

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

WO HING – PENTA-OCEAN JOINT VENTURE

**CONTRACT NO. 9/WSD/08
LAYING OF WESTERN CROSS
HARBOUR MAIN AND ASSOCIATED
LAND MAINS FROM WEST
KOWLOON TO SAI YING PUN**

**MONTHLY EM&A REPORT
NO.3**

(JULY 2010)

Prepared by:

LAW, Sau Yee
Senior Environmental Officer

Checked by:

LAU, Chi Leung
Environmental Team Leader

Issued Date: 05 August 2010

Report No.: ENA00713

ENVIRON

Ref.: WSDWHCMSEI00_0_0074L.10

16th Aug, 2010

Water Supplies Department
Sha Tin Office
6/F Sha Tin Government Offices
1 Sheung Wo Che Road
Sha Tin, NT

By Post

Attention: Ms. Candy Wong

Dear Ms. Wong

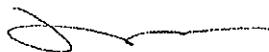
**Re: Contact No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains from West
Kowloon to Sai Ying Pun
Monthly Environmental Monitoring and Audit Report No. 3**

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 3 by Email on 5th Aug 2010 (entitled "9/WSD/08 - Draft Monthly Report (July 10)") and the subsequent revision of the report by Email on 16th Aug 2010.

We are pleased to inform you that we have no comment on the revised captioned report.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c.	Mott MacDonald Hong Kong Limited	Mr. Kelvin Ho	Fax: 2377 2900
	Wo Hing – Penta-Ocean Joint Venture	Mr. Danny Ho	Fax: 2572 4080
	ETS-TESTCONSULT LIMITED	Mr. C.L. Lau	Fax: 2695 3944

Q:\Projects\WSDWHCMSEI00\Corr\Out\WSDWHCMSEI00_0_0074L.10.doc



TABLE OF CONTENTS		Page
EXECUTIVE SUMMARY		
1.0	INTRODUCTION	1
2.0	PROJECT INFORMATION	
	2.1 Scope of the Project	1
	2.2 Work Programme	1
	2.3 Project Organization and Management Structure	1
	2.4 Contact Details of Key Personnel	1
3.0	WORK PROGRESS IN THIS REPORTING MONTH	1 – 2
4.0	NOISE MONITORING	
	4.1 Monitoring Requirements	2
	4.2 Monitoring Equipment	2
	4.3 Monitoring Parameters, Duration and Frequency	2
	4.4 Monitoring Locations	2 – 3
	4.5 Monitoring Methodology	3 – 4
	4.6 Action and Limit levels	4
	4.7 Event-Action Plans	4
	4.8 Results	4 – 5
5.0	WATER QUALITY MONITORING	
	5.1 Monitoring Requirements	5
	5.2 Monitoring Locations	5 – 6
	5.3 Monitoring Parameters	6
	5.4 Monitoring Frequency	6
	5.5 Monitoring Methodology and Equipment Used	6 – 7
	5.6 Details of site Equipment used for In-situ Measurement	7 – 8
	5.7 Quality Assurance (QA) / Quality Control (QC) results and Determination Limits	8
	5.8 Action and Limit Level	8 – 9
	5.9 Event and Action Plan	9
	5.10 Monitoring Duration and Period In this reporting month	9
	5.11 Results	9 – 10
6.0	SITE INSPECTION	10
	6.1 Summary of the ET weekly site inspection findings	10
	6.2 Recommendations on site inspection findings in Site Inspections of this month	11
7.0	STATUS OF ENVIRONMENTAL PERMITS	11
8.0	WASTE MANAGEMENT	
	8.1 Monthly Waste Summary	12
	8.2 Advice on the Solid and Liquid Waste Management Status	12
9.0	ENVIRONMENTAL NON-CONFORMANCE	
	9.1 Summary of Noise and Water Quality	12 – 13
	9.2 Summary of Environmental Complaints	13
	9.3 Summary of Notification of Summons and Prosecution	13
10.0	IMPLEMENTATION STATUS	
	10.1 Implementation Status of Environmental Mitigation Measures	13
	10.2 Implementation Status of Event and Action Plan	13
	10.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling	13
11.0	CONCLUSION AND RECOMMENDATIONS	13 – 14
12.0	FUTURE KEY ISSUE	
	12.1 Work Programme for the Coming Month	14
	12.2 Key Issues for the Coming Month	14 – 15
	12.3 Monitoring Schedule for the Coming Month	15



APPENDIX

A	Organization Chart and Lines of Communication
B1	Calibration Certificates for Impact Noise Monitoring Equipment
B2	Impact Noise Monitoring Results
B3	Graphical Plots of Impact Noise Monitoring Data
C1	Calibration Certificates for Impact Water Quality Monitoring Equipment
C2	Impact Water Quality Monitoring Results
C3	Graphical Plots of Impact Water Quality Monitoring Data
C4	QA/QC Results of Laboratory Analysis for Water Samples
D	Event-Action Plans
E	Work Programme
F	ET Weekly Site Inspection Records
G	Implementation Schedule of Mitigation Measures
H	Site General Layout Plan
I	Monitoring Schedule for this month and Coming Month
J	Daily dredging Summary
K	Details of Interim Notifications of Exceedance (NOEs) in this report month

Figures

Figure 1	Location of Noise Monitoring Station at West Kowloon
Figure 2	Location of Noise Monitoring Stations at Sai Yung Pun
Figure 3	Locations of Water Quality Monitoring Stations
Figure 1.2a	Locations of Water Sensitive Receivers and stormwater outfalls at Western Harbour
Figure 1.2b	Locations of Noise Sensitive Receivers at Sai Ying Pun
Figure 1.2c	Locations of Noise Sensitive Receivers at West Kowloon

Tables

2.1	Contact Details of Key Personnel
4.1	Noise Monitoring Equipment
4.2	Duration, Frequency and Parameters of Noise Monitoring
4.3	Noise Monitoring Stations
4.4	Action and Limit levels for Noise Monitoring
4.5	Summary of Noise Daytime Monitoring Results
5.1	Water Quality Monitoring Stations
5.2	Water Quality Monitoring Parameters
5.3	Other relevant water quality parameters
5.4	Monitoring Frequency of Impact Water Quality Monitoring
5.5	Details of Monitoring Equipment (In-situ measurement)
5.6	Summary of test method
5.7	Water Quality Action and Limit Levels
5.8	Schedule for Impact Water Quality Monitoring
5.9	Summary of Impact Marine Water Quality Exceedances in this reporting month
6.1	Summary of Site Inspection Findings
7.1	Summary of Environmental Licensing and Permit valid in this reporting month
8.1	Summary of Quantities of Waste for Disposal in this reporting month
10.1	Summary of Environmental Complaints and Prosecutions



EXECUTIVE SUMMARY

Under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(W.S) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the EM&A Manual), impact noise monitoring and water quality monitoring is required to be implemented for the "Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the Project).

This monthly Environmental Monitoring and Audit (EM&A) report No.3 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in July 2010.

Site Activities

As informed by the Contractor, the site activities in this reporting month were as below:

- Dredging of Type 1 and Type 2 marine sediment (Portion I);
- Fabrication of temporary steel working platform (Portion J);
- Drilling of pipe piles and vertical drain at Land Portion (Portion J);
- Delivering and unloading of second batch of water pipe (Portion H2); and
- Concreting of the concrete coating of the 1200mm dia. water main (Portion H1 & H2).

Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring month is listed below:

- Day-time Noise Monitoring (0700-1900 on normal weekday): 4 Occasions at KS6, CGa, RWM and KY3
- Evening-time Noise Monitoring (1900-2300): 5 Occasions at KS6, CGa, RWM and KY3
- Night-time Noise Monitoring (2300-0700 of next day): 2 Occasions at KS6, CGa, RWM and KY3
- Holiday-time Noise Monitoring (0700-1900 on Holiday): 4 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 13 Occasions at 9 monitoring stations and 4 control stations
- Weekly-site inspection: 4 Occasions

Noise Monitoring

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received.

Twenty-four exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 03 July 2010 (2300-2400) at KS6, CGa, RWM and KY3, 10 July 2010 (2300-2400) at KS6, CGa, RWM and 11 July 2010 (0000-0100) at KY3. However, all of the exceedances were considered to be invalid (not project related) and no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET. The details of NOEs present in Appendix K.

Water Quality Monitoring

No exceedances of Action and Limit levels were recorded for water quality monitoring in the reporting month.

Site Inspection

Environmental site inspections conducted in this reporting month are presented as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
ET Weekly site inspection	06, 13, 20 and 27 July 2010
Monthly Joint site inspection	20 July 2010

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting month. The major findings observed during site inspections are presented in the Section 6.0.

Environmental Complaints, Notification of summons and successful prosecutions

No complaints, notification of summons and prosecutions with respect to environmental issues were received in this reporting month.

Change in Environmental Aspect in this Reporting Month

No change on environmental aspect was reported in this reporting month.



Future Key Issues

Based on the forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Noise and dust impact due to construction works;*
- *Use and maintain silt curtain and silt screen properly;*
- *Clean up the fill material along the barge frequently;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and*
- *Maintain good site practice to minimize environmental impacts at the site.*



1.0 INTRODUCTION

Wo Hing – Penta-Ocean Joint Venture (WHPOJV) appointed Environmental Team of ETS-Testconsult Limited (ETL) to undertake the Environmental Impact Monitoring for “Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun” (the Project) under the requirements of “Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(W/S) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun” (the EM&A Manual).

This report documented the findings of EM&A Works conducted during the Project in July 2010.

2.0 PROJECT INFORMATION

2.1 Scope of the Project

The construction works of the Project are located in West Kowloon, across the Victoria Harbour and in Sai Ying Pun.

The construction works under this Project are briefly described, without limitation, as follow:

- Laying of about 1.5km of 1200mm diameter steel fresh water mains at West Kowloon;
- Laying of about 2.1km of 1200mm diameter steel submarine pipeline from West Kowloon to Sai Ying Pun including dredging, cathodic protection system and other associated works;
- Laying of about 0.4km of 1200mm diameter steel fresh water main at Sai Ying Pun;
- Laying of about 0.5km of 800mm diameter steel salt water main at West Kowloon;
- Construction of motorized butterfly valve (MBV) and the associated facilities in the vicinity of Sun Yat Sen Memorial Park at Sai Ying Pun;
- Construction of all chambers associated with pipeworks;
- Making service connections;
- Ancillary works including but not limited to reinstatement of roads, landscaping works.

Areas of the Project present in Appendix H. Locations of environmental monitoring stations and sensitive receivers are shown in Figures 1, 2, 3, 1.2a, 1.2b and 1.2c

2.2 Work Programme

Details of work programme are shown in Appendix E.

2.3 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

Project Role	Organization	Name of Key Staff	Tel. No.	Fax No.
Engineer's Representative	Mott MacDonald	Mr. Kelvin HO	2377 2823	2377 2900
IEC	Environ	Mr David Yeung	3743 0788	3548 6988
Contractor's Agent	WHPOJV	Mr. Danny HO	2695 8318	2695 3944
ET Leader	ET (ETL)	Mr C. L. Lau	2946 7791	2695 3944

3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- Dredging of Type 1 and Type 2 marine sediment (Portion I);
- Fabrication of temporary steel working platform (Portion J);
- Drilling of pipe piles and vertical drain at Land Portion (Portion J);
- Delivering and unloading of second batch of water pipe (Portion H2); and
- Concreting of the concrete coating of the 1200mm dia. water main (Portion H1 & H2).



1.0 INTRODUCTION

Wo Hing – Penta-Ocean Joint Venture (WHPOJV) appointed Environmental Team of ETS-Testconsult Limited (ETL) to undertake the Environmental Impact Monitoring for “Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun” (the Project) under the requirements of “Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(W/S) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun” (the EM&A Manual).

This report documented the findings of EM&A Works conducted during the Project in July 2010.

2.0 PROJECT INFORMATION

2.1 Scope of the Project

The construction works of the Project are located in West Kowloon, across the Victoria Harbour and in Sai Ying Pun.

The construction works under this Project are briefly described, without limitation, as follow:

- Laying of about 1.5km of 1200mm diameter steel fresh water mains at West Kowloon;
- Laying of about 2.1km of 1200mm diameter steel submarine pipeline from West Kowloon to Sai Ying Pun including dredging, cathodic protection system and other associated works;
- Laying of about 0.4km of 1200mm diameter steel fresh water main at Sai Ying Pun;
- Laying of about 0.5km of 800mm diameter steel salt water main at West Kowloon;
- Construction of motorized butterfly valve (MBV) and the associated facilities in the vicinity of Sun Yat Sen Memorial Park at Sai Ying Pun;
- Construction of all chambers associated with pipeworks;
- Making service connections;
- Ancillary works including but not limited to reinstatement of roads, landscaping works.

Areas of the Project present in Appendix H. Locations of environmental monitoring stations and sensitive receivers are shown in Figures 1, 2, 3, 1.2a, 1.2b and 1.2c

2.2 Work Programme

Details of work programme are shown in Appendix E.

2.3 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

<i>Project Role</i>	<i>Organization</i>	<i>Name of Key Staff</i>	<i>Tel. No.</i>	<i>Fax No.</i>
<i>Engineer's Representative</i>	<i>Mott MacDonald</i>	<i>Mr. Kelvin HO</i>	<i>2377 2823</i>	<i>2377 2900</i>
<i>IEC</i>	<i>Environ</i>	<i>Mr David Yeung</i>	<i>3743 0788</i>	<i>3548 6988</i>
<i>Contractor's Agent</i>	<i>WHPOJV</i>	<i>Mr. Danny HO</i>	<i>2695 8318</i>	<i>2957 8213</i>
<i>ET Leader</i>	<i>ET (ETL)</i>	<i>Mr C. L. Lau</i>	<i>2946 7791</i>	<i>2695 3944</i>

3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- *Dredging of Type 1 and Type 2 marine sediment (Portion I);*
- *Fabrication of temporary steel working platform (Portion J);*
- *Drilling of pipe piles and vertical drain at Land Portion (Portion J);*
- *Delivering and unloading of second batch of water pipe (Portion H2); and*
- *Concreting of the concrete coating of the 1200mm dia. water main (Portion H1 & H2).*



Appendix J shows the details of works daily dredging of this reporting month.

4.0 IMPACT NOISE MONITORING

4.1 Monitoring Requirements

As the requirement in the EM&A Manual, impact noise monitoring was conducted for a weekly basis at designated monitoring locations.

4.2 Monitoring Equipment

Integrating Sound Level Meters used for impact noise monitoring were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They complied with International Electro technical Commission Publications 651:1979 (Type1) and speed in m/s was used to monitor the wind speed. Table 4.1 summarized the noise monitoring equipment model used during the impact monitoring. Copies of calibration certificates and Calibration Summary for noise meters and calibrators used are attached in Appendix B1.

Table 4.1 Noise Monitoring Equipment

Equipment	Model	Equipment No.	Serial No.	Calibration Date.	Expired Date
Sound Level Meter	Rion NL-31 Sound Level Meter	ET/EN/003/12	00773032	25/11/09	24/11/10
		ET/EN/003/10	00531142	09/06/10	08/06/11
	Cesva SC-20C	ET/EN/003/11	T222897	11/11/09	10/11/10
Sound Level Calibrator	Rion NC-73 Sound Level Meter	ET/EN/002/01	10196943	11/11/09	10/11/10
Anemometer	AZ Instrument AZ 8908	ET/EN/001/03	9101259	11/11/09	10/11/10

4.3 Monitoring Parameters, Duration and Frequency

Impact noise monitoring for the A-weighted levels L_{eq} , L_{10} and L_{90} were recorded once per week. Data obtained from impact noise monitoring was processed and presented as below:

- Daytime: three sets of 30-minute noise level monitored between 0700-1900 hrs on normal weekdays;
- Evening-time*: three sets of 5-minute noise level monitored between 1900-2300 hrs ;
- Night-time*: three sets of 5-minute noise level monitored between 2300-0700 hrs of next day; and
- Holiday*: three sets of 5-minute noise level monitored between 0700-1900 hrs on holiday.

(*): Noise monitoring to be conducted only when there is construction work.

Duration, frequencies and parameters of noise measurement are presented in Table 4.2.

Table 4.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	No. of Set(s)	Parameters
Day-time: 0700-1900 hrs on normal weekday	30	1	L_{eq} , L_{10} , L_{90}
Evening-time: 1900-2300 hrs	5	3	L_{eq} , L_{10} , L_{90}
Night-time: 2300-0700 hrs of next day	5	3	L_{eq} , L_{10} , L_{90}
Holiday-time: 0700-1900 hrs on holiday	5	3	L_{eq} , L_{10} , L_{90}

4.4 Monitoring Locations

In accordance with the EM&A Manual, the proposed noise monitoring station at the Harbourside (KS4) was cancelled since the owner of the Harbourside and nearby NSRs rejected to perform baseline and impact noise monitoring at their property. As a result, there was one noise monitoring location KS6 (The Cullinan) selected at West Kowloon to conduct impact environmental monitoring.



At Sai Yung Pun, the location at the noise station CG (Connaught Garden) was unavailable for impact noise measurement because the building repairing and maintenance works was carrying out in the Connaught Garden and will be finished in May 2011. Hence, noise monitoring at noise station CG was moved to another noise station CGa (pavement in front of Connaught Garden) temporarily until the completion of repairing and maintenance works at Connaught Garden) since CGa locates close to the major site activities which are likely to have noise impacts and low disturbance to the occupants was observed during the noise monitoring. As a result, there were three noise monitoring locations, CGa (Pavement in front of Connaught Garden), RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3) selected to conduct impact environmental monitoring.

Beside, the locations at the noise stations, RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3), were unavailable for impact evening-time and night-time noise measurement because the building owners reject ET to carry out noise monitoring during such two periods due to security. Hence, evening-time and night-time noise monitoring at noise stations, RWM and KY3 were moved to pavement in front of Richwealth Mansion and Kwan Yik Building Phase 3. The details of noise monitoring stations are summarized in Table 4.3.

Table 4.3 Noise Monitoring Stations

<i>Daytime and Holiday-time Noise monitoring station</i>	<i>Description of location</i>	<i>Type of Measurement</i>
KS6	Podium at the Culliman	Façade
CGa	Pavement in front of Connaught Garden	Façade
RWM	Roof at Richwealth Mansion	Free Field
KY3	Roof at Kwan Yik Building Phase 3	Free Field
<i>Evening-time and Night-time Noise monitoring station</i>	<i>Description of location</i>	<i>Type of Measurement</i>
KS6	Podium at the Culliman	Façade
CGa	Pavement in front of Connaught Garden	Façade
RWM	Pavement at Richwealth Mansion	Façade
KY3	Pavement at Kwan Yik Building Phase 3	Façade

4.5 Monitoring Methodology

Instrumentation

Integrating Sound Level Meters were employed for noise monitoring.

Operation/Analysis Procedures

- Sound Level Meter was set on a tripod at a height of 1.2m above the ground;
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting : A
 - Time weighting : Fast
 - Time measurement : 30 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1.0 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment;
- During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- 3dB(A) correction had been added to the results if noise measurements were free-field;
- Noise measurement may be paused during periods of high intrusive noise (e.g. dog barking directly towards the receiver of noise level meter). If noise measurement was paused during high intrusive noise, the noise level meter would be resumed and continued the noise measurement and the observations would also be recorded. Any pause intervals were not included in the measurement time; and



- Noise monitoring would be cancelled in the presence of fog, rain, storm, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth at quarterly intervals; and
- The meters are sent to supplier or HOKLAS laboratory to check and calibrated at yearly intervals.

4.6 Actions and Limit Levels

The Action and Limit Levels (AL Levels) were established in accordance to the Table 4.2 of the EM&A Manual. Table 4.4 presents the AL levels for noise monitoring.

Table 4.4 Action and Limit Levels for Noise Monitoring

<i>Time Period</i>	<i>Action</i>	<i>Limit</i>
<i>0700 – 1900 hrs on normal weekday (Day-time)</i>	<i>When one documented complaint is received</i>	<i>75 dB(A) *</i>
<i>1900-2300 hrs (Evening-time)</i>		<i>70 dB(A)</i>
<i>0700-1900 hrs on Holiday (Holiday-time)</i>		<i>70 dB(A)</i>
<i>Restricted hours (2300-0700 hrs of next day) (Night-time)</i>		<i>55 dB(A)</i>

* reduce to 70dB(A) for school and 65dB(A) during school examination periods

4.7 Event-Action Plans

Should the results of the monitoring parameters at any designated monitoring stations indicate that the noise level criteria are exceeded, the actions in accordance with the Event and Action Plan that summarized in Appendix D should be carried out.

4.8 Results

During this reporting month, totally 4 occasions of day-time noise monitoring, 5 occasions of evening-time noise monitoring, 2 occasions of night-time noise monitoring and 4 occasion of holiday-time noise monitoring were carried out at all four noise monitoring stations, KS6, CGa, RWM and KY3.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received.

Twenty-four exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 03 July 2010 (2300-2400) at KS6, CGa, RWM and KY3, 10 July 2010 (2300-2400) at KS6, CGa, RWM and 11 July 2010 (0000-0100) at KY3. However, all of the exceedances were considered to be invalid (not project related) and no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET. The details of NOEs present in Appendix K.

Table 4.5 summaries the noise daytime monitoring results in the reporting period.



Table 4.5 Summary of Noise Daytime Monitoring Results

Monitoring Parameter	Date	KS6			Date	CGa			RWM			KY3		
		Time	Result	Exceed*		Time	Result	Exceed*	Time	Result#	Exceed*	Time	Result#	Exceed*
Daytime	09/07/10	13:45	58.4	X	09/07/10	15:00	71.4	X	15:35	61.2	X	16:10	62.0	X
	16/07/10	08:45	59.8	X	16/07/10	14:20	71.3	X	15:00	60.9	X	15:40	58.9	X
	23/07/10	17:40	59.8	X	23/07/10	13:00	70.7	X	13:35	60.3	X	14:10	61.0	X
	29/07/10	17:10	63.7	X	30/07/10	08:30	70.4	X	09:05	61.9	X	09:40	62.1	X
Evening-time	03/07/10	19:55	60.1	X	03/07/10	19:32	70.0	X	19:16	69.9	X	19:00	67.6	X
	03/07/10	20:00	61.4	X	03/07/10	19:37	69.8	X	19:21	69.5	X	19:05	64.8	X
	03/07/10	20:05	59.4	X	03/07/10	19:42	69.8	X	19:26	68.5	X	19:10	66.7	X
	10/07/10	20:55	58.4	X	10/07/10	21:55	69.9	X	22:15	68.7	X	22:35	68.1	X
	10/07/10	21:00	58.4	X	10/07/10	22:00	69.7	X	22:20	69.0	X	22:40	67.8	X
	10/07/10	21:05	58.2	X	10/07/10	22:05	69.9	X	22:25	69.1	X	22:45	67.9	X
	18/07/10	20:15	58.9	X	18/07/10	19:40	69.2	X	19:20	68.2	X	19:00	67.1	X
	18/07/10	20:20	58.9	X	18/07/10	19:45	69.6	X	19:25	68.8	X	19:05	67.7	X
	18/07/10	20:25	59.0	X	18/07/10	19:50	68.9	X	19:30	68.3	X	19:10	67.3	X
	25/07/10	20:25	59.7	X	25/07/10	19:00	70.0	X	19:20	69.2	X	19:40	64.9	X
	25/07/10	20:30	59.5	X	25/07/10	19:05	69.5	X	19:25	69.8	X	19:45	64.4	X
	25/07/10	20:35	58.9	X	25/07/10	19:10	69.4	X	19:30	69.4	X	19:50	66.4	X
	31/07/10	20:50	58.9	X	31/07/10	19:05	68.5	X	19:30	68.2	X	19:50	68.9	X
	31/07/10	20:55	59.0	X	31/07/10	19:10	68.7	X	19:35	68.0	X	19:55	69.0	X
31/07/10	21:00	58.8	X	31/07/10	19:15	69.0	X	19:40	67.5	X	20:00	68.8	X	
Night-time	03/07/10	23:00	58.3	L	03/07/10	23:00	56.7	L	23:15	57.8	L	23:31	58.2	L
	03/07/10	23:05	58.4	L	03/07/10	23:05	56.9	L	23:20	56.9	L	23:36	56.8	L
	03/07/10	23:10	57.7	L	03/07/10	23:10	56.3	L	23:25	57.1	L	23:41	58.4	L
	11/07/10	00:25	58.0	L	10/07/10	23:00	57.4	L	23:20	56.9	L	23:40	58.4	L
	11/07/10	00:30	57.7	L	10/07/10	23:05	56.6	L	23:25	57.3	L	23:45	58.1	L
	11/07/10	00:35	57.7	L	10/07/10	23:10	56.8	L	23:30	57.0	L	23:50	58.3	L
Holiday-time	04/07/10	09:45	60.5	X	04/07/10	11:33	69.9	X	11:10	66.5	X	10:50	63.6	X
	04/07/10	09:50	60.6	X	04/07/10	11:38	69.6	X	11:15	67.1	X	10:55	62.0	X
	04/07/10	09:55	60.2	X	04/07/10	11:43	69.8	X	11:20	66.0	X	11:00	61.5	X
	11/07/10	10:05	60.9	X	11/07/10	11:05	68.4	X	11:25	59.7	X	11:45	61.2	X
	11/07/10	10:10	60.7	X	11/07/10	11:10	68.9	X	11:30	60.1	X	11:50	61.1	X
	11/07/10	10:15	60.9	X	11/07/10	11:15	68.8	X	11:35	60.4	X	11:55	60.6	X
	18/07/10	15:35	59.2	X	18/07/10	17:20	69.2	X	17:50	60.1	X	18:20	59.7	X
	18/07/10	15:40	59.0	X	18/07/10	17:25	69.0	X	17:55	60.2	X	18:25	59.2	X
	18/07/10	15:45	58.7	X	18/07/10	17:30	68.8	X	18:00	60.6	X	18:30	59.0	X
	25/07/10	15:10	60.6	X	25/07/10	16:30	69.7	X	17:10	66.8	X	17:37	65.7	X
	25/07/10	15:15	60.8	X	25/07/10	16:35	69.8	X	17:15	67.8	X	17:42	66.5	X
25/07/10	15:20	60.8	X	25/07/10	16:40	70.0	X	17:20	66.1	X	17:47	64.2	X	

Remark (*): L = Limit Level exceedance, A = Action Level exceedance and X = not an Exceedance
(^): Since daytime and holiday-time noise measurements at monitoring stations RWM and KY3 were free-field, 3dB(A) correction had been added to the results.

The summary of noise exceedances is shown in Table 4.6.

Table 4.6 Summary of Impact Noise Exceedances in this reporting month

Exceedance Level	Daytime	Evening-time	Night-time	Holiday-time
Action (July 2010)	0	0	0	0
Cumulative	0	0	0	0
Limit (July 2010)	0	0	24	0
Cumulative	0	0	24	0



5.0 WATER QUALITY MONITORING

5.1 Monitoring Requirements

In accordance with the EM&A Manual, impact water quality monitoring was conducted three days per week during the course of the marine construction works.

5.2 Monitoring Locations

In accordance with the EM&A Manual, the proposed water quality monitoring station R8 – Macau Ferry Terminal was cancelled since it is located inside the restricted area. Another monitoring location R8a was proposed to replace R8 for impact water quality monitoring. As a result, totally four control stations and nine impaction stations were selected to conduct impact water quality monitoring for the Project. Table 5.1 shows the water quality monitoring stations of the Project.

Table 5.1 Water Quality Monitoring Stations

ID	Station	Easting	Northing
R5	Green Island	830 175.979	816 179.217
R6	Prince Philip Dental Hospital	833 437.625	816 747.640
R7	Tsan Yuk Hospital	833 461.092	816 744.773
R8a	Macau Ferry Terminal	833 573	816 885
R15 *	Kowloon South Pumping Station	833 982.630	818 282.101
R16	Kowloon Government Offices Building	834 335.800	817 769.145
R17	Canton Road Government Offices Building	834 364.658	817 802.847
R28	WSD Kennedy Town Salt Water Pumping Station	830 707	815 983
R29	WSD Sheung Wan Salt Water Pumping Station	833 414	816 745
C1	Control Station	830 797.729	819 163.377
C2	Control Station	836 350.628	817 135.218
C3	Control Station	829 495.126	817 228.312
C4	Control Station	836 638.773	816 686.030

Remark (*): Station R15 = WSD Seawater Intake

Control stations, C2 and C4, should be the upstream control station for all impact monitoring stations at mid-flood and Control Stations, C1 and C3, should be the upstream control station for all monitoring stations at mid-ebb.

5.3 Monitoring Parameters

Monitoring parameters listed in Table 5.2 shall be monitored by the ET to ensure that any deteriorating water quality could be readily detected and timely action be taken to rectify the situation. Table 5.3 shows the other relevant water quality data recorded during the impact water quality monitoring.

Table 5.2 Water Quality Monitoring Parameters

In-situ measurement	Laboratory analysis
Dissolved Oxygen (DO) (mg/L)	Suspended solids (SS) (mg/L)
Turbidity (NTU)	

Table 5.3 Other relevant water quality parameters

Water Quality Parameters	
Tidal stages	Water depth (m)
Dissolved Oxygen saturation (%)	Salinity (ppt)
Temperature (°C)	Weather Condition

5.4 Monitoring Frequency

The frequency of impact water quality monitoring of water quality is summarized in Table 5.4.



Table 5.4 Monitoring Frequency of Impact Water Quality Monitoring

Frequency	Monitoring Depth
3 days/week, 2 tides/day	For water depth greater than 6m: Three water depths (1m below Surface, mid-depth and 1m above bottom). For water depth less than 6m but greater than 3m: Two water depths: (1m below Surface and 1m above bottom). For water depth less than 3m: One water depth (Mid-depth)

5.5 Monitoring Methodology and Equipment Used

Refer to the requirement in Appendix D2 "General Technical Requirements of Environmental Monitoring" (TM) in the Environmental Monitoring and Audit Guidelines for Development Projects in Hong Kong published by EPD, water samples for all monitoring parameter were collected, stored, preserved and analysed according to the Standard Method APHA 19ed.. In-situ measurements at monitoring locations including DO, turbidity, salinity and water depth were collected by equipment with the characteristic and functions listed as below:

Location of the monitoring stations

A hand-held digital Global Positioning System (GPS) was used to identify the designated monitoring stations prior to water sampling.

Water Depth measurement

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

In-situ Water Quality Monitoring Equipment

All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

Dissolved Oxygen, salinity and temperature measuring equipment

A portable, weatherproof dissolved oxygen & salinity measuring instrument, which complete with cable, sensor and DC power source (e.g. YSI 85 or equivalent) was used for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation;
- a salinity in range 0-40 ppt; and
- a temperature of 0-45 degree Celsius

A membrane electrode with automatic temperature compensation complete with a cable was installed.

Turbidity Measurement Instrument

A portable, weatherproof turbidity-measuring instrument with DC power source was used. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. HACH model 2100P or equivalent)

Water Sampling and Sample Analysis

In-situ monitoring was carried out at three depths: 1 meter below water surface, at mid-depth and 1 meter above the seabed. If the water depth is less than 6 m, the mid-depth station shall be omitted and if the water depth is below 3 m, only the mid depth station shall be monitored.

A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 litres, was lowered into the water body at the predetermined depth. The opening ends of the sampler were then closed accordingly and water samples were collected.



The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to Environmental Laboratory of ETS-Testconsult Ltd (HOKLAS Registration No. 022) on the same day for analysis.

5.6 Details of site Equipment used for In-situ Measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring location.

Table 5.5 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix C1.

Table 5.5 Details of Monitoring Equipment (In-site measurement)

Parameter	Model	Date of Calibration	Due Date	Equipment No.	Serial No.
Coordinate of Monitoring stations	Magellan GPS Navigator	----	----	ET/EW/005/03	211836B
Dissolved Oxygen (Saturation), Temperature and Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85	30/06/10	29/09/10	ET/EW/008/003*	08L100716
Turbidity	HACH Model 2100P Turbid Meter	16/04/10 16/07/10	15/07/10 15/10/10	ET/0505/007*	08060C030281
Water Depth	Speedtech Instrument SM-5A	----	----	ET/EW/002/04	56657

Remark: (*) indicates the instrument should be calibrated on use.

5.7 Quality Assurance (QA) / Quality Control (QC) results and Determination Limits

At each measurement/sampling depth, two consecutive measurements of dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity and salinity were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. If the difference between the first and second measurement is greater than 25% the reading was discarded and the measurements were repeated.

At the laboratory analysis of water sample, test method of test parameter as required by the EM&A Manual, with the QA/QC results in accordance with the requirement of HOKLAS or international accredited scheme is shown in Table 5.6. For the QA/QC procedures, one QC sample, one duplicate sample and one sample spike of every batch of 20 samples were analysis. The QA/QC results are summarized in Appendix C4

Table 5.6 Summary of test method

Laboratory Analysis	Testing Procedure	Method Detection Limit
Total suspended solids	In house method based on APHA 19 th ed 2540D	1.0 mg/L

5.8 Action and Limit Level

The water quality criteria, namely Action and Limit (A/L) levels are presented in the table below.



Table 5.7 Water Quality Action and Limit Levels

Parameter	Action Level	Limit Level
DO (mg/L) (Surface, Middle & Bottom)	<u>Surface, Middle & Bottom</u> WSD Seawater Intakes 2 mg/L (For R15) Other Impact Monitoring Stations 5.65 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)	<u>Surface & Middle</u> WSD Seawater Intakes 2 mg/L (For R15) Other Impact Monitoring Stations 5.51 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29) <u>Bottom</u> 5.11 mg/L (For R15, R5, R6, R7, R8a, R16, R17, R28 and R29)
SS (mg/L) (Depth-averaged)	WSD Seawater Intakes 10 mg/L (For R15) Other Impact Monitoring Stations 12.7 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)	WSD Seawater Intakes 10 mg/L (For R15) Other Impact Monitoring Stations 12.7 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)
Turbidity (NTU) (Depth-averaged)	WSD Seawater Intakes 10 NTU Other Impact Monitoring Stations 6.48 NTU (For R5, R6, R7, R8a, R16, R17, R28 and R29)	WSD Seawater Intakes 10 NTU Other Impact Monitoring Stations 6.82 NTU (For R5, R6, R7, R8a, R16, R17, R28 and R29)

- Notes:
- "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
 - For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
 - For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
 - All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

5.9 Event and Action Plan

Please refer to the Appendix D for details.

5.10 Monitoring Duration and Period In this reporting month

Marine water quality monitoring on 22 July 2010 (mid-ebb) was cancelled due to bad weather (Typhoon Signal No.3). Below is the time schedule for the water quality monitoring conducted in this reporting month:

Table 5.8 Schedule for Impact Water Quality Monitoring

July 2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 Holiday	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Remarks: (▼) = Marine water quality monitoring carried out by ET.
(∇) = Marine water quality monitoring on 22 July 2010 (mid-Ebb) was cancelled due to bad weather (Typhoon Signal No.3)

The daily water quality monitoring duration are detailed in Appendix C2.

5.11 Results

The impact water quality measurement results are detailed in Appendix C2. Appendix C3 presents the water quality monitoring data and graphical presentations of monitoring results respectively.



The summary of marine water quality exceedances is shown in Table 5.9.

Table 5.9 Summary of Impact Marine Water Quality Exceedances in this reporting month

Exceedance Level	DO		Turbidity		SS		Total	
	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb
Action	0	0	0	0	0	0	0	0
Limit	0	0	0	0	0	0	0	0

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded for this reporting month.

6.0 ENVIRONMENTAL SITE INSPECTION

During this reporting month, weekly site inspections were undertaken on 06, 13, 20 and 27 July 2010 by ET. Monthly joint site inspection at 20 July 2010 was carried out by Engineer's Representative, IEC, WHPOJV and ET. A summary of implementation status of mitigation measures on site inspections is presented in Appendix G.

6.1 Summary of the ET weekly site inspection findings

According to the summary of the ET weekly site inspections carried out in this month, it indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. Summary of the site inspection findings in this reporting month is shown in Table 6.1.

Table 6.1 Summary of Site Inspection Findings

Item	Aspect	Finding	Action(s) taken by the Contractor	ET Verification
1	Water	Silt screen at the sea water intake at Kowloon South Salt Water Pumping Station was found damaged during the weekly site inspection on 06/07/10.	<ul style="list-style-type: none"> Repairing works of the silt screen was arranged on 07/07/10. 	During the subsequent weekly site inspection on 13/06/10, the silt screen was repaired and maintained properly
2	Water	Silt screen at the sea water intake at Kowloon South Salt Water Pumping Station was found damaged during the weekly site inspection on 27/07/10.	<ul style="list-style-type: none"> Repairing works of the silt screen was arranged on 27/07/10. 	Since the finding was corrected during the same inspection date, no further verification will be required.
3	Water	During the site inspection on 27/06/10, the silt curtain for dredging work at Portion I was noted damaged.	<ul style="list-style-type: none"> Dredging works was suspended immediately when damage of the frame type silt curtain was observed ; Immediate actions of maintenance and repairing works of the frame type silt curtain was arranged on 27/07/10. A new silt curtain was replaced the damaged one. 	Since the finding was corrected during the same inspection date, no further verification will be required.
4	Water	Standing water was observed accumulated inside a not-in-use desilting tank at Portion J during the weekly site inspection on 27/07/10.	<ul style="list-style-type: none"> The Contactor replied that pesticide was applied on 26/07/10; Cover will be provided to avoid accumulation of rain water. 	Since the finding was observed at the last weekly site inspection on 27/07/10, it will be verified in the coming month.
5	Chemical	A 20L bottle containing diesel was found place on the board of the dredger without drip tray at Portion I during the weekly site inspection on 27/07/10.	<ul style="list-style-type: none"> The Contractor replaced the chemical bottle to the drip tray nearby during the same inspection. 	Since the finding was corrected during the same inspection date, no further verification will be required.



6.2 Recommendations on site inspection findings in Site Inspections of this month

Based on the site inspection findings, the recommendations are as below:

- Minimize noise and dust impact due to construction works;
- Use and maintain silt curtain and silt screen properly;
- Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;
- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and
- Checking and maintaining all the site machines to prevent black smoke emission;
- Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;
- Remove all stagnant water;
- Apply proper treatment facilities to wastewater before discharge; and
- Maintain good waste management at the site.

7.0 STATUS OF ENVIRONMENTAL PERMITS

Permits/licenses valid in this reporting month are summarized in Table 7.1.

Table 7.1 Summary of Environmental Licensing and Permit valid in this reporting month

Description	Permit No.	Valid Period		Remarks
		From	To	
Environmental Permit	EP-273/2007	31/07/07	End of Project	Whole Project
Water Discharge Licence (West Kowloon)	WT0000534 7-2009	07/01/10	31/01/15	Effluent and all other wastewater arising from the construction site through Screen & Sedimentation Tank
Water Discharge Licence (Sai Yung Pun)	WT0000580 0-2010	14/01/10	31/01/15	Effluent arising from the construction site through Sedimentation Tank
Chemical Waste Producer	5213-217-W3086-01	13/10/09	End of Project	Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries
Construction Noise Permit (West Kowloon)	GW-RE0063-10	01/03/10	31/08/10	Group A One Generator, silenced, <75 dB(A) at 7m One Tunnel boring machine One Water pump (electric) (CNP 281) Group B One Dredger, grab (CNP 063) Two Guard boat One Tug boat (CNP 221)
Construction Noise Permit	GW-RS0234-10	22/03/10	19/09/10	One dredger, grab (CNP 063) Two Guard boat One Tug boat (CNP 221) Hopper barge
Dumping Licence	EP/MD/10-085	30/04/10	30/09/10	Bulk quantity of material approved for dumping at the East Ninepin Mud Disposal Ground within permit validity period: 293800 cu.m. (for Type 1 – Open Sea Disposal)
Dumping Licence	EP/MD/11-024	30/06/10	29/07/10	Bulk quantity of material approved for dumping at the East Sha Chau Contaminated Mud Disposal Site within permit validity period: 239360 cu.m. (for Type 1 – Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal)
Dumping Licence	EP/MD/11-039	26/07/10	30/09/10	Bulk quantity of material approved for dumping at the East Ninepin Mud Disposal Ground denoted "LWCHMALM" within permit validity period: 251160 cu.m. (for Type 1 – Open Sea Disposal)
Notification under APCO	Application had been submitted to EPD on 25/09/09 and approved from 29/09/09.			



8.0 WASTE MANAGEMENT

8.1 Monthly Waste Summary

The quantities of waste generated from the Project in this month are summarized in Table 8.1.

Table 8.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (in m ³)	416.4		4357.04
	Broken Concrete (in m ³)	0	---	0
	Reused in the Contract (in m ³)	0	---	0
	Reused in other Projects (in m ³)	0	---	0
	Disposal as Public Fill (in m ³)	416.4	SENT Landfill	4357.04
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	0	Collected by recycling company	39
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in m ³)	2.63	SENT Landfill	34.34
Dredged Materials*	Type 1 (in m ³)	1400	East Ninepin Mud Disposal Ground	34200
	Type 2 (in m ³)	49700	The East Sha Chau	93440

Remark (*): Daily Dredging Summary for this reporting month presents in Appendix J

8.2 Advice on the Solid and Liquid Waste Management Status

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

Besides, pre-cast drip trays were provided for oil drums at several areas, such as barge and chemical storage area. The Contractor should collect and dispose of any stagnant water accumulated in the drip trays and handle them as chemical waste.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system, including desilting facilities. Moreover, the Contractor should apply approved pesticides in the stagnant water.

All the runoff from the parking area should be pumped to the desilting facilities and oil interceptors to remove suspended solids and oil & grease prior to discharge.

9.0 ENVIRONMENTAL NON-CONFORMANCE

9.1 Summary of Noise and Water Quality

No exceedances of Action and Limit Level of marine water quality monitoring results were recorded during the reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received.



Twenty-four exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 03 July 2010 (2300-2400) at KS6, CGa, RWM and KY3, 10 July 2010 (2300-2400) at KS6, CGa, RWM and 11 July 2010 (0000-0100) at KY3. However, all of the exceedances were considered to be invalid (not project related) and no further actions were required.

9.2 Summary of Environmental Complaints

There was no complaint received in this reporting month.

9.3 Summary of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this reporting month.

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix G. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

10.2 Implementation Status of Event and Action Plan

No exceedances of Action and Limit Level of water quality monitoring results were recorded during the reporting month.

Since no documented complaints on noise issue were received in this reporting month, no Action Level exceedances were recorded.

Twenty-four exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 03 July 2010 (2300-2400) at KS6, CGa, RWM and KY3, 10 July 2010 (2300-2400) at KS6, CGa, RWM and 11 July 2010 (0000-0100) at KY3. However, all of the exceedances were considered to be invalid (not project related) and hence no further actions were required.

10.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaints, notifications of summons and successful prosecutions were received in this reporting month. A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 10.1.

Table 10.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		Summons served		Successful prosecution received	
July 2010	Cumulative	July 2010	Cumulative	July 2010	Cumulative
0	0	0	0	0	0

11.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Impact monitoring of noise and water quality were carried out at designated locations in accordance with the EM&A Manual in this reporting month.

No exceedances of Action and Limit Level of water quality monitoring results were recorded during the reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received.



Twenty-four exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 03 July 2010 (2300-2400) at KS6, CGa, RWM and KY3, 10 July 2010 (2300-2400) at KS6, CGa, RWM and 11 July 2010 (0000-0100) at KY3. However, all of the exceedances were considered to be invalid (not project related) and no further actions were required.

According to the ET weekly site inspections carried out in this reporting month, the Contractor generally implemented sufficient dust mitigation measures.

No complaints, prosecutions or notifications of summons were received in this reporting month.

Recommendations

According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke; and
- Implement the dust mitigation measures for the site activities.

Noise

- Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Maintain the drainage system regularly;
- Operate and maintain the silt curtains and silt screen regularly;
- Operate the cleaning vessel regularly;
- Provide proper treatment for the wastewater discharge;
- Clean up the fill material on the barge frequently; and
- Remove the stagnant water or provide approved pesticides for the stagnant water, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the works area;
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

12.0 FUTURE KEY ISSUES

12.1 Work Programme for the Coming Month

As informed by the Contractor, the activities to be conducted by them in the next month included:

- *Concreting of the concrete coating at 1200mm dia. water main (Portion H1 & H2);*
- *Drilling of pipe piles at Marine Portion (Portion J);*
- *Excavation of trench within pipe pile wall at Land Portion (Portion J); and*
- *Dredging works (Portion I).*

12.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- *Noise and dust impact due to construction works;*
- *Use and maintain silt curtain and silt screen properly;*
- *Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;*



- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and
- Maintain good site practice to minimize environmental impacts at the site.

Mitigation measures to be required in the coming month:

Air Quality Impact

- To ensure implementation of the dust mitigation measures for the site activities;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers

Noise

- To switch off equipment if not in use;
- To operate silent equipment;
- To identify the noise sources inside and outside of the site; and
- To re-schedule the work activities in the event of valid noise exceedance.

Water Quality Impact

- To maintain the drainage system;
- To repair, inspect and maintain the silt curtains and site screen regularly;
- To provide covers for the drip trays to avoid stagnant water due to rainfall;
- To provide proper treatment for wastewater from the area;
- To deploy a cleaning vessel to remove floating rubbish;
- To avoid dredged materials on the barge from being washed into the sea; and
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding.

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To maintain proper housekeeping;
- To remove the oil stains in the event of leakage and handle all materials using for this cleaning works as chemical waste; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

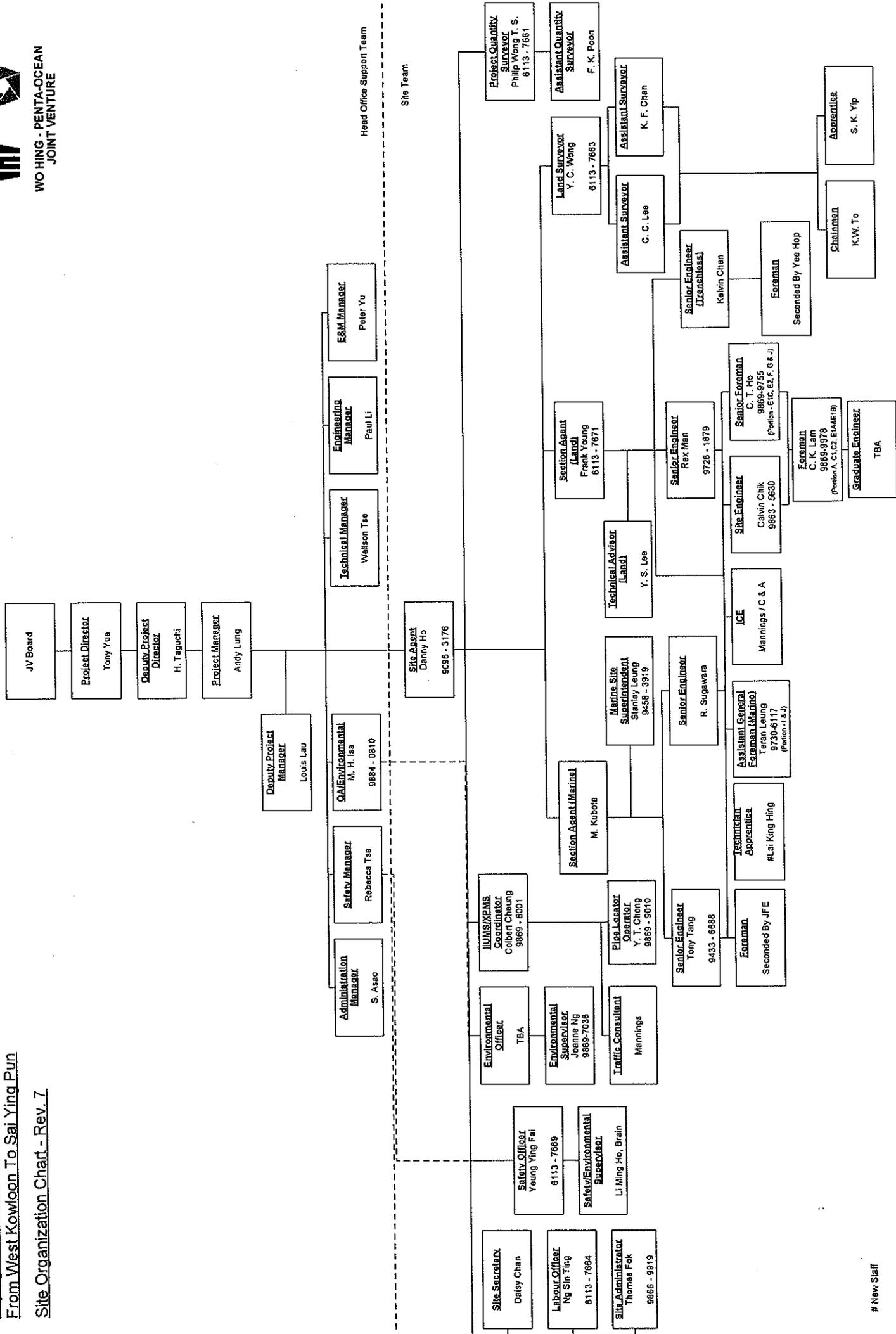
12.3 Monitoring Schedule for the Coming Month

The proposed EM&A program of the coming month is attached in Appendix I.



Appendix A

Organization Chart and Lines of Communication





Project Laying of Western Cross Harbour Main and Associated Land Mains From West Kowloon to Sai Ying Pun - Investigation

Title Project Organization and Line of Communication

Date Dec 2009

Figure 1.3a



東業探動測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix B1

Calibration Certificates for Impact Noise Monitoring Equipment



Calibration Certificate

Certificate No. 95693

Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q92297

Date of receipt : 5-Nov-09

Item Tested

Description : Sound Level Calibrator (ET/ EN/ 002/ 01)

Manufacturer : Rion

Model : NC-73

Serial No. : 10196943

Test Conditions

Date of Test : 11-Nov-09

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

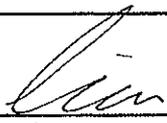
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	93091	18-Jun-10	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR
S041	Universal Counter	94005	6-Aug-10	SCL-HKSAR
S206	Sound Level Meter	93966	5-Aug-10	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 
P.F. Wong

Approved by : 
Dorothy Cheuk

Date: 16-Nov-09

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8601 Fax: 2425 8646

The copyright of this certificate is owned by Hong Kong Calibration Ltd.. It may not be reproduced except in full.



Calibration Certificate

Certificate No. 95693

Page 2 of 2 Pages

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	93.72 dB	± 1 dB

Uncertainty : ± 0.1 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.991 kHz	± 2 %

Uncertainty : ± 0.0 %

3. Level Stability : 0.0 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.8 %

Mfr's Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. The above measured values were the mean of 3 measurements.

4. Atmospheric Pressure : 1 002 hPa

----- END -----



Calibration Certificate

Certificate No. **95692**

Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q92297

Date of receipt : 5-Nov-09

Item Tested

Description : Sound Level Meter (ET/ EN/ 003/ 11)

Manufacturer : Cesva

Model : SC-20C

Serial No. : T222897

Test Conditions

Date of Test : 11-Nov-09

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

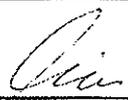
The results are shown in the attached page(s).

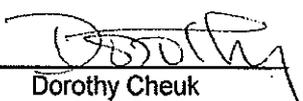
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C081456	18-Mar-10	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 
P.F. Wong

Approved by : 
Dorothy Cheuk

Date: 13-Nov-09



Calibration Certificate

Certificate No. 95692

Page 2 of 3 Pages

Results :

1. SPL Accuracy

Level Range (dB)	UUT Setting		Applied Value (dB)	UUT Reading (dB)
	Freq. Weight	Time Weighting		
23 ~ 140	L _A	L _F	94.03	93.8
		L _S		93.8
	L _C	L _F		93.8
		L _S		93.8
	L _A	L _F	113.97	113.8
		L _S		113.8
	L _C	L _F		113.8
		L _S		113.8

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.01 dB

3. Linearity

Level Linearity

UUT Range	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
23 ~ 140	114.0	113.8	0.0	± 0.7 dB
	104.0	103.8	0.0	
	94.0	93.8 (Ref.)	--	
	84.0	83.8	0.0	
	74.0	73.8	0.0	
	64.0	63.8	0.0	
	54.0	53.8	0.0	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 95692

Page 3 of 3 Pages

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.4	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.8	- 8.6 dB, ± 1 dB
500 Hz	-3.4	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.0	+ 1.2 dB, ± 1 dB
4 kHz	+1.2	+ 1.0 dB, ± 1 dB
8 kHz	-1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-11.9	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	50.0	50.0	--
1/10		50.0	± 0.5 dB
1/10 ²		50.0	± 1.0 dB
1/10 ³		49.9	
1/10 ⁴		49.9	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 002 hPa.

----- END -----



Calibration Certificate

Certificate No. 96150

Page 1 of 4 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q92457

Date of receipt : 24-Nov-09

Item Tested

Description : Precision Integrating Sound Level Meter (ET/ EN/ 003/ 12)

Manufacturer : Rion

Model : NL-31

Serial No. : 00773032

Test Conditions

Date of Test : 25-Nov-09

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C081456	18-Mar-10	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 
P.F. Wong

Approved by : 
Dorothy Cheuk

Date: 27-Nov-09

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
Tel: 2425 8801 Fax: 2425 8646



Calibration Certificate

Certificate No. 96150

Page 2 of 4 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L _A	Fast	94.03	94.0
		Slow		94.0
	L _C	Fast		94.0
	L _p	Fast		94.1
30 - 120	L _A	Fast	94.03	93.8
		Slow		93.8
	L _C	Fast		94.0
	L _p	Fast		94.0
30 - 120	L _A	Fast	113.97	113.8
		Slow		113.8
	L _C	Fast		113.9
	L _p	Fast		113.9

IEC Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.01 dB



Calibration Certificate

Certificate No. 96150

Page 3 of 4 Pages

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.8	0.0	± 0.7 dB
130	104.0	103.8	0.0	
120	94.0	93.8 (Ref.)	--	
110	84.0	83.7	-0.1	
100	74.0	73.7	-0.1	
90	64.0	63.7	-0.1	
80	54.0	53.8	0.0	

Uncertainty : ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.9	+0.1	± 0.4 dB
	94.0	93.8 (Ref.)	--	
	95.0	94.8	0.0	± 0.2 dB
	104.0	103.8	0.0	± 0.3 dB
	105.0	104.8	0.0	± 1.0 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.7	- 39.4 dB, ± 1.5 dB
63 Hz	-26.4	- 26.2 dB, ± 1.5 dB
125 Hz	-16.3	- 16.1 dB, ± 1 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.3	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1 dB
4 kHz	+1.1	+ 1.0 dB, ± 1 dB
8 kHz	-1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.8	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 96150

Page 4 of 4 Pages

4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.6	± 0.5 dB
1/10 ²	40.0	40.0	
1/10 ³	40.0	40.1	± 1.0 dB
1/10 ⁴	40.0	40.1	

Uncertainty : ± 0.1 dB

- Remark :
1. UUT : Unit-Under-Test
 2. The uncertainty claimed is for a confidence probability of not less than 95%.
 3. Atmospheric Pressure : 1 010 hPa.

----- END -----



Calibration Certificate

Certificate No. 02909A

Page 1 of 4 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q01152

Date of receipt : 31-May-10

Item Tested

Description : Precision Integrating Sound Level Meter (ET/ EN/ 003/ 10)

Manufacturer : Rion

Model : NL-31

Serial No. : 00531142

Test Conditions

Date of Test : 9-Jun-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	25-Mar-11	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by :


Dorothy Cheuk

Approved by :


Alan Chu

Date: 15-Jun-10

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8846

The copyright of this certificate is owned by Hong Kong Calibration Ltd., it may not be reproduced except in full.



Calibration Certificate

Certificate No. 02909A

Page 2 of 4 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L _A	Fast	94.03	93.7
		Slow		93.7
	L _C	Fast		93.7
	L _p	Fast		93.7
30 - 120	L _A	Fast	94.03	93.7
		Slow		93.6
	L _C	Fast		93.7
	L _p	Fast		93.7
30 - 120	L _A	Fast	113.97	113.6
		Slow		113.6
	L _C	Fast		113.6
	L _p	Fast		113.6

IEC Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 02909A

Page 3 of 4 Pages

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.9	+0.2	± 0.7 dB
130	104.0	103.9	+0.2	
120	94.0	93.7 (Ref.)	--	
110	84.0	84.1	+0.4	
100	74.0	73.7	0.0	
90	64.0	63.7	0.0	
80	54.0	53.7	0.0	

Uncertainty : ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.5	-0.2	± 0.4 dB
	94.0	93.7 (Ref.)	--	
	95.0	94.7	0.0	± 0.2 dB
	104.0	103.8	+0.1	± 0.3 dB
	105.0	104.8	0.0	± 1.0 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.2	- 39.4 dB, ± 1.5 dB
63 Hz	-26.7	- 26.2 dB, ± 1.5 dB
125 Hz	-16.7	- 16.1 dB, ± 1 dB
250 Hz	-9.1	- 8.6 dB, ± 1 dB
500 Hz	-3.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.6	+ 1.2 dB, ± 1 dB
4 kHz	+1.6	+ 1.0 dB, ± 1 dB
8 kHz	-0.5	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.0	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 02909A

Page 4 of 4 Pages

4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
1/10 ²	40.0	40.0	
1/10 ³	40.0	40.0	± 1.0 dB
1/10 ⁴	40.0	39.9	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 002 hPa.

4. This certificate is to supersede our former certificate no. 02909.

----- END -----



Calibration Certificate

Certificate No. 95694

Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q92297

Date of receipt : 5-Nov-09

Item Tested

Description : Anemometer (EN/ 001/ 03)

Manufacturer : AZ Instrument

Model : AZ 8908

Serial No. : 9101259

Test Conditions

Date of Test : 11-Nov-09

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: T03, Z04.

Test Results

A correction factor of X 1.1 applied to velocity function is required to bring the meter reading to within manufacturer's specification. The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S050A	Std. Temp/R.H. Meter	93193	14-May-10	NIM-PRC, SCS-SWISS
S155	Std. Anemometer	NSC20094046	19-Jan-10	NIM-PRC

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by :

S.K. Tang

Approved by :

Steve Kwan

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

Date: 11-Nov-09



Calibration Certificate

Certificate No. 95694

Page 2 of 2 Pages

Results :

1. Velocity

Applied Value (m/s)	UUT Reading (m/s)	Corrected Reading (UUT Reading x 1.1) (m/s)	Mfr's Spec.
2.50	2.2	2.4	± (3 % of reading + 1 dgt)
5.00	4.5	5.0	
10.00	8.8	9.7	
15.00	13.2	14.5	
20.00	17.7	19.5	

2. Temperature

Applied Value (°C)	UUT Reading (°C)	Mfr's Spec.
1.2	2.0	± 1 °C
25.9	25.6	
47.2	46.2	

Remark : 1. UUT: Unit-Under-Test

2. Uncertainty : ± (0.9% + 0.16 m/s) for Velocity, ± 0.3 °C for Temperature, for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 002 hPa

----- END -----



Appendix B2

Impact Noise Monitoring Results



Day-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
09/07/10	Fine	13:45	14:15	58.4	60.9	50.2	0.6
16/07/10	Cloudy	08:45	09:15	59.8	62.7	57.1	1.5
23/07/10	Cloudy	17:40	18:10	59.8	63.4	57.6	0.2
29/07/10	Cloudy	17:10	17:40	63.7	64.9	61.9	0.7

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
09/07/10	Cloudy	15:00	15:30	71.4	73.8	67.7	1.2
16/07/10	Fine	14:20	14:50	71.3	73.9	65.4	0.2
23/07/10	Drizzle	13:00	13:30	70.7	73.8	67.0	1.3
30/07/10	Cloudy	08:30	09:00	70.4	72.7	67.6	0.9

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
09/07/10	Cloudy	15:35	16:05	61.2	64.4	58.7	1.4
16/07/10	Fine	15:00	15:30	60.9	63.0	56.8	0.5
23/07/10	Drizzle	13:35	14:05	60.3	63.2	56.7	1.5
30/07/10	Cloudy	09:05	09:35	61.9	64.4	58.2	1.5

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
09/07/10	Cloudy	16:10	16:40	62.0	65.1	59.3	1.6
16/07/10	Fine	15:40	16:10	58.9	61.9	55.3	0.8
23/07/10	Drizzle	14:10	14:40	61.0	63.8	57.2	1.7
30/07/10	Cloudy	09:40	10:10	62.1	64.7	59.0	1.7



Evening-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Fine	19:55	20:00	60.1	61.1	58.8	0.5
03/07/10	Fine	20:00	20:05	61.4	61.8	58.9	0.6
03/07/10	Fine	20:05	20:10	59.4	60.5	58.3	0.6
10/07/10	Fine	20:55	21:00	58.4	69.6	57.0	0.6
10/07/10	Fine	21:00	21:05	58.4	59.7	57.1	0.5
10/07/10	Fine	21:05	21:10	58.2	59.4	57.1	0.7
18/07/10	Fine	20:15	20:20	58.9	60.6	53.9	0.2
18/07/10	Fine	20:20	20:25	58.9	60.2	53.5	0.1
18/07/10	Fine	20:25	20:30	59.0	61.0	53.4	<0.1
25/07/10	Fine	20:25	20:30	59.7	61.0	58.3	1.4
25/07/10	Fine	20:30	20:35	59.5	61.0	57.8	1.4
25/07/10	Fine	20:35	20:40	58.9	60.3	57.1	1.4
31/07/10	Fine	20:50	20:55	58.9	61.5	54.0	<0.1
31/07/10	Fine	20:55	21:00	59.0	62.0	54.1	<0.1
31/07/10	Fine	21:00	21:05	58.8	61.8	53.9	<0.1

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Cloudy	19:32	19:37	70.0	72.2	69.3	0.5
03/07/10	Cloudy	19:37	19:42	69.8	71.7	68.8	0.4
03/07/10	Cloudy	19:42	19:47	69.8	72.1	67.5	0.5
10/07/10	Fine	21:55	22:00	69.9	73.4	68.7	0.3
10/07/10	Fine	22:00	22:05	69.7	72.1	68.8	0.5
10/07/10	Fine	22:05	22:10	69.9	72.4	69.0	0.6
18/07/10	Fine	19:40	19:45	69.2	71.0	63.4	0.2
18/07/10	Fine	19:45	19:50	69.6	71.5	64.0	0.2
18/07/10	Fine	19:50	19:55	68.9	70.5	62.2	0.5
25/07/10	Fine	19:00	19:05	70.0	73.7	63.5	0.5
25/07/10	Fine	19:05	19:10	69.5	72.6	62.0	0.4
25/07/10	Fine	19:10	19:15	69.4	72.9	62.1	0.4
31/07/10	Fine	19:05	19:10	68.5	72.1	62.0	<0.1
31/07/10	Fine	19:10	19:15	68.7	73.0	62.2	<0.1
31/07/10	Fine	19:15	19:20	69.0	72.9	61.9	<0.1



Evening-time Noise Monitoring

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Cloudy	19:16	19:21	69.9	71.2	65.1	0.5
03/07/10	Cloudy	19:21	19:26	69.5	72.1	63.1	0.6
03/07/10	Cloudy	19:26	19:31	68.5	69.8	62.2	0.6
10/07/10	Fine	22:15	22:20	68.7	71.1	65.3	0.5
10/07/10	Fine	22:20	22:25	69.0	71.5	66.0	0.4
10/07/10	Fine	22:25	22:30	69.1	71.7	66.3	0.5
18/07/10	Fine	19:20	19:25	68.2	70.1	61.6	0.2
18/07/10	Fine	19:25	19:30	68.8	70.7	61.5	0.3
18/07/10	Fine	19:30	19:35	68.3	70.0	60.5	0.6
25/07/10	Fine	19:20	19:25	69.2	72.9	62.1	0.5
25/07/10	Fine	19:25	19:30	69.8	71.3	62.3	0.5
25/07/10	Fine	19:30	19:35	69.4	70.5	62.2	0.6
31/07/10	Fine	19:30	19:35	68.2	70.2	60.3	0.1
31/07/10	Fine	19:35	19:40	68.0	70.5	60.2	<0.1
31/07/10	Fine	19:40	19:45	67.5	69.9	60.3	<0.1

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Cloudy	19:00	19:05	67.6	70.2	60.3	0.3
03/07/10	Cloudy	19:05	19:10	64.8	68.1	60.4	0.4
03/07/10	Cloudy	19:10	19:15	66.7	70.3	59.7	0.3
10/07/10	Fine	22:35	22:40	68.1	70.9	63.6	0.6
10/07/10	Fine	22:40	22:45	67.8	70.4	63.0	0.7
10/07/10	Fine	22:45	22:50	67.9	70.6	63.4	0.5
18/07/10	Fine	19:00	19:05	67.1	69.6	60.2	0.6
18/07/10	Fine	19:05	19:10	67.7	69.0	59.9	0.6
18/07/10	Fine	19:10	19:15	67.3	68.9	61.0	0.5
25/07/10	Fine	19:40	19:45	64.9	67.4	59.4	0.7
25/07/10	Fine	19:45	19:50	64.4	67.8	58.2	0.7
25/07/10	Fine	19:50	19:55	66.4	68.3	60.8	0.7
31/07/10	Fine	19:50	19:55	68.9	72.9	61.5	0.2
31/07/10	Fine	19:55	20:00	69.0	72.3	61.1	0.2
31/07/10	Fine	20:00	20:05	68.8	72.5	61.2	<0.1



Night-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Fine	23:00	23:05	58.3	59.5	57.1	1.0
03/07/10	Fine	23:05	23:10	58.4	59.7	56.0	1.0
03/07/10	Fine	23:10	23:15	57.7	59.0	56.4	0.9
11/07/10	Fine	00:25	00:30	58.0	59.6	56.5	0.9
11/07/10	Fine	00:30	00:35	57.7	59.0	56.1	0.7
11/07/10	Fine	00:35	00:40	57.7	59.1	55.9	0.6

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Cloudy	23:00	23:05	56.7	57.9	56.1	0.7
03/07/10	Cloudy	23:05	23:10	56.9	58.2	56.2	0.8
03/07/10	Cloudy	23:10	23:15	56.3	57.2	55.6	0.5
10/07/10	Fine	23:00	23:05	57.4	59.0	54.5	0.8
10/07/10	Fine	23:05	23:10	56.6	58.5	53.2	0.7
10/07/10	Fine	23:10	23:15	56.8	58.8	53.3	0.8

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Cloudy	23:15	23:20	57.8	58.1	56.8	0.8
03/07/10	Cloudy	23:20	23:25	56.9	57.4	56.0	0.8
03/07/10	Cloudy	23:25	23:30	57.1	57.8	56.9	0.7
10/07/10	Fine	23:20	23:25	56.9	58.4	52.1	0.6
10/07/10	Fine	23:25	23:30	57.3	59.1	52.7	0.8
10/07/10	Fine	23:30	23:35	57.0	58.9	52.4	0.8

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
03/07/10	Cloudy	23:31	23:36	58.2	59.2	56.3	0.5
03/07/10	Cloudy	23:36	23:41	56.8	58.6	55.9	0.4
03/07/10	Cloudy	23:41	23:46	58.4	59.2	56.7	0.8
10/07/10	Fine	23:40	23:45	58.4	59.9	54.8	0.9
10/07/10	Fine	23:45	23:50	58.1	59.5	54.5	0.7
10/07/10	Fine	23:50	23:55	58.3	59.8	54.6	0.5



Holiday-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
04/07/10	Fine	09:45	09:50	60.5	61.7	58.9	0.7
04/07/10	Fine	09:50	09:55	60.6	62.2	58.8	0.7
04/07/10	Fine	09:55	10:00	60.2	61.9	58.6	0.6
11/07/10	Sunny	10:05	10:10	60.9	62.1	59.4	1.1
11/07/10	Sunny	10:10	10:15	60.7	62.2	58.9	0.9
11/07/10	Sunny	10:15	10:20	60.9	62.1	59.0	1.2
18/07/10	Sunny	15:35	15:40	59.2	61.0	54.4	0.2
18/07/10	Sunny	15:40	15:45	59.0	60.8	55.0	0.6
18/07/10	Sunny	15:45	15:50	58.7	60.2	54.6	0.2
25/07/10	Sunny	15:10	15:15	60.6	61.7	59.1	1.3
25/07/10	Sunny	15:15	15:20	60.8	61.7	59.6	1.3
25/07/10	Sunny	15:20	15:25	60.8	61.3	58.4	1.2

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
04/07/10	Fine	11:33	11:38	69.9	72.1	63.5	0.6
04/07/10	Fine	11:38	11:43	69.6	70.8	67.1	0.7
04/07/10	Fine	11:43	11:48	69.8	70.5	66.7	0.7
11/07/10	Sunny	11:05	11:10	68.4	70.3	66.8	0.8
11/07/10	Sunny	11:10	11:15	68.9	70.8	67.1	0.7
11/07/10	Sunny	11:15	11:20	68.8	70.6	67.0	0.6
18/07/10	Fine	17:20	17:25	69.2	73.0	62.4	0.6
18/07/10	Fine	17:25	17:30	69.0	72.5	61.6	0.6
18/07/10	Fine	17:30	17:35	68.8	73.0	62.5	0.6
25/07/10	Sunny	16:30	16:35	69.7	71.0	64.2	0.5
25/07/10	Sunny	16:35	16:40	69.8	70.4	66.5	0.4
25/07/10	Sunny	16:40	16:45	70.0	71.8	63.9	0.5



Holiday-time Noise Monitoring

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
04/07/10	Fine	11:10	11:15	66.5	68.7	61.9	1.1
04/07/10	Fine	11:15	11:20	67.1	68.8	65.1	1.1
04/07/10	Fine	11:20	11:25	66.0	68.4	60.1	1.0
11/07/10	Sunny	11:25	11:30	59.7	62.3	55.9	1.2
11/07/10	Sunny	11:30	11:35	60.1	62.7	56.0	1.3
11/07/10	Sunny	11:35	11:40	60.4	63.0	56.3	1.1
18/07/10	Fine	17:50	17:55	60.1	62.6	55.7	0.9
18/07/10	Fine	17:55	18:00	60.2	62.5	55.2	1.0
18/07/10	Fine	18:00	18:05	60.6	62.9	56.0	0.5
25/07/10	Sunny	17:10	17:15	66.8	68.9	61.9	0.7
25/07/10	Sunny	17:15	17:20	67.8	69.1	64.8	0.7
25/07/10	Sunny	17:20	17:25	66.1	68.5	60.1	0.7

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
04/07/10	Fine	10:50	10:55	63.6	65.4	58.4	1.3
04/07/10	Fine	10:55	11:00	62.0	63.6	60.1	1.4
04/07/10	Fine	11:00	11:05	61.5	63.4	57.7	1.4
11/07/10	Sunny	11:45	11:50	61.2	63.4	58.9	1.4
11/07/10	Sunny	11:50	11:55	61.1	63.2	58.7	1.3
11/07/10	Sunny	11:55	12:00	60.6	62.8	58.4	1.2
18/07/10	Fine	18:20	18:25	59.7	61.1	53.2	0.5
18/07/10	Fine	18:25	18:30	59.2	61.0	52.6	0.7
18/07/10	Fine	18:30	18:35	59.0	62.0	52.9	0.8
25/07/10	Sunny	17:37	17:42	65.7	68.7	58.6	0.8
25/07/10	Sunny	17:42	17:47	66.5	69.0	58.1	0.9
25/07/10	Sunny	17:47	17:52	64.2	67.9	58.3	0.8



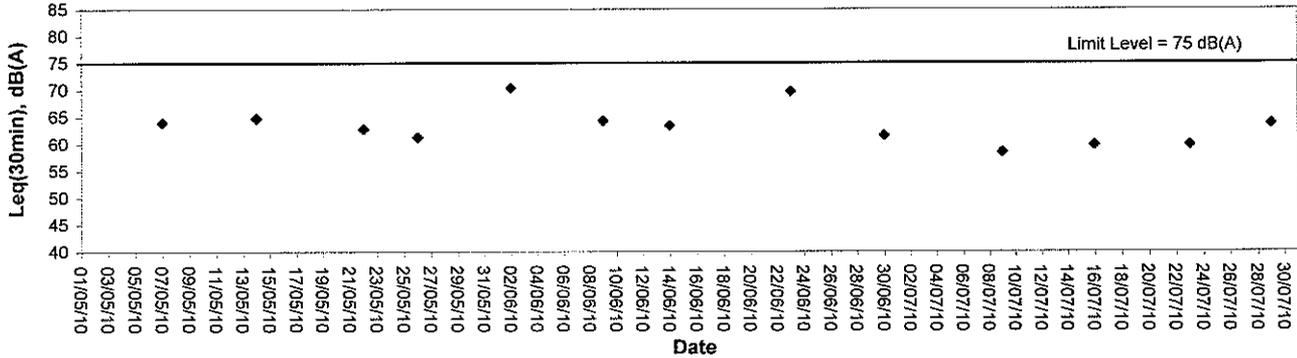
Appendix B3

Graphical Plots of Impact Noise Monitoring Data

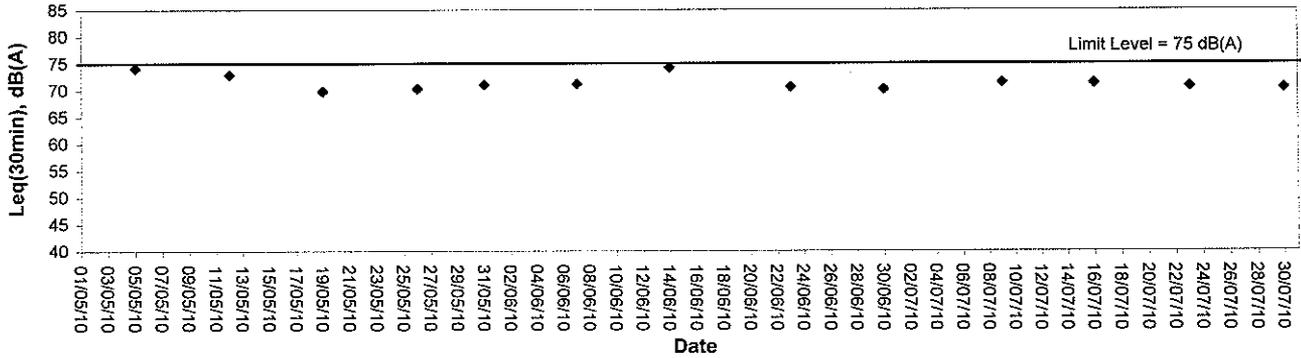


Noise Monitoring (Day-time)

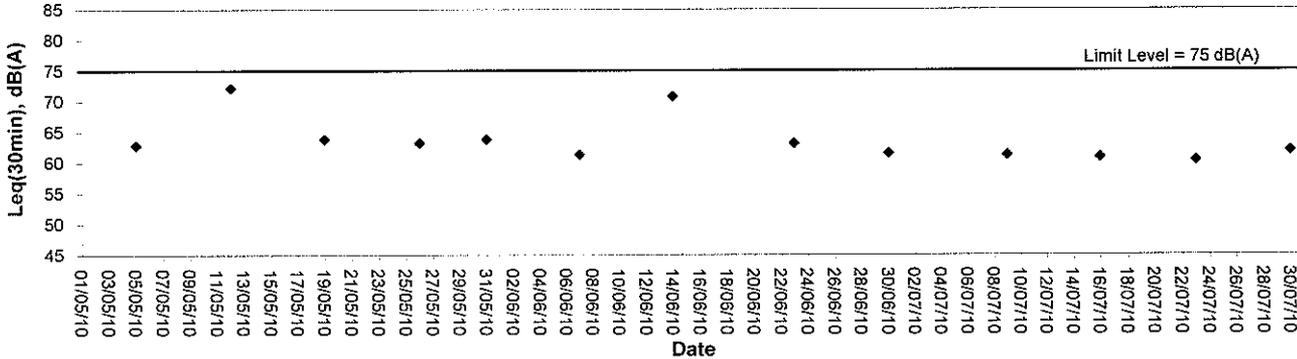
Noise level at KS6 - Podium at the Culliman



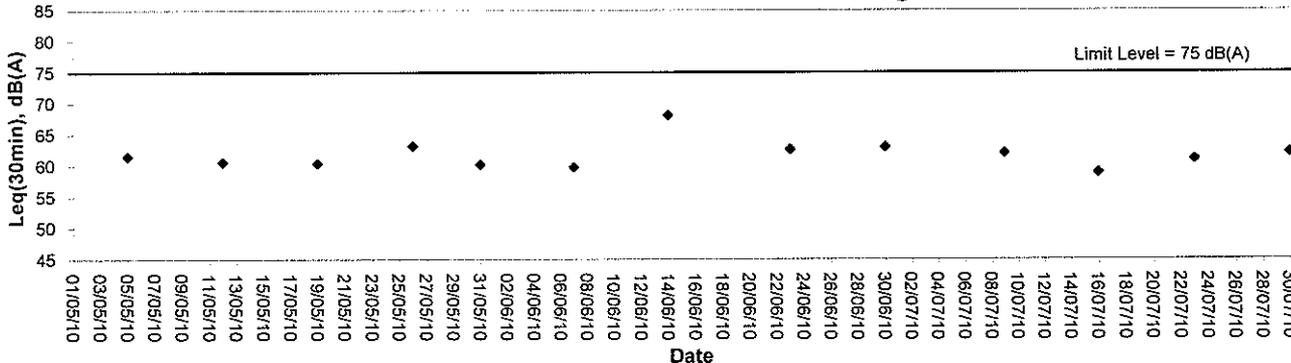
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



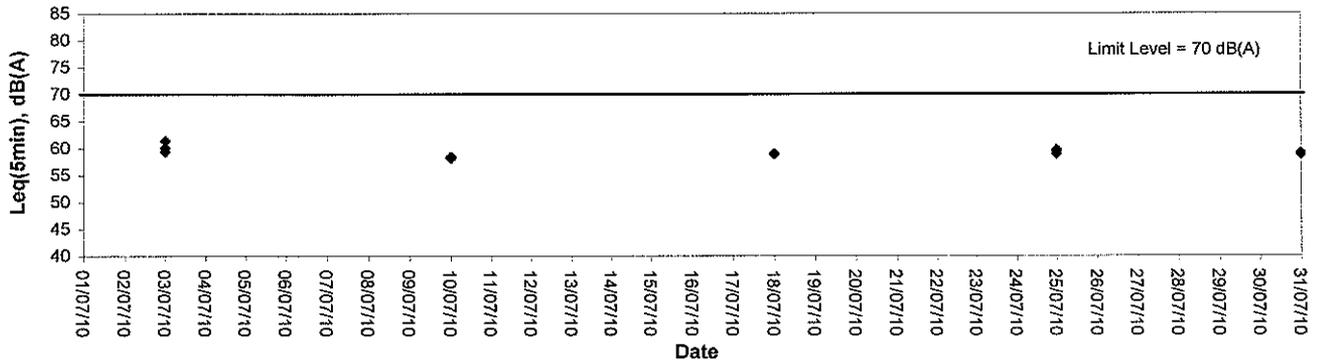
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



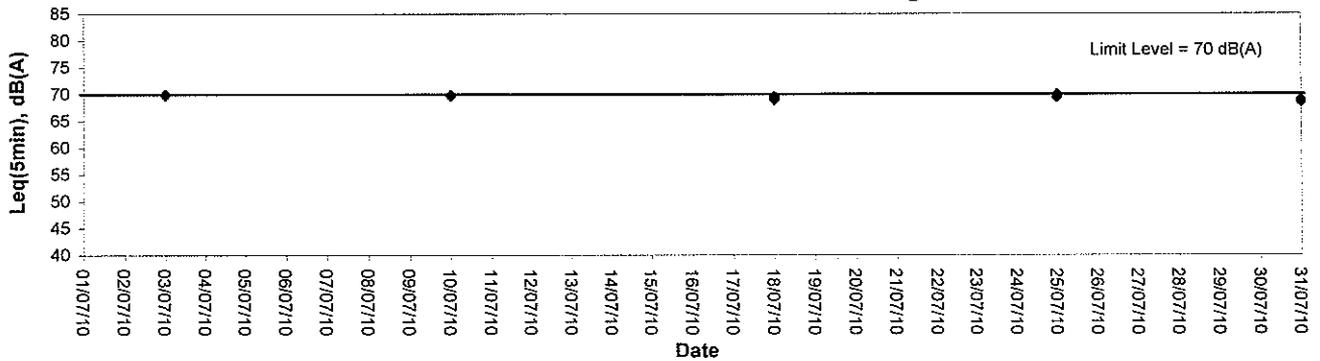


Noise Monitoring (Evening-time)

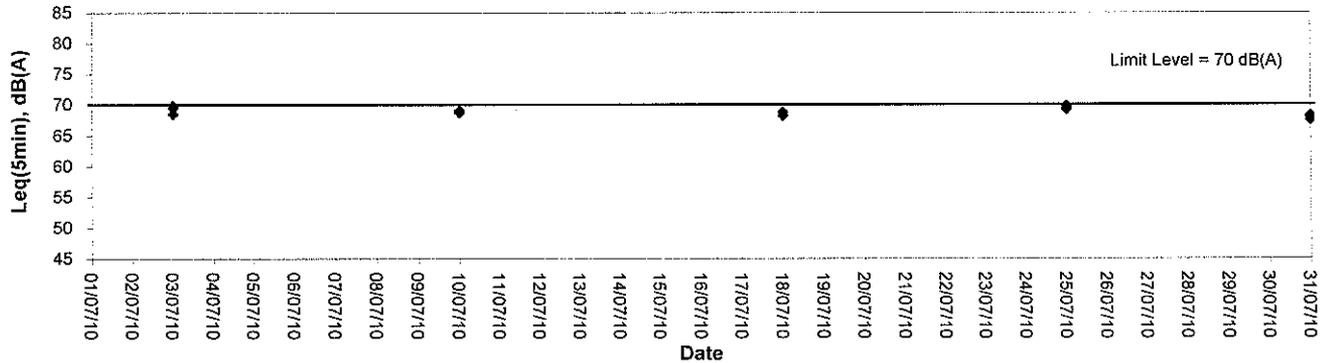
Noise level at KS6 - Podium at the Culliman



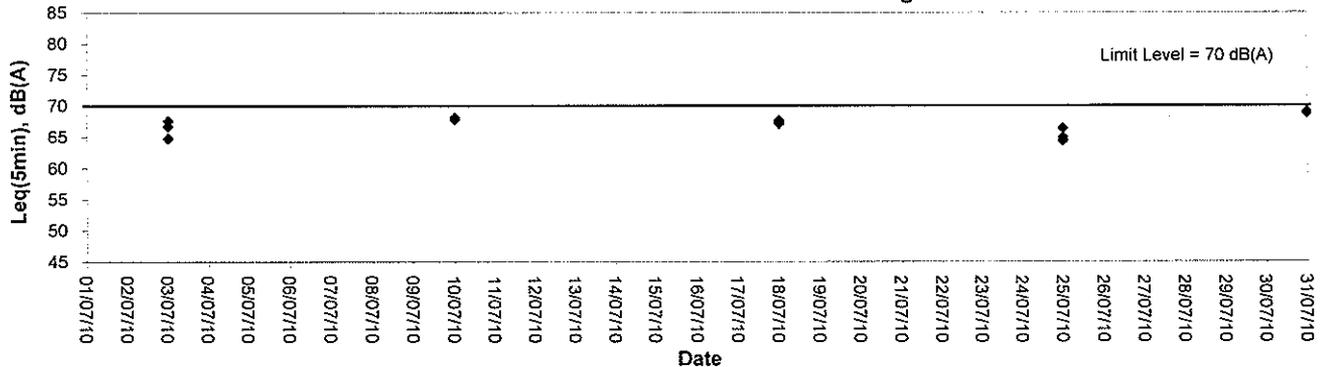
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



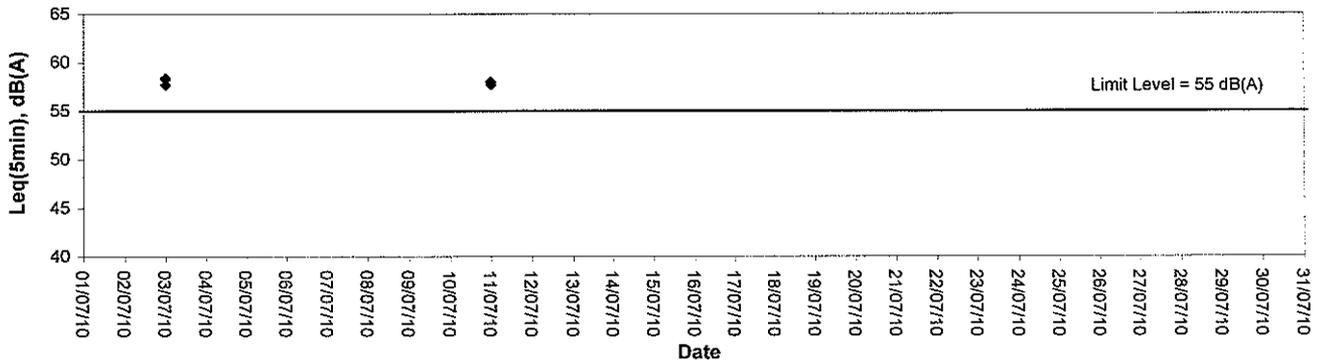
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



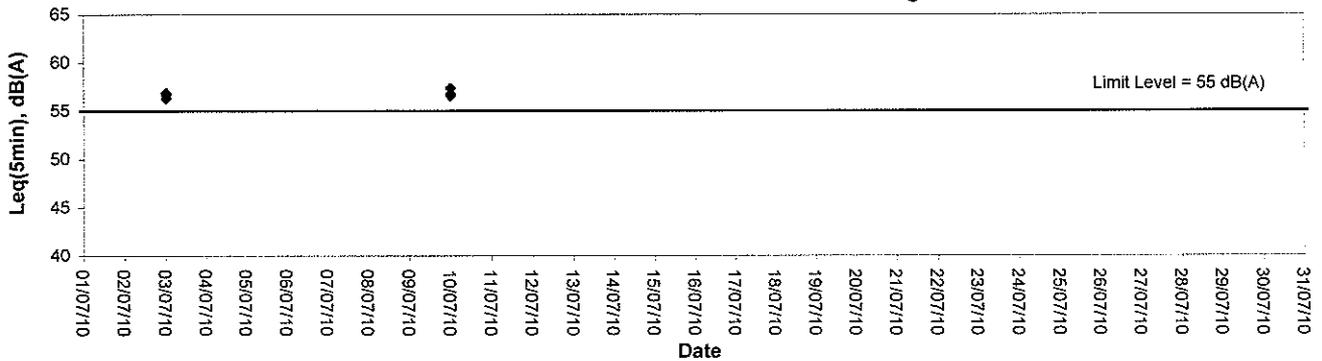


Noise Monitoring (Night-time)

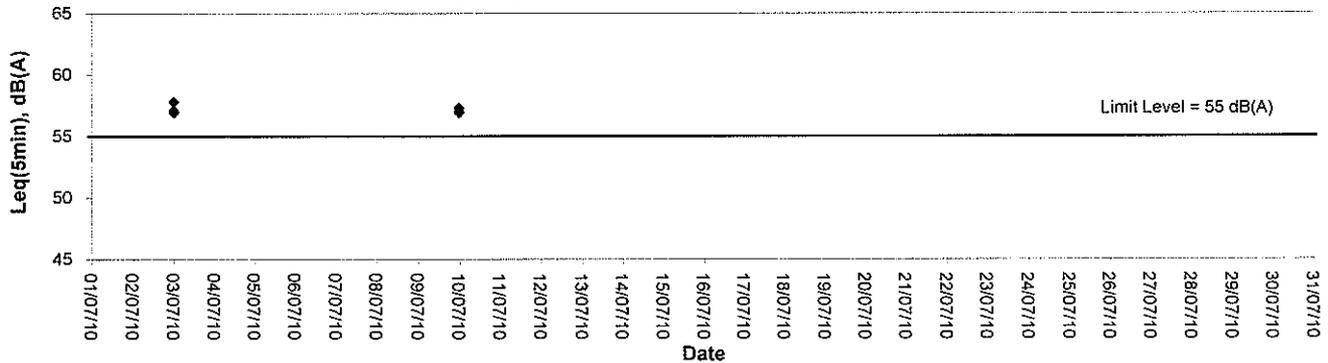
Noise level at KS6 - Podium at the Culliman



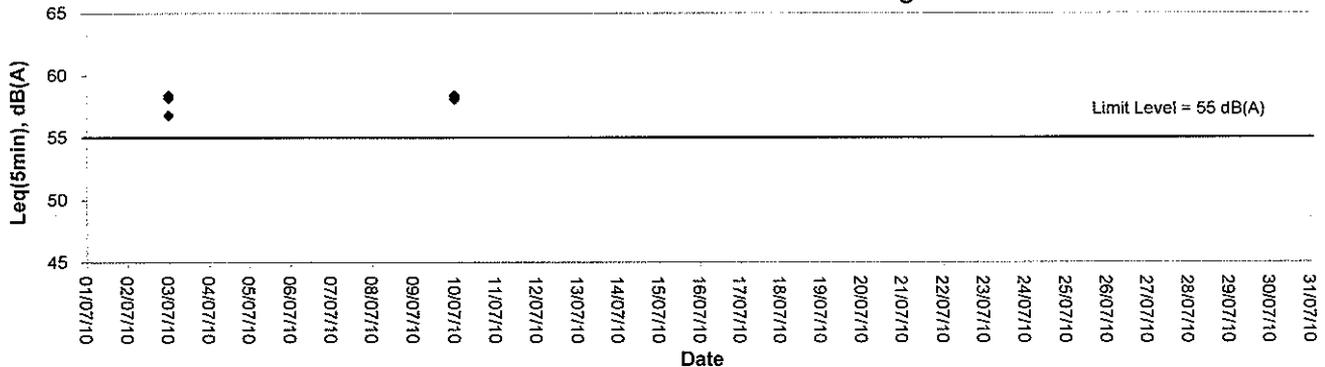
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



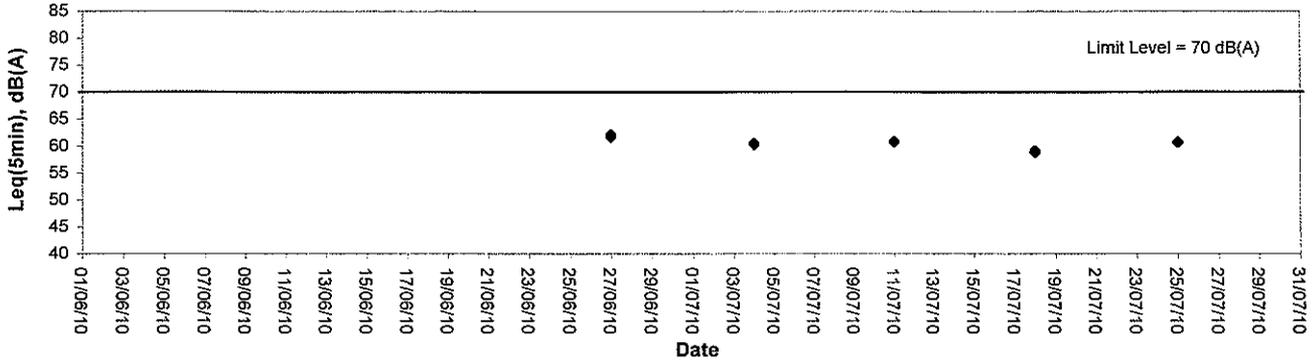
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



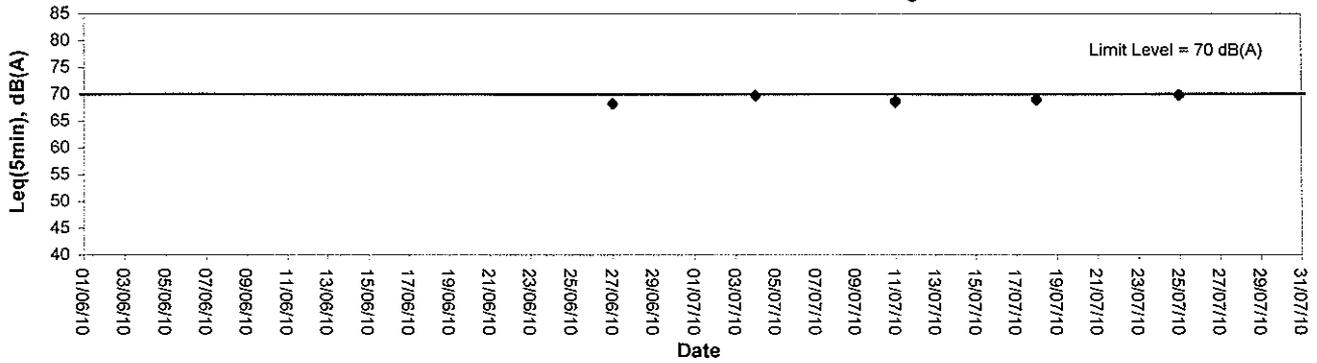


Noise Monitoring (Holiday-time)

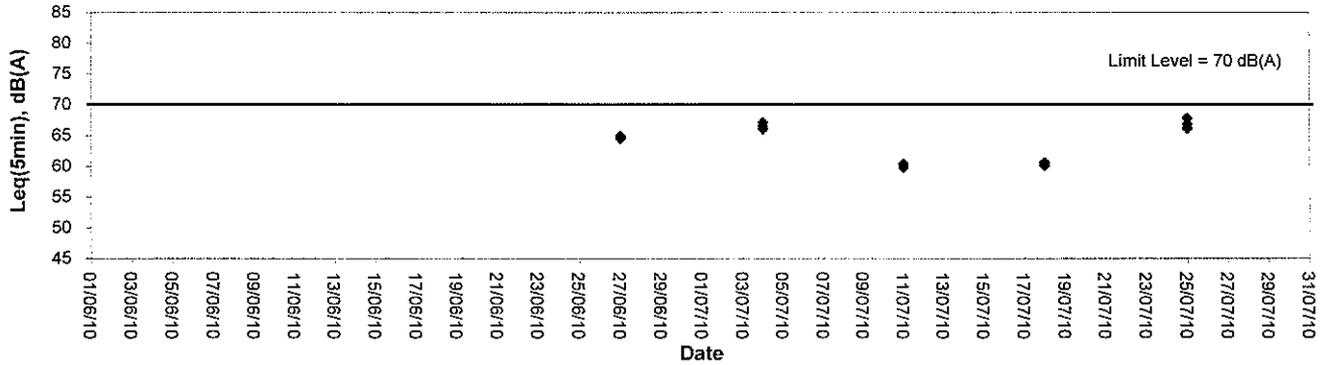
Noise level at KS6 - Podium at the Culliman



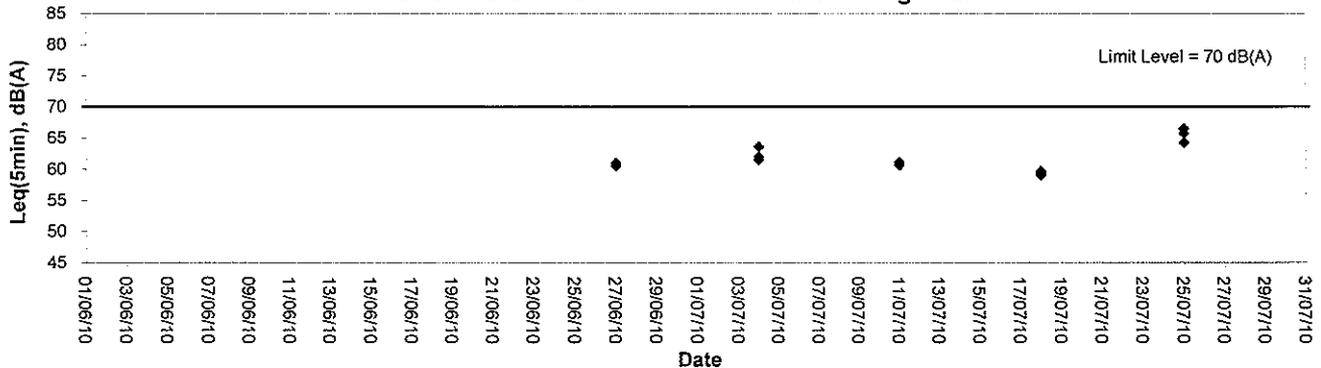
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richweath Mansion



Noise level at KY3 - Roof of Kwan Yik Building Phase 3





Appendix C1

Calibration Certificates for Impact Water Quality Monitoring Equipments



Performance Check of Turbidimeter

Equipment Ref. No. : ET/0505/007 Manufacturer : HACH
Model No. : 2100 P Serial No. : 0806 000 30281
Date of Calibration : 16 / 4 / 10 Due Date : 15 / 7 / 10

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.29	0.9
10-100 NTU	56.6	55.9	1.2
100-1000 NTU	547	539	1.5

Acceptance Criteria

Difference : <5 %

The salinity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Checked by : PK Approved by : hde lam



Performance Check of Turbidimeter

Equipment Ref. No. : ET / 0505 / 007 Manufacturer : HACH
Model No. : 2100 P Serial No. : 0806 000 30281
Date of Calibration : 16 / 7 / 10 Due Date : 15 / 10 / 10

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.25	1.7
10-100 NTU	56.6	55.5	2.0
100-1000 NTU	547	541	1.1

Acceptance Criteria

Difference : <5 %

The salinity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Checked by :  Approved by : 



Performance Check of Salinity Meter

Equipment Ref. No. : ET/EN/008/003 Manufacturer : YSZ

Model No. : 85 Serial No. : 08L100716

Date of Calibration : 30/6/10 Due Date : 29/9/10

Ref. No. of Salinity Standard used (30ppt)

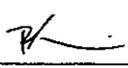
J362

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.8	2.6%

Acceptance Criteria

Difference : <10 %

The salinity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Checked by : 

Approved by : 



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : ET/EW/008/003 Manufacturer : YSI
 Model No. : 85 Serial No. : 08L100716
 Date of Calibration : 30/6/10 Calibration Due Date : 29/9/10

Temperature Verification

Ref. No. of Reference Thermometer : ET/0521/001
 Ref. No. of Water Bath : ET/0533/001

		Temperature (°C)		
Reference Thermometer reading	Measured	23.0	Corrected	23.1
DO Meter reading	Measured	23.3	Difference	0.2

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na ₂ S ₂ O ₃ titrant	J 373	Reagent No. of 0.025N K ₂ Cr ₂ O ₇	J 374
		Trial 1	Trial 2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)		0.0	0.0
Final Vol. of Na ₂ S ₂ O ₃ (ml)		40.10	40.20
Vol. of Na ₂ S ₂ O ₃ used (ml)		40.10	40.20
Normality of Na ₂ S ₂ O ₃ solution (N)		0.02494	0.02488
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)		0.02491	
Acceptance criteria, Deviation		Less than ± 0.001N	

Calculation: Normality of Na₂S₂O₃, N = 1 / ml Na₂S₂O₃ used

Linearity Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
	1	2	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0.40	12.00	23.70	0.20	9.30	15.90
Final Vol. of Na ₂ S ₂ O ₃ (ml)	12.00	23.70	32.75	9.30	15.90	22.60
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.60	11.70	9.05	9.10	6.60	6.70
Dissolved Oxygen (DO), mg/L	7.76	7.82	6.05	6.09	4.41	4.48
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: DO (mg/L) = V x N x 8000/298

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.88	7.90	7.89	7.76	7.82	7.79	1.28
5	6.13	6.11	6.12	6.05	6.09	6.07	0.82
10	4.32	4.34	4.33	4.41	4.48	4.45	2.73
Linear regression coefficient				0.9996			



Appendix C2

Impact Water Quality Monitoring Results

Mid-Flood Tide

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
03/07/10	0900-0910	28/Fine	Surface	1.0	25.5	31.5	31.5	6.58	6.60	90.8	91.0	3.09	3.11	3.21	6.2	6.2	6.4		
						31.4		6.61		91.2		3.13			6.2				
						32.0		6.49		89.5		3.18			6.4				
			Middle	7.3	24.3	32.1	32.1	6.44	6.47	88.8	89.2	3.22	3.20		6.4	6.4		6.4	6.4
						32.9		6.41		88.4		3.31			6.6				
						32.8		6.39		88.1		3.34			6.5				
			Bottom	13.6	22.8	32.8	32.9	6.41	6.40	88.4	88.3	3.31	3.33		6.6	6.6		6.6	6.6
						32.8		6.39		88.1		3.34			6.5				
						29.9		6.62		91.4		3.28			6.6				
06/07/10	1300-1315	30/Cloudy	Surface	1.0	27.4	29.9	29.9	6.62	6.65	91.4	91.7	3.28	3.30	3.44	6.6	6.6	6.9		
						29.8		6.67		92.0		3.32			6.6				
						30.1		6.54		90.3		3.45			7.0				
			Middle	7.3	26.8	30.2	30.2	6.52	6.53	90.7	90.5	3.49	3.47		7.0	7.0		7.0	7.0
						30.7		6.49		89.6		3.56			7.2				
						30.7		6.45		89.0		3.54			7.0				
			Bottom	13.6	25.0	30.7	30.7	6.49	6.47	89.6	89.3	3.56	3.55		7.2	7.1		7.0	7.1
						30.7		6.45		89.0		3.54			7.0				
						31.3		6.58		89.9		4.09			8.2				
08/07/10	1532-1544	32/Fine	Surface	1.0	28.5	31.3	31.3	6.58	6.60	89.9	90.1	4.09	4.07	4.11	8.2	8.1	8.2		
						31.3		6.61		90.3		4.05			8.0				
						32.0		6.39		86.8		4.16			8.4				
			Middle	7.0	27.8	32.0	32.0	6.42	6.41	87.2	87.0	4.20	4.18		8.4	8.4		8.4	8.4
						32.4		6.20		84.0		4.09			8.2				
						32.6		6.23		84.4		4.08			8.0				
			Bottom	13.0	26.5	32.4	32.5	6.20	6.22	84.0	84.2	4.09	4.09		8.2	8.1		8.0	8.1
						32.2		6.52		93.2		4.05			8.0				
						32.2		6.50		93.0		3.97			8.0				
10/07/10	1733-1747	31/Cloudy	Surface	1.0	27.5	32.2	32.2	6.52	6.51	93.2	93.1	4.05	4.01	4.12	8.0	8.0	8.2		
						32.2		6.50		93.0		3.97			8.0				
						32.4		6.22		89.3		4.16			8.2				
			Middle	7.5	26.5	32.4	32.4	6.28	6.25	89.5	89.4	4.14	4.15		8.2	8.2		8.2	8.2
						33.0		5.90		84.3		4.20			8.4				
						33.0		5.83		84.0		4.20			8.5				
			Bottom	14.0	25.3	33.0	33.0	5.83	5.87	84.0	84.2	4.20	4.20		8.5	8.5		8.5	8.5
						31.1		6.51		93.7		5.13			10.0				
						31.2		6.48		93.3		5.11			10.0				
13/07/10	1816-1828	32/Fine	Surface	1.0	28.8	31.1	31.2	6.51	6.50	93.7	93.5	5.13	5.12	5.25	10.0	10.0	10.7		
						31.2		6.48		93.3		5.11			10.0				
						31.7		6.44		92.1		5.23			11.0				
			Middle	7.6	26.2	31.8	31.8	6.39	6.42	91.4	91.8	5.27	5.25		11.0	11.0		11.0	11.0
						32.1		6.31		89.6		5.39			11.0				
						32.0		6.32		89.7		5.38			11.0				
			Bottom	14.2	25.1	32.0	32.1	6.32	6.32	89.7	89.7	5.38	5.39		11.0	11.0		11.0	11.0
						31.3		6.43		91.9		4.83			9.6				
						31.3		6.48		92.6		4.88			9.8				
15/07/10	1600-1613	30/Fine	Surface	1.0	27.6	31.3	31.3	6.43	6.46	91.9	92.3	4.83	4.86	4.95	9.6	9.7	10.2		
						31.3		6.48		92.6		4.88			9.8				
						31.8		6.39		91.3		4.95			10.0				
			Middle	7.5	26.3	31.8	31.8	6.33	6.36	90.5	90.9	4.99	4.97		10.0	10.0		10.0	10.0
						32.4		6.21		88.8		5.06			11.0				
						32.5		6.17		88.2		5.00			11.0				
			Bottom	14.0	24.7	32.4	32.5	6.21	6.19	88.8	88.5	5.06	5.03		11.0	11.0		11.0	11.0
						32.5		6.17		88.2		5.00			11.0				
						29.8		6.59		94.8		4.04			8.0				
17/07/10	0925-0936	29/Rainy	Surface	1.0	27.3	29.8	29.8	6.59	6.58	94.8	94.6	4.04	4.07	4.29	8.0	8.1	8.5		
						29.8		6.56		94.4		4.09			8.2				
						31.0		6.43		92.5		4.57			9.0				
			Middle	7.4	25.4	31.1	31.1	6.41	6.42	92.3	92.4	4.50	4.54		9.0	9.0		9.0	9.0
						31.3		6.36		90.9		4.23			8.4				
						31.4		6.38		91.2		4.30			8.5				
			Bottom	13.8	24.8	31.3	31.4	6.36	6.37	90.9	91.1	4.23	4.27		8.4	8.5		8.4	8.5
						31.4		6.38		91.2		4.30			8.5				
						30.8		6.51		93.7		5.07			10.0				
20/07/10	1400-1411	31/Fine	Surface	1.0	27.7	30.8	30.8	6.51	6.50	93.7	93.5	5.07	5.05	5.14	10.0	10.0	10.7		
						30.7		6.48		93.3		5.02			10.0				
						31.0		6.35		90.8		5.12			11.0				
			Middle	7.6	25.5	31.1	31.1	6.33	6.34	90.5	90.7	5.15	5.14		11.0	11.0		11.0	11.0
						31.7		6.22		88.9		5.23			11.0				
						31.8		6.27		89.7		5.25			11.0				
			Bottom	14.2	24.4	31.7	31.8	6.22	6.25	88.9	89.3	5.23	5.24		11.0	11.0		11.0	11.0
						31.8		6.27		89.7		5.25			11.0				
						29.8		6.02		85.5		4.37			8.8				
22/07/10	1603-1625	28/Rainy	Surface	1.0	27.8	29.8	29.8	6.02	6.03	85.5	85.6	4.37	4.38	4.47	8.8	8.8	9.0		
						29.8		6.03		85.6		4.39			8.8				
						30.1		5.96		84.6		4.47			9.0				
			Middle	7.7	26.5	30.0	30.1	5.94	5.95	84.3	84.5	4.45	4.46		9.0	9.0		9.0	9.0
						31.3		5.82		82.6		4.57			9.2				
						31.3		5.88		83.5		4.59			9.0				
			Bottom	14.4	24.7	31.3	31.3	5.88	5.85	83.5	83.1	4.59	4.58		9.0	9.1		9.0	9.1
						30.5		5.99		85.6		4.40			8.8				
						30.6		5.96		84.6		4.36			8.8				
24/07/10	1706-1720	31/Fine	Surface	1.0	27.3	30.5	30.6	5.99	5.98	85.6	85.1	4.40	4.38	4.51	8.8	8.8	9.0		
						31.0		5.91		83.9		4.50			9.0				
						31.1		5.87		83.3		4.54			9.0				
			Middle	7.4	26.5	31.7	31.1	5.79	5.89	82.2	83.6	4.66	4.52		9.2	9.0		9.0	9.0
						31.7		5.87		83.3		4.54			9.0				
						31.8		5.81		82.5		4.62			9.2				
			Bottom	13.8	24.6	31.8	31.8	5.81	5.80	82.5	82.4	4.62	4.64		9.0	9.1		9.0	9.1
						29.3		6.18		87.7		3.99			8.0				
						29.3		6.12		86.9		4.03			8.0				
27/07/10	1807-1820	29/Cloudy	Surface	1.0	26.3	29.3	29.3	6.18	6.15	87.7	87.3	3.99	4.01	4.11	8.0	8.0	8.2		
						29.3		6.12		86.9		4.03			8.0				
						29.9		6.29		89.3		4.07			8.2				
			Middle	7.3	25.2	30.0	30.0	6.23	6.26	88.4	88.9	4.12	4.10		8.2	8.2		8.2	8.2
						31.4		6.16		87.4		4.19			8.4				
						31.5		6.20		88.0		4.23			8.5				
			Bottom	13.6	24.2	31.5	31.5	6.20	6.18	88.0	87.7	4.23	4.21		8.5	8.5		8.5	8.5
						28.8		6.25		88.1		4.10			8.2				
						28.7		6.29		88.6		4.03			8.0				
29/07/10	0743-0755	27/Cloudy	Surface	1.0	26.3	28.8	28.8	6.25	6.27	88.1	88.4	4.10	4.07	4.18	8.2	8.1	8.3		
						28.7		6.29		88.6		4.03			8.0				
						29.0		6.34		89.3		4.18			8.4				
			Middle	7.4	25.4	29.5	29.3	6.38	6.36	89.9	89.6	4.14	4.16		8.2	8.3		8.2	8.3
						30.7		6.18		87.1		4.32			8.6				
						30.8		6.10		86.0		4.28			8.5				
			Bottom	13.8	24.4	30.7	30.8	6.18	6.14	87.1	86.6	4.32	4.30		8.6	8.6		8.6	8.6
						30.8		6.10		86.0		4.28			8.5				
						30.0		6.19		87.8		4.48			9.0				
31/07/10	0825-0837	28/Cloudy	Surface	1.0	26.4	30.0	30.1	6.19	6.18	87.8	87.6	4.48	4.51	4.77	9.0	9.0	9.5		
						30.1		6.16		87.4		4.53			9.0				
						31.0		5.97		84.1		4.87			9.8				
			Middle	6.7	25.3	30.9	31.0	5.94	5.96	83.7	83.9	4.81	4.84		9.6	9.7		9.6	9.7
						31.4		5.82		82.0		4.94			9.8				
						31.3		5.77		81.3		4.99			10.0				
			Bottom	12.4	24.9	31.4	31.4	5.82	5.80	82.0	81.7	4.94	4.97		9.8	9.9		9.8	9.9
						31.3		5.77		81.3		4.99			10.0				

Mid-Flood Tide



Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1210-1230	29/Fine	Surface	1.0	25.7	31.5	31.5	6.60	6.63	91.0	91.4	3.12	3.14	3.21	6.0	6.2	6.4
						31.5		6.65		91.7		3.16			6.4		
			Middle	8.3	24.3	32.0	32.0	6.58	6.57	90.8	90.6	3.19	3.20		6.4	6.4	
						32.0		6.55		90.3		3.21			6.4		
			Bottom	15.6	22.8	32.9	33.0	6.43	6.42	88.7	88.5	3.30	3.29		6.6	6.6	
						33.0		6.40		88.3		3.28			6.6		
06/07/10	1620-1635	30/Cloudy	Surface	1.0	27.4	29.8	29.8	6.56	6.59	90.5	90.9	2.87	2.88	2.97	5.5	5.7	5.9
						29.7		6.62		91.3		2.89			5.8		
			Middle	8.4	26.8	29.9	30.0	6.48	6.47	89.4	89.2	2.98	2.97		6.0	6.0	
						30.0		6.45		89.0		2.95			6.0		
			Bottom	15.8	25.2	30.6	30.7	6.35	6.34	87.6	87.4	3.05	3.07		6.0	6.1	
						30.7		6.32		87.2		3.09			6.2		
08/07/10	1849-1900	32/Fine	Surface	1.0	28.5	31.4	31.4	6.70	6.71	91.5	91.7	4.33	4.34	3.89	8.5	8.6	7.8
						31.4		6.72		91.8		4.35			8.6		
			Middle	7.4	27.7	32.1	32.2	6.29	6.32	85.4	85.8	3.26	3.26		6.6	6.6	
						32.2		6.35		86.2		3.25			6.6		
			Bottom	13.8	27.3	32.7	32.7	6.14	6.12	83.2	82.9	4.07	4.09		8.2	8.2	
						32.7		6.10		82.6		4.10			8.2		
10/07/10	1605-1618	31/Cloudy	Surface	1.0	28.0	32.0	32.0	6.64	6.63	94.5	94.4	4.22	4.24	4.30	8.5	8.5	8.7
						32.0		6.62		94.2		4.25			8.4		
			Middle	8.0	27.0	32.8	32.8	6.30	6.28	90.9	90.5	4.26	4.18		8.6	8.5	
						32.8		6.25		90.0		4.10			8.4		
			Bottom	15.0	26.0	32.8	32.9	6.06	5.99	86.6	86.2	4.49	4.50		9.0	9.0	
						32.9		5.92		85.8		4.50			9.0		
13/07/10	2108-2118	32/Fine	Surface	1.0	28.4	31.0	31.0	6.50	6.51	93.6	93.7	5.14	5.12	5.20	10.0	10.0	10.5
						31.0		6.51		93.7		5.09			10.0		
			Middle	8.2	26.6	31.7	31.8	6.47	6.46	92.5	92.3	5.18	5.20		10.0	10.5	
						31.8		6.44		92.1		5.21			11.0		
			Bottom	15.4	25.2	32.0	32.1	6.21	6.22	88.2	88.4	5.30	5.29		11.0	11.0	
						32.1		6.23		88.5		5.28			11.0		
15/07/10	1904-1920	29/Fine	Surface	1.0	26.4	30.6	30.6	6.46	6.45	91.7	91.5	5.16	5.14	5.29	11.0	11.0	11.0
						30.5		6.43		91.3		5.11			11.0		
			Middle	8.3	25.8	31.6	31.6	6.37	6.35	90.5	90.1	5.27	5.29		11.0	11.0	
						31.6		6.32		89.7		5.30			11.0		
			Bottom	15.6	25.0	32.5	32.6	6.24	6.22	88.6	88.4	5.44	5.46		11.0	11.0	
						32.6		6.20		88.1		5.47			11.0		
17/07/10	1221-1233	29/Rainy	Surface	1.0	27.6	29.7	29.7	6.39	6.37	91.3	91.1	5.37	5.34	5.39	11.0	11.0	11.0
						29.6		6.35		90.8		5.31			11.0		
			Middle	8.2	25.7	31.2	31.2	6.12	6.10	86.9	86.5	5.43	5.42		11.0	11.0	
						31.1		6.07		86.1		5.40			11.0		
			Bottom	15.4	25.0	31.5	31.5	6.06	6.05	86.0	85.9	5.39	5.43		11.0	11.0	
						31.4		6.04		85.7		5.46			11.0		
20/07/10	1710-1725	31/Fine	Surface	1.0	27.8	30.7	30.8	6.49	6.48	92.8	92.9	4.97	4.96	5.05	10.0	10.0	10.3
						30.8		6.47		93.0		4.95			10.0		
			Middle	8.2	25.6	31.0	31.0	6.39	6.36	91.4	91.0	4.99	5.03		10.0	10.0	
						31.0		6.33		90.5		5.07			10.0		
			Bottom	15.4	24.6	31.8	31.8	6.28	6.27	90.4	89.9	5.12	5.15		11.0	11.0	
						31.8		6.25		89.4		5.18			11.0		
22/07/10	2019-2030	26/Rainy	Surface	1.0	26.0	28.5	28.5	6.05	6.07	85.9	86.1	4.17	4.19	4.33	8.0	8.2	8.6
						28.5		6.08		86.3		4.21			8.4		
			Middle	8.8	25.5	29.5	29.6	5.93	5.94	84.2	84.4	4.37	4.35		8.8	8.7	
						29.6		5.95		84.5		4.33			8.6		
			Bottom	16.6	24.7	30.0	30.0	5.88	5.87	83.5	83.3	4.45	4.44		9.0	8.9	
						30.0		5.85		83.1		4.42			8.8		
24/07/10	2020-2035	29/Fine	Surface	1.0	26.6	30.9	31.0	6.05	6.02	85.9	85.5	4.31	4.29	4.43	8.5	8.6	8.9
						31.0		5.99		85.1		4.27			8.6		
			Middle	8.4	25.4	31.7	31.7	5.92	5.91	84.1	83.9	4.42	4.41		8.8	8.8	
						31.7		5.89		83.6		4.39			8.8		
			Bottom	15.8	24.3	32.4	32.5	5.83	5.81	82.8	82.5	4.64	4.61		9.2	9.2	
						32.5		5.78		82.1		4.57			9.2		
27/07/10	2100-2110	27/Rainy	Surface	1.0	25.9	29.4	29.5	6.10	6.06	86.6	86.0	4.03	4.05	4.13	8.0	8.0	8.2
						29.5		6.02		85.4		4.06			8.0		
			Middle	8.2	24.7	30.4	30.4	5.98	5.96	84.9	84.6	4.13	4.16		8.2	8.3	
						30.4		5.94		84.3		4.18			8.4		
			Bottom	15.4	23.6	31.5	31.5	5.89	5.87	83.6	83.3	4.15	4.18		8.4	8.4	
						31.5		5.84		82.9		4.20			8.4		
29/07/10	1038-1048	28/Cloudy	Surface	1.0	26.4	28.9	28.9	6.16	6.19	86.8	87.3	4.03	4.05	4.17	8.0	8.1	8.4
						28.9		6.22		87.7		4.07			8.2		
			Middle	8.3	25.4	29.8	29.8	6.12	6.09	86.2	85.8	4.15	4.17		8.4	8.4	
						29.8		6.05		85.3		4.19			8.4		
			Bottom	15.6	24.3	31.1	31.1	5.94	5.92	83.7	83.4	4.27	4.29		8.6	8.6	
						31.1		5.90		83.1		4.31			8.6		
31/07/10	1110-1122	28/Cloudy	Surface	1.0	26.8	30.3	30.3	6.25	6.23	88.7	88.4	4.88	4.85	4.96	10.0	9.8	10.0
						30.3		6.21		88.1		4.81			9.6		
			Middle	8.3	25.5	31.2	31.2	6.02	6.04	84.8	85.1	4.94	4.92		9.8	9.8	
						31.2		6.06		85.4		4.90			9.8		
			Bottom	15.6	24.9	31.6	31.6	5.77	5.76	81.3	81.1	5.08	5.12		10.0	10.5	
						31.5		5.74		80.9		5.15			11.0		

Mid-Flood Tide



Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1146-1156	29/Fine	Surface	1.0	25.6	31.5	31.5	6.62	6.60	91.3	91.1	3.09	3.12	3.26	6.2	6.2	6.6	
						31.5		6.58		90.8		3.14			6.2			
			Middle	8.1	24.3	32.0	32.0	6.54	6.52	90.2	90.0	3.25	3.27		6.6	6.6		6.6
						31.9		6.50		89.7		3.29			6.6			
			Bottom	15.2	22.8	32.9	32.9	6.41	6.39	88.4	88.2	3.41	3.40		6.8	6.9		6.9
						32.9		6.37		87.9		3.38			7.0			
06/07/10	1552-1613	30/Cloudy	Surface	1.0	27.3	29.8	29.8	6.50	6.49	89.7	89.6	3.12	3.15	3.26	6.2	6.3	6.6	
						29.7		6.48		89.4		3.17			6.4			
			Middle	8.2	26.9	30.3	30.3	6.32	6.34	87.2	87.4	3.28	3.29		6.6	6.6		6.6
						30.2		6.35		87.6		3.29			6.6			
			Bottom	15.4	25.0	30.8	30.8	6.27	6.25	86.5	86.2	3.30	3.34		6.6	6.8		6.8
						30.8		6.22		85.8		3.37			7.0			
08/07/10	1828-1841	32/Fine	Surface	1.0	28.5	31.2	31.3	6.64	6.66	90.7	91.0	4.84	4.88	4.60	9.6	9.7	9.1	
						31.3		6.68		91.2		4.91			9.8			
			Middle	8.2	27.8	31.7	31.8	6.46	6.47	87.7	87.8	4.56	4.56		9.0	9.0		9.0
						31.8		6.47		87.9		4.55			9.0			
			Bottom	15.4	27.2	32.3	32.4	6.30	6.32	85.3	85.5	4.34	4.37		8.6	8.6		8.6
						32.4		6.33		85.7		4.40			8.5			
10/07/10	2016-2028	31/Fine	Surface	1.0	27.1	32.4	32.4	6.36	6.38	90.9	90.7	4.19	4.20	4.14	8.4	8.4	8.4	
						32.4		6.39		90.4		4.20			8.4			
			Middle	8.1	26.0	32.8	32.8	6.10	6.10	86.9	86.9	4.11	4.12		8.4	8.4		8.4
						32.8		6.10		86.9		4.12			8.4			
			Bottom	15.2	24.5	32.9	33.0	6.00	5.95	84.0	83.2	4.11	4.11		8.5	8.5		8.5
						33.0		5.89		82.3		4.10			8.5			
13/07/10	2049-2100	32/Fine	Surface	1.0	28.4	31.0	31.1	6.47	6.46	93.2	93.0	5.11	5.09	5.21	10.0	10.0	10.7	
						31.1		6.44		92.7		5.07			10.0			
			Middle	8.4	26.8	31.8	31.9	6.34	6.36	90.7	91.0	5.19	5.22		11.0	11.0		11.0
						31.9		6.38		91.2		5.24			11.0			
			Bottom	15.8	25.0	32.2	32.2	6.20	6.23	88.7	89.1	5.30	5.32		11.0	11.0		11.0
						32.1		6.25		89.4		5.33			11.0			
15/07/10	1842-1855	29/Fine	Surface	1.0	26.3	30.5	30.5	6.37	6.39	90.5	90.7	4.15	4.17	4.26	10.0	10.0	10.7	
						30.5		6.40		90.9		4.18			10.0			
			Middle	8.4	25.7	31.5	31.6	6.29	6.27	89.3	89.1	4.25	4.24		11.0	11.0		11.0
						31.6		6.25		88.8		4.22			11.0			
			Bottom	15.8	25.0	32.4	32.5	6.16	6.14	87.5	87.2	4.36	4.38		11.0	11.0		11.0
						32.5		6.11		86.8		4.40			11.0			
17/07/10	1201-1213	29/Rainy	Surface	1.0	27.6	29.8	29.8	6.44	6.42	92.0	91.8	4.94	4.91	5.03	9.8	9.8	10.3	
						29.8		6.40		91.5		4.87			9.8			
			Middle	8.3	25.8	31.2	31.2	6.17	6.18	88.2	88.4	5.12	5.10		11.0	10.5		10.5
						31.2		6.19		88.5		5.07			10.0			
			Bottom	15.6	25.0	31.4	31.5	6.03	6.06	86.2	86.6	5.06	5.10		10.0	10.5		10.5
						31.5		6.08		86.9		5.14			11.0			
20/07/10	1640-1702	31/Fine	Surface	1.0	27.7	30.8	30.8	6.41	6.43	92.3	92.6	4.87	4.85	4.95	9.8	9.7	9.9	
						30.8		6.45		92.9		4.83			9.6			
			Middle	8.4	25.6	30.9	31.0	6.37	6.36	91.1	91.0	4.97	4.95		10.0	9.9		9.9
						31.0		6.35		90.8		4.93			9.8			
			Bottom	15.8	24.6	31.8	31.9	6.28	6.26	89.8	89.5	5.07	5.06		10.0	10.0		10.0
						31.9		6.24		89.2		5.05			10.0			
22/07/10	2005-2016	26/Rainy	Surface	1.0	26.0	28.5	28.6	6.09	6.10	86.5	86.6	4.31	4.32	4.38	8.6	8.6	8.8	
						28.6		6.10		86.6		4.32			8.6			
			Middle	6.0	25.5	29.6	29.6	6.01	5.99	85.3	85.1	4.48	4.47		9.0	9.0		9.0
						29.6		5.97		84.8		4.45			9.0			
			Bottom	11.0	24.7	30.0	30.1	5.87	5.86	83.4	83.2	4.34	4.36		8.6	8.8		8.8
						30.1		5.84		82.9		4.38			9.0			
24/07/10	1952-2010	29/Fine	Surface	1.0	26.7	30.8	30.9	6.07	6.05	86.2	85.9	4.24	4.27	4.37	8.4	8.5	8.7	
						30.9		6.03		85.6		4.29			8.6			
			Middle	8.4	25.5	31.6	31.7	5.95	5.93	84.5	84.2	4.36	4.35		8.8	8.7		8.7
						31.7		5.91		83.9		4.33			8.6			
			Bottom	15.8	24.4	32.3	32.4	5.80	5.78	82.4	82.1	4.52	4.50		9.0	9.0		9.0
						32.4		5.76		81.8		4.48			9.0			
27/07/10	2044-2054	27/Rainy	Surface	1.0	25.9	29.4	29.4	6.13	6.15	87.0	87.3	4.01	4.04	4.11	8.0	8.1	8.2	
						29.4		6.17		87.6		4.07			8.2			
			Middle	8.4	24.6	30.4	30.5	6.07	6.06	86.1	85.9	4.05	4.08		8.0	8.1		8.1
						30.5		6.04		85.7		4.11			8.2			
			Bottom	15.8	23.5	31.5	31.6	5.91	5.95	85.9	85.4	4.19	4.21		8.4	8.5		8.5
						31.6		5.98		84.9		4.23			8.5			
29/07/10	1021-1031	28/Cloudy	Surface	1.0	26.4	29.0	29.0	6.25	6.23	88.1	87.8	4.06	4.02	4.13	8.2	8.1	8.3	
						29.0		6.21		87.5		3.98			8.0			
			Middle	8.3	25.5	29.7	29.8	6.10	6.13	86.0	86.4	4.10	4.12		8.2	8.2		8.2
						29.8		6.15		86.7		4.14			8.2			
			Bottom	15.6	24.3	31.0	31.1	6.02	5.99	84.8	84.3	4.24	4.26		8.4	8.5		8.5
						31.1		5.95		83.8		4.28			8.5			
31/07/10	1051-1102	28/Cloudy	Surface	1.0	26.8	30.3	30.3	6.31	6.33	89.6	89.8	4.93	4.96	4.86	9.8	9.9	9.8	
						30.3		6.34		90.0		4.98			10.0			
			Middle	8.3	25.6	31.2	31.2	6.06	6.08	85.4	85.6	4.71	4.69		9.4	9.4		9.4
						31.2		6.09		85.8		4.66			9.4			
			Bottom	15.6	25.0	31.6	31.6	5.85	5.83	82.4	82.2	4.96	4.94		10.0	10.0		10.0
						31.6		5.81		81.9		4.91			10.0			

Mid-Flood Tide



Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	0948-0958	29/Fine	Surface	1.0	25.6	31.5	31.6	6.54	6.53	90.2	90.0	3.59	3.62	3.79	7.0	7.1	7.5
						31.6		6.51		89.8		3.64			7.2		
			Middle	8.7	24.4	32.1	32.1	6.46	6.44	89.1	88.8	3.78	3.82		7.6	7.6	
						32.1		6.41		88.4		3.82			7.6		
			Bottom	16.4	23.0	33.0	33.0	6.33	6.32	87.3	87.1	3.93	3.97		7.8	7.8	
						32.9		6.30		86.9		3.97			7.8		
06/07/10	1358-1410	30/Cloudy	Surface	1.0	27.4	29.7	29.8	6.57	6.60	90.7	91.1	4.56	4.53	4.63	9.0	9.0	9.2
						29.8		6.62		91.4		4.50			9.0		
			Middle	8.7	26.8	30.1	30.2	6.48	6.49	89.4	89.5	4.61	4.62		9.2	9.2	
						30.2		6.49		89.6		4.63			9.2		
			Bottom	16.4	25.1	30.9	30.9	6.35	6.34	87.6	86.6	4.72	4.74		9.4	9.4	
						30.8		6.33		85.5		4.75			9.4		
08/07/10	1618-1636	32/Fine	Surface	1.0	28.6	31.2	31.3	6.68	6.69	91.2	91.4	3.66	3.66	4.02	7.0	7.1	8.0
						31.3		6.70		91.5		3.65			7.2		
			Middle	8.3	27.8	31.7	31.7	6.46	6.43	87.7	87.3	4.06	4.07		8.2	8.2	
						31.7		6.40		86.9		4.08			8.2		
			Bottom	15.6	27.1	32.3	32.4	6.27	6.29	84.9	85.2	4.34	4.33		8.6	8.6	
						32.4		6.31		85.5		4.32			8.6		
10/07/10	1818-1830	31/Fine	Surface	1.0	27.8	31.7	31.7	6.12	6.14	87.3	87.5	4.10	4.13	4.38	8.0	8.2	8.7
						31.7		6.16		87.7		4.16			8.4		
			Middle	9.0	26.5	32.0	32.0	5.81	5.80	83.0	83.0	4.42	4.41		8.8	8.8	
						32.0		5.79		83.0		4.40			8.8		
			Bottom	17.0	26.0	33.8	33.8	5.64	5.67	80.8	80.9	4.58	4.59		9.2	9.2	
						33.8		5.69		80.9		4.60			9.2		
13/07/10	1906-1918	32/Fine	Surface	1.0	28.8	31.2	31.2	6.45	6.44	92.9	92.8	5.31	5.29	5.42	11.0	11.0	10.7
						31.1		6.43		92.6		5.27			11.0		
			Middle	8.8	26.2	31.8	31.9	6.32	6.35	90.4	90.8	5.38	5.40		11.0	11.0	
						31.9		6.37		91.1		5.42			11.0		
			Bottom	16.6	25.1	32.0	32.0	6.21	6.20	88.2	88.0	5.56	5.58		10.0	10.0	
						32.0		6.18		87.8		5.59			10.0		
15/07/10	1650-1702	29/Drizzle	Surface	1.0	26.6	30.8	30.9	6.36	6.34	90.9	90.6	5.18	5.20	5.34	10.0	10.0	10.7
						30.9		6.31		90.2		5.21			10.0		
			Middle	8.8	26.0	31.8	31.8	6.33	6.31	90.5	90.2	5.29	5.31		11.0	11.0	
						31.8		6.28		89.8		5.33			11.0		
			Bottom	16.6	25.3	32.4	32.4	6.19	6.15	88.5	87.9	5.49	5.50		11.0	11.0	
						32.4		6.11		87.3		5.51			11.0		
17/07/10	1014-1026	29/Rainy	Surface	1.0	27.4	29.6	29.6	6.41	6.39	91.6	91.3	5.01	5.05	4.93	10.0	10.0	9.8
						29.6		6.37		91.0		5.08			10.0		
			Middle	8.6	25.7	31.1	31.1	6.27	6.26	89.6	89.4	4.87	4.84		9.8	9.7	
						31.0		6.24		89.2		4.81			9.6		
			Bottom	16.2	25.1	31.4	31.4	6.12	6.14	87.5	87.7	4.94	4.91		9.8	9.8	
						31.3		6.15		87.9		4.87			9.8		
20/07/10	1448-1508	31/Fine	Surface	1.0	27.8	30.7	30.8	6.47	6.48	93.2	93.4	5.11	5.10	5.20	11.0	10.5	10.8
						30.8		6.49		93.5		5.08			10.0		
			Middle	8.8	25.5	30.9	30.9	6.37	6.36	91.1	91.0	5.18	5.21		11.0	11.0	
						30.9		6.35		90.8		5.23			11.0		
			Bottom	16.6	24.6	31.7	31.8	6.27	6.26	89.7	89.5	5.27	5.29		11.0	11.0	
						31.8		6.24		89.2		5.31			11.0		
22/07/10	1706-1717	28/Rainy	Surface	1.0	27.6	29.5	29.6	6.02	6.05	85.5	85.9	4.26	4.27	4.36	8.5	8.6	8.7
						29.6		6.08		86.3		4.27			8.6		
			Middle	8.8	26.1	30.0	30.0	5.97	5.96	84.8	84.7	4.35	4.34		8.6	8.6	
						29.9		5.95		84.5		4.33			8.6		
			Bottom	16.6	24.7	31.0	31.0	5.88	5.89	83.5	83.6	4.47	4.48		9.0	9.0	
						30.9		5.89		83.6		4.49			9.0		
24/07/10	1750-1802	30/Fine	Surface	1.0	27.1	30.7	30.7	5.95	5.93	84.4	84.2	4.41	4.43	4.56	9.0	9.0	9.2
						30.7		5.91		83.9		4.45			9.0		
			Middle	8.6	26.2	31.3	31.4	5.85	5.87	83.1	83.3	4.52	4.55		9.2	9.1	
						31.4		5.88		83.4		4.58			9.2		
			Bottom	16.2	24.4	32.0	32.1	5.71	5.73	81.1	81.4	4.69	4.71		9.4	9.4	
						32.1		5.75		81.6		4.73			9.4		
27/07/10	1853-1905	28/Cloudy & Drizzle	Surface	1.0	26.2	29.3	29.4	6.09	6.07	86.4	86.1	3.99	3.96	4.09	8.0	7.9	8.2
						29.4		6.04		85.7		3.92			7.8		
			Middle	8.5	25.2	30.4	30.5	5.99	5.97	85.0	84.7	4.08	4.11		8.2	8.2	
						30.5		5.95		84.4		4.13			8.2		
			Bottom	16.0	23.9	31.3	31.4	5.85	5.83	83.1	82.8	4.24	4.22		8.4	8.4	
						31.4		5.80		82.4		4.20			8.4		
29/07/10	0815-0838	27/Cloudy	Surface	1.0	26.3	28.8	28.9	6.05	6.03	85.3	85.0	4.35	4.37	4.52	9.0	8.9	9.1
						28.9		6.01		84.7		4.39			8.8		
			Middle	8.6	25.6	29.5	29.6	5.96	5.94	84.0	83.7	4.46	4.48		9.0	9.0	
						29.6		5.91		83.3		4.50			9.0		
			Bottom	16.2	24.5	30.9	31.0	5.88	5.86	82.9	82.6	4.68	4.70		9.4	9.4	
						31.0		5.84		82.3		4.72			9.4		
31/07/10	0852-0904	28/Cloudy	Surface	1.0	26.4	30.1	30.1	6.37	6.36	90.4	90.2	5.02	5.07	5.07	10.0	10.5	10.3
						30.0		6.34		90.0		5.11			11.0		
			Middle	8.7	25.5	30.9	31.0	6.15	6.14	87.3	87.1	5.15	5.12		11.0	10.5	
						31.0		6.12		86.9		5.08			10.0		
			Bottom	16.4	25.1	31.5	31.5	5.88	5.90	82.9	83.2	5.03	5.02		10.0	10.0	
						31.4		5.92		83.4		5.01			10.0		

Mid-Flood Tide



Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)		Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1039-1049	29/Fine	Surface	1.0	25.6	31.6	31.6	6.55	6.53	90.3	90.1	3.68	3.70	3.85	7.4	7.4	7.7
				8.2	24.4	32.2	32.2	6.43	6.41	88.7	88.4	3.85	3.87		7.6	7.7	
			Bottom	15.4	22.9	32.9	33.0	6.29	6.28	86.8	86.6	3.97	3.99		8.0	8.0	
06/07/10	1448-1500	30/Cloudy	Surface	1.0	27.4	29.9	29.9	6.72	6.70	92.7	92.5	4.28	4.27	4.36	8.6	8.6	8.8
				8.2	26.9	30.3	30.3	6.52	6.54	89.9	90.2	4.30	4.34		8.6	8.7	
			Bottom	15.4	25.3	30.8	30.8	6.47	6.46	89.3	89.1	4.47	4.48		9.0	9.0	
08/07/10	1726-1740	32/Fine	Surface	1.0	28.5	31.3	31.3	6.69	6.71	91.4	91.6	2.76	2.77	3.06	5.4	5.5	6.1
				8.0	28.0	31.8	31.8	6.50	6.48	88.3	88.0	3.11	3.15		6.2	6.2	
			Bottom	15.0	27.1	32.6	32.6	6.28	6.27	85.1	84.9	3.26	3.26		6.6	6.6	
10/07/10	1915-1929	31/Fine	Surface	1.0	28.0	31.9	31.9	6.10	6.15	81.9	85.2	5.05	5.03	5.32	10.0	10.0	10.7
				8.0	27.1	32.4	32.4	5.92	5.91	83.9	83.9	5.50	5.43		11.0	11.0	
			Bottom	15.0	26.6	32.8	32.8	5.66	5.67	80.8	80.8	5.52	5.51		11.0	11.0	
13/07/10	1953-2004	32/Fine	Surface	1.0	28.8	31.2	31.2	6.48	6.47	93.3	93.1	5.13	5.12	5.38	9.8	9.8	10.3
				8.4	26.1	31.8	31.9	6.35	6.36	90.8	90.9	5.43	5.45		10.0	10.0	
			Bottom	15.8	25.0	32.2	32.2	6.19	6.21	87.9	86.1	5.56	5.57		11.0	11.0	
15/07/10	1739-1750	29/Drizzle	Surface	1.0	26.4	30.7	30.7	6.46	6.44	92.3	92.0	5.24	5.22	5.33	10.0	10.0	10.7
				8.2	26.0	31.8	31.8	6.35	6.32	90.8	90.4	5.35	5.33		11.0	11.0	
			Bottom	15.4	25.2	32.5	32.5	6.14	6.13	87.8	87.6	5.44	5.46		11.0	11.0	
17/07/10	1058-1110	29/Rainy	Surface	1.0	27.4	29.7	29.7	6.56	6.55	94.4	94.2	5.39	5.35	5.23	11.0	11.0	10.7
				8.4	25.6	31.2	31.2	6.44	6.42	92.7	92.4	5.21	5.19		11.0	11.0	
			Bottom	15.8	24.9	31.5	31.5	6.34	6.36	90.6	90.8	5.19	5.15		10.0	10.0	
20/07/10	1543-1554	31/Fine	Surface	1.0	27.8	30.7	30.7	6.57	6.55	94.6	94.3	5.20	5.19	5.32	11.0	11.0	11.0
				8.4	25.7	30.9	30.9	6.48	6.47	93.3	93.2	5.29	5.32		11.0	11.0	
			Bottom	15.8	24.8	31.9	31.9	6.41	6.39	91.7	91.4	5.41	5.45		11.0	11.0	
22/07/10	1914-1925	28/Rainy	Surface	1.0	26.4	28.1	28.2	5.91	5.93	83.9	84.2	5.28	5.30	5.28	11.0	11.0	10.7
				8.4	25.8	29.6	29.7	5.78	5.77	82.1	81.9	5.18	5.16		10.0	10.0	
			Bottom	15.8	24.4	30.2	30.2	5.82	5.85	82.6	83.1	5.40	5.39		11.0	11.0	
24/07/10	1845-1856	30/Fine	Surface	1.0	26.8	30.8	30.8	5.93	5.91	84.2	83.9	5.05	5.09	5.24	10.0	10.0	10.7
				8.5	25.7	31.4	31.4	5.80	5.78	82.4	82.1	5.21	5.24		11.0	11.0	
			Bottom	15.6	24.3	32.2	32.2	5.73	5.72	81.4	81.2	5.41	5.40		11.0	11.0	
27/07/10	1956-2008	28/Cloudy & Drizzle	Surface	1.0	26.1	29.3	29.4	5.98	5.95	84.9	84.5	4.07	4.04	4.16	8.2	8.1	8.3
				8.3	25.0	30.4	30.5	5.89	5.86	83.6	83.2	4.12	4.15		8.4	8.3	
			Bottom	15.6	23.9	31.4	31.4	5.78	5.75	82.1	82.0	4.26	4.28		8.6	8.6	
29/07/10	0920-0933	27/Cloudy	Surface	1.0	26.3	28.8	28.9	6.07	6.06	85.5	85.3	4.33	4.35	4.48	8.6	8.6	8.9
				8.4	25.5	29.6	29.6	5.94	5.91	83.7	83.3	4.47	4.49		9.0	9.0	
			Bottom	15.8	24.4	31.0	31.1	5.79	5.77	81.6	81.3	4.60	4.62		9.2	9.2	
31/07/10	0950-1002	28/Cloudy	Surface	1.0	26.6	30.2	30.2	6.16	6.15	87.4	87.2	5.03	5.07	4.96	10.0	10.5	10.0
				8.3	25.4	31.2	31.2	6.07	6.06	85.5	85.3	4.87	4.91		9.8	9.8	
			Bottom	15.6	24.9	31.5	31.5	5.84	5.82	82.3	82.0	4.94	4.91		9.8	9.8	

Mid-Flood Tide



Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1057-1110	29/Fine	Surface	1.0	25.6	31.6	31.6	6.62	6.61	91.3	91.1	2.78	4.25	3.36	5.6	5.5	5.7	
						31.5		6.59		90.9		5.71			5.4			
			Middle	9.2	24.3	32.3	32.3	6.47	6.45	89.2	88.9	2.84	2.89		2.87	5.6		5.7
						32.2		6.42		88.5		2.89			5.8			
			Bottom	17.4	22.8	33.0	33.0	6.32	6.31	87.2	87.0	2.95	2.99		2.97	6.0		6.0
						33.0		6.29		86.8		2.99			6.0			
06/07/10	1508-1522	30/Cloudy	Surface	1.0	27.5	29.8	29.8	6.43	6.44	88.7	88.8	2.89	2.91	3.02	5.8	5.8	6.0	
						29.8		6.44		88.9		2.93			5.8			
			Middle	9.3	26.8	30.4	30.4	6.35	6.34	85.7	86.5	2.99	3.01		3.00	6.0		6.0
						30.3		6.32		87.2		3.01			6.0			
			Bottom	17.6	25.2	30.9	31.0	6.27	6.25	86.5	86.2	3.13	3.14		3.14	6.2		6.2
						31.0		6.23		85.9		3.14			6.2			
08/07/10	1743-1757	32/Fine	Surface	1.0	28.4	31.4	31.4	6.64	6.65	90.7	90.9	3.16	3.18	3.29	6.4	6.4	6.6	
						31.3		6.66		91.0		3.20			6.4			
			Middle	9.0	27.8	31.9	31.9	6.38	6.40	86.6	86.9	3.41	3.42		3.42	6.8		6.8
						31.8		6.42		87.2		3.42			6.8			
			Bottom	16.9	26.8	32.5	32.5	6.18	6.20	83.7	84.0	3.26	3.30		3.28	6.6		6.6
						32.5		6.22		84.3		3.30			6.6			
10/07/10	1931-1945	31/Fine	Surface	1.0	28.0	32.0	32.0	6.11	6.11	87.7	87.5	5.15	5.20	5.34	11.0	11.0	10.8	
						32.0		6.11		87.3		5.24			11.0			
			Middle	9.5	27.1	32.6	32.6	5.86	5.86	84.0	84.4	5.16	5.29		5.23	10.0		10.5
						32.6		5.84		84.8		5.29			11.0			
			Bottom	18.0	26.6	32.8	32.8	5.67	5.67	80.8	80.9	5.55	5.64		5.60	11.0		11.0
						32.8		5.66		81.0		5.64			11.0			
13/07/10	2007-2017	32/Fine	Surface	1.0	28.7	31.2	31.2	6.45	6.44	92.9	92.7	5.51	5.54	5.53	11.0	11.0	10.7	
						31.1		6.42		92.4		5.57			11.0			
			Middle	9.2	26.3	31.9	31.9	6.33	6.32	90.5	90.3	5.64	5.63		5.64	11.0		11.0
						31.8		6.30		90.1		5.63			11.0			
			Bottom	17.4	25.1	32.0	32.1	6.30	6.26	88.3	88.3	5.42	5.43		5.43	10.0		10.0
						32.1		6.21		88.2		5.43			10.0			
15/07/10	1755-1807	29/Drizzle	Surface	1.0	26.4	30.6	30.6	6.36	6.35	91.2	90.8	4.88	4.90	5.06	9.8	9.8	10.3	
						30.6		6.32		90.3		4.91			9.8			
			Middle	9.3	25.8	31.9	32.0	6.27	6.26	89.7	89.5	5.03	5.08		5.06	10.0		10.0
						32.0		6.24		89.2		5.08			10.0			
			Bottom	17.6	25.1	32.6	32.7	6.10	6.08	87.2	87.0	5.21	5.25		5.23	11.0		11.0
						32.7		6.06		86.7		5.25			11.0			
17/07/10	1113-1126	29/Rainy	Surface	1.0	27.5	29.6	29.6	6.50	6.52	93.5	93.9	5.10	5.14	5.19	11.0	11.0	10.7	
						29.6		6.54		94.2		5.18			11.0			
			Middle	9.4	25.6	31.2	31.2	6.28	6.27	89.8	89.6	5.07	5.01		5.04	10.0		10.0
						31.2		6.25		89.3		5.01			10.0			
			Bottom	17.8	24.9	31.4	31.4	6.36	6.34	90.8	90.6	5.36	5.44		5.40	11.0		11.0
						31.3		6.32		90.3		5.44			11.0			
20/07/10	1557-1607	31/Fine	Surface	1.0	27.5	30.8	30.8	6.43	6.42	92.6	92.5	5.10	5.12	5.26	10.0	10.0	10.7	
						30.7		6.41		92.3		5.13			10.0			
			Middle	9.2	25.6	30.9	31.0	6.32	6.34	91.0	91.2	5.22	5.32		5.27	11.0		11.0
						31.0		6.35		91.4		5.32			11.0			
			Bottom	17.4	24.7	31.9	32.0	6.27	6.25	90.3	89.6	5.37	5.42		5.40	11.0		11.0
						32.0		6.22		88.9		5.42			11.0			
22/07/10	1928-1939	28/Rainy	Surface	1.0	26.3	28.1	28.2	5.93	5.96	84.2	84.6	5.31	5.32	5.30	11.0	11.0	10.7	
						28.2		5.98		84.9		5.33			11.0			
			Middle	9.2	25.8	29.6	29.6	5.77	5.75	81.9	81.7	5.17	5.19		5.18	10.0		10.0
						29.6		5.73		81.4		5.19			10.0			
			Bottom	17.4	24.4	30.1	30.1	5.89	5.88	83.6	83.5	5.39	5.42		5.41	11.0		11.0
						30.1		5.87		83.4		5.42			11.0			
24/07/10	1906-1920	30/Fine	Surface	1.0	26.8	30.8	30.8	5.98	5.95	84.9	84.4	5.12	5.14	5.30	10.0	10.0	10.7	
						30.8		5.91		83.9		5.16			10.0			
			Middle	9.3	25.5	31.5	31.6	5.82	5.80	82.6	82.4	5.29	5.32		5.31	11.0		11.0
						31.6		5.78		82.1		5.32			11.0			
			Bottom	17.6	24.2	32.3	32.3	5.88	5.86	83.5	83.2	5.49	5.42		5.46	11.0		11.0
						32.3		5.83		82.8		5.42			11.0			
27/07/10	2012-2023	28/Cloudy & Drizzle	Surface	1.0	26.1	29.4	29.4	5.99	5.97	85.0	84.8	4.18	4.16	4.25	8.4	8.3	8.5	
						29.4		5.95		84.5		4.14			8.2			
			Middle	9.1	24.9	30.5	30.5	5.88	5.85	83.4	83.0	4.23	4.27		4.25	8.4		8.5
						30.5		5.81		82.5		4.27			8.6			
			Bottom	17.2	23.8	31.5	31.6	5.85	5.88	83.0	83.4	4.35	4.31		4.33	8.6		8.6
						31.6		5.90		83.7		4.31			8.6			
29/07/10	0941-0953	27/Cloudy	Surface	1.0	26.4	28.9	28.9	6.24	6.23	87.9	87.7	4.24	4.22	4.35	8.4	8.4	8.7	
						28.9		6.21		87.5		4.20			8.4			
			Middle	9.3	25.4	29.7	29.7	6.16	6.14	86.8	86.5	4.31	4.35		4.33	8.6		8.6
						29.7		6.11		86.1		4.35			8.6			
			Bottom	17.6	24.3	31.1	31.2	5.90	5.89	83.1	82.9	4.50	4.48		4.49	9.0		9.0
						31.2		5.87		82.7		4.48			9.0			
31/07/10	1005-1017	28/Cloudy	Surface	1.0	26.7	30.2	30.2	6.19	6.17	87.8	87.6	4.86	4.84	4.95	9.8	9.7	10.0	
						30.2		6.15		87.3		4.82			9.6			
			Middle	9.3	25.4	31.2	31.2	6.10	6.12	86.6	86.9	4.91	4.87		4.89	9.8		9.8
						31.2		6.14		87.1		4.87			9.8			
			Bottom	17.6	24.9	31.5	31.6	5.72	5.74	80.6	80.9	5.06	5.11		5.11	10.0		10.5
						31.6		5.76		81.2		5.15			11.0			

Mid-Flood Tide



東業德動測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1118-1128	29/Fine	Surface	1.0	25.7	31.5	31.5	6.61	6.63	91.2	91.4	3.19	3.21	3.35	6.4	6.5	6.8
						31.4		6.64		91.6		3.22			6.5		
			Middle	6.6	24.4	31.9	31.9	6.56	6.54	90.5	90.2	3.38	3.35		7.0	6.8	
						31.9		6.52		89.9		3.31			6.6		
			Bottom	12.2	22.9	32.8	32.9	6.39	6.38	88.1	87.9	3.46	3.49		7.0	7.0	
						32.9		6.36		87.7		3.51			7.0		
06/07/10	1526-1539	30/Cloudy	Surface	1.0	27.4	29.7	29.7	6.67	6.65	92.0	91.7	2.98	2.99	3.09	6.0	6.0	6.1
						29.7		6.63		91.4		2.99			6.0		
			Middle	6.1	26.8	30.2	30.2	6.53	6.54	90.1	90.3	3.11	3.10		6.0	6.0	
						30.1		6.55		90.4		3.08			6.0		
			Bottom	12.2	25.1	30.9	31.0	6.48	6.47	89.4	89.2	3.17	3.19		6.2	6.3	
						31.0		6.45		89.0		3.21			6.4		
08/07/10	1800-1813	32/Fine	Surface	1.0	28.5	31.3	31.4	6.68	6.67	91.2	91.0	2.94	2.93	3.61	5.8	5.9	7.2
						31.4		6.65		90.8		2.91			6.0		
			Middle	6.3	27.9	31.8	31.9	6.51	6.49	88.4	88.2	3.76	3.77		7.5	7.6	
						31.9		6.47		87.9		3.78			7.6		
			Bottom	11.6	27.0	32.5	32.5	6.30	6.31	85.3	85.5	4.12	4.14		8.2	8.2	
						32.4		6.32		85.6		4.16			8.2		
10/07/10	1949-2002	31/Fine	Surface	1.0	28.1	31.5	31.5	6.23	6.27	89.0	89.5	4.93	4.96	4.91	9.8	9.9	9.8
						31.5		6.30		89.9		4.99			10.0		
			Middle	7.0	27.5	31.8	31.8	6.13	6.12	87.1	87.1	4.82	4.81		9.5	9.6	
						31.8		6.11		87.1		4.80			9.6		
			Bottom	13.0	26.3	32.2	32.2	6.00	5.95	84.0	83.3	4.96	4.95		10.0	9.9	
						32.2		5.89		82.5		4.94			9.8		
13/07/10	2024-2034	32/Fine	Surface	1.0	28.5	31.1	31.1	6.50	6.49	93.6	93.5	5.12	5.11	5.24	10.0	10.0	10.7
						31.0		6.48		93.3		5.10			10.0		
			Middle	6.7	26.8	31.9	32.0	6.33	6.34	90.5	90.7	5.22	5.25		11.0	11.0	
						32.0		6.35		90.8		5.27			11.0		
			Bottom	12.4	25.0	32.1	32.2	6.27	6.25	89.0	88.7	5.35	5.37		11.0	11.0	
						32.2		6.22		88.3		5.38			11.0		
15/07/10	1814-1827	29/Fine	Surface	1.0	26.4	30.6	30.6	6.42	6.40	91.2	90.9	5.10	5.12	5.21	10.0	10.0	10.7
						30.5		6.38		90.6		5.13			10.0		
			Middle	6.6	25.8	31.4	31.5	6.31	6.29	89.6	89.4	5.19	5.21		11.0	11.0	
						31.5		6.27		89.1		5.22			11.0		
			Bottom	12.2	25.2	32.2	32.3	6.18	6.17	87.8	87.6	5.30	5.32		11.0	11.0	
						32.3		6.15		87.3		5.33			11.0		
17/07/10	1134-1146	29/Rainy	Surface	1.0	27.6	29.8	29.8	6.37	6.36	91.0	90.9	5.07	5.04	4.91	10.0	10.0	9.8
						29.7		6.35		90.8		5.01			10.0		
			Middle	6.8	25.8	31.0	31.1	6.15	6.12	87.9	87.5	4.98	4.94		10.0	9.9	
						31.1		6.09		87.0		4.90			9.8		
			Bottom	12.6	25.2	31.4	31.4	6.10	6.11	87.2	87.4	4.77	4.75		9.6	9.5	
						31.4		6.12		87.5		4.72			9.4		
20/07/10	1614-1625	31/Fine	Surface	1.0	27.7	30.8	30.9	6.37	6.38	91.7	91.9	5.17	5.15	5.25	10.0	10.0	10.7
						30.9		6.39		92.0		5.12			10.0		
			Middle	6.7	25.6	30.8	30.9	6.21	6.22	89.4	89.2	5.26	5.28		11.0	11.0	
						30.9		6.23		89.0		5.29			11.0		
			Bottom	12.4	24.6	31.7	31.8	6.18	6.18	88.3	88.3	5.31	5.33		11.0	11.0	
						31.8		6.17		88.2		5.35			11.0		
22/07/10	1947-1958	26/Rainy	Surface	1.0	26.0	28.6	28.6	6.05	6.06	85.9	86.1	4.28	4.27	4.35	8.6	8.6	8.7
						28.6		6.07		86.2		4.25			8.5		
			Middle	6.7	25.6	29.6	29.7	5.87	5.86	83.4	83.3	4.41	4.43		9.0	8.9	
						29.7		5.85		83.1		4.44			8.8		
			Bottom	12.4	24.8	30.1	30.1	5.96	5.97	84.9	84.7	4.37	4.35		8.8	8.7	
						30.1		5.95		84.5		4.33			8.6		
24/07/10	1927-1940	29/Fine	Surface	1.0	26.7	30.9	30.9	6.01	6.00	85.3	85.1	4.38	4.36	4.46	8.8	8.7	8.9
						30.9		5.98		84.9		4.33			8.5		
			Middle	6.5	25.7	31.5	31.5	5.89	5.87	83.6	83.4	4.41	4.43		9.0	8.9	
						31.5		5.85		83.1		4.44			8.8		
			Bottom	12.0	24.6	32.1	32.1	5.73	5.76	81.4	81.8	4.61	4.59		9.2	9.1	
						32.1		5.78		82.1		4.56			9.0		
27/07/10	2030-2040	27/Rainy	Surface	1.0	26.0	29.3	29.4	6.11	6.09	86.7	86.4	4.04	4.02	4.04	8.0	8.0	8.0
						29.4		6.06		86.0		4.00			8.0		
			Middle	6.4	24.8	29.8	29.9	6.01	5.94	85.3	85.0	4.15	4.13		8.0	8.1	
						29.9		5.87		84.7		4.10			8.2		
			Bottom	11.8	23.7	31.1	31.2	5.89	5.86	83.6	83.2	3.96	3.98		8.0	8.0	
						31.2		5.83		82.8		3.99			8.0		
29/07/10	1000-1012	28/Cloudy	Surface	1.0	26.4	28.9	29.0	6.20	6.19	87.4	87.2	4.04	4.03	4.09	8.0	8.0	8.1
						29.0		6.17		86.9		4.01			8.0		
			Middle	6.3	25.6	29.6	29.6	6.14	6.12	86.5	86.2	4.13	4.11		8.0	8.1	
						29.6		6.09		85.8		4.09			8.2		
			Bottom	11.6	24.5	30.7	30.8	5.97	5.95	84.1	83.9	4.13	4.15		8.2	8.3	
						30.8		5.93		83.6		4.16			8.4		
31/07/10	1024-1086	28/Cloudy	Surface	1.0	26.7	30.2	30.2	6.22	6.20	88.3	88.0	4.72	4.78	4.72	9.4	9.5	9.4
						30.2		6.17		87.6		4.83			9.5		
			Middle	6.8	25.6	31.2	31.2	5.93	5.92	83.6	83.4	4.57	4.54		9.0	9.0	
						31.1		5.90		83.1		4.51			9.0		
			Bottom	12.6	25.1	31.5	31.6	5.74	5.72	80.9	80.6	4.80	4.83		9.6	9.7	
						31.6		5.70		80.3		4.86			9.8		

Mid-Flood Tide



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	0841-0851	28/Fine	Surface	1.0	25.4	31.4	31.4	6.52	6.50	89.9	89.7	3.31	3.30	3.39	6.6	6.6	6.8	
						31.4		6.48		89.4		3.28			6.6			
			Middle	5.6	24.3	31.9	31.9	6.44	6.42	88.8	88.6	3.37	3.40		3.39	6.8		6.8
						31.9		6.40		88.3		3.40			6.8			
			Bottom	10.2	22.9	32.6	32.6	6.32	6.31	87.2	87.0	3.49	3.51		3.50	7.0		7.0
						32.6		6.29		86.8		3.51			7.0			
06/07/10	1241-1251	30/Cloudy	Surface	1.0	27.5	29.8	29.9	6.54	6.57	90.3	90.6	4.57	4.56	4.65	9.0	9.0	9.2	
						29.9		6.59		90.9		4.55			9.0			
			Middle	5.0	26.7	30.0	30.1	6.42	6.43	88.6	88.7	4.62	4.66		4.64	9.2		9.2
						30.1		6.43		88.7		4.66			9.2			
			Bottom	10.2	25.1	30.7	30.8	6.32	6.34	87.2	87.4	4.73	4.78		4.76	9.4		9.4
						30.8		6.35		87.6		4.78			9.4			
08/07/10	1501-1515	32/Fine	Surface	1.0	28.5	31.4	31.4	6.62	6.64	90.4	90.6	5.12	5.16	4.59	9.6	9.6	8.9	
						31.4		6.65		90.8		5.19			9.6			
			Middle	5.6	28.0	31.9	31.9	6.41	6.42	87.0	87.1	4.62	4.64		4.63	9.2		9.2
						31.8		6.42		87.2		4.64			9.2			
			Bottom	10.2	27.0	32.5	32.5	6.30	6.31	85.3	85.5	3.97	4.00		3.99	8.0		8.0
						32.5		6.32		85.6		4.00			8.0			
10/07/10	1708-1722	31/Cloudy	Surface	1.0	27.4	31.5	31.5	6.10	6.13	87.2	87.3	5.02	5.01	5.14	9.2	9.2	9.4	
						31.5		6.15		87.3		5.00			9.2			
			Middle	5.9	27.1	31.9	31.9	5.89	5.88	84.2	84.5	5.11	5.14		5.13	9.4		9.4
						31.8		5.87		84.7		5.14			9.4			
			Bottom	10.8	26.1	32.0	32.0	5.66	5.66	80.9	80.9	5.26	5.28		5.27	9.6		9.6
						32.0		5.66		80.9		5.28			9.6			
13/07/10	1748-1759	32/Fine	Surface	1.0	28.7	31.2	31.2	6.47	6.45	93.2	92.9	4.31	4.34	4.45	8.6	8.7	8.9	
						31.2		6.43		92.6		4.37			8.8			
			Middle	5.7	26.2	31.7	31.8	6.32	6.32	90.4	90.3	4.47	4.45		4.46	9.0		9.0
						31.8		6.31		90.2		4.45			9.0			
			Bottom	10.4	25.1	32.0	32.1	6.25	6.23	89.4	88.8	4.52	4.57		4.55	9.2		9.1
						32.1		6.21		88.2		4.57			9.2			
15/07/10	1540-1553	30/Fine	Surface	1.0	27.6	31.2	31.3	6.39	6.37	91.3	91.0	4.51	4.50	4.64	9.0	8.9	9.2	
						31.3		6.34		90.6		4.48			8.8			
			Middle	5.7	26.4	31.7	31.7	6.32	6.30	90.3	90.1	4.62	4.66		4.64	9.2		9.2
						31.7		6.28		89.8		4.66			9.2			
			Bottom	10.4	24.8	32.1	32.1	6.22	6.20	88.9	88.6	4.75	4.79		4.77	9.4		9.5
						32.1		6.18		88.3		4.79			9.6			
17/07/10	0900-0910	29/Rainy	Surface	1.0	27.3	29.6	29.6	6.63	6.61	95.4	95.1	3.84	3.86	3.99	7.6	7.7	8.0	
						29.5		6.59		94.8		3.88			7.8			
			Middle	5.6	25.4	30.9	31.0	6.27	6.26	89.6	89.4	3.98	3.92		3.95	8.0		7.9
						31.0		6.24		89.2		3.92			7.8			
			Bottom	10.2	24.9	31.3	31.3	6.20	6.22	88.6	88.9	4.12	4.18		4.15	8.2		8.3
						31.3		6.24		89.2		4.18			8.4			
20/07/10	1333-1344	31/Fine	Surface	1.0	27.6	30.8	30.8	6.36	6.35	92.0	91.6	4.17	4.15	4.26	8.4	8.3	8.5	
						30.8		6.33		91.2		4.13			8.2			
			Middle	5.7	25.4	31.1	31.1	6.21	6.24	88.8	89.5	4.27	4.22		4.25	8.6		8.5
						31.1		6.26		90.1		4.22			8.4			
			Bottom	10.4	24.3	31.8	31.9	6.18	6.17	88.4	88.3	4.36	4.39		4.38	8.8		8.8
						31.9		6.16		88.1		4.39			8.8			
22/07/10	1534-1546	28/Rainy	Surface	1.0	27.8	29.8	29.8	5.97	5.96	84.8	84.6	5.67	5.66	5.76	9.4	9.4	9.6	
						29.7		5.94		84.3		5.65			9.4			
			Middle	5.7	26.3	30.0	30.1	5.86	5.84	83.2	82.9	5.78	5.74		5.76	9.6		9.6
						30.1		5.82		82.6		5.74			9.6			
			Bottom	10.4	24.8	31.2	31.3	5.73	5.74	81.3	81.5	5.85	5.89		5.87	9.8		9.8
						31.3		5.75		81.7		5.89			9.8			
24/07/10	1644-1657	31/Fine	Surface	1.0	27.4	30.6	30.6	5.86	5.87	83.2	83.4	5.37	5.34	5.46	9.4	9.4	9.6	
						30.6		5.88		83.5		5.31			9.4			
			Middle	5.6	26.7	31.0	31.0	5.77	5.78	81.9	82.1	5.41	5.45		5.43	9.6		9.6
						31.0		5.79		82.2		5.45			9.6			
			Bottom	10.2	24.9	31.6	31.7	5.72	5.74	81.2	81.5	5.62	5.58		5.60	9.8		9.8
						31.7		5.75		81.7		5.58			9.8			
27/07/10	1748-1759	29/Cloudy	Surface	1.0	26.4	29.3	29.3	5.98	5.95	85.5	85.0	4.33	4.35	4.45	8.6	8.7	8.9	
						29.3		5.91		84.5		4.37			8.8			
			Middle	5.7	25.4	29.8	29.9	5.83	5.81	83.4	83.1	4.42	4.48		4.45	8.8		8.9
						29.9		5.78		82.7		4.48			8.8			
			Bottom	10.4	24.3	31.2	31.2	5.73	5.71	81.3	81.1	4.52	4.59		4.56	9.0		9.1
						31.2		5.69		80.8		4.59			9.2			
29/07/10	0723-0735	27/Cloudy	Surface	1.0	26.3	28.7	28.7	6.08	6.05	85.7	85.3	4.31	4.30	4.43	8.6	8.6	8.8	
						28.7		6.02		84.8		4.28			8.6			
			Middle	5.7	25.6	29.4	29.4	5.97	5.95	84.1	83.9	4.39	4.43		4.41	8.8		8.8
						29.3		5.93		83.6		4.43			8.8			
			Bottom	10.4	24.5	30.5	30.5	5.95	6.00	83.8	84.5	4.56	4.61		4.59	9.0		9.1
						30.5		6.04		85.1		4.61			9.2			
31/07/10	28/Cloudy	28/Cloudy	Surface	1.0	26.3	29.9	29.9	6.27	6.26	89.0	89.3	3.93	3.96	4.00	7.8	7.9	8.0	
						29.8		6.24		89.6		3.99			8.0			
			Middle	5.8	25.2	31.1	31.2	6.02	6.04	84.8	85.1	4.06	4.15		4.11	8.2		8.2
						31.2		6.06		85.4		4.15			8.2			
			Bottom	10.6	25.1	31.4	31.4	5.88	5.87	82.9	82.7	3.91	3.97		3.94	7.8		7.9
						31.4		5.85		82.4		3.97			8.0			

Mid-Flood Tide

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)		Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	0819-0829	28/Fine	Surface	1.0	25.5	31.5	31.5	6.55	6.57	90.3	93.6	3.06	3.08	3.19	6.0	6.1	6.4
						31.5		6.58		96.8		3.09			6.2		
			Middle	6.6	24.3	31.9	32.0	6.47	6.45	89.2	88.9	3.16	3.19		3.18	6.4	
						32.0		6.42		88.5		3.19			6.4		
			Bottom	12.2	22.8	32.8	32.8	6.38	6.37	88.0	87.8	3.29	3.31		3.31	6.6	
						32.8		6.35		87.6		3.32			6.6		
06/07/10	1218-1228	30/Cloudy	Surface	1.0	27.4	29.8	29.8	6.44	6.47	88.9	89.3	3.16	3.18	3.25	6.2	6.3	6.5
						29.8		6.49		89.6		3.19			6.4		
			Middle	6.5	26.7	30.1	30.2	6.32	6.34	87.2	87.4	3.28	3.27		3.27	6.6	
						30.2		6.35		87.6		3.25			6.6		
			Bottom	12.0	25.1	30.8	30.8	6.27	6.27	86.5	86.5	3.31	3.32		3.32	6.6	
						30.8		6.26		86.4		3.33			6.6		
08/07/10	1445-1458	32/Fine	Surface	1.0	28.5	31.3	31.3	6.58	6.60	89.9	90.1	3.76	3.74	4.18	7.6	7.5	8.3
						31.2		6.61		90.3		3.72			7.4		
			Middle	6.4	27.8	31.8	31.8	6.45	6.44	87.6	87.4	4.18	4.21		4.21	8.4	
						31.7		6.42		87.2		4.23			8.4		
			Bottom	11.8	27.0	32.4	32.5	6.32	6.34	85.6	85.8	4.56	4.59		4.59	9.0	
						32.5		6.35		86.0		4.61			9.2		
10/07/10	1650-1702	31/Cloudy	Surface	1.0	28.0	31.6	31.6	6.20	6.19	89.1	89.0	4.25	4.24	4.59	8.6	8.5	9.1
						31.6		6.18		88.9		4.22			8.4		
			Middle	6.3	27.0	31.9	31.9	6.00	6.00	86.9	87.0	4.46	4.63		4.63	9.0	
						31.9		6.00		87.0		4.80			9.0		
			Bottom	11.6	26.3	32.6	32.6	5.74	5.72	82.1	82.0	4.92	4.91		4.91	9.8	
						32.6		5.70		81.9		4.90			9.8		
13/07/10	1729-1739	32/Fine	Surface	1.0	28.7	31.2	31.2	6.41	6.42	92.3	92.5	4.26	4.24	4.35	8.6	8.5	8.7
						31.2		6.43		92.6		4.21			8.4		
			Middle	6.4	26.0	31.8	31.9	6.35	6.37	90.8	91.1	4.37	4.34		4.34	8.8	
						31.9		6.39		91.4		4.31			8.6		
			Bottom	11.8	25.0	32.1	32.2	6.28	6.27	89.2	89.0	4.49	4.47		4.47	9.0	
						32.2		6.25		88.8		4.45			9.0		
15/07/10	1516-1528	30/Fine	Surface	1.0	27.7	31.2	31.2	6.41	6.39	91.6	91.4	4.27	4.30	4.44	8.6	8.6	8.9
						31.2		6.37		91.1		4.32			8.6		
			Middle	6.6	26.3	31.7	31.8	6.35	6.33	90.8	90.5	4.39	4.42		4.42	8.8	
						31.8		6.31		90.2		4.44			8.8		
			Bottom	12.2	24.7	32.1	32.2	6.23	6.25	89.0	89.3	4.60	4.61		4.61	9.2	
						32.2		6.27		89.6		4.62			9.2		
17/07/10	0844-0854	29/Rainy	Surface	1.0	27.1	29.6	29.6	6.47	6.45	93.1	92.8	3.97	3.95	4.09	8.0	8.0	8.2
						29.6		6.42		92.4		3.93			8.0		
			Middle	6.6	25.5	30.9	30.9	6.34	6.32	91.2	91.0	4.03	4.06		4.06	8.2	
						30.8		6.30		90.7		4.09			8.2		
			Bottom	12.2	24.8	31.3	31.3	6.19	6.17	88.5	88.2	4.29	4.25		4.25	8.6	
						31.2		6.15		87.9		4.21			8.4		
20/07/10	1314-1324	31/Fine	Surface	1.0	27.6	30.9	30.9	6.40	6.38	92.2	91.9	3.75	3.74	3.85	7.6	7.5	7.7
						30.8		6.36		91.6		3.73			7.4		
			Middle	6.4	25.3	31.0	31.1	6.28	6.28	89.8	89.8	3.87	3.85		3.85	7.8	
						31.1		6.27		89.7		3.82			7.6		
			Bottom	11.8	24.7	31.8	31.9	6.13	6.16	87.7	88.1	3.93	3.96		3.96	7.8	
						31.9		6.19		88.5		3.99			8.0		
22/07/10	1514-1525	28/Rainy	Surface	1.0	27.8	29.7	29.8	6.05	6.04	85.9	85.8	4.27	4.28	4.37	8.6	8.6	8.8
						29.8		6.03		85.6		4.29			8.6		
			Middle	6.4	26.4	30.1	30.1	5.98	5.97	84.9	84.7	4.38	4.37		4.37	8.8	
						30.1		5.95		84.4		4.35			8.8		
			Bottom	11.8	24.7	31.3	31.4	5.88	5.88	83.5	83.5	4.45	4.47		4.47	9.0	
						31.4		5.87		83.4		4.48			9.0		
24/07/10	1620-1635	31/Fine	Surface	1.0	27.4	30.5	30.5	5.94	5.93	84.3	84.1	4.19	4.21	4.37	8.4	8.4	8.7
						30.5		5.91		83.9		4.23			8.4		
			Middle	6.5	26.6	31.0	31.0	5.88	5.86	83.4	83.2	4.41	4.40		4.40	8.8	
						31.0		5.84		82.9		4.38			8.8		
			Bottom	12.0	24.7	31.7	31.7	5.79	5.77	82.2	81.9	4.51	4.50		4.50	9.0	
						31.7		5.74		81.5		4.49			9.0		
27/07/10	1727-1740	29/Cloudy	Surface	1.0	26.4	29.3	29.4	6.09	6.07	86.4	86.1	4.06	4.08	4.19	8.2	8.2	8.4
						29.4		6.04		85.7		4.09			8.2		
			Middle	6.5	25.3	29.9	29.9	5.97	5.98	84.7	84.8	4.16	4.18		4.18	8.4	
						29.9		5.98		84.9		4.20			8.4		
			Bottom	12.0	24.2	31.4	31.4	5.88	5.87	83.5	83.3	4.30	4.33		4.33	8.6	
						31.4		5.85		83.1		4.35			8.6		
29/07/10	0703-0715	27/Cloudy	Surface	1.0	26.3	28.8	28.8	6.15	6.18	86.7	87.1	4.15	4.17	4.32	8.4	8.4	8.6
						28.8		6.20		87.4		4.19			8.4		
			Middle	6.5	25.5	29.4	29.5	6.09	6.06	85.8	85.4	4.31	4.33		4.33	8.6	
						29.5		6.03		85.0		4.35			8.6		
			Bottom	12.0	24.4	30.6	30.7	5.92	5.91	83.4	83.2	4.49	4.47		4.47	9.0	
						30.7		5.89		83.0		4.44			8.8		
31/07/10	0715-0726	28/Cloudy	Surface	1.0	26.3	29.8	29.8	6.18	6.17	87.7	87.5	3.87	3.84	4.34	7.8	7.7	8.7
						29.8		6.15		87.3		3.81			7.6		
			Middle	6.6	25.4	30.9	31.0	6.10	6.09	86.6	86.4	4.29	4.32		4.32	8.6	
						31.0		6.07		86.1		4.35			8.6		
			Bottom	12.2	25.1	31.4	31.4	5.83	5.82	82.2	82.0	4.84	4.87		4.87	9.6	
						31.3		5.80		81.7		4.89			9.6		

Mid-Flood Tide

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
03/07/10	0800-0815	28/Fine	Surface	1.0	25.5	31.4	31.5	6.59	6.61	90.9	91.1	3.01	3.05	3.19	6.0	6.1	6.4		
						31.5		6.62		91.3		3.08			6.2				
			Middle	6.1	24.4	31.9	31.9	6.45	6.47	89.0	89.3	3.17	3.19		3.17	3.19		6.4	6.5
						31.9		6.49		89.5		3.20			6.5				
			Bottom	11.2	22.8	32.7	32.8	6.47	6.44	89.2	88.8	3.33	3.35		3.33	3.35		6.5	6.6
						32.8		6.41		88.4		3.36			6.6				
06/07/10	1200-1213	30/Cloudy	Surface	1.0	27.5	29.8	29.9	6.43	6.44	88.7	88.9	2.89	2.88	2.96	5.8	5.8	5.9		
						29.9		6.45		89.0		2.87			5.8				
			Middle	6.1	26.8	30.0	30.2	6.32	6.35	87.2	87.6	2.91	2.93		2.91	2.93		5.8	5.9
						30.3		6.37		87.9		2.95			6.0				
			Bottom	11.2	25.2	30.8	30.9	6.28	6.25	86.7	86.3	3.04	3.06		3.04	3.06		6.0	6.0
						30.9		6.22		85.8		3.08			6.0				
08/07/10	1430-1442	32/Fine	Surface	1.0	28.5	31.2	31.2	6.63	6.64	90.6	90.7	4.12	4.13	4.05	8.2	8.2	8.0		
						31.2		6.64		90.7		4.14			8.2				
			Middle	5.8	27.8	31.8	31.9	6.41	6.42	87.0	87.1	4.09	4.11		4.09	4.11		8.0	8.0
						31.9		6.42		87.2		4.12			8.0				
			Bottom	10.6	27.0	32.5	32.5	6.27	6.29	84.9	85.1	3.88	3.90		3.88	3.90		7.5	7.7
						32.5		6.30		85.3		3.92			7.8				
10/07/10	1635-1649	31/Cloudy	Surface	1.0	28.1	31.4	31.4	6.22	6.21	89.2	89.4	4.30	4.31	4.53	8.6	8.6	9.1		
						31.4		6.20		89.5		4.32			8.6				
			Middle	6.3	27.2	31.9	31.9	6.02	6.02	86.7	86.8	4.44	4.45		4.44	4.45		8.8	8.9
						31.9		6.01		86.9		4.46			9.0				
			Bottom	11.6	26.3	32.2	32.4	5.77	5.74	82.5	82.3	4.88	4.84		4.88	4.84		10.0	9.9
						32.6		5.70		82.1		4.80			9.8				
13/07/10	1715-1726	32/Fine	Surface	1.0	28.8	31.1	31.2	6.57	6.55	94.6	94.0	3.94	3.95	4.18	8.0	8.0	8.4		
						31.2		6.53		93.3		3.96			8.0				
			Middle	6.2	26.1	31.7	31.8	6.32	6.31	90.4	90.2	4.27	4.26		4.27	4.26		8.6	8.6
						31.8		6.29		89.9		4.25			8.5				
			Bottom	11.4	25.0	32.0	32.0	6.14	6.16	87.2	87.5	4.31	4.32		4.31	4.32		8.5	8.6
						32.0		6.18		87.8		4.33			8.6				
15/07/10	1500-1512	30/Fine	Surface	1.0	28.0	31.1	31.2	6.47	6.45	92.5	92.2	3.81	3.79	3.86	7.6	7.6	7.8		
						31.2		6.42		91.8		3.77			7.6				
			Middle	6.3	26.4	31.7	31.7	6.38	6.36	91.2	90.9	3.86	3.88		3.86	3.88		7.8	7.8
						31.7		6.33		90.5		3.89			8.0				
			Bottom	11.6	24.8	32.0	32.1	6.17	6.18	88.2	88.4	3.91	3.92		3.91	3.92		8.0	7.9
						32.1		6.19		88.5		3.93			7.8				
17/07/10	0830-0841	29/Rainy	Surface	1.0	27.2	29.7	29.7	6.54	6.52	94.1	93.8	3.60	3.64	4.24	7.2	7.3	8.5		
						29.7		6.50		93.5		3.67			7.4				
			Middle	6.2	25.7	30.7	30.8	6.26	6.25	89.5	89.4	4.47	4.44		4.47	4.44		9.0	9.0
						30.8		6.24		89.2		4.41			9.0				
			Bottom	11.4	25.0	31.4	31.4	6.28	6.27	89.8	89.6	4.60	4.65		4.60	4.65		9.0	9.2
						31.3		6.25		89.3		4.70			9.4				
20/07/10	1300-1311	31/Fine	Surface	1.0	27.7	30.8	30.8	6.37	6.38	91.7	91.9	3.80	3.83	3.92	7.6	7.7	7.9		
						30.8		6.39		92.0		3.85			7.8				
			Middle	6.2	25.4	30.9	31.0	6.27	6.25	90.3	90.0	3.91	3.93		3.91	3.93		7.8	7.9
						31.0		6.23		89.7		3.95			8.0				
			Bottom	11.4	24.6	31.7	31.8	6.14	6.16	88.0	88.2	4.02	4.02		4.02	4.02		8.0	8.0
						31.8		6.18		88.4		4.01			8.0				
22/07/10	1500-1511	28/Rainy	Surface	1.0	27.9	29.8	29.8	6.08	6.06	86.3	86.0	4.16	4.18	4.27	8.2	8.3	8.6		
						29.8		6.03		85.6		4.19			8.4				
			Middle	6.2	26.4	30.1	30.2	6.01	5.99	85.3	85.1	4.23	4.26		4.23	4.26		8.4	8.5
						30.2		5.97		84.8		4.28			8.5				
			Bottom	11.4	24.8	31.2	31.3	5.88	5.87	83.5	83.3	4.37	4.38		4.37	4.38		9.0	8.9
						31.3		5.85		83.1		4.39			8.8				
24/07/10	1600-1615	31/Fine	Surface	1.0	27.4	30.5	30.6	5.92	5.95	84.1	84.5	4.22	4.25	4.33	8.4	8.5	8.7		
						30.6		5.98		84.9		4.27			8.6				
			Middle	6.2	26.6	30.9	31.0	5.88	5.87	83.5	83.3	4.36	4.34		4.36	4.34		8.8	8.7
						31.0		5.85		83.1		4.31			8.5				
			Bottom	11.4	24.7	31.6	31.7	5.77	5.75	81.9	81.6	4.39	4.42		4.39	4.42		9.0	8.9
						31.7		5.73		81.3		4.44			8.8				
27/07/10	1700-1714	29/Cloudy	Surface	1.0	26.4	29.2	29.3	6.05	6.03	85.9	85.6	4.14	4.17	4.29	8.2	8.3	8.6		
						29.3		6.01		85.3		4.19			8.4				
			Middle	6.2	25.3	29.9	30.0	5.99	5.97	85.6	85.3	4.29	4.31		4.29	4.31		8.6	8.6
						30.0		5.94		84.9		4.32			8.5				
			Bottom	11.4	24.2	31.3	31.4	5.82	5.81	82.6	82.4	4.41	4.40		4.41	4.40		9.0	8.9
						31.4		5.79		82.2		4.39			8.8				
29/07/10	0645-0658	27/Cloudy	Surface	1.0	26.3	28.8	28.8	6.19	6.21	87.2	87.5	4.13	4.15	4.33	8.2	8.3	8.6		
						28.7		6.23		87.8		4.17			8.4				
			Middle	5.8	25.7	29.4	29.4	6.11	6.08	86.1	85.7	4.29	4.31		4.29	4.31		8.6	8.6
						29.4		6.05		85.3		4.33			8.5				
			Bottom	11.6	24.6	30.5	30.6	5.97	5.96	84.1	83.7	4.51	4.53		4.51	4.53		9.0	9.0
						30.6		5.94		83.3		4.55			9.0				
31/07/10	0700-0712	28/Cloudy	Surface	1.0	26.4	29.8	29.9	6.20	6.22	88.0	88.3	4.02	4.06	4.49	8.0	8.1	8.9		
						29.9		6.24		88.6		4.10			8.2				
			Middle	6.3	25.5	30.8	30.9	6.03	6.02	85.6	85.5	4.74	4.72		4.74	4.72		9.4	9.5
						30.9		6.01		85.3		4.69			9.5				
			Bottom	11.6	25.2	31.2	31.3	5.97	5.91	84.1	83.9	4.64	4.69		4.64	4.69		9.0	9.2
						31.3		5.84		83.7		4.74			9.4				

Mid-Flood Tide

Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
03/07/10	1002-1012	29/Fine	Surface	1.0	25.6	31.6	31.6	6.61	6.60	91.2	91.0	3.73	3.75	3.89	7.4	7.5	7.8		
						31.6		6.58		90.8		3.77			7.6				
			Middle	5.9	24.4	31.9	32.0	6.49	6.50	89.5	89.7	3.89	3.90		3.89	3.90		7.8	7.8
						32.0		6.51		89.8		3.91			7.8				
			Bottom	10.8	22.9	32.7	32.8	6.42	6.40	88.5	88.3	4.01	4.03		4.01	4.03		8.0	8.0
						32.8		6.38		88.0		4.04			8.0				
06/07/10	1414-1428	30/Cloudy	Surface	1.0	27.5	29.8	29.8	6.48	6.45	89.4	89.0	3.38	3.39	3.45	6.8	6.8	6.9		
						29.8		6.42		88.6		3.39			6.8				
			Middle	5.8	26.9	30.2	30.2	6.33	6.34	87.4	87.5	3.47	3.45		3.47	3.45		7.0	6.9
						30.1		6.35		87.6		3.42			6.8				
			Bottom	10.6	25.2	30.8	30.8	6.27	6.26	86.5	86.4	3.50	3.53		3.50	3.53		7.0	7.0
						30.8		6.25		86.3		3.56			7.0				
08/07/10	1638-1655	32/Fine	Surface	1.0	28.6	31.2	31.2	6.64	6.65	90.7	90.9	3.24	3.25	3.34	6.4	6.4	6.6		
						31.2		6.66		91.0		3.25			6.4				
			Middle	5.4	28.0	31.8	31.8	6.50	6.49	88.3	88.1	3.07	3.09		3.07	3.09		6.2	6.2
						31.8		6.47		87.9		3.10			6.2				
			Bottom	9.8	27.5	32.2	32.3	6.33	6.34	85.7	85.8	3.65	3.68		3.65	3.68		7.2	7.3
						32.3		6.34		85.9		3.70			7.4				
10/07/10	1859-1914	31/Fine	Surface	1.0	28.2	31.9	31.9	6.20	6.21	87.9	88.0	5.10	5.11	5.08	11.0	11.0	10.6		
						31.9		6.21		88.0		5.11			11.0				
			Middle	6.0	27.3	32.5	32.5	6.00	5.90	84.0	83.5	4.90	4.91		4.90	4.91		9.8	9.8
						32.5		5.80		83.0		4.92			9.8				
			Bottom	11.0	27.0	32.8	32.8	5.69	5.70	81.0	81.1	5.20	5.22		5.20	5.22		11.0	11.0
						32.8		5.71		81.2		5.24			11.0				
13/07/10	1925-1936	32/Fine	Surface	1.0	28.7	31.0	31.1	6.51	6.52	93.7	93.9	5.08	5.06	5.16	10.0	10.0	10.7		
						31.1		6.53		94.0		5.04			10.0				
			Middle	6.0	26.1	31.9	31.9	6.49	6.46	92.8	92.3	5.12	5.16		5.12	5.16		11.0	11.0
						31.8		6.42		91.8		5.19			11.0				
			Bottom	11.0	25.2	32.1	32.1	6.35	6.36	90.2	90.4	5.25	5.26		5.25	5.26		11.0	11.0
						32.0		6.37		90.6		5.27			11.0				
15/07/10	1706-1718	29/Drizzle	Surface	1.0	26.5	30.9	30.9	6.44	6.42	92.1	91.8	4.91	4.92	5.09	9.8	9.8	10.3		
						30.9		6.40		91.5		4.93			9.8				
			Middle	5.8	26.0	31.6	31.7	6.35	6.33	90.8	90.5	5.08	5.10		5.08	5.10		10.0	10.0
						31.7		6.31		90.2		5.11			10.0				
			Bottom	10.6	25.4	32.3	32.3	6.23	6.21	89.1	88.7	5.28	5.27		5.28	5.27		11.0	11.0
						32.3		6.18		88.3		5.25			11.0				
17/07/10	1032-1042	29/Rainy	Surface	1.0	27.4	29.7	29.7	6.37	6.36	91.0	90.8	4.87	4.84	5.05	9.8	9.7	10.4		
						29.6		6.34		90.6		4.81			9.6				
			Middle	6.1	25.8	31.1	31.2	6.30	6.32	90.0	90.3	5.24	5.21		5.24	5.21		11.0	11.0
						31.2		6.34		90.6		5.17			11.0				
			Bottom	11.2	25.0	31.4	31.4	6.27	6.26	89.6	89.4	5.15	5.12		5.15	5.12		10.5	10.5
						31.4		6.24		89.2		5.08			10.0				
20/07/10	1515-1526	31/Fine	Surface	1.0	27.7	30.8	30.8	6.38	6.40	91.9	92.2	5.08	5.09	5.17	10.0	10.0	10.7		
						30.7		6.42		92.4		5.10			10.0				
			Middle	6.0	25.5	30.9	31.0	6.35	6.33	91.4	91.2	5.17	5.18		5.17	5.18		11.0	11.0
						31.0		6.31		90.9		5.19			11.0				
			Bottom	11.0	24.7	31.8	31.9	6.22	6.24	88.9	89.2	5.25	5.24		5.25	5.24		11.0	11.0
						31.9		6.26		89.5		5.23			11.0				
22/07/10	1724-1734	28/Rainy	Surface	1.0	27.7	29.5	29.5	6.07	6.06	86.2	86.1	4.18	4.21	4.34	8.4	8.4	8.7		
						29.5		6.05		85.9		4.23			8.4				
			Middle	6.0	26.2	30.0	30.0	5.98	5.95	84.9	84.5	4.33	4.35		4.33	4.35		8.7	8.7
						29.9		5.92		84.1		4.37			8.6				
			Bottom	11.0	24.6	30.9	30.9	5.87	5.85	83.4	83.1	4.45	4.47		4.45	4.47		9.0	9.0
						30.9		5.83		82.8		4.48			9.0				
24/07/10	1806-1820	30/Fine	Surface	1.0	27.0	30.6	30.7	6.04	6.02	85.7	85.4	4.33	4.36	4.50	8.6	8.7	9.0		
						30.7		5.99		85.0		4.39			8.8				
			Middle	5.8	26.3	31.2	31.2	5.91	5.89	83.9	83.6	4.49	4.51		4.49	4.51		9.0	9.0
						31.2		5.86		83.2		4.53			9.0				
			Bottom	10.6	24.9	32.0	32.0	5.83	5.81	82.8	82.5	4.67	4.63		4.67	4.63		9.2	9.2
						31.9		5.79		82.2		4.59			9.2				
27/07/10	1912-1925	28/Cloudy & Drizzle	Surface	1.0	26.2	29.4	29.4	5.99	5.97	85.0	84.7	4.10	4.12	4.23	8.2	8.2	8.4		
						29.4		5.94		84.3		4.14			8.2				
			Middle	5.8	25.4	30.3	30.3	5.87	5.83	83.3	82.8	4.26	4.28		4.26	4.28		8.6	8.6
						30.3		5.79		82.2		4.30			8.6				
			Bottom	10.6	24.2	31.2	31.2	5.83	5.80	82.7	82.3	4.23	4.29		4.23	4.29		8.4	8.5
						31.2		5.77		81.9		4.34			8.6				
29/07/10	0843-0855	27/Cloudy	Surface	1.0	26.2	28.9	28.9	6.22	6.25	87.7	88.1	4.21	4.23	4.37	8.4	8.4	8.7		
						28.9		6.27		88.4		4.25			8.4				
			Middle	5.8	29.5	29.5	29.5	6.25	6.22	88.1	87.7	4.29	4.31		4.29	4.31		8.6	8.6
						29.5		6.19		87.2		4.33			8.6				
			Bottom	10.6	30.6	30.6	30.6	6.06	6.04	85.4	85.1	4.55	4.57		4.55	4.57		9.0	9.1
						30.6		6.01		84.7		4.59			9.2				
31/07/10	0911-0922	28/Cloudy	Surface	1.0	26.6	30.0	30.1	6.29	6.27	89.3	89.0	5.17	5.14	5.26	11.0	11.0	11.0		
						30.1		6.25		88.7		5.11			11.0				
			Middle	5.9	25.6	31.0	31.1	6.08	6.07	86.3	86.1	5.27	5.28		5.27	5.28		11.0	11.0
						31.1		6.05		85.9		5.29			11.0				
			Bottom	10.8	25.0	31.4	31.4	5.86	5.84	82.6	82.3	5.39	5.35		5.39	5.35		11.0	11.0
						31.3		5.82		82.0		5.30			11.0				

Mid-Flood Tide

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1024-1034	29/Fine	Surface	1.0	25.5	31.5	31.6	6.56	6.55	90.5	90.6	3.79	3.81	3.94	7.6	7.6	7.9	
						31.6		6.53		90.7		3.83			7.6			
			Middle	8.9	24.3	32.1	32.2	6.48	6.46	89.4	89.1	3.91	3.96		3.94	7.8		7.9
						32.2		6.44		88.8		3.96			8.0			
			Bottom	16.8	22.8	33.0	33.0	6.35	6.33	87.6	87.4	4.05	4.08		4.08	8.0		8.1
						33.0		6.31		87.1		4.11			8.2			
06/07/10	1434-1445	30/Cloudy	Surface	1.0	27.5	29.8	29.9	6.51	6.49	89.8	89.6	4.12	4.15	4.30	8.2	8.3	8.6	
						29.9		6.47		89.3		4.18			8.4			
			Middle	8.9	26.9	30.3	30.3	6.38	6.35	88.0	87.6	4.27	4.30		4.30	8.6		8.6
						30.2		6.32		87.2		4.32			8.6			
			Bottom	16.8	25.2	30.9	30.9	6.28	6.25	86.7	86.2	4.45	4.46		4.46	9.0		9.0
						30.8		6.21		85.7		4.47			9.0			
08/07/10	1708-1724	32/Fine	Surface	1.0	28.5	31.2	31.3	6.68	6.70	91.2	91.4	4.05	4.08	3.55	8.0	8.1	7.1	
						31.3		6.71		91.6		4.10			8.2			
			Middle	8.6	27.8	31.8	31.8	6.29	6.31	85.4	85.7	3.62	3.64		3.64	7.2		7.2
						31.8		6.33		86.0		3.65			7.2			
			Bottom	16.2	27.0	32.5	32.5	6.14	6.13	83.2	83.1	2.87	2.94		2.94	5.8		5.9
						32.4		6.12		82.9		3.00			6.0			
10/07/10	1836-1850	31/Fine	Surface	1.0	28.0	31.9	31.9	6.11	6.11	87.3	87.3	4.44	4.45	4.64	8.8	8.9	9.3	
						31.9		6.10		87.2		4.46			9.0			
			Middle	9.0	27.0	32.2	32.2	5.89	5.85	83.9	83.5	4.56	4.53		4.53	9.2		9.1
						32.2		5.80		83.0		4.50			9.0			
			Bottom	17.0	26.1	32.8	32.8	5.66	5.66	80.9	80.9	4.92	4.94		4.94	9.8		9.8
						32.8		5.66		80.9		4.96			9.8			
13/07/10	1939-1950	32/Fine	Surface	1.0	28.7	31.2	31.2	6.48	6.47	93.3	93.1	5.13	5.12	5.24	10.0	10.0	10.7	
						31.2		6.45		92.9		5.10			10.0			
			Middle	8.8	26.1	31.8	31.9	6.38	6.40	91.2	91.5	5.24	5.26		5.26	11.0		11.0
						31.9		6.42		91.8		5.28			11.0			
			Bottom	16.6	25.0	32.0	32.0	6.30	6.29	89.5	89.3	5.31	5.35		5.35	11.0		11.0
						31.9		6.27		89.0		5.38			11.0			
15/07/10	1725-1736	29/Drizzle	Surface	1.0	26.5	30.8	30.8	6.31	6.30	90.2	90.0	5.04	5.03	5.17	10.0	10.0	10.7	
						30.8		6.28		89.8		5.01			10.0			
			Middle	9.1	25.9	31.8	31.9	6.19	6.17	88.5	88.2	5.17	5.19		5.19	11.0		11.0
						31.9		6.15		87.9		5.20			11.0			
			Bottom	17.2	25.2	32.5	32.6	6.09	6.07	87.1	86.7	5.29	5.30		5.30	11.0		11.0
						32.6		6.04		86.3		5.31			11.0			
17/07/10	1045-1055	29/Rainy	Surface	1.0	27.4	29.6	29.7	6.44	6.42	92.7	92.4	5.27	5.24	5.37	11.0	11.0	11.0	
						29.7		6.40		92.1		5.21			11.0			
			Middle	8.9	25.7	31.2	31.2	6.29	6.27	89.9	89.6	5.37	5.34		5.34	11.0		11.0
						31.1		6.25		89.3		5.31			11.0			
			Bottom	16.8	24.9	31.5	31.5	6.21	6.19	88.8	88.5	5.50	5.54		5.54	11.0		11.0
						31.4		6.17		88.2		5.58			11.0			
20/07/10	1529-1540	31/Fine	Surface	1.0	27.6	30.8	30.8	6.52	6.54	93.9	94.1	5.17	5.18	5.26	11.0	11.0	11.0	
						30.7		6.55		94.3		5.19			11.0			
			Middle	9.8	25.5	30.9	31.0	6.47	6.45	93.2	92.5	5.23	5.25		5.25	11.0		11.0
						31.0		6.42		91.8		5.27			11.0			
			Bottom	16.6	24.7	31.9	32.0	6.35	6.35	90.8	90.8	5.33	5.34		5.34	11.0		11.0
						32.0		6.34		90.7		5.35			11.0			
22/07/10	1900-1911	28/Rainy	Surface	1.0	26.5	28.2	28.2	5.96	5.96	84.6	84.6	5.07	5.08	5.17	10.0	10.0	10.7	
						28.1		5.95		84.5		5.09			10.0			
			Middle	8.8	25.9	29.7	29.7	5.87	5.86	83.4	83.2	5.13	5.16		5.16	11.0		11.0
						29.6		5.84		82.9		5.19			11.0			
			Bottom	16.6	24.4	30.2	30.3	5.70	5.74	80.9	81.4	5.27	5.26		5.26	11.0		11.0
						30.3		5.77		81.9		5.25			11.0			
24/07/10	1826-1840	30/Fine	Surface	1.0	26.9	30.7	30.8	5.88	5.87	83.4	83.3	5.03	5.06	5.23	10.0	10.0	10.7	
						30.8		5.85		83.1		5.08			10.0			
			Middle	8.9	25.9	31.4	31.5	5.78	5.77	82.1	82.0	5.19	5.22		5.22	11.0		11.0
						31.5		5.76		81.8		5.24			11.0			
			Bottom	16.8	24.3	32.2	32.2	5.72	5.71	81.2	81.0	5.39	5.41		5.41	11.0		11.0
						32.2		5.69		80.8		5.43			11.0			
27/07/10	1936-1950	28/Cloudy & Drizzle	Surface	1.0	26.2	29.3	29.3	5.95	5.92	84.4	84.0	4.25	4.29	4.36	8.6	8.6	8.8	
						29.3		5.88		83.5		4.33			8.6			
			Middle	8.8	25.1	30.4	30.4	5.79	5.81	82.2	82.4	4.45	4.47		4.47	9.0		9.0
						30.4		5.82		82.6		4.49			9.0			
			Bottom	16.6	24.0	31.4	31.5	5.74	5.72	81.5	81.2	4.29	4.33		4.33	8.8		8.7
						31.5		5.70		80.9		4.36			8.8			
29/07/10	0902-0915	27/Cloudy	Surface	1.0	26.3	28.9	29.0	6.03	6.01	85.0	84.7	4.37	4.39	4.53	8.8	8.8	9.1	
						29.0		5.99		84.4		4.41			8.8			
			Middle	8.8	25.6	29.6	29.6	5.92	5.91	83.4	83.3	4.52	4.54		4.54	9.0		9.1
						29.6		5.90		83.1		4.56			9.2			
			Bottom	16.6	24.4	31.0	31.0	5.82	5.80	82.0	81.7	4.65	4.67		4.67	9.2		9.3
						31.0		5.78		81.4		4.69			9.4			
31/07/10	0936-0947	28/Cloudy	Surface	1.0	26.6	30.1	30.1	6.35	6.37	90.1	90.3	4.99	4.95	4.98	10.0	9.9	9.9	
						30.1		6.38		90.5		4.91			9.8			
			Middle	8.8	25.5	31.2	31.2	6.11	6.09	86.7	86.4	5.06	5.04		5.04	10.0		10.0
						31.1		6.07		86.1		5.02			10.0			
			Bottom	16.6	24.9	31.5	31.5	5.93	5.92	83.6	83.4	4.92	4.96		4.96	9.8		9.9
						31.5		5.90		83.1		4.99			10.0			



Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1431-1442	30/Fine	Surface	1.0	25.8	29.9	29.9	6.86	6.88	94.7	94.9	3.11	3.14	3.27	6.2	6.3	6.6
						29.8		6.89		95.1		3.17			6.4		
			Middle	6.9	24.5	30.4	30.4	6.75	6.75	93.2	93.1	3.29	3.27		6.6	6.6	
						30.3		6.74		93.0		3.25			6.6		
			Bottom	12.8	22.8	31.1	31.2	6.63	6.65	91.5	91.7	3.40	3.39		6.8	6.9	
						31.2		6.66		91.9		3.38			7.0		
06/07/10	0800-0813	29/Fine	Surface	1.0	26.6	30.0	30.0	6.60	6.61	90.2	90.3	4.27	4.30	4.06	8.6	8.6	8.1
						30.0		6.62		90.4		4.32			8.6		
			Middle	7.2	26.0	30.3	30.3	6.35	6.36	86.3	86.4	4.10	4.13		8.2	8.2	
						30.3		6.36		86.4		4.15			8.2		
			Bottom	13.4	24.8	30.5	30.6	6.21	6.21	84.2	84.2	3.72	3.76		7.4	7.5	
						30.6		6.20		84.1		3.80			7.5		
08/07/10	0903-0915	29/Fine	Surface	1.0	25.4	31.4	31.5	6.63	6.65	90.8	91.1	3.62	3.64	3.84	7.2	7.2	7.6
						31.5		6.67		91.3		3.66			7.2		
			Middle	6.9	24.6	32.2	32.3	6.56	6.54	91.1	90.1	3.81	3.85		7.6	7.7	
						32.3		6.51		89.1		3.89			7.8		
			Bottom	12.8	23.4	33.2	33.3	6.30	6.31	87.4	87.0	4.01	4.03		8.0	8.0	
						33.3		6.32		86.5		4.05			8.0		
10/07/10	0926-0937	31/Cloudy	Surface	1.0	27.9	31.3	31.3	6.79	6.77	96.4	96.1	5.07	5.11	5.12	10.0	10.5	10.5
						31.3		6.74		95.7		5.15			11.0		
			Middle	6.9	25.6	31.8	31.8	6.57	6.56	92.6	92.4	4.99	4.95		10.0	9.9	
						31.7		6.54		92.2		4.90			9.8		
			Bottom	12.8	25.1	32.0	32.1	6.43	6.45	90.6	90.9	5.26	5.29		11.0	11.0	
						32.1		6.47		91.2		5.32			11.0		
13/07/10	1128-1140	32/Sunny	Surface	1.0	28.5	31.2	31.3	6.57	6.56	93.9	93.7	5.06	5.11	4.73	1.0	1.0	5.8
						31.3		6.54		93.5		5.15			1.0		
			Middle	6.9	25.9	31.9	31.9	6.38	6.36	90.5	90.3	4.43	4.42		8.8	8.8	
						31.9		6.34		90.0		4.40			8.8		
			Bottom	12.8	25.1	32.2	32.2	6.25	6.23	88.7	88.4	4.69	4.68		7.4	7.5	
						32.1		6.21		88.1		4.66			7.5		
15/07/10	0932-0943	28/Fine	Surface	1.0	27.9	31.3	31.3	6.49	6.51	93.5	93.7	5.03	5.04	5.15	10.0	10.0	10.3
						31.2		6.52		93.9		5.05			10.0		
			Middle	7.0	26.4	31.9	31.9	6.41	6.39	91.7	91.4	5.13	5.15		10.0	10.0	
						31.8		6.37		91.1		5.17			10.0		
			Bottom	13.0	24.8	32.1	32.1	6.27	6.25	89.7	89.3	5.22	5.25		11.0	11.0	
						32.1		6.22		88.9		5.28			11.0		
17/07/10	1542-1554	32/Fine	Surface	1.0	27.7	28.4	28.4	6.67	6.68	95.2	95.3	3.25	3.26	3.41	6.6	6.6	6.8
						28.4		6.68		95.3		3.26			6.6		
			Middle	7.1	26.6	29.9	29.9	6.39	6.36	91.3	91.5	3.39	3.39		6.8	6.8	
						29.8		6.32		91.7		3.39			6.8		
			Bottom	13.2	25.1	30.9	30.9	6.19	6.17	88.5	88.5	3.58	3.59		7.2	7.1	
						30.9		6.15		88.5		3.59			7.0		
20/07/10	0839-0850	30/Fine	Surface	1.0	26.2	32.0	32.0	6.24	6.27	89.1	89.2	3.43	3.36	3.23	6.8	6.7	6.5
						32.0		6.30		89.3		3.29			6.6		
			Middle	8.0	24.9	31.8	32.3	6.20	6.18	88.6	88.3	3.11	3.14		6.2	6.3	
						32.8		6.16		88.0		3.16			6.4		
			Bottom	15.0	24.2	32.8	32.8	6.05	6.04	86.5	86.3	3.18	3.19		6.4	6.5	
						32.8		6.02		86.1		3.20			6.5		
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																
24/07/10	1005-1016	28/Fine	Surface	1.0	27.4	29.7	29.7	6.01	5.99	85.3	85.1	4.24	4.23	4.35	8.4	8.4	8.7
						29.6		5.97		84.8		4.21			8.4		
			Middle	7.0	26.6	30.0	30.0	5.93	5.92	84.2	84.1	4.47	4.45		9.0	8.9	
						29.9		5.91		83.9		4.42			8.8		
			Bottom	13.0	24.7	31.0	31.1	5.82	5.83	82.6	82.8	4.36	4.38		9.0	8.9	
						31.1		5.84		82.9		4.39			9.0		
27/07/10	1103-1115	28/Cloudy	Surface	1.0	26.7	29.7	29.8	6.11	6.13	86.8	87.0	3.97	3.96	4.06	8.0	7.9	8.1
						29.8		6.14		87.2		3.94			7.8		
			Middle	7.0	25.5	30.1	30.2	6.27	6.28	89.0	89.1	4.05	4.07		8.0	8.1	
						30.2		6.28		89.2		4.09			8.2		
			Bottom	13.0	24.4	31.1	31.1	6.32	6.34	89.7	90.0	4.12	4.15		8.2	8.4	
						31.1		6.35		90.2		4.17			8.5		
29/07/10	1306-1319	28/Drizzle	Surface	1.0	26.9	28.5	28.5	6.21	6.20	87.6	87.5	4.13	4.16	4.26	8.4	8.4	8.6
						28.4		6.19		87.3		4.18			8.4		
			Middle	7.0	25.9	29.2	29.2	6.28	6.30	88.5	88.8	4.25	4.27		8.6	8.6	
						29.2		6.32		89.1		4.28			8.6		
			Bottom	13.0	24.7	30.2	30.2	6.08	6.06	85.7	85.5	4.34	4.36		8.6	8.8	
						30.1		6.04		85.2		4.37			9.0		
31/07/10	1403-1418	31/Cloudy	Surface	1.0	27.1	30.1	30.2	6.21	6.19	87.6	87.3	4.44	4.47	4.74	8.8	8.9	9.5
						30.2		6.17		87.0		4.50			9.0		
			Middle	7.0	26.0	30.1	30.2	5.95	5.94	83.9	83.8	4.81	4.78		9.6	9.6	
						30.2		5.93		83.6		4.75			9.6		
			Bottom	13.0	25.3	31.4	31.4	5.87	5.84	82.8	82.4	4.97	4.97		10.0	10.0	
						31.4		5.81		81.9		4.96			10.0		

Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1739-1754	29/Fine	Surface	1.0	25.5	29.8	29.9	6.97	6.95	96.2	95.9	3.17	3.20	3.27	6.5	6.5	6.6	
						29.9		6.93		95.6		3.22			6.4			
			Middle	7.3	24.6	30.5	30.5	6.84	6.87	94.4	94.8	3.25	3.29		3.27	6.6		6.6
						30.4		6.89		95.1		3.29			6.6			
			Bottom	13.6	22.9	31.2	31.2	6.72	6.75	92.7	93.1	3.38	3.35		3.35	6.8		6.8
						31.1		6.77		93.4		3.32			6.8			
06/07/10	1055-1110	29/Fine	Surface	1.0	26.6	30.0	30.0	6.56	6.57	89.6	89.8	4.17	4.19	4.29	8.0	8.2	8.5	
						30.0		6.58		89.9		4.20			8.4			
			Middle	8.3	26.0	30.3	30.4	6.36	6.35	86.4	86.3	3.72	3.75		3.74	7.4		7.4
						30.4		6.34		86.1		3.75			7.4			
			Bottom	15.6	25.1	30.7	30.8	6.12	6.13	83.0	83.2	4.95	4.96		4.96	10.0		10.0
						30.8		6.14		83.3		4.96			10.0			
08/07/10	1215-1230	31/Fine	Surface	1.0	25.4	31.5	31.6	6.59	6.61	90.2	90.4	3.66	3.69	3.90	7.0	7.2	7.7	
						31.6		6.62		90.6		3.71			7.4			
			Middle	7.3	24.5	32.2	32.2	6.48	6.49	88.7	88.9	3.93	3.96		3.95	7.8		7.9
						32.2		6.50		89.1		3.96			8.0			
			Bottom	13.6	23.3	33.1	33.2	6.37	6.36	87.2	87.1	4.03	4.09		4.06	8.0		8.1
						33.2		6.35		86.9		4.09			8.2			
10/07/10	1220-1230	31/Cloudy	Surface	1.0	28.2	31.4	31.4	6.69	6.71	95.6	95.9	4.82	4.85	4.97	9.5	9.7	10.2	
						31.4		6.73		96.2		4.88			9.8			
			Middle	7.7	25.6	32.1	32.1	6.44	6.42	91.4	91.1	4.98	4.91		4.95	10.0		10.0
						32.0		6.40		90.8		4.91			10.0			
			Bottom	14.4	25.0	32.0	32.1	6.37	6.39	90.4	90.6	5.06	5.15		5.11	11.0		11.0
						32.1		6.40		90.8		5.15			11.0			
13/07/10	1425-1438	32/Sunny	Surface	1.0	28.5	31.3	31.3	6.52	6.50	93.2	92.9	4.98	4.95	4.93	10.0	10.0	9.8	
						31.2		6.48		92.6		4.91			10.0			
			Middle	7.9	26.1	32.0	32.0	6.23	6.22	88.4	88.2	4.79	4.71		4.75	9.6		9.5
						32.0		6.20		88.0		4.71			9.4			
			Bottom	14.8	25.4	32.2	32.2	6.26	6.28	88.8	89.1	5.13	5.07		5.10	10.0		10.0
						32.2		6.29		89.3		5.07			10.0			
15/07/10	1252-1305	30/Fine	Surface	1.0	28.2	31.3	31.3	6.61	6.59	95.2	94.9	5.28	5.28	5.37	11.0	11.0	11.0	
						31.3		6.57		94.6		5.27			11.0			
			Middle	7.4	26.5	31.8	31.7	6.42	6.43	92.4	92.6	5.36	5.33		5.35	11.0		11.0
						31.5		6.44		92.7		5.33			11.0			
			Bottom	13.8	25.1	32.0	32.1	6.40	6.38	92.6	92.1	5.48	5.47		5.48	11.0		11.0
						32.1		6.36		91.6		5.47			11.0			
17/07/10	1858-1912	32/Fine	Surface	1.0	27.1	30.2	30.2	6.55	6.54	93.1	93.4	3.30	3.30	3.46	6.5	6.6	6.9	
						30.2		6.52		93.6		3.30			6.6			
			Middle	7.3	25.4	31.4	31.7	6.29	6.30	89.9	89.9	3.50	3.50		3.50	7.0		7.0
						31.9		6.30		89.9		3.50			7.0			
			Bottom	13.6	24.1	32.6	32.6	6.10	6.13	87.2	87.1	3.56	3.60		3.58	7.2		7.2
						32.6		6.15		87.0		3.60			7.2			
20/07/10	1135-1150	31/Fine	Surface	1.0	26.3	31.6	31.7	6.32	6.31	91.0	91.2	3.90	3.91	3.60	8.0	7.9	7.2	
						31.8		6.30		91.3		3.92			7.8			
			Middle	8.3	25.3	32.2	32.3	6.15	6.16	87.9	87.7	3.29	3.30		3.30	6.6		6.6
						32.3		6.17		87.4		3.30			6.6			
			Bottom	15.6	24.2	32.9	32.9	5.91	5.92	84.5	84.5	3.46	3.71		3.59	7.0		7.1
						32.9		5.92		84.5		3.71			7.2			
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																	
24/07/10	1320-1335	29/Fine	Surface	1.0	27.8	29.8	29.8	5.98	6.00	84.9	85.1	4.37	4.34	4.45	9.0	8.8	9.0	
						29.7		6.01		85.3		4.30			8.6			
			Middle	7.4	26.8	30.1	30.1	5.93	5.92	84.2	84.0	4.47	4.49		4.48	9.0		9.0
						30.0		5.90		83.7		4.49			9.0			
			Bottom	13.8	24.7	31.0	31.1	5.85	5.83	83.1	82.8	4.52	4.55		4.54	9.0		9.1
						31.1		5.81		82.5		4.55			9.2			
27/07/10	1358-1412	30/Cloudy	Surface	1.0	26.9	29.6	29.7	6.13	6.10	87.0	86.6	4.14	4.16	4.25	8.0	8.1	8.4	
						29.7		6.07		86.2		4.17			8.2			
			Middle	7.3	25.6	30.1	30.1	5.93	5.94	84.2	84.4	4.36	4.32		4.34	8.8		8.7
						30.0		5.95		84.5		4.32			8.6			
			Bottom	13.6	24.5	31.1	31.1	5.86	5.87	83.2	83.3	4.27	4.23		4.25	8.6		8.5
						31.0		5.87		83.4		4.23			8.4			
29/07/10	1625-1637	29/Cloudy	Surface	1.0	26.9	28.5	28.5	6.20	6.19	87.4	87.2	4.08	4.09	4.17	8.0	8.1	8.3	
						28.5		6.17		87.0		4.10			8.2			
			Middle	7.4	25.8	29.2	29.2	6.14	6.15	86.6	86.8	4.17	4.19		4.18	8.4		8.4
						29.2		6.16		86.9		4.19			8.4			
			Bottom	13.8	24.7	30.2	30.2	5.96	5.94	84.0	83.8	4.25	4.21		4.23	8.6		8.5
						30.1		5.92		83.5		4.21			8.4			
31/07/10	1729-1740	30/Cloudy	Surface	1.0	27.1	30.3	30.3	6.20	6.17	87.4	87.0	4.90	4.88	5.00	10.0	9.9	10.3	
						30.2		6.14		86.6		4.86			9.8			
			Middle	7.4	25.7	30.5	30.6	6.10	6.09	86.0	85.8	4.95	4.99		4.97	10.0		10.0
						30.6		6.07		85.6		4.99			10.0			
			Bottom	13.8	24.7	31.5	31.5	5.78	5.77	81.5	81.3	5.13	5.16		5.16	11.0		11.0
						31.4		5.75		81.1		5.16			11.0			

Monitoring Station : C3

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average			
03/07/10	1454-1502	30/Fine	Surface	1.0	25.8	29.9	29.9	6.89	6.91	95.1	95.4	3.87	3.84	3.95	7.6	7.6	7.8			
						29.8		6.93		95.6		3.81			7.6					
			Middle	6.3	24.6	30.5	30.5	6.77	6.75	93.4	93.2	3.94	3.97		3.96	3.96		7.8	7.9	7.8
						30.4		6.73		92.9		3.97			8.0					
			Bottom	11.6	22.8	31.0	31.1	6.64	6.67	91.6	92.0	4.08	4.05		4.07	4.07		8.0	8.0	8.0
						31.1		6.69		92.3		4.05			8.0					
06/07/10	0830-0844	29/Fine	Surface	1.0	26.7	29.9	30.0	6.58	6.59	89.9	90.1	4.06	4.06	4.03	8.2	8.2	8.1			
						30.0		6.60		90.2		4.05			8.2					
			Middle	6.8	26.1	30.3	30.3	6.27	6.29	85.2	85.4	4.27	4.30		4.29	4.29		8.6	8.6	8.6
						30.3		6.30		85.6		4.30			8.6					
			Bottom	12.5	25.0	30.6	30.7	6.02	6.04	81.6	81.9	3.72	3.75		3.74	3.74		7.4	7.4	7.4
						30.7		6.05		82.1		3.75			7.4					
08/07/10	0927-0938	29/Fine	Surface	1.0	25.3	31.4	31.4	6.64	6.63	90.9	90.7	3.68	3.70	3.83	7.4	7.4	7.7			
						31.4		6.61		90.5		3.71			7.4					
			Middle	6.4	24.6	32.2	32.2	6.55	6.54	89.7	89.6	3.79	3.82		3.81	3.81		7.6	7.6	7.6
						32.2		6.53		89.4		3.82			7.6					
			Bottom	11.8	23.3	33.2	33.2	6.40	6.38	87.6	87.4	3.97	3.99		3.98	3.98		8.0	8.0	8.0
						33.2		6.36		87.1		3.99			8.0					
10/07/10	0950-1002	31/Cloudy	Surface	1.0	27.9	31.3	31.3	6.85	6.87	97.9	98.1	5.12	5.10	5.19	11.0	11.0	11.0			
						31.2		6.88		98.3		5.07			11.0					
			Middle	6.4	25.6	31.7	31.8	6.58	6.56	93.4	93.1	5.07	5.15		5.11	5.11		11.0	11.0	11.0
						31.8		6.54		92.8		5.15			11.0					
			Bottom	11.8	25.0	32.1	32.1	6.50	6.52	92.3	92.6	5.39	5.31		5.35	5.35		11.0	11.0	11.0
						32.1		6.54		92.8		5.31			11.0					
13/07/10	1152-1203	32/Sunny	Surface	1.0	28.6	31.3	31.3	6.49	6.48	92.8	92.6	4.87	4.84	5.03	9.8	9.7	10.2			
						31.2		6.46		92.3		4.81			9.6					
			Middle	6.3	25.9	31.8	31.8	6.36	6.35	90.3	90.1	5.06	5.11		5.09	5.09		10.0	10.0	10.0
						31.7		6.33		89.8		5.11			10.0					
			Bottom	11.6	25.1	32.2	32.2	6.40	6.42	90.8	91.1	5.18	5.14		5.16	5.16		11.0	11.0	11.0
						32.2		6.44		91.4		5.14			11.0					
15/07/10	1023-1034	28/Fine	Surface	1.0	27.9	31.2	31.2	6.51	6.50	93.7	93.5	4.81	4.83	4.94	9.6	9.7	9.9			
						31.2		6.48		93.3		4.85			9.8					
			Middle	6.4	26.5	31.9	31.9	6.38	6.35	91.2	90.7	4.93	4.98		4.96	4.96		9.8	9.9	9.9
						31.8		6.31		90.2		4.98			10.0					
			Bottom	11.8	24.8	32.0	32.0	6.25	6.24	88.7	89.2	5.02	5.05		5.04	5.04		10.0	10.0	10.0
						32.0		6.23		89.7		5.05			10.0					
17/07/10	1608-1620	32/Fine	Surface	1.0	27.8	28.5	28.5	6.77	6.74	96.2	96.5	3.22	3.21	3.42	6.4	6.4	6.9			
						28.5		6.70		96.8		3.20			6.4					
			Middle	6.6	26.2	30.1	30.1	6.40	6.40	91.5	91.5	3.15	3.16		3.16	3.16		6.4	6.4	6.4
						30.1		6.39		91.4		3.16			6.4					
			Bottom	12.2	25.0	32.5	32.5	6.20	6.18	88.0	88.1	3.90	3.90		3.90	3.90		7.8	7.8	7.8
						32.5		6.15		88.1		3.90			7.8					
20/07/10	0859-0912	30/Fine	Surface	1.0	26.0	32.1	32.1	6.44	6.44	92.1	92.2	3.42	3.31	3.19	6.6	6.5	6.3			
						32.1		6.43		92.2		3.20			6.4					
			Middle	7.1	24.9	32.8	32.9	6.30	6.28	90.9	90.5	3.12	3.02		3.07	3.07		6.2	6.1	6.2
						32.9		6.26		90.0		3.02			6.0					
			Bottom	13.2	23.9	33.0	33.0	6.10	6.13	87.1	87.4	3.19	3.20		3.20	3.20		6.4	6.4	6.4
						33.0		6.15		87.7		3.20			6.4					
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																			
24/07/10	1028-1040	28/Fine	Surface	1.0	27.4	29.7	29.7	6.05	6.07	85.9	86.1	4.32	4.31	4.42	8.6	8.6	8.8			
						29.7		6.08		86.3		4.30			8.6					
			Middle	6.4	26.7	30.1	30.1	5.97	5.96	84.8	84.7	4.47	4.43		4.45	4.45		8.8	8.9	8.8
						30.0		5.95		84.5		4.43			8.8					
			Bottom	11.8	24.8	31.1	31.1	5.88	5.86	83.5	83.2	4.52	4.50		4.51	4.51		9.0	9.0	9.0
						31.1		5.84		82.9		4.50			9.0					
27/07/10	1127-1138	28/Cloudy	Surface	1.0	26.8	29.7	29.7	6.05	6.06	85.9	86.1	4.08	4.05	4.15	8.0	8.0	8.3			
						29.7		6.07		86.2		4.01			8.0					
			Middle	6.8	25.6	30.1	30.1	5.97	5.95	84.8	84.5	4.13	4.17		4.15	4.15		8.2	8.3	8.2
						30.0		5.93		84.2		4.17			8.4					
			Bottom	11.8	24.5	31.0	31.1	5.82	5.85	82.6	83.0	4.28	4.25		4.27	4.27		8.6	8.6	8.6
						31.1		5.87		83.4		4.25			8.6					
29/07/10	1331-1344	28/Drizzle	Surface	1.0	26.8	28.4	28.5	6.19	6.17	87.3	87.0	4.03	4.04	4.15	8.0	8.0	8.3			
						28.5		6.14		86.6		4.05			8.0					
			Middle	6.4	25.9	29.1	29.2	6.21	6.23	87.6	87.9	4.14	4.17		4.16	4.16		8.2	8.3	8.2
						29.2		6.25		88.1		4.17			8.4					
			Bottom	11.8	24.7	30.1	30.2	6.09	6.08	85.9	85.8	4.23	4.29		4.26	4.26		8.4	8.5	8.4
						30.2		6.07		85.6		4.29			8.6					
31/07/10	1430-1444	31/Cloudy	Surface	1.0	27.1	30.2	30.2	6.27	6.29	88.4	88.7	4.70	4.68	4.96	9.4	9.4	10.1			
						30.1		6.31		89.0		4.66			9.4					
			Middle	6.4	25.9	30.2	30.2	6.19	6.18	87.3	87.2	5.01	4.98		5.00	5.00		10.0	10.0	10.0
						30.2		6.17		87.0		4.98			10.0					
			Bottom	11.8	25.1	31.3	31.4	5.95	5.93	84.0	83.6	5.19	5.24		5.22	5.22		11.0	11.0	11.0
						31.4		5.90		83.2		5.24			11.0					

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1714-1729	29/Fine	Surface	1.0	25.5	29.9	29.9	6.88	6.89	94.9	95.0	3.28	3.30	3.40	6.6	6.6	6.8	
						29.8		6.89		95.1		3.32			6.6			
			Middle	7.9	24.6	30.4	30.4	6.78	6.77	93.6	93.4	3.39	3.42		3.41	6.8		6.8
						30.4		6.75		93.2		3.42			6.8			
			Bottom	14.8	22.9	31.2	31.2	6.61	6.63	91.2	91.4	3.48	3.51		3.50	7.0		7.0
						31.2		6.64		91.6		3.51			7.0			
06/07/10	1037-1051	29/Fine	Surface	1.0	26.6	30.0	30.0	6.65	6.64	90.8	90.7	3.46	3.48	3.97	7.0	7.0	7.9	
						30.0		6.63		90.6		3.50			7.0			
			Middle	8.1	26.0	30.4	30.5	6.41	6.42	87.1	87.3	4.27	4.30		4.29	8.6		8.6
						30.5		6.43		87.4		4.30			8.6			
			Bottom	15.2	25.2	30.7	30.8	6.29	6.27	85.3	85.1	4.12	4.14		4.13	8.2		8.1
						30.8		6.25		84.8		4.14			8.0			
08/07/10	1154-1208	31/Fine	Surface	1.0	25.4	31.5	31.5	6.67	6.65	91.3	91.1	3.62	3.65	3.85	7.2	7.3	7.7	
						31.5		6.63		90.8		3.68			7.4			
			Middle	8.0	24.4	32.2	32.3	6.55	6.53	89.7	89.4	3.84	3.90		3.87	7.6		7.7
						32.3		6.51		89.1		3.90			7.8			
			Bottom	15.0	23.3	33.2	33.3	6.36	6.38	87.1	87.3	4.01	4.05		4.03	8.0		8.0
						33.3		6.39		87.5		4.01			8.0			
10/07/10	1204-1214	31/Cloudy	Surface	1.0	28.2	31.3	31.4	6.63	6.62	94.1	93.9	4.75	4.77	4.63	9.6	9.6	9.3	
						31.4		6.60		93.7		4.78			9.6			
			Middle	7.9	25.6	32.0	32.0	6.26	6.26	88.2	88.1	4.49	4.41		4.45	9.0		8.9
						32.0		6.25		88.0		4.41			8.8			
			Bottom	14.8	25.2	32.2	32.2	6.35	6.33	89.5	89.2	4.64	4.69		4.67	9.2		9.4
						32.1		6.31		88.9		4.69			9.5			
13/07/10	1405-1417	32/Sunny	Surface	1.0	28.4	31.2	31.2	6.50	6.49	92.9	92.7	5.16	5.19	5.06	11.0	11.0	10.3	
						31.1		6.47		92.5		5.21			11.0			
			Middle	7.8	26.2	32.0	32.0	6.17	6.16	87.6	87.4	5.07	5.01		5.04	10.0		10.0
						31.9		6.14		87.1		5.01			10.0			
			Bottom	14.6	25.3	32.2	32.2	6.15	6.17	87.3	87.6	4.99	4.94		4.97	10.0		10.0
						32.1		6.19		87.8		4.94			10.0			
15/07/10	1233-1244	30/Fine	Surface	1.0	28.2	31.3	31.3	6.56	6.54	94.5	94.1	4.28	4.30	4.40	8.6	8.6	8.8	
						31.2		6.51		93.7		4.32			8.6			
			Middle	8.0	26.5	31.7	31.7	6.48	6.45	93.3	92.9	4.38	4.42		4.40	8.8		8.8
						31.7		6.42		92.4		4.42			8.8			
			Bottom	15.0	24.9	32.0	32.0	6.39	6.37	92.0	91.7	4.50	4.52		4.51	9.0		9.0
						32.0		6.35		91.4		4.52			9.0			
17/07/10	1838-1852	32/Fine	Surface	1.0	27.1	30.1	30.2	6.49	6.52	92.2	92.5	3.29	3.29	3.37	6.6	6.6	6.7	
						30.2		6.55		92.8		3.29			6.6			
			Middle	7.0	25.5	31.4	31.5	6.23	6.22	89.0	89.0	3.30	3.40		3.35	6.6		6.7
						31.6		6.20		89.0		3.40			6.8			
			Bottom	13.0	24.8	32.2	32.4	6.09	6.12	87.0	87.0	3.44	3.48		3.46	6.8		6.9
						32.6		6.15		87.0		3.48			7.0			
20/07/10	1116-1129	31/Fine	Surface	1.0	26.3	31.6	31.6	6.49	6.44	92.8	92.4	3.90	3.91	3.85	7.8	7.8	7.6	
						31.6		6.39		92.0		3.92			7.8			
			Middle	8.2	25.1	32.2	32.2	6.21	6.23	89.1	89.0	3.84	3.80		3.82	7.6		7.6
						32.2		6.24		88.9		3.80			7.6			
			Bottom	15.4	24.3	32.9	32.9	6.02	6.04	85.1	85.2	3.71	3.90		3.81	7.4		7.5
						32.9		6.05		85.3		3.90			7.5			
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																	
24/07/10	1255-1310	29/Fine	Surface	1.0	27.8	29.7	29.8	6.01	5.99	85.3	85.1	4.18	4.19	4.27	8.4	8.4	8.6	
						29.8		5.97		84.8		4.20			8.4			
			Middle	8.1	26.8	30.0	30.1	5.93	5.90	84.2	83.7	4.27	4.23		4.25	8.6		8.5
						30.1		5.86		83.2		4.23			8.4			
			Bottom	15.2	24.7	30.9	30.9	5.73	5.76	81.4	81.8	4.39	4.37		4.38	8.8		8.9
						30.9		5.78		82.1		4.37			9.0			
27/07/10	1337-1349	30/Cloudy	Surface	1.0	26.9	29.7	29.7	6.16	6.14	87.5	87.2	4.03	4.06	4.15	8.0	8.0	8.3	
						29.7		6.12		86.9		4.08			8.0			
			Middle	8.0	25.7	30.0	30.1	6.09	6.06	86.5	86.0	4.12	4.17		4.15	8.2		8.2
						30.1		6.02		85.5		4.17			8.2			
			Bottom	15.0	24.5	31.0	31.0	5.95	5.96	83.9	84.0	4.29	4.21		4.25	8.6		8.6
						31.0		5.96		84.0		4.21			8.5			
29/07/10	1602-1617	29/Cloudy	Surface	1.0	26.9	28.5	28.5	6.28	6.26	88.5	88.3	4.09	4.06	4.15	8.2	8.1	8.3	
						28.4		6.24		88.0		4.03			8.0			
			Middle	8.0	25.8	29.1	29.2	6.13	6.15	86.4	86.7	4.12	4.17		4.15	8.2		8.3
						29.2		6.17		87.0		4.17			8.4			
			Bottom	15.0	24.7	30.1	30.1	6.05	6.03	85.3	85.0	4.28	4.21		4.25	8.6		8.6
						30.1		6.01		84.7		4.21			8.5			
31/07/10	1706-1721	30/Cloudy	Surface	1.0	27.2	30.2	30.2	6.28	6.30	88.5	88.8	5.04	5.02	4.93	10.0	10.0	9.9	
						30.2		6.32		89.1		4.99			10.0			
			Middle	7.9	25.6	30.6	30.6	6.04	6.08	85.2	85.7	4.78	4.80		4.79	9.6		9.6
						30.5		6.11		86.2		4.80			9.6			
			Bottom	14.8	24.7	31.4	31.5	5.90	5.88	83.2	82.9	4.97	5.01		4.99	10.0		10.0
						31.5		5.85		82.5		5.01			10.0			

Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)		Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1519-1532	29/Fine	Surface	1.0	25.9	29.8	29.8	6.87	6.88	94.8	94.9	4.16	4.18	4.26	8.5	8.5	8.6	
						29.7		6.88		94.9		4.19			8.4			
			Middle	8.2	24.4	30.4	30.5	6.72	6.73	92.7	92.9	4.23	4.28		4.26	8.4		8.5
						30.5		6.74		93.0		4.28			8.6			
			Bottom	15.4	22.9	31.2	31.2	6.62	6.64	91.4	91.6	4.33	4.37		4.35	8.6		8.7
						31.2		6.65		91.8		4.37			8.8			
06/07/10	0850-0902	29/Fine	Surface	1.0	26.6	29.9	30.0	6.54	6.54	89.3	89.3	4.06	4.08	3.58	8.0	8.1	7.2	
						30.0		6.53		89.2		4.09			8.2			
			Middle	8.6	25.8	30.4	30.4	6.40	6.41	87.0	87.1	3.26	3.25		3.26	6.6		6.6
						30.4		6.41		87.1		3.25			6.6			
			Bottom	16.2	24.6	30.8	30.8	6.32	6.31	85.7	85.6	3.41	3.43		3.42	6.8		6.8
						30.8		6.30		85.4		3.43			6.8			
08/07/10	0952-1004	30/Fine	Surface	1.0	25.4	31.5	31.5	6.48	6.46	88.7	88.4	4.10	4.07	4.28	8.0	8.0	8.5	
						31.4		6.43		88.1		4.04			8.0			
			Middle	8.2	24.5	32.3	32.4	6.37	6.38	87.2	87.4	4.31	4.34		4.33	8.6		8.6
						32.4		6.39		87.5		4.34			8.6			
			Bottom	15.4	23.2	33.2	33.3	6.31	6.29	86.4	86.1	4.44	4.46		4.45	8.8		8.8
						33.3		6.27		85.8		4.46			8.8			
10/07/10	1016-1028	31/Cloudy	Surface	1.0	27.9	31.3	31.3	6.78	6.77	96.9	96.7	5.01	5.05	4.91	10.0	10.0	9.8	
						31.2		6.75		96.5		5.09			10.0			
			Middle	8.4	25.6	31.8	31.9	6.43	6.42	91.3	91.1	4.77	4.70		4.74	9.4		9.4
						31.9		6.40		90.8		4.70			9.4			
			Bottom	15.8	25.1	32.0	32.1	6.37	6.35	90.4	90.1	4.93	4.98		4.96	9.8		9.9
						32.1		6.33		89.8		4.98			10.0			
13/07/10	1218-1230	32/Sunny	Surface	1.0	28.7	31.1	31.2	6.46	6.45	91.7	91.5	5.29	5.32	5.08	11.0	11.0	10.3	
						31.2		6.43		91.3		5.34			11.0			
			Middle	8.3	26.1	31.9	32.0	6.29	6.27	89.3	89.0	4.88	4.84		4.86	9.8		9.8
						32.0		6.25		88.7		4.84			9.8			
			Bottom	15.6	25.2	32.2	32.2	6.18	6.16	87.7	87.4	5.03	5.09		5.06	10.0		10.0
						32.1		6.14		87.1		5.09			10.0			
15/07/10	1049-1059	29/Fine	Surface	1.0	28.0	31.2	31.2	6.43	6.45	92.6	92.9	5.31	5.31	5.43	11.0	11.0	11.0	
						31.1		6.47		93.2		5.30			11.0			
			Middle	8.3	26.5	31.8	31.8	6.32	6.34	91.0	91.2	5.42	5.45		5.44	11.0		11.0
						31.8		6.35		91.4		5.45			11.0			
			Bottom	15.6	25.0	32.0	32.1	6.21	6.23	88.9	89.1	5.58	5.53		5.56	11.0		11.0
						32.1		6.24		89.2		5.53			11.0			
17/07/10	1635-1649	32/Fine	Surface	1.0	27.9	28.9	28.9	6.29	6.31	89.9	90.0	4.00	4.01	4.23	8.0	8.0	8.4	
						28.9		6.33		90.0		4.02			8.0			
			Middle	8.4	26.3	29.5	29.5	6.10	6.09	87.2	87.3	4.41	4.44		4.43	8.8		8.8
						29.5		6.08		87.3		4.44			8.8			
			Bottom	15.6	25.0	30.9	30.9	5.84	5.86	83.5	83.3	4.29	4.20		4.25	8.6		8.5
						30.9		5.88		83.1		4.20			8.4			
20/07/10	0921-0932	31/Fine	Surface	1.0	26.4	31.2	31.2	6.36	6.38	90.4	90.7	4.10	4.04	3.67	8.0	8.0	7.3	
						31.2		6.39		90.9		3.97			8.0			
			Middle	8.6	25.4	32.0	32.0	6.20	6.21	88.6	88.4	3.82	3.80		3.81	7.6		7.6
						32.0		6.21		88.2		3.80			7.6			
			Bottom	16.2	25.0	32.3	32.3	6.15	6.15	87.1	87.1	3.16	3.19		3.18	6.4		6.4
						32.3		6.14		87.1		3.19			6.4			
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																	
24/07/10	1043-1056	28/Fine	Surface	1.0	27.5	29.7	29.7	6.03	6.06	85.6	86.0	4.13	4.15	4.24	8.0	8.2	8.4	
						29.7		6.08		86.3		4.17			8.4			
			Middle	8.3	26.7	30.0	30.0	5.99	5.98	85.1	85.0	4.21	4.25		4.23	8.4		8.5
						30.0		5.97		84.8		4.25			8.6			
			Bottom	15.6	24.7	31.1	31.1	5.85	5.87	83.1	83.3	4.33	4.35		4.34	8.6		8.6
						31.0		5.88		83.5		4.35			8.6			
27/07/10	1153-1204	29/Cloudy	Surface	1.0	26.8	29.6	29.6	6.07	6.05	86.2	85.9	3.97	3.96	4.05	8.0	7.9	8.1	
						29.6		6.03		85.6		3.94			7.8			
			Middle	8.3	25.5	30.1	30.2	6.01	6.00	85.3	85.1	4.02	4.05		4.04	8.0		8.0
						30.2		5.98		84.9		4.05			8.0			
			Bottom	15.6	24.3	31.0	31.1	5.87	5.85	83.4	83.1	4.17	4.16		4.17	8.4		8.4
						31.1		5.83		82.8		4.16			8.4			
29/07/10	1359-1413	29/Drizzle	Surface	1.0	26.8	28.4	28.4	6.03	6.06	85.0	85.4	4.37	4.36	4.48	9.0	9.0	9.0	
						28.4		6.08		85.7		4.35			9.0			
			Middle	8.3	25.9	29.1	29.1	6.01	5.99	84.7	84.5	4.47	4.44		4.46	8.8		8.9
						29.0		5.97		84.2		4.44			8.8			
			Bottom	15.6	24.7	30.1	30.2	5.91	5.90	83.3	83.2	4.59	4.67		4.63	9.2		9.2
						30.2		5.88		83.0		4.67			9.2			
31/07/10	1459-1514	31/Cloudy	Surface	1.0	27.0	30.2	30.2	6.33	6.34	89.3	89.4	5.08	5.07	5.10	10.0	10.0	10.7	
						30.1		6.35		89.5		5.05			10.0			
			Middle	8.2	25.9	30.4	30.4	6.13	6.12	86.4	86.3	5.19	5.12		5.16	11.0		11.0
						30.3		6.11		86.2		5.12			11.0			
			Bottom	15.4	25.0	31.5	31.5	5.82	5.86	82.1	82.6	5.10	5.07		5.09	11.0		11.0
						31.4		5.89		83.0		5.07			11.0			



Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)		Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1610-1621	29/Fine	Surface	1.0	25.9	29.9	29.9	6.78	6.79	93.6	93.7	4.02	4.05	4.15	8.0	8.1	8.3
						29.8		6.80		93.8		4.08			8.2		
			Middle	7.7	24.6	30.6	30.6	6.72	6.70	92.7	92.5	4.12	4.15		8.2	8.3	
						30.5		6.68		92.2		4.18			8.4		
			Bottom	14.4	22.9	31.2	31.3	6.61	6.62	91.2	91.4	4.27	4.25		8.6	8.5	
						31.3		6.63		91.5		4.23			8.4		
06/07/10	0939-0953	29/Fine	Surface	1.0	26.6	29.9	29.9	6.56	6.58	89.6	89.9	2.95	2.98	3.80	6.0	6.0	7.6
						29.9		6.60		90.2		3.00			6.0		
			Middle	8.2	26.0	30.2	30.3	6.27	6.26	85.2	85.1	4.12	4.13		8.2	8.2	
						30.3		6.25		84.9		4.13			8.2		
			Bottom	15.3	25.2	30.4	30.5	6.16	6.17	83.5	83.7	4.27	4.29		8.6	8.6	
						30.5		6.18		83.8		4.30			8.6		
08/07/10	1048-1059	30/Fine	Surface	1.0	25.4	31.5	31.5	6.50	6.48	89.0	88.7	4.13	4.11	4.27	8.2	8.2	8.5
						31.5		6.45		88.3		4.08			8.2		
			Middle	7.9	24.5	32.2	32.3	6.39	6.36	87.5	87.1	4.25	4.28		8.6	8.6	
						32.3		6.33		86.7		4.30			8.6		
			Bottom	14.8	23.2	33.2	33.2	6.27	6.24	85.8	85.5	4.39	4.42		8.8	8.8	
						33.2		6.21		85.1		4.45			8.8		
10/07/10	1105-1118	31/Cloudy	Surface	1.0	28.1	31.3	31.4	6.65	6.63	94.4	94.1	4.92	4.95	4.98	9.8	9.9	10.1
						31.4		6.61		93.8		4.98			10.0		
			Middle	7.9	25.4	31.9	31.9	6.47	6.46	91.8	91.6	4.97	4.94		10.0	10.0	
						31.8		6.44		91.4		4.90			10.0		
			Bottom	14.8	25.1	32.2	32.2	6.39	6.41	90.0	90.3	5.02	5.05		10.0	10.5	
						32.1		6.43		90.6		5.07			11.0		
13/07/10	1305-1317	32/Sunny	Surface	1.0	28.6	31.3	31.3	6.67	6.66	95.3	95.1	5.44	5.47	5.25	11.0	11.0	10.3
						31.2		6.64		94.9		5.49			11.0		
			Middle	7.9	25.8	32.0	32.1	6.39	6.37	90.7	90.4	5.18	5.15		10.0	10.0	
						32.1		6.34		90.0		5.11			10.0		
			Bottom	14.8	25.2	32.2	32.2	6.36	6.34	90.3	90.0	5.10	5.13		10.0	10.0	
						32.1		6.32		89.7		5.15			10.0		
15/07/10	1135-1146	29/Fine	Surface	1.0	28.1	31.3	31.3	6.50	6.52	93.6	95.2	5.28	5.29	5.39	11.0	11.0	11.0
						31.3		6.54		96.7		5.30			11.0		
			Middle	7.8	26.4	31.7	31.7	6.43	6.42	92.6	92.5	5.39	5.41		11.0	11.0	
						31.6		6.41		92.3		5.42			11.0		
			Bottom	14.6	25.0	32.0	32.0	6.32	6.31	91.0	90.5	5.48	5.49		11.0	11.0	
						32.0		6.29		89.9		5.49			11.0		
17/07/10	1732-1745	32/Fine	Surface	1.0	27.6	28.1	28.1	6.20	6.19	88.0	88.0	4.37	4.34	4.50	8.8	8.7	9.0
						28.1		6.18		87.9		4.30			8.6		
			Middle	8.1	27.0	29.9	29.9	5.96	5.97	85.0	85.0	4.66	4.63		9.2	9.2	
						29.9		5.97		85.0		4.60			9.2		
			Bottom	15.2	26.1	31.3	31.3	5.70	5.71	82.0	82.1	4.45	4.54		9.0	9.1	
						31.2		5.71		82.1		4.62			9.2		
20/07/10	1014-1026	31/Fine	Surface	1.0	26.7	31.2	31.2	6.19	6.16	87.9	87.6	3.90	3.90	3.91	7.8	7.8	7.8
						31.2		6.12		87.2		3.90			7.8		
			Middle	8.1	25.7	31.9	31.9	6.03	6.02	85.9	85.6	3.99	3.96		8.0	7.9	
						31.9		6.00		85.2		3.92			7.8		
			Bottom	15.2	25.1	32.6	32.6	5.87	5.85	83.0	83.5	3.94	3.89		7.8	7.7	
						32.5		5.82		83.9		3.83			7.6		
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																
24/07/10	1140-1155	28/Fine	Surface	1.0	27.6	29.7	29.7	5.90	5.93	83.8	84.2	4.87	4.86	4.96	9.8	9.7	9.9
						29.7		5.95		84.5		4.85			9.6		
			Middle	7.8	26.7	30.1	30.1	5.87	5.84	83.4	83.0	4.96	4.98		10.0	10.0	
						30.0		5.81		82.5		4.99			10.0		
			Bottom	14.6	24.8	31.0	31.1	5.76	5.77	81.8	81.9	5.05	5.05		10.0	10.0	
						31.1		5.77		81.9		5.04			10.0		
27/07/10	1239-1250	29/Cloudy	Surface	1.0	26.8	29.7	29.7	5.95	5.93	84.5	84.2	4.09	4.11	4.22	8.0	8.1	8.4
						29.6		5.91		83.9		4.12			8.2		
			Middle	7.8	25.7	30.0	30.0	5.86	5.84	83.2	82.9	4.24	4.23		8.4	8.4	
						29.9		5.82		82.6		4.22			8.4		
			Bottom	14.6	24.4	30.9	30.9	5.73	5.75	81.4	81.7	4.35	4.33		8.8	8.7	
						30.9		5.77		81.9		4.31			8.6		
29/07/10	1452-1505	29/Drizzle	Surface	1.0	26.9	28.3	28.4	6.04	6.06	85.2	85.4	4.37	4.36	4.48	8.8	8.8	9.0
						28.4		6.07		85.6		4.35			8.8		
			Middle	7.8	25.8	29.1	29.1	5.98	5.95	84.3	83.8	4.48	4.49		9.0	9.0	
						29.0		5.91		83.3		4.49			9.0		
			Bottom	14.6	24.7	30.1	30.1	5.85	5.84	82.5	82.4	4.58	4.60		9.2	9.2	
						30.1		5.83		82.2		4.62			9.2		
31/07/10	1557-1613	31/Cloudy	Surface	1.0	27.2	30.1	30.2	6.20	6.17	87.4	87.0	5.11	5.10	4.99	11.0	11.0	10.3
						30.2		6.14		86.6		5.08			11.0		
			Middle	7.7	25.8	30.6	30.6	6.11	6.09	86.2	85.9	4.99	4.94		10.0	9.9	
						30.5		6.07		85.6		4.89			9.8		
			Bottom	14.4	24.9	31.4	31.5	5.87	5.86	82.8	82.6	4.97	4.94		10.0	9.9	
						31.5		5.84		82.3		4.91			9.8		

Mid-Ebb Tide

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
03/07/10	1629-1642	29/Fine	Surface	1.0	25.8	29.8	29.8	6.84	6.82	94.4	94.1	2.87	2.84	2.95	5.8	5.7	5.9		
						29.7		6.79		93.7		2.81			5.6				
			Middle	8.7	24.6	30.5	30.5	6.75	6.73	93.2	92.9	2.92	2.98		2.95	5.8		5.9	5.9
						30.4		6.71		92.6		2.98			6.0				
			Bottom	16.4	22.8	31.2	31.2	6.67	6.65	92.0	91.7	3.03	3.06		3.06	6.0		6.1	6.1
						31.2		6.62		91.4		3.09			6.2				
06/07/10	0955-1008	29/Fine	Surface	1.0	26.6	29.9	29.9	6.50	6.51	88.8	89.0	4.05	4.06	4.59	8.0	8.1	9.1		
						29.9		6.52		89.1		4.07			8.2				
			Middle	9.3	25.8	30.3	30.4	6.32	6.31	85.9	85.8	5.06	5.10		5.08	10.0		10.0	10.0
						30.4		6.30		85.6		5.10			10.0				
			Bottom	17.5	24.6	30.6	30.7	6.16	6.17	83.5	83.7	4.65	4.62		4.62	9.2		9.2	9.2
						30.7		6.18		83.8		4.58			9.2				
08/07/10	1108-1120	30/Fine	Surface	1.0	25.5	31.4	31.4	6.61	6.64	90.5	90.9	3.81	3.84	3.95	7.6	7.6	7.9		
						31.4		6.66		91.2		3.86			7.6				
			Middle	8.8	24.4	32.4	32.4	6.57	6.55	90.0	89.7	3.95	3.99		3.97	8.0		8.0	8.0
						32.3		6.52		89.3		3.99			8.0				
			Bottom	16.6	23.2	33.2	33.3	6.39	6.38	87.5	87.4	4.02	4.04		4.04	8.0		8.1	8.1
						33.3		6.37		87.2		4.05			8.2				
10/07/10	1120-1133	31/Cloudy	Surface	1.0	28.2	31.3	31.3	6.70	6.69	95.8	95.6	5.07	5.11	5.15	11.0	11.0	10.6		
						31.3		6.67		95.3		5.15			11.0				
			Middle	8.7	25.4	31.9	31.9	6.51	6.50	92.4	92.2	5.43	5.37		5.40	11.0		11.0	11.0
						31.9		6.48		92.0		5.37			11.0				
			Bottom	16.4	25.1	32.2	32.2	6.56	6.57	93.1	93.3	4.98	4.91		4.95	10.0		9.9	9.9
						32.2		6.58		93.4		4.91			9.8				
13/07/10	1320-1331	32/Sunny	Surface	1.0	28.7	31.2	31.2	6.59	6.58	94.2	94.0	5.60	5.62	5.41	11.0	11.0	10.7		
						31.1		6.56		93.8		5.64			11.0				
			Middle	8.7	25.8	31.9	32.0	6.40	6.43	91.5	91.9	5.27	5.21		5.24	11.0		11.0	11.0
						32.0		6.45		92.2		5.21			11.0				
			Bottom	16.4	25.1	32.2	32.2	6.27	6.26	89.0	88.8	5.33	5.40		5.37	10.0		10.0	10.0
						32.2		6.24		88.6		5.40			10.0				
15/07/10	1149-1200	29/Fine	Surface	1.0	28.0	31.2	31.2	6.44	6.43	92.7	92.6	5.04	5.05	5.16	10.0	10.0	10.3		
						31.1		6.42		92.5		5.06			10.0				
			Middle	8.8	26.5	31.8	31.8	6.38	6.37	91.8	91.7	5.14	5.18		5.16	10.0		10.0	10.0
						31.7		6.35		91.5		5.18			10.0				
			Bottom	16.6	25.0	32.1	32.1	6.22	6.23	89.6	89.7	5.26	5.27		5.27	11.0		11.0	11.0
						32.0		6.24		89.8		5.27			11.0				
17/07/10	1748-1800	32/Fine	Surface	1.0	27.6	28.2	28.3	6.25	6.25	88.8	88.8	4.39	4.40	4.60	8.8	8.8	9.2		
						28.3		6.25		88.7		4.41			8.8				
			Middle	8.4	26.4	30.2	30.2	6.01	5.99	85.0	85.0	4.60	4.70		4.65	9.2		9.3	9.2
						30.2		5.97		84.9		4.70			9.4				
			Bottom	15.8	25.5	31.3	31.4	5.71	5.74	82.0	82.0	4.74	4.77		4.76	9.4		9.5	9.5
						31.4		5.77		82.0		4.77			9.6				
20/07/10	1028-1040	31/Fine	Surface	1.0	26.7	31.3	31.3	6.02	6.02	85.1	85.2	3.87	3.85	3.87	7.8	7.7	7.7		
						31.2		6.02		85.3		3.82			7.6				
			Middle	8.1	25.2	31.9	31.9	6.00	5.92	85.0	85.0	3.80	3.80		3.80	7.6		7.6	7.6
						31.9		5.83		85.0		3.80			7.6				
			Bottom	15.2	24.9	32.6	32.6	5.77	5.75	82.4	82.4	3.91	3.95		3.95	7.8		7.9	7.9
						32.6		5.73		82.4		3.99			8.0				
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																		
24/07/10	1203-1218	28/Fine	Surface	1.0	27.7	29.8	29.8	5.89	5.91	83.6	83.9	5.04	5.06	5.16	10.0	10.0	10.7		
						29.7		5.93		84.2		5.08			10.0				
			Middle	8.8	26.8	30.1	30.1	5.76	5.78	81.8	82.0	5.27	5.25		5.26	11.0		11.0	11.0
						30.1		5.79		82.2		5.25			11.0				
			Bottom	16.6	24.8	31.0	31.1	5.81	5.83	82.5	82.7	5.16	5.13		5.15	11.0		11.0	11.0
						31.0		5.84		82.9		5.13			11.0				
27/07/10	1253-1304	29/Cloudy	Surface	1.0	26.9	29.7	29.7	5.96	5.95	84.6	84.5	4.29	4.26	4.38	8.6	8.5	8.8		
						29.7		5.94		84.3		4.23			8.4				
			Middle	8.8	25.7	30.1	30.1	5.73	5.74	81.4	81.5	4.47	4.51		4.49	9.0		9.0	9.0
						30.0		5.74		81.5		4.51			9.0				
			Bottom	16.6	24.5	31.0	31.1	5.87	5.88	83.4	83.5	4.39	4.38		4.39	8.8		8.8	8.8
						31.1		5.88		83.5		4.38			8.8				
29/07/10	1509-1524	29/Drizzle	Surface	1.0	26.9	28.4	28.4	6.21	6.20	87.6	87.5	4.25	4.27	4.38	8.6	8.6	8.8		
						28.3		6.19		87.3		4.28			8.6				
			Middle	8.8	25.8	29.1	29.1	6.15	6.14	86.7	86.5	4.37	4.33		4.35	8.8		8.7	8.7
						29.1		6.12		86.3		4.33			8.6				
			Bottom	16.6	24.6	30.2	30.2	5.93	5.92	83.6	83.4	4.55	4.50		4.53	9.2		9.1	9.1
						30.1		5.90		83.2		4.50			9.0				
31/07/10	1616-1629	31/Cloudy	Surface	1.0	27.2	30.2	30.3	6.22	6.21	87.7	87.6	4.89	4.90	4.96	9.8	9.8	9.9		
						30.3		6.20		87.4		4.91			9.8				
			Middle	8.7	25.8	30.6	30.6	6.12	6.15	86.3	86.7	4.90	4.92		4.91	9.8		9.8	9.8
						30.6		6.17		87.0		4.92			9.8				
			Bottom	16.4	24.8	31.5	31.6	5.78	5.76	81.5	81.2	5.02	5.06		5.06	10.0		10.0	10.0
						31.6		5.74		80.9		5.10			10.0				

Mid-Ebb Tide

Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1647-1659	29/Fine	Surface	1.0	25.4	29.8	29.8	6.91	6.93	95.4	95.7	3.47	3.44	3.55	7.0	7.0	7.1
						29.8		6.95		95.9		3.41			7.0		
			Middle	6.1	24.6	30.3	30.4	6.87	6.85	94.8	94.6	3.59	3.56		7.0	7.0	
						30.4		6.83		94.3		3.53			7.0		
			Bottom	11.2	23.0	31.2	31.3	6.75	6.72	93.2	92.8	3.64	3.65		7.2	7.2	
						31.3		6.69		92.3		3.66			7.2		
06/07/10	1010-1023	29/Fine	Surface	1.0	26.6	29.9	30.0	6.56	6.58	89.6	89.9	3.72	3.74	4.04	7.4	7.5	8.1
						30.0		6.60		90.2		3.75			7.5		
			Middle	6.5	26.1	30.4	30.4	6.35	6.34	86.3	86.1	4.06	4.08		8.0	8.1	
						30.4		6.32		85.9		4.10			8.2		
			Bottom	12.0	25.2	30.7	30.8	6.20	6.21	84.1	84.2	4.27	4.30		8.6	8.6	
						30.8		6.21		84.2		4.32			8.6		
08/07/10	1129-1141	31/Fine	Surface	1.0	25.5	31.5	31.6	6.65	6.63	91.1	90.8	3.66	3.69	3.85	7.2	7.4	7.7
						31.6		6.61		90.5		3.72			7.5		
			Middle	6.2	24.4	32.1	32.2	6.53	6.51	89.4	89.2	3.83	3.86		7.5	7.7	
						32.2		6.49		88.9		3.88			7.8		
			Bottom	11.4	23.4	33.1	33.1	6.32	6.33	86.5	86.7	3.98	4.01		8.0	8.0	
						33.1		6.34		86.8		4.03			8.0		
10/07/10	1140-1150	31/Cloudy	Surface	1.0	28.2	31.4	31.4	6.50	6.53	93.5	93.3	4.49	4.52	4.51	9.0	9.0	9.0
						31.4		6.56		93.1		4.55			9.0		
			Middle	6.3	25.6	31.9	32.0	6.29	6.31	88.6	88.9	4.30	4.34		8.5	8.7	
						32.0		6.33		89.2		4.37			8.8		
			Bottom	11.6	25.1	32.2	32.2	6.36	6.35	89.6	89.4	4.72	4.68		9.4	9.3	
						32.1		6.33		89.2		4.63			9.2		
13/07/10	1338-1350	32/Sunny	Surface	1.0	28.5	31.2	31.2	6.41	6.43	91.6	91.9	5.31	5.35	5.24	11.0	11.0	10.7
						31.2		6.45		92.2		5.39			11.0		
			Middle	6.3	26.0	32.0	32.0	6.22	6.21	88.3	88.2	5.15	5.13		10.0	10.0	
						32.0		6.20		88.0		5.10			10.0		
			Bottom	11.6	25.3	32.0	32.1	6.19	6.17	87.8	87.6	5.21	5.26		11.0	11.0	
						32.1		6.15		87.3		5.30			11.0		
15/07/10	1207-1218	30/Fine	Surface	1.0	28.2	31.2	31.2	6.59	6.57	94.2	93.9	5.16	5.18	5.26	10.0	10.0	10.7
						31.2		6.54		93.5		5.19			10.0		
			Middle	6.2	26.5	31.7	31.7	6.45	6.47	92.9	93.1	5.25	5.26		11.0	11.0	
						31.6		6.48		93.3		5.27			11.0		
			Bottom	11.4	25.0	32.0	32.0	6.32	6.33	91.0	91.1	5.36	5.36		11.0	11.0	
						32.0		6.33		91.2		5.35			11.0		
17/07/10	1808-1820	32/Fine	Surface	1.0	27.0	29.1	29.2	6.26	6.28	89.5	89.3	5.02	4.99	4.85	10.0	10.0	9.7
						29.2		6.30		89.1		4.96			10.0		
			Middle	6.6	25.9	30.9	30.9	6.10	6.09	87.2	87.2	4.82	4.81		9.5	9.6	
						30.9		6.08		87.2		4.80			9.6		
			Bottom	12.2	25.0	32.1	32.1	5.90	5.86	84.3	84.3	4.79	4.75		9.6	9.5	
						32.1		5.82		84.3		4.70			9.4		
20/07/10	1045-1056	31/Fine	Surface	1.0	26.8	31.3	31.3	6.22	6.24	88.0	88.2	4.19	4.20	4.56	8.4	8.5	9.0
						31.3		6.26		88.4		4.20			8.5		
			Middle	6.5	25.2	31.5	31.5	6.20	6.18	88.0	87.6	4.81	4.81		9.5	9.6	
						31.5		6.16		87.2		4.80			9.6		
			Bottom	12.0	25.1	31.9	32.0	6.03	6.03	85.3	85.4	4.48	4.69		9.0	9.0	
						32.0		6.02		85.4		4.90			9.0		
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																
24/07/10	1225-1240	29/Fine	Surface	1.0	27.7	29.8	29.8	6.04	6.03	85.5	85.7	4.22	4.25	4.35	8.4	8.5	8.7
						29.7		6.02		85.5		4.27			8.5		
			Middle	6.2	26.8	30.1	30.2	5.86	5.85	83.2	83.0	4.41	4.43		9.0	8.9	
						30.2		5.83		82.7		4.44			8.8		
			Bottom	11.4	24.8	30.9	31.0	5.97	5.96	84.8	84.7	4.36	4.38		8.8	8.8	
						31.0		5.95		84.5		4.39			8.8		
27/07/10	1311-1322	30/Cloudy	Surface	1.0	26.9	29.7	29.7	6.08	6.07	86.3	86.1	4.11	4.09	4.16	8.2	8.1	8.3
						29.6		6.05		85.9		4.06			8.0		
			Middle	6.1	25.6	30.1	30.1	6.03	6.01	85.6	85.4	4.07	4.11		8.0	8.2	
						30.1		5.99		85.1		4.14			8.4		
			Bottom	11.2	24.5	31.1	31.1	5.93	5.91	83.6	83.3	4.28	4.28		8.6	8.6	
						31.0		5.88		82.9		4.27			8.6		
29/07/10	1532-1547	29/Cloudy	Surface	1.0	26.9	28.4	28.5	6.18	6.16	87.1	86.9	4.08	4.07	4.16	8.2	8.1	8.4
						28.5		6.14		86.6		4.05			8.0		
			Middle	6.2	25.9	29.2	29.2	6.07	6.06	85.6	85.5	4.15	4.17		8.5	8.5	
						29.1		6.05		85.3		4.19			8.4		
			Bottom	11.4	24.7	30.2	30.2	5.97	5.96	84.2	84.1	4.23	4.26		8.4	8.5	
						30.1		5.95		83.9		4.28			8.6		
31/07/10	1636-1651	30/Cloudy	Surface	1.0	27.2	30.2	30.3	6.19	6.20	87.3	87.5	4.77	4.81	4.71	9.6	9.6	9.4
						30.3		6.21		87.6		4.84			9.5		
			Middle	6.1	25.7	30.5	30.6	5.97	5.94	84.2	83.8	4.54	4.52		9.0	9.0	
						30.6		5.91		83.3		4.49			9.0		
			Bottom	11.2	24.8	31.5	31.5	5.78	5.80	81.5	81.8	4.78	4.82		9.6	9.7	
						31.5		5.82		82.1		4.85			9.8		



Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/07/10	1410-1420	30/Fine	Surface	1.0	25.7	29.8	29.9	6.92	6.91	95.5	95.4	4.16	4.18	4.27	8.4	8.4	8.5
						29.9		6.90		95.2		4.19			8.4		
			Middle	5.2	24.4	30.4	30.4	6.81	6.80	94.0	93.9	4.23	4.24		8.4		
						30.4		6.79		93.7		4.25			8.4		
			Bottom	9.4	23.0	31.2	31.2	6.67	6.65	92.0	91.7	4.37	4.38		8.8		
						31.2		6.62		91.4		4.39			8.8		
06/07/10	0730-0744	29/Fine	Surface	1.0	26.5	29.9	30.0	6.56	6.57	89.6	89.8	5.67	5.69	5.31	9.6	9.6	9.4
						30.0		6.58		89.9		5.71			9.6		
			Middle	5.5	26.1	30.2	30.2	6.41	6.39	87.1	86.9	5.24	5.27		9.4		
						30.2		6.37		86.6		5.30			9.4		
			Bottom	10.0	25.2	30.6	30.6	6.20	6.22	84.1	84.3	5.00	4.98		9.2		
						30.6		6.23		84.5		4.95			9.2		
08/07/10	0843-0855	29/Fine	Surface	1.0	25.4	31.3	31.3	6.55	6.53	89.7	89.4	4.21	4.20	4.29	8.4	8.4	8.6
						31.3		6.50		89.1		4.18			8.4		
			Middle	5.4	24.6	32.1	32.2	6.46	6.44	88.5	88.2	4.29	4.28		8.6		
						32.2		6.41		87.8		4.27			8.6		
			Bottom	9.8	23.4	33.0	33.1	6.31	6.29	86.4	86.1	4.40	4.39		8.8		
						33.1		6.27		85.8		4.38			8.8		
10/07/10	0902-0912	31/Cloudy	Surface	1.0	27.8	31.2	31.2	6.86	6.88	97.4	97.7	4.58	4.61	4.92	9.2	9.2	9.4
						31.2		6.90		97.9		4.64			9.2		
			Middle	5.3	25.5	31.8	31.8	6.82	6.60	94.0	93.6	5.14	5.11		9.6		
						31.8		6.57		93.2		5.07			9.6		
			Bottom	9.6	25.1	32.0	32.0	6.53	6.52	92.0	91.8	5.02	5.06		9.4		
						32.0		6.50		91.6		5.09			9.4		
13/07/10	1102-1113	32/Sunny	Surface	1.0	28.6	31.2	31.2	6.61	6.59	94.5	94.2	4.23	4.20	3.97	8.4	8.4	8.0
						31.2		6.57		93.9		4.16			8.4		
			Middle	5.4	25.8	31.8	31.9	6.54	6.52	93.5	93.2	3.98	3.95		8.0		
						31.9		6.50		92.9		3.91			8.0		
			Bottom	9.8	25.2	32.1	32.1	6.44	6.42	92.0	91.8	3.75	3.77		7.6		
						32.1		6.40		91.5		3.79			7.6		
15/07/10	0932-0943	28/Fine	Surface	1.0	27.8	31.4	31.4	6.44	6.47	92.7	93.1	4.68	4.66	4.75	9.4	9.3	9.5
						31.3		6.49		93.5		4.63			9.2		
			Middle	5.3	26.4	31.8	31.8	6.36	6.35	91.6	91.1	4.72	4.74		9.4		
						31.8		6.34		90.6		4.75			9.4		
			Bottom	9.6	24.8	32.0	32.1	6.27	6.24	90.3	91.3	4.86	4.87		9.6		
						32.1		6.21		92.2		4.88			9.8		
17/07/10	1518-1530	32/Fine	Surface	1.0	27.6	28.8	28.9	6.40	6.40	91.5	91.5	4.11	4.11	4.24	8.2	8.2	8.5
						28.9		6.40		91.5		4.10			8.2		
			Middle	5.5	26.5	29.7	29.7	6.20	6.18	88.2	88.1	4.15	4.18		8.4		
						29.7		6.15		88.0		4.20			8.4		
			Bottom	10.0	25.2	30.5	30.7	5.96	5.94	85.0	85.0	4.44	4.45		8.8		
						30.8		5.92		85.0		4.45			9.0		
20/07/10	0813-0825	30/Fine	Surface	1.0	26.5	31.9	31.9	6.10	6.08	87.0	87.1	5.93	5.92	5.92	9.6	9.6	9.7
						31.9		6.05		87.1		5.90			9.6		
			Middle	5.3	25.2	31.6	31.6	5.90	5.87	84.4	84.4	5.89	5.78		9.6		
						31.6		5.84		84.4		5.67			9.6		
			Bottom	9.6	25.0	32.0	32.0	5.71	5.70	80.0	79.6	6.05	6.07		9.8		
						32.0		5.69		79.2		6.08			9.8		
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																
24/07/10	0936-0948	28/Fine	Surface	1.0	27.3	29.8	29.8	5.92	5.90	84.1	83.8	5.29	5.31	5.34	9.4	9.4	9.5
						29.7		5.87		83.4		5.33			9.4		
			Middle	5.3	26.6	30.1	30.1	5.71	5.71	81.1	81.0	5.39	5.42		9.6		
						30.1		5.70		80.9		5.45			9.6		
			Bottom	9.6	24.8	31.1	31.2	5.28	5.30	82.9	82.8	5.28	5.30		9.4		
						31.2		5.31		82.6		5.31			9.4		
27/07/10	1035-1046	28/Cloudy	Surface	1.0	26.7	29.6	29.7	5.97	5.96	84.8	84.6	4.47	4.48	4.56	9.0	9.0	9.1
						29.7		5.94		84.3		4.49			9.0		
			Middle	5.3	25.5	30.0	30.0	5.76	5.74	81.8	81.5	4.63	4.64		9.2		
						29.9		5.72		81.2		4.65			9.2		
			Bottom	9.6	24.5	31.1	31.1	5.84	5.85	82.9	83.1	4.55	4.56		9.2		
						31.0		5.86		83.2		4.57			9.2		
29/07/10	1238-1250	28/Drizzle	Surface	1.0	26.9	28.5	28.5	6.05	6.03	85.3	85.0	4.39	4.37	4.46	8.8	8.7	8.9
						28.5		6.01		84.7		4.34			8.6		
			Middle	5.3	25.9	29.2	29.2	5.94	5.96	83.8	84.0	4.42	4.45		8.8		
						29.1		5.97		84.2		4.47			9.0		
			Bottom	9.6	24.7	30.2	30.3	5.83	5.85	82.2	82.4	4.57	4.56		9.2		
						30.3		5.86		82.6		4.54			9.0		
31/07/10	1341-1356	31/Cloudy	Surface	1.0	27.1	30.0	30.1	6.24	6.22	88.0	87.7	4.07	4.06	4.07	8.2	8.2	8.2
						30.1		6.20		87.4		4.04			8.2		
			Middle	5.3	26.0	31.0	31.0	6.11	6.09	86.2	85.9	4.15	4.14		8.4		
						31.0		6.07		85.6		4.13			8.4		
			Bottom	9.6	25.4	31.3	31.4	5.91	5.90	83.3	83.2	4.01	4.00		8.0		
						31.4		5.89		83.0		3.99			8.0		

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1347-1357	30/Fine	Surface	1.0	25.7	29.8 29.7	29.8	6.93 6.87	6.90	95.6 94.8	95.2	2.91 2.93	2.92	3.03	5.8 5.8	5.8	6.0	
			Middle	6.2	24.5	30.3 30.4	30.4	6.78 6.73	6.76	93.6 92.9	93.3	3.01 3.02	3.02		6.0 6.0			6.0
			Bottom	11.4	22.9	31.1 31.2	31.2	6.61 6.65	6.63	91.2 91.8	91.5	3.17 3.12	3.15		6.4 6.2			6.3
06/07/10	0715-0728	29/Fine	Surface	1.0	26.5	29.9 29.9	29.9	6.60 6.58	6.59	90.2 89.9	90.1	4.42 4.40	4.41	4.27	8.8 8.8	8.8	8.5	
			Middle	6.4	26.1	30.2 30.2	30.2	6.40 6.34	6.37	87.0 86.1	86.6	4.26 4.30	4.28		8.6 8.6			8.6
			Bottom	11.7	25.0	30.6 30.7	30.7	6.15 6.18	6.17	83.4 83.8	83.6	4.11 4.13	4.12		8.2 8.2			8.2
08/07/10	0825-0838	29/Fine	Surface	1.0	25.4	31.4 31.4	31.4	6.65 6.61	6.63	91.1 90.5	90.8	3.65 3.69	3.67	3.84	7.4 7.4	7.4	7.7	
			Middle	6.3	24.6	32.3 32.2	32.3	6.50 6.47	6.49	89.1 88.6	88.9	3.84 3.87	3.86		7.6 7.6			7.6
			Bottom	11.6	23.3	33.2 33.2	33.2	6.27 6.24	6.26	85.8 85.4	85.6	3.99 4.01	4.00		8.0 8.0			8.0
10/07/10	0844-0854	31/Cloudy	Surface	1.0	27.7	31.2 31.2	31.2	6.94 6.90	6.92	99.2 98.6	98.9	4.67 4.72	4.70	4.91	9.2 9.4	9.3	9.9	
			Middle	6.2	25.7	31.6 31.7	31.8	6.67 6.63	6.65	94.7 94.1	94.4	5.09 5.01	5.05		11.0 10.0			10.5
			Bottom	11.4	25.2	31.9 32.0	32.0	6.40 6.44	6.42	92.1 91.4	91.8	4.95 4.99	4.97		10.0 10.0			10.0
13/07/10	1044-1054	32/Sunny	Surface	1.0	28.7	31.1 31.2	31.2	6.44 6.47	6.46	92.0 92.5	92.3	4.15 4.10	4.13	4.56	8.2 8.2	8.2	9.1	
			Middle	6.3	26.0	31.8 31.7	31.8	6.29 6.33	6.31	89.3 89.8	89.6	4.47 4.53	4.50		9.0 9.0			9.0
			Bottom	11.6	25.1	32.1 32.0	32.1	6.20 6.24	6.22	88.0 88.6	88.3	5.03 5.09	5.06		10.0 10.0			10.0
15/07/10	0913-0923	28/Fine	Surface	1.0	27.7	31.3 31.3	31.3	6.48 6.45	6.47	93.3 92.9	93.1	4.49 4.53	4.51	4.65	9.0 9.0	9.0	9.3	
			Middle	6.2	26.4	31.8 31.9	31.9	6.48 6.43	6.46	89.4 92.5	91.0	4.67 4.65	4.66		9.2 9.2			9.2
			Bottom	11.4	24.8	32.1 32.2	32.2	6.34 6.37	6.36	90.0 92.3	91.2	4.79 4.77	4.78		9.6 9.6			9.6
17/07/10	1500-1512	32/Fine	Surface	1.0	27.5	28.5 28.5	28.5	6.39 6.39	6.39	91.3 91.3	91.3	4.04 4.02	4.03	4.10	8.0 8.0	8.0	8.2	
			Middle	6.5	26.7	29.6 29.9	29.8	6.19 6.20	6.20	88.5 88.2	88.4	4.15 4.11	4.13		8.2 8.2			8.2
			Bottom	12.0	25.1	31.2 31.2	31.2	6.01 6.01	6.01	85.2 85.3	85.3	4.12 4.16	4.14		8.2 8.4			8.3
20/07/10	0756-0808	30/Fine	Surface	1.0	26.4	31.6 31.6	31.6	6.10 6.10	6.10	87.2 87.3	87.3	5.23 5.20	5.22	5.07	11.0 11.0	11.0	10.2	
			Middle	6.2	25.0	32.1 32.1	32.1	5.89 5.82	5.86	84.2 84.2	84.2	5.11 5.15	5.13		10.0 10.0			10.0
			Bottom	11.4	24.9	32.7 32.7	32.7	5.77 5.76	5.77	80.2 80.5	80.4	4.90 4.81	4.86		9.8 9.6			9.7
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																	
24/07/10	0915-0927	28/Fine	Surface	1.0	27.3	29.7 29.7	29.7	5.98 5.96	5.97	84.9 84.6	84.8	4.08 4.11	4.10	4.23	8.0 8.2	8.1	8.4	
			Middle	6.2	26.5	30.0 30.1	30.1	5.85 5.81	5.83	83.1 82.5	82.8	4.34 4.33	4.34		8.6 8.6			8.6
			Bottom	11.4	24.8	31.2 31.2	31.2	5.77 5.79	5.78	81.9 82.2	82.1	4.28 4.25	4.27		8.6 8.6			8.6
27/07/10	1015-1026	28/Cloudy	Surface	1.0	26.7	29.7 29.7	29.7	6.12 6.10	6.11	86.9 86.6	86.8	4.02 3.99	4.01	4.14	8.0 8.0	8.0	8.3	
			Middle	6.2	25.5	30.0 30.1	30.1	6.01 6.05	6.03	85.3 85.9	85.6	4.14 4.17	4.16		8.2 8.4			8.3
			Bottom	11.4	24.4	31.1 31.1	31.1	5.97 5.95	5.96	84.3 84.5	84.4	4.25 4.28	4.27		8.6 8.6			8.6
29/07/10	1216-1229	28/Drizzle	Surface	1.0	26.8	28.0 28.5	28.3	6.11 6.08	6.10	86.2 85.7	86.0	4.17 4.21	4.19	4.36	8.4 8.4	8.4	8.7	
			Middle	6.2	25.9	29.1 29.2	29.2	6.03 6.01	6.02	85.0 84.7	84.9	4.38 4.40	4.39		8.8 8.8			8.8
			Bottom	11.4	24.7	30.2 30.1	30.2	5.95 5.99	5.97	83.9 84.5	84.2	4.48 4.52	4.50		9.0 9.0			9.0
31/07/10	1317-1332	31/Cloudy	Surface	1.0	27.0	30.1 30.0	30.1	6.18 6.14	6.16	87.1 86.6	86.9	3.94 3.97	3.96	4.34	7.8 8.0	7.9	8.7	
			Middle	6.2	25.9	31.0 31.1	31.1	6.04 6.08	6.06	85.2 85.7	85.5	4.23 4.27	4.25		8.4 8.6			8.5
			Bottom	11.4	25.4	31.5 31.4	31.5	5.89 5.94	5.92	83.0 83.8	83.4	4.79 4.85	4.82		9.6 9.8			9.7

Mid-Ebb Tide

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1330-1343	30/Fine	Surface	1.0	25.7	29.8	29.8	6.89	6.85	95.1	94.6	2.87	2.88	2.97	5.6	5.7	5.9	
						29.8		6.81		94.0		2.89			5.8			
			Middle	5.5	24.5	30.4	30.4	6.73	6.74	92.9	93.1	2.95	2.99		2.97	6.0		6.0
						30.4		6.75		93.2		3.07			6.0			
			Bottom	10.0	22.9	31.2	31.2	6.66	6.67	91.9	92.1	3.05	3.06		3.06	6.0		6.0
						31.2		6.68		92.2		3.05			6.0			
06/07/10	0700-0713	29/Fine	Surface	1.0	26.5	29.9	30.0	6.61	6.62	90.3	90.4	4.12	4.13	3.68	8.2	8.2	7.3	
						30.0		6.62		90.4		4.14			8.2			
			Middle	6.0	26.0	30.2	30.2	6.29	6.31	85.5	85.7	3.67	3.59		3.63	7.2		7.1
						30.2		6.32		85.9		3.59			7.0			
			Bottom	11.0	25.2	30.5	30.5	6.10	6.11	82.7	82.9	3.26	3.26		3.28	6.5		6.6
						30.5		6.12		83.0		3.30			6.6			
08/07/10	0800-0820	29/Fine	Surface	1.0	25.4	31.3	31.4	6.59	6.61	90.2	90.4	3.69	3.72	3.89	7.4	7.4	7.8	
						31.4		6.62		90.6		3.74			7.4			
			Middle	5.7	24.6	32.2	32.2	6.48	6.46	88.7	88.5	3.88	3.92		3.90	7.6		7.8
						32.2		6.44		88.2		3.92			8.0			
			Bottom	10.4	23.3	33.1	33.2	6.29	6.31	86.1	86.4	4.04	4.08		4.06	8.0		8.1
						33.2		6.33		86.7		4.08			8.2			
10/07/10	0830-0844	31/Cloudy	Surface	1.0	27.6	31.2	31.2	6.89	6.87	97.8	97.5	4.49	4.45	4.89	9.0	8.9	10.0	
						31.2		6.85		97.2		4.40			8.8			
			Middle	5.8	25.7	31.7	31.8	6.54	6.52	92.2	92.0	5.02	5.05		5.05	10.0		10.0
						31.8		6.50		91.7		5.08			10.0			
			Bottom	10.6	25.1	31.9	31.9	6.60	6.62	93.7	94.0	5.15	5.17		5.17	11.0		11.0
						31.9		6.64		94.2		5.19			11.0			
13/07/10	1030-1041	32/Sunny	Surface	1.0	28.6	31.1	31.1	6.53	6.52	93.3	93.1	3.97	3.94	3.95	8.0	7.9	7.9	
						31.0		6.50		92.9		3.91			7.8			
			Middle	5.7	26.2	31.6	31.7	6.34	6.32	90.0	89.7	4.15	4.19		4.19	8.2		8.4
						31.8		6.30		89.4		4.23			8.5			
			Bottom	10.4	25.1	31.9	32.0	6.41	6.39	91.6	91.3	3.67	3.74		3.71	7.5		7.5
						32.0		6.37		91.0		3.74			7.4			
15/07/10	0900-0910	28/Fine	Surface	1.0	27.8	31.2	31.3	6.51	6.53	93.7	94.0	3.83	3.84	3.95	7.6	7.7	7.9	
						31.3		6.55		94.3		3.85			7.8			
			Middle	5.6	26.4	31.7	31.8	6.47	6.45	93.2	92.9	3.94	3.91		3.93	8.0		7.9
						31.8		6.43		92.6		3.91			8.0			
			Bottom	10.2	24.9	32.1	32.1	6.31	6.32	91.3	91.3	4.09	4.07		4.08	8.0		8.0
						32.0		6.33		91.2		4.07			8.0			
17/07/10	1445-1458	32/Fine	Surface	1.0	27.6	28.4	28.4	6.43	6.42	91.9	91.7	3.92	3.91	4.03	7.8	7.8	8.0	
						28.4		6.40		91.5		3.90			7.8			
			Middle	6.0	26.9	29.6	29.6	6.21	6.21	88.8	88.8	4.05	4.11		4.08	8.0		8.0
						29.6		6.20		88.7		4.11			8.0			
			Bottom	11.0	25.0	31.0	31.0	5.96	5.98	85.2	85.5	4.04	4.10		4.10	8.0		8.1
						31.0		5.99		85.8		4.15			8.2			
20/07/10	0745-0754	30/Fine	Surface	1.0	26.5	31.7	31.7	6.02	6.05	86.0	86.4	5.25	5.18	4.76	11.0	11.0	9.7	
						31.7		6.08		86.8		5.10			11.0			
			Middle	6.2	25.2	32.2	32.2	5.79	5.78	82.7	82.8	5.03	4.92		4.98	10.0		10.0
						32.2		5.77		82.9		4.92			10.0			
			Bottom	11.4	24.9	32.4	32.4	5.72	5.71	81.1	81.5	4.10	4.13		4.13	8.0		8.1
						32.3		5.70		81.9		4.15			8.2			
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																	
24/07/10	0900-0912	28/Fine	Surface	1.0	27.2	29.8	29.8	6.02	6.02	85.5	85.4	4.12	4.15	4.25	8.2	8.3	8.4	
						29.7		6.01		85.3		4.17			8.4			
			Middle	5.6	26.5	30.1	30.1	5.97	5.95	84.8	84.5	4.23	4.28		4.26	8.4		8.5
						30.0		5.92		84.1		4.28			8.5			
			Bottom	10.2	24.9	31.2	31.2	5.81	5.81	82.5	82.5	4.33	4.33		4.34	8.5		8.6
						31.1		5.80		82.4		4.35			8.6			
27/07/10	1000-1012	28/Cloudy	Surface	1.0	26.8	29.6	29.7	6.10	6.09	86.6	86.5	4.03	4.05	4.15	8.0	8.1	8.3	
						29.7		6.08		86.3		4.07			8.2			
			Middle	5.6	25.4	30.1	30.1	5.98	5.97	84.9	84.7	4.27	4.26		4.26	8.6		8.6
						30.0		5.95		84.5		4.25			8.5			
			Bottom	10.2	24.3	31.0	31.1	5.84	5.86	82.3	82.6	4.13	4.15		4.15	8.0		8.2
						31.1		5.87		82.8		4.16			8.4			
29/07/10	1200-1213	28/Drizzle	Surface	1.0	26.8	28.6	28.6	6.15	6.18	86.7	87.1	4.15	4.17	4.33	8.4	8.4	8.7	
						28.5		6.20		87.4		4.19			8.4			
			Middle	5.6	25.9	29.2	29.2	6.07	6.05	85.6	85.3	4.29	4.32		4.32	8.6		8.6
						29.1		6.03		85.0		4.34			8.5			
			Bottom	10.2	24.7	30.1	30.2	5.93	5.92	83.6	83.5	4.49	4.50		4.50	9.0		9.0
						30.2		5.91		83.3		4.51			9.0			
31/07/10	1300-1314	31/Cloudy	Surface	1.0	26.9	30.0	30.0	6.19	6.20	87.3	87.5	4.11	4.13	4.52	8.2	8.2	9.1	
						29.9		6.21		87.6		4.14			8.2			
			Middle	5.6	26.0	30.9	31.0	6.09	6.07	85.9	85.6	4.68	4.71		4.71	9.6		9.6
						31.0		6.05		85.3		4.73			9.5			
			Bottom	10.2	25.4	31.4	31.4	5.95	5.97	83.9	84.2	4.72	4.74		4.74	9.5		9.6
						31.3		5.99		84.5		4.75			9.6			

Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/07/10	1535-1550	29/Fine	Surface	1.0	25.9	29.7	29.8	6.89	6.91	95.1	95.4	3.91	3.93	4.07	7.8	7.8	8.1	
						29.8		6.93		95.6		3.95			7.8			
			Middle	5.1	24.5	30.4	30.4	6.81	6.79	93.9	93.7	4.08	4.11		4.10	8.0		8.1
						30.3		6.77		93.4		4.11			8.2			
			Bottom	9.2	22.9	31.1	31.2	6.69	6.68	92.3	92.1	4.17	4.21		4.19	8.4		8.4
						31.2		6.66		91.9		4.21			8.4			
06/07/10	0904-0916	29/Fine	Surface	1.0	26.6	30.0	30.0	6.56	6.56	89.6	89.6	3.25	3.27	3.48	6.6	6.6	6.9	
						30.0		6.55		89.5		3.27			6.6			
			Middle	5.8	26.1	30.3	30.4	6.40	6.41	87.0	87.1	3.42	3.45		3.44	6.8		6.8
						30.4		6.42		87.2		3.45			6.8			
			Bottom	10.5	25.3	30.7	30.7	6.27	6.26	85.0	84.9	3.72	3.75		3.74	7.4		7.4
						30.7		6.25		84.8		3.75			7.4			
08/07/10	1010-1023	30/Fine	Surface	1.0	25.3	31.4	31.4	6.62	6.60	90.6	90.4	3.74	3.77	3.89	7.4	7.5	7.7	
						31.4		6.58		90.1		3.79			7.6			
			Middle	5.2	24.6	32.2	32.2	6.51	6.49	89.1	88.9	3.88	3.91		3.90	7.6		7.7
						32.2		6.47		88.6		3.91			7.8			
			Bottom	9.4	23.3	33.1	33.2	6.40	6.38	87.6	87.4	3.99	4.04		4.02	8.0		8.0
						33.2		6.36		87.1		4.04			8.0			
10/07/10	1035-1047	31/Cloudy	Surface	1.0	28.0	31.3	31.3	6.69	6.67	94.9	94.7	5.60	5.64	5.31	11.0	11.0	10.7	
						31.3		6.65		94.4		5.67			11.0			
			Middle	5.6	25.4	31.9	31.9	6.39	6.41	90.7	91.0	5.12	5.06		5.09	10.0		10.0
						31.9		6.43		91.3		5.06			10.0			
			Bottom	10.2	25.2	32.2	32.2	6.43	6.45	91.3	91.6	5.23	5.17		5.20	11.0		11.0
						32.1		6.47		91.8		5.17			11.0			
13/07/10	1237-1247	32/Sunny	Surface	1.0	28.7	31.3	31.3	6.38	6.41	90.5	90.9	5.15	5.18	4.88	11.0	11.0	10.0	
						31.2		6.43		91.3		5.21			11.0			
			Middle	5.4	26.0	32.0	32.0	6.35	6.37	90.1	90.0	4.79	4.84		4.82	9.6		9.6
						31.9		6.38		89.9		4.84			9.6			
			Bottom	9.8	25.2	32.2	32.2	6.37	6.36	90.4	90.2	4.67	4.60		4.64	9.4		9.3
						32.2		6.34		90.0		4.60			9.2			
15/07/10	1107-1118	29/Fine	Surface	1.0	28.0	31.3	31.3	6.51	6.52	93.7	93.8	5.08	5.10	5.24	10.0	10.5	10.8	
						31.2		6.52		93.9		5.12			11.0			
			Middle	5.2	26.5	31.9	31.9	6.44	6.46	92.7	92.9	5.24	5.28		5.26	11.0		11.0
						31.8		6.47		93.1		5.28			11.0			
			Bottom	9.4	25.0	32.0	32.1	6.35	6.37	90.8	91.0	5.35	5.37		5.36	11.0		11.0
						32.1		6.38		91.2		5.37			11.0			
17/07/10	1658-1710	32/Fine	Surface	1.0	28.0	28.9	29.0	6.29	6.29	89.9	89.9	4.15	4.17	4.21	8.2	8.3	8.4	
						29.0		6.29		89.9		4.18			8.4			
			Middle	6.0	26.5	30.2	30.2	6.05	6.06	87.0	87.0	4.17	4.20		4.19	8.4		8.4
						30.2		6.06		86.9		4.20			8.4			
			Bottom	11.0	25.1	31.4	31.4	5.79	5.79	82.9	82.8	4.40	4.16		4.28	8.8		8.6
						31.4		5.79		82.7		4.16			8.4			
20/07/10	0938-0950	31/Fine	Surface	1.0	26.6	31.3	31.5	6.21	6.22	88.4	88.6	3.71	3.74	3.74	7.4	7.4	7.6	
						31.6		6.22		88.7		3.77			7.4			
			Middle	5.8	25.7	31.9	31.9	6.06	6.08	86.2	86.1	3.79	3.80		3.80	7.6		7.6
						31.9		6.08		86.0		3.80			7.6			
			Bottom	10.6	25.1	32.0	32.0	5.96	5.96	85.1	85.0	3.90	3.45		3.68	7.8		7.8
						32.0		5.96		84.9		3.45			7.8			
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																	
24/07/10	1113-1115	28/Fine	Surface	1.0	27.5	29.8	29.8	5.98	5.98	84.9	84.9	4.26	4.27	4.36	8.6	8.6	8.8	
						29.7		5.97		84.8		4.28			8.6			
			Middle	5.2	26.6	30.1	30.1	5.77	5.76	81.9	81.8	4.45	4.42		4.44	9.0		8.9
						30.1		5.75		81.7		4.42			8.8			
			Bottom	9.4	24.8	31.0	31.1	5.86	5.88	83.2	83.4	4.39	4.36		4.38	8.8		8.8
						31.1		5.89		83.6		4.36			8.8			
27/07/10	1211-1222	29/Cloudy	Surface	1.0	26.8	29.7	29.7	5.96	5.97	84.6	84.7	4.17	4.15	4.24	8.4	8.3	8.5	
						29.6		5.97		84.8		4.13			8.2			
			Middle	5.2	25.6	30.2	30.2	5.77	5.76	81.9	81.7	4.33	4.31		4.32	8.6		8.6
						30.1		5.74		81.5		4.31			8.6			
			Bottom	9.4	24.4	31.1	31.1	5.86	5.88	83.2	83.4	4.27	4.22		4.25	8.6		8.5
						31.1		5.89		83.6		4.22			8.4			
29/07/10	1420-1433	29/Drizzle	Surface	1.0	26.9	28.4	28.5	6.20	6.19	87.4	87.2	4.27	4.28	4.38	8.6	8.6	8.7	
						28.5		6.17		87.0		4.29			8.6			
			Middle	5.2	25.8	29.0	29.0	6.12	6.11	86.3	86.1	4.38	4.33		4.36	8.6		8.6
						29.0		6.09		85.9		4.33			8.6			
			Bottom	9.4	24.7	30.2	30.2	6.01	5.99	84.7	84.5	4.47	4.52		4.50	9.0		9.0
						30.1		5.97		84.2		4.52			9.0			
31/07/10	1521-1536	31/Cloudy	Surface	1.0	27.1	30.1	30.2	6.24	6.23	88.0	87.8	5.19	5.20	5.28	11.0	11.0	11.0	
						30.2		6.21		87.6		5.21			11.0			
			Middle	5.1	25.8	30.4	30.5	6.10	6.09	86.0	85.8	5.31	5.29		5.30	11.0		11.0
						30.5		6.07		85.6		5.29			11.0			
			Bottom	9.2	25.0	31.3	31.4	5.87	5.86	82.8	82.7	5.33	5.37		5.35	11.0		11.0
						31.4		5.85		82.5		5.37			11.0			

Mid-Ebb Tide



Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
03/07/10	1555-1607	29/Fine	Surface	1.0	26.0	29.8	29.9	6.91	6.88	95.4	95.0	4.16	4.19	4.31	8.4	8.4	8.6		
						29.9		6.85		94.5		4.22			8.4				
			Middle	8.4	24.6	30.5	30.5	6.79	6.77	93.7	93.5	4.29	4.35		4.32	4.32		8.6	8.6
						30.5		6.75		93.2		4.35			8.6				
			Bottom	15.8	23.0	31.2	31.2	6.63	6.64	91.5	91.6	4.44	4.44		4.43	4.43		8.8	8.8
						31.2		6.64		91.6		4.41			8.8				
06/07/10	0924-0937	29/Fine	Surface	1.0	26.6	30.0	30.0	6.60	6.61	90.2	90.3	3.65	3.65	4.74	7.2	7.2	7.5		
						30.0		6.62		90.4		3.64			7.2				
			Middle	8.8	26.0	30.4	30.4	6.36	6.36	86.4	86.4	6.27	6.30		6.29	6.29		6.6	6.6
						30.4		6.35		86.3		6.30			6.6				
			Bottom	16.6	25.0	30.8	30.8	6.25	6.25	84.8	84.7	4.26	4.30		4.28	4.28		8.6	8.6
						30.8		6.24		84.6		4.30			8.6				
08/07/10	1030-1043	30/Fine	Surface	1.0	25.3	31.3	31.4	6.51	6.49	89.1	88.9	3.97	3.99	4.25	8.0	8.0	8.5		
						31.4		6.47		88.6		4.01			8.0				
			Middle	8.5	24.4	32.3	32.3	6.40	6.39	87.6	87.5	4.28	4.33		4.31	4.31		8.6	8.6
						32.3		6.38		87.4		4.33			8.6				
			Bottom	16.0	23.3	33.3	33.3	6.29	6.26	86.1	85.7	4.42	4.48		4.45	4.45		8.8	8.9
						33.3		6.23		85.3		4.48			9.0				
10/07/10	1050-1102	31/Cloudy	Surface	1.0	28.1	31.3	31.3	6.72	6.70	96.0	95.8	5.43	5.40	5.22	11.0	11.0	10.7		
						31.2		6.68		95.5		5.37			11.0				
			Middle	8.6	25.5	31.9	31.9	6.40	6.42	90.8	91.1	5.03	5.09		5.06	5.06		10.0	10.0
						31.8		6.44		91.4		5.09			10.0				
			Bottom	16.2	25.2	32.2	32.2	6.33	6.35	89.2	89.5	5.17	5.23		5.20	5.20		11.0	11.0
						32.2		6.37		89.8		5.23			11.0				
13/07/10	1250-1302	32/Sunny	Surface	1.0	28.6	31.3	31.3	6.50	6.52	92.9	93.2	5.39	5.35	5.26	11.0	11.0	10.7		
						31.3		6.54		93.5		5.31			11.0				
			Middle	8.3	25.8	32.0	32.0	6.21	6.19	88.1	87.9	5.45	5.51		5.48	5.48		11.0	11.0
						32.0		6.17		87.6		5.51			11.0				
			Bottom	15.6	25.1	32.2	32.2	6.19	6.21	87.8	88.1	4.98	4.93		4.96	4.96		10.0	10.0
						32.1		6.23		88.4		4.93			10.0				
15/07/10	1121-1132	29/Fine	Surface	1.0	28.0	31.2	31.3	6.36	6.37	91.6	91.7	5.12	5.15	5.25	10.0	10.0	10.7		
						31.3		6.37		91.7		5.17			10.0				
			Middle	8.5	26.5	31.8	31.8	6.28	6.25	90.4	90.0	5.23	5.28		5.26	5.26		11.0	11.0
						31.7		6.22		89.6		5.28			11.0				
			Bottom	16.0	25.0	32.0	32.0	6.17	6.15	88.2	89.5	5.32	5.37		5.35	5.35		11.0	11.0
						32.0		6.13		90.7		5.37			11.0				
17/07/10	1716-1730	32/Fine	Surface	1.0	27.7	28.4	28.4	6.16	6.17	87.9	87.8	4.30	4.31	4.27	8.6	8.6	8.5		
						28.4		6.17		87.7		4.32			8.6				
			Middle	9.0	26.3	29.9	30.1	6.00	5.96	85.8	85.5	4.29	4.24		4.27	4.27		8.4	8.5
						30.2		5.92		85.2		4.24			8.4				
			Bottom	17.0	25.3	31.8	31.8	5.73	5.76	82.0	82.5	4.26	4.20		4.23	4.23		8.6	8.5
						31.8		5.79		82.9		4.20			8.4				
20/07/10	1001-1013	31/Fine	Surface	1.0	26.6	31.2	31.2	6.21	6.22	88.8	88.8	4.15	4.14	4.00	8.4	8.3	8.0		
						31.2		6.22		88.7		4.12			8.2				
			Middle	9.0	25.8	31.9	31.9	6.07	6.08	86.0	86.0	4.00	3.92		3.96	3.96		8.0	7.9
						31.9		6.09		85.9		3.92			7.8				
			Bottom	17.0	25.0	32.6	32.6	5.92	5.91	84.9	84.9	3.89	3.89		3.89	3.89		7.8	7.8
						32.5		5.90		84.9		3.89			7.8				
22/07/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3)																		
24/07/10	1120-1135	28/Fine	Surface	1.0	27.5	29.7	29.7	5.95	5.94	84.5	84.4	4.91	4.93	5.04	10.0	10.0	10.3		
						29.6		5.93		84.2		4.95			10.0				
			Middle	8.5	26.6	30.0	30.0	5.78	5.75	82.1	81.7	5.13	5.17		5.15	5.15		11.0	11.0
						29.9		5.72		81.2		5.17			11.0				
			Bottom	16.0	24.8	30.9	31.0	5.87	5.88	83.4	83.5	5.07	5.02		5.05	5.05		10.0	10.0
						31.0		5.88		83.5		5.02			10.0				
27/07/10	1225-1236	29/Cloudy	Surface	1.0	26.8	29.6	29.6	5.86	5.88	83.2	83.4	4.31	4.30	4.37	8.6	8.6	8.7		
						29.6		5.89		83.6		4.28			8.6				
			Middle	8.4	25.6	30.1	30.1	5.68	5.69	80.7	80.8	4.44	4.43		4.44	4.44		8.8	8.8
						30.1		5.69		80.8		4.43			8.8				
			Bottom	15.8	24.4	31.0	31.1	5.78	5.77	82.1	81.9	4.35	4.39		4.37	4.37		8.8	8.8
						31.1		5.75		81.7		4.39			8.8				
29/07/10	1436-1449	29/Drizzle	Surface	1.0	26.9	28.4	28.4	6.01	5.99	84.7	84.5	4.34	4.38	4.52	8.6	8.7	9.0		
						28.4		5.97		84.2		4.41			8.8				
			Middle	8.5	25.8	29.1	29.1	5.93	5.94	83.6	83.8	4.50	4.55		4.53	4.53		9.0	9.0
						29.1		5.95		83.9		4.55			9.0				
			Bottom	16.0	24.7	30.1	30.2	5.82	5.85	82.1	82.5	4.63	4.66		4.65	4.65		9.2	9.2
						30.2		5.87		82.8		4.66			9.2				
31/07/10	1539-1554	31/Cloudy	Surface	1.0	27.1	30.2	30.2	6.31	6.30	89.0	88.8	5.01	4.99	5.01	10.0	10.0	10.1		
						30.2		6.28		88.5		4.97			10.0				
			Middle	8.4	25.9	30.5	30.6	6.08	6.09	85.7	85.8	5.08	5.11		5.10	5.10		10.0	10.5
						30.6		6.09		85.9		5.11			11.0				
			Bottom	15.8	25.0	31.5	31.5	5.97	5.96	84.2	84.1	4.96	4.93		4.95	4.95		10.0	9.9
						31.5		5.95		83.9		4.93			9.8				

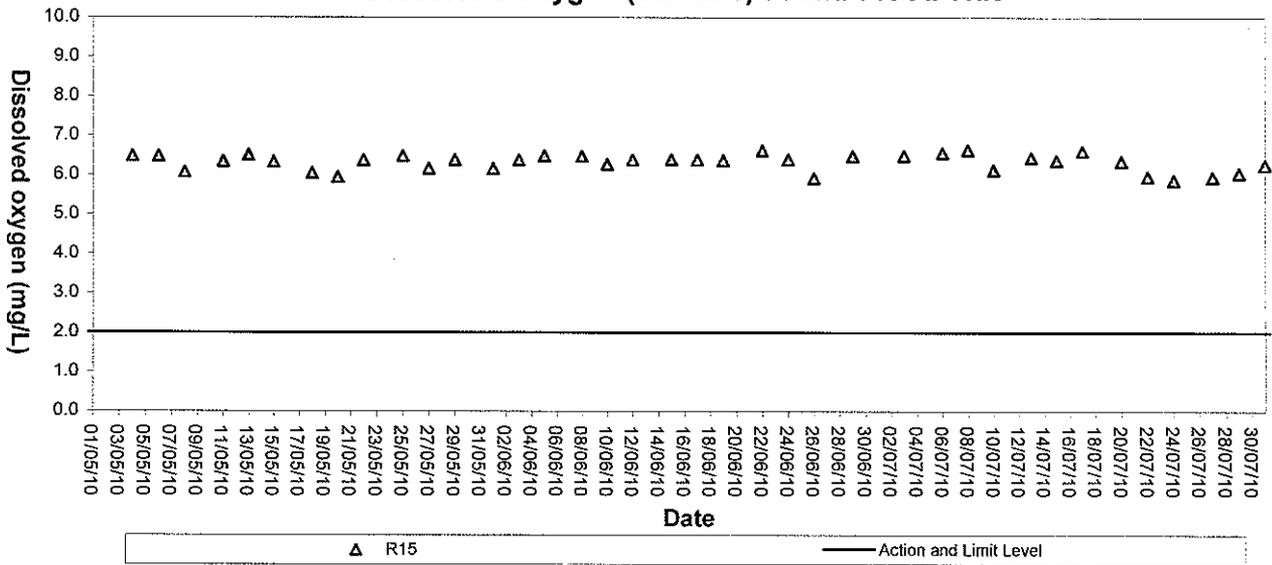


Appendix C3

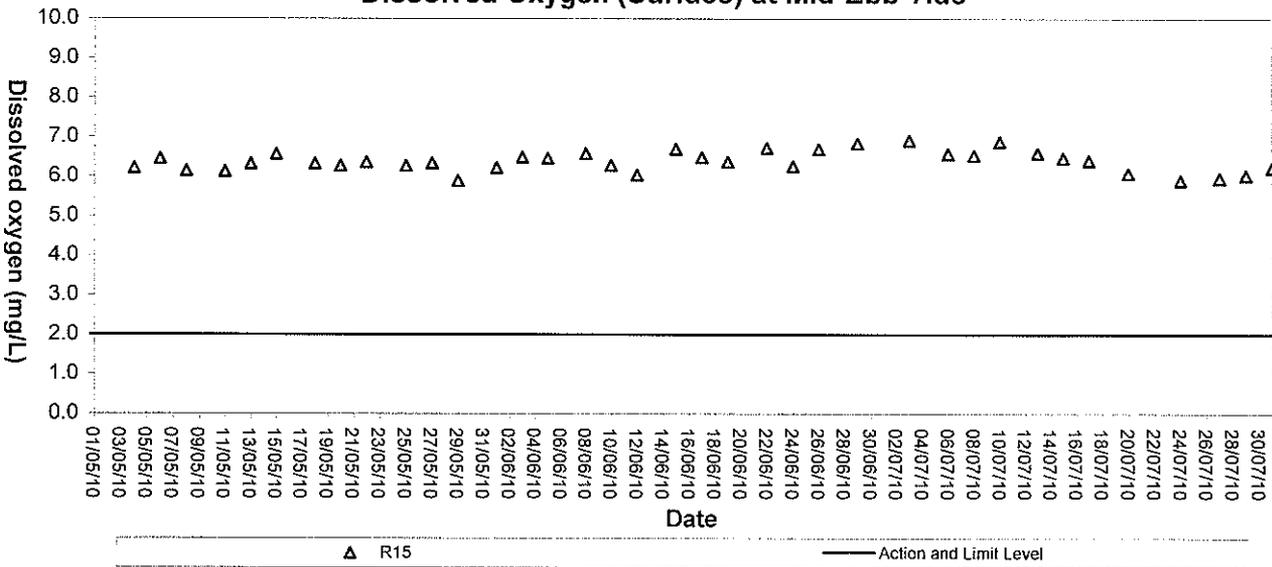
Graphical Plots of Impact Water Quality Monitoring Data



Dissolved Oxygen (Surface) at Mid-Flood Tide

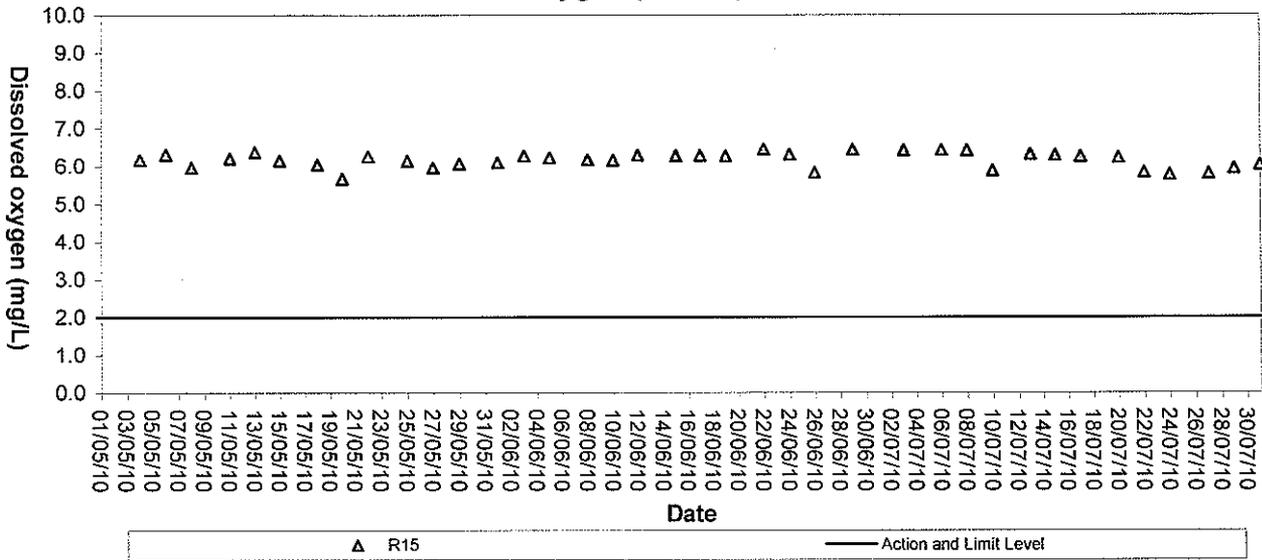


Dissolved Oxygen (Surface) at Mid-Ebb Tide

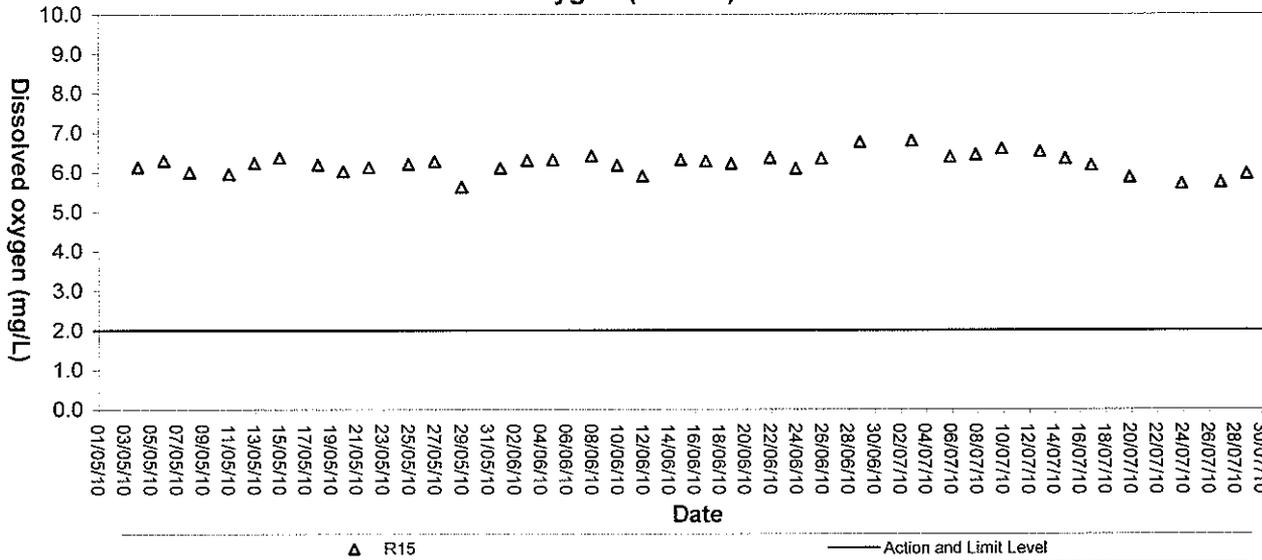




Dissolved Oxygen (Middle) at Mid-Flood Tide

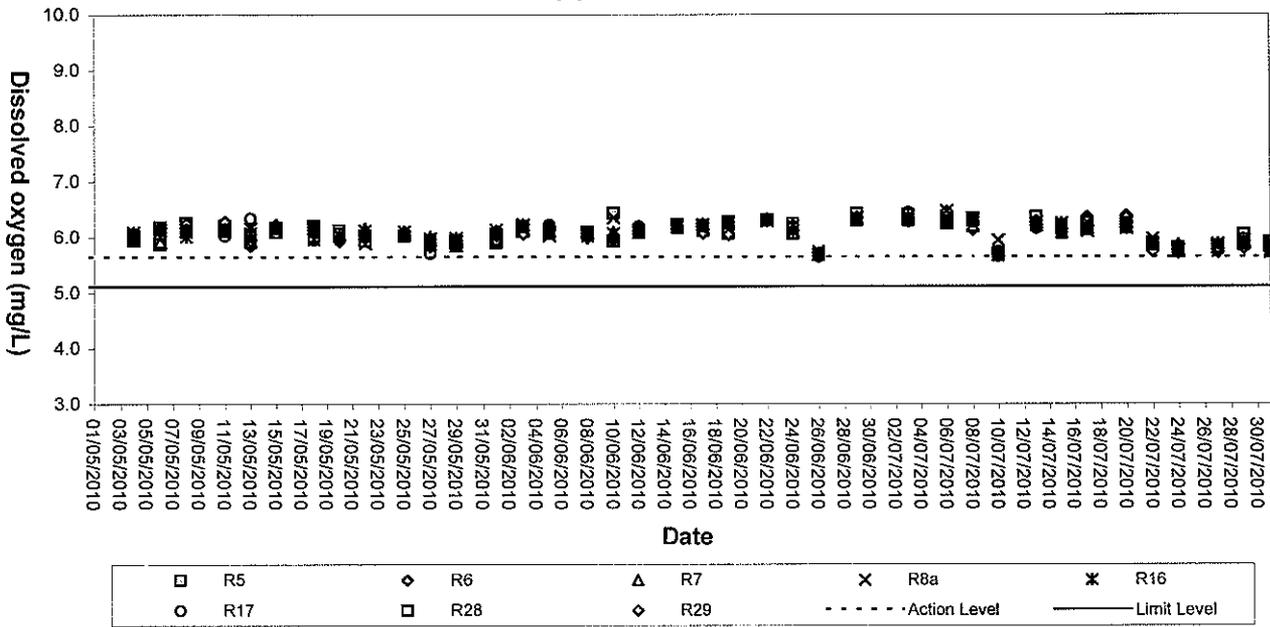


Dissolved Oxygen (Middle) at Mid-Ebb Tide

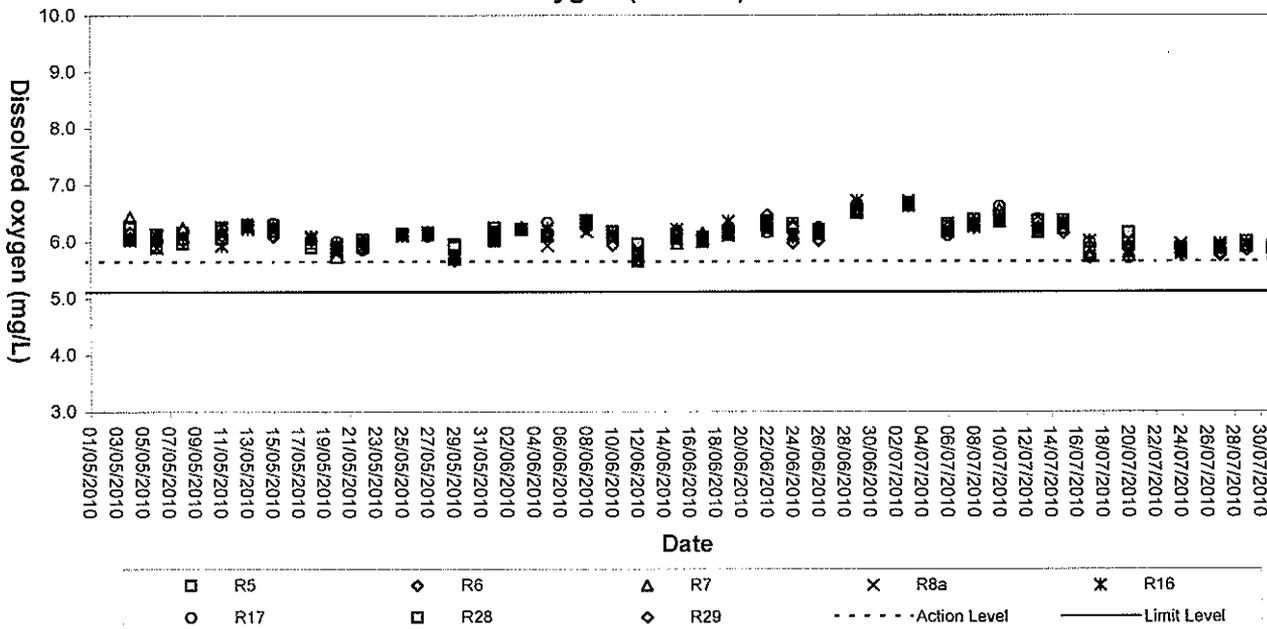




Dissolved Oxygen (Bottom) at Mid-Flood Tide

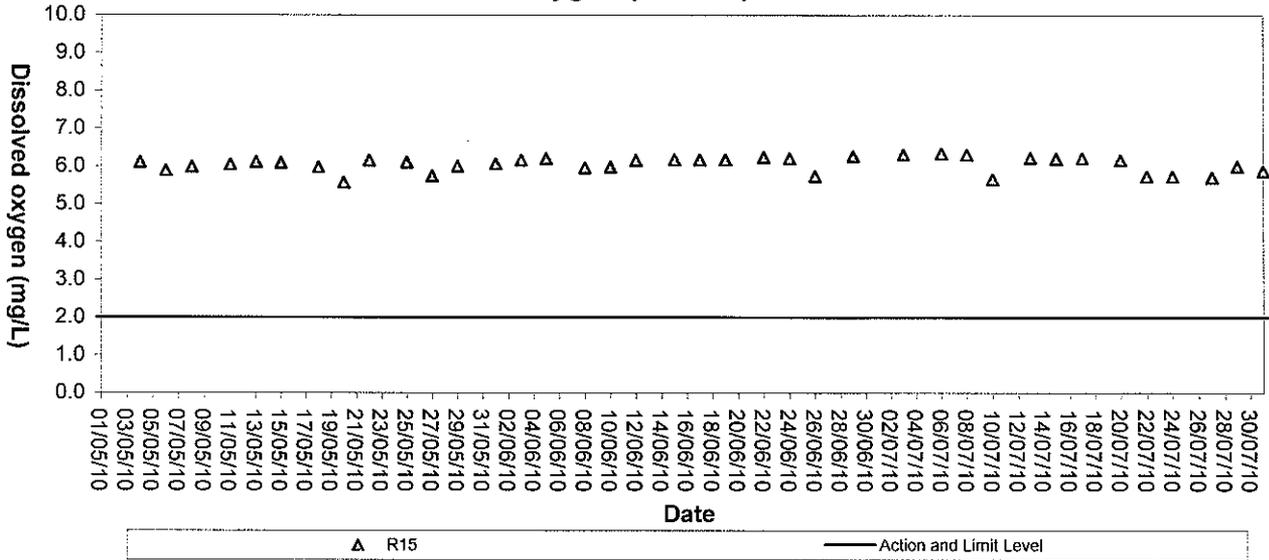


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

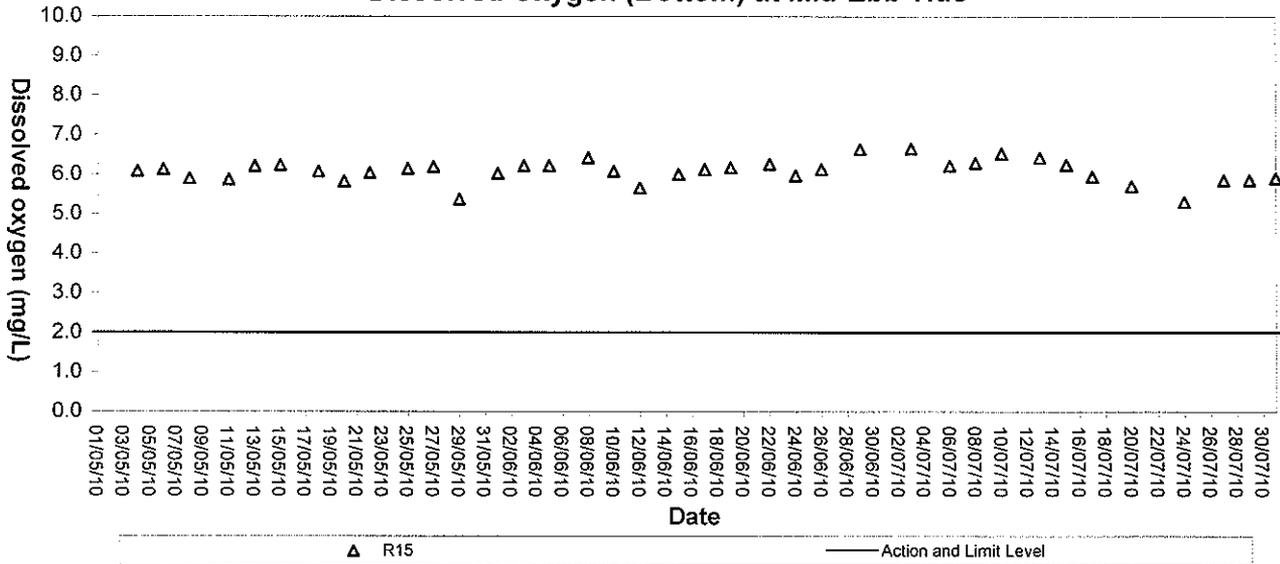




Dissolved Oxygen (Bottom) at Mid-Flood Tide

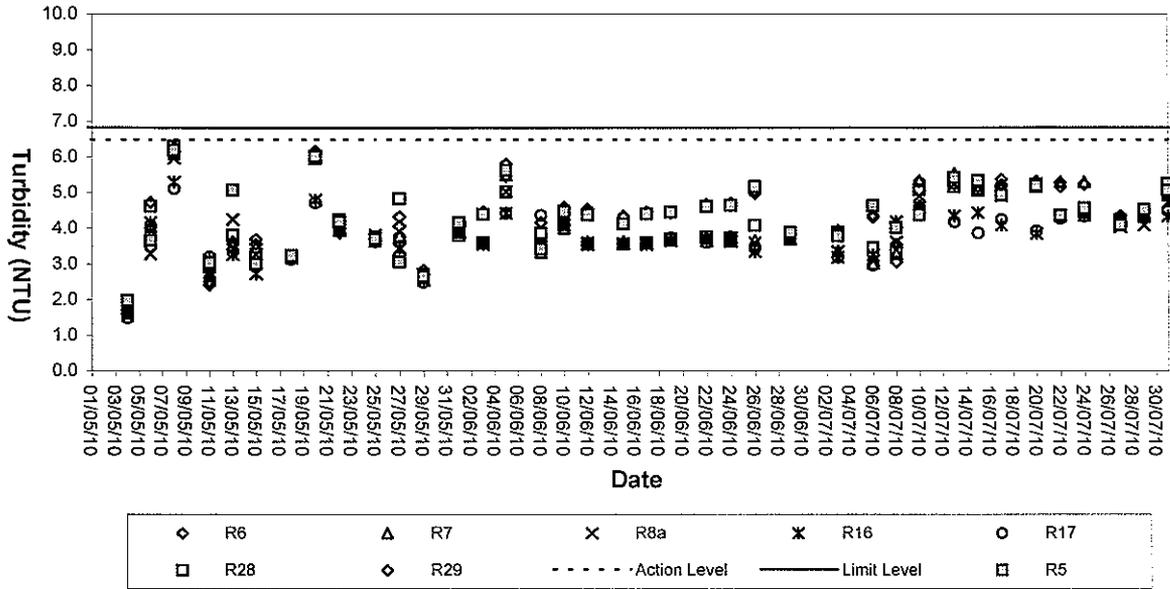


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

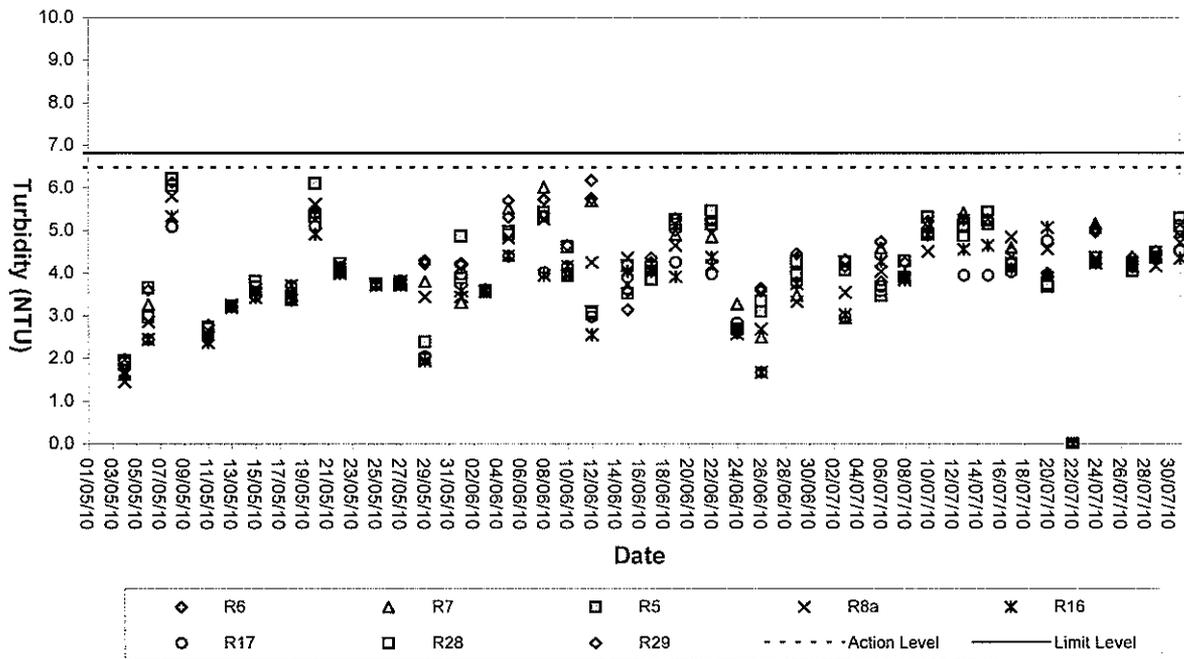




Turbidity (Depth-average) at Mid-Flood Tide

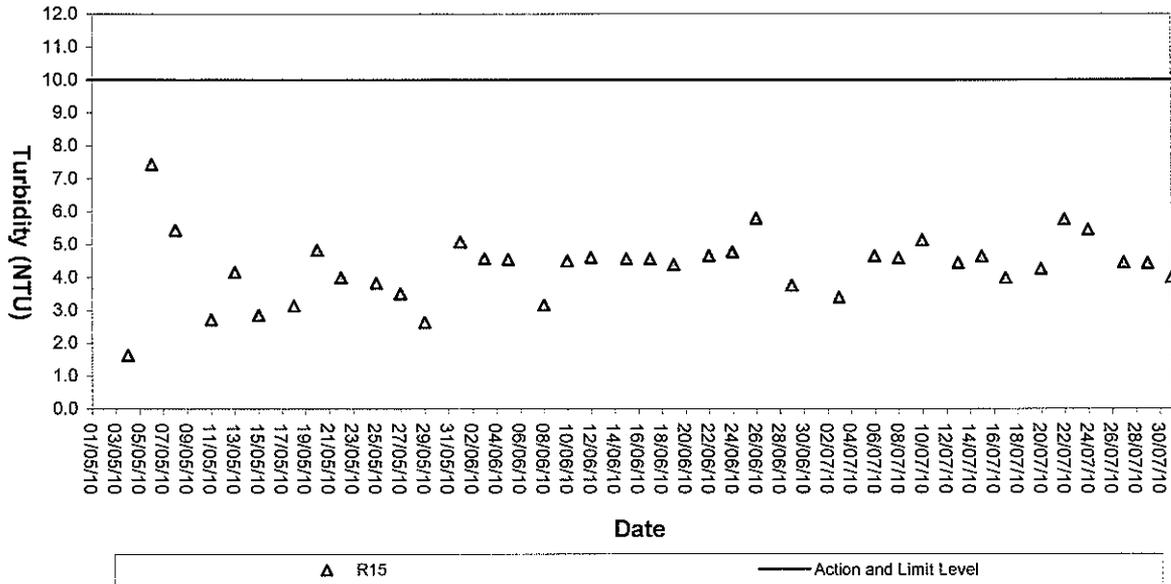


Turbidity (Depth-average) at Mid-Ebb Tide

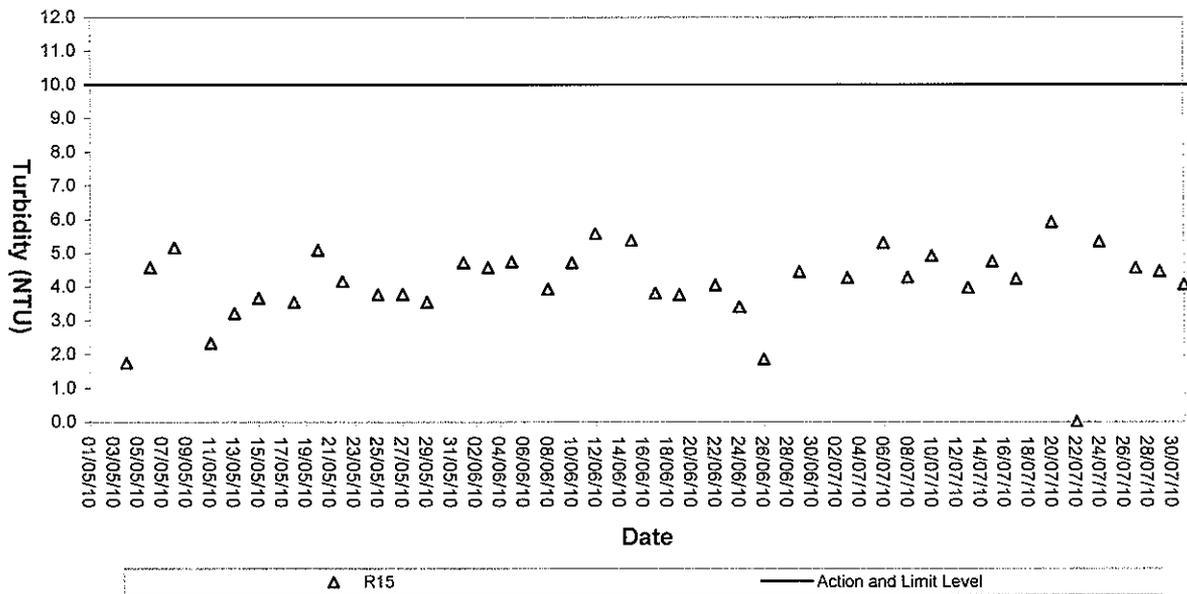




Turbidity (Depth-average) of R15 at Mid-Flood Tide

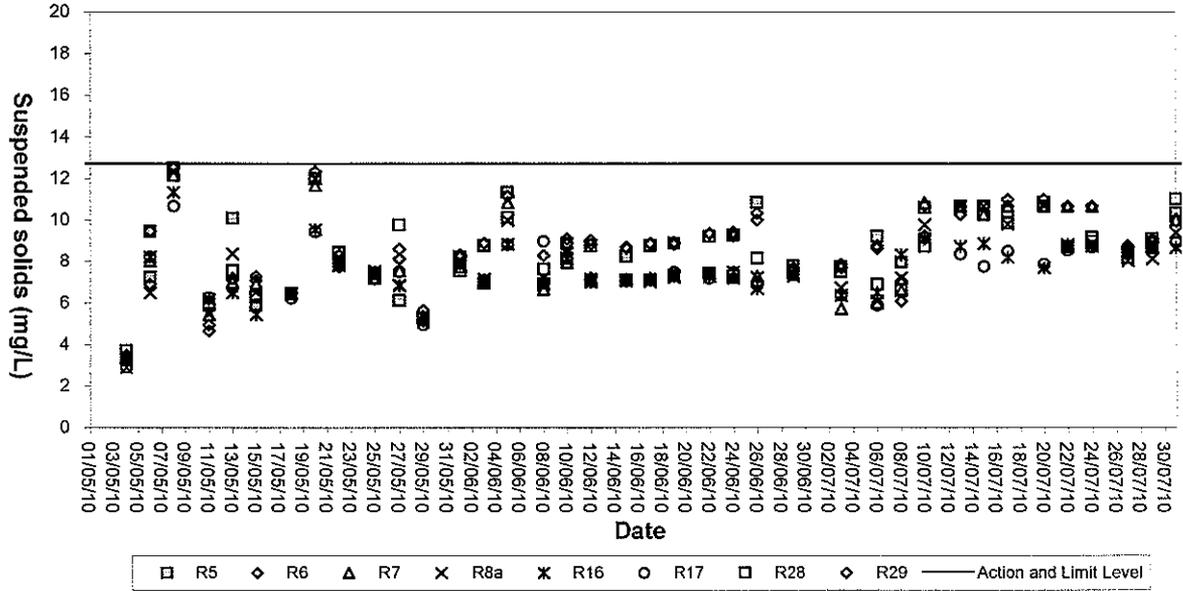


Turbidity (Depth-average) of R15 at Mid-Ebb Tide

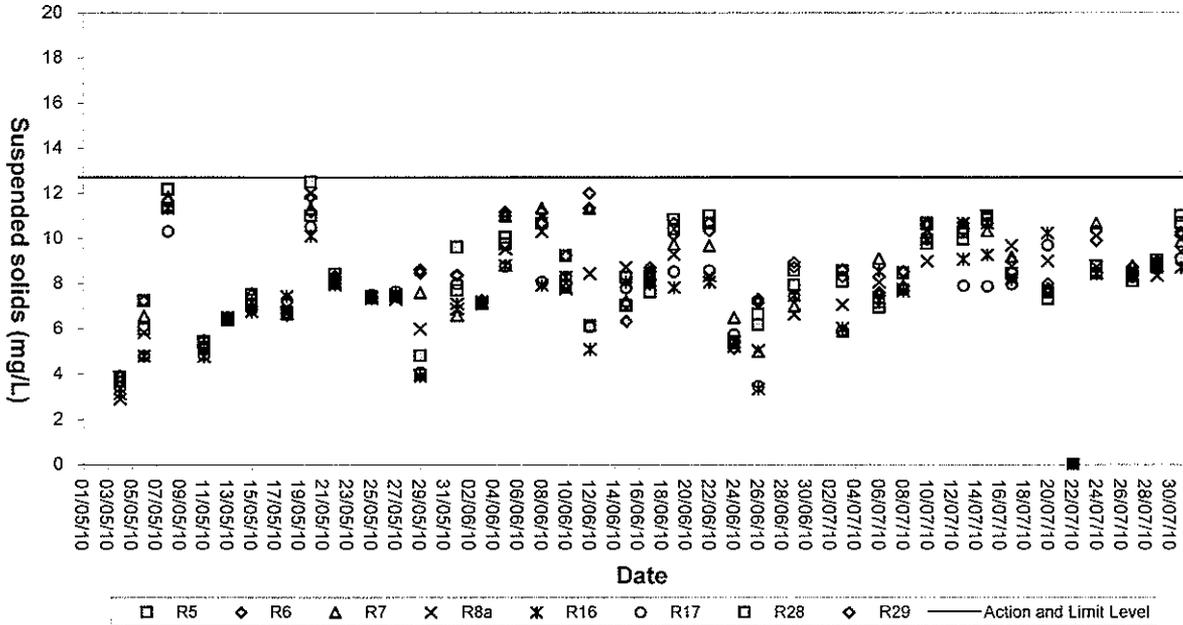




Suspended solids (Depth-average) at Mid-Flood Tide

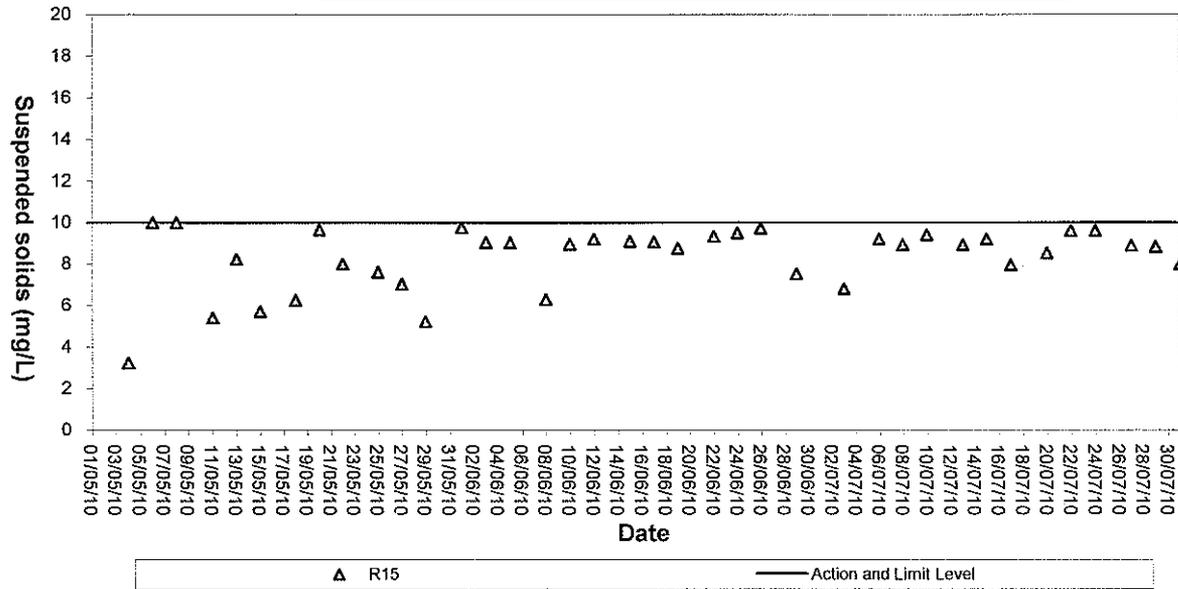


Suspended Solids (Depth-average) at Mid-Ebb Tide

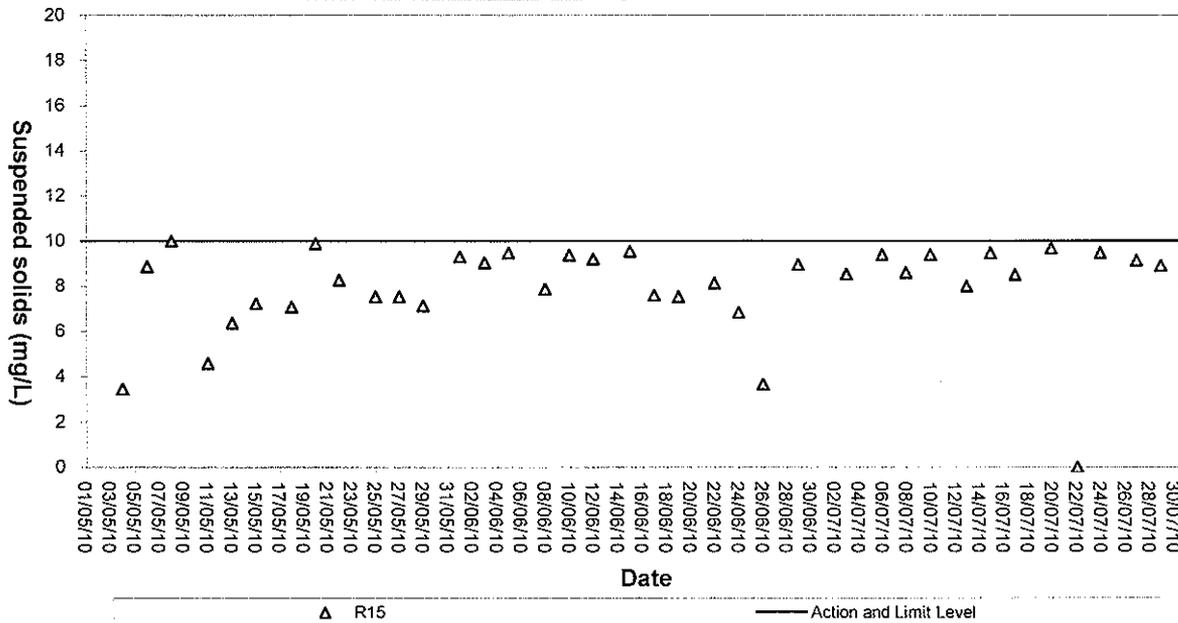




Suspended solids (Depth-average) of R15 at Mid-Flood Tide



Suspended Solids (Depth-average) of R15 at Mid-Ebb Tide





Appendix C4

QA/QC Results of Laboratory Analysis for Water Samples



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
03/07/10	97.1	R5FS	0.0	R8FS	96.1
	101.6	R8FM	7.4	R17FM	95.7
	100.4	R17FB	0.0	C1FB	110.0
	99.8	C2FS	8.0	C4FB	96.0
	99.0	R5ES	0.0	R8ES	104.2
	95.8	R8EM	0.0	R17EM	100.0
	96.6	R17EB	0.0	C1EB	106.1
	99.6	C2ES	0.0	C4EB	97.9
06/07/10	99.8	R5FS	0.0	R8FS	102.1
	103.3	R8FM	0.0	R17FM	107.7
	92.0	R17FB	0.0	C1FB	105.7
	103.3	C2FS	8.7	C4FB	106.1
	95.9	R5ES	0.0	R8ES	102.0
	106.0	R8EM	0.0	R17EM	94.3
	105.6	R17EB	0.0	C1EB	96.1
	100.8	C2ES	6.1	C4EB	100.0
08/07/10	95.8	R5FS	0.0	R8FS	105.9
	105.5	R8FM	0.0	R17FM	101.9
	103.8	R17FB	6.5	C1FB	104.2
	96.0	C2FS	0.0	C4FB	98.0
	99.8	R5ES	0.0	R8ES	103.8
	100.8	R8EM	6.5	R17EM	98.0
	102.1	R17EB	0.0	C1EB	95.8
	92.6	C2ES	6.9	C4EB	106.4
10/07/10	105.8	R5FS	6.1	R8FS	100.0
	95.1	R8FM	0.0	R17FM	100.0
	103.3	R17FB	0.0	C1FB	94.2
	104.4	C2FS	0.0	C4FB	104.1
	96.6	R5ES	0.0	R8ES	98.0
	105.1	R8EM	5.7	R17EM	96.2
	99.8	R17EB	0.0	C1EB	102.0
	92.6	C2ES	5.1	C4EB	103.9
13/07/10	101.0	R5FS	0.0	R8FS	104.0
	101.0	R8FM	4.4	R17FM	109.6
	106.7	R17FB	0.0	C1FB	96.2
	96.1	C2FS	4.9	C4FB	110.6
	106.5	R5ES	0.0	R8ES	102.0
	93.0	R8EM	0.0	R17EM	98.0
	103.8	R17EB	0.0	C1EB	94.2
	103.3	C2ES	4.9	C4EB	100.0
15/07/10	105.4	R5FS	4.9	R8FS	109.4
	100.8	R8FM	0.0	R17FM	107.7
	104.8	R17FB	0.0	C1FB	102.0
	101.1	C2FS	0.0	C4FB	93.9
	101.6	R5ES	4.4	R8ES	95.8
	92.6	R8EM	0.0	R17EM	106.1
	95.4	R17EB	0.0	C1EB	104.0
	104.7	C2ES	4.4	C4EB	92.0

Note: (*)% Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between -10% to 10%.
 (@) % Recovery of Sample Spike should be between 80% to 120%.



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
17/07/10	95.3	R5FS	4.9	R8FS	105.9
	101.0	R8FM	0.0	R17FM	104.0
	100.6	R17FB	5.4	C1FB	110.0
	108.0	C2FS	0.0	C4FB	98.1
	102.0	R5ES	0.0	R8ES	102.0
	102.7	R8EM	5.4	R17EM	94.1
	101.9	R17EB	0.0	C1EB	105.9
	98.3	C2ES	0.0	C4EB	98.0
20/07/10	92.5	R5FS	9.5	R8FS	110.2
	102.2	R8FM	0.0	R17FM	100.0
	92.5	R17FB	0.0	C1FB	106.1
	97.6	C2FS	4.9	C4FB	102.1
	105.4	R5ES	0.0	R8ES	108.2
	92.6	R8EM	0.0	R17EM	103.8
	98.8	R17EB	0.0	C1EB	103.9
	96.9	C2ES	0.0	C4EB	95.9
22/07/10	94.8	R5FS	0.0	R8FS	93.8
	97.4	R8FM	0.0	R17FM	97.9
	93.0	R17FB	0.0	C1FB	106.1
	93.0	C2FS	6.1	C4FB	103.8
24/07/10	102.4	R5FS	5.7	R8FS	95.9
	107.6	R8FM	0.0	R17FM	105.8
	97.2	R17FB	0.0	C1FB	95.8
	101.1	C2FS	0.0	C4FB	97.9
	91.9	R5ES	6.1	R8ES	101.9
	94.5	R8EM	0.0	R17EM	106.0
	97.7	R17EB	0.0	C1EB	93.9
	102.7	C2ES	5.7	C4EB	105.9
27/07/10	104.7	R5FS	9.5	R8FS	98.1
	96.2	R8FM	0.0	R17FM	100.0
	99.0	R17FB	5.4	C1FB	95.8
	94.5	C2FS	5.1	C4FB	96.2
	100.0	R5ES	0.0	R8ES	105.8
	105.4	R8EM	0.0	R17EM	107.8
	98.2	R17EB	0.0	C1EB	95.8
	100.6	C2ES	4.9	C4EB	96.2
29/07/10	95.6	R5FS	0.0	R8FS	93.6
	103.4	R8FM	0.0	R17FM	109.6
	104.4	R17FB	5.7	C1FB	104.1
	103.5	C2FS	0.0	C4FB	96.1
	93.6	R5ES	5.4	R8ES	104.1
	104.6	R8EM	0.0	R17EM	105.8
	97.3	R17EB	0.0	C1EB	98.0
	102.6	C2ES	6.1	C4EB	106.0

Note: (*) % Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between -10% to 10%.
 (@) % Recovery of Sample Spike should be between 80% to 120%.



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
31/07/10	93.9	R5FS	0.0	R8FS	109.4
	99.6	R8FM	0.0	R17FM	106.3
	100.6	R17FB	5.7	C1FB	101.9
	93.7	C2FS	0.0	C4FB	95.9
	99.1	R5ES	0.0	R8ES	107.7
	96.3	R8EM	6.1	R17EM	110.0
	100.2	R17EB	6.1	C1EB	95.7
	100.2	C2ES	0.0	C4EB	98.1

Note: (*) % Recovery of QC sample should be between 80% to 120%.
(#) % Error of Sample Duplicate should be between -10% to 10%.
(@) % Recovery of Sample Spike should be between 80% to 120%.



Appendix D

Event-Action Plans



Event and Action Plan for Construction Noise

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures. 	<ol style="list-style-type: none"> 1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify the source. 2. Notify IEC, ER, EPD and the Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.



Event and Action Plan for Water Quality for Construction Phase

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; and 6. Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; and 2. Make agreement on the mitigation measures to be implemented. 	<ol style="list-style-type: none"> 1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; and 6. Implement the agreed mitigation measures.
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; and 8. Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; and 6. Implement the agreed mitigation measures.



Event and Action Plan for Water Quality for Construction Phase

Event	Action			
	ET Leader	IEC	ER	Contractor
Limit Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; and 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; and 4. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; and 6. Implement the agreed mitigation measures.
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; and 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level. 	<ol style="list-style-type: none"> 1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; and 7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.



Appendix E

Work Programme

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
S1-4440	E1B Existing DN600 SWM Diversion & Demolition	30	25APR10	24MAY10	13NOV10	12DEC10	202d
S1-4445	Portion E1B Through Construction Under Planter	60	24JUN10	21AUG10	02MAR11	02MAR11	192d
S1-4450	Portion E1B Pipe Works CH660.5-677.4 (PT)	60	23AUG10	21OCT10	03MAR11	01MAY11	192d
S1-4460	Portion E1B Pipe Works CH677.4-685.9 (O)	40	01DEC10	09JAN11	31JUL11	08SEP11	242d
S1-4470	Portion E1B Pipe Works CH685.9-693.5 (UC)	20	22OCT10	19NOV10	02MAY11	21MAY11	192d
S1-4480	Portion E1B DN600B SWM Works CH0.0-7.1 (O)	20	25MAY10	23JUN10	02JAN11	31JAN11	222d
S1-4490	Portion E2 DN600B SWM Works CH7.1-63.7 (UC)	50	25MAY10	13JUL10	13DEC10	31JAN11	202d
S1-4500	Portion E2 DN600B SWM Works 63.7-67.9 (O)	30	14JUL10	12AUG10	01FEB11	02MAR11	202d
S1-4510	Area E1B+E2 SWM Portional Pipe Testing	14	25JAN11	07FEB11	09SEP11	23SEP11	227d
Portion E1C + E1D							
S1-4710	Portion E1C DN300 FWM Works CH0.0-50.0 (UC)	50	05JAN10	23FEB10	29DEC10	16FEB11	356d
S1-4720	E1C DN300 FWM Diversion Main Testing	14	24FEB10	03MAR10	17FEB11	02MAR11	356d
S1-4730	E1C Exst. DN300 FWM Diversion & Demolition	30	10MAR10	08APR10	03MAY11	01APR11	356d
S1-4740	Portion E1C DN800 SWM Works CH0.0-52.0 (UC)	80	09APR10	27JUN10	21JUN11	20JUN11	356d
S1-4750	Portion E1C DN800 SWM Works CH52.0-90.0 (O)	80	01FEB11	21JUN11	08SEP11	08SEP11	140d
S1-4760	Area E1C Portional Pipe Testing	14	22APR11	05MAY11	09SEP11	23SEP11	140d
Portion E2							
S1-5010	Portion E2 Marine Dept Advance Notice	90	07OCT09	04JAN10	21NOV09	18FEB10	45d
S1-5020	WHTCL Consent For Works Within Tunnel Area	120	07SEP09	04JAN10	22OCT09	18FEB10	45d
S1-5030	Chamber Modification - 180 Days of Portion E2	180	07SEP09	09MAR10	05MAR10	05MAR10	0
S1-5040	Portion E2 Trial Run	60	07SEP09	05NOV09*	07SEP09	05NOV09*	0
S1-5050	Portion E2 Trial Pit & Utilities Detection	15	05JAN10	19JAN10	19FEB10	05MAR10	45d
S1-5060	Portion E2 Initial & Utilities Survey	30	04FEB10	05MAR10	04FEB10	05MAR10	0
S1-5070	Portion E2 Pipe Works CH688.5-752.5 (UC)	80	11NOV10	29JAN11	22MAY11	09AUG11	192d
S1-5080	Portion E2 Pipe Works CH752.5-780.5 (O)	30	10AUG10	09SEP10	10AUG10	03OCT10	0
S1-5090	TL-C FWM Sleeve Jacking CH790.5-977.7 (A1-A3)	70	26JUL10	03OCT10	06JUN11	15JUL11	0
S1-5100	Portion E2 Pipe Works CH977.7-995.5 (O)	25	16JUL11	09AUG11	16JUL11	09AUG11	0
S1-5110	TL-E SWM Sleeve Jacking CH90.0-225.5 (A1-A4)	120	04OCT10	31JAN11	04OCT10	31JAN11	0
S1-5115	TL-E DN800 SWM Pipe Installation CH90.0-225.5	50	23MAR11	11MAY11	23MAR11	11MAY11	0
S1-5120	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	12MAY11	05JUN11	12MAY11	05JUN11	0
S1-5130	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	142	03MAR10	25JUL10	06MAR10	25JUL10	0
S1-5135	TL-F DN800 SWM Pipe Installation CH252.0-432.0	50	01FEB11	22MAR11	01FEB11	22MAR11	0
S1-5140	Area E2 Portional Pipe Testing	14	09SEP11	22SEP11	09SEP11	22SEP11	0
Portion F							
S1-6010	Portion F Pipe Works CH695.5-1240.5 (O)	180	23NOV10	21MAY11	10DEC10	10JUN11	20d
S1-6020	Portion F DN800 SWM Works CH432.0-494.7 (O)	120	26JUL10	22NOV10	15AUG10	12DEC10	20d
S1-6030	Area F Portional Pipe Testing	14	22MAY11	04JUN11	09SEP11	23SEP11	110d
Portion H1							
S1-7010	Portion H1 Temporary Assess Road	80	27OCT09	14JAN10	31OCT09	18JAN10	4d
S1-7020	Portion H1 Pipe Works CH1465.5-1516.5 (O)	40	22MAY11	30JUN11	11JUN11	20JUL11	20d
S1-7030	Portion H1 Pipe Works CH1516.5-1544.7 (O-S wall)	50	21JUL11	08SEP11	21JUL11	08SEP11	0
S1-7040	Area H1 Portional Pipe Testing	14	09SEP11	22SEP11	09SEP11	22SEP11	0
Portion J							
S1-8010	Portion J Pipe Works CH0.0-48.0 (O-S Wall)	40	28JUL11	08SEP11	31JUL11	08SEP11	2d
S1-8020	Portion J Pipe Works CH48.0-339.0 (O)	300	01OCT10	27JUL11	04OCT10	30JUL11	3d
S1-8030	Portion J Kiosk for RTU & Connect To SCADA	30	28JUL11	28AUG11	10AUG11	08SEP11	13d
S1-8040	Portion J Pipe Works CH339.0-386.4 (TL-D)	208	09MAR10	30SEP10	09MAR10	03OCT10	3d
S1-8050	Portion J Pipe Works CH386.4-396.4 (O)	40	01OCT10	09NOV10	12MAY11	20JUN11	222d
S1-8060	Portion J Pipe Works DN1000 CH0.0-22.7 (O)	60	10NOV10	28JAN11	21JUN11	08SEP11	222d
S1-8070	Area J Portional Pipe Testing	14	07SEP11	20SEP11	09SEP11	23SEP11	2d
Portion K							
S1-9010	Within 365 Days Commencement of Portion K	365	07SEP09	06SEP10	02NOV09	01NOV10	56d
S1-9020	Portion K Initial Survey	15	07SEP10	21SEP10	02NOV10	16NOV10	56d

Start date 07SEP09
 Finish date 05NOV12
 Data date 07SEP09
 Run date 02NOV09
 Page number 2A
 S. Primavera Systems, Inc.

Master Programme Rev. B1

Wo Hing - Penta-Ocean Joint Venture

Legend:

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
S1-9030	Portion K Utilities Detection & Trial Pit	20	22SEP10	11OCT10	17NOV10	06DEC10	56d
S1-9040	Portion K Pipe Works (Construction of MBV)	200	12OCT10	28APR11	07DEC11	24JUN11	56d
S1-9050	Portion K Kiosk for RTU & Connect To SCADA	30	30APR11	29MAY11	25JUN11	24JUL11	56d
S1-9060	Area K Constructed MBV Testing	60	30MAY11	28JUL11	25JUL11	22SEP11	56d
Marine Works (Portion L)							
S1-M1000	Permit Application & Advance Notification	120	07SEP09	04JAN10	07SEP09	04JAN10	0
S1-M1010	Submission & Approval - MS & Temp Works Design	120	07SEP09	04JAN10	02OCT09	28JAN10	26d
S1-M1020	Ballistic Survey	120	07SEP09	04JAN10	17SEP09	14JAN10	10d
S1-M1030	Material Procurement & Delivery	180	09NOV09	04MAY10	01DEC09	29MAY10	26d
S1-M1040	Submission & Approval of EM&A Manual	90	07SEP09	05DEC09	08OCT09	05JAN10	31d
S1-M1050	EM&A - Monitoring & Update	60	06DEC09	06SEP10	06JAN10	07OCT11	15d
S1-M1060	Portion H1 Coating Yard Set-up	60	06MAR10	04MAY10	31MAR10	29MAY10	26d
S1-M1070	Portion H1 Pipe Material On-site Coating	90	05MAY10	02AUG10	30MAY10	27AUG10	25d
S1-M1080	West Kowloon Cofferdam for Landfall (H1)	180	05JAN10	03JUL10	15JAN10	13JUL10	10d
S1-M1090	Sai Ying Pun Cofferdam for Landfall (J)	180	05JAN10	03JUL10	15JAN10	13JUL10	10d
S1-M2050	Set-up For Pipe Pulling	60	04JUL10	01SEP10	14JUL10	11SEP10	10d
S1-M2070	Dredging Works	150	15APR10	11SEP10	15APR10	11SEP10	0
S1-M2080	Portion I Submarine Pipe Pulling	130	12SEP10	19JAN11	12SEP10	19JAN11	0
S1-M2090	Portion H1&J Tie-in With Submarine Pipe Line	30	20JAN11	18FEB11	20JAN11	18FEB11	0
S1-M2100	Portion I Submarine Pipe Pressure Testing & CCTV	30	19FEB11	20MAR11	19FEB11	20MAR11	0
S1-M2110	Portion H1&J Seawall Reinstatement	120	20APR11	17AUG11	20APR11	17AUG11	0
S1-M2120	Portion I Submarine Pipeline Backfilling	185	21MAR11	21SEP11	21MAR11	21SEP11	0
S1-M2130	CP Test Box Installation (On Land)	60	21MAR11	19MAY11	25JUL11	22SEP11	126d
S1-M2140	CIP Test (Close Internal Potential Survey)	30	22SEP11	21OCT11	08NOV11	08NOV11	16d
S1-M2150	Completion of Section 1 Works	0	08NOV11*	08NOV11*	08NOV11*	08NOV11*	0
Section 2							
S2-1010	Submission & Approval - XP, MS & Temp Works	180	07SEP09	05MAR10	07SEP09	05MAR10	0
S2-1020	Initial & Utilities Survey	90	07SEP09	05DEC09	07SEP09	05DEC09	0
S2-1030	Utilities Detection & Trial Pit	30	06DEC09	04JAN10	06DEC09	04JAN10	0
S2-1040	Within 90 Days Commencement of Portion A	90	07SEP09	05DEC09*	07SEP09	05DEC09*	0
S2-2010	Portion A Pipe Works CH100-88.5 (O)	150	06MAR10	02AUG10	06MAR10	02AUG10	0
S2-2020	Portion A Kiosk For RTU & Connect To SCADA	30	03AUG10	01SEP10	09AUG10	07SEP10	6d
S2-2030	Portion A Pipe Trough Construction CH88.5-102	30	05JAN10	03FEB10	05JAN10	03FEB10	0
S2-2040	Portion A Pipe Works CH88.5-102 (PT)	30	04FEB10	05MAR10	04FEB10	05MAR10	0
S2-2050	Portion A Pipe Works CH102.0-105.0 (O)	30	03AUG10	01SEP10	09AUG10	07SEP10	6d
S2-2060	Pipe Testing & Reinstatement	60	02SEP10	31OCT10	08SEP10	06NOV10	5d
S2-3010	Completion of Section 2 Works	0	08NOV10*	08NOV10*	08NOV10*	08NOV10*	0
Section 4							
S4-1010	Submission & Approval - TTA, MS & Temp Work	540	07SEP09	09MAR11	21OCT09	09MAR11	0
S4-1020	Initial Surveying	120	07SEP09	04JAN10	21OCT09	17FEB10	44d
S4-1030	Utilities Detection & Trial Pit	90	07SEP09	05DEC09	21OCT09	19JAN10	44d
S4-2010	Portion C2 Pipe Works CH325.5-387.5 (O)	20	16NOV09	05DEC09	30DEC09	16JAN10	40d
S4-2020	Portion G Pipe Works CH1240.5-1438.7 (O)	100	27SEP10	04JAN11	01OCT10	06JAN11	4d
S4-2030	Portion G Kiosk for RTU & Connect To SCADA	210	15JAN10	12AUG10	15JAN10	12AUG10	4d
S4-2040	Portion G Pipe Works CH1438.7-1464.7 (O)	30	13AUG10	11SEP10	08FEB11	09MAR11	179d
S4-2050	Portion G Pipe Works CH1464.7-1466.5 (O)	45	13AUG10	26SEP10	17AUG10	30SEP10	4d
S4-2060	Portion G Pipe Works CH1464.7-1466.5 (O)	35	27SEP10	31OCT10	05DEC10	06JAN11	65d

Master Programme Rev. B1

Wo Hing - Penta-Ocean Joint Venture

Start date: 07SEP09
 Finish date: 08NOV12
 Data date: 07SEP09
 Run date: 02NOV09
 Page number: 3A
 © Primavera Systems, Inc.

Legend:
 Early bar
 Progress bar
 Critical bar
 Summary bar
 Start milestone point
 Finish milestone point

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	2009		2010		2011		2012		2013	
			Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float	2009	2010	2011	2012
S4-3010	Pipe Testing & Reinstatement	60	05JAN11	05MAR11	06JAN11	05MAR11	4d	4d				
S4-3020	Completion of Section 4 Works	0	05MAR11*	05MAR11*			0	0				
Section 5												
		1155	07SEP09	05NOV12	14JUL10	05NOV12	0	0				
Landscape Softworks and Establishment Works												
BB-9010	Landscape works	845	07SEP09	31DEC11	14JUL10	05NOV12	310d	310d				
BS-9020	Reinstatement of Portion H1 & H2	203	07NOV11	27MAY12	17APR12	05NOV12	162d	162d				
BS-9030	Promenade of Portion H1 & H2 Handover to LCSD	0		27MAY12		05NOV12	162d	162d				
BS-9300	Completion of Section 5 Works	0		05NOV12*		05NOV12*	0	0				





Appendix F

ET Weekly Site Inspection Records

Contract No. 9WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
Water Quality				
Mitigation Measures for other Construction Activities				
<ul style="list-style-type: none"> Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WZS Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices. Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WZ under the TM-DSS. Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. 	√			
Waste Management				
C&D Materials				
<ul style="list-style-type: none"> Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable. C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses. A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods. 	√		√	
Chemical Waste				
<ul style="list-style-type: none"> Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility. 	√			

Contract No. 9WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Waste Management				
General Refuse				
General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√			
A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√			
An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√			
Marine Dredged Sediment (During transportation and disposal)				
Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved	√			
Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD	√			
Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	√			
Good Site Practices				
Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√			
Training of site personnel in proper waste management and chemical handling procedures	√			
Provision of sufficient waste disposal points and regular collection of waste	√			
Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√			
Waste Reduction Measures				
Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√			
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√			
Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√			
Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√			
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Marine Ecology				
Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	✓			
Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	✓			
Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.		✓		Item 1
Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	✓			
Good Site Practices				
The Environmental Permit should be displaced conspicuously on site.	✓			
Construction noise permits should be posted at site entrance or available for site inspection.	✓			
Chemical storage area provided with lock and located on sealed areas.	✓			
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	✓			
Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
All generators, fuel and oil storage are within bundle areas.	✓			
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	✓			
A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	✓			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	The silt screen at the sea water intake at Kowloon South Salt Water Pumping Station was found damaged.	Continue follow-up	To repair the silt screen and maintain it properly.	100706_001& 100706_002	13/07/10

Remark

--

Inspected by	Name	Signature	Date
	C.K.Li		06 July 2010

Contract No. 9/MWSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Photos



Photo 100706_001



Photo 100706_002



Contract No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	✓			
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓			
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓			
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Compressors and generators should operate with door closed.	✓			
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓			
Water Quality				
Mitigation Measures for Dredging				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.	✓			
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.	✓			
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	✓			
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	✓			
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓			
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard.	✓			
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	✓			
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport.	✓			
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds.	✓			
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	✓			
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments.	✓			

Implementation Stages*	Remark		
	Yes	No	Not Obs
Environmental Checklist			
Waste Management			
General Refuse			
General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√		
A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√		
An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√		
Marine Dredged Sediment (During transportation and disposal)			
Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved	√		
Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD	√		
Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	√		
Good Site Practices			
Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√		
Training of site personnel in proper waste management and chemical handling procedures	√		
Provision of sufficient waste disposal points and regular collection of waste	√		
Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√		
Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√		
Waste Reduction Measures			
Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√		
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√		
Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√		
Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√		
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√		

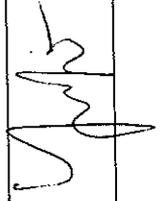
Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Marine Ecology				
• Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	√			
• Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	√			
• Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√			
• Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√			
Good Site Practices				
• The Environmental Permit should be displaced conspicuously on site.	√			
• Construction noise permits should be posted at site entrance or available for site inspection.	√			
• Chemical storage area provided with lock and located on sealed areas.	√			
• All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
• Any unused chemicals or those with remaining functional capacity should be recycled.	√			
• All generators, fuel and oil storage are within bundle areas.	√			
• Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
• A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Contract No. 9/WSD/08
 Laying of Western Cross Harbour Main and Associated Land Mains
 From West Kowloon to Sai Ying Pun

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	The silt screen at the sea water intake at Kowloon South Salt Water Pumping Station is repaired.	Closed		100713_001	---

Remark

Inspected by	Name C.K.Li	Signature 	Date 13 July 2010
--------------	----------------	--	----------------------

Photos



Photo 100713_001



Contract No. 9M/SD/08
 Laying of Western Cross Harbour Main and Associated Land Mains
 From West Kowloon to Sai Ying Pun

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Noise Impact				
<ul style="list-style-type: none"> The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process. Noisy equipment and mobile plant shall always be site away from NSRs. Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials. Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable. Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME. Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works. Air compressors and hand held breakers should have noise labels. Compressors and generators should operate with door closed. Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 			
Water Quality				
Mitigation Measures for Dredging				
<ul style="list-style-type: none"> Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m³ per day. Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress. Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used. All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action. All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport Construction activities should not cause foam, oil, grease, scurm, litter or other objectionable matter to be present in the water within the site or dumping grounds Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 			



Contract No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
Environmental Checklist					
Water Quality					
Mitigation Measures for other Construction Activities					
<ul style="list-style-type: none"> ▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped ▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers ▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. ▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. ▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains ▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCs ▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices. ▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS. ▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. 	√				
Waste Management					
C&D Materials					
<ul style="list-style-type: none"> ▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable. ▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses. ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods. 			√		
Chemical Waste					
<ul style="list-style-type: none"> ▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. ▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. ▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility. 	√				

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Waste Management				
General Refuse				
General refuse should be stored in enclosed bins or compaction units separate from C&D material.	✓			
A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	✓			
An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	✓			
Marine Dredged Sediment (During transportation and disposal)				
Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved	✓			
Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD	✓			
Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	✓			
Good Site Practices				
Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	✓			
Training of site personnel in proper waste management and chemical handling procedures	✓			
Provision of sufficient waste disposal points and regular collection of waste	✓			
Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	✓			
Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	✓			
Waste Reduction Measures				
Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	✓			
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	✓			
Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	✓			
Proper storage and site practices to minimise the potential for damage or contamination of construction materials	✓			
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	✓			

Contract No. 9WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Marine Ecology				
▪ Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	√			
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	√			
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√			
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√			
Good Site Practices				
• The Environmental Permit should be displaced conspicuously on site.	√			
• Construction noise permits should be posted at site entrance or available for site inspection.	√			
▪ Chemical storage area provided with lock and located on sealed areas.	√			
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
---	---	---	---	---	---

Remark

Inspected by	Name	Signature	Date
	Linda Law	<i>Linda Law</i>	20 July 2010

	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Environmental Checklist				
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	✓			
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓			
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓			
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Compressors and generators should operate with door closed.	✓			
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓			
Water Quality				
Mitigation Measures for Dredging				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.	✓			
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.	✓			
▪ Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	✓			
▪ Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	✓			
▪ All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	✓			
▪ The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	✓			
▪ Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	✓			
▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	✓			
▪ Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	✓			
▪ Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	✓			
▪ The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	✓			



Contract No. 9AWSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Environmental Checklist

	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Water Quality				
Mitigation Measures for other Construction Activities				
<ul style="list-style-type: none"> ▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped ▪ Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers ▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. ▪ An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. ▪ The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. ▪ Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs ▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices. ▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS. ▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. 	√			
Waste Management				
C&D Materials				
<ul style="list-style-type: none"> ▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable. ▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses. ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods. 			√	
Chemical Waste				
<ul style="list-style-type: none"> ▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. ▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. ▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility. 	√			
	√			
	√			
	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Waste Management				
General Refuse				
General refuse should be stored in enclosed bins or compaction units separate from C&D material.	✓			
A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	✓			
An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	✓			
Marine Dredged Sediment (During transportation and disposal)				
Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved	✓			
Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD	✓			
Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	✓			
Good Site Practices				
Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	✓			
Training of site personnel in proper waste management and chemical handling procedures	✓			
Provision of sufficient waste disposal points and regular collection of waste	✓			
Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	✓			
Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	✓			
Waste Reduction Measures				
Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	✓			
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	✓			
Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	✓			
Proper storage and site practices to minimise the potential for damage or contamination of construction materials	✓			
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	✓			

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Environmental Checklist				
Marine Ecology				
▪ Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	✓			
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.		✓		
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.		✓		
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	✓			
Good Site Practices				
• The Environmental Permit should be displaced conspicuously on site.	✓			
• Construction noise permits should be posted at site entrance or available for site inspection.	✓			
▪ Chemical storage area provided with lock and located on sealed areas.	✓			
▪ All chemicals should be placed at the banded area with adequate band capacity (> 110% of largest tank).	✓			
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
▪ All generators, fuel and oil storage are within bundle areas.	✓			
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	✓			
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	✓			

Summary of the Weekly Site Inspection:

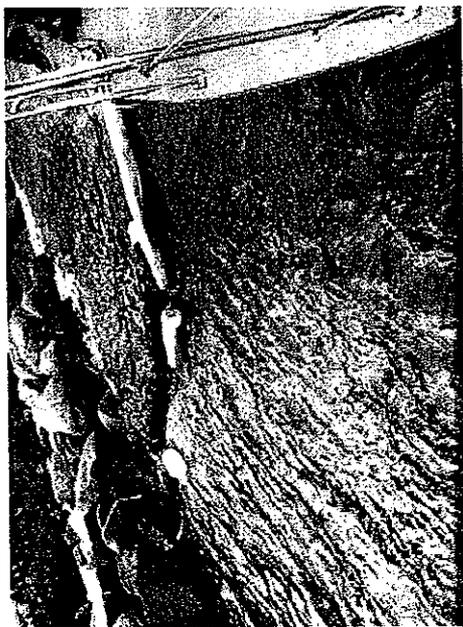
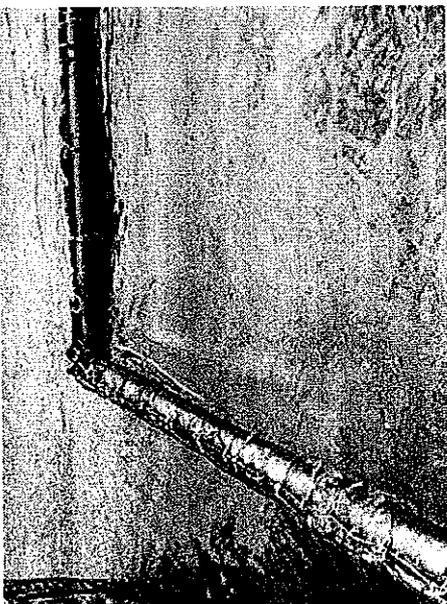
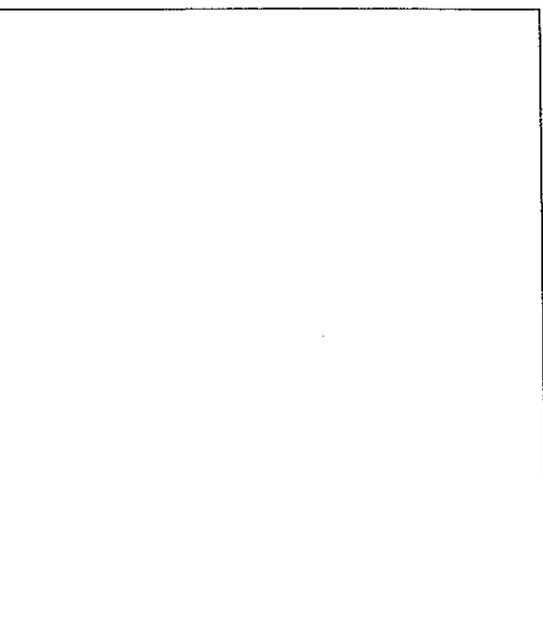
Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	The silt screen at the sea water intake at Kowloon South Salt Water Pumping Station was damaged.	Continue follow-up	To repair and maintain silt screen properly.	100727_001	03/08/10
2	The silt curtain at Portion I was damaged.	Continue follow-up	To repair and maintain silt curtain properly.	100727_002	03/08/10
3	A 20L bottle contained diesel was placed on the board of barge without drip tray at Portion I. After ET notified the fact to the Contractor, the Contractor was relocated the diesel bottle immediately to the drip tray nearby during the same inspection.	Closed	---	100727_003 & 100727_004	---
4	Standing water was found accumulated inside a desilting tank at Portion J. The Contractor reported that pesticide have applied a day before the inspection. However, the Contractor was still reminded to cover the tank to over-flow of rain water during rainy day.	Continue follow-up	To cover the desilting tank properly to avoid accumulation and over-flow of rain water during rainy day	100727_005	03/08/10

Remark

--

Inspected by	Name
	Linda Law
	Signature
	<i>Linda Law</i>
	Date
	27 July 2010

Photos

 <p>Photo 100727_001</p>	 <p>Photo 100727_002</p>	 <p>Photo 100727_003</p>
 <p>Photo 100727_004</p>	 <p>Photo 100727_005</p>	



Appendix G

Implementation Schedule of Mitigation Measures

	Location	Implementation Status		
		Implemented	Partially Implemented	Not Implemented / Not Applicable
Environmental Protection Measures				
Noise Impact				
Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas	√		
Air compressors and hand held breakers should have noise labels.	All areas	√		
Compressors and generators should operate with door closed.	All areas	√		
Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	All areas	√		
Water Quality				
Mitigation Measures for Dredging				
Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.	Marine	√		
Deployment of frame type silt curtain should be fully enclose the grab while dredging works are in progress.	Marine		√	
Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	Marine		√	
Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	Marine	√		
All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	Marine	√		
The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	Marine	√		
Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	Marine	√		
All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	Marine	√		
Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	Marine	√		
Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	Marine	√		
The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	Marine	√		
Mitigation Measures for other Construction Activities				
Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	All areas	√		
Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	All areas	√		
All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.	All areas			√
An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.	All areas			√
The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silt water to public roads and drains	All areas			√
Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	All areas	√		

	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
Environmental Protection Measures				
Water Quality				
Mitigation Measures for other Construction Activities				
<ul style="list-style-type: none"> ▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices. ▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS. ▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. 	All areas	√		
Waste Management				
C&D Materials				
<ul style="list-style-type: none"> ▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable. ▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses. ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods. 	All areas			√
Chemical Waste				
<ul style="list-style-type: none"> ▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. ▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. ▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility. 	All areas	√		
General Refuse				
<ul style="list-style-type: none"> ▪ General refuse should be stored in enclosed bins or compaction units separate from C&D material. ▪ A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. ▪ An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. 	All areas	√		
Marine Dredged Sediment (During transportation and disposal)				
<ul style="list-style-type: none"> ▪ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved ▪ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD ▪ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation. 	Marine	√		
Good Site Practices				
<ul style="list-style-type: none"> ▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site ▪ Training of site personnel in proper waste management and chemical handling procedures ▪ Provision of sufficient waste disposal points and regular collection of waste 	All areas	√		
	All areas	√		
	All areas	√		

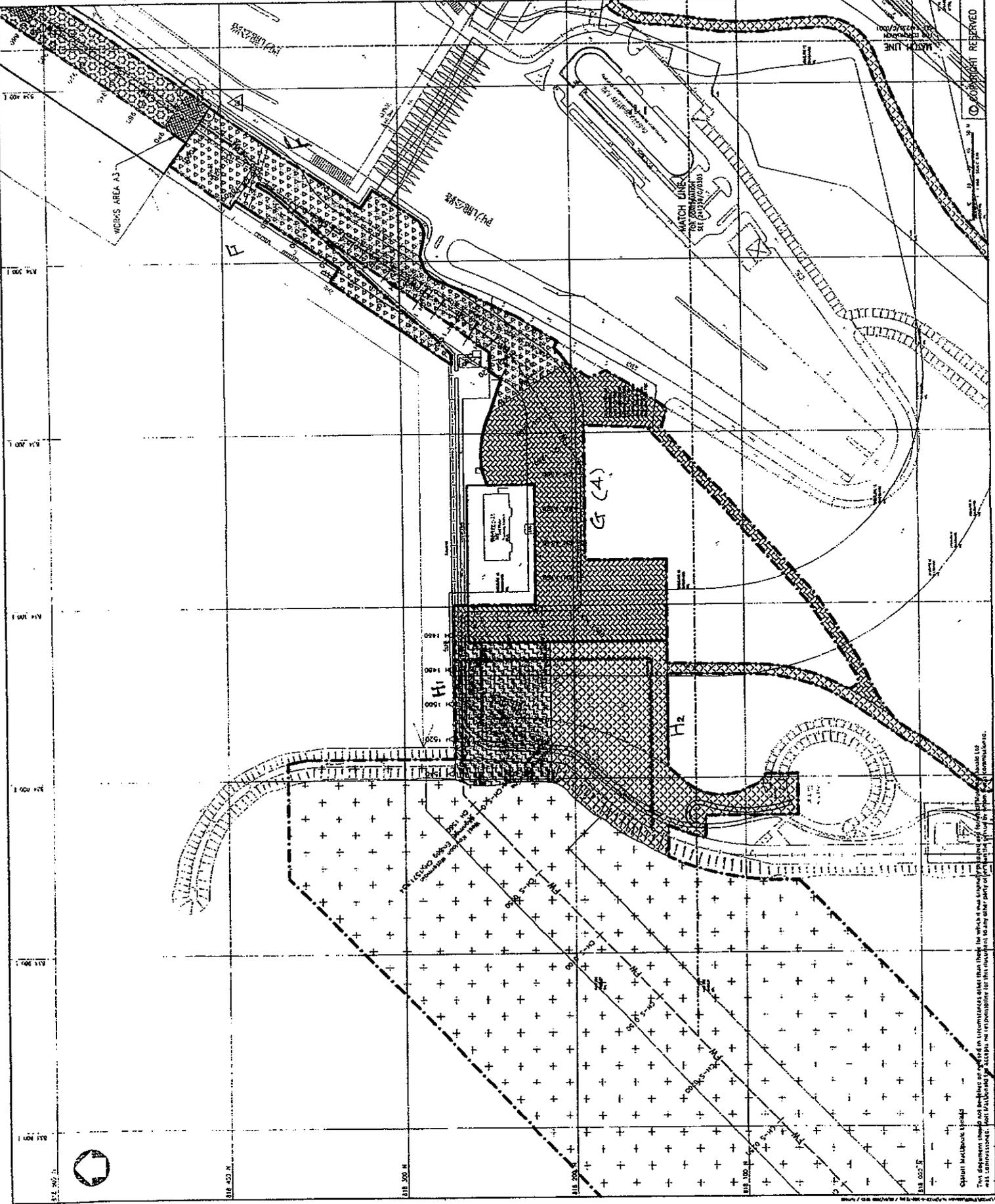


Appendix H

Site General Layout plan

NOTES

1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 241212/6/0301 AND 0302 TO 0303.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241212/6/0301.



01	APR 05	DESIGN APPROVAL NO. 4	DATE
02	MAR 09	DESIGN APPROVAL NO. 3	DATE
03	DEC 08	DESIGN APPROVAL NO. 2	DATE
04	DEC 08	DESIGN APPROVAL NO. 1	DATE

Mott MacDonald
 11th Floor, One Island Plaza
 1101-1105, Canton Road
 Kowloon, Hong Kong
 Tel: 852 2412 1111
 Fax: 852 2412 1112
 www.mottmacdonald.com.hk

THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

97/WSD/08

LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 2 OF 5)

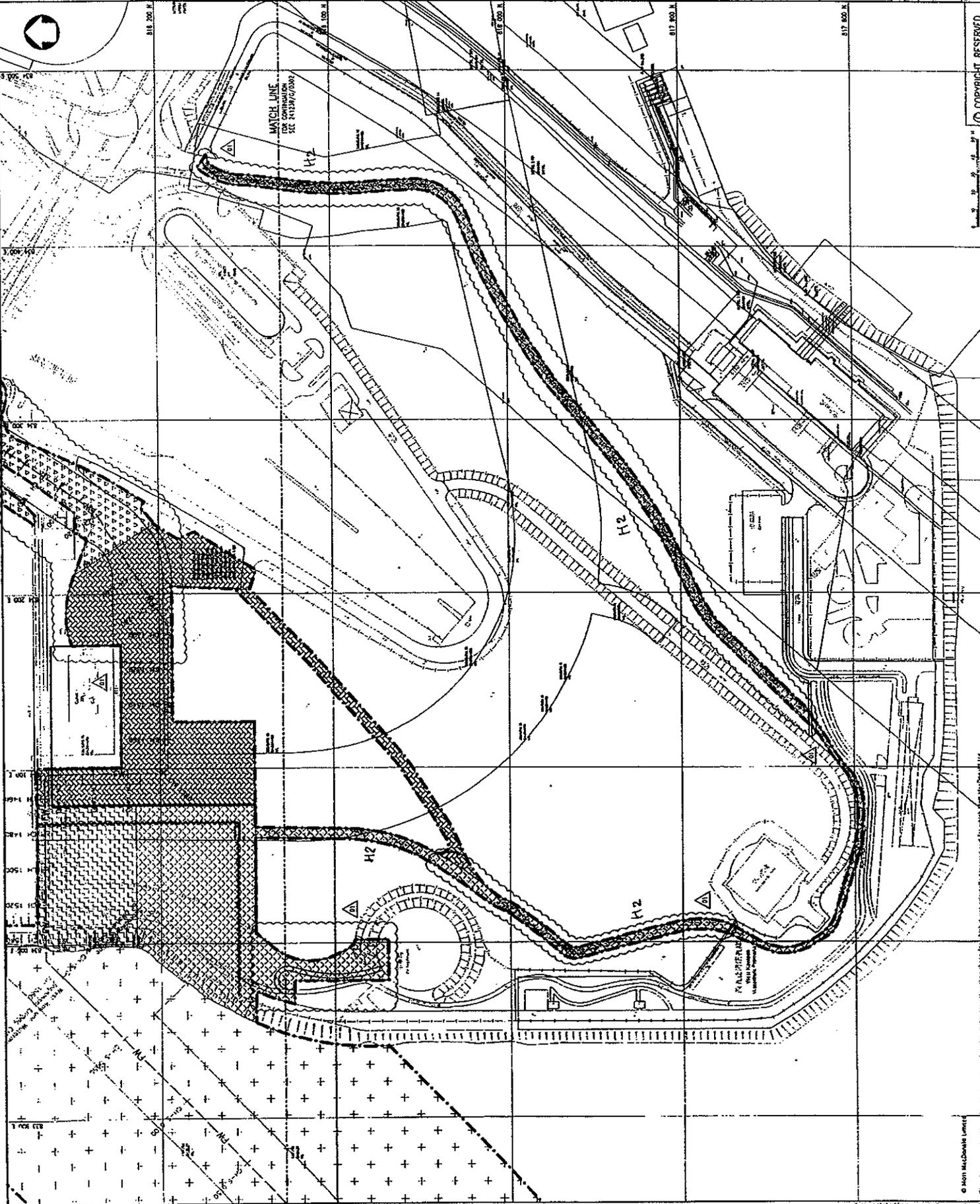
Project No.	97/WSD/08
Scale	1:1000
Sheet No.	241212/6/0301
Revision	10
Date	24/12/08
Author	YIP
Checker	YIP
Designer	YIP
Engineer	YIP
Surveyor	YIP
Inspector	YIP
Contractor	YIP
Client	YIP
Project Name	241212/6/0301
Project Location	241212/6/0301
Project No.	241212/6/0302
Sheet No.	10
Date	24/12/08
Author	YIP
Checker	YIP
Designer	YIP
Engineer	YIP
Surveyor	YIP
Inspector	YIP
Contractor	YIP
Client	YIP

FOR INFORMATION RECEIVED

Quantity MacDonok & Co.
 This document is the property of Mott MacDonald and shall not be used for any other purpose without the written consent of Mott MacDonald.

NOTES :

1. THIS DRAWING SHALL BE USED IN CONNECTION WITH DRAWING NO. 241239/G/0301 TO LOTS AND QUOTA TO LOTS.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.



DATE OF ISSUE	2/1/08	PROJECT NO.	241239/G/0301
DATE OF REVISION		PROJECT NAME	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAN YING PUN
DATE OF REVISION		CLIENT	THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
DATE OF REVISION		SCALE	1:1000 @ A1

Mott MacDonald
 The Hong Kong Office is located at:
 27th Floor, One World Trade Centre
 1 World Trade Centre
 999090-0001
 www.mottmacdonald.com.hk

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

Project No. 97/WSD/08
 LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAN YING PUN

POSSESSION OF SITE (SHEET 3 OF 5)

NO.	DATE	BY	CHKD BY	APP'D BY	SCALE
1	2/1/08	Y. H. CHAN	S. C. CHAN	S. C. CHAN	1:1000 @ A1
2					
3					
4					
5					
6					
7					
8					
9					
10					

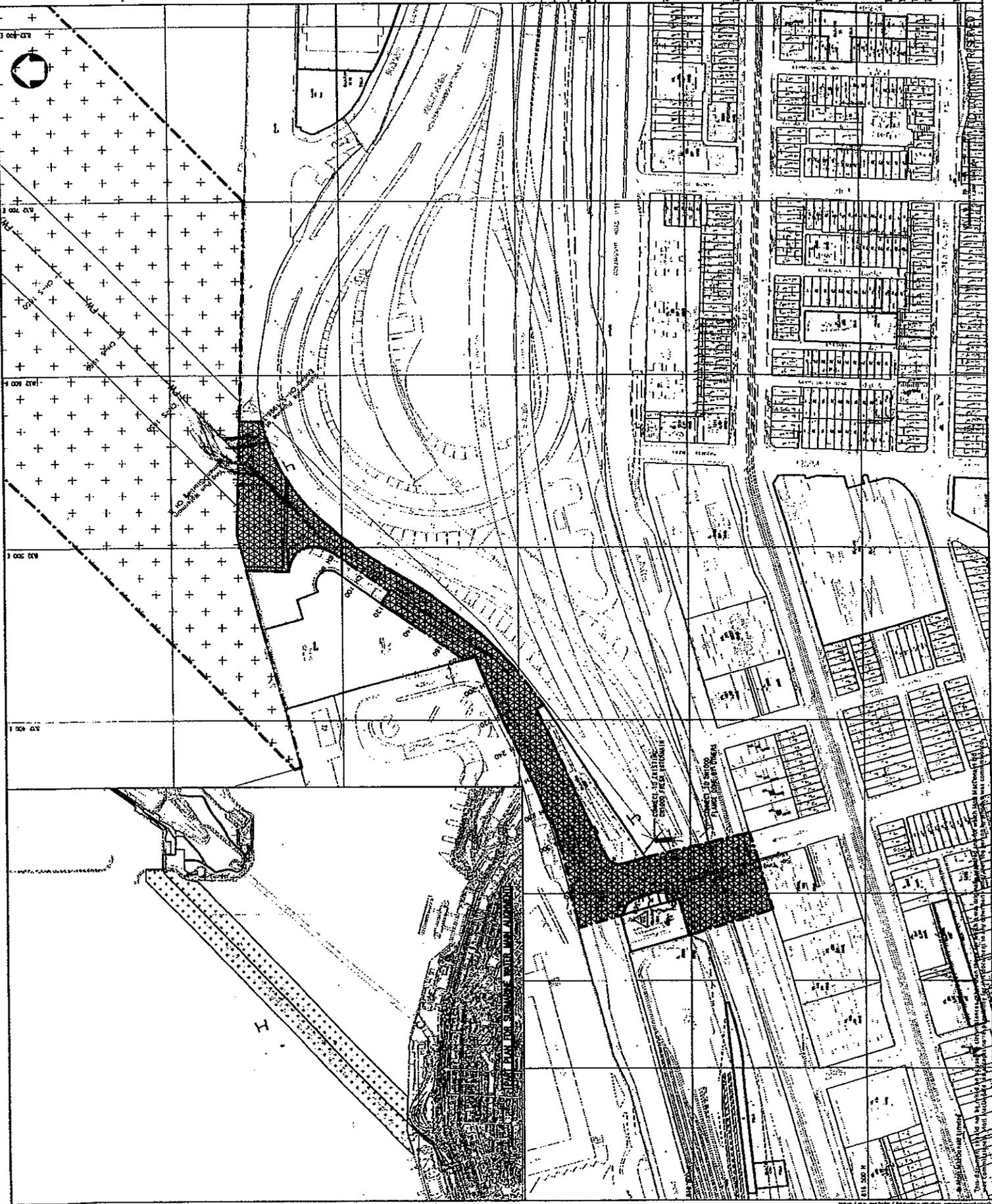
© COPYRIGHT RESERVED

The Government should not be held liable for any loss or damage, whether directly or indirectly, arising from any use of this drawing, whether in whole or in part, without the prior written consent of Mott MacDonald Ltd.

© MOTT MACDONALD LIMITED

NOTES :

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241238/0/001 TO 004 AND 005.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241238/0/001.



NO.	DATE	BY	DESCRIPTION
01	10/11/08	MM	ISSUED FOR TENDER NO. 4
02	10/11/08	MM	ISSUED FOR TENDER NO. 3
03	10/11/08	MM	ISSUED FOR TENDER NO. 2
04	10/11/08	MM	ISSUED FOR TENDER NO. 1

Mott MacDonald
 9/F, WSD/08
 The Government of the Hong Kong Special Administrative Region
 Water Supplies Department

THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

9/WSD/08

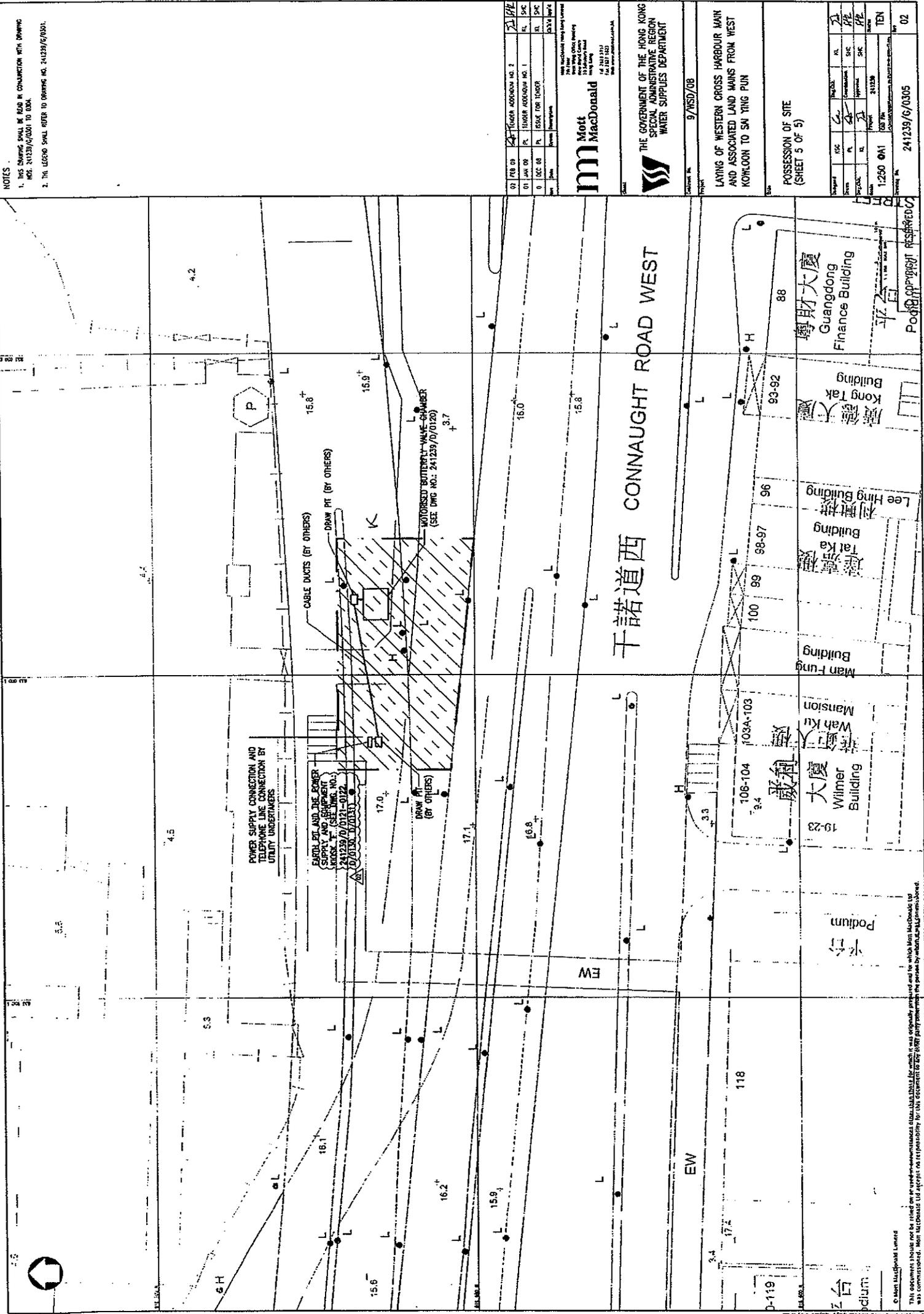
LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 4 OF 5)

Scale	1:1000	Scale	1:1000
Author	MM	Checker	MM
Designer	MM	Approver	MM
Drawn	MM	Checked	MM
Date	10/11/08	Date	10/11/08
Project No.	241238/0/004	Sheet No.	02

NOTES

1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 241239/G/0301 TO 0304.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.



02	FEB 09	241239	REVISION NO. 2	KL	SVC
01	JAN 08	PL	ISSUE FOR CONSTRUCTION NO. 1	KL	SVC
00	DEC 08	PL	ISSUE FOR TENDER	KL	SVC
					CONTRACT NO.

Mott MacDonald
 1100 MacArthur Road, Suite 1000
 Hong Kong
 Tel: +852 2500 8600
 Fax: +852 2500 8601
 Email: mottmacdonald.com.hk

THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

PROJECT NO. 9/MSD/08
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 5 OF 5)

Project No.	1:2500 0A1	Scale	1:2500
Project Name	CONTRACT NO. 9/MSD/08	Sheet No.	02
Revision No.	241239/G/0305	Date	

This document is the property of Mott MacDonald Limited. It is to be used only for the purposes for which it was prepared and for which Mott MacDonald Ltd. has accepted responsibility. It is not to be used for any other purpose without the prior written consent of Mott MacDonald Limited.



Appendix I

Monitoring Schedule for this Month and Coming Month

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
 Time Schedule for Impact Marine Water Quality Monitoring (WQM), Noise Monitoring (NM) and Weekly Site Inspection (SI)
 July 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				Holiday		
04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul	10-Jul
NM (Holiday-time) WK & SYP	WQM Mid-Ebb 07:00 - 11:00 Mid-Flood 12:00 - 16:30 SI	WQM Mid-Ebb 08:00 - 12:30 Mid-Flood 14:30 - 19:00	WQM Mid-Ebb 08:00 - 12:30 Mid-Flood 14:30 - 19:00	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Ebb 08:30 - 13:00 Mid-Flood 16:00 - 20:30 NM (Evening-time) WK & SYP NM (Night-time) WK & SYP	WQM Mid-Flood 08:00 - 12:30 Mid-Ebb 13:30 - 18:00 NM (Evening-time) WK & SYP NM (Night-time) WK & SYP
11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul
NM (Holiday-time) WK & SYP	WQM Mid-Ebb 10:30 - 15:00 Mid-Flood 17:15 - 21:15 SI	WQM Mid-Flood 07:00 - 11:30 Mid-Ebb 13:00 - 17:30	WQM Mid-Flood 07:00 - 11:30 Mid-Ebb 13:00 - 17:30	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Flood 08:30 - 13:00 Mid-Ebb 14:30 - 19:00	WQM Mid-Flood 08:30 - 13:00 Mid-Ebb 14:30 - 19:00
18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul
NM (Holiday-time) WK & SYP NM (Evening-time) WK & SYP	WQM Mid-Ebb 07:00 - 11:30 Mid-Flood 13:00 - 17:30 SI	WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 15:00 - 19:30	WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 15:00 - 19:30	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 16:00 - 20:30	WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 16:00 - 20:30
25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul
NM (Holiday-time) WK & SYP NM (Evening-time) WK & SYP	WQM Mid-Ebb 10:00 - 14:30 Mid-Flood 17:00 - 21:00 SI	WQM Mid-Flood 06:30 - 10:30 Mid-Ebb 12:00 - 16:30 NM (WK-Daytime)	WQM Mid-Flood 06:30 - 10:30 Mid-Ebb 12:00 - 16:30 NM (WK-Daytime)	NM (SYP-Daytime)	WQM Mid-Flood 07:00 - 11:30 Mid-Ebb 13:00 - 17:30 NM (Evening-time) WK & SYP	WQM Mid-Flood 07:00 - 11:30 Mid-Ebb 13:00 - 17:30 NM (Evening-time) WK & SYP

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
 Time Schedule for Impact Marine Water Quality Monitoring (WQM), Noise Monitoring (NM) and Weekly Site Inspection (SI)
 August 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Aug	02-Aug	03-Aug	04-Aug	05-Aug	06-Aug	07-Aug
	WQM Mid-Flood 09:30 - 14:00 Mid-Ebb 15:30 - 20:00 SI	WQM Mid-Flood 07:30 - 12:00 Mid-Flood 13:30 - 18:00	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Ebb 07:30 - 12:00 Mid-Flood 13:30 - 18:00		WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 15:00 - 19:30
08-Aug	09-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug
	WQM Mid-Ebb 09:30 - 14:00 Mid-Flood 16:00 - 20:30 SI	WQM Mid-Flood 11:30 - 16:00 Mid-Ebb 17:30 - 22:00	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Flood 07:30 - 12:00 Mid-Ebb 13:30 - 18:00		WQM Mid-Flood 07:30 - 12:00 Mid-Ebb 13:30 - 18:00
15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug
	WQM Mid-Flood 10:30 - 15:00 Mid-Ebb 16:45 - 21:00 SI	WQM Mid-Ebb 08:00 - 12:30 Mid-Flood 14:00 - 18:30	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 15:00 - 19:30		WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 15:00 - 19:30
22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug
	WQM Mid-Ebb 09:00 - 13:30 Mid-Flood 16:00 - 20:30 SI	WQM Mid-Flood 10:30 - 15:00 Mid-Ebb 16:45 - 21:00	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 11:30 - 16:00		WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 11:30 - 16:00
29-Aug	30-Aug	31-Aug				
	WQM Mid-Flood 07:30 - 12:00 Mid-Ebb 14:30 - 19:00 SI					



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix J

Daily Dredging Summary

Wo Hing - Penta-Ocean Joint Venture							
Contract no. 9/WSD/08							
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun							
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)							
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m ³)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
30-Apr-2010	0	0	0	0	0	0	EP/MD/10-085
01-May-2010	0	0	0	0	0	0	EP/MD/10-085
02-May-2010	0	0	0	0	0	0	EP/MD/10-085
03-May-2010	0	0	0	0	0	0	EP/MD/10-085
04-May-2010	0	0	0	0	0	0	EP/MD/10-085
05-May-2010	0	0	0	0	0	0	EP/MD/10-085
06-May-2010	0	0	0	0	0	0	EP/MD/10-085
07-May-2010	0	0	0	0	0	0	EP/MD/10-085
08-May-2010	0	0	0	0	0	0	EP/MD/10-085
09-May-2010	0	0	0	0	0	0	EP/MD/10-085
10-May-2010	0	0	0	0	0	0	EP/MD/10-085
11-May-2010	0	0	0	0	0	0	EP/MD/10-085
12-May-2010	0	0	0	0	0	0	EP/MD/10-085
13-May-2010	0	0	0	0	0	0	EP/MD/10-085
14-May-2010	0	0	0	0	0	0	EP/MD/10-085
15-May-2010	0	0	0	0	0	0	EP/MD/10-085
16-May-2010	0	0	0	0	0	0	EP/MD/10-085
17-May-2010	0	0	0	0	0	0	EP/MD/10-085
18-May-2010	0	0	0	0	0	0	EP/MD/10-085
19-May-2010	0	0	0	0	0	0	EP/MD/10-085
20-May-2010	0	0	0	0	0	0	EP/MD/10-085
21-May-2010	0	0	0	0	0	0	EP/MD/10-085
22-May-2010	0	0	0	0	0	0	EP/MD/10-085
23-May-2010	0	0	0	0	0	0	EP/MD/10-085
24-May-2010	0	0	0	0	0	0	EP/MD/10-085
25-May-2010	0	0	0	0	0	0	EP/MD/10-085
26-May-2010	0	0	0	0	0	0	EP/MD/10-085
27-May-2010	0	0	0	0	0	0	EP/MD/10-085
28-May-2010	0	0	0	0	0	0	EP/MD/10-085
29-May-2010	0	0	0	0	0	0	EP/MD/10-085
30-May-2010	0	0	0	0	0	0	EP/MD/10-085
31-May-2010	0	0	0	0	0	0	EP/MD/10-085
01-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
02-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
03-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
04-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
05-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
06-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
07-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
08-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
09-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
10-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
11-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
12-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
13-Jun-2010	0	0	0	0	0	0	EP/MD/10-085
14-Jun-2010	1,400	2	1,400	2,100	3	2,100	EP/MD/10-085
15-Jun-2010	1,400	2	2,800	2,100	3	4,200	EP/MD/10-085
16-Jun-2010	2,100	3	4,900	2,100	3	6,300	EP/MD/10-085
17-Jun-2010	2,800	4	7,700	2,100	3	8,400	EP/MD/10-085
18-Jun-2010	2,100	3	9,800	2,100	3	10,500	EP/MD/10-085
19-Jun-2010	2,700	4	12,500	2,100	3	12,600	EP/MD/10-085

Wo Hing - Penta-Ocean Joint Venture							
Contract no. 9/WSD/08							
Laying of Western Cross Harbour Main & Associated Land Mains from							
West Kowloon to Sai Ying Pun							
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)							
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m ³)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
20-Jun-2010	2,800	4	15,300	2,100	3	14,700	EP/MD/10-085
21-Jun-2010	2,100	3	17,400	2,100	3	16,800	EP/MD/10-085
22-Jun-2010	2,800	4	20,200	2,100	3	18,900	EP/MD/10-085
23-Jun-2010	2,100	3	22,300	2,100	3	21,000	EP/MD/10-085
24-Jun-2010	2,100	3	24,400	2,100	3	23,100	EP/MD/10-085
25-Jun-2010	2,100	3	26,500	2,100	3	25,200	EP/MD/10-085
26-Jun-2010	2,100	3	28,600	2,100	3	27,300	EP/MD/10-085
27-Jun-2010	700	1	29,300	2,100	3	29,400	EP/MD/10-085
28-Jun-2010	2,100	3	31,400	2,100	3	31,500	EP/MD/10-085
29-Jun-2010	1,400	2	32,800	2,100	3	33,600	EP/MD/10-085
30-Jun-2010	0	0	32,800	2,100	3	35,700	EP/MD/10-085
01-Jul-2010	0	0	32,800	2,100	3	37,800	EP/MD/10-085
02-Jul-2010	0	0	32,800	2,100	3	39,900	EP/MD/10-085
03-Jul-2010	0	0	32,800	2,100	3	42,000	EP/MD/10-085
04-Jul-2010	0	0	32,800	2,100	3	44,100	EP/MD/10-085
05-Jul-2010	0	0	32,800	2,100	3	46,200	EP/MD/10-085
06-Jul-2010	0	0	32,800	2,100	3	48,300	EP/MD/10-085
07-Jul-2010	0	0	32,800	2,100	3	50,400	EP/MD/10-085
08-Jul-2010	0	0	32,800	2,100	3	52,500	EP/MD/10-085
09-Jul-2010	0	0	32,800	2,100	3	54,600	EP/MD/10-085
10-Jul-2010	0	0	32,800	2,100	3	56,700	EP/MD/10-085
11-Jul-2010	0	0	32,800	2,100	3	58,800	EP/MD/10-085
12-Jul-2010	0	0	32,800	2,100	3	60,900	EP/MD/10-085
13-Jul-2010	0	0	32,800	2,100	3	63,000	EP/MD/10-085
14-Jul-2010	0	0	32,800	2,100	3	65,100	EP/MD/10-085
15-Jul-2010	0	0	32,800	2,100	3	67,200	EP/MD/10-085
16-Jul-2010	0	0	32,800	2,100	3	69,300	EP/MD/10-085
17-Jul-2010	0	0	32,800	2,100	3	71,400	EP/MD/10-085
18-Jul-2010	0	0	32,800	2,100	3	73,500	EP/MD/10-085
19-Jul-2010	0	0	32,800	2,100	3	75,600	EP/MD/10-085
20-Jul-2010	0	0	32,800	2,100	3	77,700	EP/MD/10-085
21-Jul-2010	0	0	32,800	2,100	3	79,800	EP/MD/10-085
22-Jul-2010	0	0	32,800	2,100	3	81,900	EP/MD/10-085
23-Jul-2010	0	0	32,800	2,100	3	84,000	EP/MD/10-085
24-Jul-2010	0	0	32,800	2,100	3	86,100	EP/MD/10-085
25-Jul-2010	0	0	32,800	2,100	3	88,200	EP/MD/10-085
26-Jul-2010	0	0	32,800	2,100	3	90,300	EP/MD/11-039
27-Jul-2010	0	0	32,800	2,100	3	92,400	EP/MD/11-039
28-Jul-2010	0	0	32,800	2,100	3	94,500	EP/MD/11-039
29-Jul-2010	0	0	32,800	2,100	3	96,600	EP/MD/11-039
30-Jul-2010	700	1	33,500	2,100	3	98,700	EP/MD/11-039
31-Jul-2010	700	1	34,200	2,100	3	100,800	EP/MD/11-039
01-Aug-2010	2,100	3	36,300	2,100	3	102,900	EP/MD/11-039
02-Aug-2010	1,400	2	37,700	2,100	3	105,000	EP/MD/11-039
03-Aug-2010	700	1	38,400	2,100	3	107,100	EP/MD/11-039
04-Aug-2010			38,400	2,100	3	109,200	EP/MD/11-039
05-Aug-2010			38,400	2,100	3	111,300	EP/MD/11-039
	38,400	55		203,700	291		

Wo Hing - Penta-Ocean Joint Venture							
Contract no. 9/WSD/08							
Laying of Western Cross Harbour Main & Associated Land Mains from							
West Kowloon to Sai Ying Pun							
Summary of Dumping Qty. of Type 2 Marine Sediment							
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty. (bulk volume)	Target Dumping qty (m ³)	Target Barge Load per day	Target Accumulated Dumping Qty. (bulk volume)	Permit No.
05-May-2010	440	1	440	1,260	2	1,260	EP/MD/10-086
06-May-2010	1,280	3	1,720	1,260	2	2,520	EP/MD/10-086
07-May-2010	0	0	1,720	1,260	2	3,780	EP/MD/10-086
08-May-2010	0	0	1,720	1,260	2	5,040	EP/MD/10-086
09-May-2010	1,400	2	3,120	1,260	2	6,300	EP/MD/10-086
10-May-2010	1,400	2	4,520	1,260	2	7,560	EP/MD/10-086
11-May-2010	1,300	2	5,820	1,260	2	8,820	EP/MD/10-086
12-May-2010	1,800	3	7,620	1,260	2	10,080	EP/MD/10-086
13-May-2010	1,200	2	8,820	1,260	2	11,340	EP/MD/10-086
14-May-2010	0	0	8,820	1,260	2	12,600	EP/MD/10-086
15-May-2010	0	0	8,820	1,260	2	13,860	EP/MD/10-086
16-May-2010	600	1	9,420	1,260	2	15,120	EP/MD/10-086
17-May-2010	1,200	2	10,620	1,260	2	16,380	EP/MD/10-086
18-May-2010	700	1	11,320	1,260	2	17,640	EP/MD/10-086
19-May-2010	2,000	3	13,320	1,260	2	18,900	EP/MD/10-086
20-May-2010	1,400	2	14,720	1,260	2	20,160	EP/MD/10-086
21-May-2010	1,400	2	16,120	1,260	2	21,420	EP/MD/10-086
22-May-2010	2,100	3	18,220	1,260	2	22,680	EP/MD/10-086
23-May-2010	1,400	2	19,620	1,260	2	23,940	EP/MD/10-086
24-May-2010	1,400	2	21,020	1,260	2	25,200	EP/MD/10-086
25-May-2010	1,300	2	22,320	1,260	2	26,460	EP/MD/10-086
26-May-2010	1,400	2	23,720	1,260	2	27,720	EP/MD/10-086
27-May-2010	1,300	2	25,020	1,260	2	28,980	EP/MD/10-086
28-May-2010	1,400	2	26,420	1,260	2	30,240	EP/MD/10-086
29-May-2010	600	1	27,020	1,260	2	31,500	EP/MD/10-086
30-May-2010	2,100	3	29,120	1,260	2	32,760	EP/MD/11-012
31-May-2010	700	1	29,820	1,260	2	34,020	EP/MD/11-012
01-Jun-2010	1,900	3	31,720	1,260	2	35,280	EP/MD/11-012
02-Jun-2010	1,220	2	32,940	1,260	2	36,540	EP/MD/11-012
03-Jun-2010	1,300	2	34,240	1,260	2	37,800	EP/MD/11-012
04-Jun-2010	1,200	2	35,440	1,260	2	39,060	EP/MD/11-012
05-Jun-2010	1,400	2	36,840	1,260	2	40,320	EP/MD/11-012
06-Jun-2010	600	1	37,440	1,260	2	41,580	EP/MD/11-012
07-Jun-2010	0	0	37,440	1,260	2	42,840	EP/MD/11-012
08-Jun-2010	500	1	37,940	1,260	2	EP/MD/11-012	EP/MD/11-012
09-Jun-2010	0	0	37,940	1,260	2	EP/MD/11-012	EP/MD/11-012
10-Jun-2010	600	1	38,540	1,260	2	EP/MD/11-012	EP/MD/11-012
11-Jun-2010	1,200	2	39,740	1,260	2	EP/MD/11-012	EP/MD/11-012
12-Jun-2010	1,400	2	41,140	1,260	2	EP/MD/11-012	EP/MD/11-012
13-Jun-2010	1,400	2	42,540	1,260	2	EP/MD/11-012	EP/MD/11-012
14-Jun-2010	0	0	42,540	0	0	EP/MD/11-012	EP/MD/11-012
15-Jun-2010	0	0	42,540	0	0	EP/MD/11-012	EP/MD/11-012
16-Jun-2010	0	0	42,540	0	0	EP/MD/11-012	EP/MD/11-012
17-Jun-2010	0	0	42,540	0	0	EP/MD/11-012	EP/MD/11-012
18-Jun-2010	0	0	42,540	0	0	EP/MD/11-012	EP/MD/11-012
19-Jun-2010	0	0	42,540	0	0	EP/MD/11-012	EP/MD/11-012

Wo Hing - Penta-Ocean Joint Venture							
Contract no. 9/WSD/08							
Laying of Western Cross Harbour Main & Associated Land Mains from							
West Kowloon to Sai Ying Pun							
Summary of Dumping Qty. of Type 2 Marine Sediment							
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m ³)	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
20-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
21-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
22-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
23-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
24-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
25-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
26-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
27-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
28-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
29-Jun-2010	0	0	42,540	0	0		EP/MD/11-012
30-Jun-2010	1,200	2	43,740				EP/MD/11-024
01-Jul-2010	2,600	4	46,340				EP/MD/11-024
02-Jul-2010	2,800	4	49,140				EP/MD/11-024
03-Jul-2010	1,400	2	50,540				EP/MD/11-024
04-Jul-2010	2,100	3					EP/MD/11-024
05-Jul-2010	2,850	4					EP/MD/11-024
06-Jul-2010	1,400	2					EP/MD/11-024
07-Jul-2010	1,400	2					EP/MD/11-024
08-Jul-2010	2,700	4					EP/MD/11-024
09-Jul-2010	2,100	3					EP/MD/11-024
10-Jul-2010	2,100	3					EP/MD/11-024
11-Jul-2010	1,400	2					EP/MD/11-024
12-Jul-2010	2,150	3					EP/MD/11-024
13-Jul-2010	2,100	3					EP/MD/11-024
14-Jul-2010	700	1					EP/MD/11-024
15-Jul-2010	2,100	3					EP/MD/11-024
16-Jul-2010	2,100	3					EP/MD/11-024
17-Jul-2010	700	1					EP/MD/11-024
18-Jul-2010	700	1					EP/MD/11-024
19-Jul-2010	2,100	3					EP/MD/11-024
20-07-2010 (18 July 2010)	2,100	3					EP/MD/11-024
21-Jul-2010	700	1					EP/MD/11-024
22-Jul-2010	600	1					EP/MD/11-024
23-Jul-2010	1,400	2					EP/MD/11-024
24-Jul-2010	1,400	2					EP/MD/11-024
25-Jul-2010	1,400	2					EP/MD/11-024
26-Jul-2010	1,450	2					EP/MD/11-024
27-Jul-2010	2,200	3					EP/MD/11-024
28-Jul-2010	1,450	2					EP/MD/11-024
29-Jul-2010	1,500	2					EP/MD/11-024
30-Jul-2010	0	0					--
31-Jul-2010	0	0					--
	93,440	139		50,400	70		

Wo Hing -- Penta-Ocean Joint Venture

Contract No. S/WSD/08
 Laying of Western Cross Harbour Main and Associated Land Mains
 From West Kowloon to Sai Ying Pun

Dredging Location of GD "Shun Tai 20" during Overtime Hours 19:00 - 07:00 (next day)

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)					
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to
03-05-2010	-	-	-	-	-	-	-	-	-	-	-	-
04-05-2010	07:00	23:00	1238	1244	0	+17	22:00	23:00	1238	1244	0	+17
05-05-2010	07:00	23:00	1244	1276	0	+17	19:00	23:00	1264	1276	0	+17
06-05-2010	07:00	23:00	1276	1280	0	+17	19:00	23:00	1252	1264	0	-17
07-05-2010	07:00	19:00	1238	1264	0	-17	19:00	19:00	-	-	-	-
08-05-2010	07:00	19:00	1264	1276	0	+17	19:00	19:00	-	-	-	-
09-05-2010	07:00	23:00	1276	1304	0	-17	19:00	23:00	1284	1304	0	-17
10-05-2010	07:00	23:00	1304	1316	0	-17	19:00	23:00	1304	1316	0	-17
11-05-2010	07:00	23:00	1280	1316	0	+17	-	-	-	-	-	-
12-05-2010	07:00	23:00	1315	1368	0	+17	19:00	23:00	1348	1368	0	+17
13-05-2010	07:00	23:00	1320	1368	0	-17	19:00	23:00	1348	1368	0	-17
14-05-2010	07:00	23:00	1368	1424	0	-17	19:00	23:00	1400	1424	0	-17
15-05-2010	07:00	23:00	1368	1376	0	+17	19:00	23:00	1368	1376	0	+17
16-05-2010	07:00	23:00	1376	1392	0	+17	19:00	23:00	1380	1392	0	+17
17-05-2010	07:00	23:00	1392	1416	0	+15.5	19:00	23:00	1416	1432	0	-15.5
18-05-2010	07:00	23:00	1416	1432	0	-15.5	-	-	-	-	-	-
19-05-2010	07:00	23:00	1432	1468	0	+15	19:00	23:00	1452	1468	0	+15
20-05-2010	07:00	23:00	1468	1484	0	-15	19:00	23:00	1476	1484	0	-15
21-05-2010	07:00	23:00	1480	1500	0	+12.7	19:00	22:00	1480	1496	0	+14.1
22-05-2010	07:00	23:00	1472	1496	0	+14.1	-	-	-	-	-	-
23-05-2010	07:00	23:00	1496	1536	0	+12.9	19:00	23:00	1496	1516	0	-12.9
24-05-2010	07:00	23:00	1496	1516	0	-12.9	-	-	-	-	-	-
25-05-2010	07:00	23:00	1516	1572	0	-14.0	19:00	23:00	1564	1572	0	-14.0
26-05-2010	07:00	23:00	1536	1540	0	+13.1	-	-	-	-	-	-
27-05-2010	07:00	23:00	1540	1592	0	+16.6	19:00	23:00	1580	1592	0	+16.6
28-05-2010	07:00	23:00	1572	1620	0	-17	19:00	23:00	1592	1620	0	-17
29-05-2010	07:00	23:00	1620	1656	0	+17	19:00	23:00	1608	1636	0	-17
30-05-2010	07:00	23:00	1608	1636	0	-17	-	-	-	-	-	-
31-05-2010	07:00	23:00	1636	1660	0	-17	19:00	23:00	1664	1680	0	-17
01-06-2010	07:00	23:00	1656	1680	0	+17	-	-	-	-	-	-
02-06-2010	07:00	23:00	1660	1708	0	-17	19:00	23:00	1680	1692	0	+16.8
03-06-2010	07:00	23:00	1680	1692	0	+16.8	-	-	-	-	-	-
04-06-2010	07:00	23:00	1692	1712	0	+17	19:00	23:00	1716	1736	0	-16
05-06-2010	07:00	23:00	1708	1736	0	-16	-	-	-	-	-	-
06-06-2010	07:00	23:00	1712	1752	0	+16	19:00	23:00	1748	1752	0	+16
07-06-2010	07:00	23:00	1736	1756	0	-16	19:00	23:00	1736	1756	0	-16
08-06-2010	07:00	23:00	1752	1800	0	-15	19:00	23:00	1752	1780	0	+16
09-06-2010	07:00	23:00	1752	1780	0	+16	-	-	-	-	-	-
10-06-2010	07:00	23:00	1780	1820	0	+15	19:00	23:00	1800	1824	0	-15
11-06-2010	07:00	23:00	1800	1824	0	-15	-	-	-	-	-	-
12-06-2010	07:00	23:00	1824	1848	0	-14	19:00	23:00	1820	1844	0	+14
13-06-2010	07:00	23:00	1820	1844	0	+14	-	-	-	-	-	-
14-06-2010	07:00	23:00	1844	1876	0	+14	19:00	23:00	1848	1864	0	-14
15-06-2010	07:00	23:00	1848	1864	0	-14	-	-	-	-	-	-
16-06-2010	07:00	23:00	1872	1908	0	+13	19:00	19:45	1864	1868	0	-13
17-06-2010	07:00	23:00	1864	1876	0	-13	-	-	-	-	-	-
18-06-2010	07:00	23:00	1876	1932	0	-13	19:00	23:00	1868	1932	0	-13
19-06-2010	07:00	23:00	1908	1960	0	+12	19:00	23:00	1944	1960	0	+12
20-06-2010	07:00	23:00	1932	1960	0	-12	19:00	21:00	1960	1970	0	+12
21-06-2010	07:00	23:00	1960	1970	0	+12	-	-	-	-	-	-
22-06-2010	07:00	23:00	1970	1980	0	-16	19:00	20:00	1974	1980	0	+12
23-06-2010	07:00	23:00	1980	1990	0	+12	-	-	-	-	-	-
24-06-2010	07:00	14:40	1250	1300	0	+19	-	-	-	-	-	-
25-06-2010	07:00	23:00	-	-	-	-	-	-	-	-	-	-
26-06-2010	07:00	23:00	1300	1390	+19	-19	19:00	23:00	1300	1390	+4	+19
27-06-2010	07:00	23:00	1390	1530	+16	-16	19:00	23:00	1490	1530	+16	-16
28-06-2010	07:00	23:00	1530	1665	+18	-18	19:00	23:00	1630	1665	+18	-18
29-06-2010	07:00	23:00	1665	1780	+16	-16	19:00	23:00	1750	1780	+18	-18
30-06-2010	07:00	23:00	1780	1820	+4	-21	23:00	07:00	1130	1142	-4	-21
01-07-2010	07:00	07:00	1142	1174	-4.7	-20.7	19:00	07:00	1162	1174	-4.7	-20.7
02-07-2010	07:00	07:00	1130	1162	+4.7	+20.7	19:00	07:00	1142	1162	+4.7	+20.7
03-07-2010	07:00	07:00	1162	1214	+4.7	+20.7	19:00	07:00	1162	1214	+4.7	+20.7
04-07-2010	07:00	07:00	1214	1222	+4.7	+20.7	-	-	-	-	-	-
05-07-2010	07:00	07:00	1174	1210	-4.7	-20.7	19:00	07:00	1186	1210	-4.7	-20.7
06-07-2010	07:00	07:00	1130	1190	+8	-8	19:00	07:00	1158	1190	+8	-8
07-07-2010	07:00	07:00	1190	1238	+8.5	-8.5	19:00	07:00	1214	1238	+8.5	-8.5
08-07-2010	07:00	07:00	1256	1210	-4.5	-20.5	19:00	07:00	1222	1210	-4.5	-20.5
09-07-2010	07:00	07:00	1226	1250	+4.5	+20.5	-	-	1226	1250	+4.5	+20.5
10-07-2010	07:00	07:00	1250	1282	+5.5	+20.5	-	-	-	-	-	-
11-07-2010	07:00	07:00	1238	1150	+8.5	-8.5	19:00	07:00	1262	1150	+8.5	-8.5
12-07-2010	07:00	07:00	1262	1302	-5.5	-20.5	19:00	07:00	1266	1302	-5.5	-20.5
13-07-2010	07:00	07:00	1262	1298	+8.5	-8.5	-	-	1262	1298	+8.5	-8.5
14-07-2010	07:00	07:00	1150	1162	+8.5	-8.5	-	-	1150	1162	+8.5	-8.5

Wo Hing – Penta-Ocean Joint Venture

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Dredging Location of GD "Shun Tai 20" during Overtime Hours 19:00 – 07:00 (next day)

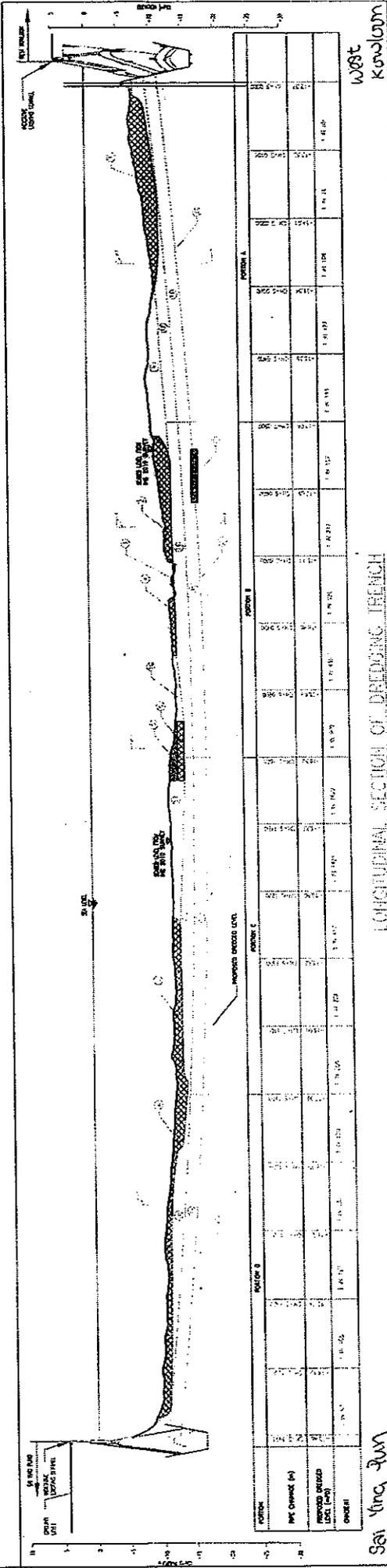
Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)							
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to		
23-06-2010	07:00	07:00	1282	1326	+5.5	+20.5	19:00	07:00	1324	1338	+8.5	-8.5		
			1298	1338	+8.5	-8.5			1162	1188	+8.5	-8.5		
24-06-2010	07:00	07:00	1346	1358	-5.5	-20.5	19:00	07:00	1350	1364	+7.5	-7.5		
			1338	1364	+7.5	-7.5			1188	1208	+8.5	-8.5		
25-06-2010	07:00	07:00	1364	1412	+7.5	-7.5	19:00	07:00	1392	1412	+7.5	-7.5		
			1206	1250	+8.5	-8.5			1206	1250	+8.5	-8.5		
26-06-2010	07:00	23:00	1306	1400	-7.5	-20.5	19:00	23:00	1380	1400	-7.5	-20.5		
			1412	1444	+7.5	-7.5			1412	1444	+7.5	-7.5		
27-06-2010	07:00	23:00	1362	1366	+5	+20	19:00	23:00	1362	1366	+5	+20		
			1326	1448	+7.5	+20.5			1400	1448	+7.5	+20.5		
28-06-2010	07:00	23:00	1400	1435	-7.5	-20.5	19:00	23:00	1400	1436	-7.5	-20.5		
			1448	1480	+7.5	+20			1448	1488	+7.5	-7.5		
29-06-2010	07:00	23:00	1444	1458	-7.5	-7.5	19:00	23:00	1448	1458	-7.5	-20		
			1436	1456	-7.5	-20			1436	1456	-7.5	-20		
30-06-2010	07:00	07:00	1456	1500	-7.5	-20	19:00	20:00	1496	1500	+7.5	-7.5		
			1468	1500	+7.5	-7.5			23:00	07:00	1076	1100	0	-16
01-07-2010	07:00	07:00	1076	1100	0	-16	19:00	07:00	1064	1100	0	+16		
			1048	1100	0	+16			19:00	07:00	1064	1100	0	+16
02-07-2010	07:00	07:00	1020	1064	0	+16	19:00	07:00	1020	1048	0	+16		
			1032	1048	0	-16			1032	1036	0	-16		
03-07-2010	07:00	18:00	1000	1032	0	16	19:00	07:00	1000	1008	0	16		
			992	1020	0	+16			992	1020	0	+16		
04-07-2010	07:00	07:00	968	992	0	+16	19:00	07:00	956	1000	0	-16		
			944	968	0	+16			944	976	0	-16		
05-07-2010	07:00	07:00	944	976	0	-16	19:00	07:00	798	832	0	+17		
			798	850	0	+17			838	850	0	-17		
06-07-2010	07:00	07:00	838	850	0	-17	20:50	07:00	838	850	0	-17		
			782	838	0	-17			782	826	0	-17		
07-07-2010	07:00	07:00	758	782	0	-16	19:00	07:00	758	774	0	-16		
			774	798	0	+16			774	798	0	+16		
08-07-2010	07:00	07:00	728	774	0	+17	19:00	07:00	696	750	0	-17		
			696	750	0	-17			696	700	0	+17		
09-07-2010	07:00	07:00	666	710	0	+17	19:00	07:00	666	670	0	+17		
			682	710	0	-17			682	710	0	-17		
10-07-2010	07:00	07:00	654	682	0	-17	19:00	07:00	654	662	0	-17		
			634	666	0	+17			634	666	0	+17		
11-07-2010	07:00	07:00	622	654	0	-17	20:55	01:10	622	642	0	-17		
			602	622	0	-17			602	626	0	+17		
12-07-2010	07:00	07:00	602	634	0	+17	19:00	07:00	602	596	0	+17		
			574	602	0	-17			574	582	0	-17		
13-07-2010	07:00	07:00	574	602	0	-17	19:00	07:00	570	596	0	+17		
			558	570	0	+17			558	570	0	+17		
14-07-2010	07:00	07:00	562	574	0	-17	21:00	07:00	558	574	0	+17		
			546	562	0	-17			562	574	0	-17		
15-07-2010	07:00	07:00	546	562	0	-17	21:15	07:00	530	558	0	+17		
			530	558	0	+17			526	538	0	-17		
16-07-2010	07:00	07:00	526	546	0	-17	19:00	07:00	526	530	0	-17		
			526	536	0	+17			526	530	0	+17		
17-07-2010	07:00	19:00	-	-	-	-	19:00	23:00	260	276	0	-17		
			260	300	0	-17			248	256	0	+17		
18-07-2010	07:00	23:00	248	300	0	+17	19:00	21:15	248	256	0	+17		
			232	260	0	-15			224	236	0	+15		
19-07-2010	07:00	23:00	224	248	0	+15	19:00	23:00	224	236	0	+15		
			216	232	0	-15			-	-	-	-	-	-
20-07-2010	07:00	23:00	216	232	0	-15	19:00	23:00	204	224	0	+15		
			208	224	0	+15			176	200	0	-15		
21-07-2010	07:00	23:00	208	224	0	+15	19:00	23:00	176	184	0	-15		
			204	224	0	+15			172	176	0	-15		
22-07-2010	07:00	23:00	176	200	0	-15	19:00	20:50	172	176	0	-15		
			176	184	0	-15			200	204	0	+15		
23-07-2010	07:00	23:00	172	176	0	-15	21:00	23:00	200	204	0	+15		
			172	200	0	+15			172	192	0	+15		
24-07-2010	07:00	23:00	172	192	0	+15	19:00	22:40	172	192	0	+15		
			168	172	0	+15			148	172	0	-15		
25-07-2010	07:00	23:00	148	172	0	-15	19:20	23:00	152	168	0	+15		
			152	168	0	+15			128	152	0	+15		
26-07-2010	07:00	23:00	152	168	0	+15	19:00	21:00	128	136	0	+15		
			128	136	0	+15			124	128	0	+15		
27-07-2010	07:00	23:00	128	136	0	+15	21:45	23:00	124	128	0	+15		
			124	128	0	+15			124	136	0	-15		
28-07-2010	07:00	23:00	124	148	0	-15	19:00	20:20	124	136	0	-15		
			124	136	0	-15			116	124	0	-15		
29-07-2010	07:00	23:00	116	124	0	-15	20:30	23:00	116	124	0	-15		
			88	116	0	-15			88	100	0	-15		
30-07-2010	07:00	23:00	88	100	0	-15	19:00	20:45	88	100	0	-15		
			1480	1528	+5	+20.5			1480	1528	+5	+20.5		
31-07-2010	07:00	23:00	1480	1528	+5	+20.5	19:00	22:45	1480	1528	+5	+20.5		
			1500	1508	+7.5	-7.5			1500	1508	+7.5	-7.5		
31-07-2010	07:00	23:00	1500	1548	-5	-20.5	19:00	20:45	1500	1548	-5	-20.5		
			1508	1516	+7.5	-7.5			1516	1540	+7.5	-7.5		
			1516	1540	+7.5	-7.5			1516	1540	+7.5	-7.5		
			1516	1540	+7.5	-7.5			19:00	20:45	1516	1540	+7.5	-7.5
			1540	1548	+7.5	-7.5			20:50	23:00	1540	1548	7.5	-7.5

NOTE:

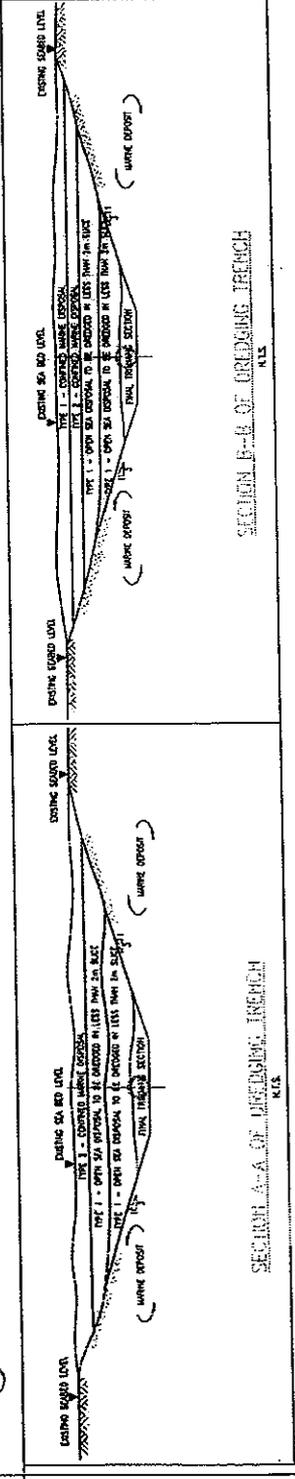
LOGISTIC OF DREDGING

- STAGE 1 - TYPE 2 MARINE SEDIMENT
① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧
- STAGE 2 - TYPE 1 MARINE SEDIMENT
⑨ → ⑩ → ⑪ → ⑫ → ⑬ → ⑭ → ⑮ → ⑯ → ⑰ → ⑱
- STAGE 3 - TYPE 1 MARINE SEDIMENT
⑲ → ⑳ → ㉑ → ㉒ → ㉓ → ㉔ → ㉕ → ㉖ → ㉗ → ㉘ → ㉙ → ㉚ → ㉛ → ㉜ → ㉝ → ㉞ → ㉟ → ㊱ → ㊲ → ㊳ → ㊴ → ㊵ → ㊶ → ㊷ → ㊸ → ㊹ → ㊺ → ㊻ → ㊼ → ㊽ → ㊾ → ㊿
- STAGE 4 - TYPE 10 MARINE SEDIMENT
① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧ → ⑨ → ⑩ → ⑪ → ⑫ → ⑬ → ⑭ → ⑮ → ⑯ → ⑰ → ⑱ → ⑲ → ⑳ → ㉑ → ㉒ → ㉓ → ㉔ → ㉕ → ㉖ → ㉗ → ㉘ → ㉙ → ㉚ → ㉛ → ㉜ → ㉝ → ㉞ → ㉟ → ㊱ → ㊲ → ㊳ → ㊴ → ㊵ → ㊶ → ㊷ → ㊸ → ㊹ → ㊺ → ㊻ → ㊼ → ㊽ → ㊾ → ㊿
- STAGE 5 - TYPE 1 MARINE SEDIMENT
① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧ → ⑨ → ⑩ → ⑪ → ⑫ → ⑬ → ⑭ → ⑮ → ⑯ → ⑰ → ⑱ → ⑲ → ⑳ → ㉑ → ㉒ → ㉓ → ㉔ → ㉕ → ㉖ → ㉗ → ㉘ → ㉙ → ㉚ → ㉛ → ㉜ → ㉝ → ㉞ → ㉟ → ㊱ → ㊲ → ㊳ → ㊴ → ㊵ → ㊶ → ㊷ → ㊸ → ㊹ → ㊺ → ㊻ → ㊼ → ㊽ → ㊾ → ㊿

IF SIMILAR DISPOSAL SITE IS DEDICATED FOR TYPE 10 AND TYPE 1 MARINE SEDIMENT DREDGING LOGISTIC AT ⑳ WILL BE DELETED AND INCLUDED IN ⑱ AND ㉚.



LONGITUDINAL SECTION OF DREDGING TRENCH



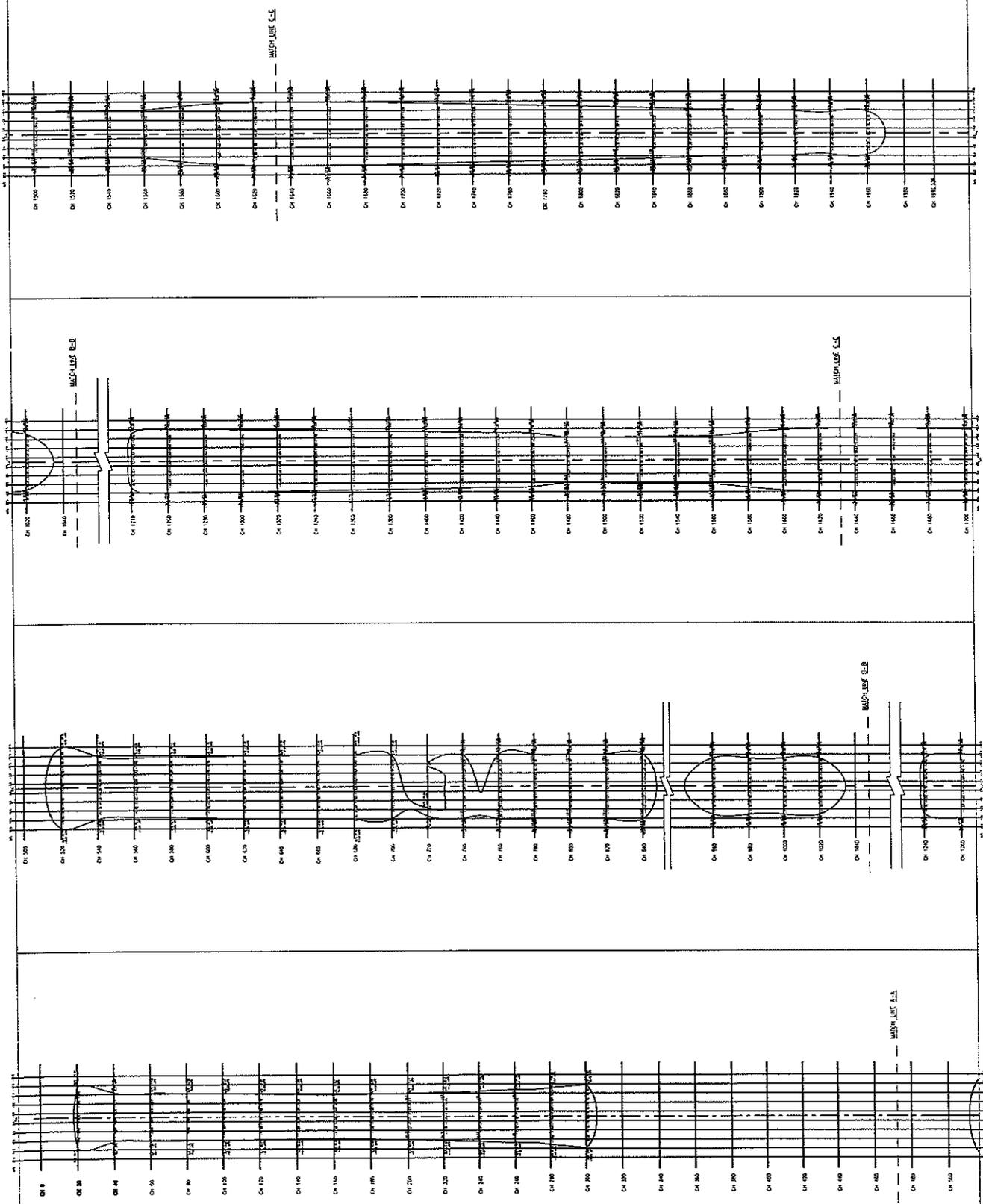
LEGEND:

- TYPE 1 - OPEN SEA DISPOSAL
- TYPE 10 - OPEN SEA DISPOSAL (DEDICATED SITES)
- TYPE 2 - CONFINED MARINE DISPOSAL
- TYPE 1 - CONFINED MARINE DISPOSAL

THE NUMBER INDICATE THE SEQUENCE OF DREDGING

CONTRACTOR WO HING-PENTAOCEAN JOINT VENTURE 和興五洲聯合	CONTRACT NO. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun	DRAWN BY	TONY TANG	SCALE	NTS
		CHECKED BY	STANLEY LEUNG	DWG No.	SK-D-002
DRAWING TITLE DREDGING LOGISTIC		DATE	08 Apr 2010	REVISION	D

NOTES :



NO.	REVISION	DATE	BY	CHECKED	APPROVED


**THE GOVERNMENT OF THE HONG KONG
SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT**

CONTRACT TITLE 1
 LAYING OF WESTERN CROSS HARBOUR BARR
 AND ASSOCIATED WORKS (FROM WEST
 SIDE) TO SA TUNG PEN
 (CONTRACT NO. S/MS/04)

**GRID PLAN OF THE EXTENT
 AND LEVEL OF TYPE 2
 SEDIMENT TO BE DREDGED**

Mott MacDonald
 Mott MacDonald Hong Kong Limited
 MAIN CONTRACTOR


 MOTT MACDONALD HONG KONG VENTURE
 香港特許有限公司

Sheet 1 of 12 (A1) Page 1 12 APRIL 2010
 Dwg. No. SK-0-011



Appendix K

Details of Interim Notifications of Exceedance (NOEs) in this reporting month



Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Notification of Exceedance (NOE)

Date and Time of Noise Monitoring: 03 July 2010 (2300-2400)

Construction Works carried out during the monitoring: Maintenance of frame type silt curtain at Point I (CH984 to CH968)

Corresponding CNP: GW-RE0063-10 (01 March 2010 to 31 August 2010)

Monitoring Location	Measured Value, dB(A)	Action Level	Limit Level, dB(A)	Possible Reason(s) for the Exceedance	Action to be taken	Remark
KY3	58.2 56.8 58.4	When one documented complaint is received	55	Refer to the observation during the monitoring, main source of noise impact was due to local traffic along Connaught Road West and Western Harbour Crossing. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 58.5dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 58.5dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
RWM	57.8 56.9 57.1	When one documented complaint is received	55	Refer to the observation during the monitoring, main source of noise impact was due to local traffic along Connaught Road West and Western Harbour Crossing. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 60.5dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 60.5dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
CGa	56.7 56.9 56.3	When one documented complaint is received	55	Refer to the observation during the monitoring, main source of noise impact was due to local traffic along Connaught Road West and Western Harbour Crossing. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 63.3dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 63.3dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
KS6	58.3 58.4 57.7	When one documented complaint is received	55	Refer to the observation during the monitoring, main source of noise impact was due to local traffic along West Kowloon Highway. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 60.3dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 60.3dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil

Remark (*): Refer to the baseline data, it shows that the range of noise level during 2300-0700 is very large (around from 52dB(A) to 67dB(A)) and noise from 2300-2400 is in high level (greater than 60dB(A)) at all monitoring stations. As a result, baseline noise data measured between 2300-2400 is more suitable for being as background indicator (instead of 2300-0700 of next day).

Attachment

Noise monitoring (2300-2400) data sheet (03 July 2010)
Summary of Baseline Noise Monitoring (2300-2400) at KY3, RWM, CGa and KS6
Location plan show the construction works carried out during the period from 03 July 2010 (1900) to 04 July 2010 (0700)

Linda Lau

Prepared by:

(Linda Lau) (Senior Environmental Officer)

Date: 05 July 2010

C. L. Lau

Checked by:

(C. L. Lau) (Environmental Teamer Leader)

Date: 05 July 2010



Agreement No. CE 42/2005 (WS)

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun - Investigation

Impact Noise Monitoring at Sai Ying Pun during 1900-2300 / 2300-0700 / 0700-1900 (Holiday) Data Record Sheet

Date of Monitoring		3/7/10								
Monitoring Location For 1900-2300		CGa - Pavement at Connaught Garden			RWM - Pavement at Richwealth Mansion			KY3 - Pavement at Kwan Yik Building Phase 3		
Monitoring Location For 2300-0700 and 0700-1900 (Holiday)		CGa - Pavement at Connaught Garden			RWM - Roof at Richwealth Mansion			KY3 - Roof at Kwan Yik Building Phase 3		
Sound Level Meter (Model and Serial No.)		Rion NL-31 (S/N: 00531142)			Rion NL-31 (S/N: 00531142)			Rion NL-31 (S/N: 00531142)		
Sound Pressure Calibrator (Model and Serial No.)		Rion NC-13 (S/N: 10196943)			Rion NC-13 (S/N: 10196943)			Rion NC-13 (S/N: 10196943)		
Weather Condition		Cloudy			Cloudy			Cloudy		
Temperature (°C)		28			28			28		
Type of Measurement		Free Field / Facade			Free Field / Facade			Free Field / Facade		
Measurement Period (min)		5			5			5		
Calibration before Measurement, dB(A)	Before	94.0			94.0			94.0		
	After	94.0			94.0			94.0		
Measurement Time	From	23:00	23:05	23:10	23:15	23:20	23:25	23:31	23:36	23:41
	To	23:05	23:10	23:15	23:20	23:25	23:30	23:36	23:41	23:46
Wind Strength (m/s)		0.7	0.8	0.5	0.8	0.8	0.7	0.5	0.4	0.8
L _{eq} , dB(A)		56.7	56.9	56.3	57.8	56.9	57.1	58.2	56.8	58.4
L ₁₀ , dB(A)		57.9	58.2	57.2	58.1	57.4	57.8	59.2	58.6	59.2
L ₅₀ , dB(A)		56.1	56.2	55.6	56.8	56.0	56.9	56.3	55.9	56.7
Major Construction Noise Source(s) During Measurement		Ve hicles passing by			Ve hicles passing by			Ve hicles passing by		
Other Noise Source(s) During Measurement		↓			↓			↓		
Remarks		The result was / was not exceeded the Limit Level.			The result was / was not exceeded the Limit Level.			The result was / was not exceeded the Limit Level.		

Time Period	Action	Limit
0700 - 1900 hrs normal weekdays	When one documented complaint is received	75 dB(A)
1900-2300 hrs on normal weekdays		70 dB(A)
0700-1900 hrs on holidays		70 dB(A)
Restricted hrs (2300-0700 hrs)		55 dB(A)

	Name	Signature	Date
Recorded by	S.H. Lam	<i>S.H. Lam</i>	3 July 2010
Checked by	Inde Lam	<i>Inde Lam</i>	3/7/10



Agreement No. CE 42/2005 (WS)
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun - Investigation

Impact Noise Monitoring at West Kowloon during 1900-2300 / 2300-0700 / 0700-1900 (Holiday) Data Record Sheet

Date of Monitoring		3 Jul 2010					
Monitoring Location		KS6 - Podium at the Cullinan			KS4b - Footpath of West Kowloon Waterfront Promenade		
Sound Level Meter (Model and Serial No.)		R10N-NL-31 (S/N: 60593620)			R20N-NL-31 (S/N: 60593620)		
Sound Pressure Calibrator (Model and Serial No.)		R10N-NC-73 (S/N: 10196943)			R20N-NC-73 (S/N: 10196943)		
Weather Condition		FINE			FINE		
Temperature (°C)		30			30		
Type of Measurement		Free Field / <u>Facade</u>			<u>Free Field</u> / Façade		
Measurement Period (min)		5			5		
Calibration before Measurement, dB(A)	Before	94.0			94.0		
	After	94.0			94.0		
Measurement Time	From	23:00	23:05	23:10	23:28	23:33	23:38
	To	23:05	23:10	23:15	23:33	23:38	23:43
Wind Strength (m/s)		1.0	1.0	0.9	0.8	0.8	0.8
L _{eq} , dB(A)		58.3	58.4	57.7	54.3	54.7	53.1
L ₁₀ , dB(A)		59.5	59.7	59.0	55.8	55.7	54.2
L ₅₀ , dB(A)		57.1	56.0	56.4	53.0	52.3	51.7
Major Construction Noise Source(s) During Measurement		/			-		
Other Noise Source(s) During Measurement		Vehicles passing.			/		
Remarks		The result was / was not exceeded the Limit Level.			The result was / was not exceeded the Limit Level.		

Time Period	Action	Limit
0700-1900 hrs normal weekdays	When one documented complaint is received	75 dB(A)
1900-2300 hrs on normal weekdays		70 dB(A)
0700-1900 hrs on holiday		70 dB(A)
Restricted hours (2300-0700 hrs)		55 dB(A)

	Name	Signature	Date
Recorded by	K. M. Kwan		3 Jul 2010
Checked by	Lide Lam		31/7/10

Summary of Baseline Noise Monitoring (Night-time:2300-2400) - KY3 (Kwan Yik Building Phase 3)

Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	57.5	60.4	57.0	61.4	58.0	57.7	57.6	57.5	57.7	60.0	57.4	58.5	57.9	57.4
Max Leq(5min)	59.6	61.5	59.4	62.9	59.4	59.4	60.2	58.4	59.7	61.6	59.1	61.5	59.4	59.2
Min Leq(5min)	56.5	59.0	55.1	59.6	56.6	56.2	56.1	56.7	56.6	59.2	55.9	56.6	56.3	55.4

Overall Average, Leq(5-min) **58.5** dB(A)
 Max **62.9** dB(A)
 Min **55.1** dB(A)

Summary of Baseline Noise Monitoring (Night-time:2300-2400) - RWM (Richwealth Mansion)

Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	60.7	61.4	60.1	65.0	61.5	56.9	55.2	58.5	56.3	58.5	58.2	57.5	62.9	61.9
Max Leq(5min)	62.0	64.1	61.9	67.3	62.3	57.7	57.0	59.3	57.3	59.4	62.1	58.5	64.7	63.6
Min Leq(5min)	59.3	58.3	58.4	61.4	60.0	56.0	52.8	57.5	55.7	56.9	55.7	56.3	60.9	60.2

Overall Average, Leq(5-min) 60.5 dB(A)

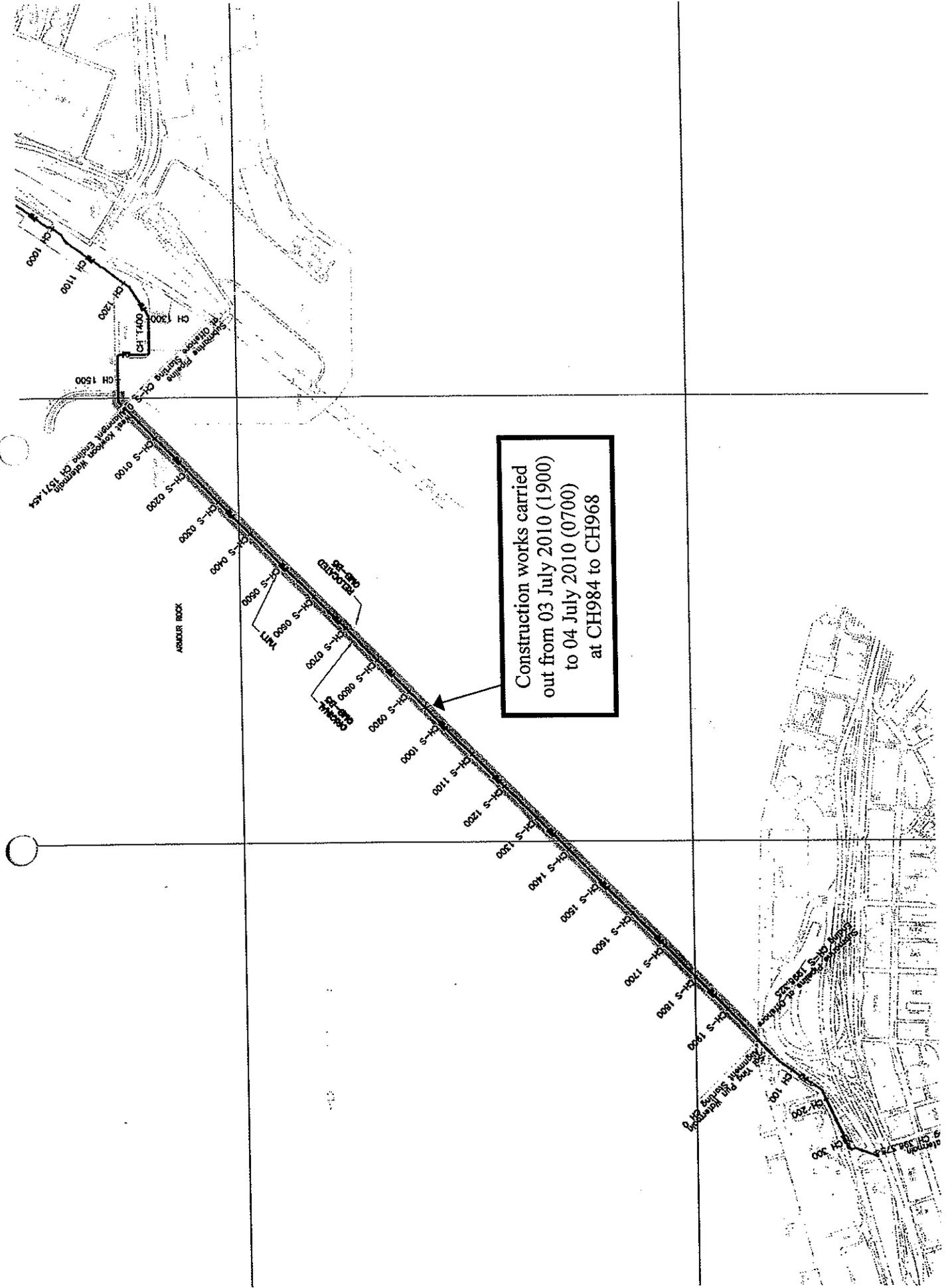
Max 67.3 dB(A)

Min 52.8 dB(A)

Summary of Baseline Noise Monitoring (Night-time:2300-2400) - CG (Connaught Garden)

Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	63.7	63.3	63.3	63.5	64.0	64.1	63.5	63.1	62.5	62.2	61.7	64.2	63.9	63.0
Max Leq(5min)	64.6	64.7	64.4	64.2	65.0	66.1	64.6	63.7	63.6	63.0	63.6	64.7	65.3	64.0
Min Leq(5min)	62.7	61.3	61.9	62.2	63.0	63.3	62.4	62.0	61.4	60.6	60.2	63.1	62.9	61.9

Overall Average, Leq(5-min) **63.3** dB(A)
 Max **66.1** dB(A)
 Min **60.2** dB(A)



Construction works carried out from 03 July 2010 (0700) to 04 July 2010 (0700) at CH984 to CH968

CH 1000
CH 1100
CH 1200
CH 1300
CH 1400
CH 1500
Surrey Police Station
CH 1600
CH 1700
CH 1800
CH 1900
CH 2000
CH 2100
CH 2200
CH 2300

West Kenton Industrial Estate
CH 1211.454

ARBOUR ROCK

CH-S 0700
CH-S 0800
CH-S 0900
CH-S 1000
CH-S 1100
CH-S 1200
CH-S 1300
CH-S 1400
CH-S 1500
CH-S 1600
CH-S 1700
CH-S 1800
CH-S 1900
CH-S 2000
CH-S 2100
CH-S 2200
CH-S 2300

Surrey Police Station
CH 2300

West Kenton Industrial Estate
CH 2300



Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Notification of Exceedance (NOE)

Date and Time of Noise Monitoring: 10 July 2010 (2300-2400) at KY3, RWM and CGa & 11 July 2010 (0000-0100) at KS6
Construction Works carried out during the monitoring: Dredging of Type 2 marine sediment at Point I (CH654 to CH634)
Corresponding CNP: GW-RE0063-10 (01 March 2010 to 31 August 2010)

Monitoring Location	Measured Value, dB(A)	Action Level	Limit Level, dB(A)	Possible Reason(s) for the Exceedance	Action to be taken	Remark
KY3	57.4	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH654 to CH634, which fulfill the requirement described in corresponding CNP. Refer to the observation during the monitoring, main source of noise impact was due to local traffic along Connaught Road West and Western Harbour Crossing. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 58.5dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 58.5dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	56.6					
	56.8					
RWM	56.9	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH654 to CH634, which fulfill the requirement described in corresponding CNP. Refer to the observation during the monitoring, main source of noise impact was due to local traffic along Connaught Road West and Western Harbour Crossing. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 60.5dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 60.5dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	57.3					
	57.0					
CGa	58.4	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH654 to CH634, which fulfill the requirement described in corresponding CNP. Refer to the observation during the monitoring, main source of noise impact was due to local traffic along Connaught Road West and Western Harbour Crossing. According to the summary of baseline noise monitoring, the average background noise level from 2300-2400 * is 63.3dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 63.3dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	58.1					
	58.3					
KS6	58.0	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH654 to CH634, which fulfill the requirement described in corresponding CNP. Refer to the observation during the monitoring, main source of noise impact was due to local traffic along West Kowloon Highway. According to the summary of baseline noise monitoring, the average background noise level from 0000-0100 * is 58.5dB(A) which is higher than the limit level 55dB(A) and the monitoring results were found below 58.5dB(A). Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	57.7					
	57.7					

Remark (*): Refer to the baseline data, it shows that the range of noise level during 2300-0700 is very large (around from 52dB(A) to 67dB(A)) and noise from 2300-0100 is in high level (greater than 60dB(A)) at all monitoring stations. As a result, baseline noise data measured between 2300-2400 at CGa, RWM, KY3 and 0000-0100 at KS6 are more suitable for being as background indicator (instead of 2300-0700 of next day).

Attachment

Night-time Noise monitoring data sheet (10 to 11 July 2010)
Summary of Baseline Noise Monitoring at KY3, RWM and CGa (2300-2400) & at KS6 (0000-0100)
Location plan shown the construction works carried out during the period from 10 July 2010 (2155) to 11 July 2010 (0300)

Prepared by: _____

(Linda Law) (Senior Environmental Officer)

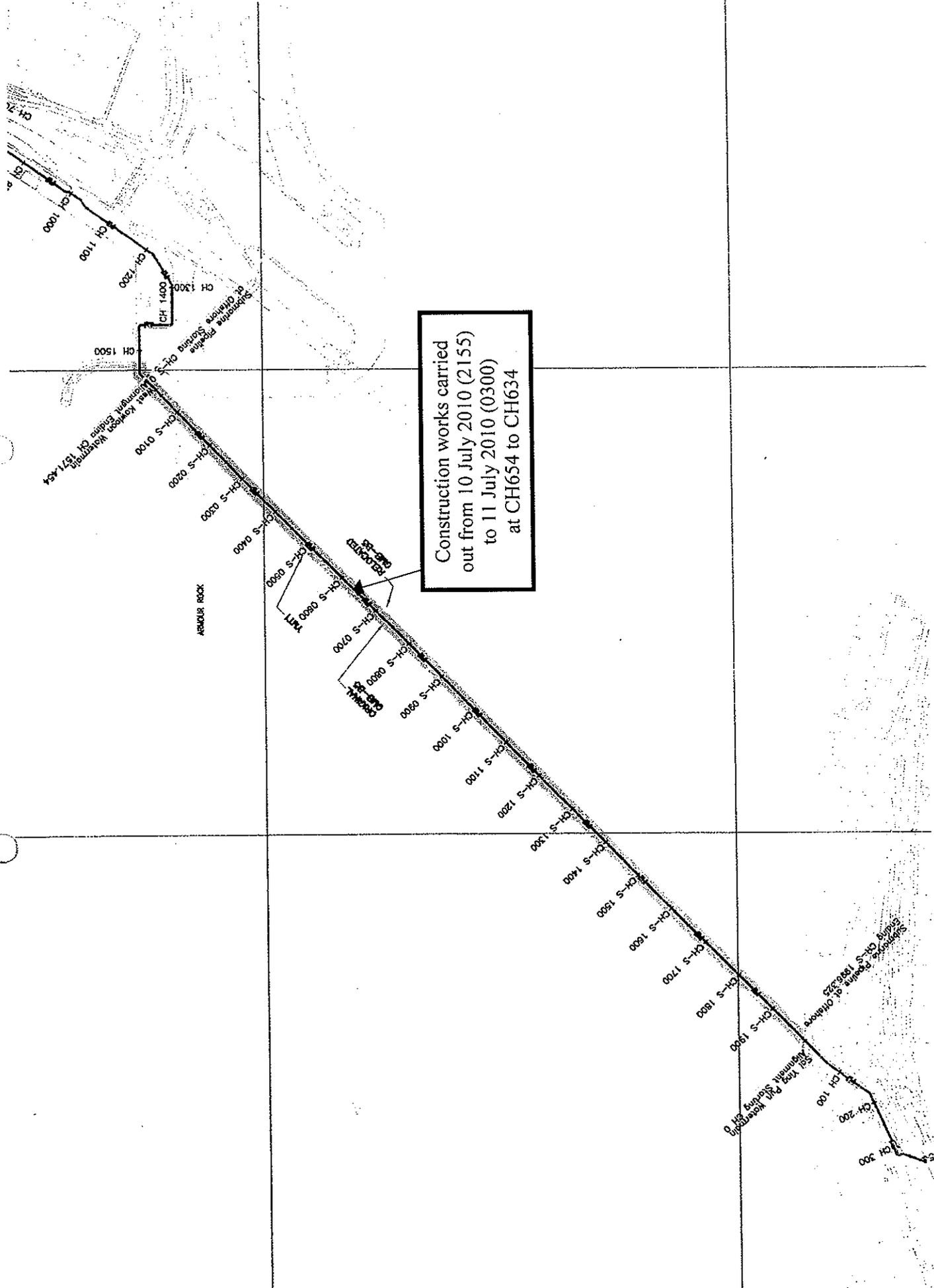
Date: 12 July 2010

Checked by: _____

(C. L. Lau) (Environmental Teamer Leader)

Date: 12 July 2010

Construction works carried out from 10 July 2010 (2155) to 11 July 2010 (0300) at CH654 to CH634





Agreement No. CE 42/2005 (WS)
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun - Investigation

**Impact Noise Monitoring at Sai Ying Pun during 1900-2300 / 2300-0700 / 0700-1900 (Holiday)
Data Record Sheet**

Date of Monitoring		10/7/10								
Monitoring Location For 1900-2300		CGa - Pavement at Connaught Garden			RWM - Pavement at Richwealth Mansion			KY3 - Pavement at Kwan Yik Building Phase 3		
Monitoring Location For 2300-0700 and 0700-1900 (Holiday)		CGa - Pavement at Connaught Garden			RWM - Roof at Richwealth Mansion			KY3 - Roof at Kwan Yik Building Phase 3		
Sound Level Meter (Model and Serial No.)		Rion NL-31 (S/N: 00593620)			Rion NL-31 (S/N: 00593620)			Rion NL-31 (S/N: 00593620)		
Sound Pressure Calibrator (Model and Serial No.)		Rion NC-73 (S/N: 10196943)			Rion NC-73 (S/N: 10196943)			Rion NC-73 (S/N: 10196943)		
Weather Condition		Fine			Fine			Fine		
Temperature (°C)		30			30			30		
Type of Measurement		Free Field / Façade			Free Field / Façade			Free Field / Façade		
Measurement Period (min)		5			5			5		
Calibration before Measurement, dB(A)	Before	94.0			94.0			94.0		
	After	94.0			94.0			94.0		
Measurement Time	From	23:00	23:05	23:10	23:20	23:25	23:30	23:40	23:45	23:50
	To	23:05	23:10	23:15	23:25	23:30	23:35	23:45	23:50	23:55
Wind Strength (m/s)		0.8	0.7	0.8	0.6	0.8	0.8	0.9	0.7	0.5
L _{eq} , dB(A)		57.4	56.6	56.8	56.9	57.3	57.0	58.4	58.1	58.3
L ₁₀ , dB(A)		59.0	58.5	58.8	58.4	59.1	58.9	59.9	59.5	59.8
L ₉₀ , dB(A)		54.5	53.2	53.3	52.1	52.7	52.4	54.8	54.5	54.6
Major Construction Noise Source(s) During Measurement		/			/			/		
Other Noise Source(s) During Measurement		Vehicles passing by			→			→		
Remarks		The result was was not exceeded the Limit Level.			The result was was not exceeded the Limit Level.			The result was was not exceeded the Limit Level.		

Time Period	Action	Limit
0700 - 1900 hrs normal weekdays	When one documented complaint is received	75 dB(A)
1900-2300 hrs on normal weekdays		70 dB(A)
0700-1900 hrs on holidays		70 dB(A)
Restricted hrs (2300-0700 hrs)		55 dB(A)

	Name	Signature	Date
Recorded by	Maik Jui Wan	Maik	10/7/10
Checked by	Lada Lam	Lada Lam	12/7/10



Agreement No. CE 42/2005 (WS)

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun - Investigation

Impact Noise Monitoring at West Kowloon during 1900-2300 / 2300-0700 / 0700-1900 (Holiday) Data Record Sheet

Date of Monitoring		11/10/10					
Monitoring Location		KS6 - Podium at the Cullinan			KS4b - Footpath of West Kowloon Waterfront Promenade		
Sound Level Meter (Model and Serial No.)		Dion NL-31 (S/N: 00593620)			Dion NL-31 (S/N: 00593620)		
Sound Pressure Calibrator (Model and Serial No.)		Dion NC-73 (S/N: 10196943)			Dion NC-73 (S/N: 10196943)		
Weather Condition		Fine			Fine		
Temperature (°C)		30			30		
Type of Measurement		Free Field / Façade			Free Field / Façade		
Measurement Period (min)		5			5		
Calibration before Measurement, dB(A)	Before	94.0			94.0		
	After	94.0			94.0		
Measurement Time	From	00:25	00:30	00:35	00:45	00:50	00:55
	To	00:30	00:35	00:40	00:50	00:55	01:00
Wind Strength (m/s)		0.9	0.7	0.6	0.8	0.6	0.7
L _{eq} , dB(A)		58.0	57.7	57.7	54.0	53.3	52.8
L ₁₀ , dB(A)		59.6	59.0	59.1	56.5	55.8	55.2
L ₉₀ , dB(A)		56.5	56.1	55.9	51.4	50.5	49.9
Major Construction Noise Source(s) During Measurement		/			/		
Other Noise Source(s) During Measurement		/			vehicles passing by		
Remarks		The result was <u>not</u> exceeded the Limit Level.			The result was <u>not</u> exceeded the Limit Level.		

Time Period	Action	Limit
0700 - 1900 hrs normal weekdays	When one documented complaint is received	75 dB(A)
1900-2300 hrs on normal weekdays		70 dB(A)
0700-1900 hrs on holiday		70 dB(A)
Restricted hours (2300-0700 hrs)		55 dB(A)

	Name	Signature	Date
Recorded by	Mak Yui Wai	Mak	11/10/10
Checked by	Linda Lam	Linda Lam	12/10/10

Summary of Baseline Noise Monitoring (Night-time:0000-0100) - KS6 (The Cullinan)

Date	28/12/09	29/12/09	30/12/09	31/12/09	01/01/10	02/01/10	03/01/10	04/01/10	05/01/10	06/01/10	07/01/10	08/01/10	09/01/10	10/01/10
Daily Average, Leq(5min)	57.0	57.1	62.3	56.8	56.8	59.2	56.6	55.3	60.6	56.7	57.4	60.1	59.0	56.8
Max Leq(5min)	58.5	58.5	63.6	59.5	59.5	60.5	58.3	57.8	61.1	58.2	58.9	61.4	64.7	58.3
Min Leq(5min)	54.7	55.7	60.4	55.2	55.2	57.6	54.2	54.7	59.6	55.1	55.7	59.2	56.0	55.0

Overall Average, Leq(5-min) 58.5 dB(A)
 Max 64.7 dB(A)
 Min 54.2 dB(A)

Summary of Baseline Noise Monitoring (Night-time:2300-2400) - CG (Connaught Garden)

Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	63.7	63.3	63.3	63.5	64.0	64.1	63.5	63.1	62.5	62.2	61.7	64.2	63.9	63.0
Max Leq(5min)	64.6	64.7	64.4	64.2	65.0	66.1	64.6	63.7	63.6	63.0	63.6	64.7	65.3	64.0
Min Leq(5min)	62.7	61.3	61.9	62.2	63.0	63.3	62.4	62.0	61.4	60.6	60.2	63.1	62.9	61.9

Overall Average, Leq(5-min) 63.3 dB(A)
 Max 66.1 dB(A)
 Min 60.2 dB(A)

Summary of Baseline Noise Monitoring (Night-time:2300-2400) - KY3 (Kwan Yik Building Phase 3)

Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	57.5	60.4	57.0	61.4	58.0	57.7	57.6	57.5	57.7	60.0	57.4	58.5	57.9	57.4
Max Leq(5min)	59.6	61.5	59.4	62.9	59.4	59.4	60.2	58.4	59.7	61.6	59.1	61.5	59.4	59.2
Min Leq(5min)	56.5	59.0	55.1	59.6	56.6	56.2	56.1	56.7	56.6	59.2	55.9	56.6	56.3	55.4

Overall Average, Leq(5-min) 58.5 dB(A)
 Max 62.9 dB(A)
 Min 55.1 dB(A)

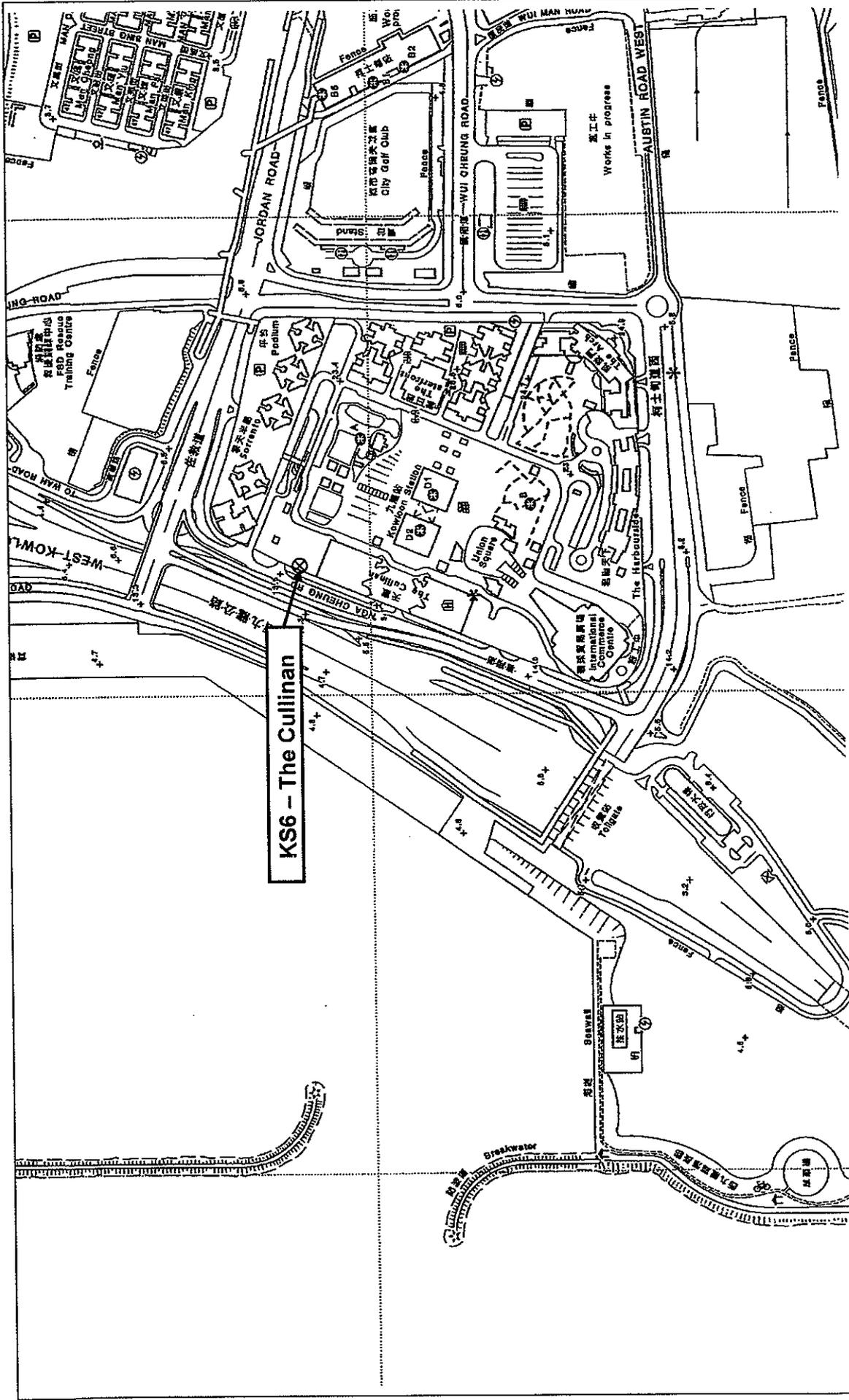
Summary of Baseline Noise Monitoring (Night-time:2300-2400) - RWM (Richwealth Mansion)

Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	60.7	61.4	60.1	65.0	61.5	56.9	55.2	58.5	56.3	58.5	58.2	57.5	62.9	61.9
Max Leq(5min)	62.0	64.1	61.9	67.3	62.3	57.7	57.0	59.3	57.3	59.4	62.1	58.5	64.7	63.6
Min Leq(5min)	59.3	58.3	58.4	61.4	60.0	56.0	52.8	57.5	55.7	56.9	55.7	56.3	60.9	60.2

Overall Average, Leq(5-min) 60.5 dB(A)
 Max 67.3 dB(A)
 Min 52.8 dB(A)



Figures



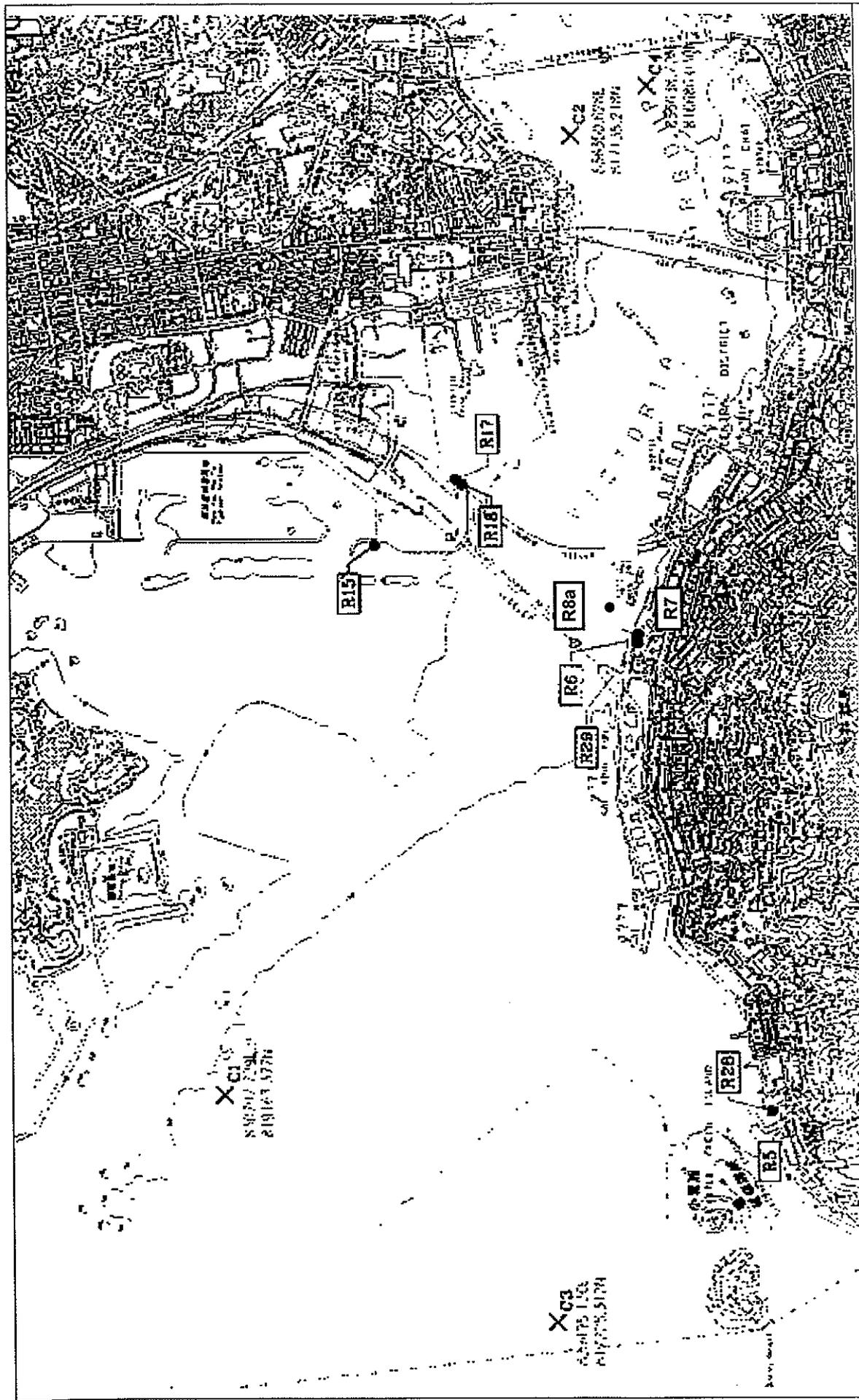
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



東業建築測試顧問有限公司
ETS-TESTCONSULT LIMITED



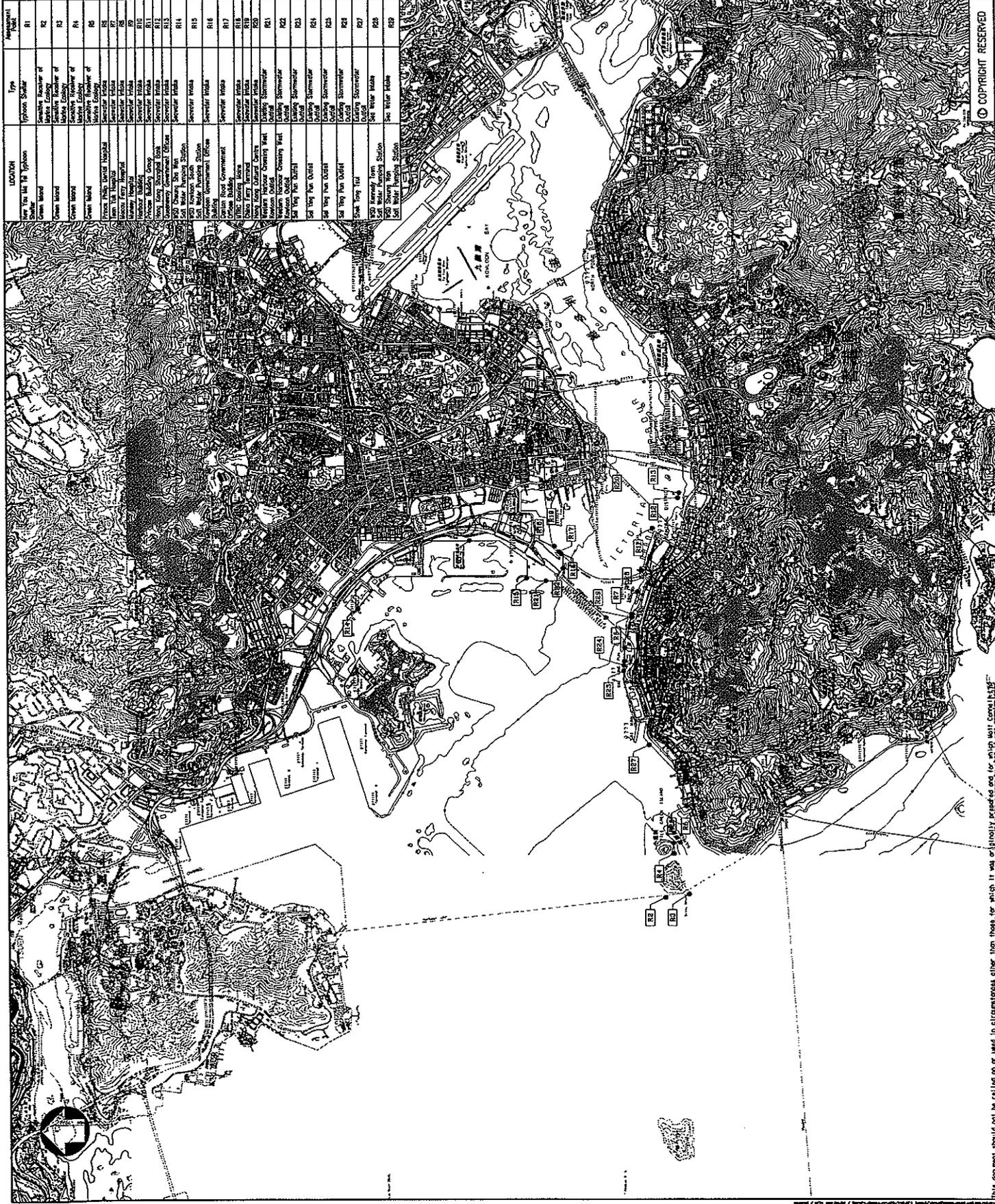
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 3

Locations of Water Quality Monitoring Stations



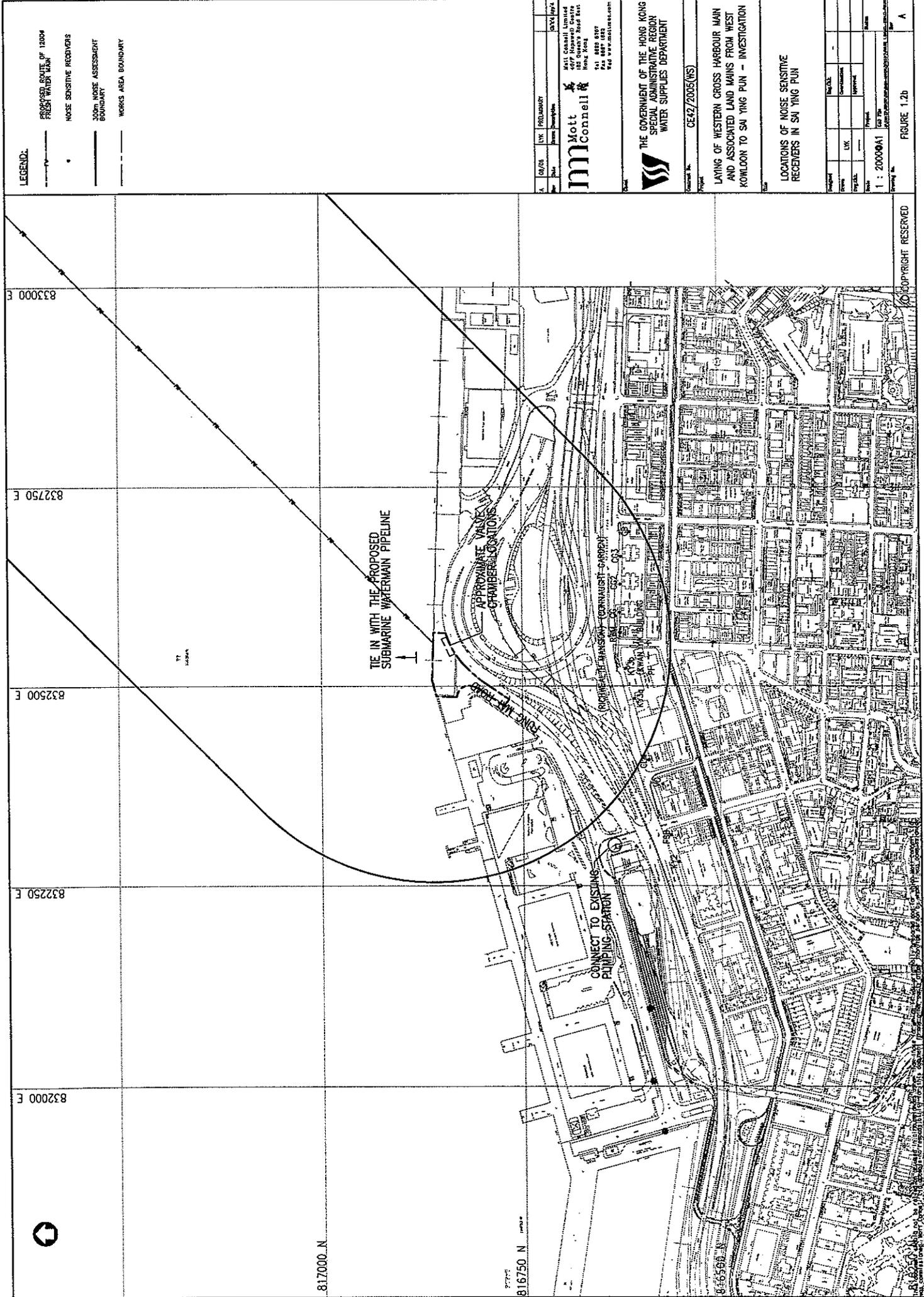
東業德測測試顧問有限公司
ETS-TESTCONSULT LIMITED



Project No.	CE-12/2005(NS)
Project Name	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SHA YING FUN - INVESTIGATION
Client	THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
Contractor	Mott MacDonald Mott MacDonald Limited 250 Queen's Road East Hong Kong Tel: 852 2787 Fax: 852 2787 www.mottmac.com
Scale	1:25000/041
Date	2013
Sheet No.	A

This document should not be used in any way for any purpose other than that for which it was prepared. It is the property of Mott MacDonald and its contents should not be disclosed to any other party without the written consent of Mott MacDonald.

© COPYRIGHT RESERVED



LEGEND:

- PROPOSED GRADE OF 12004 FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- 300m NOISE ASSESSMENT BOUNDARY
- - - WORKS AREA BOUNDARY

Mott MacDonald Limited

 102 Seaview Road East

 Hong Kong

 Tel: 8522 5000

 Fax: 8522 5001

 Web: www.mottmac.com

THE GOVERNMENT OF THE HONG KONG

 SPECIAL ADMINISTRATIVE REGION

 WATER SUPPLIES DEPARTMENT

Contract No. GE42/2005 (WS)

LAYING OF WESTERN CROSS HARBOUR MAIN

 AND ASSOCIATED LAND MAINS FROM WEST

 KOWLOON TO SAI YING PUN - INVESTIGATION

LOCATIONS OF NOISE SENSITIVE

 RECEIVERS IN SAI YING PUN

Project No.	GE42/2005 (WS)
Scale	1 : 20000/1
Sheet No.	A
Revision	
Drawn by	
Checked by	
Approved by	

COPYRIGHT RESERVED

LEGEND:

- PROPOSED ROUTE OF 1200V FIBRE OPTIC MAIN
- NOISE SENSITIVE RECEIVERS
- TEMPORARY PLATFORM
- 300m NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

No.	Date	Rev.	Description
1	10/03	1.0	PRELIMINARY
2	04/04	1.0	REVISED

Mott MacDonald
 407, Hing-Fong Centre
 110, Hing-Fong Road East
 Hong Kong
 Tel: 852 2577 8888
 Fax: 852 2577 8888
 Web: www.mott.com

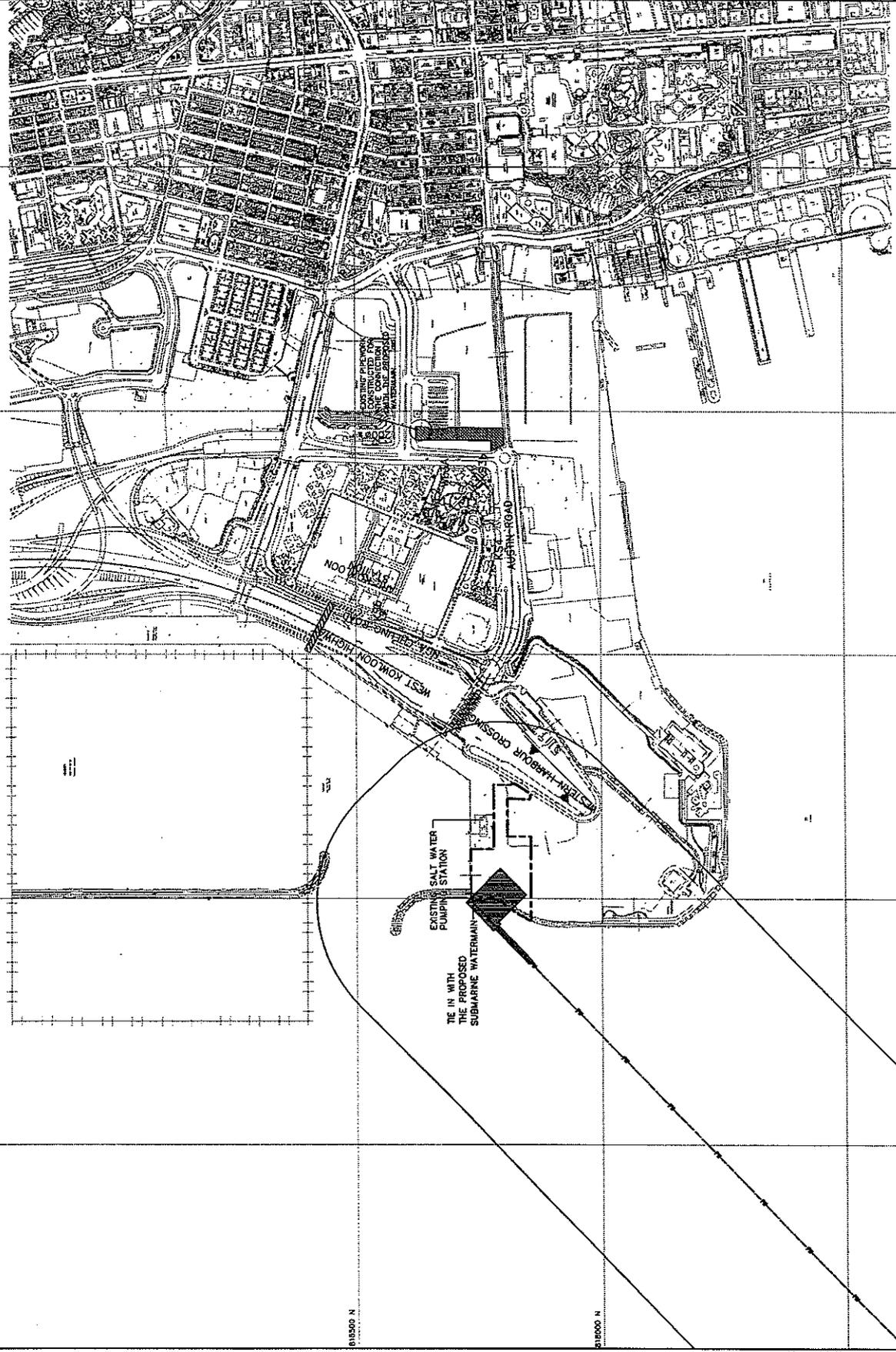
THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

Project No. CE42/2005(W5)
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SU YING PUN - INVESTIGATION

LOCATION OF NOISE SENSITIVE
 RECEIVERS IN WEST KOWLOON

Category	Design	Drawn	Checked	Approved
Design				
Drawn				
Checked				
Approved				

Scale: 1 : 40000A1
 Drawing No. **FIGURE 1.2c**



© COPYRIGHT RESERVED

This document should not be relied upon for any purpose other than that for which it was prepared. It is the responsibility of the user to ensure that it is used in accordance with the terms and conditions of the contract.