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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.6**

(OCTOBER 2010)

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9th Nov, 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

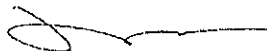
**Re: Contact No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains from West
Kowloon to Sai Ying Pun
Monthly Environmental Monitoring and Audit Report No. 6**

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 6 by Email on 8th Nov 2010 (entitled "9/WSD/08 - Draft Monthly Report (October 10)") and the subsequent revision of the report by Email on 9th Nov 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

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	Wo Hing – Penta-Ocean Joint Venture	Mr. Danny Ho	Fax: 2572 4080
	ETS-TESTCONSULT LIMITED	Mr. C.L. Lau	Fax: 2695 3944

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EXECUTIVE SUMMARY

Under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(W) 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.6 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in October 2010.

Site Activities

As informed by the Contractor², the site activities in this reporting month were as below:

- Dredging of Type 1 marine sediment (between CH778 and CH128 at Portion I);
- Drilling of pipe piles (Portion J); and
- Dismantling of the steel working platform (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): 3 Occasions at KS6, CGa, RWM and KY3
- Holiday-time Noise Monitoring (0700-1900 on Holiday): 5 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 11 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.

Thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 02, 15 and 23 October 2010 (2300-2400) at CGa, 02, 16 and 23 October 2010 (2300-2400) at RWM and KY3, 24 October 2010 (0000-0100) at KS6. 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

Marine water quality monitoring on 21 October 2010 (both mid-flood and mid-ebb) was cancelled due to bad weather (Typhoon Signal No.3).

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	05, 12, 20 and 28 October 2010
Monthly Joint site inspection	20 October 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 in October 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 marine sediment (between CH778 and CH128 at Portion I);*
- *Drilling of pipe piles (Portion J); and*
- *Dismantling of the steel working platform (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	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

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

* 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, 3 occasions of night-time noise monitoring and 5 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.

Thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 02, 15 and 23 October 2010 (2300-2400) at CGa, 02, 16 and 23 October 2010 (2300-2400) at RWM and KY3, 24 October 2010 (0000-0100) at KS6. 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		
		Time	Result	Exceed*
Daytime	08/10/10	16:55	57.5	X
	13/10/10	16:30	65.3	X
	21/10/10	15:05	62.3	X
	27/10/10	16:20	64.5	X
Evening-time	02/10/10	21:15	61.6	X
	02/10/10	21:20	60.6	X
	02/10/10	21:25	60.0	X
	09/10/10	21:20	59.7	X
	09/10/10	21:25	61.2	X
	09/10/10	21:30	59.9	X
	15/10/10	22:15	59.7	X
	15/10/10	22:20	59.9	X
	15/10/10	22:25	59.6	X
	23/10/10	21:35	60.3	X
	23/10/10	21:40	57.9	X
	23/10/10	21:45	60.5	X
	30/10/10	20:10	59.6	X
	30/10/10	20:15	59.8	X
	30/10/10	20:20	59.1	X
Night-time	03/10/10	00:10	54.9	X
	03/10/10	00:15	54.7	X
	03/10/10	00:20	54.6	X
	15/10/10	23:00	54.4	X
	15/10/10	23:05	54.0	X
	15/10/10	23:10	54.4	X
	24/10/10	00:45	56.1	L
	24/10/10	00:50	56.6	L
Holiday-time	03/10/10	09:15	60.8	X
	03/10/10	09:20	60.7	X
	03/10/10	09:25	59.9	X
	10/10/10	11:45	62.1	X
	10/10/10	11:50	62.1	X
	10/10/10	11:55	62.8	X
	16/10/10	12:30	61.2	X
	16/10/10	12:35	61.3	X
	16/10/10	12:40	61.2	X
	24/10/10	14:25	62.5	X
	24/10/10	14:30	62.3	X
	24/10/10	14:35	62.7	X
	31/10/10	09:30	59.1	X
31/10/10	09:35	59.6	X	
31/10/10	09:40	60.1	X	



Monitoring Parameter	Date	CGa		
		Time	Result	Exceed*
Daytime	04/10/10	14:45	71.5	X
	11/10/10	14:55	73.5	X
	20/10/10	13:00	71.7	X
	27/10/10	10:20	71.2	X
Evening-time	02/10/10	22:05	67.2	X
	02/10/10	22:10	67.8	X
	02/10/10	22:15	66.9	X
	09/10/10	22:35	69.2	X
	09/10/10	22:40	67.1	X
	09/10/10	22:45	68.8	X
	15/10/10	20:35	67.9	X
	15/10/10	20:40	68.2	X
	15/10/10	20:45	68.8	X
	23/10/10	22:45	70.0	X
	23/10/10	22:50	70.0	X
	23/10/10	22:55	69.8	X
	30/10/10	21:05	67.7	X
	30/10/10	21:10	67.1	X
	30/10/10	21:15	66.8	X
Night-time	02/10/10	23:00	57.4	L
	02/10/10	23:05	56.9	L
	02/10/10	23:10	56.4	L
	15/10/10	23:45	61.5	L
	15/10/10	23:50	61.2	L
	15/10/10	23:55	61.7	L
	23/10/10	23:05	61.9	L
	23/10/10	23:10	61.9	L
Holiday-time	03/10/10	10:15	67.6	X
	03/10/10	10:20	68.1	X
	03/10/10	10:25	67.9	X
	10/10/10	14:35	70.0	X
	10/10/10	14:40	69.8	X
	10/10/10	14:45	69.8	X
	16/10/10	11:10	69.5	X
	16/10/10	11:15	69.9	X
	16/10/10	11:20	69.2	X
	24/10/10	14:00	62.1	X
	24/10/10	14:05	61.9	X
	24/10/10	14:10	62.3	X
	31/10/10	09:50	59.7	X
	31/10/10	09:55	60.4	X
31/10/10	10:00	60.6	X	



Monitoring Parameter	Date	RWM		
		Time	Result	Exceed*
Daytime	04/10/10	16:00	62.7	X
	11/10/10	15:30	67.4	X
	20/10/10	13:35	61.2	X
	27/10/10	10:55	64.1	X
Evening-time	02/10/10	22:25	65.4	X
	02/10/10	22:30	66.7	X
	02/10/10	22:35	67.0	X
	09/10/10	22:15	69.8	X
	09/10/10	22:20	68.2	X
	09/10/10	22:25	68.6	X
	15/10/10	20:53	65.9	X
	15/10/10	20:58	65.9	X
	15/10/10	21:03	66.0	X
	23/10/10	22:28	67.5	X
	23/10/10	22:33	66.5	X
	23/10/10	22:28	64.8	X
	30/10/10	21:25	66.7	X
	30/10/10	21:30	67.0	X
30/10/10	21:35	67.4	X	
Night-time	02/10/10	23:20	55.7	L
	02/10/10	23:25	56.4	L
	02/10/10	23:30	56.6	L
	16/10/10	00:00	61.5	L
	16/10/10	00:05	61.2	L
	16/10/10	00:10	61.0	L
	23/10/10	23:23	61.7	L
	23/10/10	23:28	61.0	L
23/10/10	23:33	61.0	L	
Holiday-time	03/10/10	10:35	61.4	X
	03/10/10	10:40	61.7	X
	03/10/10	10:45	61.2	X
	10/10/10	14:15	61.9	X
	10/10/10	14:20	61.9	X
	10/10/10	14:25	62.1	X
	16/10/10	11:27	62.3	X
	16/10/10	11:32	63.0	X
	16/10/10	11:37	62.8	X
	24/10/10	11:30	61.5	X
	24/10/10	11:35	61.2	X
	24/10/10	11:40	61.9	X
	31/10/10	10:40	61.4	X
31/10/10	10:45	61.7	X	
31/10/10	10:50	60.9	X	



Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Daytime	04/10/10	15:20	65.7	X
	11/10/10	16:05	66.8	X
	20/10/10	14:10	62.4	X
	27/10/10	11:30	63.4	X
Evening-time	02/10/10	22:45	63.0	X
	02/10/10	22:50	61.7	X
	02/10/10	22:55	60.9	X
	09/10/10	21:55	66.8	X
	09/10/10	22:00	67.7	X
	09/10/10	22:05	67.3	X
	15/10/10	21:10	65.4	X
	15/10/10	21:15	65.8	X
	15/10/10	21:20	66.3	X
	23/10/10	22:10	64.5	X
	23/10/10	22:15	64.9	X
	23/10/10	22:20	64.2	X
	30/10/10	21:45	68.1	X
	30/10/10	21:50	67.7	X
	30/10/10	21:55	67.3	X
	Night-time	02/10/10	23:40	57.0
02/10/10		23:45	56.8	L
02/10/10		23:50	56.6	L
16/10/10		00:17	60.3	L
16/10/10		00:22	60.9	L
16/10/10		00:27	61.0	L
23/10/10		23:44	58.8	L
23/10/10		23:49	58.6	L
Holiday-time	03/10/10	10:55	60.3	X
	03/10/10	11:00	60.9	X
	03/10/10	11:05	61.2	X
	10/10/10	13:55	61.5	X
	10/10/10	14:00	61.8	X
	10/10/10	14:05	61.6	X
	16/10/10	11:45	62.1	X
	16/10/10	11:50	61.5	X
	16/10/10	11:55	61.7	X
	24/10/10	13:10	60.5	X
	24/10/10	13:15	60.9	X
	24/10/10	13:20	59.8	X
	31/10/10	11:00	62.2	X
31/10/10	11:05	61.7	X	
31/10/10	11:10	61.9	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

<i>Exceedance Level</i>	<i>Daytime</i>	<i>Evening-time</i>	<i>Night-time</i>	<i>Holiday-time</i>
<i>Action</i>	0	0	0	0
<i>Cumulative</i>	0	0	0	0
<i>Limit</i>	0	0	30	0
<i>Cumulative</i>	0	0	98	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

<i>ID</i>	<i>Station</i>	<i>Easting</i>	<i>Northing</i>
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

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



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	23/08/10	22/11/10	ET/EW/008/002*	06C1998AD
Turbidity	HACH Model 2100P Turbid Meter	16/07/10 15/10/10	15/10/10 14/01/11	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: 1. "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity and SS, non-compliance of water quality limits occurs when monitoring result is higher than the limits.
4. 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 21 October 2010 (both mid-flood and mid-ebb) was cancelled due to bad weather (Typhoon Signal No.3). Daily water quality monitoring duration are detailed in Appendix C2. Below is the time schedule for the water quality monitoring conducted in this reporting month:

Table 5.8 Schedule for Impact Water Quality Monitoring

October 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 Holiday
17	18	19 ▼	20	21 ▼	22	23 ▼
24 / 31	25	26 ▼	27	28 ▼	29	30 ▼

- Remarks: (▼) = Marine water quality monitoring carried out by ET.
(▽) = Marine water quality monitoring on 21 October 2010 was cancelled due to bad weather (Typhoon Signal No.3).



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		Cumulative	
	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 05, 12, 20 and 27 October 2010 by ET. Monthly joint site inspection at 20 October 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	Status of the finding
1	Water	Dredged materials were noted accumulated on the deck of the barge during the weekly site inspection on 20/10/2010. (Photo 101020_003)	<ul style="list-style-type: none"> ▪ Cleaning work was arranged immediately by the Contractor during the weekly site inspection. (Photo 101020_004). The cleaning work was finished at 18:15 on 20/10/2010 (Photo Ref. 05a and 06a of the Contractor Follow-up Action – 20/10/2010) ▪ Maintenance and repairing works were carried out on 22/10/2010 and trial test of the grab on 23/10/2010 was found satisfactory. 	During the subsequent weekly site inspection on 28/10/2010, no dredged materials was observed on the deck of the barge. (Photo 101028_001 and 101028_002)	Closed
2	Chemical	A 200L oil drum was note don the ground at Portion J without drip tray during the weekly site inspection on 05/10/2010. (Photo 101005_001)	<ul style="list-style-type: none"> ▪ A drip tray was provided for the oil drum. (Photo Ref. 01 of the Contractor Follow-up Action – 05/10/2010) 	During the subsequently weekly site inspection on 12/10/2010, a drip tray was noted provided for the oil drum at Portion J (Photo 101012_001)	Closed



Item	Aspect	Finding	Action(s) taken by the Contractor	ET Verification	Status of the finding
3	Chemical	During the weekly site inspection on 12/10/2010, the Contractor was reminded to provide appropriate chemical labels for the chemicals used for the sedimentation tank at Portion J before use (Photo 101012_003)	Labels were post to distinguish different chemical for the sedimentation tank at Portion J. (Photo Ref. 02 of the Contractor Follow-up Action – 12/10/2010)	During the subsequent weekly site inspection on 20/10/2010, labels were noted provided for the chemicals use for the sedimentation tank at Portion J. (Photo 101020_002)	Closed
4	Site Practice	A rubbish bin at Portion J was found without cover and label during the weekly site inspection on 12/10/2010. (Photo 101012_002)	Label and cover were noted provided for the rubbish bin at Portion J. (Photo Ref. 01 of the Contractor Follow-up Action – 12/10/2010)	During the subsequent weekly site inspection on 20/10/2010, label and cover were provided for the rubbish bin. (Photo 101020_001)	Closed

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)	WT00005347-2009	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)	WT00005800-2010	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-RE0188-10	01/09/10	20/10/10	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)



Description	Permit No.	Valid Period		Remarks
		From	To	
Construction Noise Permit (West Kowloon)	GW-RE0502-10	21/10/10	20/04/11	One Dredger, grab (CNP 063) Two Guard boat One Tug boat (CNP 221) One Generator, standard (CNP 101)
Construction Noise Permit (Sai Ying Pun)	GW-RS0756-10	12/09/10	11/03/11	One dredger, grab (CNP 063) Two Guard boat One Tug boat (CNP 221) Hopper barge
Dumping Licence	EP/MD/11-069	01/10/10	31/03/11	Bulk quantity of material approved for dumping at the South Cheung Chau Spoil Disposal Area denoted "LWCHMALM" within permit validity period: 130000 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)	350.65		5498.29
	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)	350.65	SENT Landfill	5498.29
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	13	Collected by recycling company	65
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in m ³)	3.75	SENT Landfill	49.50
Dredged Materials*	Type 1 (in m ³)	32500	East Ninepin Mud Disposal Ground	116400 [#]
	Type 2 (in m ³)	0	The East Sha Chau	104990

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

([#]): Total amount of Type 1 marine sediment was 14700m³ (instead of 15200m³) in September 2010. Hence, the cumulative quantity of Type 1 marine sediment until September 2010 was 83900m³ (instead of 84400m³).

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.

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.

Thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 02, 15 and 23 October 2010 (2300-2400) at CGa, 02, 16 and 23 October 2010 (2300-2400) at RWM and KY3, 24 October 2010 (0000-0100) at KS6. 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.

Thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 02, 15 and 23 October 2010 (2300-2400) at CGa, 02, 16 and 23 October 2010 (2300-2400) at RWM and KY3, 24 October 2010 (0000-0100) at KS6. However, all of the exceedances were considered to be invalid (not project related) and 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

<i>Complaints logged</i>		<i>Summons served</i>		<i>Successful prosecution received</i>	
<i>October 2010</i>	<i>Cumulative</i>	<i>October 2010</i>	<i>Cumulative</i>	<i>October 2010</i>	<i>Cumulative</i>
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.

Thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 02, 15 and 23 October 2010 (2300-2400) at CGa, 02, 16 and 23 October 2010 (2300-2400) at RWM and KY3, 24 October 2010 (0000-0100) at KS6. 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 environmental 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:

- Drilling of pipe piles (Portion H1 & H2);
- Erection of steel working platform for marine piling (Portion J);
- Drilling of pipe piles (Portion J);
- Dredging of Type 1 marine sediment between CH0 and CH1960 (Portion I);
- Dismantle existing sloping seawall in West Kowloon (Portion I); and
- Drilling of pipe pile (construction of cofferdam) in West Kowloon (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.

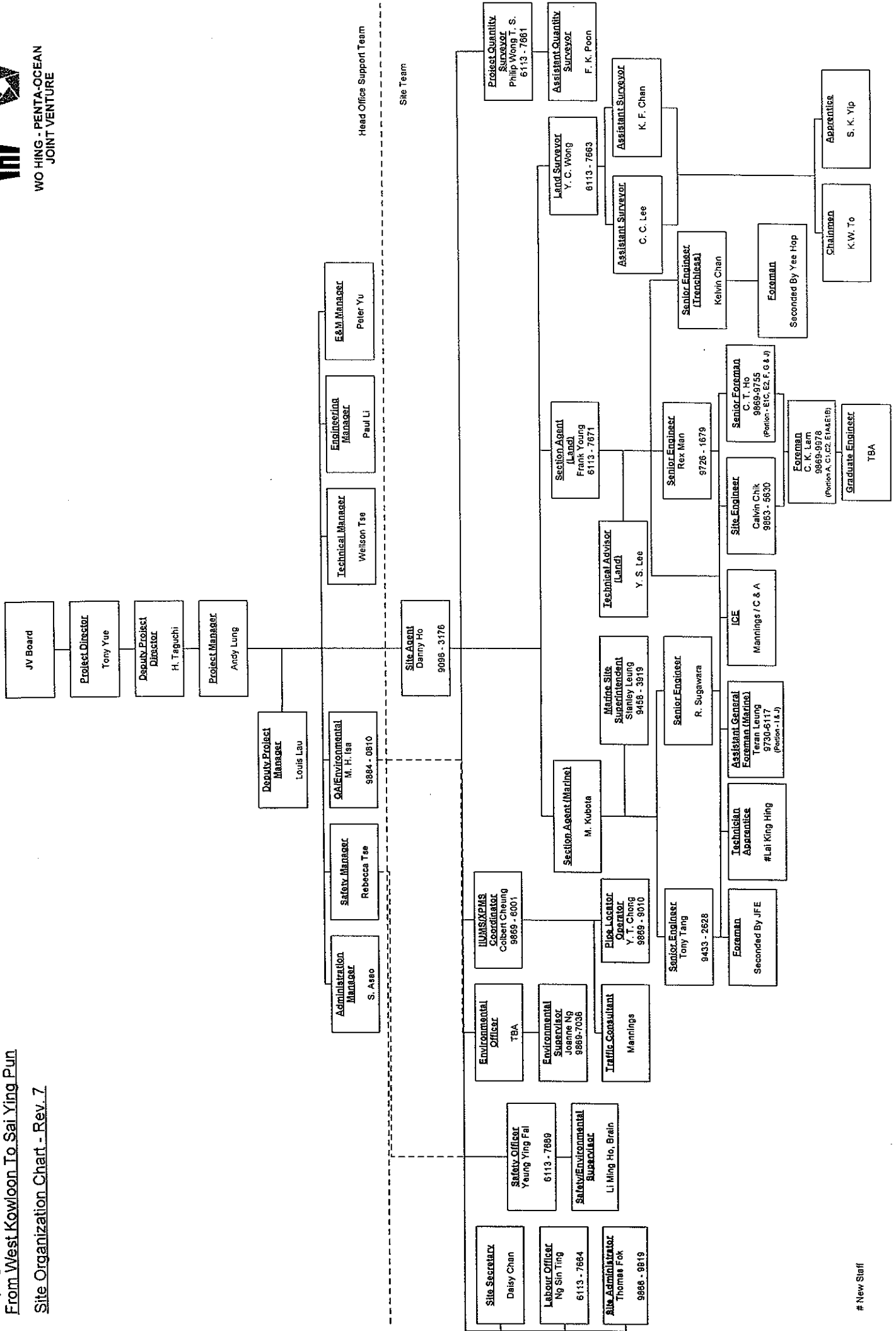
12.3 Monitoring Schedule for the Coming Month

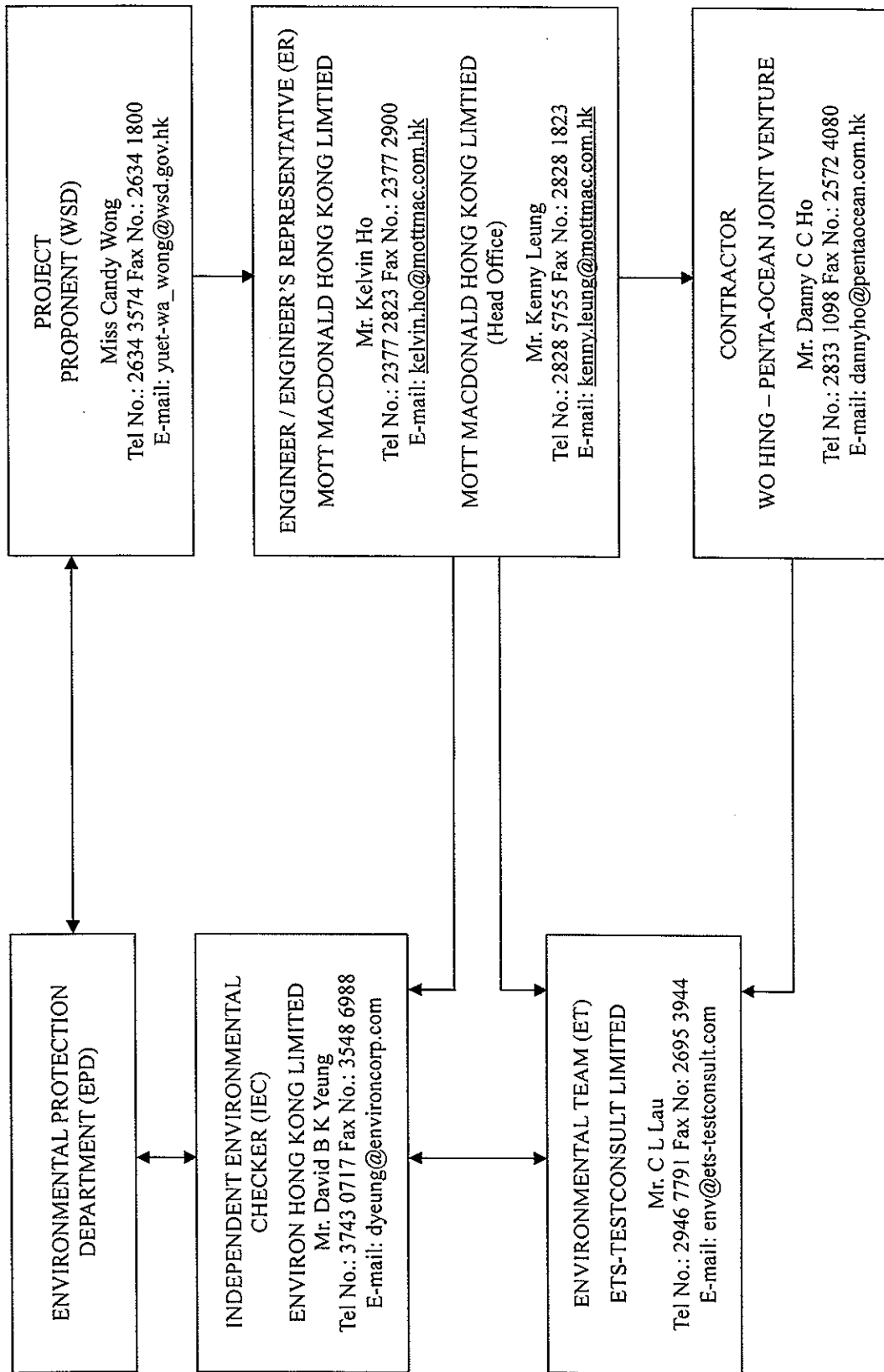
The proposed EM&A program of the coming month is attached in Appendix I.



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



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).

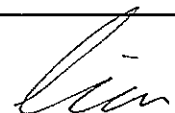
Main Test equipment used:


<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



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:

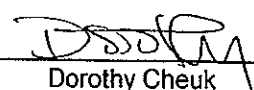
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C081456	18-Mar-10	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

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 L _p	Fast		94.0
		Fast		94.1
		Fast		94.1
30 – 120	L _A	Fast	94.03	93.8
		Slow		93.8
	L _C L _p	Fast		94.0
		Fast		94.0
		Fast		94.0
30 – 120	L _A	Fast	113.97	113.8
		Slow		113.8
	L _C L _p	Fast		113.9
		Fast		113.9
		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:

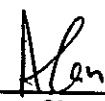
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	25-Mar-11	SCL-HKSAR
S024	Sound Level Calibrator	93758	16-Jul-10	NIM-PRC & SCL-HKSAR

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

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: 15-Jun-10



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

Date: 11-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 8846

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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	
08/10/10	Cloudy	16:55	17:25	57.5	59.2	50.5	0.5
13/10/10	Fine	16:30	17:00	65.3	67.6	62.8	0.9
21/10/10	Cloudy	15:05	15:35	62.3	63.7	60.5	1.5
27/10/10	Fine	16:20	16:50	64.5	65.0	63.2	1.4

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	
04/10/10	Cloudy	14:45	15:15	71.5	73.3	67.0	0.8
11/10/10	Cloudy	14:55	15:25	73.5	75.9	68.6	0.6
20/10/10	Cloudy	13:00	13:30	71.7	73.8	67.5	1.4
27/10/10	Cloudy	10:20	10:50	71.2	74.3	67.5	1.2

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	
04/10/10	Cloudy	16:00	16:30	62.7	64.3	60.8	1.5
11/10/10	Cloudy	15:30	16:00	67.4	68.3	64.8	1.0
20/10/10	Cloudy	13:35	14:05	61.2	64.0	55.7	1.6
27/10/10	Cloudy	10:55	11:25	64.1	67.0	60.2	1.6

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	
04/10/10	Cloudy	15:20	15:50	65.7	68.9	62.2	1.8
11/10/10	Cloudy	16:05	16:35	66.8	68.0	63.9	1.2
20/10/10	Cloudy	14:10	14:40	62.4	64.6	56.0	1.8
27/10/10	Cloudy	11:30	12:00	63.4	66.9	59.7	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	
02/10/10	Fine	21:15	21:20	61.6	64.6	59.0	1.2
02/10/10	Fine	21:20	21:25	60.6	61.7	59.2	1.4
02/10/10	Fine	21:25	21:30	60.0	61.2	59.5	1.3
09/10/10	Fine	21:20	21:25	59.7	61.2	57.9	1.6
09/10/10	Fine	21:25	21:30	61.2	63.2	58.6	1.6
09/10/10	Fine	21:30	21:35	59.9	61.6	57.8	1.6
15/10/10	Cloudy	22:15	22:20	59.7	60.9	57.0	0.3
15/10/10	Cloudy	22:20	22:25	59.9	60.3	56.7	0.2
15/10/10	Cloudy	22:25	22:30	59.6	61.0	56.8	0.3
23/10/10	Fine	21:35	21:40	60.3	62.1	58.3	0.8
23/10/10	Fine	21:40	21:45	57.9	58.4	57.5	0.8
23/10/10	Fine	21:45	21:50	60.5	61.8	58.3	0.8
30/10/10	Fine	20:10	20:15	59.6	60.6	58.5	1.4
30/10/10	Fine	20:15	20:20	59.8	60.8	58.7	1.3
30/10/10	Fine	20:20	20:25	59.1	59.7	58.2	1.6

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	
02/10/10	Fine	22:05	22:10	67.2	69.6	63.3	1.1
02/10/10	Fine	22:10	22:15	67.8	70.1	63.6	1.3
02/10/10	Fine	22:15	22:20	66.9	68.8	62.9	1.2
09/10/10	Fine	22:35	22:40	69.2	72.1	64.4	0.8
09/10/10	Fine	22:40	22:45	67.1	70.0	62.8	0.8
09/10/10	Fine	22:45	22:50	68.8	71.5	64.1	0.8
15/10/10	Cloudy	20:35	20:40	67.9	70.1	64.9	0.1
15/10/10	Cloudy	20:40	20:45	68.2	70.7	64.9	0.1
15/10/10	Cloudy	20:45	20:50	68.8	72.0	65.5	0.1
23/10/10	Fine	22:45	22:50	70.0	73.1	62.1	0.8
23/10/10	Fine	22:50	22:55	70.0	72.5	62.0	0.8
23/10/10	Fine	22:55	23:00	69.8	71.3	61.6	0.8
30/10/10	Fine	21:05	21:10	67.7	70.2	64.3	1.2
30/10/10	Fine	21:10	21:15	67.1	69.8	63.9	1.1
30/10/10	Fine	21:15	21:20	66.8	69.5	63.4	1.3



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	
02/10/10	Fine	22:25	22:30	65.4	68.2	61.4	1.4
02/10/10	Fine	22:30	22:35	66.7	68.9	61.8	1.3
02/10/10	Fine	22:35	22:40	67.0	69.2	62.3	1.2
09/10/10	Fine	22:15	22:20	69.8	73.2	62.0	0.7
09/10/10	Fine	22:20	22:25	68.2	71.3	62.0	0.7
09/10/10	Fine	22:25	22:30	68.6	71.3	62.1	0.7
15/10/10	Cloudy	20:53	20:58	65.9	67.9	62.5	0.1
15/10/10	Cloudy	20:58	21:03	65.9	68.2	62.4	<0.1
15/10/10	Cloudy	21:03	21:08	66.0	68.3	61.9	<0.1
23/10/10	Fine	22:28	22:33	67.5	72.1	61.7	0.5
23/10/10	Fine	22:33	22:38	66.5	70.9	59.4	0.5
23/10/10	Fine	22:28	22:43	64.8	69.1	59.1	0.5
30/10/10	Fine	21:25	21:30	66.7	69.4	63.6	1.4
30/10/10	Fine	21:30	21:35	67.0	69.7	64.0	1.2
30/10/10	Fine	21:35	21:40	67.4	70.0	64.3	1.1

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	
02/10/10	Fine	22:45	22:50	63.0	65.4	58.9	1.2
02/10/10	Fine	22:50	22:55	61.7	64.8	56.1	1.1
02/10/10	Fine	22:55	23:00	60.9	63.2	55.6	1.4
09/10/10	Fine	21:55	22:00	66.8	68.8	60.4	0.8
09/10/10	Fine	22:00	22:05	67.7	69.1	61.9	0.8
09/10/10	Fine	22:05	22:10	67.3	68.9	61.6	0.8
15/10/10	Cloudy	21:10	21:15	65.4	68.0	62.7	<0.1
15/10/10	Cloudy	21:15	21:20	65.8	68.2	63.5	0.1
15/10/10	Cloudy	21:20	21:25	66.3	69.5	63.9	0.1
23/10/10	Fine	22:10	22:15	64.5	68.7	59.3	0.7
23/10/10	Fine	22:15	22:20	64.9	68.6	59.4	0.7
23/10/10	Fine	22:20	22:25	64.2	68.0	59.0	0.7
30/10/10	Fine	21:45	21:50	68.1	70.8	65.2	1.2
30/10/10	Fine	21:50	21:55	67.7	70.4	64.8	1.3
30/10/10	Fine	21:55	22:00	67.3	70.2	64.6	1.3



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	
03/10/10	Fine	00:10	00:15	54.9	57.9	51.3	1.3
03/10/10	Fine	00:15	00:20	54.7	57.5	50.9	1.2
03/10/10	Fine	00:20	00:25	54.6	57.1	50.6	1.5
15/10/10	Cloudy	23:00	23:05	54.4	56.7	49.9	0.1
15/10/10	Cloudy	23:05	23:10	54.0	56.5	50.0	<0.1
15/10/10	Cloudy	23:10	23:15	54.4	56.9	50.2	<0.1
24/10/10	Fine	00:45	00:50	56.1	57.5	54.2	1.2
24/10/10	Fine	00:50	00:55	56.6	57.4	54.2	1.2
24/10/10	Fine	00:55	01:00	55.5	56.6	53.8	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	
02/10/10	Fine	23:00	23:05	57.4	59.8	53.2	1.3
02/10/10	Fine	23:05	23:10	56.9	59.1	52.7	1.5
02/10/10	Fine	23:10	23:15	56.4	58.8	52.3	1.4
15/10/10	Cloudy	23:45	23:50	61.5	66.0	57.2	<0.1
15/10/10	Cloudy	23:50	23:55	61.2	65.9	58.3	<0.1
15/10/10	Cloudy	23:55	24:00	61.7	68.0	59.0	<0.1
23/10/10	Fine	23:05	23:10	61.9	64.5	58.4	1.0
23/10/10	Fine	23:10	23:15	61.9	64.1	59.5	1.0
23/10/10	Fine	23:15	23:20	61.7	62.9	59.4	1.0



Night-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	
02/10/10	Fine	23:20	23:25	55.7	57.9	51.4	1.4
02/10/10	Fine	23:25	23:30	56.4	58.2	52.0	1.6
02/10/10	Fine	23:30	23:35	56.6	58.5	52.3	1.5
16/10/10	Cloudy	00:00	00:05	61.5	63.4	55.4	0.2
16/10/10	Cloudy	00:05	00:10	61.2	63.9	55.9	<0.1
16/10/10	Cloudy	00:10	00:15	61.0	63.7	56.1	<0.1
23/10/10	Fine	23:23	23:28	61.7	62.5	59.3	0.8
23/10/10	Fine	23:28	23:33	61.0	62.8	58.4	0.8
23/10/10	Fine	23:33	23:38	61.0	62.1	58.2	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	
02/10/10	Fine	23:40	23:45	57.0	59.1	52.5	1.2
02/10/10	Fine	23:45	23:50	56.8	58.8	52.1	1.4
02/10/10	Fine	23:50	23:55	56.6	58.5	51.9	1.5
16/10/10	Cloudy	00:17	00:22	60.3	62.2	54.1	0.1
16/10/10	Cloudy	00:22	00:27	60.9	62.5	53.9	0.1
16/10/10	Cloudy	00:27	00:32	61.0	62.6	54.8	<0.1
23/10/10	Fine	23:44	23:49	58.8	59.3	54.9	1.1
23/10/10	Fine	23:49	23:54	58.6	59.1	54.7	1.1
23/10/10	Fine	23:54	23:59	58.5	59.1	54.7	1.1



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	
03/10/10	Sunny	09:15	09:20	60.8	62.3	59.1	1.2
03/10/10	Sunny	09:20	09:25	60.7	62.5	58.8	1.5
03/10/10	Sunny	09:25	09:30	59.9	61.0	58.5	1.4
10/10/10	Cloudy	11:45	11:50	62.1	63.7	60.4	1.3
10/10/10	Cloudy	11:50	11:55	62.1	63.5	60.5	1.3
10/10/10	Cloudy	11:55	12:00	62.8	64.4	60.7	1.3
16/10/10	Cloudy	12:30	12:35	61.2	62.5	57.0	<0.1
16/10/10	Cloudy	12:35	12:40	61.3	62.9	57.2	0.2
16/10/10	Cloudy	12:40	12:45	61.2	62.8	58.0	0.1
24/10/10	Cloudy	14:25	14:30	62.5	65.1	59.4	1.9
24/10/10	Cloudy	14:30	14:35	62.3	63.6	60.8	1.9
24/10/10	Cloudy	14:35	14:40	62.7	64.1	59.7	1.9
31/10/10	Sunny	09:30	09:35	59.1	60.4	57.7	0.8
31/10/10	Sunny	09:35	09:40	59.6	61.0	58.0	1.1
31/10/10	Sunny	09:40	09:45	60.1	61.7	58.0	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	
03/10/10	Sunny	10:15	10:20	67.6	69.9	62.3	1.2
03/10/10	Sunny	10:20	10:25	68.1	70.3	62.8	1.1
03/10/10	Sunny	10:25	10:30	67.9	70.1	62.6	0.9
10/10/10	Cloudy	14:35	14:40	70.0	71.3	63.2	0.8
10/10/10	Cloudy	14:40	14:45	69.8	70.8	65.4	0.8
10/10/10	Cloudy	14:45	14:50	69.8	70.7	65.5	0.8
16/10/10	Cloudy	11:10	11:15	69.5	71.5	65.2	0.5
16/10/10	Cloudy	11:15	11:20	69.9	72.0	65.1	0.5
16/10/10	Cloudy	11:20	11:25	69.2	71.9	65.4	0.5
24/10/10	Cloudy	14:00	14:05	62.1	63.2	56.2	1.6
24/10/10	Cloudy	14:05	14:10	61.9	63.2	56.1	1.6
24/10/10	Cloudy	14:10	14:15	62.3	63.4	56.2	1.6
31/10/10	Sunny	09:50	09:55	59.7	60.6	54.5	0.6
31/10/10	Sunny	09:55	10:00	60.4	62.6	55.9	0.7
31/10/10	Sunny	10:00	10:05	60.6	62.8	56.2	0.9



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	
03/10/10	Sunny	10:35	10:40	61.4	63.6	55.3	1.4
03/10/10	Sunny	10:40	10:45	61.7	64.0	55.8	1.3
03/10/10	Sunny	10:45	10:50	61.2	63.3	54.9	1.6
10/10/10	Cloudy	14:15	14:20	61.9	62.4	59.8	1.2
10/10/10	Cloudy	14:20	14:25	61.9	62.7	60.1	1.2
10/10/10	Cloudy	14:25	14:30	62.1	62.7	60.5	1.2
16/10/10	Cloudy	11:27	11:32	62.3	64.4	60.1	0.6
16/10/10	Cloudy	11:32	11:37	63.0	64.5	60.5	0.6
16/10/10	Cloudy	11:37	11:42	62.8	64.7	60.6	0.5
24/10/10	Cloudy	11:30	11:35	61.5	62.8	59.6	1.2
24/10/10	Cloudy	11:35	11:40	61.2	62.1	59.5	1.2
24/10/10	Cloudy	11:40	11:45	61.9	62.8	59.8	1.2
31/10/10	Sunny	10:40	10:45	61.4	63.0	57.1	1.4
31/10/10	Sunny	10:45	10:50	61.7	63.4	57.5	1.3
31/10/10	Sunny	10:50	10:55	60.9	62.7	56.6	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 (5min)	L10	L90	
03/10/10	Sunny	10:55	11:00	60.3	62.8	54.6	1.4
03/10/10	Sunny	11:00	11:05	60.9	63.1	55.2	1.2
03/10/10	Sunny	11:05	11:10	61.2	63.5	55.6	1.5
10/10/10	Cloudy	13:55	14:00	61.5	62.0	59.2	1.5
10/10/10	Cloudy	14:00	14:05	61.8	62.1	59.3	1.5
10/10/10	Cloudy	14:05	14:10	61.6	62.0	59.2	1.5
16/10/10	Cloudy	11:45	11:50	62.1	63.5	59.2	0.2
16/10/10	Cloudy	11:50	11:55	61.5	64.0	58.9	0.5
16/10/10	Cloudy	11:55	12:00	61.7	63.8	59.0	0.2
24/10/10	Cloudy	13:10	13:15	60.5	61.8	59.1	1.5
24/10/10	Cloudy	13:15	13:20	60.9	61.8	59.3	1.5
24/10/10	Cloudy	13:20	13:25	59.8	60.6	58.9	1.5
31/10/10	Sunny	11:00	11:05	62.2	63.6	57.9	1.2
31/10/10	Sunny	11:05	11:10	61.7	63.2	57.3	1.4
31/10/10	Sunny	11:10	11:15	61.9	63.4	57.5	1.6



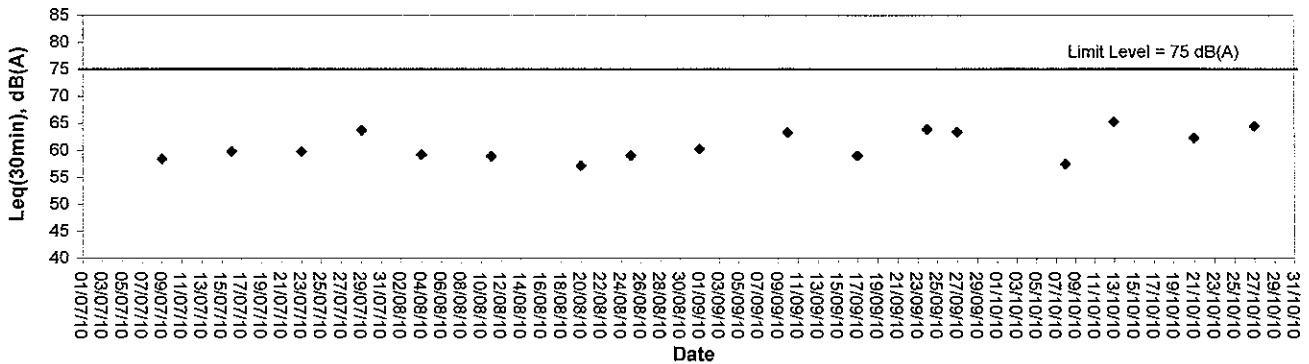
Appendix B3

Graphical Plots of Impact Noise Monitoring Data

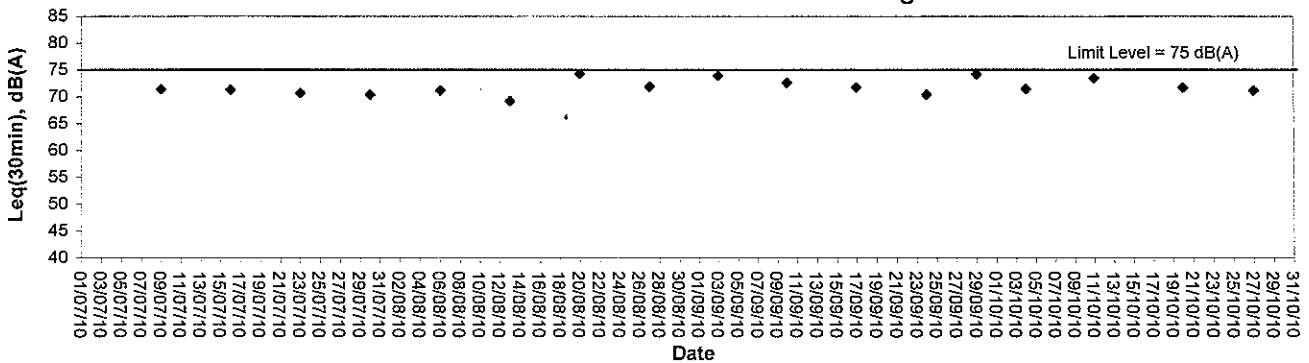


Noise Monitoring (Day-time)

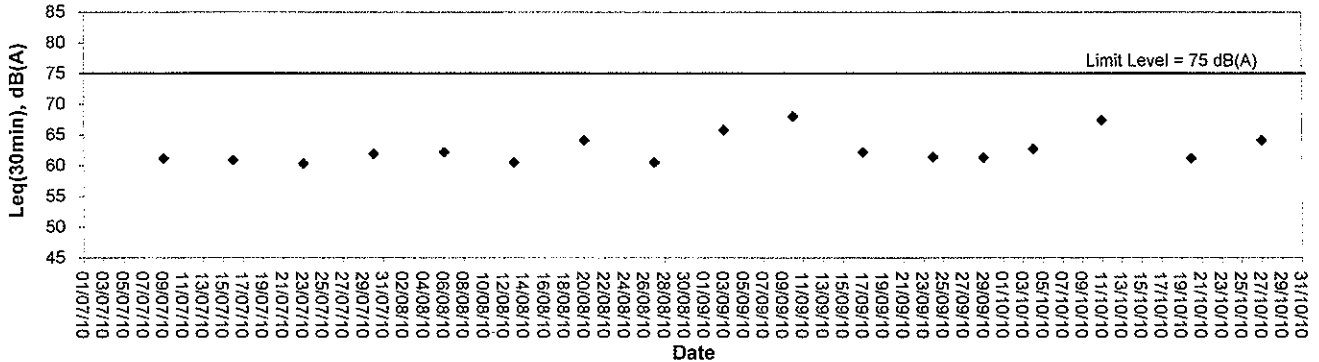
Noise level at KS6 - Podium at the Culliman



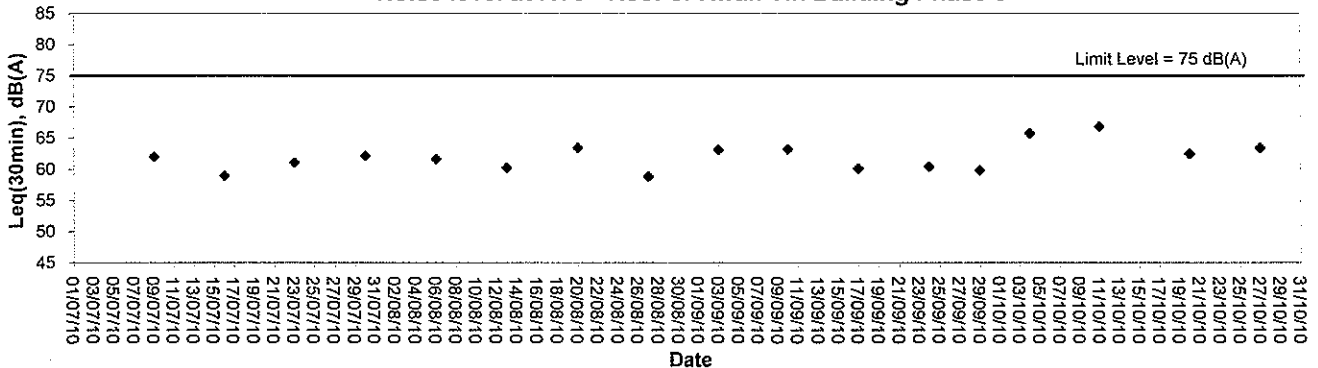
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



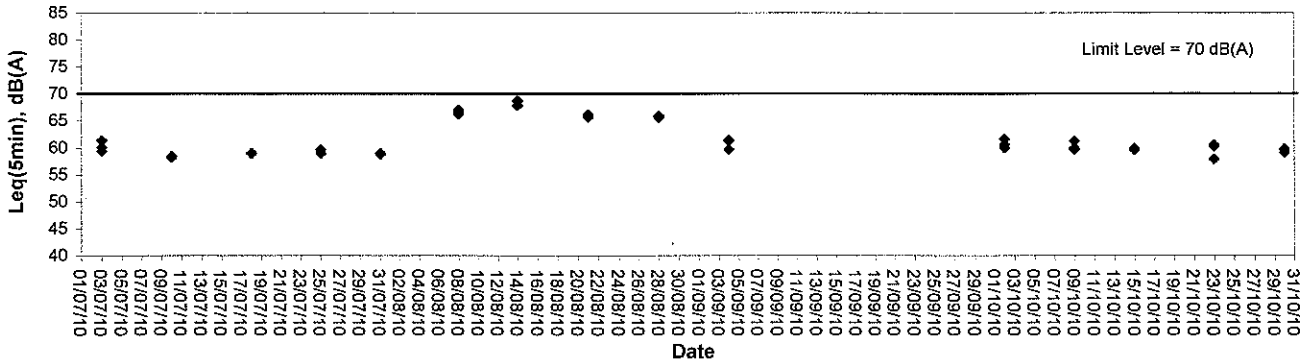
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



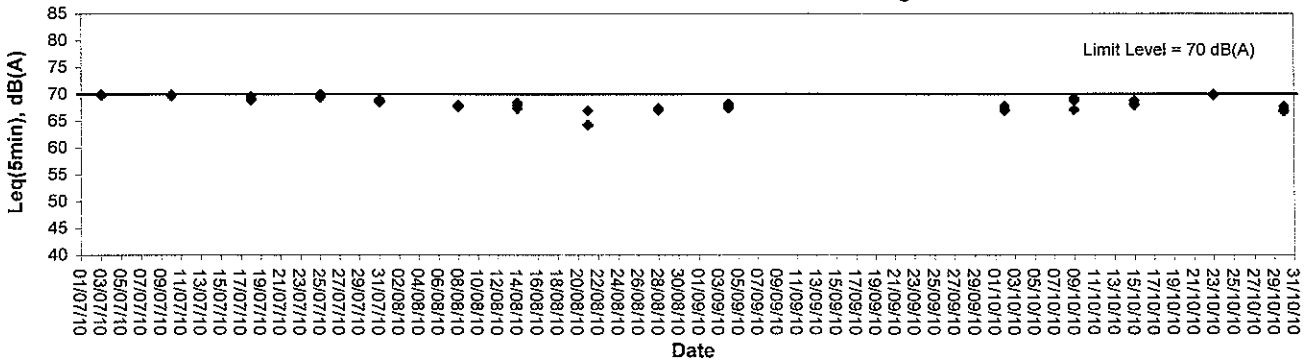


Noise Monitoring (Evening-time)

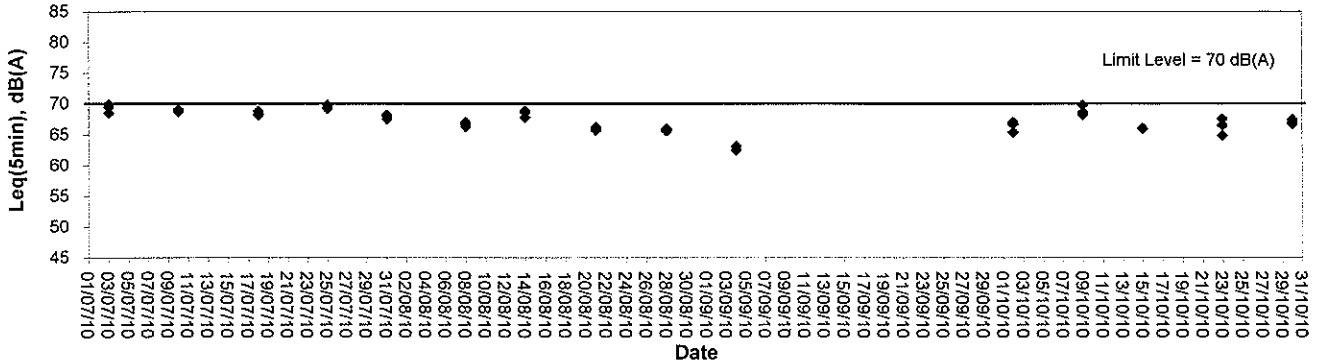
Noise level at KS6 - Podium at the Culliman



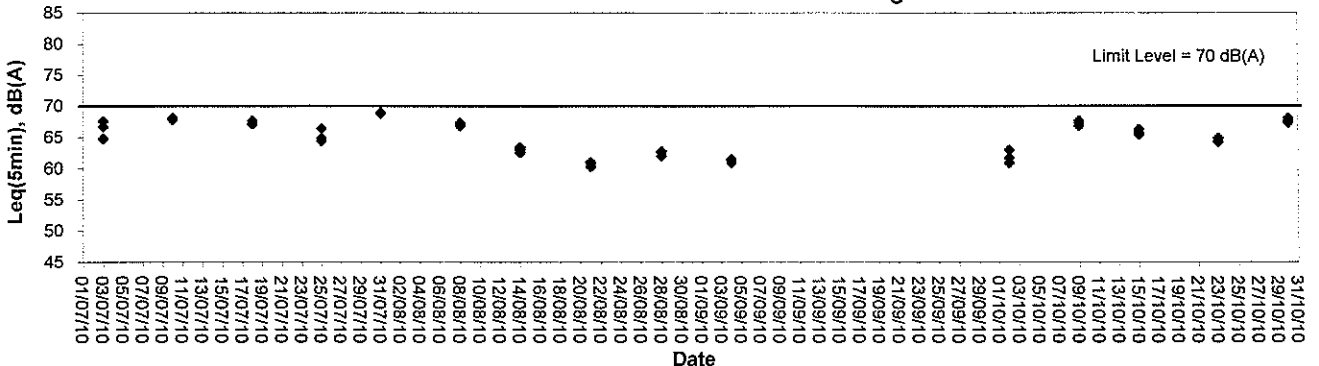
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



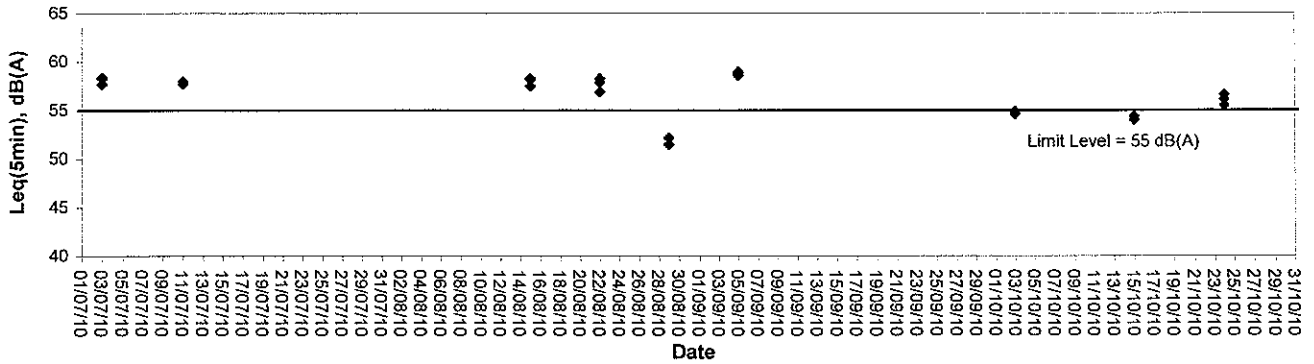
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



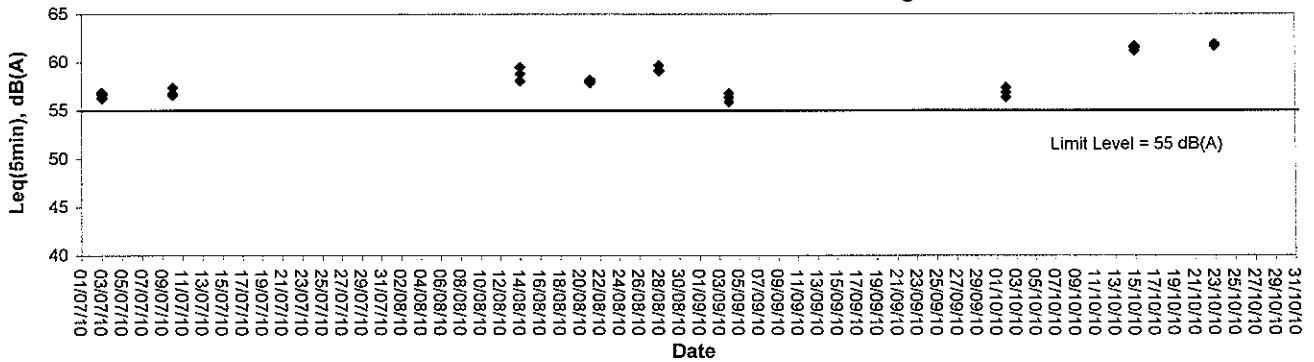


Noise Monitoring (Night-time)

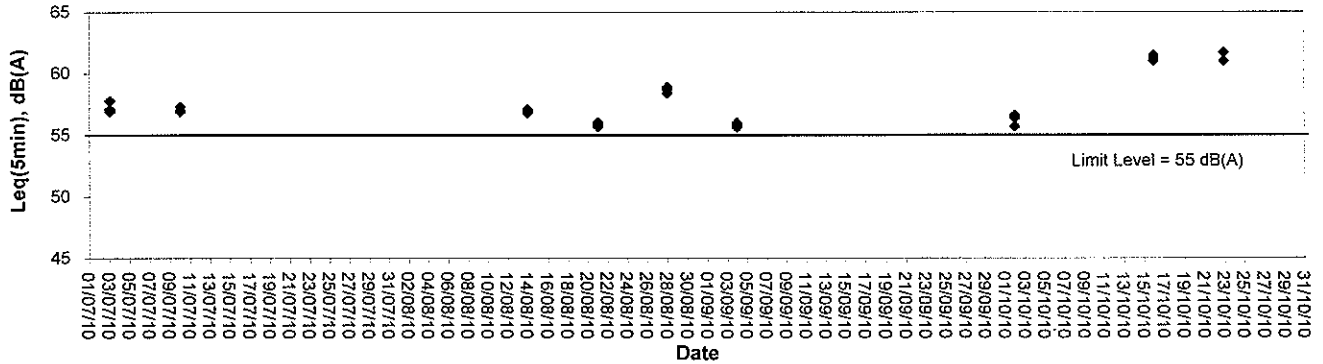
Noise level at KS6 - Podium at the Culliman



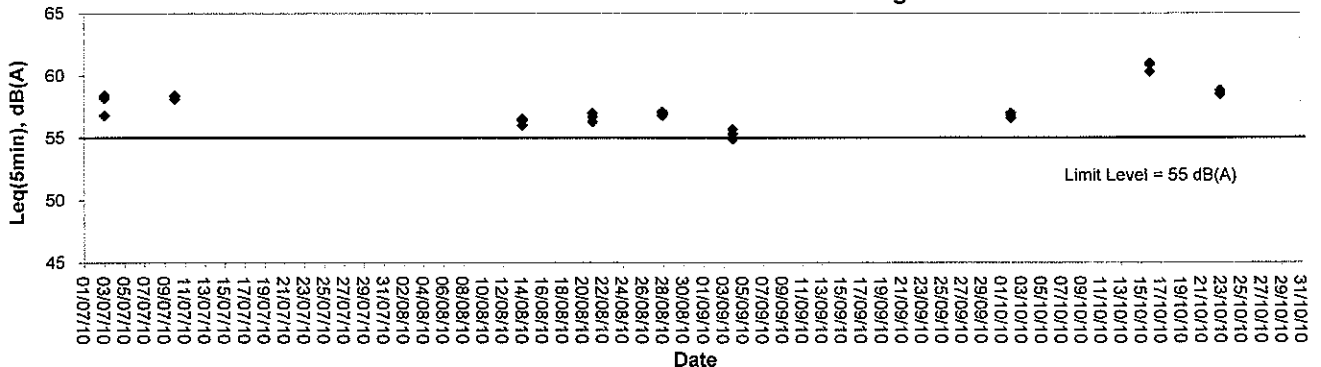
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



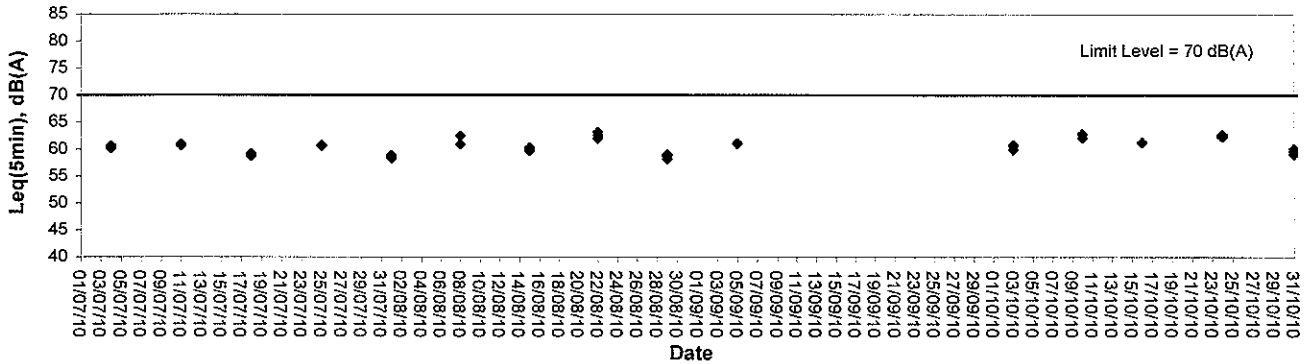
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



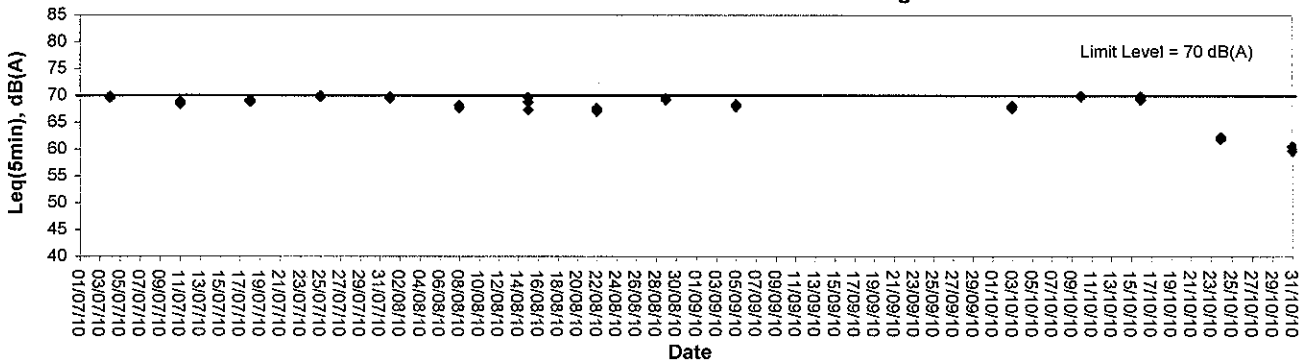


Noise Monitoring (Holiday-time)

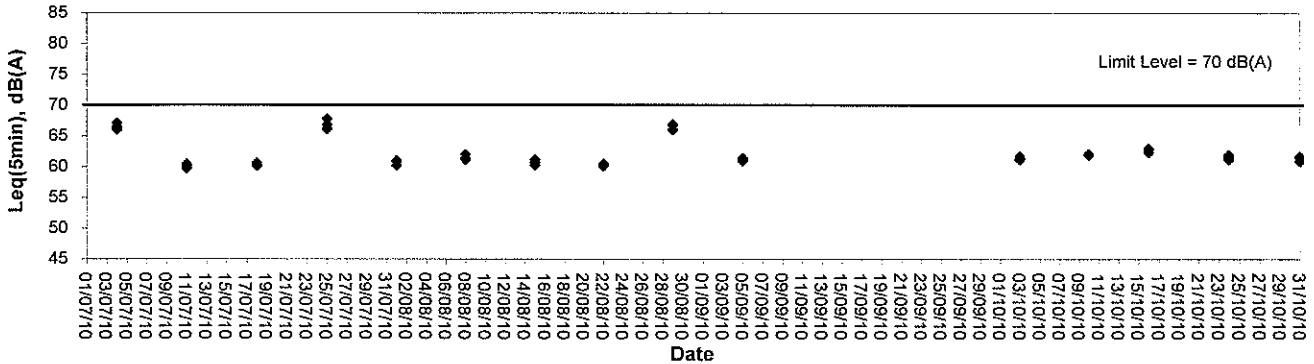
Noise level at KS6 - Podium at the Culliman



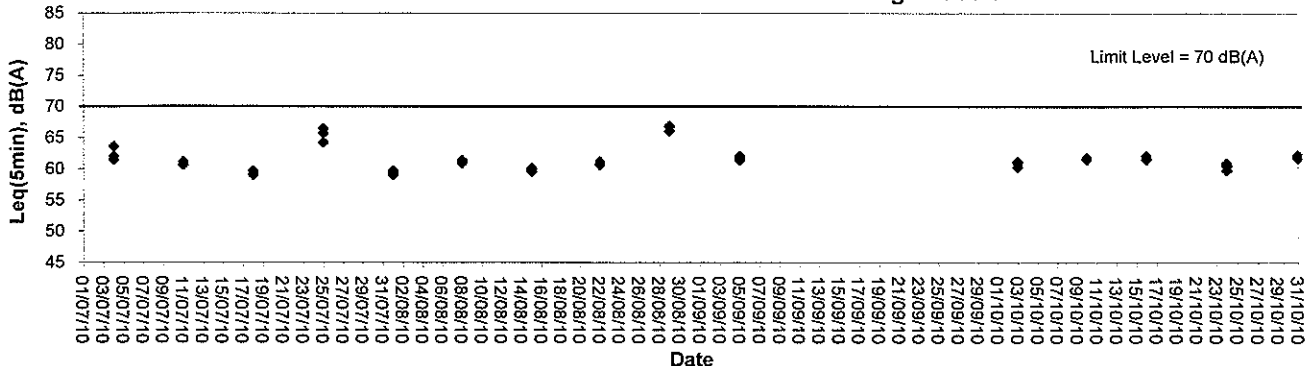
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth 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 / 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 : PK Approved by : Ude Lam



Performance Check of Turbidimeter

Equipment Ref. No. : ET105051007 Manufacturer : HACH
Model No. : 2100P Serial No. : 0806.000.30281
Date of Calibration : 15/10/10 Due Date : 14/1/11

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.49	2.77%
10-100 NTU	52.5	52.1	0.76%
100-1000 NTU	543	529	2.61%

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 : *zm* Approved by : *hde lan*



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : ET1EW10081002 Manufacturer : YSI
 Model No. : 85 Serial No. : 06C 198 AD
 Date of Calibration : 23/8/10 Calibration Due Date : 22/11/10

Temperature Verification

Ref. No. of Reference Thermometer : ET105211001
 Ref. No. of Water Bath : ET105331001

		Temperature (°C)		
Reference Thermometer reading	Measured	25.0	Corrected	25.1
DO Meter reading	Measured	25.3	Difference	0.2

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na ₂ S ₂ O ₃ titrant	J392	Reagent No. of 0.025N K ₂ Cr ₂ O ₇	J393
		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)		40.3	40.1
Vol. of Na ₂ S ₂ O ₃ used (ml)		40.3	40.1
Normality of Na ₂ S ₂ O ₃ solution (N)		0.0249481	0.02494
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)		0.02488	
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	
Trial	1	2	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0.1	11.85	0.5	9.15	0.2	6.65
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.95	23.90	9.65	18.4	6.65	13.25
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.85	12.05	9.15	9.25	6.45	6.60
Dissolved Oxygen (DO), mg/L	7.91	8.05	6.11	6.18	4.31	4.41
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	8.12	8.04	8.08	7.91	8.05	7.98	1.25
5	6.8 6.23	6.8 6.22	6.21	6.11	6.18	6.15	0.97
10	4.29	4.23	4.26	4.31	4.41	4.30	0.93
Linear regression coefficient			0.9999				



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
------------------------	------

Salinity Checking

Reagent No. of NaCl (10ppt)	J390	Reagent No. of NaCl (30ppt)	J391
-----------------------------	------	-----------------------------	------

Determination of dissolved oxygen content by Winkler Titration **

Salinity (ppt)	10		30	
	1	2	1	2
Initial Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ (ml)	0.5	12.15	1.2	11.10
Final Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ (ml)	12.15	23.85	12.30	22.10
Vol. (V) of $\text{Na}_2\text{S}_2\text{O}_3$ used (ml)	11.65	11.70	11.10	11.00
Dissolved Oxygen (DO), mg/L	7.78	7.81	7.41	7.36
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: $\text{DO (mg/L)} = V \times N \times 8000/298$

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.93	7.89	7.91	7.78	7.81	7.80	1.40
30	7.47	7.43	7.45	7.41	7.36	7.39	0.81

Acceptance Criteria

- (1) Differenc between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : >0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies # / ~~does not comply #~~ with the specified requirements and is deemed acceptable # / unacceptable # for use.

* Delete as appropriate

Calibrated by : Tun

Approved by :



Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/098/002 Manufacturer : YSI
Model No. : 85 Serial No. : 06C1998 AD
Date of Calibration : 23/8/10 Due Date : 22/11/10

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

J402

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.4	2%

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 : *W* Approved by : *[Signature]*



Appendix C2

Impact Water Quality Monitoring Results

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		
02/10/10	1739-1750	30/Fine	Surface	1.0	27.8	31.1	31.1	6.19	6.18	88.5	88.3	4.74	4.72	4.84	7.8	7.7	7.9		
						31.1		6.16		88.0		4.70			7.6				
			Middle	8.4	25.9	32.0	32.0	6.01	6.03	85.9	86.2	4.96	4.95		4.94	4.85		8.0	8.1
						32.0		6.05		86.5		4.94			8.2				
			Bottom	15.8	25.6	32.3	32.2	5.93	5.95	84.2	84.5	4.88	4.85		4.81	4.78		7.8	7.8
						32.1		5.97		84.7		4.81			7.8				
05/10/10	1805-1819	25/Cloudy	Surface	1.0	26.7	30.3	30.3	6.34	6.33	90.1	89.9	4.83	4.78	4.64	7.7	7.7	7.6		
						30.3		6.31		89.7		4.72			7.6				
			Middle	6.9	25.5	31.2	31.2	6.09	6.12	85.9	86.6	4.51	4.54		4.57	4.60		7.5	7.5
						31.1		6.15		87.3		4.57			7.5				
			Bottom	14.0	24.9	31.5	31.5	5.85	5.83	82.4	82.1	4.60	4.60		4.59	4.60		7.6	7.6
						31.5		5.81		81.8		4.59			7.5				
07/10/10	1925-1940	26/Cloudy	Surface	1.0	25.5	29.8	29.8	6.36	6.34	90.9	90.6	4.48	4.51	4.74	7.5	7.5	7.8		
						29.7		6.32		90.3		4.53			7.5				
			Middle	8.3	25.0	30.3	30.4	6.20	6.18	88.6	88.3	4.78	4.81		4.84	4.81		7.8	7.9
						30.4		6.15		87.9		4.84			8.0				
			Bottom	15.6	24.6	31.1	31.2	6.01	6.03	85.9	86.2	4.86	4.91		4.95	4.91		8.0	7.9
						31.2		6.05		86.5		4.95			7.8				
09/10/10	1530-1543	26/Cloudy	Surface	1.0	25.0	30.6	30.7	6.21	6.23	87.6	87.8	4.80	4.81	4.94	7.7	7.8	8.1		
						30.7		6.24		88.0		4.82			7.8				
			Middle	8.2	24.2	31.6	31.7	6.09	6.07	85.9	85.6	4.94	4.95		4.96	4.95		8.2	8.1
						31.7		6.04		85.2		4.96			8.0				
			Bottom	15.4	23.9	32.2	32.3	5.94	5.96	83.8	84.0	5.08	5.06		5.04	5.06		8.4	8.3
						32.3		5.97		84.2		5.04			8.2				
12/10/10	1159-1212	25/Sunny	Surface	1.0	24.8	30.3	30.3	6.34	6.33	89.6	89.8	4.70	4.75	4.69	7.8	7.7	7.6		
						30.3		6.31		90.0		4.80			7.5				
			Middle	7.0	23.5	31.0	31.1	6.09	6.08	85.8	85.6	4.55	4.53		4.50	4.53		7.5	7.5
						31.2		6.06		85.4		4.50			7.4				
			Bottom	12.9	23.0	31.4	31.5	5.81	5.83	81.9	82.2	4.77	4.79		4.80	4.79		7.8	7.7
						31.5		5.85		82.4		4.80			7.6				
14/10/10	1520-1535	30/Fine	Surface	1.0	26.6	30.0	30.1	6.29	6.27	88.6	88.4	4.44	4.48	4.69	7.2	7.4	7.7		
						30.1		6.25		88.1		4.51			7.5				
			Middle	8.3	25.8	30.9	30.9	6.12	6.09	86.2	85.8	4.66	4.68		4.70	4.68		7.6	7.7
						30.9		6.06		85.4		4.70			7.8				
			Bottom	15.6	24.8	31.6	31.6	5.98	5.95	84.3	83.9	4.89	4.91		4.93	4.91		8.0	7.9
						31.6		5.92		83.4		4.93			7.8				
19/10/10	1758-1812	25/Fine	Surface	1.0	25.7	30.7	30.7	6.19	6.20	87.6	87.8	4.73	4.75	4.82	7.5	7.7	7.9		
						30.7		6.21		87.9		4.76			7.8				
			Middle	7.3	24.9	31.2	31.2	6.20	6.22	87.7	88.0	4.80	4.82		4.83	4.82		8.0	7.9
						31.2		6.23		88.2		4.83			7.8				
			Bottom	15.0	24.2	31.4	31.5	6.17	6.18	87.3	87.4	4.89	4.89		4.88	4.88		8.0	8.0
						31.5		6.18		87.4		4.88			8.0				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	2005-2020	27/Fine	Surface	1.0	26.6	31.0	31.0	6.18	6.15	86.5	86.7	4.76	4.79	5.06	7.5	7.8	8.2		
						31.0		6.12		86.8		4.81			8.0				
			Middle	8.4	25.8	31.7	31.7	6.07	6.05	84.9	84.7	4.98	5.02		5.05	5.02		8.0	8.1
						31.7		6.03		84.4		5.05			8.2				
			Bottom	15.8	24.9	32.1	32.1	5.95	5.90	83.3	82.5	5.36	5.39		5.41	5.39		8.6	8.6
						32.1		5.84		81.7		5.41			8.6				
26/10/10	1120-1130	24/Cloudy	Surface	1.0	25.8	30.9	30.9	6.17	6.16	88.2	88.0	5.02	5.06	5.09	8.0	8.1	8.1		
						30.9		6.14		87.8		5.09			8.2				
			Middle	8.4	24.8	31.5	31.5	6.01	6.03	85.9	86.2	5.18	5.15		5.11	5.15		8.4	8.3
						31.4		6.05		86.5		5.11			8.2				
			Bottom	15.8	24.6	31.8	31.9	5.67	5.69	80.5	80.7	5.02	5.07		5.11	5.07		8.0	8.0
						31.9		5.70		80.9		5.11			8.0				
28/10/10	1140-1153	18/Fine	Surface	1.0	22.8	30.6	30.7	6.20	6.19	86.8	86.7	4.77	4.78	4.86	7.5	7.7	7.8		
						30.7		6.18		86.5		4.79			7.8				
			Middle	8.2	23.3	31.6	31.6	6.13	6.12	85.8	85.6	4.81	4.83		4.84	4.83		8.0	7.8
						31.5		6.10		85.4		4.84			7.6				
			Bottom	15.4	22.7	32.3	32.3	6.05	6.04	84.7	84.6	4.97	4.96		4.95	4.96		7.8	7.9
						32.2		6.03		84.4		4.95			8.0				
30/10/10	1608-1620	22/Fine	Surface	1.0	19.5	32.1	32.1	6.20	6.24	89.2	89.8	4.11	4.13	4.21	6.5	6.5	6.5		
						32.0		6.28		90.4		4.14			6.4				
			Middle	8.0	19.4	32.1	32.2	6.14	6.15	88.7	88.5	4.10	4.25		4.39	4.25		6.5	6.6
						32.2		6.16		88.3		4.39			6.6				
			Bottom	15.0	19.2	32.4	32.5	6.03	6.01	85.9	85.8	4.25	4.26		4.26	4.26		6.3	6.4
						32.5		5.99		85.6		4.26			6.4				

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		
02/10/10	1720-1731	30/Fine	Surface	1.0	27.7	31.2	31.2	6.15	6.17	87.9	88.1	4.69	4.72	4.83	7.6	7.7	7.8		
						31.1		6.18		88.3		4.74			7.8				
			Middle	8.4	25.8	32.0	32.0	5.83	5.82	82.7	82.5	4.98	4.96		4.94	4.96		8.0	7.9
						31.9		5.80		82.3		4.94			7.8				
			Bottom	15.8	25.6	32.3	32.3	5.90	5.93	83.7	84.1	4.79	4.82		4.84	4.82		7.6	7.7
						32.3		5.95		84.4		4.84			7.7				
05/10/10	1742-1800	25/Cloudy	Surface	1.0	26.8	30.2	30.2	6.17	6.20	87.7	88.0	4.93	4.96	4.78	7.8	7.9	7.7		
						30.2		6.22		88.3		4.98			8.0				
			Middle	8.5	25.6	31.2	31.2	6.09	6.08	85.9	85.6	4.71	4.69		4.66	4.69		7.6	7.6
						31.2		6.06		85.3		4.70			7.5				
			Bottom	15.6	25.1	31.5	31.6	5.77	5.75	81.2	81.0	4.70	4.69		4.68	4.69		7.6	7.6
						31.6		5.73		80.8		4.68			7.5				
07/10/10	1903-1918	26/Cloudy	Surface	1.0	25.5	29.8	29.8	6.35	6.33	90.8	90.9	4.40	4.42	4.68	7.4	7.4	7.7		
						29.8		6.30		90.9		4.44			7.4				
			Middle	8.0	25.1	30.4	30.4	6.21	6.19	88.8	88.5	4.72	4.75		4.77	4.75		7.8	7.7
						30.4		6.17		88.2		4.77			7.6				
			Bottom	15.0	24.7	31.1	31.1	6.08	6.06	86.9	86.6	4.83	4.86		4.89	4.86		7.8	7.9
						31.1		6.04		86.3		4.83			8.0				
09/10/10	1510-1522	26/Cloudy	Surface	1.0	24.8	30.5	30.6	6.12	6.14	86.3	86.5	4.72	4.73	4.84	7.8	7.9	8.0		
						30.6		6.15		86.7		4.73			8.0				
			Middle	8.4	24.0	31.5	31.5	6.02	6.03	84.9	85.1	4.82	4.83		4.84	4.83		8.0	7.9
						31.4		6.04		85.2		4.84			7.8				
			Bottom	15.8	23.7	32.0	32.1	5.92	5.92	83.5	83.4	4.99	4.97		4.95	4.97		8.2	8.1
						32.1		5.91		83.3		4.95			8.0				
12/10/10	1143-1156	25/Sunny	Surface	1.0	24.8	30.0	30.1	6.21	6.23	88.1	88.4	4.86	4.83	4.93	7.8	7.7	7.9		
						30.1		6.25		88.7		4.79			7.6				
			Middle	8.5	23.6	31.1	31.1	6.06	6.04	85.4	85.1	4.92	4.87		4.82	4.87		8.0	7.9
						31.1		6.02		84.8		4.82			7.8				
			Bottom	16.2	23.0	31.5	31.5	5.74	5.76	80.9	81.1	5.05	5.08		5.11	5.08		8.2	8.1
						31.5		5.77		81.3		5.11			8.0				
14/10/10	1459-1515	30/Fine	Surface	1.0	26.6	30.0	30.0	6.19	6.17	87.2	86.9	4.40	4.43	4.62	7.3	7.4	7.6		
						30.0		6.14		86.5		4.46			7.5				
			Middle	8.0	25.8	30.7	30.8	6.09	6.06	85.8	85.3	4.57	4.60		4.62	4.60		7.6	7.6
						30.8		6.02		84.8		4.62			7.5				
			Bottom	15.0	24.8	31.5	31.5	5.96	5.93	84.0	83.6	4.81	4.84		4.86	4.84		8.0	7.9
						31.5		5.90		83.1		4.86			7.7				
19/10/10	1742-1754	25/Fine	Surface	1.0	25.8	30.9	30.9	6.34	6.33	89.7	89.6	4.85	4.87	4.94	8.0	7.9	7.9		
						30.9		6.32		89.4		4.88			7.8				
			Middle	8.0	25.0	31.4	31.4	6.15	6.16	87.0	87.2	4.92	4.93		4.93	4.93		7.6	7.7
						31.3		6.17		87.3		4.93			7.8				
			Bottom	15.7	24.4	31.6	31.6	6.11	6.10	86.4	86.3	5.02	5.04		5.05	5.04		8.0	8.0
						31.6		6.09		86.2		5.05			8.0				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1945-2000	27/Fine	Surface	1.0	26.6	30.9	31.0	6.09	6.06	85.2	84.7	4.74	4.77	5.02	7.8	7.9	8.4		
						31.0		6.02		84.2		4.79			8.0				
			Middle	8.2	25.8	31.6	31.7	5.97	5.93	83.5	82.9	5.01	4.99		4.96	4.99		8.4	8.3
						31.7		5.88		82.3		4.96			8.2				
			Bottom	15.4	25.0	32.0	32.1	5.93	5.90	83.0	82.5	5.28	5.30		5.32	5.30		8.8	8.9
						32.1		5.86		82.0		5.32			9.0				
26/10/10	1104-1114	24/Cloudy	Surface	1.0	25.8	30.9	30.9	6.14	6.12	87.8	87.5	5.17	5.16	5.06	8.2	8.3	8.1		
						30.8		6.10		87.2		5.14			8.4				
			Middle	8.4	24.6	31.5	31.6	5.98	5.96	85.5	85.2	4.87	4.90		4.93	4.90		7.8	7.7
						31.6		5.94		84.9		4.93			7.6				
			Bottom	15.8	24.5	31.9	32.0	5.71	5.69	81.0	80.8	5.09	5.12		5.15	5.12		8.2	8.4
						32.0		5.67		80.5		5.15			8.5				
28/10/10	1119-1132	18/Fine	Surface	1.0	22.8	30.5	30.5	6.14	6.15	86.0	86.1	4.87	4.87	4.95	7.6	7.7	7.9		
						30.4		6.15		86.1		4.86			7.8				
			Middle	8.4	23.4	31.4	31.4	6.10	6.11	85.4	85.6	4.93	4.94		4.94	4.94		8.0	7.9
						31.3		6.12		85.7		4.94			7.8				
			Bottom	15.8	22.8	32.0	32.1	6.07	6.08	85.0	85.2	5.01	5.04		5.06	5.04		8.2	8.1
						32.1		6.09		85.3		5.06			8.0				
30/10/10	1548-1559	22/Fine	Surface	1.0	19.5	32.1	32.1	6.23	6.25	89.6	90.2	4.12	4.14	4.17	6.6	6.7	6.6		
						32.1		6.26		90.7		4.15			6.8				
			Middle	8.1	19.2	31.9	32.1	6.11	6.11	88.0	88.0	4.16	4.16		4.16	4.16		6.2	6.4
						32.2		6.10		87.9		4.16			6.6				
			Bottom	15.2	19.0	32.2	32.4	6.01	5.97	85.9	85.8	4.20	4.20		4.20	4.20		6.8	6.7
						32.6		5.92		85.6		4.20			6.5				

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		
02/10/10	1520-1531	30/Fine	Surface	1.0	27.9	30.9	30.9	6.18	6.16	88.3	88.1	4.98	4.95	4.95	8.2	8.1	8.0		
						30.9		6.14		87.8		4.91			8.0				
			Middle	8.6	26.0	31.9	31.9	6.02	6.04	86.0	86.5	4.74	4.79		4.83	5.12		7.6	7.7
						31.9		6.05		86.5		4.83			7.8				
			Bottom	16.2	25.6	32.1	32.2	5.85	5.88	83.0	83.4	5.09	5.12		5.15	5.12		8.4	8.3
						32.2		5.90		83.7		5.15			8.2				
05/10/10	1539-1556	25/Cloudy	Surface	1.0	26.7	30.2	30.2	6.15	6.17	87.2	87.5	5.11	5.14	5.05	8.2	8.3	8.2		
						30.2		6.19		87.7		5.17			8.4				
			Middle	8.3	25.4	31.2	31.2	6.07	6.09	86.1	86.5	4.94	4.98		5.02	5.03		8.0	8.1
						31.2		6.11		86.8		5.02			8.2				
			Bottom	15.7	24.9	31.4	31.5	5.82	5.84	81.9	82.2	5.04	5.03		5.02	5.16		8.2	8.1
						31.5		5.86		82.5		5.02			8.0				
07/10/10	1657-1712	26/Cloudy	Surface	1.0	25.5	29.7	29.7	6.14	6.12	87.8	87.5	4.76	4.73	4.94	7.5	7.6	7.9		
						29.7		6.10		87.2		4.70			7.6				
			Middle	8.6	25.1	30.2	30.2	6.01	5.99	85.8	85.5	4.89	4.93		4.97	5.16		7.8	7.9
						30.2		5.96		85.2		4.97			8.0				
			Bottom	16.2	24.6	31.2	31.2	5.89	5.87	84.2	83.9	5.13	5.16		5.18	5.16		8.4	8.3
						31.2		5.85		83.6		5.18			8.2				
09/10/10	1314-1327	25/Cloudy	Surface	1.0	24.1	30.5	30.5	6.17	6.16	87.0	86.8	4.56	4.56	4.67	7.5	7.6	7.7		
						30.4		6.14		86.6		4.56			7.6				
			Middle	8.9	23.6	31.4	31.5	6.08	6.07	85.7	85.5	4.68	4.67		4.66	4.77		7.8	7.7
						31.5		6.05		85.3		4.66			7.6				
			Bottom	16.8	23.2	32.1	32.1	5.96	5.95	84.0	83.8	4.74	4.77		4.79	4.77		8.0	7.8
						32.0		5.93		83.6		4.79			7.6				
12/10/10	0927-0940	25/Sunny	Surface	1.0	24.6	30.6	30.6	6.34	6.33	89.4	89.3	4.99	4.96	4.98	8.2	8.0	7.9		
						30.5		6.31		89.1		4.92			7.8				
			Middle	8.3	23.8	31.4	31.5	6.11	6.10	86.4	86.2	5.05	5.03		5.01	5.03		8.2	7.9
						31.5		6.09		86.0		5.01			7.6				
			Bottom	15.7	23.4	31.9	31.9	5.85	5.87	82.5	82.8	4.91	4.95		4.98	4.95		8.0	7.9
						31.8		5.89		83.0		4.98			7.8				
14/10/10	1252-1308	31/Fine	Surface	1.0	26.6	29.9	29.9	6.15	6.13	86.7	86.4	4.81	4.84	5.02	7.7	7.9	8.1		
						29.9		6.10		86.0		4.86			8.0				
			Middle	8.6	25.7	30.7	30.7	5.98	6.01	84.3	84.7	4.94	4.98		5.01	5.25		7.8	8.0
						30.7		6.04		85.1		5.01			8.2				
			Bottom	16.2	24.8	31.5	31.5	5.88	5.90	82.9	83.1	5.22	5.25		5.28	5.25		8.6	8.5
						31.5		5.91		83.3		5.28			8.4				
19/10/10	1431-1444	25/Fine	Surface	1.0	25.7	30.7	30.7	6.25	6.27	88.5	88.5	4.99	4.95	5.02	8.0	8.2	8.3		
						30.7		6.28		88.5		4.90			8.4				
			Middle	9.0	24.6	31.5	31.5	6.07	6.08	85.9	86.0	5.05	5.04		5.03	5.08		8.2	8.2
						31.5		6.09		86.1		5.03			8.2				
			Bottom	17.3	24.1	32.1	32.1	5.93	5.95	83.9	84.0	5.09	5.08		5.06	5.08		8.4	8.4
						32.0		5.96		84.1		5.06			8.4				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1750-1804	28/Fine	Surface	1.0	26.4	30.9	31.0	5.98	5.95	83.7	83.3	5.18	5.21	5.49	8.5	8.6	8.9		
						31.0		5.92		82.8		5.23			8.6				
			Middle	8.2	25.9	31.2	31.3	5.78	5.82	80.9	81.5	5.40	5.43		5.46	5.85		9.0	8.8
						31.3		5.86		82.0		5.46			8.6				
			Bottom	16.4	25.0	31.9	32.0	5.74	5.72	80.3	80.1	5.88	5.85		5.81	5.85		9.6	9.4
						32.0		5.70		79.8		5.81			9.2				
26/10/10	0916-0926	24/Cloudy	Surface	1.0	25.7	30.7	30.8	6.18	6.17	88.3	88.1	4.67	4.70	5.01	7.5	7.8	8.2		
						30.8		6.15		87.9		4.73			8.0				
			Middle	8.7	24.7	31.5	31.5	6.04	6.06	86.3	86.6	5.15	5.13		5.10	5.21		8.4	8.3
						31.5		6.08		86.9		5.10			8.2				
			Bottom	16.4	24.1	32.2	32.2	5.92	5.94	84.6	84.9	5.18	5.21		5.24	5.21		8.2	8.4
						32.1		5.96		85.2		5.24			8.6				
28/10/10	0922-0935	17/Fine	Surface	1.0	22.8	30.4	30.4	6.06	6.04	84.8	84.6	5.12	5.14	5.23	8.5	8.6	8.5		
						30.4		6.02		84.3		5.15			8.6				
			Middle	8.8	23.2	31.3	31.3	5.96	5.94	83.4	83.2	5.20	5.22		5.23	5.34		8.8	8.6
						31.2		5.92		82.9		5.23			8.4				
			Bottom	16.6	22.9	32.1	32.2	5.82	5.84	81.5	81.7	5.32	5.34		5.35	5.34		8.6	8.4
						32.2		5.85		81.9		5.35			8.2				
30/10/10	1350-1405	22/Fine	Surface	1.0	19.7	31.7	31.5	6.20	6.18	89.0	89.2	4.22	4.24	4.32	6.5	6.5	6.5		
						31.3		6.15		89.4		4.26			6.4				
			Middle	5.4	19.2	31.5	31.5	6.01	6.04	85.9	86.1	4.25	4.35		4.44	4.39		6.4	6.5
						31.5		6.06		86.2		4.44			6.6				
			Bottom	9.8	19.0	31.3	31.6	5.94	5.94	84.7	84.5	4.41	4.39		4.36	4.39		6.8	6.7
						31.9		5.93		84.2		4.36			6.5				

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			
02/10/10	1618-1630	30/Fine	Surface	1.0	28.1	31.1	31.1	6.17	6.16	88.2	88.0	5.02	5.07	4.98	8.0	8.0	8.0			
						31.1		6.14		87.8		5.12			8.0					
			Middle	8.4	25.9	32.0	32.0	6.01	6.03	85.3	85.5	4.87	4.91		4.87	4.91		7.8	7.9	8.0
						32.0		6.04		85.7		4.94			8.0					
			Bottom	15.8	25.7	32.1	32.1	5.79	5.81	82.2	82.5	4.95	4.97		4.95	4.97		8.2	8.1	8.1
						32.1		5.83		82.7		4.99			8.0					
05/10/10	1651-1659	25/Cloudy	Surface	1.0	26.6	30.0	30.1	6.25	6.27	88.8	89.1	4.86	4.86	4.96	7.8	7.8	8.0			
						30.2		6.29		89.4		4.85			7.8					
			Middle	9.3	25.6	31.1	31.2	6.04	6.06	85.2	85.3	4.91	4.90		4.89	4.90		8.0	7.9	8.0
						31.2		6.07		85.4		4.89			7.8					
			Bottom	17.0	24.9	31.4	31.4	5.75	5.74	81.1	80.8	5.10	5.13		5.10	5.13		8.2	8.2	8.2
						31.3		5.72		80.5		5.15			8.2					
07/10/10	1754-1810	26/Cloudy	Surface	1.0	25.6	29.8	29.8	6.18	6.15	88.3	87.8	4.64	4.66	4.95	7.5	7.7	8.0			
						29.7		6.11		87.3		4.68			8.0					
			Middle	8.3	25.1	30.3	30.3	6.08	6.06	86.9	86.6	4.98	5.01		5.03	5.01		8.0	8.0	8.0
						30.3		6.03		86.2		5.03			8.0					
			Bottom	15.6	24.5	31.2	31.2	5.94	5.91	84.9	84.4	5.18	5.20		5.18	5.20		8.2	8.3	8.3
						31.2		5.87		83.9		5.21			8.4					
09/10/10	1408-1421	25/Cloudy	Surface	1.0	24.3	30.4	30.5	6.18	6.17	87.1	86.9	4.72	4.71	4.84	7.8	7.9	8.1			
						30.5		6.15		86.7		4.70			8.0					
			Middle	8.4	23.7	31.4	31.4	6.04	6.03	85.2	85.1	4.87	4.86		4.85	4.86		8.2	8.1	8.1
						31.4		6.02		84.9		4.85			8.0					
			Bottom	15.8	23.4	32.2	32.2	5.99	5.98	84.5	84.4	4.96	4.94		4.96	4.94		8.4	8.3	8.3
						32.1		5.97		84.2		4.91			8.2					
12/10/10	1042-1057	25/Sunny	Surface	1.0	24.4	30.7	30.7	6.32	6.34	89.2	89.4	5.16	5.13	5.13	8.6	8.5	8.4			
						30.6		6.35		89.5		5.10			8.4					
			Middle	6.0	23.6	31.7	31.7	6.08	6.06	85.8	85.6	5.25	5.26		5.25	5.26		8.6	8.5	8.5
						31.7		6.03		85.3		5.26			8.4					
			Bottom	11.0	23.4	31.9	31.9	5.89	5.88	83.2	83.0	5.02	5.01		5.02	5.01		8.0	8.1	8.1
						31.9		5.87		82.7		5.00			8.2					
14/10/10	1352-1407	31/Fine	Surface	1.0	26.5	30.0	30.0	6.14	6.12	86.5	86.3	4.81	4.84	5.07	7.6	7.7	8.1			
						30.0		6.10		86.0		4.86			7.8					
			Middle	8.3	25.7	30.8	30.8	5.89	5.92	83.0	83.2	5.02	5.05		5.02	5.05		8.0	8.1	8.1
						30.7		5.94		83.4		5.08			8.2					
			Bottom	15.6	24.7	31.6	31.6	5.88	5.85	82.9	82.5	5.30	5.33		5.30	5.33		8.4	8.4	8.4
						31.6		5.82		82.1		5.35			8.4					
19/10/10	1522-1535	25/Fine	Surface	1.0	25.3	30.7	30.7	6.17	6.16	87.3	87.2	4.85	4.84	4.90	7.6	7.7	7.8			
						30.7		6.14		87.0		4.83			7.8					
			Middle	8.2	24.5	31.7	31.7	6.05	6.06	85.6	85.7	4.91	4.91		4.91	4.91		8.0	8.0	8.0
						31.7		6.06		85.8		4.90			8.0					
			Bottom	15.6	24.0	32.0	32.0	5.94	5.94	84.1	84.0	4.94	4.94		4.94	4.94		7.6	7.7	7.7
						32.0		5.93		83.9		4.94			7.8					
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																			
23/10/10	1846-1900	28/Fine	Surface	1.0	26.5	31.0	31.0	5.96	5.94	83.4	83.1	4.96	4.98	5.21	8.0	8.1	8.5			
						31.0		5.91		82.7		5.00			8.2					
			Middle	8.3	25.8	31.5	31.5	5.86	5.83	82.0	81.6	5.14	5.18		5.14	5.18		8.4	8.3	8.3
						31.5		5.80		81.2		5.22			8.2					
			Bottom	15.6	25.0	32.0	32.1	5.72	5.74	80.0	80.3	5.44	5.47		5.44	5.47		9.4	9.2	9.2
						32.1		5.76		80.6		5.49			9.0					
26/10/10	1009-1020	24/Cloudy	Surface	1.0	25.8	30.9	30.9	6.30	6.29	90.0	89.8	4.91	4.95	5.02	7.8	7.9	8.0			
						30.9		6.27		89.6		4.98			8.0					
			Middle	8.4	24.7	31.5	31.5	6.01	6.03	85.9	86.1	4.98	4.94		4.98	4.94		7.8	7.7	7.7
						31.4		6.04		86.3		4.90			7.6					
			Bottom	15.8	24.1	32.0	32.1	5.83	5.81	82.7	82.5	5.15	5.19		5.15	5.19		8.4	8.3	8.3
						32.1		5.79		82.2		5.22			8.2					
28/10/10	1014-1029	17/Fine	Surface	1.0	22.8	30.6	30.6	6.06	6.08	84.8	85.1	5.07	5.08	5.16	8.0	8.1	8.3			
						30.5		6.09		85.3		5.09			8.2					
			Middle	8.4	23.3	31.3	31.4	5.97	5.95	83.2	83.1	5.16	5.14		5.16	5.14		8.4	8.2	8.2
						31.4		5.92		82.9		5.12			8.0					
			Bottom	15.8	22.9	32.1	32.1	5.88	5.87	82.3	82.1	5.26	5.25		5.26	5.25		8.6	8.5	8.5
						32.0		5.85		81.9		5.24			8.4					
30/10/10	1447-1459	22/Fine	Surface	1.0	19.2	31.7	31.7	6.10	6.10	87.9	87.8	4.18	4.18	4.38	6.4	6.5	6.6			
						31.7		6.09		87.7		4.18			6.6					
			Middle	8.0	19.2	31.9	31.9	5.92	5.93	85.0	85.1	4.12	4.36		4.12	4.36		6.5	6.4	6.4
						31.9		5.94		85.2		4.60			6.2					
			Bottom	15.0	19.0	32.1	32.1	5.79	5.78	83.0	83.0	4.60	4.60		4.60	4.60		7.0	6.9	6.9
						32.1		5.77		83.0		4.60			6.8					

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			
02/10/10	1634-1646	30/Fine	Surface	1.0	27.9	31.2	31.2	6.30	6.32	90.0	90.3	5.34	5.32	5.33	8.8	8.7	8.6		
						31.2		6.33		90.5		5.30			8.6				
			Middle	9.4	25.9	32.0	32.1	6.15	6.13	87.9	87.6	5.15	5.18		5.21	5.18		8.2	8.3
						32.1		6.11		87.3		5.21			8.4				
			Bottom	17.8	25.6	32.2	32.3	5.95	5.93	85.0	84.8	5.43	5.48		5.43	5.48		9.0	8.9
						32.3		5.91		84.5		5.52			8.8				
05/10/10	1705-1718	25/Cloudy	Surface	1.0	26.4	30.0	30.1	6.34	6.36	90.0	90.3	4.97	4.98	5.06	7.8	8.0	8.1		
						30.1		6.37		90.5		4.98			8.2				
			Middle	10.0	25.5	31.1	31.2	6.14	6.12	87.2	86.9	5.06	5.07		5.06	5.07		8.2	8.3
						31.3		6.10		86.6		5.07			8.4				
			Bottom	17.6	24.9	31.6	31.6	5.92	5.90	83.4	83.1	5.11	5.13		5.11	5.13		8.2	8.1
						31.5		5.87		82.8		5.14			8.0				
07/10/10	1816-1832	26/Cloudy	Surface	1.0	25.6	29.8	29.8	6.38	6.37	91.2	91.0	4.44	4.43	4.69	7.4	7.4	7.7		
						29.8		6.35		90.8		4.41			7.4				
			Middle	9.2	25.1	30.4	30.4	6.28	6.25	89.8	89.4	4.60	4.63		4.65	4.63		7.5	7.5
						30.4		6.22		88.9		4.65			7.4				
			Bottom	17.4	24.4	31.4	31.4	6.07	6.05	86.8	86.5	4.98	5.02		4.98	5.02		8.0	8.1
						31.3		6.03		86.2		5.05			8.2				
09/10/10	1424-1437	25/Cloudy	Surface	1.0	24.4	30.5	30.5	6.24	6.23	88.0	87.9	4.74	4.75	4.85	7.6	7.6	7.9		
						30.5		6.22		87.7		4.75			7.6				
			Middle	9.2	23.7	31.5	31.5	6.12	6.14	86.3	86.5	4.81	4.82		4.81	4.82		8.0	7.9
						31.4		6.15		86.7		4.83			7.8				
			Bottom	17.4	23.5	32.1	32.2	6.02	6.03	84.9	85.1	4.98	4.98		4.98	4.98		8.0	8.1
						32.2		6.04		85.2		4.97			8.2				
12/10/10	1109-1120	25/Sunny	Surface	1.0	24.6	30.7	30.7	6.26	6.24	88.8	88.5	5.01	5.05	5.16	8.0	8.1	8.4		
						30.7		6.22		88.2		5.09			8.2				
			Middle	8.9	23.6	31.6	31.7	6.05	6.03	85.3	85.0	5.14	5.10		5.14	5.10		8.4	8.3
						31.7		6.01		84.7		5.06			8.2				
			Bottom	16.9	23.4	31.9	32.0	5.82	5.81	82.1	81.9	5.32	5.34		5.32	5.34		8.8	8.7
						32.0		5.79		81.6		5.35			8.6				
14/10/10	1414-1430	31/Fine	Surface	1.0	26.5	30.0	30.0	6.18	6.16	87.1	86.8	4.57	4.60	4.80	7.5	7.6	7.8		
						30.0		6.14		86.5		4.63			7.6				
			Middle	9.2	25.6	30.8	30.9	6.08	6.06	85.7	85.4	4.79	4.81		4.79	4.81		7.8	7.8
						30.9		6.03		85.0		4.83			7.8				
			Bottom	17.4	24.7	31.7	31.7	5.93	5.91	83.6	83.3	5.00	4.98		5.00	4.98		8.2	8.1
						31.6		5.89		83.0		4.96			8.0				
19/10/10	1539-1552	25/Fine	Surface	1.0	25.1	30.8	30.8	6.19	6.21	87.6	87.7	5.09	5.08	5.10	8.4	8.3	8.2		
						30.7		6.22		87.8		5.06			8.2				
			Middle	9.0	24.3	31.6	31.6	6.10	6.12	86.3	86.4	5.10	5.11		5.10	5.11		8.4	8.2
						31.5		6.13		86.5		5.12			8.0				
			Bottom	17.7	23.8	31.9	32.0	5.96	5.95	84.3	84.3	5.11	5.12		5.11	5.12		8.2	8.2
						32.0		5.94		84.2		5.12			8.2				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1903-1917	28/Fine	Surface	1.0	26.5	31.0	31.0	6.14	6.12	85.9	85.7	4.80	4.83	5.12	7.8	7.9	8.3		
						31.0		6.10		85.4		4.86			8.0				
			Middle	9.3	25.7	31.6	31.6	6.05	6.04	84.7	84.5	5.08	5.12		5.08	5.12		8.2	8.2
						31.6		6.02		84.2		5.15			8.2				
			Bottom	17.6	24.9	32.1	32.2	5.85	5.87	81.9	82.2	5.46	5.43		5.46	5.43		8.8	8.9
						32.2		5.89		82.4		5.39			9.0				
26/10/10	1023-1034	24/Cloudy	Surface	1.0	25.8	30.8	30.8	6.17	6.16	88.2	88.0	5.02	5.06	5.04	8.0	8.1	8.1		
						30.7		6.14		87.8		5.09			8.2				
			Middle	9.4	24.7	31.6	31.6	6.04	6.03	86.3	86.1	4.97	4.94		4.97	4.94		7.8	7.8
						31.5		6.01		85.9		4.91			8.2				
			Bottom	17.8	24.2	31.9	32.0	5.71	5.73	81.0	81.3	5.09	5.12		5.09	5.12		8.2	8.3
						32.0		5.75		81.6		5.14			8.4				
28/10/10	1032-1044	17/Fine	Surface	1.0	22.8	30.7	30.7	6.03	6.02	84.4	84.3	5.11	5.12	5.14	8.1	8.1	8.2		
						30.6		6.01		84.1		5.13			8.0				
			Middle	9.2	23.4	31.4	31.5	5.95	5.93	83.3	83.1	5.07	5.08		5.07	5.08		8.2	8.1
						31.5		5.91		82.9		5.09			8.0				
			Bottom	17.4	22.9	32.2	32.2	5.87	5.86	82.2	82.1	5.20	5.21		5.20	5.21		8.6	8.5
						32.1		5.85		81.9		5.22			8.4				
30/10/10	1500-1514	22/Fine	Surface	1.0	19.5	32.0	32.1	6.15	6.14	88.0	87.9	4.18	4.30	4.29	6.2	6.5	6.6		
						32.1		6.12		87.7		4.41			6.8				
			Middle	8.0	19.2	32.2	32.2	5.99	5.98	85.6	85.5	4.49	4.32		4.49	4.32		7.0	6.8
						32.2		5.97		85.4		4.15			6.6				
			Bottom	15.0	19.0	32.2	32.2	5.89	5.86	83.1	83.1	4.18	4.24		4.18	4.24		6.4	6.5
						32.2		5.82		83.0		4.30			6.6				

Mid-Flood 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
02/10/10	1654-1705	30/Fine	Surface	1.0	27.8	31.1	31.2	6.21	6.23	88.8	89.0	4.57	4.60	4.85	7.6	7.7	8.0
				6.9		25.8		31.2		6.24		88.9			4.63		
			Middle	6.9	25.8	31.9	32.0	5.97	5.96	84.7	84.5	4.84	4.87		8.0	8.0	
				12.8		25.7		32.0		5.94		84.3			4.90		
			Bottom	12.8	25.7	32.2	32.2	5.91	5.89	83.9	83.6	5.03	5.07		8.2	8.2	
				1.0		26.8		30.3		6.21		88.0			4.81		
05/10/10	1720-1737	25/Cloudy	Surface	1.0	26.8	30.3	30.3	6.25	6.23	88.6	88.3	4.88	4.85	4.86	8.0	7.9	7.9
				7.4		25.5		31.2		5.90		83.2			4.90		
			Middle	7.4	25.5	31.1	31.2	5.93	5.92	83.6	83.4	4.94	4.92		7.8	7.9	
				13.9		25.0		31.6		5.74		80.8			4.80		
			Bottom	13.9	25.0	31.5	31.6	5.71	5.73	80.4	80.6	4.85	4.83		8.0	7.9	
				1.0		25.4		29.8		6.33		90.5			4.46		
07/10/10	1838-1855	26/Cloudy	Surface	1.0	25.4	29.9	29.9	6.36	6.36	91.2	90.9	4.51	4.49	4.69	7.5	7.5	7.7
				6.6		25.1		30.2		6.26		89.5			4.68		
			Middle	6.6	25.1	30.2	30.2	6.20	6.23	88.6	89.1	4.71	4.70		7.6	7.7	
				12.2		24.8		30.9		6.11		87.3			4.86		
			Bottom	12.2	24.8	30.9	30.9	6.07	6.09	86.8	87.1	4.93	4.90		8.0	7.9	
				1.0		24.6		30.6		6.08		85.7			4.61		
09/10/10	1444-1456	26/Cloudy	Surface	1.0	24.6	30.5	30.6	6.11	6.10	86.2	86.0	4.64	4.63	4.73	7.5	7.5	7.7
				6.8		23.8		31.4		6.04		85.2			4.72		
			Middle	6.8	23.8	31.5	31.5	6.01	6.03	84.7	85.0	4.75	4.74		7.8	7.8	
				12.6		23.5		32.2		5.96		84.0			4.83		
			Bottom	12.6	23.5	32.1	32.2	5.93	5.95	83.6	83.8	4.82	4.83		7.8	7.9	
				1.0		24.7		30.3		6.17		87.6			4.91		
12/10/10	1128-1139	25/Sunny	Surface	1.0	24.7	30.2	30.3	6.22	6.20	88.3	88.0	4.97	4.94	4.84	8.0	7.9	7.8
				8.8		23.6		31.2		5.90		83.1			4.69		
			Middle	8.8	23.6	31.1	31.2	5.93	5.92	83.6	83.4	4.65	4.67		7.6	7.6	
				16.0		23.1		31.5		5.70		80.3			4.93		
			Bottom	16.0	23.1	31.6	31.6	5.74	5.72	80.9	80.6	4.90	4.92		7.8	7.9	
				1.0		26.6		30.0		6.22		87.7			4.28		
14/10/10	1436-1452	30/Fine	Surface	1.0	26.6	30.0	30.0	6.26	6.24	88.2	88.0	4.33	4.31	4.57	7.0	7.0	7.5
				6.6		25.9		30.6		6.13		86.4			4.51		
			Middle	6.6	25.9	30.6	30.6	6.07	6.10	85.5	86.0	4.59	4.55		7.4	7.5	
				12.2		25.0		31.4		5.85		82.4			4.83		
			Bottom	12.2	25.0	31.3	31.4	5.91	5.88	83.3	82.9	4.90	4.87		8.0	7.9	
				1.0		25.8		30.8		6.21		87.9			4.90		
19/10/10	1724-1739	25/Fine	Surface	1.0	25.8	30.7	30.8	6.24	6.23	88.3	88.1	4.92	4.91	4.96	8.0	8.0	8.1
				8.9		24.9		31.2		6.10		86.3			4.95		
			Middle	8.9	24.9	31.3	31.3	6.12	6.11	86.6	86.5	4.96	4.96		8.2	8.1	
				16.8		24.2		31.6		6.09		86.2			5.00		
			Bottom	16.8	24.2	31.5	31.6	6.08	6.09	86.0	86.1	5.01	5.01		8.0	8.1	
				21/10/10 Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).													
23/10/10	1922-1937	27/Fine	Surface	1.0	26.6	30.8	30.9	6.15	6.13	86.1	85.8	4.90	4.94	5.13	8.0	8.0	8.3
				6.7		26.0		31.2		6.06		84.8			5.08		
			Middle	6.7	26.0	31.2	31.2	6.00	6.03	84.0	84.4	5.14	5.11		8.4	8.2	
				12.4		25.5		31.9		5.96		83.4			5.33		
			Bottom	12.4	25.5	32.0	32.0	5.90	5.93	82.6	83.0	5.38	5.36		8.6	8.7	
				1.0		25.8		30.9		6.09		87.0			5.30		
26/10/10	1041-1051	24/Cloudy	Surface	1.0	25.8	30.9	30.9	6.06	6.08	86.6	86.8	5.27	5.29	5.05	8.0	8.1	8.1
				6.8		24.5		31.4		5.92		84.0			4.94		
			Middle	6.8	24.5	31.5	31.5	5.89	5.91	83.6	83.8	4.90	4.92		8.2	8.1	
				12.6		24.4		31.9		5.79		82.2			4.96		
			Bottom	12.6	24.4	32.0	32.0	5.75	5.77	81.6	81.9	4.91	4.94		7.8	7.9	
				1.0		22.8		30.8		6.08		85.1			5.14		
28/10/10	1051-1104	18/Fine	Surface	1.0	22.8	30.7	30.8	6.03	6.06	84.4	84.8	5.17	5.16	5.25	8.5	8.5	8.4
				6.7		23.5		31.3		5.96		83.4			5.28		
			Middle	6.7	23.5	31.4	31.4	5.98	5.97	83.7	83.6	5.29	5.29		8.5	8.4	
				12.4		22.9		32.1		5.84		81.8			5.32		
			Bottom	12.4	22.9	32.2	32.2	5.86	5.85	82.0	81.9	5.31	5.32		8.4	8.5	
				1.0		19.9		31.5		5.99		85.6			4.15		
30/10/10	1520-1533	22/Fine	Surface	1.0	19.9	31.2	31.4	5.90	5.95	85.0	85.3	4.16	4.16	4.40	6.5	6.5	7.0
				8.0		19.4		31.7		5.90		85.0			4.91		
			Middle	8.0	19.4	31.7	31.7	5.92	5.91	85.1	85.1	4.83	4.87		8.0	8.0	
				15.0		19.2		31.9		5.80		83.1			4.17		
			Bottom	15.0	19.2	31.9	31.9	5.75	5.78	82.0	82.6	4.19	4.18		6.6	6.5	

Mid-Flood Tide

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
02/10/10	1403-1415	30/Fine	Surface	1.0	28.0	31.0	31.1	6.09	6.11	86.4	86.7	5.02	5.06	5.19	7.8	7.9	8.2
						31.1		6.12		86.9		5.09			8.0		
			Middle	5.9	25.8	31.8	31.8	5.82	5.85	82.6	83.0	5.37	5.34		8.6	8.5	
						31.8		5.87		83.3		5.31			8.4		
			Bottom	10.8	25.6	32.0	32.1	5.64	5.62	80.0	79.8	5.18	5.16		8.2	8.3	
						32.1		5.60		79.5		5.14			8.4		
05/10/10	1431-1444	25/Cloudy	Surface	1.0	26.0	30.4	30.4	6.24	6.26	88.4	88.8	4.46	4.49	4.57	7.5	7.6	7.6
						30.4		6.27		89.1		4.52			7.6		
			Middle	6.8	25.7	31.2	31.1	6.01	6.02	85.2	84.9	4.60	4.59		7.8	7.7	
						31.0		6.02		84.6		4.58			7.6		
			Bottom	11.1	25.2	31.5	31.6	5.80	5.82	81.6	82.0	4.65	4.64		7.5	7.6	
						31.6		5.83		82.3		4.63			7.6		
07/10/10	1554-1607	26/Cloudy	Surface	1.0	25.5	29.6	29.6	6.18	6.17	88.3	88.1	4.78	4.80	4.92	7.8	7.8	7.9
						29.5		6.15		87.9		4.82			7.8		
			Middle	5.6	25.2	29.9	30.0	6.03	6.05	86.2	86.2	4.88	4.92		8.0	7.9	
						30.0		6.07		86.1		4.95			7.8		
			Bottom	10.2	24.7	30.8	30.9	5.88	5.91	84.1	84.5	5.02	5.05		8.0	8.1	
						30.9		5.93		84.8		5.08			8.2		
09/10/10	1140-1153	24/Cloudy	Surface	1.0	23.8	30.4	30.4	6.24	6.26	88.0	88.2	4.62	4.63	4.74	7.5	7.5	7.7
						30.4		6.27		88.4		4.64			7.4		
			Middle	7.3	23.2	31.3	31.4	6.12	6.14	86.3	86.6	4.78	4.77		8.0	7.9	
						31.4		6.16		86.9		4.75			7.8		
			Bottom	13.6	22.9	32.1	32.1	6.08	6.07	85.7	86.1	4.80	4.82		7.6	7.8	
						32.0		6.06		86.4		4.83			8.0		
12/10/10	0819-0831	25/Sunny	Surface	1.0	24.3	30.9	31.0	6.26	6.26	88.1	88.2	3.94	3.97	4.10	6.2	6.3	6.5
						31.0		6.25		88.2		3.99			6.4		
			Middle	7.4	23.7	31.5	31.6	6.11	6.11	86.2	86.2	4.07	4.12		6.6	6.5	
						31.6		6.10		86.1		4.17			6.4		
			Bottom	13.2	23.3	31.9	31.9	6.05	6.06	85.2	85.3	4.19	4.21		6.8	6.6	
						31.8		6.06		85.3		4.22			6.4		
14/10/10	1140-1155	30/Fine	Surface	1.0	26.4	29.8	29.4	6.11	6.09	86.1	85.8	4.67	4.71	4.93	7.6	7.6	7.9
						29.0		6.07		85.5		4.75			7.6		
			Middle	5.6	26.0	30.3	30.4	5.99	5.96	84.4	83.9	4.93	4.96		8.0	8.1	
						30.4		5.92		83.4		4.99			8.2		
			Bottom	10.2	25.2	31.1	31.1	5.78	5.81	81.4	81.8	5.08	5.11		8.0	8.1	
						31.1		5.83		82.2		5.13			8.2		
19/10/10	1631-1643	25/Fine	Surface	1.0	25.3	30.8	30.8	6.21	6.23	87.8	88.1	4.02	4.04	4.32	6.4	6.5	7.0
						30.7		6.24		88.3		4.05			6.6		
			Middle	6.3	24.2	31.3	31.4	6.08	6.09	86.0	86.1	4.40	4.38		7.2	7.1	
						31.4		6.09		86.2		4.35			7.0		
			Bottom	11.4	23.9	32.1	32.1	5.95	5.97	84.2	84.4	4.56	4.54		7.6	7.5	
						32.0		5.98		84.6		4.52			7.4		
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																
23/10/10	1648-1703	29/Cloudy	Surface	1.0	26.6	30.9	30.9	5.90	5.93	82.6	83.0	5.00	4.99	5.15	8.2	8.1	8.4
						30.8		5.96		83.4		4.97			8.0		
			Middle	5.7	26.1	30.9	31.0	5.88	5.85	82.3	81.9	5.08	5.11		8.4	8.4	
31.0	5.82	81.4				5.14		8.4									
Bottom	10.4	25.5	31.7	31.7	5.70	5.72	79.8	80.0	5.31	5.36	8.6	8.7					
			31.7		5.73		80.2		5.40		8.8						
26/10/10	0801-0812	24/Cloudy	Surface	1.0	25.4	30.4	30.5	6.10	6.09	87.2	87.0	4.98	4.95	5.10	8.0	7.9	8.1
						30.5		6.07		86.8		4.92			7.8		
			Middle	5.9	24.4	31.7	31.7	5.88	5.87	83.4	83.2	5.29	5.25		8.4	8.3	
31.6	5.85	83.0				5.21		8.2									
Bottom	10.8	24.2	32.0	32.0	5.92	5.90	84.0	83.7	5.11	5.09	8.0	8.1					
			31.9		5.87		83.3		5.06		8.2						
28/10/10	0809-0812	16/Fine	Surface	1.0	22.7	30.4	30.4	6.02	6.04	84.3	84.5	5.67	5.67	5.77	9.2	9.1	9.3
						30.3		6.05		84.7		5.66			9.0		
			Middle	5.6	27.3	31.5	31.5	5.97	5.95	83.6	83.3	5.79	5.78		9.4	9.3	
31.4	5.93	83.0				5.77		9.2									
Bottom	10.2	22.8	32.1	32.1	5.84	5.83	81.8	81.6	5.86	5.85	9.5	9.4					
			32.0		5.81		81.3		5.84		9.2						
30/10/10	1228-1240	22/Fine	Surface	1.0	19.4	31.5	31.4	5.91	5.92	84.2	84.3	4.00	4.41	4.56	6.4	6.7	7.5
						31.2		5.93		84.4		4.81			7.0		
			Middle	5.4	19.0	31.9	31.8	5.77	5.77	83.1	83.1	4.92	4.49		8.0	7.8	
31.7	5.77	83.1				4.06		7.6									
Bottom	7.8	18.7	31.9	31.9	5.79	5.80	82.1	82.1	4.93	4.80	8.0	8.0					
			31.9		5.80		82.0		4.66		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		
02/10/10	1344-1355	30/Fine	Surface	1.0	27.9	30.9	30.9	6.07	6.06	86.1	85.9	4.94	4.92	4.98	7.8	7.8	7.9		
						30.9		6.04		85.7		4.90			7.8				
			Middle	6.7	25.9	31.8	31.8	5.83	5.85	82.7	83.0	5.07	5.12		5.10	8.2		8.1	8.0
						31.7		5.87		83.3		5.12			8.0				
			Bottom	12.4	25.6	31.9	31.9	5.78	5.75	81.6	81.3	4.95	4.90		4.93	8.0		7.9	7.8
						31.9		5.71		81.0		4.90			7.8				
05/10/10	1416-1428	25/Cloudy	Surface	1.0	26.2	30.5	30.6	6.16	6.18	87.4	87.7	5.00	5.04	5.10	8.1	8.1	8.2		
						30.6		6.19		87.9		5.07			8.0				
			Middle	5.9	25.2	31.1	31.1	6.07	6.05	86.1	85.4	5.09	5.12		5.11	8.0		8.2	8.4
						31.0		6.03		84.7		5.12			8.2				
			Bottom	12.1	25.0	31.7	31.8	5.84	5.91	83.5	83.9	5.15	5.16		5.16	8.4		8.3	8.2
						31.8		5.97		84.3		5.16			8.2				
07/10/10	1535-1550	26/Cloudy	Surface	1.0	25.4	29.6	29.6	6.40	6.38	91.5	91.2	4.56	4.52	4.65	7.5	7.5	7.7		
						29.6		6.36		90.9		4.47			7.4				
			Middle	6.4	25.2	30.1	30.1	6.29	6.27	89.9	89.6	4.62	4.66		4.64	7.6		7.6	7.6
						30.1		6.25		89.3		4.66			7.6				
			Bottom	11.8	24.7	31.0	31.0	6.10	6.08	87.2	86.9	4.78	4.82		4.80	8.0		7.9	7.8
						31.0		6.06		86.6		4.82			7.8				
09/10/10	1117-1130	24/Cloudy	Surface	1.0	23.8	30.5	30.5	6.13	6.14	86.4	86.6	4.42	4.45	4.58	7.4	7.3	7.5		
						30.4		6.15		86.7		4.47			7.2				
			Middle	6.4	23.1	31.3	31.3	6.10	6.10	86.0	86.0	4.56	4.53		4.55	7.6		7.5	7.4
						31.2		6.09		85.9		4.53			7.4				
			Bottom	11.8	22.9	32.2	32.2	5.97	5.96	84.2	84.1	4.71	4.76		4.74	7.8		7.7	7.6
						32.1		5.95		83.9		4.76			7.6				
12/10/10	0803-0813	25/Sunny	Surface	1.0	24.3	30.8	30.8	6.22	6.22	87.9	88.0	3.82	3.84	4.32	6.0	6.1	6.9		
						30.8		6.22		88.0		3.86			6.2				
			Middle	6.2	23.8	31.8	31.8	6.07	6.08	85.8	85.9	4.28	4.33		4.31	6.8		6.8	6.8
						31.8		6.08		85.9		4.33			6.8				
			Bottom	11.9	23.1	32.0	32.1	6.02	6.03	84.9	85.0	4.81	4.83		4.82	7.8		7.8	7.8
						32.1		6.03		85.0		4.83			7.8				
14/10/10	1119-1134	30/Fine	Surface	1.0	26.5	29.8	29.8	6.28	6.26	88.5	88.2	4.51	4.55	4.75	7.6	7.6	7.8		
						29.8		6.23		87.8		4.58			7.6				
			Middle	6.4	25.9	30.4	30.4	6.12	6.10	86.2	86.0	4.72	4.77		4.75	7.8		7.7	7.6
						30.4		6.08		85.7		4.77			7.6				
			Bottom	11.8	25.0	31.1	31.1	5.91	5.94	83.3	83.7	4.91	4.99		4.95	8.0		8.1	8.2
						31.1		5.96		84.0		4.99			8.2				
19/10/10	1613-1627	25/Fine	Surface	1.0	25.4	30.6	30.6	6.15	6.18	87.0	87.4	4.48	4.51	4.51	7.2	7.4	7.4		
						30.6		6.20		87.7		4.53			7.6				
			Middle	7.8	24.5	31.2	31.3	6.02	6.04	85.2	85.4	4.59	4.63		4.61	7.6		7.5	7.4
						31.3		6.05		85.6		4.63			7.4				
			Bottom	14.2	24.0	32.0	32.1	5.93	5.94	83.9	84.0	4.40	4.45		4.43	7.2		7.4	7.5
						32.1		5.94		84.1		4.45			7.5				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1622-1640	29/Cloudy	Surface	1.0	26.5	30.8	30.9	6.25	6.23	87.5	87.2	4.89	4.91	5.03	7.8	7.9	8.1		
						30.9		6.21		86.9		4.93			8.0				
			Middle	6.6	25.9	31.2	31.2	6.18	6.16	86.5	86.2	4.97	5.02		5.00	8.0		8.2	8.4
						31.2		6.13		85.8		5.02			8.2				
			Bottom	12.2	25.3	31.9	32.0	6.07	6.05	84.9	84.7	5.16	5.20		5.18	8.2		8.2	8.2
						32.0		6.03		84.4		5.20			8.2				
26/10/10	0743-0753	24/Cloudy	Surface	1.0	25.3	30.3	30.4	6.02	6.05	86.0	86.4	5.15	5.18	5.16	8.4	8.3	8.3		
						30.4		6.07		86.8		5.21			8.2				
			Middle	6.7	24.5	31.6	31.7	5.94	5.92	84.9	84.6	5.07	5.15		5.11	8.0		8.2	8.4
						31.7		5.90		84.3		5.15			8.4				
			Bottom	12.4	24.1	31.9	31.9	5.87	5.86	83.3	83.1	5.23	5.17		5.20	8.4		8.3	8.2
						31.9		5.84		82.9		5.17			8.2				
28/10/10	0746-0759	16/Fine	Surface	1.0	22.8	30.4	30.5	6.04	6.04	84.6	84.5	4.99	5.03	5.18	8.0	8.1	8.4		
						30.5		6.03		84.4		5.07			8.2				
			Middle	6.3	23.0	31.3	31.4	5.99	5.97	83.9	83.6	5.18	5.21		5.20	8.4		8.3	8.2
						31.4		5.95		83.3		5.21			8.2				
			Bottom	11.6	22.9	32.1	32.1	5.89	5.88	82.5	82.4	5.30	5.32		5.31	8.8		8.7	8.5
						32.0		5.87		82.2		5.32			8.5				
30/10/10	1211-1224	22/Fine	Surface	1.0	19.5	31.7	31.6	6.11	6.11	87.2	87.4	4.61	4.61	4.36	7.5	7.6	7.1		
						31.5		6.10		87.6		4.60			7.6				
			Middle	5.4	19.0	31.7	31.8	6.00	5.97	85.7	85.5	4.51	4.40		4.46	7.4		7.3	7.2
						31.9		5.94		85.3		4.40			7.2				
			Bottom	9.8	18.2	31.9	31.9	5.84	5.87	84.2	84.4	4.04	4.02		4.03	6.4		6.5	6.6
						31.9		5.90		84.5		4.02			6.6				

Mid-Flood Tide



聚業檢測測試顧問有限公司
ETS-TESTCONSULT LIMITED

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
02/10/10	1330-1341	30/Fine	Surface	1.0	27.8	30.8	30.8	6.10	6.13	87.2	87.6	4.78	4.74	4.97	7.6	7.6	8.1
						30.8		6.15		87.9		4.70			7.6		
			Middle	6.3	25.9	31.6	31.7	5.74	5.72	81.5	81.2	5.03	5.07		8.0	8.3	
						31.7		5.70		80.9		5.11			8.5		
			Bottom	11.6	25.5	31.9	32.0	5.69	5.67	80.7	80.5	5.15	5.11		8.5	8.4	
						32.0		5.65		80.2		5.07			8.2		
05/10/10	1400-1411	25/Cloudy	Surface	1.0	26.3	30.9	30.9	6.34	6.32	90.0	89.7	5.06	5.08	5.13	8.2	8.1	8.3
						30.8		6.30		89.4		5.09			8.0		
			Middle	6.6	25.5	31.4	31.5	5.94	5.98	83.7	84.5	5.15	5.14		8.4	8.3	
						31.5		6.01		85.3		5.13			8.2		
			Bottom	11.5	25.2	31.9	31.9	5.93	5.95	84.2	84.4	5.20	5.19		8.5	8.5	
						31.8		5.96		84.5		5.17			8.4		
07/10/10	1515-1530	26/Cloudy	Surface	1.0	25.4	29.6	29.7	6.39	6.42	91.3	91.7	4.54	4.56	4.67	7.6	7.6	7.7
						29.7		6.44		92.0		4.58			7.6		
			Middle	6.2	25.1	30.1	30.2	6.31	6.29	90.2	89.9	4.59	4.62		7.4	7.6	
						30.2		6.27		89.6		4.64			7.7		
			Bottom	11.4	24.7	30.9	31.0	6.12	6.14	87.5	87.8	4.81	4.83		8.0	8.0	
						31.0		6.16		88.1		4.85			8.0		
09/10/10	1100-1114	24/Cloudy	Surface	1.0	23.8	30.4	30.5	6.24	6.25	87.9	88.1	4.34	4.35	4.51	7.0	7.1	7.4
						30.5		6.26		88.3		4.36			7.2		
			Middle	6.3	23.1	31.2	31.3	6.12	6.13	86.3	86.5	4.48	4.50		7.5	7.5	
						31.3		6.14		86.6		4.51			7.5		
			Bottom	11.6	22.9	32.1	32.2	6.03	6.04	85.0	85.2	4.68	4.67		7.5	7.5	
						32.2		6.05		85.3		4.66			7.4		
12/10/10	0746-0759	25/Sunny	Surface	1.0	24.2	31.2	31.2	6.24	6.23	88.0	88.0	4.53	4.51	4.78	7.0	7.1	7.7
						31.1		6.21		87.9		4.49			7.2		
			Middle	6.7	23.9	31.6	31.7	6.09	6.10	86.0	86.1	4.85	4.86		8.0	7.9	
						31.7		6.11		86.2		4.87			7.7		
			Bottom	12.7	23.4	31.9	31.9	6.03	6.03	85.0	85.1	4.95	4.96		8.0	8.0	
						31.9		6.03		85.1		4.96			8.0		
14/10/10	1100-1115	30/Fine	Surface	1.0	26.5	29.8	29.9	6.25	6.23	88.1	87.8	4.55	4.58	4.79	7.5	7.7	7.8
						29.9		6.21		87.5		4.60			7.8		
			Middle	6.2	25.9	30.4	30.4	6.16	6.13	86.8	86.4	4.78	4.80		7.6	7.7	
						30.4		6.10		86.0		4.81			7.8		
			Bottom	11.4	25.0	31.1	31.1	5.98	6.01	84.3	84.7	5.01	4.99		8.0	8.0	
						31.1		6.04		85.1		4.96			8.0		
19/10/10	1557-1608	25/Fine	Surface	1.0	25.4	30.7	30.7	6.18	6.17	87.4	87.3	4.72	4.70	4.79	8.0	7.8	7.9
						30.6		6.16		87.2		4.67			7.6		
			Middle	6.9	24.6	31.3	31.3	6.05	6.06	85.6	85.8	4.79	4.80		8.0	8.0	
						31.3		6.07		85.9		4.81			8.0		
			Bottom	12.7	24.2	31.9	32.0	5.94	5.95	84.1	84.2	4.87	4.87		7.5	7.8	
						32.0		5.96		84.3		4.86			8.0		
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																
23/10/10	1600-1618	29/Cloudy	Surface	1.0	26.5	30.8	30.8	6.18	6.16	86.5	86.2	4.81	4.84	4.97	7.6	7.7	8.0
						30.8		6.13		85.8		4.87			7.8		
			Middle	6.2	26.1	31.1	31.1	6.15	6.12	86.1	85.6	4.96	4.98		8.0	8.0	
						31.1		6.08		85.1		4.99			8.0		
			Bottom	11.4	25.6	31.8	31.8	6.01	6.00	84.1	83.9	5.05	5.08		8.0	8.2	
						31.8		5.98		83.7		5.11			8.4		
26/10/10	0730-0740	24/Cloudy	Surface	1.0	25.4	30.1	30.2	6.07	6.06	86.8	86.6	5.07	5.10	5.08	8.2	8.3	8.2
						30.2		6.04		86.3		5.12			8.4		
			Middle	6.4	24.7	31.6	31.6	5.87	5.86	83.3	83.1	4.95	4.97		8.0	8.0	
						31.5		5.84		82.9		4.99			8.0		
			Bottom	11.8	24.2	31.7	31.8	5.69	5.67	80.7	80.5	5.20	5.16		8.0	8.2	
						31.8		5.65		80.2		5.12			8.4		
28/10/10	0730-0743	16/Fine	Surface	1.0	22.8	30.5	30.5	6.08	6.07	85.1	85.0	4.98	4.97	5.06	7.8	8.0	8.2
						30.4		6.06		84.8		4.96			8.2		
			Middle	6.2	23.1	31.4	31.4	5.96	5.95	83.4	83.2	5.06	5.05		8.2	8.1	
						31.3		5.93		83.0		5.03			8.0		
			Bottom	11.4	22.8	32.0	32.1	5.84	5.82	81.8	81.5	5.13	5.15		8.5	8.4	
						32.1		5.80		81.2		5.17			8.2		
30/10/10	1155-1210	22/Fine	Surface	1.0	19.4	31.7	31.7	6.11	6.11	86.6	86.8	4.16	4.22	4.24	6.4	6.6	6.5
						31.7		6.10		87.0		4.28			6.8		
			Middle	5.6	18.4	31.9	31.9	6.00	6.03	85.7	85.8	4.22	4.21		6.6	6.6	
						31.9		6.05		85.9		4.20			6.5		
			Bottom	10.2	18.0	32.0	32.0	5.96	5.94	84.9	84.6	4.15	4.28		6.3	6.4	
						32.0		5.92		84.2		4.40			6.4		

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	
02/10/10	1539-1550	30/Fine	Surface	1.0	27.9	30.8	30.8	6.14	6.14	87.8	87.7	4.79	4.82	5.09	7.6	7.7	8.1	
						30.7		6.13		87.6		4.84			7.8			
			Middle	6.1	25.9	31.9	31.9	5.99	5.97	85.0	84.7	5.21	5.24		8.4	8.5		8.6
						31.8		5.95		84.4		5.27			8.0			
			Bottom	11.2	25.5	32.2	32.2	5.92	5.91	84.0	83.8	5.18	5.21		8.0	8.1		8.2
						32.1		5.89		83.6		5.24			8.6			
05/10/10	1608-1620	25/Cloudy	Surface	1.0	26.6	30.1	30.1	6.13	6.15	87.1	87.3	5.10	5.06	5.22	8.2	8.1	8.5	
						30.1		6.16		87.5		5.02			8.0			
			Middle	8.7	25.4	31.2	31.2	6.05	6.07	85.8	86.0	5.29	5.28		8.6	8.6		8.6
						31.1		6.08		86.2		5.27			8.8			
			Bottom	16.3	25.0	31.3	31.4	5.90	5.92	83.2	83.5	5.31	5.32		8.8	8.7		8.6
						31.4		5.93		83.7		5.32			8.6			
07/10/10	1715-1730	26/Cloudy	Surface	1.0	25.5	29.7	29.8	6.34	6.32	90.6	90.4	4.50	4.53	4.68	7.5	7.6	7.7	
						29.8		6.30		90.1		4.56			7.6			
			Middle	5.9	25.3	30.0	30.0	6.31	6.29	90.2	89.9	4.66	4.68		7.8	7.7		7.5
						29.9		6.26		89.5		4.69			7.5			
			Bottom	10.8	24.8	30.6	30.7	6.18	6.16	88.3	88.0	4.80	4.82		8.0	7.9		7.8
						30.7		6.13		87.6		4.84			8.0			
09/10/10	1334-1348	25/Cloudy	Surface	1.0	24.2	30.4	30.5	6.12	6.11	86.3	86.2	4.71	4.73	4.84	7.8	7.7	7.9	
						30.5		6.10		86.0		4.74			7.6			
			Middle	6.1	23.6	31.5	31.5	6.04	6.03	85.2	85.1	4.86	4.86		8.0	7.9		7.8
						31.4		6.02		84.9		4.85			7.8			
			Bottom	11.2	23.2	32.0	32.1	5.92	5.92	83.5	83.4	4.93	4.95		8.2	8.1		8.0
						32.1		5.91		83.3		4.96			8.0			
12/10/10	0951-1003	25/Sunny	Surface	1.0	24.6	30.5	30.6	6.16	6.14	87.2	87.1	4.87	4.84	4.93	7.8	7.7	7.9	
						30.6		6.12		87.0		4.81			7.6			
			Middle	9.3	23.7	31.5	31.5	6.07	6.09	85.9	86.1	4.90	4.88		8.0	7.9		7.8
						31.5		6.10		86.3		4.85			8.2			
			Bottom	17.5	23.4	31.8	31.8	5.69	5.70	80.1	80.5	5.04	5.07		8.0	8.1		8.0
						31.7		5.71		80.8		5.09			8.0			
14/10/10	1312-1328	31/Fine	Surface	1.0	26.6	29.9	30.0	6.24	6.22	87.9	87.7	4.49	4.51	4.75	7.6	7.7	7.8	
						30.0		6.20		87.4		4.53			7.8			
			Middle	5.9	25.9	30.5	30.5	6.15	6.13	86.7	86.4	4.75	4.78		7.8	7.7		7.6
						30.4		6.10		86.0		4.80			8.0			
			Bottom	10.8	25.0	31.2	31.2	5.98	6.01	84.3	84.7	4.95	4.98		8.0	8.0		8.2
						31.1		6.03		85.0		5.00			8.0			
19/10/10	1448-1459	25/Fine	Surface	1.0	25.5	30.6	30.7	6.29	6.27	89.2	88.9	5.00	5.05	5.08	8.2	8.2	8.2	
						30.7		6.25		88.5		5.10			8.2			
			Middle	6.8	24.4	31.3	31.4	6.10	6.09	86.3	86.3	5.07	5.08		8.0	7.9		7.8
						31.4		6.08		86.2		5.08			8.4			
			Bottom	14.1	23.9	32.0	32.0	5.97	5.97	84.5	84.5	5.11	5.11		8.4	8.5		8.6
						31.9		5.96		84.4		5.10			8.6			
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																	
23/10/10	1808-1824	28/Fine	Surface	1.0	26.6	30.9	30.9	6.07	6.04	84.9	84.5	4.85	4.87	5.02	8.0	7.9	8.1	
						30.9		6.01		84.1		4.89			7.8			
			Middle	5.9	26.2	31.1	31.1	6.11	6.08	85.5	85.0	4.97	5.00		8.2	8.2		8.2
						31.1		6.04		84.5		5.02			8.4			
			Bottom	10.8	25.6	31.7	31.7	5.98	5.95	83.7	83.3	5.16	5.21		8.4	8.2		8.0
						31.6		5.92		82.8		5.25			8.0			
26/10/10	0933-0943	24/Cloudy	Surface	1.0	25.8	30.8	30.8	6.11	6.10	87.3	87.1	4.89	4.91	5.05	7.8	7.9	8.1	
						30.7		6.08		86.9		4.93			8.0			
			Middle	6.1	24.6	31.6	31.6	6.07	6.06	86.8	86.6	5.21	5.18		8.4	8.3		8.2
						31.5		6.04		86.3		5.15			8.2			
			Bottom	11.2	24.1	32.1	32.2	5.91	5.89	83.9	83.6	5.01	5.05		8.0	8.0		8.0
						32.2		5.87		83.3		5.09			8.0			
28/10/10	0942-0955	17/Fine	Surface	1.0	22.8	30.5	30.5	6.02	6.03	84.3	84.4	5.01	5.03	5.15	8.2	8.1	8.2	
						30.4		6.03		84.4		5.04			8.0			
			Middle	6.1	23.1	31.4	31.4	5.92	5.93	82.9	83.0	5.14	5.15		8.4	8.2		8.4
						31.3		5.93		83.0		5.16			8.0			
			Bottom	11.2	22.9	32.2	32.3	5.80	5.81	81.2	81.3	5.27	5.26		8.5	8.4		8.2
						32.3		5.81		81.3		5.25			8.2			
30/10/10	1411-1423	22/Fine	Surface	1.0	19.9	31.7	31.7	6.15	6.16	87.9	87.8	4.32	4.22	4.13	7.0	6.9	6.6	
						31.7		6.16		87.7		4.11			6.8			
			Middle	6.2	19.8	31.7	31.8	6.04	6.02	86.0	86.0	4.14	4.15		6.4	6.4		6.4
						31.9		6.00		86.0		4.16			6.4			
			Bottom	11.4	19.2	32.0	32.0	5.96	5.93	84.4	84.3	4.00	4.03		6.6	6.4		6.6
						32.0		5.90		84.2		4.05			6.2			



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			
02/10/10	1605-1615	30/Fine	Surface	1.0	28.0	31.0	31.1	6.27	6.26	89.6	89.4	4.96	4.95	4.92	8.0	7.9	7.8			
				31.1		6.24		89.2		4.94		7.8								
			Middle	8.9	25.9	31.9	32.0	6.03	6.05	86.2	86.5	4.87	4.84		7.6			7.7	7.6	
	Bottom	16.8		25.7	32.0	6.07		86.8		4.81		7.8								
		05/10/10	1632-1649	25/Cloudy	Surface	1.0	26.6	30.1	30.1	6.38	6.37	90.4	90.2		5.03	5.06		5.14	8.0	8.1
	30.0					6.35		90.0		5.09		8.2								
	Middle				5.9	25.5	31.0	31.0	6.12	6.12	86.9	87.2	5.15		5.12	8.4			8.3	
		Bottom	15.9	25.1	30.9	6.12	87.4		5.08		8.2									
	07/10/10		1734-1750	26/Cloudy	Surface	1.0	25.5	29.8	29.8	6.12	6.14	87.5	87.8		4.67	4.70			4.95	7.6
29.8		6.16				88.1		4.72		7.6										
Middle		8.8			25.1	30.3	30.3	6.05	6.03	86.5	86.2	4.94	4.97	8.0	7.9	8.0				
	Bottom	16.6	24.6	30.3	6.00	85.8		4.99		7.8										
09/10/10		1352-1405	25/Cloudy	Surface	1.0	24.3	30.5	30.5	6.20	6.21	87.4	87.6	4.79	4.81	4.94	7.8	7.8			8.0
	30.4				6.22		87.7		4.82		7.8									
	Middle			8.8	23.6	31.4	31.5	6.13	6.15	86.4	86.7	4.95	4.96	8.0		8.1		8.2		
Bottom		16.6	23.3	31.5	6.17	87.0		4.96		8.2										
	12/10/10	1017-1030	25/Sunny	Surface	1.0	24.7	30.6	30.6	6.13	6.12	87.0	86.7	5.04	5.07		4.95	8.2	8.1		
30.6					6.10		86.3		5.09		8.0									
Middle				8.7	23.8	31.7	31.7	6.04	6.03	85.2	85.0	4.86	4.89	7.8			7.8		7.8	
	Bottom	16.7	23.5	31.6	6.01	84.7		4.92		8.2										
14/10/10		1334-1349	31/Fine	Surface	1.0	26.6	29.9	29.9	6.08	6.11	85.7	86.1	4.70	4.73			4.92	7.6	7.6	
	29.9				6.13		86.4		4.75		7.6									
	Middle			8.8	25.6	30.6	30.6	5.93	5.90	83.6	83.2	4.88	4.91	8.0	7.9			8.0		
Bottom		16.6	24.8	30.6	5.87	82.7		4.94		8.0										
	19/10/10	1506-1518	25/Fine	Surface	1.0	25.5	30.8	30.8	6.26	6.25	88.4	88.3	5.12	5.11	5.11			8.6	8.6	8.3
30.8					6.23		88.2		5.09		8.6									
Middle				7.5	24.4	31.6	31.7	6.12	6.12	86.6	86.5	5.08	5.11	8.2		8.2		8.2		
	Bottom	14.9	23.9	31.6	5.76	81.2		5.16		8.2										
21/10/10		Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
	23/10/10	1828-1843	28/Fine	Surface	1.0	26.6	30.9	30.9	5.94	5.92	83.1	82.8	5.05	5.09		5.35	8.2	8.3	8.6	
					30.9		5.89		82.4		5.12		8.4							
Middle				8.9	25.8	31.3	31.3	5.77	5.80	80.7	81.2	5.26	5.28	8.6			8.6			
		Bottom	16.8	25.0	31.3	5.83		81.6		5.30		8.6								
26/10/10			0956-1006	24/Cloudy	Surface	1.0	25.7	30.9	30.9	6.24	6.26	89.2	89.4	5.01	5.05		5.00	8.0		8.1
		30.8				6.27		89.6		5.08		8.2								
		Middle			8.8	24.7	31.6	31.6	5.98	5.97	85.5	85.3	5.17	5.16	8.4			8.3		
Bottom			16.6	24.2	31.6	5.95	85.0		5.14		7.7									
		28/10/10	0958-1011	17/Fine	Surface	1.0	22.8	30.5	30.6	6.05	6.05	84.7	84.7	5.13	5.14			5.24		8.4
30.6	6.04					84.6		5.14		8.2										
Middle	8.8				23.3	31.4	31.5	5.98	5.97	83.7	83.6	5.26	5.25	8.5	8.5	8.5				
	Bottom	16.6	22.8	31.5	5.96	83.4		5.23		8.8										
30/10/10		1434-1445	22/Fine	Surface	1.0	19.9	31.7	31.7	6.11	6.10	88.7	88.4	4.01	4.02	4.06	6.4			6.4	6.4
	31.7				6.09		88.0		4.02		6.4									
	Middle			8.0	19.2	31.9	31.9	5.91	5.93	84.2	84.4	4.00	4.03	6.5		6.4	6.2			
Bottom		15.0	19.0	31.9	5.95	84.6		4.06		6.2										
							32.0	32.1	5.81	5.81	83.0	83.0	4.12	4.13			6.5		6.5	
32.1							5.80		83.0		4.14		6.5							

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
02/10/10	1430-1441	30/Fine	Surface	1.0	27.9	31.1	31.1	6.15	6.14	87.9	88.3	5.48	5.51	5.23	9.0	9.1	8.5
						31.1		6.12		88.6		5.53			9.2		
			Middle	7.4	25.8	31.8	31.9	5.97	5.96	85.3	85.1	5.21	5.24		8.4	8.5	
						31.9		5.94		84.9		5.27			8.6		
			Bottom	13.8	25.5	32.0	32.0	5.75	5.77	81.6	81.9	4.99	4.95		8.0	7.9	
						32.0		5.79		82.2		4.91			7.8		
05/10/10	1449-1502	25/Cloudy	Surface	1.0	26.4	30.8	30.8	6.15	6.17	87.4	87.6	3.98	3.97	4.03	6.4	6.5	6.4
						30.7		6.18		87.8		3.96			6.5		
			Middle	7.0	25.4	31.3	31.4	6.10	6.11	86.5	86.4	4.01	4.03		6.4	6.5	
						31.5		6.12		86.3		4.04			6.6		
			Bottom	10.8	25.1	31.7	31.7	5.85	5.87	82.4	82.7	4.09	4.09		6.2	6.4	
						31.7		5.88		83.0		4.08			6.5		
07/10/10	1614-1628	26/Cloudy	Surface	1.0	25.6	29.5	29.5	6.37	6.35	91.1	90.8	4.44	4.46	4.63	7.2	7.3	7.6
						29.5		6.32		90.4		4.48			7.4		
			Middle	7.2	25.1	30.0	30.1	6.18	6.16	88.4	88.1	4.60	4.64		7.8	7.7	
						30.1		6.14		87.8		4.67			7.6		
			Bottom	13.4	24.6	31.1	31.1	6.01	5.99	85.9	85.6	4.77	4.81		7.8	7.8	
						31.1		5.97		85.3		4.84			7.7		
09/10/10	1210-1224	24/Cloudy	Surface	1.0	23.9	30.5	30.5	6.20	6.19	87.4	87.3	4.53	4.56	4.66	7.4	7.4	7.7
						30.4		6.18		87.1		4.58			7.4		
			Middle	7.7	23.3	31.4	31.4	6.10	6.09	86.0	85.8	4.69	4.68		7.8	7.7	
						31.3		6.07		85.6		4.66			7.6		
			Bottom	14.4	22.9	32.1	32.2	5.93	5.95	83.6	83.8	4.74	4.76		8.0	7.9	
						32.2		5.96		84.0		4.77			7.7		
12/10/10	0837-0849	25/Sunny	Surface	1.0	24.5	30.8	30.9	6.23	6.24	88.5	88.5	4.71	4.69	4.97	7.6	7.6	8.0
						30.9		6.24		88.5		4.66			7.6		
			Middle	6.0	24.0	31.4	31.5	6.09	6.10	86.0	86.0	5.04	5.07		8.2	8.3	
						31.5		6.10		86.0		5.09			8.4		
			Bottom	12.5	23.1	31.6	31.7	6.05	6.05	85.2	85.2	5.17	5.16		8.2	8.2	
						31.8		6.04		85.1		5.15			8.2		
14/10/10	1204-1219	30/Fine	Surface	1.0	26.5	29.9	29.9	6.20	6.18	87.4	87.1	4.50	4.53	4.70	7.5	7.6	7.7
						29.9		6.15		86.7		4.56			7.6		
			Middle	7.2	25.8	30.4	30.5	6.09	6.06	85.8	85.3	4.68	4.65		7.8	7.7	
						30.5		6.02		84.8		4.62			7.6		
			Bottom	13.4	24.9	31.3	31.3	5.90	5.93	83.1	83.6	4.90	4.93		7.8	7.8	
						31.2		5.96		84.0		4.95			7.7		
19/10/10	1649-1703	25/Fine	Surface	1.0	25.4	30.7	30.7	6.16	6.17	87.2	87.3	3.92	3.94	4.15	6.2	6.3	6.7
						30.6		6.17		87.3		3.96			6.4		
			Middle	6.5	24.3	31.2	31.2	6.03	6.04	85.2	85.3	4.12	4.15		6.8	6.9	
						31.2		6.04		85.4		4.17			7.0		
			Bottom	12.4	24.0	31.9	31.9	5.92	5.92	83.8	83.8	4.39	4.38		6.8	6.9	
						31.8		5.92		83.8		4.36			7.0		
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																
23/10/10	1700-1717	29/Cloudy	Surface	1.0	26.6	30.9	30.9	6.09	6.08	85.2	85.0	4.91	4.95	5.06	7.8	7.9	8.0
						30.9		6.06		84.8		4.98			8.0		
			Middle	7.3	25.9	31.4	31.4	6.00	5.97	84.0	83.5	4.96	4.99		8.0	8.0	
						31.4		5.93		83.0		5.01			8.0		
			Bottom	13.6	25.1	31.8	31.8	5.87	5.85	82.1	81.9	5.21	5.25		8.4	8.2	
						31.8		5.83		81.6		5.28			8.0		
26/10/10	0827-0837	24/Cloudy	Surface	1.0	25.5	30.6	30.6	6.17	6.16	88.2	88.0	5.43	5.42	5.28	7.6	7.4	8.0
						30.5		6.14		87.8		5.40			7.2		
			Middle	7.4	24.3	31.5	31.6	5.93	5.92	84.7	84.5	5.21	5.23		8.6	8.6	
						31.6		5.90		84.3		5.25			8.6		
			Bottom	13.8	24.2	31.9	31.9	5.81	5.83	82.5	82.7	5.17	5.20		8.2	8.1	
						31.8		5.84		82.9		5.23			8.0		
28/10/10	0829-0842	16/Fine	Surface	1.0	22.4	30.3	30.4	6.12	6.11	85.7	85.6	5.03	5.03	5.11	8.0	8.0	8.2
						30.4		6.10		85.4		5.02			8.0		
			Middle	7.7	23.3	31.4	31.4	6.08	6.07	85.1	84.9	5.10	5.11		8.4	8.3	
						31.3		6.05		84.7		5.12			8.2		
			Bottom	14.4	22.9	32.0	32.1	5.96	5.95	83.4	83.3	5.20	5.20		8.5	8.4	
						32.1		5.94		83.2		5.19			8.3		
30/10/10	1255-1310	22/Fine	Surface	1.0	19.2	32.2	32.3	6.25	6.24	89.6	89.4	4.04	4.03	3.98	6.4	6.3	6.3
						32.3		6.22		89.2		4.02			6.2		
			Middle	8.3	19.0	32.5	32.5	6.10	6.09	88.0	87.8	3.97	3.95		6.0	6.2	
						32.5		6.08		87.5		3.92			6.4		
			Bottom	15.6	18.9	32.5	32.7	5.91	5.95	84.1	84.9	3.99	3.98		6.4	6.4	
						32.9		5.99		85.6		3.96			6.3		

Mid-Flood Tide



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
02/10/10	1454-1505	30/Fine	Surface	1.0	27.8	31.0	31.0	6.24	6.26	89.2	89.4	5.67	5.69	5.41	9.0	9.2	8.8
						31.0		6.27		89.6		5.70			9.4		
			Middle	6.8	26.0	31.9	31.9	6.03	6.06	86.2	86.6	5.34	5.37		8.6	8.7	
						31.8		6.08		86.9		5.39			8.8		
			Bottom	12.6	25.6	32.1	32.2	5.88	5.86	83.4	83.2	5.15	5.18		8.2	8.4	
						32.2		5.84		82.9		5.20			8.6		
05/10/10	1514-1527	25/Cloudy	Surface	1.0	26.2	30.5	30.5	6.24	6.22	88.7	88.5	4.75	4.80	4.87	7.6	7.8	7.9
						30.4		6.20		88.2		4.85			8.0		
			Middle	6.3	25.9	31.2	31.3	5.97	6.00	84.0	84.8	4.90	4.89		7.8	7.9	
						31.4		6.03		85.6		4.88			8.0		
			Bottom	12.2	25.4	31.5	31.7	5.77	5.80	81.3	81.7	4.92	4.93		8.0	7.9	
						31.8		5.82		82.1		4.94			7.8		
07/10/10	1635-1650	26/Cloudy	Surface	1.0	25.5	29.6	29.6	6.41	6.39	91.6	91.3	4.49	4.53	4.67	7.4	7.4	7.6
						29.6		6.36		90.9		4.56			7.4		
			Middle	6.8	25.1	30.0	30.0	6.25	6.23	89.3	89.0	4.62	4.66		7.6	7.6	
						30.0		6.20		88.6		4.69			7.5		
			Bottom	12.6	24.6	31.1	31.1	6.11	6.10	87.3	87.1	4.80	4.84		7.8	7.9	
						31.0		6.08		86.9		4.88			8.0		
09/10/10	1246-1259	24/Cloudy	Surface	1.0	23.9	30.4	30.5	6.17	6.16	87.0	86.8	4.44	4.45	4.53	7.2	7.3	7.5
						30.5		6.14		86.6		4.45			7.4		
			Middle	6.9	23.4	31.3	31.4	6.02	6.04	84.9	85.1	4.49	4.51		7.5	7.5	
						31.4		6.05		85.3		4.52			7.4		
			Bottom	12.8	23.0	32.1	32.2	5.95	5.94	83.9	83.8	4.66	4.65		7.8	7.7	
						32.2		5.93		83.6		4.64			7.6		
12/10/10	0856-0909	25/Sunny	Surface	1.0	24.4	31.0	31.0	6.22	6.22	88.0	87.9	4.05	4.07	4.53	6.4	6.5	7.3
						31.0		6.22		87.8		4.09			6.6		
			Middle	5.6	23.8	31.6	31.7	6.07	6.07	85.9	85.9	4.69	4.72		7.6	7.7	
						31.7		6.07		85.8		4.74			7.8		
			Bottom	11.6	23.1	31.9	31.9	6.03	6.04	85.0	85.1	4.78	4.81		8.0	7.8	
						31.9		6.04		85.1		4.84			7.6		
14/10/10	1227-1244	30/Fine	Surface	1.0	26.6	29.9	29.9	6.17	6.20	86.9	87.4	4.44	4.48	4.75	7.4	7.5	7.8
						29.9		6.23		87.8		4.51			7.5		
			Middle	6.8	26.0	30.5	30.5	6.08	6.11	85.7	86.1	4.73	4.76		7.8	7.8	
						30.5		6.13		86.4		4.79			7.8		
			Bottom	12.6	25.0	31.3	31.3	6.06	6.04	85.4	85.1	4.98	5.01		8.0	8.1	
						31.3		6.01		84.7		5.04			8.2		
19/10/10	1707-1720	25/Fine	Surface	1.0	25.4	30.8	30.8	6.20	6.22	87.7	88.0	4.26	4.24	4.37	6.8	6.9	7.2
						30.8		6.24		88.2		4.22			7.0		
			Middle	6.6	24.5	31.3	31.4	6.09	6.10	86.2	86.3	4.39	4.41		7.2	7.1	
						31.4		6.10		86.3		4.43			7.0		
			Bottom	11.9	24.2	31.9	32.0	5.99	5.99	84.8	84.7	4.42	4.45		7.6	7.5	
						32.0		5.98		84.6		4.47			7.4		
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																
23/10/10	1722-1738	29/Cloudy	Surface	1.0	26.5	30.9	30.9	6.12	6.09	85.6	85.6	4.85	4.88	4.98	7.6	7.7	8.0
						30.8		6.06		85.6		4.90			7.8		
			Middle	6.9	25.9	31.3	31.3	6.08	6.04	85.1	84.5	4.94	4.97		8.0	7.9	
						31.3		5.99		83.8		4.99			7.8		
			Bottom	12.8	25.2	31.9	31.9	5.89	5.92	82.4	82.9	5.06	5.10		8.2	8.3	
						31.9		5.95		83.3		5.13			8.4		
26/10/10	0850-0901	24/Cloudy	Surface	1.0	25.5	30.6	30.7	6.21	6.19	88.8	88.5	5.27	5.29	5.24	8.6	8.4	8.3
						30.7		6.17		88.2		5.31			8.2		
			Middle	6.8	24.4	31.5	31.5	6.01	6.03	85.9	86.2	5.09	5.12		8.0	8.1	
						31.4		6.05		86.5		5.15			8.2		
			Bottom	12.6	24.2	31.8	31.9	5.95	5.97	85.0	85.3	5.33	5.30		8.6	8.5	
						31.9		5.98		85.5		5.27			8.4		
28/10/10	0854-0907	16/Fine	Surface	1.0	22.8	30.5	30.5	6.14	6.16	86.0	86.2	4.80	4.82	4.95	7.9	7.9	8.0
						30.4		6.17		86.4		4.84			7.8		
			Middle	6.8	23.3	31.3	31.3	6.07	6.05	85.0	84.7	4.96	4.97		8.0	7.9	
						31.2		6.03		84.4		4.98			7.8		
			Bottom	12.6	22.8	32.1	32.1	5.97	5.96	83.6	83.5	5.04	5.07		8.0	8.1	
						32.0		5.95		83.3		5.09			8.2		
30/10/10	1325-1337	22/Fine	Surface	1.0	19.5	32.0	32.0	6.22	6.23	89.6	89.8	4.01	4.03	4.12	6.4	6.5	6.6
						32.0		6.23		89.9		4.05			6.6		
			Middle	8.2	19.1	32.9	32.9	6.01	6.04	85.9	86.1	4.16	4.14		6.8	6.9	
						32.9		6.07		86.2		4.12			7.0		
			Bottom	15.4	19.0	33.0	33.1	6.00	5.96	85.7	85.5	4.18	4.19		6.5	6.5	
						33.1		5.92		85.2		4.19			6.5		

Mid-Ebb 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	
02/10/10	1108-1120	28/Fine	Surface	1.0	26.9	30.8	30.9	6.14	6.13	88.4	88.3	4.59	4.61	4.69	7.5	7.6	7.7	
						30.9		6.12		88.1		4.62			7.6			
			Middle	7.4	25.9	31.6	31.6	6.03	6.04	86.8	87.0	4.68	4.69		4.69	7.8		7.7
						31.5		6.05		87.1		4.69			7.6			
			Bottom	13.8	25.5	32.1	32.2	5.93	5.95	85.4	85.6	4.78	4.77		4.77	7.8		7.8
						32.2		5.96		85.8		4.75			7.8			
05/10/10	1153-1203	25/Cloudy	Surface	1.0	26.6	30.9	31.0	6.17	6.16	87.6	87.4	4.88	4.85	5.07	7.8	7.9	8.2	
						31.0		6.14		87.1		4.81			8.0			
			Middle	8.1	25.4	31.8	31.8	6.01	6.03	85.3	85.5	5.15	5.19		5.19	8.4		8.3
						31.8		6.04		85.7		5.23			8.2			
			Bottom	15.2	25.2	32.1	32.1	5.84	5.82	82.3	82.0	5.21	5.18		5.18	8.4		8.3
						32.1		5.80		81.7		5.14			8.2			
07/10/10	1342-1357	25/Cloudy	Surface	1.0	22.1	32.0	32.0	6.29	6.31	90.0	90.3	3.30	3.30	3.25	5.5	5.5	5.3	
						32.0		6.32		90.6		3.30			5.4			
			Middle	8.4	21.4	32.2	32.2	6.20	6.18	88.6	88.4	3.15	3.23		3.23	5.0		5.1
						32.2		6.15		88.2		3.30			5.2			
			Bottom	15.8	20.9	32.5	32.5	6.05	6.07	86.5	86.5	3.23	3.23		3.23	5.4		5.5
						32.5		6.09		86.5		3.22			5.5			
09/10/10	2005-2020	26/Cloudy	Surface	1.0	25.2	30.1	30.2	6.22	6.20	87.1	86.8	4.52	4.55	4.78	8.0	7.9	8.1	
						30.2		6.17		86.4		4.58			7.8			
			Middle	7.4	24.8	30.8	30.8	6.09	6.06	85.2	84.8	4.75	4.78		4.78	8.2		8.1
						30.8		6.03		84.4		4.81			8.0			
			Bottom	13.8	24.0	31.2	31.3	5.94	5.92	83.1	82.9	4.99	5.01		5.01	8.4		8.4
						31.3		5.90		82.6		5.03			8.3			
12/10/10	1820-1830	28/Cloudy	Surface	1.0	27.4	30.5	30.5	6.23	6.22	88.4	88.2	5.39	5.38	5.03	8.5	8.7	8.2	
						30.4		6.20		88.0		5.36			8.8			
			Middle	8.1	25.7	31.3	31.4	5.96	5.94	84.6	84.3	4.78	4.81		4.81	7.8		7.9
						31.4		5.92		84.0		4.84			8.0			
			Bottom	15.2	25.3	31.8	31.8	5.99	5.97	85.0	84.7	4.94	4.91		4.91	8.0		7.9
						31.8		5.95		84.4		4.87			7.8			
14/10/10	0950-1003	27/Cloudy	Surface	1.0	26.3	30.6	30.6	6.18	6.16	86.5	86.2	4.41	4.42	4.53	7.3	7.3	7.4	
						30.6		6.13		85.8		4.42			7.3			
			Middle	7.4	25.9	31.4	31.4	6.09	6.03	85.3	84.5	4.58	4.57		4.57	7.5		7.6
						31.3		5.97		83.6		4.55			7.6			
			Bottom	13.8	25.3	32.1	32.2	5.95	5.94	83.3	83.2	4.63	4.62		4.62	7.4		7.5
						32.2		5.93		83.0		4.60			7.5			
19/10/10	1248-1258	29/Fine	Surface	1.0	27.2	31.1	31.1	6.15	6.13	87.9	87.6	5.03	5.07	5.02	8.0	8.0	8.2	
						31.1		6.10		87.2		5.11			8.0			
			Middle	8.2	25.6	31.8	31.8	5.91	5.93	84.5	84.7	4.98	4.95		4.95	8.4		8.3
						31.8		5.94		84.9		4.91			8.2			
			Bottom	15.4	25.2	32.1	32.1	5.74	5.72	81.5	81.2	5.09	5.06		5.06	8.0		8.2
						32.0		5.70		80.9		5.02			8.4			
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																	
23/10/10	1454-1507	26/Cloudy	Surface	1.0	25.4	30.2	30.2	6.12	6.11	85.7	85.6	4.81	4.83	4.94	8.0	8.0	8.1	
						30.1		6.10		85.4		4.85			8.0			
			Middle	7.5	24.8	30.5	30.5	6.07	6.07	84.9	84.9	4.96	4.95		4.95	8.0		8.1
						30.4		6.06		84.8		4.94			8.2			
			Bottom	14.0	24.4	31.2	31.2	5.94	5.95	83.2	83.3	5.03	5.05		5.05	8.4		8.3
						31.1		5.96		83.4		5.06			8.2			
26/10/10	1705-1720	23/Cloudy	Surface	1.0	21.1	31.9	31.9	6.30	6.32	91.2	91.3	4.02	4.02	4.03	6.5	6.5	6.3	
						31.9		6.33		91.4		4.02			6.4			
			Middle	8.3	20.4	32.3	32.3	6.19	6.21	89.7	89.8	4.02	4.03		4.03	6.6		6.4
						32.3		6.22		89.9		4.04			6.2			
			Bottom	15.6	20.0	32.5	32.5	6.15	6.13	88.1	88.2	4.01	4.05		4.05	6.2		6.1
						32.5		6.10		88.2		4.08			6.0			
28/10/10	1648-1700	22/Fine	Surface	1.0	23.6	30.7	30.7	5.96	5.93	83.4	82.9	5.67	5.68	5.84	9.0	9.2	9.4	
						30.7		5.89		82.4		5.69			9.4			
			Middle	7.4	23.1	31.2	31.2	5.71	5.74	79.9	80.3	5.81	5.84		5.84	9.6		9.6
						31.2		5.76		80.6		5.87			9.5			
			Bottom	13.8	22.7	31.7	31.7	5.61	5.64	78.5	78.9	5.97	6.01		6.01	9.2		9.3
						31.7		5.66		79.2		6.05			9.4			
30/10/10	0930-0940	17/Fine	Surface	1.0	24.3	31.4	31.4	6.10	6.09	87.2	87.0	5.15	5.12	4.98	8.3	34.0	8.0	
						31.3		6.07		86.8		5.08			8.4			
			Middle	8.2	23.7	31.9	31.9	5.77	5.76	81.9	81.7	4.87	4.89		4.89	7.6		7.7
						31.9		5.74		81.5		4.91			7.8			
			Bottom	15.4	23.4	32.1	32.2	5.61	5.59	79.6	79.3	4.90	4.94		4.94	8.0		8.0
						32.2		5.57		79.0		4.98			8.0			

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	
02/10/10	1047-1100	28/Fine	Surface	1.0	26.9	30.9	30.9	6.23	6.22	89.7	89.5	4.61	4.62	4.73	7.5	7.5	7.7	
						30.8		6.20		89.3		4.62			7.5			
			Middle	8.0	26.3	31.5	31.6	6.19	6.18	89.1	88.9	4.70	4.74		4.72	7.8		7.7
						31.6		6.16		88.7		4.74			7.6			
			Bottom	15.0	25.5	32.1	32.1	6.03	6.04	86.8	87.0	4.83	4.85		4.85	8.0		7.9
						32.0		6.05		87.1		4.86			7.7			
05/10/10	1135-1145	25/Cloudy	Surface	1.0	26.4	31.0	31.1	6.20	6.22	88.0	88.3	5.04	5.06	5.19	8.2	8.1	8.3	
						31.1		6.24		88.6		5.08			8.0			
			Middle	8.1	25.5	31.8	31.8	5.90	5.92	83.1	83.4	5.34	5.32		5.32	8.6		8.4
						31.7		5.94		83.7		5.30			8.2			
			Bottom	15.2	25.3	32.0	32.1	5.93	5.91	83.6	83.3	5.18	5.22		5.20	8.2		8.4
						32.1		5.89		83.0		5.22			8.5			
07/10/10	1322-1334	25/Cloudy	Surface	1.0	22.0	32.0	32.0	6.25	6.24	89.3	89.2	3.22	3.26	3.24	5.4	5.4	5.3	
						32.0		6.22		89.0		3.30			5.4			
			Middle	8.1	21.5	32.1	32.2	6.10	6.10	87.2	87.2	3.15	3.17		3.17	5.2		5.1
						32.3		6.09		87.1		3.18			5.0			
			Bottom	15.2	21.0	32.5	32.5	5.99	6.00	85.7	85.8	3.29	3.29		3.29	5.4		5.3
						32.5		6.01		85.9		3.28			5.2			
09/10/10	1945-2000	26/Cloudy	Surface	1.0	25.3	30.1	30.1	6.15	6.13	86.1	85.8	4.61	4.59	4.74	7.4	7.4	7.7	
						30.1		6.11		85.5		4.56			7.4			
			Middle	8.0	24.7	30.9	31.0	6.07	6.03	84.9	84.4	4.68	4.73		4.71	7.8		7.7
						31.0		5.99		83.9		4.73			7.6			
			Bottom	15.0	23.7	31.5	31.6	5.86	5.84	82.0	81.7	4.91	4.96		4.94	8.0		8.0
						31.6		5.81		81.3		4.96			8.0			
12/10/10	1803-1813	28/Cloudy	Surface	1.0	27.4	30.5	30.5	6.17	6.16	87.6	87.5	5.27	5.31	5.26	8.2	8.3	8.3	
						30.4		6.15		87.3		5.34			8.4			
			Middle	8.1	25.7	31.3	31.3	5.87	5.89	83.3	83.5	5.30	5.29		5.29	8.4		8.3
						31.2		5.90		83.7		5.27			8.2			
			Bottom	15.2	25.4	31.8	31.8	5.75	5.77	81.0	81.2	5.15	5.19		5.19	8.0		8.3
						31.8		5.78		81.4		5.22			8.5			
14/10/10	0929-0942	27/Cloudy	Surface	1.0	26.2	30.5	30.6	6.17	6.16	86.4	86.3	4.47	4.48	4.57	7.5	7.5	7.6	
						30.6		6.15		86.1		4.49			7.5			
			Middle	8.1	25.8	31.3	31.4	6.08	6.07	85.1	84.9	4.56	4.55		4.55	7.8		7.7
						31.4		6.05		84.7		4.53			7.5			
			Bottom	15.2	25.2	32.2	32.2	5.94	5.94	83.2	83.1	4.69	4.67		4.67	7.6		7.7
						32.1		5.93		83.0		4.65			7.8			
19/10/10	1229-1239	29/Fine	Surface	1.0	27.3	31.1	31.1	6.07	6.06	86.8	86.6	4.91	4.95	5.07	8.0	8.0	8.3	
						31.0		6.04		86.3		4.98			8.0			
			Middle	8.1	25.4	31.8	31.8	5.96	5.95	85.2	85.0	5.03	5.07		5.07	8.2		8.3
						31.7		5.93		84.7		5.10			8.4			
			Bottom	15.2	25.1	32.2	32.2	5.78	5.77	82.0	81.8	5.21	5.19		5.19	8.6		8.6
						32.2		5.75		81.6		5.17			8.5			
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																	
23/10/10	1433-1446	26/Cloudy	Surface	1.0	25.4	30.1	30.1	6.05	6.07	84.7	85.0	4.72	4.74	4.86	8.0	7.8	7.9	
						30.1		6.09		85.3		4.75			7.6			
			Middle	8.1	24.8	30.4	30.5	5.95	5.97	83.3	83.6	4.88	4.87		4.87	7.8		7.8
30.5	5.99	83.9				4.85		7.8										
Bottom	15.2	24.3	31.2	31.2	5.81	5.83	81.3	81.6	4.96	4.97	4.97	8.2	8.1					
			31.1		5.84		81.8		4.98		8.0							
26/10/10	1638-1651	23/Cloudy	Surface	1.0	21.0	32.5	32.5	6.23	6.24	89.9	89.9	4.00	4.08	4.06	6.4	6.6	6.6	
						32.5		6.25		89.9		4.15			6.8			
			Middle	8.1	20.4	32.5	32.5	6.12	6.15	88.1	88.4	4.11	4.11		4.11	6.4		6.6
						32.5		6.18		88.7		4.10			6.8			
			Bottom	15.2	20.0	32.7	32.7	5.99	6.00	85.9	85.9	4.00	4.01		4.01	6.6		6.6
						32.7		6.01		85.9		4.01			6.5			
28/10/10	1628-1643	22/Fine	Surface	1.0	23.6	30.7	30.7	5.80	5.82	81.2	81.5	5.54	5.57	5.80	8.8	8.9	9.2	
						30.6		5.84		81.7		5.60			9.0			
			Middle	7.9	23.2	31.1	31.2	5.76	5.75	80.6	80.4	5.80	5.82		5.82	9.4		9.3
						31.2		5.73		80.2		5.83			9.2			
			Bottom	14.8	22.8	31.6	31.7	5.68	5.64	79.5	79.0	5.98	6.01		6.01	9.6		9.4
						31.7		5.60		78.4		6.03			9.2			
30/10/10	0910-0922	17/Fine	Surface	1.0	24.3	31.4	31.4	6.15	6.13	87.9	87.6	5.02	5.06	5.19	8.0	8.1	8.3	
						31.4		6.11		87.3		5.09			8.2			
			Middle	8.1	23.6	31.8	31.8	5.81	5.80	82.5	82.3	5.43	5.40		5.40	9.0		8.9
						31.7		5.78		82.0		5.37			8.8			
			Bottom	15.2	23.3	32.3	32.3	5.75	5.73	81.6	81.3	5.15	5.13		5.13	8.0		8.0
						32.2		5.71		81.0		5.10			8.0			

Mid-Ebb 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		
02/10/10	0902-0915	27/Fine	Surface	1.0	26.1	30.8	30.8	6.14	6.16	88.4	88.7	4.78	4.79	4.86	7.7	7.7	7.9		
						30.7		6.18		89.0		4.79			7.6				
			Middle	8.4	25.6	31.2	31.2	6.04	6.05	87.0	87.2	4.86	4.84		4.86	4.84		8.0	7.9
						31.1		6.06		87.3		4.82			7.8				
			Bottom	15.8	25.5	31.8	31.8	5.84	5.83	84.1	83.9	4.96	4.95		4.96	4.95		8.0	8.0
						31.7		5.81		83.7		4.93			8.0				
05/10/10	0938-0948	25/Cloudy	Surface	1.0	26.4	31.1	31.1	6.26	6.25	88.8	88.6	5.04	5.06	5.19	8.2	8.2	8.4		
						31.1		6.23		88.4		5.08			8.2				
			Middle	8.3	25.4	31.7	31.7	6.03	6.02	85.6	85.5	5.09	5.13		5.13	5.13		8.4	8.3
						31.6		6.01		85.3		5.16			8.2				
			Bottom	15.6	25.2	32.0	32.0	5.93	5.92	83.6	83.4	5.34	5.39		5.34	5.39		8.6	8.7
						32.0		5.90		83.1		5.43			8.8				
07/10/10	1133-1143	25/Cloudy	Surface	1.0	22.1	31.9	31.9	6.15	6.16	88.2	88.3	3.15	3.19	3.25	5.0	5.2	5.4		
						31.9		6.17		88.3		3.22			5.4				
			Middle	6.5	21.7	32.1	32.2	6.02	6.02	85.9	85.9	3.25	3.25		3.25	3.25		5.2	5.3
						32.2		6.01		85.8		3.25			5.2				
			Bottom	12.0	21.0	32.7	32.7	5.89	5.86	84.2	84.1	3.30	3.30		3.30	3.30		5.8	5.7
						32.7		5.82		84.0		3.30			5.5				
09/10/10	1810-1822	26/Cloudy	Surface	1.0	25.1	30.3	30.3	6.09	6.07	85.2	84.9	4.93	4.96	5.13	8.0	8.0	8.3		
						30.2		6.04		84.5		4.99			8.0				
			Middle	8.3	24.5	31.4	31.4	5.90	5.92	82.6	82.9	5.08	5.11		5.11	5.11		8.2	8.3
						31.4		5.94		83.1		5.14			8.4				
			Bottom	15.6	23.9	32.1	32.1	5.82	5.80	81.4	81.2	5.30	5.33		5.33	5.33		8.8	8.7
						32.1		5.78		80.9		5.36			8.6				
12/10/10	1615-1625	28/Cloudy	Surface	1.0	27.6	30.4	30.4	6.08	6.07	86.3	86.1	5.02	5.04	4.95	8.3	8.4	8.1		
						30.4		6.05		85.9		5.06			8.4				
			Middle	8.4	25.5	31.1	31.2	5.74	5.72	80.9	80.6	4.87	4.86		4.86	4.86		7.8	7.9
						31.2		5.70		80.3		4.84			8.0				
			Bottom	15.8	25.2	31.7	31.7	5.63	5.65	79.3	79.6	4.99	4.95		4.95	4.95		8.2	8.1
						31.7		5.67		79.9		4.91			8.0				
14/10/10	0732-0745	26/Cloudy	Surface	1.0	25.8	30.4	30.5	6.26	6.24	87.4	87.2	4.36	4.37	4.47	7.3	7.3	7.3		
						30.5		6.21		86.9		4.37			7.2				
			Middle	8.4	25.5	31.3	31.4	6.19	6.18	86.7	86.6	4.49	4.49		4.49	4.49		7.5	7.3
						31.4		6.17		86.4		4.48			7.1				
			Bottom	15.8	25.0	32.2	32.2	6.01	6.03	84.6	84.8	4.56	4.55		4.55	4.55		7.6	7.4
						32.1		6.04		85.0		4.54			7.2				
19/10/10	1035-1045	29/Fine	Surface	1.0	27.4	30.9	31.0	6.14	6.15	88.5	88.2	4.67	4.71	4.90	7.5	7.7	7.9		
						31.0		6.15		87.9		4.74			7.8				
			Middle	8.4	25.8	31.5	31.6	5.93	5.91	84.7	84.5	4.98	4.95		4.95	4.95		8.0	8.0
						31.6		5.89		84.2		4.91			8.0				
			Bottom	15.8	25.0	32.0	32.1	5.90	5.92	84.3	84.5	5.01	5.05		5.05	5.05		7.8	8.0
						32.1		5.93		84.7		5.09			8.2				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1235-1248	26/Cloudy	Surface	1.0	24.9	30.1	30.2	6.09	6.08	85.3	85.1	4.56	4.57	4.65	7.5	7.7	7.7		
						30.2		6.07		84.9		4.57			7.8				
			Middle	8.2	24.3	30.4	30.5	5.95	5.94	83.3	83.2	4.68	4.67		4.67	4.67		7.6	7.7
30.5	5.93	83.0				4.65		7.8											
26/10/10	1459-1502	23/Cloudy	Bottom	15.4	23.9	31.0	31.1	5.86	5.87	82.0	82.2	4.71	4.72	4.12	8.0	7.8	6.8		
						31.1		5.88		82.3		4.73			7.6				
			Surface	1.0	21.3	31.3	31.4	6.11	6.12	86.2	86.3	4.01	4.03		4.03	4.03		6.5	6.4
31.5	6.13	86.4				4.04		6.2											
Middle	6.0	20.9	32.0	32.0	6.01	6.01	85.8	85.8	4.06	4.09	4.09	4.09	6.8	6.7					
			32.0		6.00		85.7		4.12		6.6								
Bottom	11.0	20.6	32.2	32.2	5.92	5.96	83.4	84.3	4.19	4.25	4.25	4.25	7.0	7.2					
			32.2		5.99		85.2		4.30		7.4								
28/10/10	1442-1458	22/Fine	Surface	1.0	23.8	30.6	30.7	5.76	5.78	80.6	80.8	5.51	5.53	5.81	9.0	9.1	9.3		
						30.7		5.79		81.0		5.55			9.2				
			Middle	8.2	23.2	31.0	31.0	5.68	5.70	79.5	79.3	5.78	5.81		5.81	5.81		9.0	9.2
						30.9		5.71		79.1		5.84			9.4				
			Bottom	15.4	22.8	31.5	31.6	5.68	5.66	78.7	78.4	6.06	6.08		6.08	6.08		9.6	9.6
						31.6		5.64		78.1		6.10			9.5				
30/10/10	0717-0727	17/Fine	Surface	1.0	24.0	31.1	31.2	6.01	6.03	85.9	86.2	5.27	5.31	5.00	8.5	8.6	8.1		
						31.2		6.05		86.5		5.34			8.6				
			Middle	8.6	23.7	31.8	31.8	5.93	5.92	84.2	84.0	4.74	4.79		4.79	4.79		7.6	7.7
						31.8		5.90		83.7		4.84			7.8				
			Bottom	16.2	23.2	32.0	32.0	5.78	5.76	82.0	81.8	4.93	4.90		4.90	4.90		8.0	8.1
						31.9		5.74		81.5		4.87			8.2				

Mid-Ebb 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
02/10/10	0953-1006	27/Fine	Surface	1.0	26.4	30.9	30.9	6.18	6.17	88.9	88.8	4.91	4.92	5.03	7.8	7.9	8.1
				7.8	25.6	31.4		6.09		87.7		5.03			8.0		
			14.6	25.4	31.8	5.97	86.0	5.12	8.2								
						31.9	5.95	85.7	5.14	5.13	8.2						
05/10/10	1033-1043	25/Cloudy	Surface	1.0	26.4	31.1	31.1	6.35	6.33	90.1	89.9	4.89	4.86	4.93	7.8	7.8	8.0
				8.1	25.3	31.9		5.99		85.0		4.94			8.2		
			15.2	25.1	31.8	5.96	84.6	4.90	8.0								
						32.0	5.90	83.7	4.98	5.02	8.0						
						32.1	5.94	84.3	5.06		8.4						
07/10/10	1232-1242	25/Cloudy	Surface	1.0	22.4	31.5	31.5	6.10	6.11	87.2	87.3	3.20	3.25	3.37	5.2	5.3	5.7
				7.4	21.5	31.9		6.00		85.8		3.39			5.8		
			13.8	21.0	31.9	5.95	85.1	3.41	6.0								
						32.2	5.80	82.9	3.44	3.46	5.6						
						32.0	5.81	83.0	3.48		6.0						
09/10/10	1900-1910	26/Cloudy	Surface	1.0	25.3	30.2	30.2	6.03	6.00	84.4	84.0	4.91	4.95	5.19	8.0	8.1	8.4
				7.8	24.7	31.0		5.90		82.6		5.16			8.2		
			14.6	23.9	31.1	5.85	81.9	5.22	8.2								
						31.9	5.76	80.6	5.41	5.44	8.8						
						31.9	5.71	79.9	5.47		9.0						
12/10/10	1708-1718	28/Cloudy	Surface	1.0	27.4	30.4	30.4	6.09	6.08	86.4	86.3	5.21	5.25	5.20	8.4	8.5	8.4
				8.1	25.6	31.4		5.94		84.3		5.34			8.8		
			15.0	25.4	31.3	5.90	83.7	5.26	8.4								
						31.7	5.68	80.0	5.01	5.05	8.0						
						31.7	5.64	79.5	5.09		8.2						
14/10/10	0824-0837	26/Cloudy	Surface	1.0	25.9	30.5	30.6	6.18	6.16	86.5	86.2	4.39	4.38	4.46	7.5	7.6	7.5
				7.9	25.4	31.3		6.04		84.6		4.47			7.2		
			14.8	25.1	31.4	6.01	84.1	4.44	7.6								
						32.2	5.95	83.4	4.53	4.54	7.6						
						32.3	6.01	84.4	4.55		7.8						
19/10/10	1130-1141	29/Fine	Surface	1.0	27.5	31.2	31.2	6.16	6.15	88.0	87.9	5.30	5.27	5.24	8.6	8.5	8.3
				8.1	25.7	31.5		5.95		85.0		5.17			8.0		
			15.2	25.0	31.4	5.91	84.5	5.11	8.0								
						32.2	5.81	82.5	5.29	5.32	8.4						
						32.1	5.78	82.0	5.35		8.6						
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																
23/10/10	1328-1342	26/Cloudy	Surface	1.0	25.3	29.9	30.0	6.07	6.08	85.0	85.2	4.78	4.79	4.86	7.8	7.8	7.9
				7.7	24.7	30.3		5.93		83.0		4.87			8.0		
			14.4	24.2	30.2	5.92	82.9	4.85	8.0								
						31.0	5.89	82.5	4.92	4.93	8.0						
						30.9	5.85	81.9	4.94		8.0						
26/10/10	1542-1552	23/Cloudy	Surface	1.0	21.3	31.9	31.9	6.01	6.04	85.9	86.0	4.16	4.17	4.25	7.0	7.1	7.3
				7.1	20.8	31.9		6.07		86.1		4.18			7.2		
			13.2	20.4	32.0	5.99	85.6	4.40	7.6								
						32.1	5.96	85.4	4.19	4.30	7.2						
						32.3	5.84	84.9	4.25	4.28	7.4						
						32.3	5.82	84.4	4.30		7.6						
28/10/10	1538-1554	22/Fine	Surface	1.0	23.7	30.6	30.7	5.75	5.77	80.5	80.8	5.60	5.63	5.84	9.4	9.3	9.5
				7.8	23.1	31.0		5.70		79.8		5.84			9.6		
			14.6	22.7	31.0	5.65	79.1	5.89	9.5								
						31.7	5.68	79.4	5.99	6.03	9.5						
						31.7	5.63	78.9	6.07		9.6						
30/10/10	0813-0825	17/Fine	Surface	1.0	24.2	31.3	31.3	6.11	6.10	87.3	87.2	5.02	5.06	5.31	8.2	8.3	8.6
				8.1	23.7	31.2		6.09		87.0		5.10			8.4		
			15.2	23.2	31.7	5.90	84.3	5.37	8.6								
						31.8	5.87	83.9	5.20	5.29	8.6						
						32.2	5.74	82.0	5.60	5.59	9.0						
						32.1	5.70	81.4	5.57		8.8						

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					
02/10/10	1009-1012	27/Fine	Surface	1.0	26.5	30.8	30.9	6.20	6.21	89.3	89.5	5.04	5.03	5.14	8.0	8.0	8.3					
						30.9		6.22		88.6		5.12			8.0							
						31.5		6.16		88.7		5.15			8.4							
			Middle	8.8	25.7	31.4	31.5	6.14	6.15	88.4	88.6	5.15	5.14		8.2	8.3						
						31.9		6.09		87.7		5.23			8.6							
						32.0		6.05		87.1		5.26			8.4							
			Bottom	16.6	25.5	31.2	32.0	6.27	6.07	89.0	87.4	4.97	5.25		8.0	8.5						
						31.1		6.25		88.7		4.93			8.0							
						31.8		6.04		85.7		4.87			7.8							
05/10/10	1046-1056	25/Cloudy	Surface	1.0	26.5	31.7	31.8	6.04	6.06	85.7	85.9	4.87	4.84	4.96	8.0	8.0	8.0					
						31.7		6.07		86.1		4.80			8.0							
						31.9		5.87		82.7		5.06			8.4							
			Middle	8.7	25.2	32.0	32.0	5.90	5.89	83.1	82.9	5.15	5.11		8.2	8.3						
						31.9		5.97		85.1		3.65			8.2							
						31.7		6.11		87.3		3.71			6.2							
			07/10/10	1243-1253	25/Cloudy	Surface	1.0	22.4	31.7	31.7	6.15	6.13	87.7		87.5	3.72		3.72	3.75	6.4	6.3	6.3
									31.9		5.99		85.2			3.60				6.0		
									31.9		5.97		85.1			3.65				6.2		
Middle	7.4	21.5				32.0	32.0	5.79	5.98	82.8	85.2	3.90	3.90	6.4	6.4							
						32.0		5.80		82.9		3.90		6.4								
						30.3		6.12		85.6		4.66		7.6								
09/10/10	1913-1925	26/Cloudy				Surface	1.0	25.3	30.3	30.3	6.15	6.14	86.1	85.9	4.70	4.68	4.89	7.8		7.7	7.9	
									31.1		6.06		84.8		4.86			8.0				
									31.1		6.01		84.1		4.93			7.6				
			Middle	8.8	24.6	32.2	32.2	5.91	5.90	82.7	82.5	5.05	5.08	8.2	8.2							
						32.2		5.88		82.3		5.11		8.2								
						30.5		6.11		86.7		5.09		8.2								
			12/10/10	1721-1731	28/Cloudy	Surface	1.0	27.3	30.5	30.5	6.08	6.10	86.3	86.5	5.02	5.06		5.03	8.0	8.1		8.1
									31.4		5.87		82.7		5.02				8.2			
									31.3		5.84		82.3		5.10				8.4			
Middle	8.9	25.6				31.8	31.4	5.79	5.86	81.6	82.5	4.93	5.06	7.8	8.3							
						31.7		5.76		81.2		4.99		8.0								
						31.8		5.79		81.4		4.99		8.0								
14/10/10	0840-0853	26/Cloudy				Surface	1.0	25.9	30.6	30.6	6.12	6.14	86.2	86.0	4.23	4.26	4.36		7.0	7.1	7.3	
									30.5		6.12		85.7		4.28				7.2			
									31.4		6.04		84.8		4.39				7.5			
			Middle	8.9	25.5	31.3	31.4	6.06	6.05	84.8	84.8	4.36	4.38	7.3	7.4							
						32.3		5.94		83.2		4.42		7.4								
						32.2		5.95		83.3		4.46		7.4								
			19/10/10	1144-1156	29/Fine	Surface	1.0	27.4	31.1	31.1	6.19	6.17	88.5	88.2	5.15	5.11		5.08	8.4	8.2		8.2
									31.0		6.15		87.9		5.07				8.0			
									31.5		5.89		83.6		5.03				8.2			
Middle	8.9	25.7				31.6	31.6	5.93	5.91	84.2	83.9	5.12	5.08	8.4	8.3							
						32.2		5.76		81.7		5.08		8.0								
						32.2		5.79		82.2		5.01		8.0								
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																					
23/10/10	1345-1358	26/Cloudy				Surface	1.0	25.3	30.0	30.0	6.04	6.03	84.6	84.4	4.72	4.73	4.86		7.6	7.7	7.9	
									29.9		6.01		84.1		4.74				7.8			
			30.2	5.91	82.7				4.86		8.0											
			Middle	8.7	24.7	30.3	30.3	5.93	5.92	83.0	82.9	4.89	4.88	8.0	8.0							
						30.9		5.86		82.0		4.98		8.2								
						30.8		5.89		82.5		4.96		8.0								
			Bottom	16.4	24.3	31.9	30.9	6.06	6.08	86.1	86.2	4.36	4.35	7.6	7.5							
						31.9		6.09		86.3		4.33		7.4								
						32.0		5.91		85.0		4.44		7.6								
26/10/10	1554-1604	23/Cloudy	Surface	1.0	21.2	32.0	32.0	5.91	5.92	85.0	85.1	4.44	4.43	4.29	7.6	7.6	7.2					
						32.0		5.93		85.1		4.42			7.6							
						32.1		5.80		84.0		4.09			6.6							
			Middle	7.0	20.7	32.1	32.1	5.79	5.80	83.9	84.0	4.09	4.09		6.4	6.5						
						30.7		5.85		81.9		5.35			8.8							
						31.1		5.76		80.6		5.66			9.0							
			28/10/10	1600-1615	22/Fine	Surface	1.0	23.6	30.7	30.7	5.81	5.83	81.3		81.6	5.38		5.37	5.61	9.0	8.9	9.3
									31.1		5.70		79.8			5.69				9.2		
									31.7		5.66		79.2			5.77				9.2		
Middle	8.4	23.1				31.1	31.1	5.70	5.73	80.6	80.2	5.66	5.68	9.4	9.5							
						31.7		5.66		79.2		5.77		9.2								
						31.8		5.69		79.6		5.83		9.6								
30/10/10	0828-0838	17/Fine				Surface	1.0	24.2	31.3	31.3	6.09	6.07	87.0	86.7	4.98	4.95	4.98	8.0		7.9	8.0	
									31.2		6.04		86.3		4.91			7.8				
									31.8		5.82		82.6		5.02			8.0				
			Middle	8.9	23.6	31.9	31.9	5.85	5.84	83.0	82.8	5.10	5.06	8.2	8.1							
						32.1		5.75		81.6		4.97		7.8								
						32.0		5.78		82.0		4.91		8.0								

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		
02/10/10	1019-1032	28/Fine	Surface	1.0	26.7	30.8	30.8	6.19	6.20	89.1	89.3	4.70	4.68	4.74	7.6	7.6	7.7		
						30.8		6.21		89.4		4.65			7.5				
			Middle	6.2	25.8	31.6	31.6	6.13	6.14	88.3	88.5	4.71	4.72		4.71	4.72		7.5	7.7
						31.5		6.15		88.6		4.73			7.8				
			Bottom	11.4	25.5	32.0	32.1	6.02	6.02	86.7	86.6	4.82	4.84		4.82	4.84		8.0	7.9
						32.1		6.01		86.5		4.85			7.8				
05/10/10	1111-1123	25/Cloudy	Surface	1.0	26.5	31.1	31.2	6.15	6.13	87.3	87.0	4.89	4.92	5.05	7.8	7.9	8.1		
						31.2		6.11		86.7		4.94			8.0				
			Middle	6.4	25.6	31.6	31.7	5.89	5.87	83.0	82.7	5.04	5.07		5.04	5.07		8.0	8.2
						31.7		5.85		82.4		5.10			8.4				
			Bottom	11.8	25.2	31.9	32.0	5.78	5.77	81.4	81.2	5.15	5.17		5.15	5.17		8.4	8.3
						32.0		5.75		81.0		5.19			8.2				
07/10/10	1257-1307	25/Cloudy	Surface	1.0	22.3	31.7	31.7	6.09	6.10	87.3	87.5	3.90	3.95	4.00	6.4	6.5	6.4		
						31.7		6.11		87.7		3.99			6.5				
			Middle	8.5	21.9	32.0	32.0	5.96	5.97	85.0	85.1	3.95	4.01		3.95	4.01		6.0	6.3
						32.0		5.97		85.1		4.07			6.5				
			Bottom	16.0	21.0	32.2	32.2	5.79	5.79	82.7	82.7	4.05	4.05		4.05	4.05		6.4	6.5
						32.2		5.79		82.7		4.04			6.6				
09/10/10	1929-1941	26/Cloudy	Surface	1.0	25.2	30.2	30.2	6.13	6.10	85.8	85.4	4.46	4.48	4.75	7.4	7.5	7.7		
						30.1		6.07		84.9		4.50			7.5				
			Middle	6.2	24.8	30.9	30.9	5.98	5.95	83.7	83.3	4.71	4.74		4.71	4.74		7.7	7.7
						30.9		5.92		82.8		4.77			7.6				
			Bottom	11.4	23.9	31.4	31.4	5.79	5.81	81.1	81.3	4.98	5.02		4.98	5.02		8.0	8.0
						31.4		5.82		81.4		5.05			8.0				
12/10/10	1739-1749	28/Cloudy	Surface	1.0	27.5	30.4	30.4	6.12	6.10	86.9	86.6	5.43	5.45	5.21	8.8	8.9	8.4		
						30.4		6.08		86.3		5.47			9.0				
			Middle	6.4	25.6	31.2	31.2	6.01	6.03	85.3	85.5	5.06	5.09		5.06	5.09		8.0	8.1
						31.2		6.04		85.7		5.12			8.2				
			Bottom	11.8	25.3	31.8	31.8	5.82	5.84	82.0	82.2	5.10	5.09		5.10	5.09		8.4	8.3
						31.7		5.85		82.4		5.07			8.2				
14/10/10	0900-0914	27/Cloudy	Surface	1.0	26.1	30.6	30.6	6.12	6.13	85.7	85.9	4.34	4.35	4.45	7.5	7.4	7.4		
						30.5		6.14		86.0		4.36			7.2				
			Middle	6.3	25.7	31.4	31.4	6.07	6.08	85.0	85.2	4.47	4.46		4.47	4.46		7.5	7.5
						31.3		6.09		85.3		4.44			7.4				
			Bottom	11.6	25.3	32.1	32.2	5.99	5.98	83.9	83.8	4.56	4.55		4.56	4.55		7.6	7.5
						32.2		5.97		83.6		4.53			7.4				
19/10/10	1204-1214	29/Fine	Surface	1.0	27.3	31.1	31.2	6.11	6.09	87.3	87.1	4.94	4.92	5.10	8.0	8.3	8.3		
						31.2		6.07		86.8		4.90			8.5				
			Middle	6.4	25.5	31.6	31.7	6.01	6.03	85.9	86.2	5.21	5.25		5.21	5.25		8.5	8.5
						31.7		6.05		86.5		5.28			8.4				
			Bottom	11.8	25.2	32.1	32.2	5.83	5.81	82.7	82.5	5.17	5.14		5.17	5.14		8.0	8.2
						32.2		5.79		82.2		5.11			8.4				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1405-1418	26/Cloudy	Surface	1.0	25.4	30.2	30.1	6.04	6.03	84.6	84.4	4.78	4.77	4.84	7.8	7.7	7.8		
						30.0		6.01		84.1		4.75			7.5				
			Middle	6.3	24.8	30.3	30.4	5.93	5.92	83.0	82.8	4.82	4.84		4.82	4.84		8.0	8.0
						30.4		5.90		82.6		4.85			8.0				
			Bottom	11.6	24.3	31.1	31.1	5.83	5.82	81.6	81.4	4.91	4.93		4.91	4.93		7.8	7.7
						31.1		5.80		81.2		4.95			7.6				
26/10/10	1612-1622	23/Cloudy	Surface	1.0	21.0	31.5	31.5	6.11	6.11	86.1	86.1	4.24	4.22	4.18	6.8	6.9	6.7		
						31.5		6.11		86.1		4.20			7.0				
			Middle	9.0	20.5	31.9	31.9	6.00	5.99	85.7	85.5	4.15	4.09		4.15	4.09		6.5	8.5
						31.9		5.97		85.2		4.03			6.4				
			Bottom	17.0	20.0	32.0	32.1	5.90	5.89	85.0	85.0	4.22	4.24		4.22	4.24		6.8	6.7
						32.2		5.88		85.0		4.25			6.6				
28/10/10	1619-1635	22/Fine	Surface	1.0	23.7	30.7	30.8	5.87	5.84	82.1	81.7	5.50	5.57	5.76	9.0	9.2	9.4		
						30.8		5.81		81.3		5.64			9.3				
			Middle	6.2	23.4	31.0	31.1	5.83	5.81	81.6	81.3	5.73	5.76		5.73	5.76		9.5	9.5
						31.1		5.78		80.9		5.78			9.5				
			Bottom	11.4	23.0	31.4	31.4	5.67	5.66	79.3	79.2	5.92	5.95		5.92	5.95		9.4	9.5
						31.4		5.65		79.1		5.97			9.6				
30/10/10	0845-0855	17/Fine	Surface	1.0	24.2	31.3	31.4	6.07	6.08	86.8	86.9	4.98	4.95	5.10	8.0	7.9	8.1		
						31.4		6.09		87.0		4.91			7.7				
			Middle	6.4	23.7	31.9	31.9	5.84	5.82	82.9	82.6	5.07	5.09		5.07	5.09		8.0	8.0
						31.8		5.80		82.3		5.10			8.0				
			Bottom	11.8	23.4	32.1	32.2	5.69	5.67	80.7	80.5	5.29	5.27		5.29	5.27		8.4	8.3
						32.3		5.65		80.2		5.24			8.2				

Mid-Ebb Tide



東業德驗測試顧問有限公司
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	
02/10/10	0739-0752	26/Fine	Surface	1.0	25.9	30.4	30.5	6.24	6.24	89.8	89.8	4.69	4.70	4.76	7.6	7.7	7.8	
				5.4		30.5		6.18		89.0		4.78			8.0			
			Middle	5.4	30.9	6.14	88.4	4.75	7.6									
Bottom	9.8	25.3		31.5	6.07	6.08	87.4	4.81	4.82	8.0	7.9							
	Surface	1.0	26.3	31.4	30.9	6.21	6.19	88.1	87.9	5.09	5.12	8.2	8.1		5.17	8.2		8.3
Middle		5.6		25.5		31.7		5.84		5.82		82.3				5.21		
	Bottom	10.2	25.1	32.0	5.84	5.82	82.3	5.22	8.6									
Surface		1.0	22.3	31.0	31.0	6.23	6.24	89.0	89.1	3.90	3.90	6.4	6.4	4.11		6.4	6.9	6.6
	Middle	6.0		21.7		31.3		6.09		6.09		87.0				4.31		
Bottom		11.0	21.1	31.4	6.09	6.09	87.1	4.29	6.8									
	Surface	1.0	25.2	31.6	31.8	5.95	5.96	85.1	85.2	4.05	4.12	6.6	6.5		5.06	6.4	7.9	
Middle		5.9		24.9		31.9		5.97		5.83		82.0				5.01		
	Bottom	10.8	23.7	31.8	5.68	5.66	79.5	5.26	8.2									
Surface		1.0	27.3	30.2	30.2	5.98	5.96	83.7	83.4	4.83	4.86	7.8	7.9	5.19		8.0	8.9	8.4
	Middle	5.6		25.8		31.0		5.86		5.83		82.0				5.01		
Bottom		10.2	25.2	31.8	5.64	5.66	78.9	5.31	8.4									
	Surface	1.0	27.3	30.3	30.3	6.18	6.17	87.7	87.5	4.82	4.80	7.6	7.7		4.41	7.8	7.5	
Middle		5.6		25.8		31.3		5.88		5.87		82.9				5.43		
	Bottom	10.2	25.2	31.2	5.85	5.87	82.4	5.40	9.0									
Surface		1.0	25.6	31.7	31.7	5.76	5.75	81.2	81.0	5.37	5.36	8.6	8.7	4.41		7.6	7.5	7.3
	Middle	5.4		25.3		31.7		5.73		5.91		80.7				5.34		
Bottom		9.8	24.9	31.4	6.02	6.04	84.3	4.49	7.3									
	Surface	1.0	27.0	30.4	30.4	6.19	6.17	86.7	86.4	4.19	4.21	7.0	7.1		4.83	7.6	7.5	
Middle		5.6		25.7		30.3		6.15		5.85		86.1				4.23		
	Bottom	10.2	25.1	31.3	6.05	6.04	84.7	4.42	7.5									
Surface		1.0	24.6	31.4	31.4	6.02	6.04	84.3	84.5	4.49	4.46	7.4	7.5	4.75		7.4	7.9	7.7
	Middle	5.2		25.1		30.5		5.96		5.95		83.4				4.79		
Bottom		9.4	23.7	31.2	5.89	5.88	82.5	4.84	7.8									
	Surface	1.0	21.3	31.1	31.2	6.05	6.03	86.2	86.1	4.05	4.14	6.6	6.5		4.14	6.4	6.7	
Middle		5.0		20.7		31.2		6.01		5.94		85.9				4.22		
	Bottom	9.0	20.1	31.7	5.92	5.81	84.4	4.11	6.6									
Surface		1.0	23.9	31.9	31.9	5.81	5.81	83.0	83.0	4.14	4.17	7.0	6.8	5.96		9.2	9.3	9.5
	Middle	5.3		23.5		31.9		5.80		5.66		83.0				4.19		
Bottom		9.6	23.0	30.7	5.77	5.74	80.1	5.68	9.6									
	Surface	1.0	23.7	30.8	30.8	5.71	5.74	79.9	80.0	5.75	5.72	9.4	9.3		4.96	9.5	9.7	
Middle		5.6		23.2		30.7		5.67		5.66		79.3				5.96		
	Bottom	10.2	23.2	30.7	5.65	5.67	79.1	6.01	9.8									
Surface		1.0	24.6	31.2	31.2	5.32	5.35	74.4	74.9	6.14	6.17	9.6	9.7	4.96		8.2	8.1	8.0
	Middle	5.6		23.2		31.2		5.38		5.91		75.3				6.19		
Bottom		10.2	23.2	32.1	5.69	5.67	80.7	4.99	8.2									
	Surface	1.0	24.6	32.1	32.1	5.65	5.67	80.2	80.5	4.96	4.98	8.2	8.1		4.96	8.2	8.1	
Middle		5.6		23.2		32.1		5.65		5.91		84.7				4.88		
	Bottom	10.2	23.2	32.1	5.65	5.67	80.2	4.96	8.2									

Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).

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
02/10/10	0716-0729	26/Fine	Surface	1.0	25.9	30.5	30.5	6.13	6.15	88.3	88.6	4.63	4.64	4.76	7.6	7.7	7.8
						30.4		6.17		88.8		4.64			7.8		
			Middle	6.2	25.5	30.9	31.0	6.03	6.04	86.8	87.0	4.78	4.77		7.8	7.7	
						31.0		6.05		87.1		4.76			7.6		
			Bottom	11.4	25.3	31.4	31.5	5.96	5.95	85.8	85.6	4.89	4.89		8.0	8.0	
						31.5		5.93		85.4		4.88			8.0		
05/10/10	0814-0825	25/Cloudy	Surface	1.0	26.2	30.9	30.9	6.14	6.16	87.1	87.4	5.10	5.13	5.21	8.0	8.1	8.3
						30.9		6.17		87.6		5.16			8.2		
			Middle	6.4	25.6	31.8	31.8	5.94	5.92	84.3	84.0	5.06	5.11		8.0	8.1	
						31.7		5.90		83.7		5.15			8.2		
			Bottom	11.8	25.1	32.0	32.1	5.90	5.92	83.7	84.0	5.37	5.41		8.6	8.7	
						32.1		5.93		84.2		5.44			8.8		
07/10/10	1002-1013	25/Cloudy	Surface	1.0	22.4	31.3	31.3	6.21	6.20	88.8	88.7	3.17	3.18	3.19	5.0	5.1	5.3
						31.3		6.19		88.6		3.19			5.2		
			Middle	5.7	21.7	32.0	32.0	6.05	6.04	86.5	86.3	3.10	3.11		5.0	5.2	
						32.0		6.02		86.1		3.11			5.3		
			Bottom	10.4	21.0	32.3	32.3	5.91	5.91	84.5	84.5	3.14	3.27		5.4	5.7	
						32.3		5.91		84.5		3.40			6.0		
09/10/10	1630-1643	26/Cloudy	Surface	1.0	25.1	30.3	30.3	6.19	6.15	86.6	86.1	4.64	4.62	4.82	7.5	7.5	7.8
						30.2		6.11		85.5		4.60			7.5		
			Middle	6.1	24.8	31.1	31.1	6.08	6.06	85.1	84.8	4.81	4.84		7.8	7.9	
						31.1		6.03		84.4		4.86			8.0		
			Bottom	11.2	23.9	32.0	32.0	5.91	5.89	82.7	82.4	5.05	5.01		8.0	8.1	
						32.0		5.87		82.1		4.97			8.2		
12/10/10	1414-1454	28/Cloudy	Surface	1.0	27.3	30.4	30.4	6.25	6.23	88.7	88.4	4.78	4.81	4.94	7.6	7.7	8.0
						30.4		6.21		88.1		4.83			7.8		
			Middle	6.3	25.8	31.2	31.2	6.03	6.05	85.6	85.9	4.95	4.97		8.0	8.1	
						31.2		6.07		86.1		4.99			8.2		
			Bottom	11.6	25.3	31.6	31.6	5.92	5.91	84.0	83.8	5.07	5.04		8.0	8.1	
						31.6		5.89		83.6		5.01			8.2		
14/10/10	0546-0559	26/Cloudy	Surface	1.0	25.6	30.3	30.4	6.21	6.23	86.9	87.2	4.33	4.32	4.43	7.2	7.2	7.4
						30.4		6.24		87.4		4.31			7.2		
			Middle	6.2	25.2	31.3	31.3	6.13	6.12	85.8	85.6	4.42	4.42		7.5	7.5	
						31.2		6.10		85.4		4.41			7.4		
			Bottom	11.4	24.9	32.0	32.1	6.02	6.04	84.3	84.5	4.54	4.55		7.6	7.6	
						32.1		6.05		84.7		4.56			7.5		
19/10/10	0903-0913	29/Fine	Surface	1.0	27.1	30.8	30.9	6.07	6.06	86.8	86.6	4.72	4.74	5.01	7.6	7.7	8.1
						30.9		6.04		86.3		4.75			7.8		
			Middle	6.3	25.5	31.5	31.6	5.92	5.94	84.6	84.8	4.95	4.97		8.0	8.0	
						31.6		5.95		85.0		4.99			8.0		
			Bottom	11.6	25.2	32.0	32.0	5.95	5.97	85.0	85.3	5.37	5.34		8.6	8.6	
						32.0		5.96		85.5		5.30			8.6		
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																
23/10/10	1047-1100	25/Cloudy	Surface	1.0	24.4	30.1	30.2	6.10	6.11	85.4	85.6	4.59	4.57	4.66	7.6	7.7	7.8
						30.2		6.12		85.7		4.55			7.8		
			Middle	6.1	23.9	30.4	30.5	6.09	6.08	85.3	85.2	4.68	4.67		8.0	7.8	
30.5	6.07	85.0				4.66		7.6									
Bottom	11.2	23.6	31.2	31.2	5.99	5.98	83.9	83.7	4.72	4.74	7.8	7.8					
			31.1		5.96		83.4		4.75		7.8						
26/10/10	1322-1333	23/Cloudy	Surface	1.0	21.3	31.2	31.2	6.16	6.16	88.8	88.9	4.15	4.16	4.13	7.0	6.9	6.8
						31.2		6.15		88.9		4.17			6.8		
			Middle	4.9	20.7	31.9	31.9	6.07	6.06	86.1	86.2	4.16	4.14		6.6	6.7	
						31.9		6.05		86.2		4.12			6.8		
			Bottom	8.8	20.1	32.2	32.2	6.00	5.99	85.7	85.6	4.11	4.08		7.0	6.9	
						32.2		5.98		85.5		4.04			6.8		
28/10/10	1319-1334	23/Fine	Surface	1.0	23.9	30.7	30.7	5.83	5.84	81.6	81.8	5.48	5.51	5.76	9.0	8.9	9.3
						30.7		5.85		81.9		5.53			8.8		
			Middle	6.2	23.4	30.9	30.9	5.79	5.78	81.0	80.8	5.75	5.77		9.4	9.3	
						30.9		5.76		80.6		5.79			9.2		
			Bottom	11.4	23.0	31.4	31.4	5.66	5.68	79.2	79.5	5.98	6.02		9.6	9.6	
						31.3		5.70		79.8		6.05			9.5		
30/10/10	0543-0553	17/Fine	Surface	1.0	23.8	30.8	30.8	6.09	6.08	87.0	86.8	4.49	4.52	4.83	7.5	7.4	7.8
						30.7		6.06		86.6		4.54			7.2		
			Middle	6.3	23.2	31.6	31.6	5.79	5.77	82.2	81.9	4.94	4.92		8.0	7.9	
						31.5		5.75		81.6		4.89			7.8		
			Bottom	11.6	23.1	32.0	32.0	5.84	5.86	82.9	83.2	5.09	5.05		8.2	8.1	
						31.9		5.88		83.4		5.01			8.0		

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			
02/10/10	0700-0713	26/Fine	Surface	1.0	25.9	30.4	30.5	6.12	6.13	88.1	88.3	4.56	4.57	4.66	7.4	7.5	7.6			
						30.5		6.14		88.4		4.58			7.6					
			Middle	5.7	25.5	30.8	30.9	6.06	6.07	87.3	87.4	87.4	87.4		4.61	4.63		7.8	7.7	7.8
						30.9		6.07		87.4		4.64			7.5					
			Bottom	10.4	25.2	31.4	31.4	5.97	5.96	86.0	85.8	85.8	85.8		4.79	4.80		7.5	7.7	7.8
						31.3		5.94		85.5		4.80			7.8					
05/10/10	0800-0811	25/Cloudy	Surface	1.0	26.2	30.7	30.8	6.15	6.15	87.3	87.2	5.34	5.37	5.02	8.6	8.7	8.1			
						30.8		6.14		87.1		5.40			8.8					
			Middle	6.2	25.7	31.6	31.7	5.89	5.88	83.0	82.8	82.8	82.8		4.78	4.75		7.8	7.7	8.0
						31.7		5.86		82.6		4.71			7.5					
			Bottom	11.4	25.2	31.9	32.0	5.82	5.81	82.0	81.8	81.8	81.8		4.95	4.93		8.0	8.0	8.0
						32.0		5.79		81.6		4.91			8.0					
07/10/10	0950-1001	25/Cloudy	Surface	1.0	22.3	31.7	31.7	6.22	6.21	88.9	88.9	3.29	3.30	3.39	5.8	5.9	5.9			
						31.7		6.20		88.8		3.30			6.0					
			Middle	5.6	21.4	32.2	32.2	6.01	6.02	85.9	85.9	85.9	85.9		3.25	3.23		5.4	5.5	5.5
						32.2		6.03		85.9		3.21			5.5					
			Bottom	10.2	21.0	32.5	32.5	5.90	5.90	84.3	84.5	84.5	84.5		3.60	3.65		6.0	6.2	6.4
						32.5		5.90		84.7		3.69			6.4					
09/10/10	1615-1626	26/Cloudy	Surface	1.0	25.2	30.3	30.3	6.08	6.11	85.1	85.5	4.61	4.64	4.89	7.6	7.5	7.9			
						30.3		6.13		85.8		4.67			7.4					
			Middle	5.7	24.8	31.2	31.2	6.01	5.98	84.1	83.4	83.4	83.4		4.88	4.91		7.8	7.9	8.0
						31.2		5.94		82.7		4.93			8.0					
			Bottom	10.4	23.8	32.0	32.0	5.80	5.83	81.2	81.6	81.6	81.6		5.08	5.11		8.2	8.3	8.4
						32.0		5.85		81.9		5.14			8.4					
12/10/10	1400-1411	28/Cloudy	Surface	1.0	27.4	30.2	30.2	6.12	6.14	86.9	87.2	4.64	4.68	4.83	7.6	7.7	7.8			
						30.2		6.16		87.4		4.72			7.8					
			Middle	6.2	25.7	31.2	31.2	5.95	5.97	84.4	84.7	84.7	84.7		4.88	4.91		8.0	7.8	8.0
						31.1		5.98		84.9		4.94			7.5					
			Bottom	11.4	25.3	31.6	31.6	5.89	5.88	83.0	82.8	82.8	82.8		4.94	4.91		8.0	8.0	8.0
						31.5		5.86		82.6		4.87			8.0					
14/10/10	0539-0545	28/Cloudy	Surface	1.0	25.5	30.4	30.4	6.23	6.22	87.2	87.0	4.27	4.29	4.37	7.2	7.2	7.3			
						30.3		6.20		86.8		4.30			7.2					
			Middle	5.7	25.1	31.2	31.3	6.12	6.15	85.7	86.1	86.1	86.1		4.39	4.38		7.5	7.5	7.3
						31.3		6.17		86.4		4.36			7.5					
			Bottom	10.4	24.8	31.9	32.0	6.09	6.07	85.3	85.0	85.0	85.0		4.42	4.44		7.2	7.3	7.4
						32.0		6.05		84.7		4.45			7.4					
19/10/10	0850-0900	29/Fine	Surface	1.0	27.1	30.7	30.7	6.02	6.04	86.0	86.3	4.34	4.37	4.86	7.4	7.5	8.0			
						30.6		6.05		86.5		4.40			7.6					
			Middle	5.9	25.6	31.4	31.5	5.87	5.86	83.3	83.1	83.1	83.1		5.12	5.09		8.4	8.5	8.0
						31.5		5.84		82.9		5.06			8.5					
			Bottom	10.8	25.1	31.9	32.0	5.74	5.72	81.5	81.2	81.2	81.2		5.07	5.11		8.0	8.0	8.0
						32.0		5.70		80.9		5.15			8.0					
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																			
23/10/10	1030-1044	25/Cloudy	Surface	1.0	24.3	30.2	30.3	6.08	6.08	85.1	85.0	4.46	4.45	4.57	7.4	7.5	7.6			
						30.3		6.07		84.9		4.43			7.6					
			Middle	5.5	23.9	30.5	30.6	5.98	5.98	83.7	83.7	83.7	83.7		4.59	4.59		7.8	7.7	7.8
						30.6		5.97		83.6		4.58			7.5					
			Bottom	10.0	23.5	31.3	31.4	5.86	5.85	82.0	81.9	81.9	81.9		4.69	4.68		7.5	7.6	7.6
						31.4		5.84		81.8		4.67			7.6					
26/10/10	1310-1321	23/Cloudy	Surface	1.0	21.2	31.2	31.2	6.15	6.15	88.9	88.9	4.11	4.11	4.18	7.0	6.9	7.0			
						31.2		6.15		88.9		4.10			6.8					
			Middle	4.9	20.9	31.9	31.9	6.01	6.02	85.9	86.0	86.0	86.0		4.22	4.21		7.2	7.1	7.2
						31.9		6.03		86.0		4.20			7.0					
			Bottom	8.8	20.1	32.0	32.0	5.92	5.91	85.0	85.0	85.0	85.0		4.25	4.23		7.0	7.0	7.0
						32.0		5.90		84.9		4.20			7.0					
28/10/10	1300-1315	23/Fine	Surface	1.0	23.9	30.8	30.8	5.86	5.83	82.0	81.6	5.41	5.43	5.70	8.6	8.6	9.0			
						30.7		5.80		81.2		5.45			8.5					
			Middle	5.6	23.5	30.8	30.9	5.83	5.80	81.6	81.2	81.2	81.2		5.66	5.69		8.8	9.1	9.0
						30.9		5.77		80.7		5.71			9.3					
			Bottom	10.2	22.9	31.3	31.3	5.67	5.68	79.3	79.5	79.5	79.5		5.96	5.99		9.5	9.5	9.4
						31.3		5.69		79.6		6.01			9.4					
30/10/10	0530-0540	17/Fine	Surface	1.0	23.7	30.9	30.9	6.04	6.03	86.3	86.1	4.37	4.34	4.69	7.2	7.1	7.6			
						30.8		6.01		85.9		4.30			7.0					
			Middle	6.1	23.2	31.6	31.7	5.82	5.81	82.6	82.4	82.4	82.4		4.89	4.92		8.0	7.9	8.0
						31.7		5.79		82.2		4.95			7.8					
			Bottom	11.2	23.2	31.9	31.9	5.77	5.76	81.9	81.7	81.7	81.7		4.78	4.81		7.8	7.9	8.0
						31.8		5.74		81.5		4.84			8.0					

Mid-Ebb 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		
02/10/10	0922-0935	27/Fine	Surface	1.0	26.2	30.7	30.8	6.16	6.15	88.7	88.5	4.88	4.86	4.95	7.8	7.9	8.0		
						30.8		6.13		88.3		4.84			8.0				
			Middle	5.2	25.6	31.3	31.3	6.03	6.04	86.8	87.0	4.97	4.93		4.97	4.95		8.2	8.0
						31.2		6.05		87.1		4.93			7.8				
			Bottom	9.4	25.4	31.8	31.8	5.96	5.95	85.8	85.7	5.02	5.04		5.02	5.03		8.0	8.1
						31.7		5.94		85.5		5.04			8.2				
05/10/10	0955-1005	25/Cloudy	Surface	1.0	26.4	31.2	31.2	6.19	6.17	87.8	87.6	5.15	5.20	5.19	8.2	8.3	8.3		
						31.2		6.15		87.3		5.24			8.4				
			Middle	5.6	25.3	31.8	31.9	5.95	5.97	84.4	84.7	5.24	5.20		5.24	5.22		8.4	8.3
						31.9		5.98		84.9		5.20			8.2				
			Bottom	10.2	25.3	32.1	32.1	5.82	5.81	82.0	81.8	5.19	5.11		5.19	5.15		8.0	8.2
						32.0		5.79		81.6		5.11			8.4				
07/10/10	1150-1202	25/Cloudy	Surface	1.0	22.3	31.7	31.7	6.14	6.12	87.8	87.5	3.15	3.15	3.23	5.2	5.1	5.3		
						31.7		6.09		87.2		3.15			5.0				
			Middle	5.1	21.5	32.0	32.0	6.00	5.99	85.8	85.7	3.30	3.30		3.30	3.30		5.6	5.5
						32.0		5.97		85.5		3.30			5.4				
			Bottom	9.2	21.0	32.2	32.2	5.84	5.83	83.5	83.4	3.22	3.25		3.22	3.24		5.2	5.3
						32.2		5.81		83.3		3.25			5.4				
09/10/10	1827-1839	26/Cloudy	Surface	1.0	25.1	30.3	30.3	6.21	6.19	86.9	86.6	4.55	4.58	4.81	7.5	7.5	7.8		
						30.3		6.16		86.2		4.60			7.4				
			Middle	5.4	24.7	31.3	31.2	6.11	6.08	85.5	85.1	4.79	4.84		4.79	4.82		7.8	7.9
						31.1		6.05		84.7		4.84			8.0				
			Bottom	9.8	24.1	31.8	31.9	5.97	5.95	83.5	83.2	5.01	5.06		5.01	5.04		8.0	8.1
						31.9		5.92		82.8		5.06			8.2				
12/10/10	1632-1642	28/Cloudy	Surface	1.0	27.6	30.4	30.4	6.15	6.17	87.3	87.6	4.99	4.98	5.06	8.2	8.1	8.3		
						30.4		6.19		87.8		4.96			8.0				
			Middle	5.6	25.6	31.3	31.3	5.80	5.82	81.7	82.0	5.06	5.01		5.06	5.04		8.4	8.3
						31.2		5.83		82.2		5.01			8.2				
			Bottom	10.2	25.3	31.8	31.8	5.82	5.80	82.0	81.7	5.15	5.21		5.15	5.18		8.6	8.4
						31.7		5.77		81.3		5.21			8.2				
14/10/10	0752-0805	26/Cloudy	Surface	1.0	25.8	30.5	30.5	6.12	6.13	86.7	86.4	4.41	4.42	4.54	7.5	7.5	7.5		
						30.4		6.14		86.0		4.43			7.4				
			Middle	5.3	25.5	31.4	31.4	6.09	6.06	85.3	84.8	4.52	4.56		4.52	4.54		7.6	7.5
						31.3		6.02		84.3		4.56			7.3				
			Bottom	9.6	25.1	32.1	32.2	5.94	5.95	83.2	83.3	4.69	4.63		4.69	4.66		7.8	7.7
						32.2		5.96		83.4		4.63			7.6				
19/10/10	1052-1102	29/Fine	Surface	1.0	27.4	31.1	31.2	6.21	6.19	88.8	88.5	4.94	4.91	5.17	7.8	7.7	8.0		
						31.2		6.17		88.2		4.87			7.6				
			Middle	5.7	25.7	31.6	31.7	5.87	5.86	83.3	83.1	5.15	5.22		5.15	5.19		8.0	8.1
						31.7		5.84		82.9		5.22			8.2				
			Bottom	10.4	24.9	32.1	32.1	5.77	5.76	81.9	81.7	5.45	5.37		5.45	5.41		8.0	8.2
						32.0		5.74		81.5		5.37			8.4				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1255-1308	26/Cloudy	Surface	1.0	25.1	30.0	30.1	6.12	6.13	85.7	85.8	4.66	4.65	4.74	7.6	7.7	7.7		
						30.1		6.14		85.9		4.63			7.8				
			Middle	5.1	24.5	30.3	30.4	6.01	6.03	84.1	84.4	4.72	4.74		4.72	4.73		8.0	7.8
30.4	6.04	84.6				4.74		7.6											
Bottom	9.2	24.1	31.0	31.0	5.94	5.95	83.2	83.3	4.86	4.84	4.86	4.85	7.8	7.6					
			31.0		5.96		83.4		4.84		7.4								
26/10/10	1508-1520	23/Cloudy	Surface	1.0	21.3	31.4	31.4	5.97	5.98	85.0	85.2	4.11	4.12	4.19	7.2	7.0	6.8		
						31.4		5.99		85.3		4.13			6.8				
			Middle	6.5	20.9	31.9	31.9	5.83	5.83	84.0	84.1	4.16	4.22		4.16	4.19		6.6	6.7
						31.9		5.82		84.2		4.22			6.8				
			Bottom	12.0	20.6	32.2	32.2	5.78	5.78	81.1	81.3	4.24	4.26		4.24	4.25		7.0	6.8
						32.2		5.77		81.5		4.26			6.6				
28/10/10	1500-1515	22/Fine	Surface	1.0	23.7	30.6	30.6	5.89	5.86	82.4	82.0	5.39	5.41	5.58	8.5	8.6	9.0		
						30.6		5.83		81.6		5.43			8.6				
			Middle	5.2	23.3	30.8	30.8	5.85	5.83	81.9	81.6	5.51	5.57		5.51	5.54		9.0	8.9
						30.8		5.80		81.2		5.57			8.8				
			Bottom	9.4	23.0	31.3	31.3	5.65	5.67	79.1	79.4	5.78	5.81		5.78	5.80		9.6	9.5
						31.3		5.69		79.7		5.81			9.4				
30/10/10	0734-0745	17/Fine	Surface	1.0	23.9	31.2	31.2	6.08	6.06	86.9	86.6	5.12	5.14	5.14	8.2	8.3	8.3		
						31.2		6.03		86.2		5.16			8.4				
			Middle	5.7	23.5	31.8	31.8	5.88	5.85	83.4	83.0	5.07	5.01		5.07	5.04		8.0	8.0
						31.7		5.81		82.5		5.01			8.0				
			Bottom	10.4	23.3	32.1	32.1	5.82	5.80	82.6	82.3	5.21	5.24		5.21	5.23		8.4	8.5
						32.0		5.78		82.0		5.24			8.5				

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	
02/10/10	0938-0950	27/Fine	Surface	1.0	26.3	30.8	30.9	6.21	6.20	89.4	89.3	4.85	4.84	4.94	7.8	7.7	8.0	
						30.9		6.19		89.1		4.82			7.6			
			Middle	8.5	25.6	31.4	31.4	6.12	6.11	88.1	88.0	4.92	4.93		7.8	7.9		8.0
						31.3		6.10		87.8		4.94			8.0			
			Bottom	16.0	25.4	31.9	31.9	6.03	6.01	86.8	86.6	5.08	5.07		8.4	8.3		8.2
						31.8		5.99		86.3		5.05			8.2			
05/10/10	1020-1030	25/Cloudy	Surface	1.0	26.4	31.2	31.2	6.30	6.32	89.4	89.6	4.98	4.94	5.09	8.0	7.9	8.2	
						31.2		6.33		89.8		4.90			7.8			
			Middle	8.4	25.4	31.9	31.9	6.02	6.04	85.4	85.7	5.03	5.09		8.2	8.3		8.4
						31.8		6.05		85.9		5.15			8.4			
			Bottom	15.8	25.2	32.1	32.1	5.77	5.76	81.3	81.1	5.27	5.23		8.6	8.5		8.4
						32.1		5.74		80.9		5.19			8.4			
07/10/10	1220-1230	25/Cloudy	Surface	1.0	22.4	31.4	31.4	6.20	6.16	88.7	88.4	3.09	3.11	3.32	5.0	5.2	5.6	
						31.4		6.12		86.1		3.12			5.4			
			Middle	7.2	21.6	31.9	31.9	6.01	6.01	85.9	85.9	3.25	3.32		5.6	5.5		5.4
						31.9		6.01		85.9		3.39			5.4			
			Bottom	13.4	21.0	32.2	32.2	5.90	5.89	84.1	84.1	3.55	3.53		6.4	6.2		6.0
						32.2		5.88		84.0		3.50			6.0			
09/10/10	1842-1856	26/Cloudy	Surface	1.0	25.2	30.3	30.4	6.04	6.02	84.5	84.3	4.87	4.91	5.16	8.0	7.9	8.3	
						30.4		6.00		84.0		4.95			7.8			
			Middle	8.4	24.6	31.3	31.4	5.82	5.85	81.4	81.9	5.12	5.15		8.2	8.3		8.4
						31.4		5.88		82.3		5.18			8.4			
			Bottom	15.8	23.8	32.2	32.2	5.69	5.67	79.6	79.4	5.38	5.41		8.8	8.7		8.6
						32.2		5.65		79.1		5.43			8.6			
12/10/10	1655-1705	28/Cloudy	Surface	1.0	27.5	30.3	30.3	6.07	6.06	86.1	85.9	5.15	5.12	5.00	8.4	8.3	8.0	
						30.3		6.04		85.7		5.09			8.2			
			Middle	8.6	25.6	31.3	31.3	5.79	5.81	81.6	81.9	4.87	4.91		7.8	7.9		8.0
						31.3		5.83		82.2		4.95			8.0			
			Bottom	16.2	25.2	31.8	31.8	5.85	5.87	82.4	82.7	4.93	4.96		8.0	7.9		7.8
						31.8		5.88		82.9		4.98			7.8			
14/10/10	0808-0821	26/Cloudy	Surface	1.0	25.9	30.4	30.5	6.17	6.18	86.4	87.5	4.42	4.45	4.54	7.5	7.6	7.6	
						30.5		6.19		86.5		4.47			7.6			
			Middle	8.6	25.4	31.3	31.4	6.04	6.03	84.6	84.5	4.56	4.55		7.8	7.7		7.5
						31.4		6.02		84.3		4.54			7.5			
			Bottom	16.2	25.1	32.3	32.3	5.97	5.96	83.6	83.4	4.62	4.63		7.6	7.5		7.4
						32.2		5.94		83.2		4.63			7.4			
19/10/10	1116-1127	29/Fine	Surface	1.0	27.4	31.1	31.1	6.11	6.10	87.3	87.1	5.23	5.26	5.23	8.6	8.5	8.2	
						31.1		6.08		86.9		5.29			8.4			
			Middle	8.4	25.8	31.7	31.7	6.01	6.02	85.9	86.1	5.07	5.11		8.0	7.9		7.8
						31.6		6.03		86.2		5.14			7.8			
			Bottom	15.8	24.9	32.1	32.2	5.94	5.96	84.9	85.2	5.34	5.32		8.2	8.1		8.0
						32.2		5.98		85.5		5.30			8.0			
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																	
23/10/10	1312-1325	26/Cloudy	Surface	1.0	25.2	30.1	30.1	6.18	6.17	86.5	86.4	4.68	4.67	4.76	7.8	7.7	7.7	
						30.0		6.16		86.2		4.65			7.6			
			Middle	8.4	24.6	30.2	30.3	6.05	6.06	84.7	84.8	4.78	4.77		7.4	7.6		7.8
						30.3		6.07		84.9		4.76			7.8			
			Bottom	15.8	24.2	31.1	31.1	5.93	5.94	83.0	83.2	4.84	4.83		8.0	7.9		7.8
						31.0		5.95		83.3		4.82			7.8			
26/10/10	1530-1541	23/Cloudy	Surface	1.0	21.3	31.9	31.9	6.00	6.03	85.7	85.8	4.04	4.03	4.13	6.4	6.3	6.5	
						31.9		6.06		85.9		4.02			6.2			
			Middle	7.2	20.8	32.0	32.0	5.90	5.93	84.9	85.0	4.08	4.12		6.6	6.7		6.8
						32.0		5.96		85.0		4.16			6.6			
			Bottom	13.4	20.1	32.2	32.2	5.81	5.82	83.8	83.6	4.19	4.24		6.6	6.6		6.6
						32.2		5.83		83.4		4.28			6.6			
28/10/10	1520-1535	22/Fine	Surface	1.0	23.7	30.7	30.7	5.77	5.79	80.7	81.0	5.57	5.59	5.81	9.0	9.1	9.4	
						30.7		5.81		81.3		5.61			9.2			
			Middle	8.4	23.1	31.0	31.0	5.66	5.68	79.2	79.4	5.80	5.83		9.6	9.5		9.4
						31.0		5.69		79.6		5.86			9.4			
			Bottom	15.8	22.7	31.7	31.7	5.65	5.68	79.1	79.4	5.98	6.01		9.6	9.6		9.6
						31.7		5.70		79.7		6.04			9.5			
30/10/10	0759-0810	17/Fine	Surface	1.0	24.1	31.2	31.2	6.15	6.13	87.9	87.6	5.49	5.52	5.17	9.0	9.1	8.4	
						31.1		6.10		87.2		5.55			9.2			
			Middle	8.4	23.6	31.8	31.8	5.71	5.70	81.0	80.9	5.15	5.13		8.2	8.1		8.0
						31.8		5.69		80.7		5.11			8.0			
			Bottom	15.8	23.2	32.2	32.2	5.75	5.73	81.6	81.3	4.89	4.87		7.8	7.9		8.0
						32.2		5.70		80.9		4.84			8.0			

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		
02/10/10	0809-0822	26/Fine	Surface	1.0	25.9	30.5	30.6	6.11	6.13	88.0	88.2	4.74	4.76	4.86	8.0	7.9	7.9		
						30.6		6.14		88.4		4.77			7.8				
			Middle	7.1	25.6	31.0	31.1	6.02	6.04	86.7	86.9	4.86	4.88		4.86	4.88		7.6	7.8
						31.1		6.05		87.1		4.89			8.0				
			Bottom	13.2	25.3	31.6	31.7	5.95	5.94	85.7	85.5	4.93	4.94		4.93	4.94		8.2	8.1
						31.7		5.92		85.2		4.95			8.0				
05/10/10	0859-0910	25/Cloudy	Surface	1.0	26.4	31.0	31.0	6.30	6.32	89.4	89.6	5.34	5.37	5.16	8.6	8.7	8.3		
						31.0		6.33		89.8		5.40			8.8				
			Middle	6.8	25.4	31.8	31.8	6.03	6.05	85.6	85.9	5.03	5.09		5.03	5.09		8.0	8.1
						31.7		6.07		86.1		5.15			8.2				
			Bottom	12.6	25.1	32.1	32.1	5.95	5.97	84.4	84.7	5.05	5.03		5.05	5.03		8.1	8.2
						32.0		5.98		84.9		5.01			8.2				
07/10/10	1045-1057	25/Cloudy	Surface	1.0	22.0	32.6	32.6	6.30	6.33	90.1	90.2	3.01	3.03	3.07	5.0	4.9	5.0		
						32.6		6.35		90.3		3.05			4.8				
			Middle	8.3	21.3	32.9	32.9	6.17	6.19	88.2	88.4	3.11	3.13		3.11	3.13		5.2	5.1
						32.9		6.20		88.5		3.15			5.0				
			Bottom	15.6	20.9	33.0	33.0	6.01	6.02	85.9	86.0	3.02	3.05		3.02	3.05		5.0	4.9
						33.0		6.02		86.0		3.07			4.8				
09/10/10	1715-1730	26/Cloudy	Surface	1.0	25.3	30.2	30.2	6.28	6.26	87.9	87.6	4.66	4.68	4.84	7.5	7.7	7.7		
						30.2		6.23		87.2		4.70			7.8				
			Middle	7.0	24.8	31.1	31.1	6.12	6.10	85.6	85.4	4.82	4.85		4.82	4.85		7.6	7.6
						31.1		6.08		85.1		4.88			7.6				
			Bottom	13.0	23.6	31.9	32.0	6.00	5.98	84.0	83.7	5.00	4.98		5.00	4.98		7.8	7.9
						32.0		5.96		83.4		4.95			8.0				
12/10/10	1528-1538	28/Cloudy	Surface	1.0	27.3	30.2	30.2	6.07	6.06	86.1	85.9	4.99	4.97	5.39	8.2	8.0	8.6		
						30.2		6.04		85.7		4.95			7.8				
			Middle	7.1	25.7	31.4	31.4	5.95	5.97	84.4	84.7	5.59	5.55		5.59	5.55		8.8	8.9
						31.3		5.98		84.9		5.51			9.0				
			Bottom	13.2	25.3	31.8	31.8	5.91	5.90	83.9	83.8	5.68	5.66		5.68	5.66		9.0	9.0
						31.8		5.89		83.6		5.64			9.0				
14/10/10	0639-0652	26/Cloudy	Surface	1.0	25.7	30.4	30.4	6.20	6.18	86.8	86.5	4.32	4.31	4.50	7.2	7.2	7.5		
						30.3		6.16		86.2		4.30			7.2				
			Middle	7.1	25.4	31.4	31.4	6.02	6.05	84.3	84.7	4.56	4.58		4.56	4.58		7.5	7.6
						31.3		6.08		85.1		4.59			7.6				
			Bottom	13.2	25.0	32.1	32.1	5.96	5.94	83.4	83.1	4.61	4.62		4.61	4.62		7.8	7.7
						32.0		5.91		82.7		4.62			7.5				
19/10/10	0946-0956	29/Fine	Surface	1.0	26.9	31.0	31.0	6.09	6.12	87.0	87.4	5.01	5.05	5.18	7.8	8.1	8.4		
						30.9		6.14		87.8		5.09			8.4				
			Middle	6.8	25.5	31.6	31.6	5.78	5.77	82.0	81.8	5.15	5.19		5.15	5.19		8.2	8.4
						31.5		5.75		81.6		5.23			8.6				
			Bottom	12.6	25.1	31.8	31.9	5.89	5.67	80.7	80.4	5.27	5.30		5.27	5.30		8.6	8.6
						31.9		5.64		80.0		5.32			8.5				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1140-1154	25/Cloudy	Surface	1.0	24.6	30.2	30.3	6.17	6.16	86.4	86.2	4.56	4.55	4.66	7.4	7.5	7.7		
						30.3		6.14		86.0		4.54			7.6				
			Middle	6.9	24.1	30.4	30.4	6.02	6.03	84.3	84.5	4.69	4.67		4.69	4.67		7.8	7.8
						30.3		6.04		84.6		4.65			7.8				
			Bottom	12.8	23.8	31.2	31.2	5.94	5.92	83.2	82.9	4.74	4.75		4.74	4.75		8.0	7.8
						31.1		5.90		82.6		4.76			7.5				
26/10/10	1409-1420	23/Cloudy	Surface	1.0	21.2	31.9	31.9	6.22	6.24	89.9	90.1	4.22	4.12	4.03	6.8	6.6	6.3		
						31.9		6.25		90.2		4.02			6.4				
			Middle	8.0	20.5	32.2	32.2	6.11	6.13	87.7	87.4	4.00	4.00		4.00	4.00		6.2	6.3
						32.2		6.14		87.0		4.00			6.4				
			Bottom	15.0	20.0	32.5	32.5	6.01	6.02	85.7	85.8	3.97	3.96		3.97	3.96		6.0	6.0
						32.5		6.03		85.9		3.94			6.0				
28/10/10	1400-1415	23/Fine	Surface	1.0	23.9	30.8	30.8	5.84	5.82	81.7	81.5	5.63	5.66	5.80	9.2	9.1	9.3		
						30.8		5.80		81.2		5.68			9.0				
			Middle	6.9	23.3	30.9	30.9	5.77	5.75	80.7	80.5	5.74	5.77		5.74	5.77		9.4	9.5
						30.9		5.73		80.2		5.79			9.5				
			Bottom	12.8	23.0	31.4	31.4	5.68	5.66	79.5	79.2	6.00	5.98		6.00	5.98		9.6	9.5
						31.4		5.64		78.9		5.96			9.3				
30/10/10	0627-0637	17/Fine	Surface	1.0	23.9	31.0	31.0	6.10	6.12	87.2	87.5	5.27	5.30	5.39	8.4	8.5	8.7		
						31.0		6.14		87.8		5.32			8.6				
			Middle	6.9	23.4	31.7	31.8	5.89	5.88	84.2	84.0	5.37	5.40		5.37	5.40		8.8	8.7
						31.8		5.86		83.7		5.43			8.5				
			Bottom	12.8	23.3	32.0	32.0	5.71	5.73	81.0	81.3	5.43	5.47		5.43	5.47		9.0	8.9
						31.9		5.75		81.6		5.50			8.8				

Mid-Ebb Tide

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		
02/10/10	0834-0847	26/Fine	Surface	1.0	26.0	30.6	30.6	6.19	6.19	89.1	89.1	4.72	4.72	4.83	7.7	7.7	7.8		
						30.5		6.18		89.0		4.71			7.6				
			Middle	6.4	25.6	31.1	31.1	6.08	6.08	87.6	87.5	4.83	4.84		8.0	7.9		8.0	8.0
						31.0		6.07		87.4		4.85			7.8				
			Bottom	11.8	25.4	31.7	31.7	5.94	5.96	85.5	85.8	4.96	4.94		8.0	8.0		8.0	8.0
						31.6		5.98		86.1		4.92			7.9				
05/10/10	0913-0923	25/Cloudy	Surface	1.0	26.4	31.1	31.1	6.25	6.23	88.7	88.4	5.48	5.46	5.18	9.0	8.9	8.4		
						31.0		6.21		88.1		5.44			8.8				
			Middle	6.6	25.4	31.7	31.7	6.07	6.05	86.1	85.8	5.17	5.14		8.2	8.2		8.2	8.0
						31.6		6.02		85.4		5.11			8.0				
			Bottom	12.2	25.2	32.1	32.1	5.87	5.85	82.7	82.5	4.99	4.95		8.0	8.0		8.0	8.0
						32.1		5.83		82.2		4.91			8.0				
07/10/10	1111-1124	25/Cloudy	Surface	1.0	22.0	32.6	32.6	6.32	6.34	90.3	90.4	3.07	3.06	3.10	4.8	4.9	5.0		
						32.6		6.35		90.5		3.05			5.0				
			Middle	8.3	21.4	32.7	32.7	6.20	6.20	88.6	88.7	3.10	3.10		5.2	5.1		5.2	5.1
						32.7		6.20		88.7		3.10			5.0				
			Bottom	15.6	20.9	32.9	32.9	6.10	6.09	87.2	87.1	3.11	3.13		5.2	5.1		5.0	5.1
						32.8		6.08		87.0		3.15			5.0				
09/10/10	1743-1800	26/Cloudy	Surface	1.0	25.4	30.2	30.3	6.26	6.23	87.6	87.2	4.58	4.61	4.83	7.7	7.8	7.9		
						30.3		6.20		86.8		4.63			7.8				
			Middle	6.4	24.9	30.8	30.9	6.16	6.13	86.2	85.8	4.85	4.83		8.0	7.9		8.0	8.1
						30.9		6.10		85.4		4.80			7.8				
			Bottom	11.8	23.7	31.6	31.6	6.03	6.01	84.4	84.1	5.02	5.05		8.2	8.1		8.0	8.1
						31.6		5.98		83.7		5.07			8.0				
12/10/10	1551-1601	28/Cloudy	Surface	1.0	27.4	30.2	30.2	6.12	6.11	86.9	86.7	5.12	5.14	5.33	8.4	8.4	8.6		
						30.2		6.09		86.4		5.15			8.4				
			Middle	6.4	25.6	31.4	31.4	5.84	5.82	82.9	82.6	5.43	5.45		9.0	8.9		8.8	8.5
						31.4		5.80		82.3		5.47			8.8				
			Bottom	11.8	25.2	31.8	31.8	5.90	5.93	83.7	84.1	5.37	5.40		8.4	8.5		8.6	8.5
						31.8		5.95		84.4		5.43			8.6				
14/10/10	0704-0717	26/Cloudy	Surface	1.0	25.7	30.5	30.5	6.14	6.13	86.0	85.8	4.26	4.28	4.36	7.0	7.1	7.3		
						30.4		6.11		85.5		4.29			7.2				
			Middle	6.4	25.4	31.4	31.5	6.05	6.06	84.7	84.9	4.31	4.34		7.5	7.4		7.2	7.5
						31.5		6.07		85.0		4.36			7.4				
			Bottom	11.8	25.0	32.0	32.1	5.97	5.96	83.6	83.4	4.49	4.48		7.4	7.5		7.5	7.5
						32.1		5.94		83.2		4.46			7.5				
19/10/10	1009-1020	29/Fine	Surface	1.0	26.9	31.1	31.1	6.14	6.12	87.8	87.5	4.83	4.86	5.01	7.6	7.7	8.0		
						31.0		6.10		87.2		4.89			7.8				
			Middle	6.4	25.5	31.7	31.7	5.95	5.93	85.0	84.8	5.03	5.07		8.2	8.2		8.2	8.2
						31.6		5.91		84.5		5.11			8.2				
			Bottom	11.8	25.0	31.9	32.0	5.97	5.96	85.3	85.1	5.15	5.09		8.4	8.2		8.0	8.2
						32.0		5.94		84.9		5.02			8.0				
21/10/10	Marine water quality monitoring was cancelled due to bad weather (Typhoon Signal No.3).																		
23/10/10	1206-1220	25/Cloudy	Surface	1.0	24.7	30.2	30.2	6.05	6.04	84.7	84.5	4.57	4.56	4.63	7.6	7.5	7.6		
						30.1		6.02		84.3		4.54			7.4				
			Middle	6.3	24.2	30.3	30.4	5.93	5.95	83.0	83.3	4.63	4.62		7.8	7.6		7.8	7.8
						30.4		5.97		83.6		4.61			7.4				
			Bottom	11.6	23.8	31.0	31.1	5.85	5.84	81.9	81.7	4.72	4.72		7.8	7.8		7.8	7.8
						31.1		5.82		81.5		4.71			7.8				
26/10/10	1432-1444	23/Cloudy	Surface	1.0	21.2	31.9	31.9	6.25	6.26	89.2	89.6	3.95	3.94	4.03	6.4	6.3	6.4		
						31.9		6.27		89.9		3.92			6.2				
			Middle	8.1	20.4	32.2	32.2	6.10	6.13	88.0	88.4	4.11	4.11		6.6	6.6		6.6	6.6
						32.2		6.15		88.8		4.10			6.6				
			Bottom	15.2	20.0	32.0	32.3	6.03	6.05	85.9	86.4	4.04	4.05		6.4	6.3		6.2	6.3
						32.5		6.06		86.9		4.06			6.2				
28/10/10	1419-1435	23/Fine	Surface	1.0	23.8	30.6	30.7	5.88	5.85	82.3	81.9	5.51	5.54	5.80	8.8	8.7	9.2		
						30.7		5.82		81.4		5.57			8.6				
			Middle	6.4	23.4	30.8	30.9	5.78	5.75	80.9	80.5	5.80	5.82		9.0	9.2		9.4	9.6
						30.9		5.72		80.0		5.84			9.4				
			Bottom	11.8	22.9	31.3	31.4	5.59	5.61	78.2	78.4	6.01	6.04		9.6	9.6		9.6	9.6
						31.4		5.62		78.6		6.07			9.5				
30/10/10	0650-0702	17/Fine	Surface	1.0	24.0	31.0	31.1	6.07	6.06	86.8	86.6	5.15	5.19	5.27	8.2	8.3	8.5		
						31.1		6.04		86.3		5.22			8.4				
			Middle	6.4	23.4	31.8	31.7	5.72	5.71	81.2	81.0	5.07	5.11		8.0	8.0		8.0	8.0
						31.6		5.69		80.7		5.15			8.0				
			Bottom	11.8	23.2	31.9	32.0	5.67	5.66	80.5	80.3	5.54	5.52		9.0	9.1		9.0	9.1
						32.0		5.64		80.0		5.50			9.2				

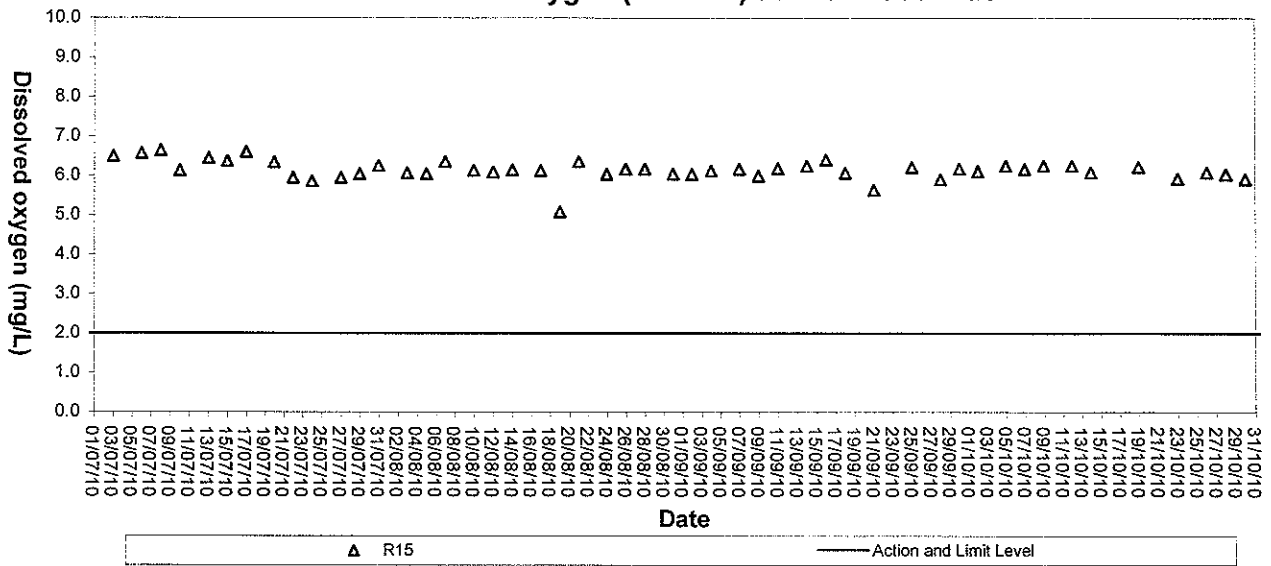


Appendix C3

Graphical Plots of Impact Water Quality Monitoring Data



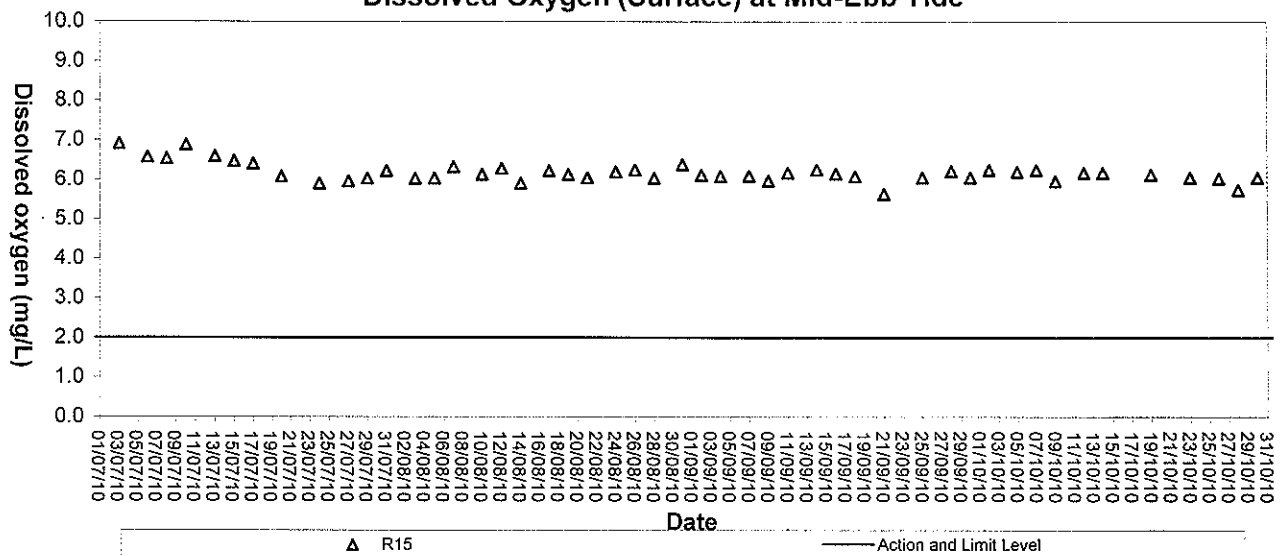
Dissolved Oxygen (Surface) at Mid-Flood Tide



▲ R15

— Action and Limit Level

Dissolved Oxygen (Surface) at Mid-Ebb Tide

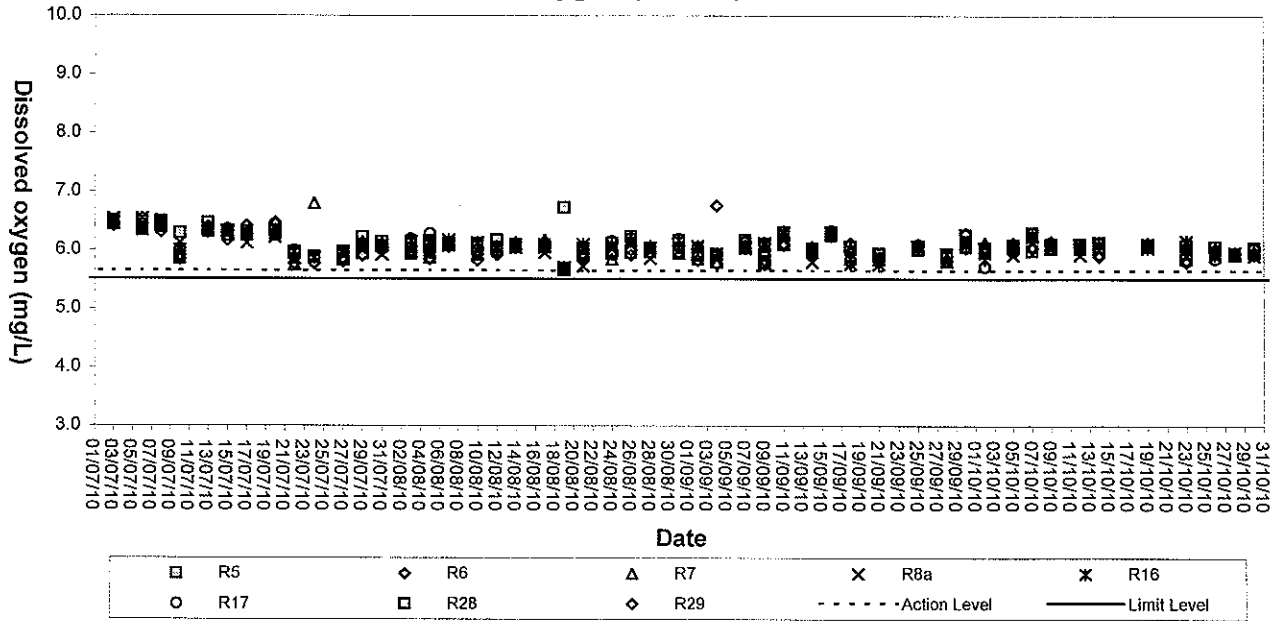


▲ R15

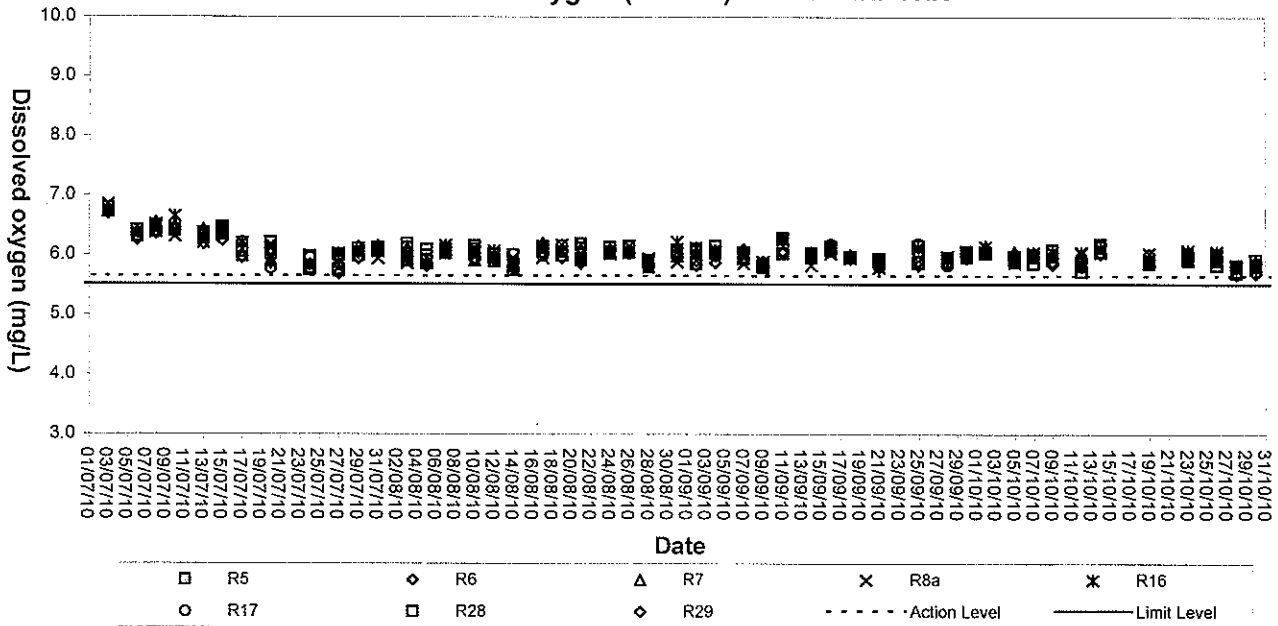
— Action and Limit Level



Dissolved Oxygen (Middle) at Mid-Flood Tide

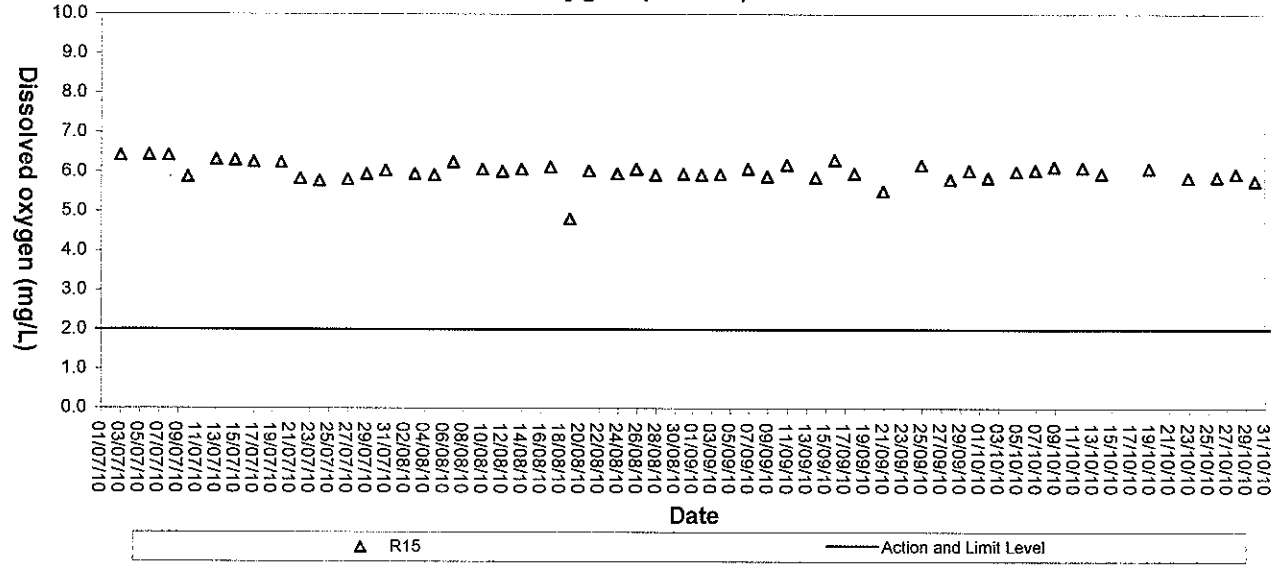


Dissolved Oxygen (Middle) at Mid-Ebb Tide

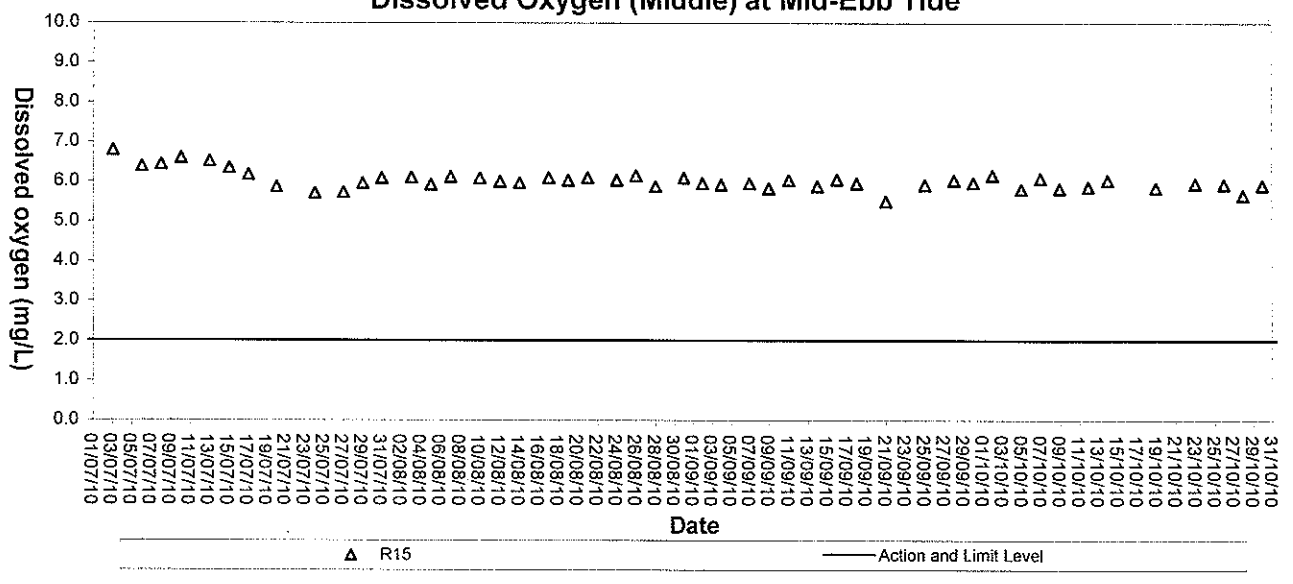




Dissolved Oxygen (Middle) at Mid-Flood Tide

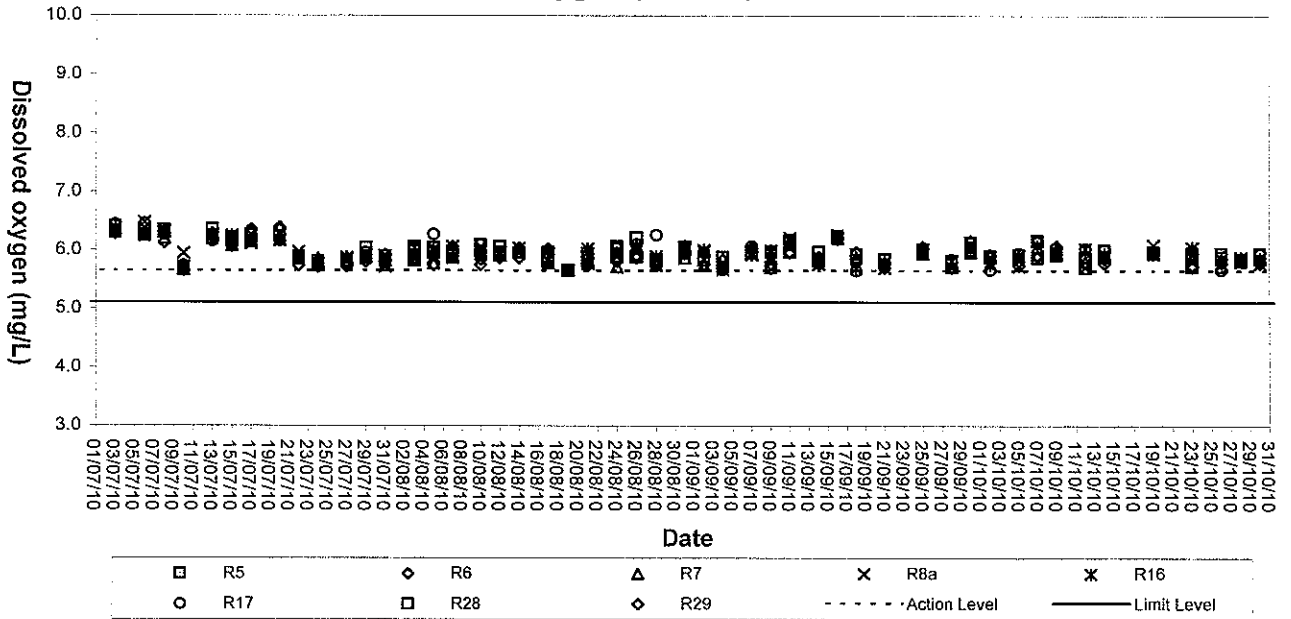


Dissolved Oxygen (Middle) at Mid-Ebb Tide

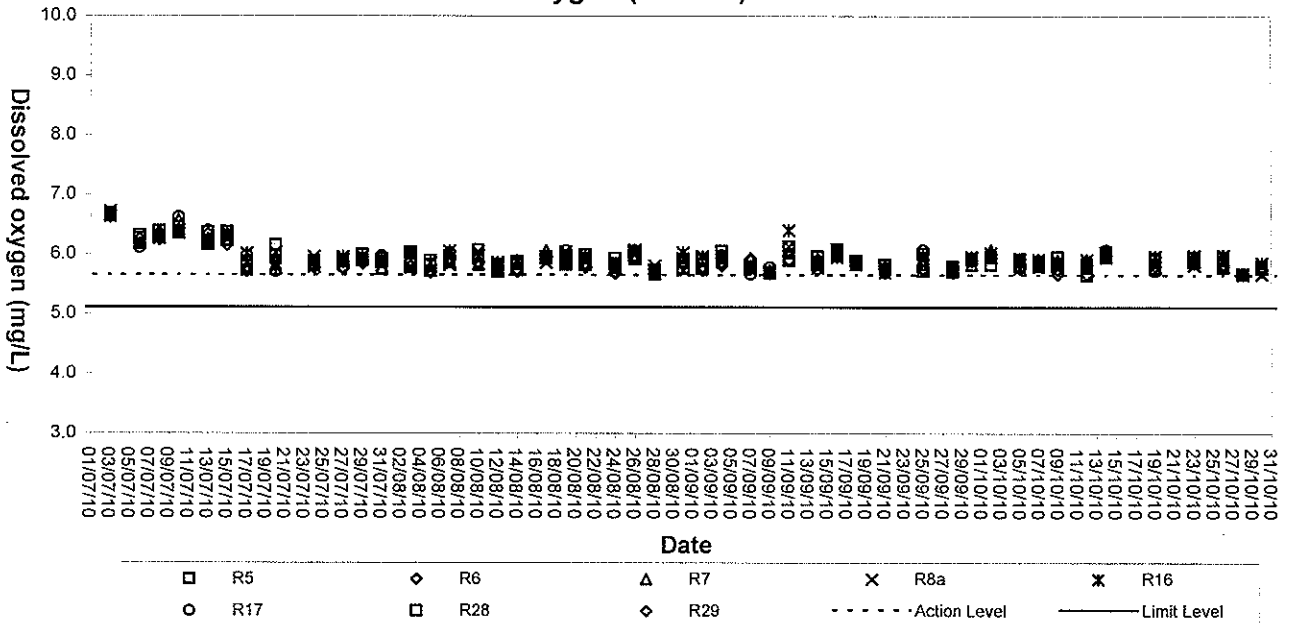




Dissolved Oxygen (Bottom) at Mid-Flood Tide

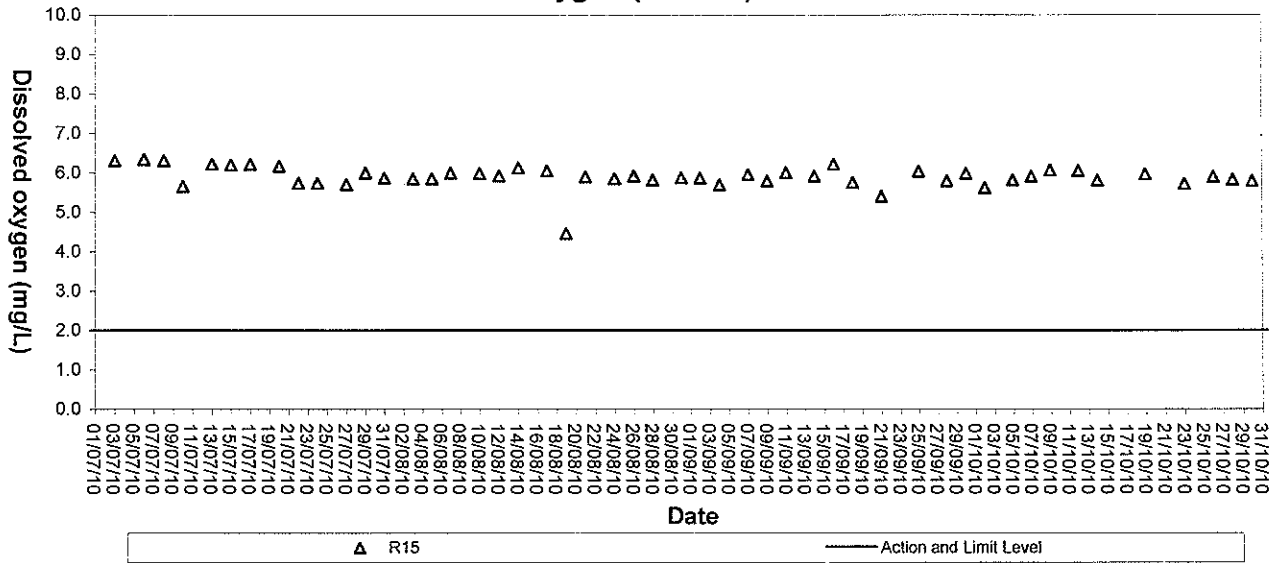


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

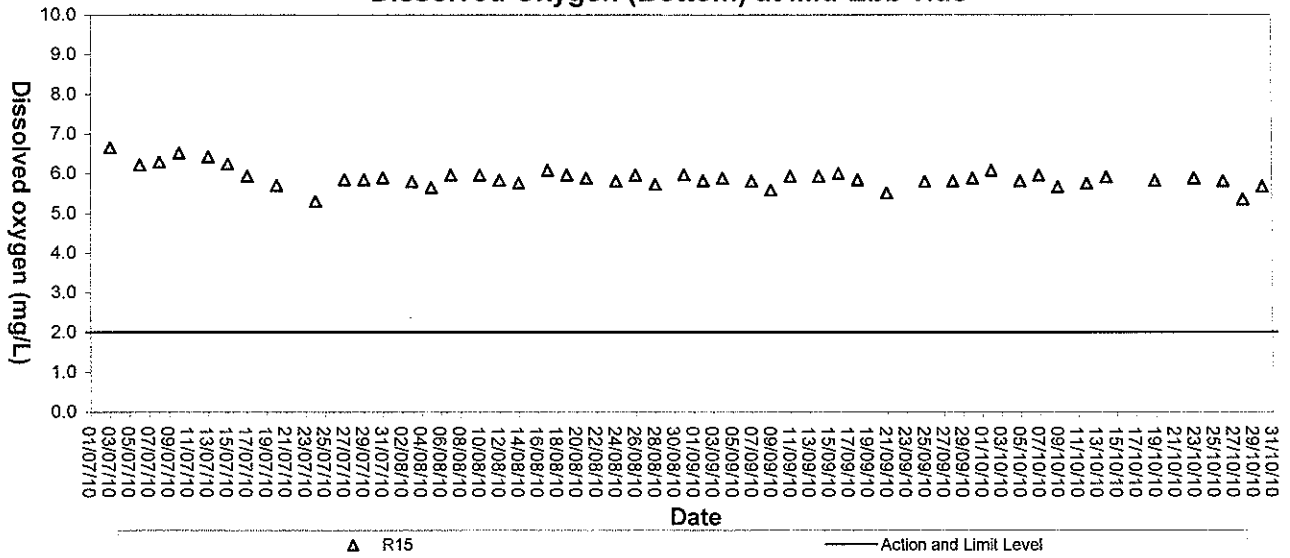




Dissolved Oxygen (Bottom) at Mid-Flood Tide

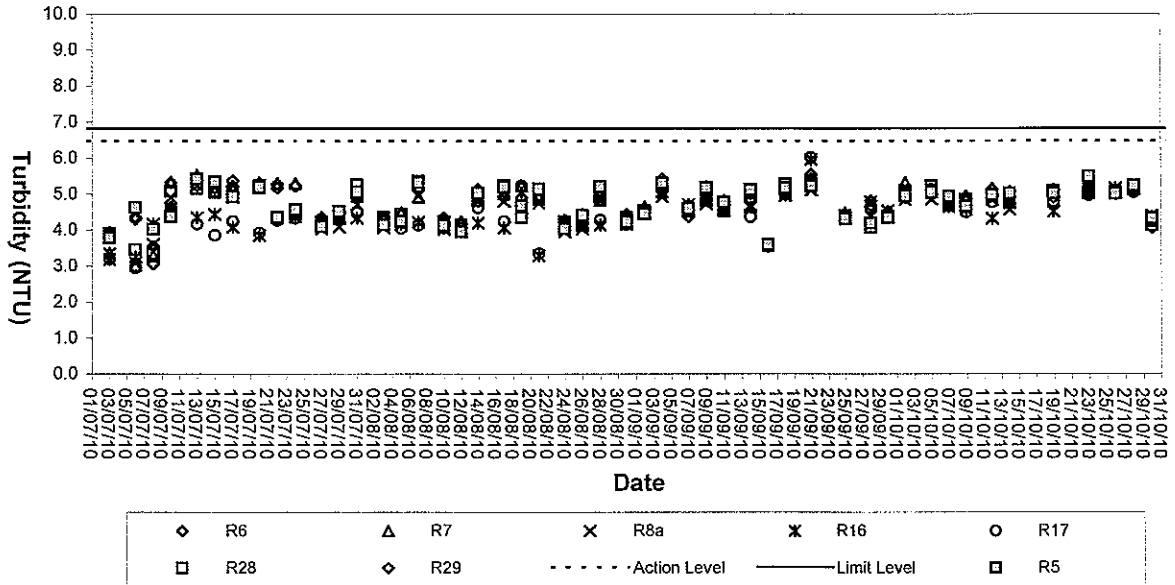


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

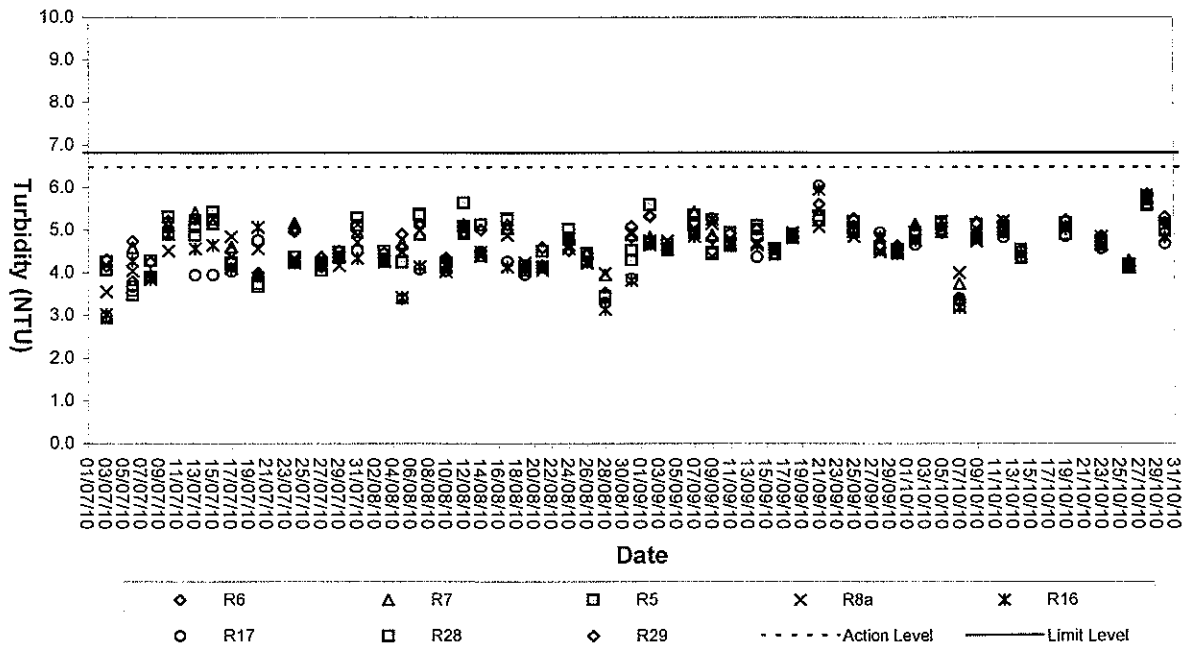




Turbidity (Depth-average) at Mid-Flood Tide

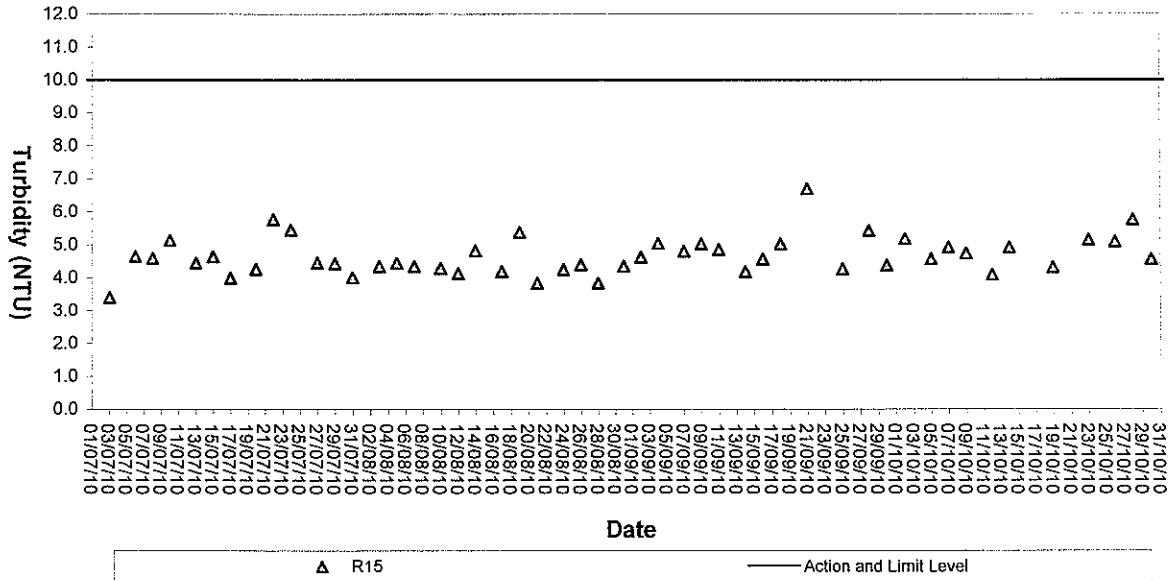


Turbidity (Depth-average) at Mid-Ebb Tide

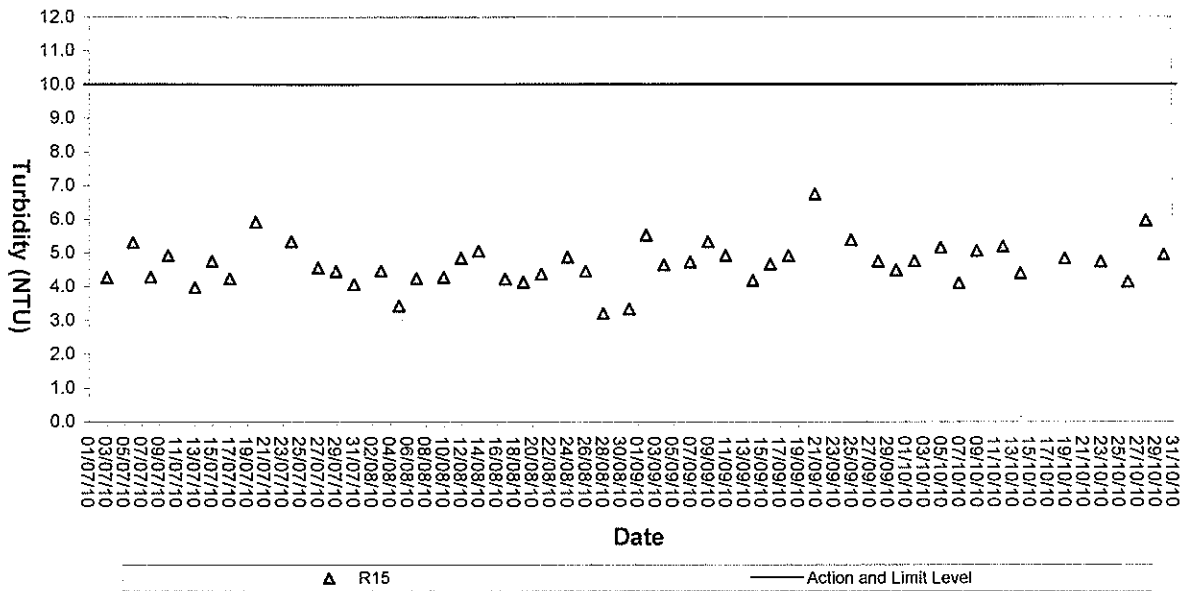




Turbidity (Depth-average) of R15 at Mid-Flood Tide

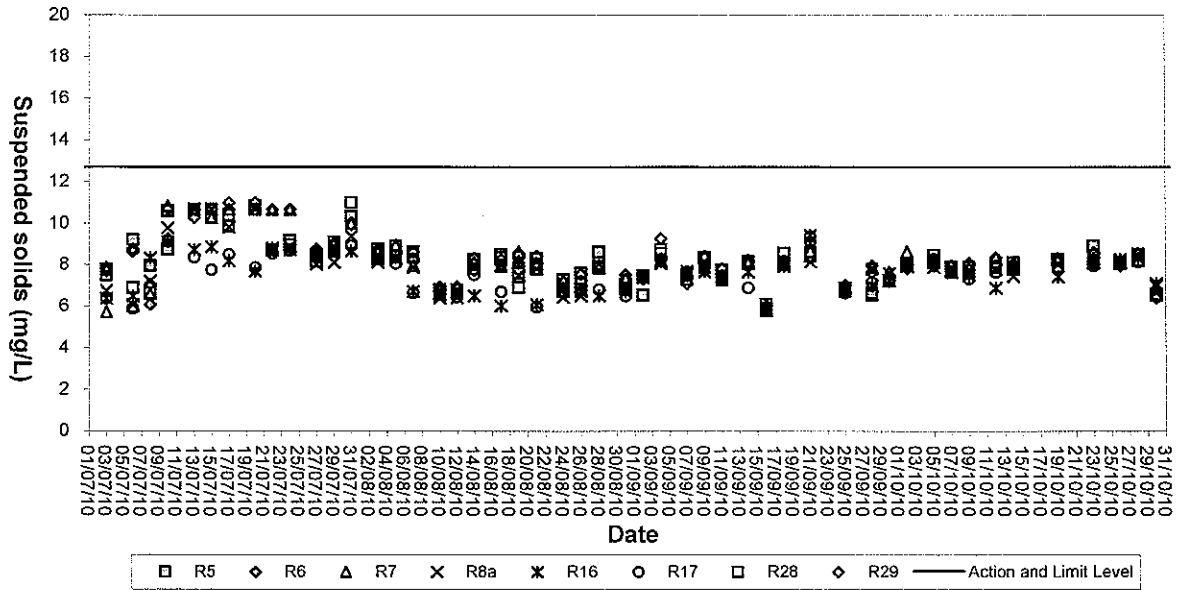


Turbidity (Depth-average) of R15 at Mid-Ebb Tide

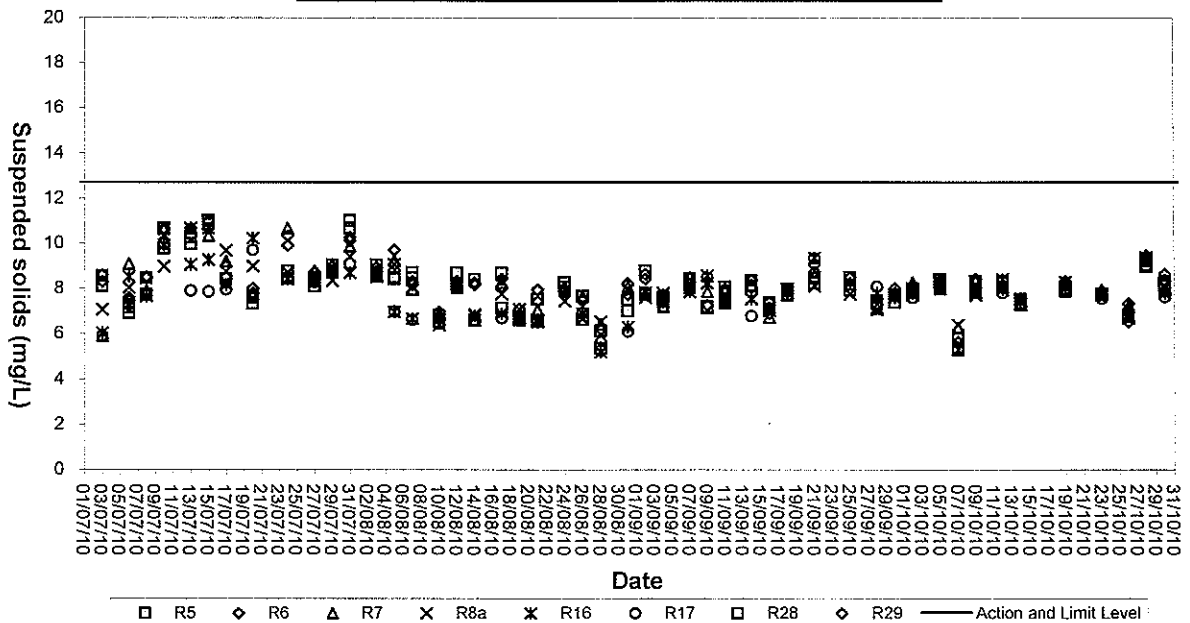




Suspended solids (Depth-average) at Mid-Flood Tide

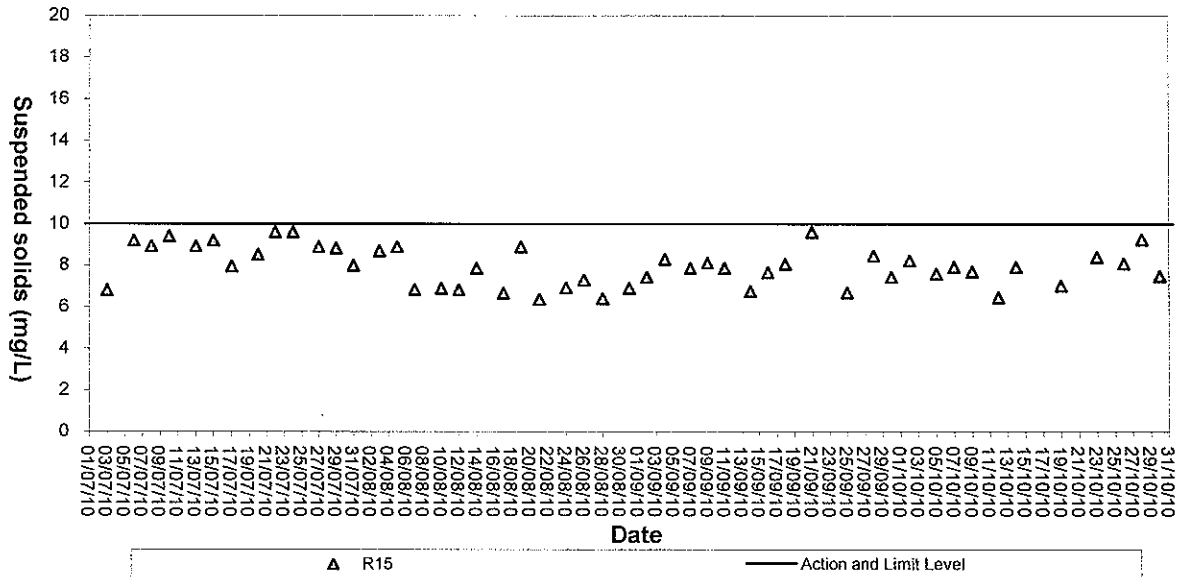


Suspended Solids (Depth-average) at Mid-Ebb Tide

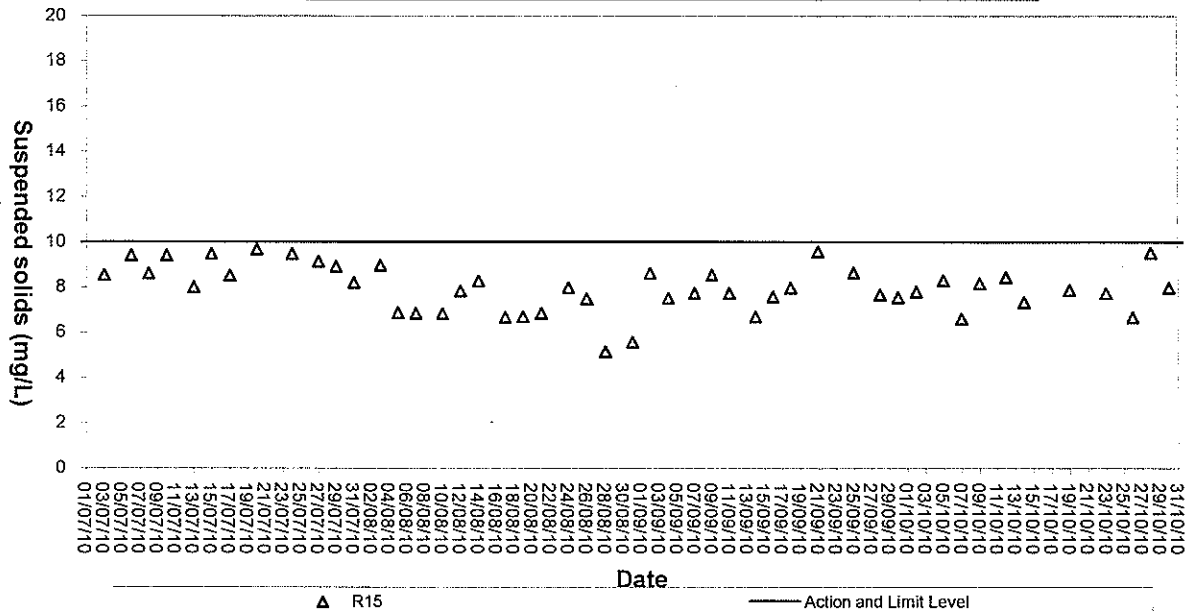




Suspended solids (Depth-average) of R15 at Mid-Flood Tide



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 @
02/10/10	98.6	R5FS	3.08	R8FS	94.2
	98.1	R8FM	2.47	R17FM	100.0
	100.0	R17FB	3.59	C1FB	107.7
	98.1	C2FS	4.62	C4FB	101.9
	103.1	R5ES	3.17	R8ES	102.1
	101.1	R8EM	4.08	R17EM	104.1
	105.1	R17EB	6.45	C1EB	100.0
	107.8	C2ES	6.90	C4EB	95.9
05/10/10	95.7	R5FS	3.08	R8FS	98.0
	92.5	R8FM	2.47	R17FM	104.1
	100.9	R17FB	3.59	C1FB	104.0
	98.8	C2FS	3.17	C4FB	96.2
	100.6	R5ES	3.08	R8ES	96.0
	93.2	R8EM	5.13	R17EM	108.3
	99.2	R17EB	2.53	C1EB	98.0
	104.7	C2ES	3.28	C4EB	107.5
07/10/10	94.8	R5FS	6.45	R8FS	98.0
	95.2	R8FM	5.64	R17FM	108.5
	97.3	R17FB	2.47	C1FB	105.9
	105.3	C2FS	6.45	C4FB	108.3
	103.3	R5ES	3.92	R8ES	107.7
	106.6	R8EM	8.00	R17EM	100.0
	101.7	R17EB	3.28	C1EB	98.0
	93.3	C2ES	9.52	C4EB	94.1
09/10/10	93.8	R5FS	3.92	R8FS	96.2
	94.0	R8FM	3.17	R17FM	106.4
	95.1	R17FB	6.90	C1FB	106.1
	92.9	C2FS	3.28	C4FB	96.0
	96.7	R5ES	2.47	R8ES	102.1
	107.4	R8EM	7.36	R17EM	94.1
	105.6	R17EB	3.08	C1EB	92.2
	106.4	C2ES	2.53	C4EB	101.9
12/10/10	102.0	R5FS	3.08	R8FS	92.3
	103.9	R8FM	3.92	R17FM	105.7
	95.8	R17FB	2.47	C1FB	91.7
	101.5	C2FS	4.62	C4FB	106.0
	105.0	R5ES	3.08	R8ES	104.0
	97.3	R8EM	4.88	R17EM	96.2
	97.6	R17EB	2.47	C1EB	106.0
	106.8	C2ES	6.06	C4EB	102.0
14/10/10	96.9	R5FS	3.17	R8FS	100.0
	93.0	R8FM	6.45	R17FM	106.1
	94.3	R17FB	2.47	C1FB	101.9
	98.5	C2FS	3.39	C4FB	94.3
	104.3	R5ES	3.39	R8ES	102.1
	93.6	R8EM	1.34	R17EM	98.1
	98.8	R17EB	3.39	C1EB	103.9
	105.1	C2ES	3.51	C4EB	108.2

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 @
19/10/10	92.9	R5FS	2.47	R8FS	92.3
	99.8	R8FM	2.53	R17FM	102.1
	104.5	R17FB	6.45	C1FB	96.2
	92.4	C2FS	1.32	C4FB	105.7
	93.6	R5ES	3.92	R8ES	105.9
	98.2	R8EM	6.06	R17EM	93.9
	95.1	R17EB	2.47	C1EB	104.2
	104.4	C2ES	2.47	C4EB	107.8
23/10/10	102.2	R5FS	3.59	R8FS	100.0
	97.4	R8FM	2.53	R17FM	93.9
	102.3	R17FB	2.47	C1FB	106.1
	95.0	C2FS	1.32	C4FB	101.9
	94.6	R5ES	3.92	R8ES	96.2
	96.0	R8EM	2.47	R17EM	100.0
	102.9	R17EB	4.08	C1EB	100.0
	98.8	C2ES	2.47	C4EB	102.1
26/10/10	94.2	R5FS	6.45	R8FS	106.1
	94.9	R8FM	2.47	R17FM	94.1
	97.4	R17FB	2.47	C1FB	95.8
	106.5	C2FS	5.13	C4FB	98.0
	99.6	R5ES	8.00	R8ES	96.0
	105.8	R8EM	4.72	R17EM	100.0
	101.3	R17EB	2.82	C1EB	96.0
	106.5	C2ES	8.00	C4EB	100.0
28/10/10	104.9	R5FS	3.59	R8FS	88.5
	106.1	R8FM	3.08	R17FM	98.0
	105.7	R17FB	0.00	C1FB	105.7
	99.4	C2FS	6.45	C4FB	97.9
	102.2	R5ES	9.30	R8ES	98.0
	99.2	R8EM	3.21	R17EM	92.0
	107.8	R17EB	2.13	C1EB	98.0
	94.2	C2ES	2.20	C4EB	91.5
30/10/10	104.9	R5FS	8.00	R8FS	108.0
	102.9	R8FM	2.53	R17FM	107.7
	92.8	R17FB	0.80	C1FB	103.9
	108.0	C2FS	4.51	C4FB	105.7
	97.5	R5ES	0.00	R8ES	97.9
	95.2	R8EM	7.79	R17EM	96.1
	92.8	R17EB	3.28	C1EB	94.0
	92.4	C2ES	3.08	C4EB	94.0

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%.



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

Task ID	Task Name	Start	Finish	Priority	Task ID	Task Name	Start	Finish	Priority
91-1000	Approved & Consent - XP, TTA, M&S & Temp Works	01/01/2009	01/01/2009	0	91-1000	Approved & Consent - XP, TTA, M&S & Temp Works	01/01/2009	01/01/2009	0
91-1001	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1001	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1002	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1002	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1003	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1003	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1004	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1004	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1005	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1005	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1006	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1006	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1007	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1007	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1008	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1008	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1009	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1009	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0
91-1010	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0	91-1010	Final PE & UBL Design (Except E2 & K)	01/01/2009	01/01/2009	0

3 Months Rolling Program (October 2010)

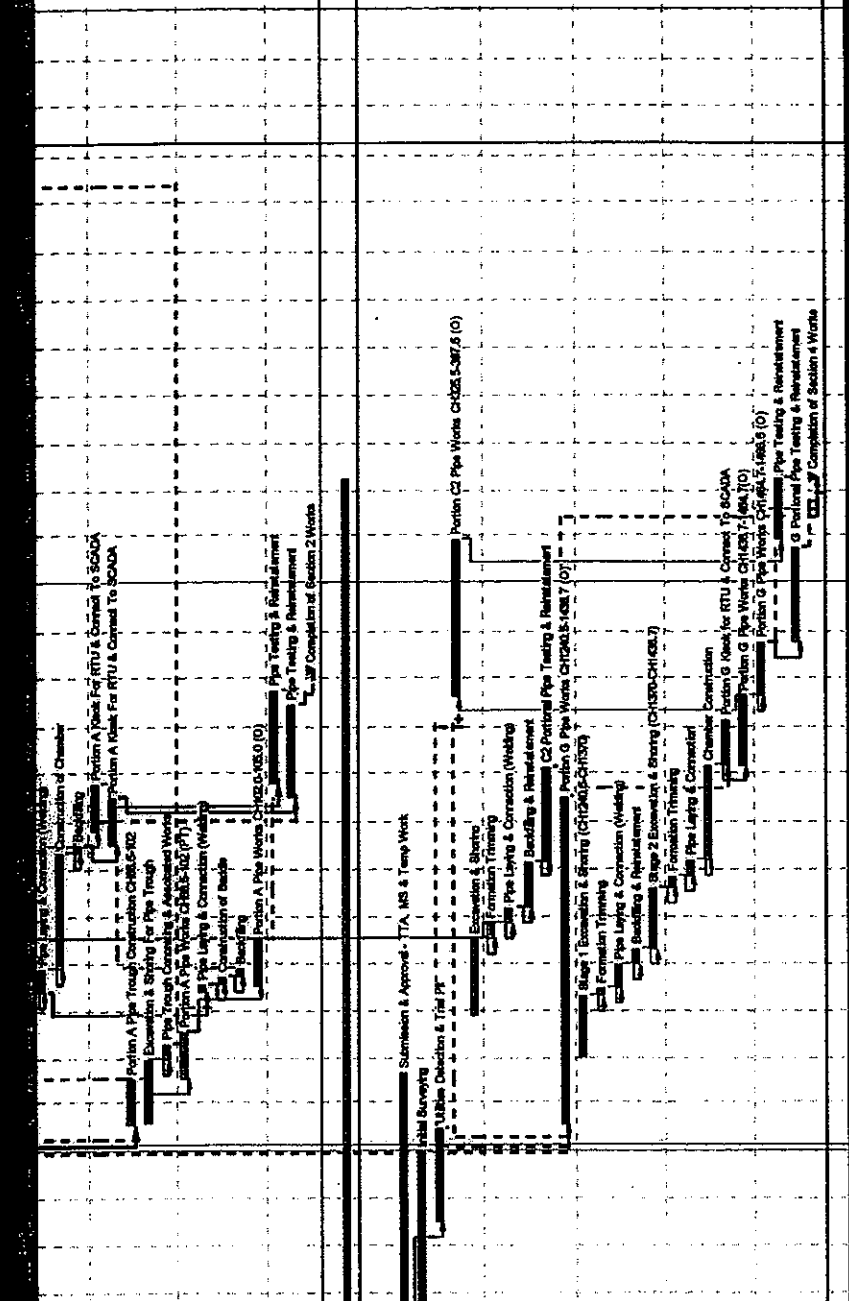
Wo Hing - Penta-Ocean Joint Venture

Early Issue
Cleared Issue
Summary Issue
Start milestone point
Finish milestone point

MS ID	Description	Start Date	End Date	Days	Weeks	Hours	Cost	Estimate
84-1000	Final Surveying	17/JUL/10	17/JUL/10	1	1	224	0	0
84-1001	Submission & Approval - TTA, MS & Temp Work	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1002	Utility Detection & Trial Pit	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1003	Excavation & Shoring for Pipe Trench	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1004	Formwork Installation	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1005	Concrete Pouring	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1006	Formwork Striking	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1007	Backfilling & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1008	Final Pipe Laying & Connection (Welding)	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1009	Final Testing & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-1010	Completion of Section 2 Works	17/JUL/10	17/JUL/10	1	1	176	0	0

MS ID	Description	Start Date	End Date	Days	Weeks	Hours	Cost	Estimate
84-2000	Submission & Approval - TTA, MS & Temp Work	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2001	Utility Detection & Trial Pit	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2002	Excavation & Shoring for Pipe Trench	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2003	Formwork Installation	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2004	Concrete Pouring	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2005	Formwork Striking	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2006	Backfilling & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2007	Final Pipe Laying & Connection (Welding)	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2008	Final Testing & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-2009	Completion of Section 2 Works	17/JUL/10	17/JUL/10	1	1	176	0	0

MS ID	Description	Start Date	End Date	Days	Weeks	Hours	Cost	Estimate
84-3000	Submission & Approval - TTA, MS & Temp Work	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3001	Utility Detection & Trial Pit	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3002	Excavation & Shoring for Pipe Trench	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3003	Formwork Installation	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3004	Concrete Pouring	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3005	Formwork Striking	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3006	Backfilling & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3007	Final Pipe Laying & Connection (Welding)	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3008	Final Testing & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-3009	Completion of Section 2 Works	17/JUL/10	17/JUL/10	1	1	176	0	0



MS ID	Description	Start Date	End Date	Days	Weeks	Hours	Cost	Estimate
84-4000	Submission & Approval - TTA, MS & Temp Work	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4001	Utility Detection & Trial Pit	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4002	Excavation & Shoring for Pipe Trench	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4003	Formwork Installation	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4004	Concrete Pouring	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4005	Formwork Striking	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4006	Backfilling & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4007	Final Pipe Laying & Connection (Welding)	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4008	Final Testing & Reinstatement	17/JUL/10	17/JUL/10	1	1	176	0	0
84-4009	Completion of Section 2 Works	17/JUL/10	17/JUL/10	1	1	176	0	0



Appendix F

ET Weekly Site Inspection Records

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

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	5 Oct 2010	Inspected by	RE <i>[Signature]</i>	IEC	Contractor	ET
Time	09:45	Name	Peter Yung MOTHS R10W		JNG <i>[Signature]</i> (ES)	C. K. Si <i>[Signature]</i>

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Calm / Light / Breeze / Strong
 Wind : High / Moderate / Low
 Temperature : 26 °C
 Humidity :

	Implementation Stages*			Remark
	Yes	No	Not Obs	
Environmental Checklist				
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
▪ Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓			
▪ The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓			
▪ The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓			
▪ Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit.	✓			
▪ The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.			✓	
▪ Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓			
▪ The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓			
▪ All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓			
▪ Vehicle speed should be limited to 10 kph except on completed access roads.	✓			
▪ Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.			✓	
▪ The public road around the site entrance should be kept clean and free from dust.	✓			
▪ Vehicle and equipment should be switched off while not in use.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪ Open burning should be prohibited.	✓			

	Implementation Stages*			Remark
	Yes	No	Not Obs	
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	✓			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Water Quality					
<i>Mitigation Measures for other Construction Activities</i>					
▪	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	✓			
▪	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					
▪	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					
▪	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.	√			
Maine 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).		√		item 1
▪	Any unused chemicals or those with remaining functional capacity should be recycled.	√			
▪	All generators, fuel and oil storage are within bunded 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/06

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun



東業檢測顧問有限公司
ETS-TESTCONSULT LIMITED

Summary of the Weekly Site Inspection:

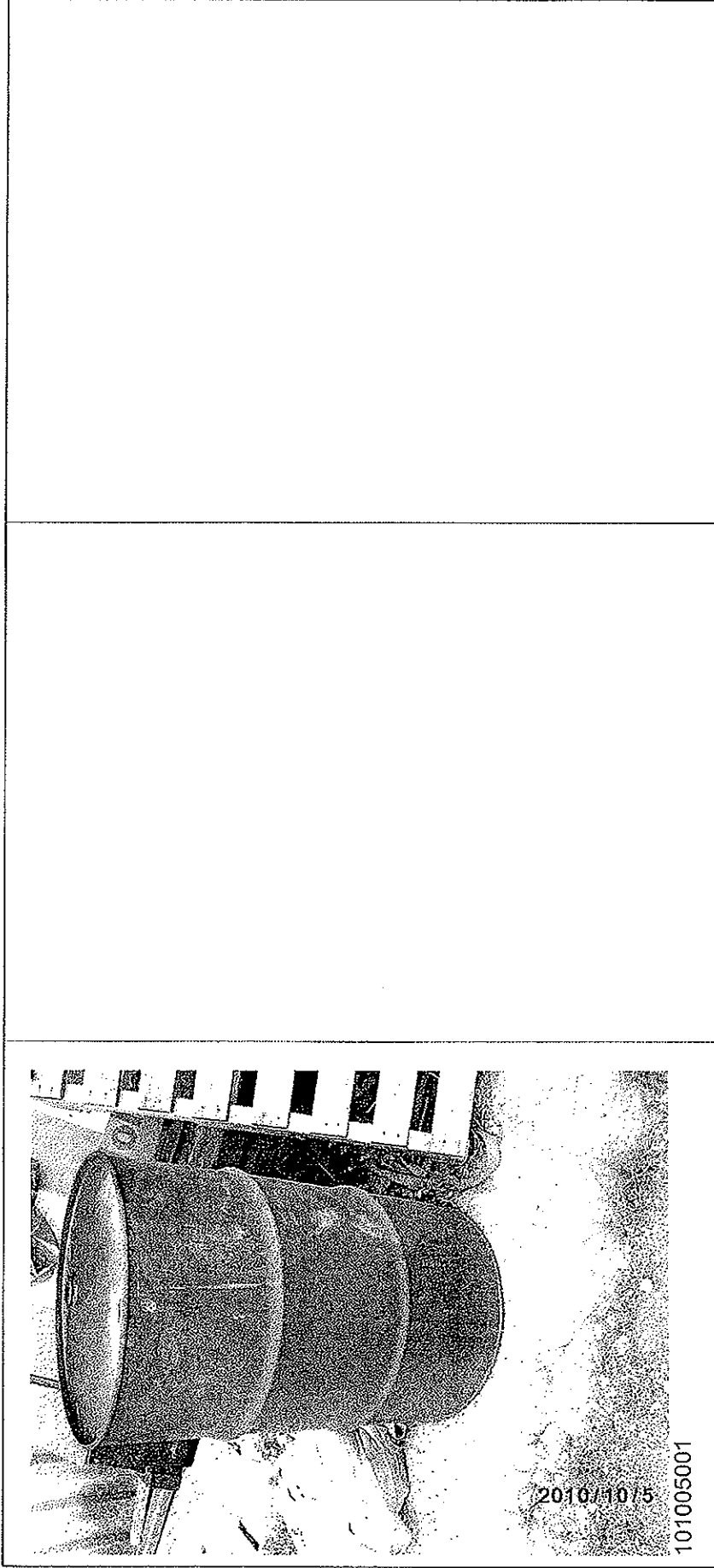
Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	A 200L oil tank at Portion J was found without drip tray.	Continue follow-up	To provide an appropriate drip tray and store in chemical storage area when not-in-use	101005_001	12/10/10

Remark

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Inspected by	Name	Signature	Date
	Frankie Li		28 October 2010 05 October 2010

Photos



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

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	12/16/10	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	<i>[Signature]</i>		JNG	Linda Law

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Calm / Light / Breeze / Strong
 Humidity : High / Moderate / Low

Environmental Checklist

Fugitive Dust Emission

Implementation Stages*	Remark		
	Yes	No	Not Obs / N/A
<ul style="list-style-type: none"> Dust control / mitigation measures shall be provided to prevent dust nuisance. 	✓		
<ul style="list-style-type: none"> Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading. 	✓		
<ul style="list-style-type: none"> The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet. 	✓		
<ul style="list-style-type: none"> The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle 	✓		
<ul style="list-style-type: none"> Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit. 	✓		
<ul style="list-style-type: none"> The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. 	✓		✓
<ul style="list-style-type: none"> Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. 	✓		
<ul style="list-style-type: none"> The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials. 	✓		
<ul style="list-style-type: none"> All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet. 	✓		
<ul style="list-style-type: none"> Vehicle speed should be limited to 10 kph except on completed access roads. 	✓		✓
<ul style="list-style-type: none"> Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. 	✓		
<ul style="list-style-type: none"> The public road around the site entrance should be kept clean and free from dust. 	✓		
<ul style="list-style-type: none"> Vehicle and equipment should be switched off while not in use. 	✓		
<ul style="list-style-type: none"> All plant and equipment should be well maintained e.g. without black smoke emission. 	✓		
<ul style="list-style-type: none"> Open burning should be prohibited. 	✓		

	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. 9M/SD/08
Laying of Western Cross Harbour Main and Associated Lend 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 W CZs 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			✓	
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				
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. 9M/SD/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			
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

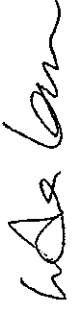
Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Marine Ecology				
Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	√			
Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	√			
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 displayed 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.		√		Item 2

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	Follow up action to item 1 on 12/10/10, a drip tray was provided for the 200L oil tank at Portion J.	Closed	---	101012_001	---
2	No label and cover were provided for a rubbish bin at Portion J.	Continue to follow-up	To provide appropriate labels and covers for all rubbish bin	101012_002	19/01/10
3	Appropriate chemical labels should be provided for the chemicals used for the sedimentation tank at Portion J before use. (Reminder)	Continue to follow-up	To provide appropriate chemical labels for all chemicals used for sedimentation tanks before use.	101012_003	Before the use of sedimentation tank

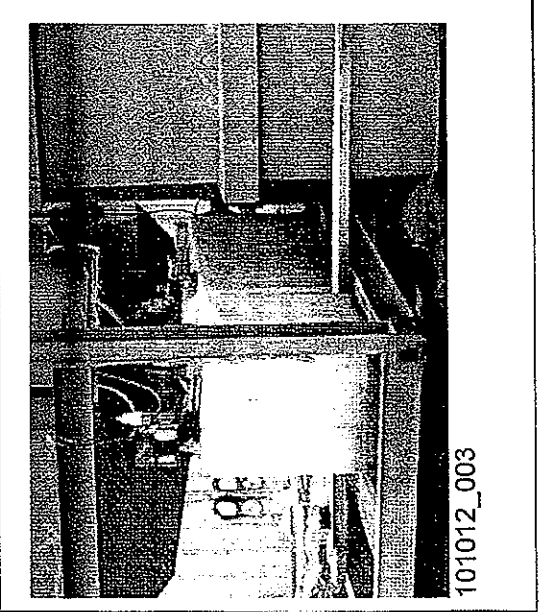
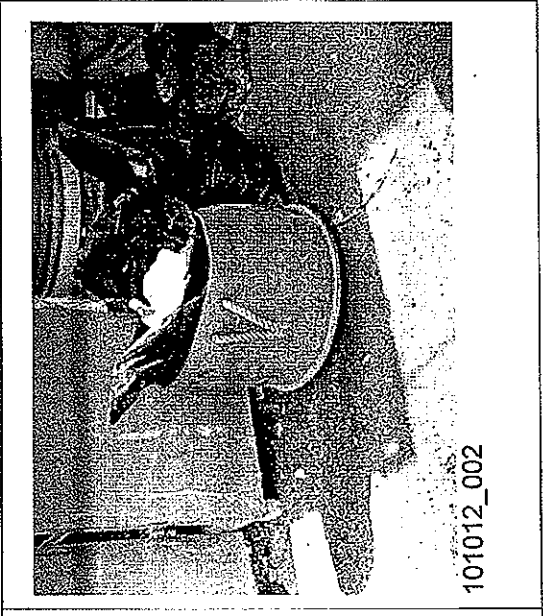
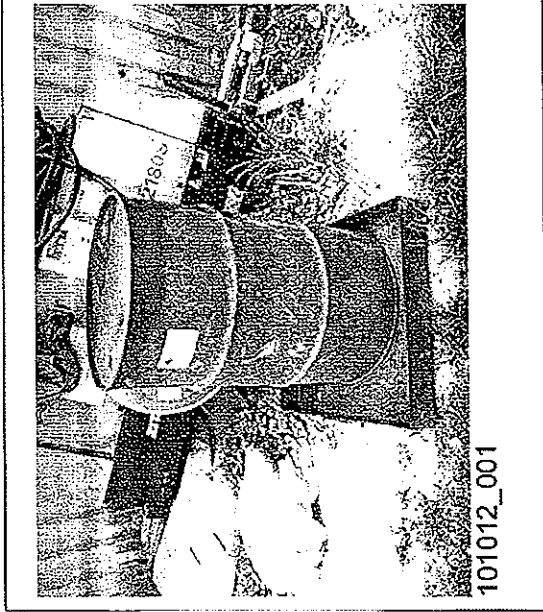
Remark

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Inspected by	Date
Linda Law	12 October 2010
Signature 	

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

Photos





WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	20/10/10	Inspected by	RE Nelson Chau	IEC	Justin Ye	Contractor	Jeanne Ng	ET	Li-da Lam
Time	13:30	Name	Nelson				Justin Ye		Li-da Lam

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Calm / Light / Breeze / Strong
 Wind :
 Temperature : 30°C
 Humidity : High / Moderate / Low

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
▪ Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓			
▪ The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓			
▪ The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓			
▪ Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit.	✓			
▪ The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	✓		✓	
▪ Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓			
▪ The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓			
▪ All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓			
▪ Vehicle speed should be limited to 10 kph except on completed access roads.	✓			
▪ Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	✓		✓	
▪ The public road around the site entrance should be kept clean and free from dust.	✓			
▪ Vehicle and equipment should be switched off while not in use.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪ Open burning should be prohibited.	✓			

Contract No. 9/MVSD/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 generator's should operate with door closed. Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		
Water Quality			
<i>Mitigation Measures for Dredging</i>			
<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, 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 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		<p>Maintenance work in progress</p> <p>Item 3</p>

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 W CZs 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. 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ ✓ 				
Waste Management					
C&D Materials					
<ul style="list-style-type: none"> Excavated materials should be reused on-site as back-filling 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. 	<ul style="list-style-type: none"> ✓ ✓ 				
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. 	<ul style="list-style-type: none"> ✓ ✓ ✓ 				

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	√			

Contract No. 9WSD/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 bund 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 bund 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. 9WSD/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	Follow up action to item 2 on 12/10/10, label and cover were provided for a rubbish bin at Portion J.	Closed	---	101020_001	---
2	Follow up action to item 2 on 12/10/10, labels were provided for the chemicals used for the sedimentation tank at Portion J	Closed	---	101020_002	---
3	Dredged materials were noted accumulated on the deck of the barge at Portion I. The Contractor arranged a worker to clean up the dredged materials immediately (Photo 101020_004).	Continue to follow-up	To remind the Contractor to avoid the leakage of dredged materials from the grab during transport to the deck and also clean up all the dredged materials especially before each transport.	101020_003 & 101020_004	26/10/10
4	The Contractor was reminded to provide daily visual check record for wastewater discharge during weekly site inspection in order to show the quality of discharged wastewater is suitable for discharge or not (Reminder).	Continue to follow-up	---	101020_005 & 101020_006	26/10/10

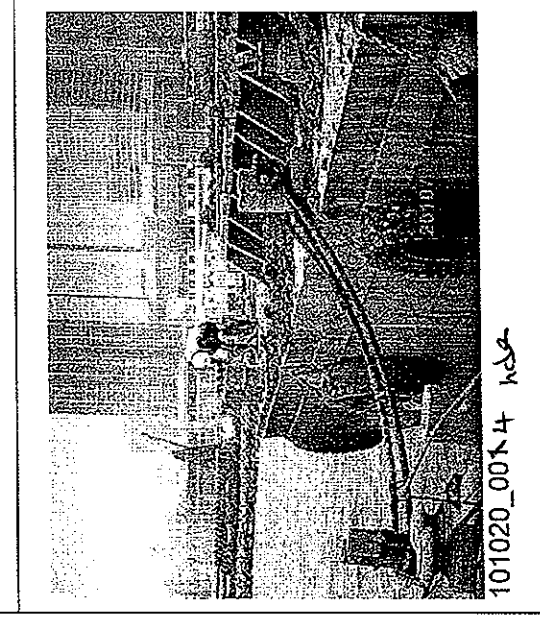
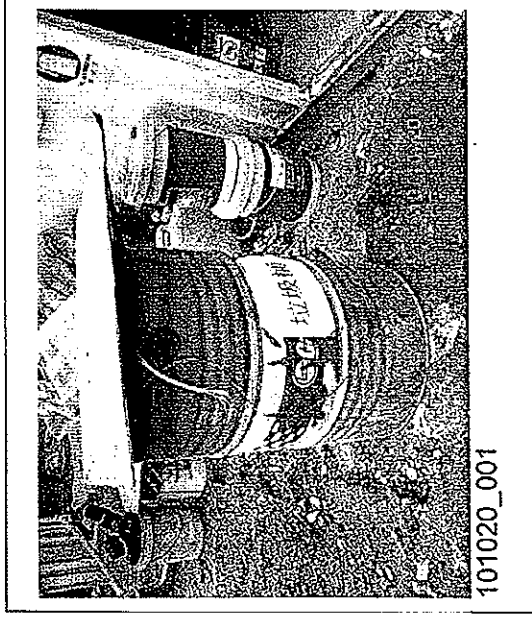
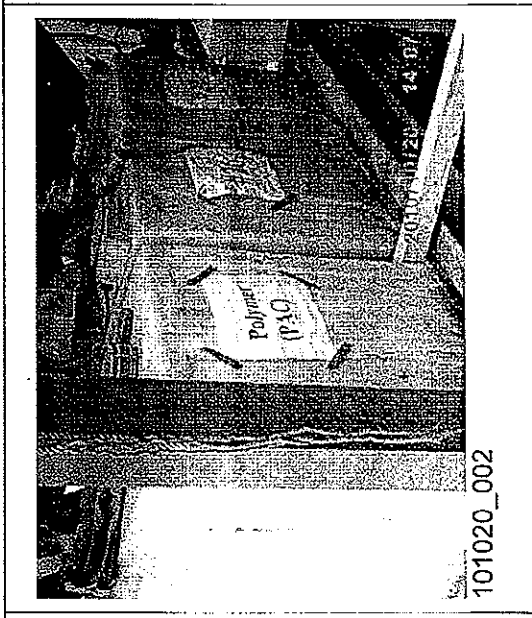
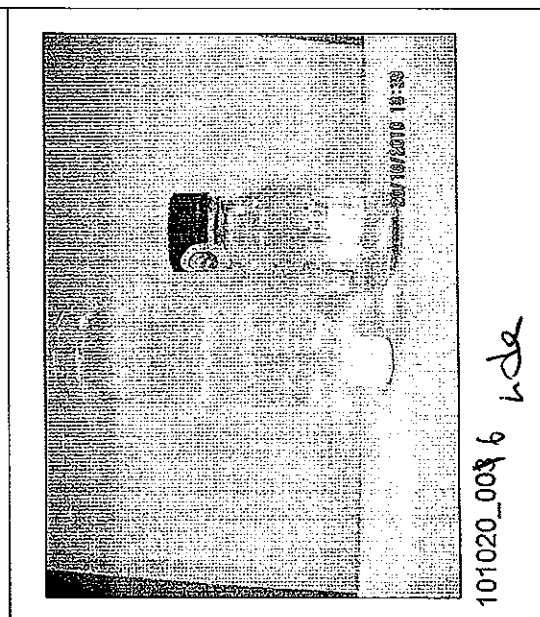
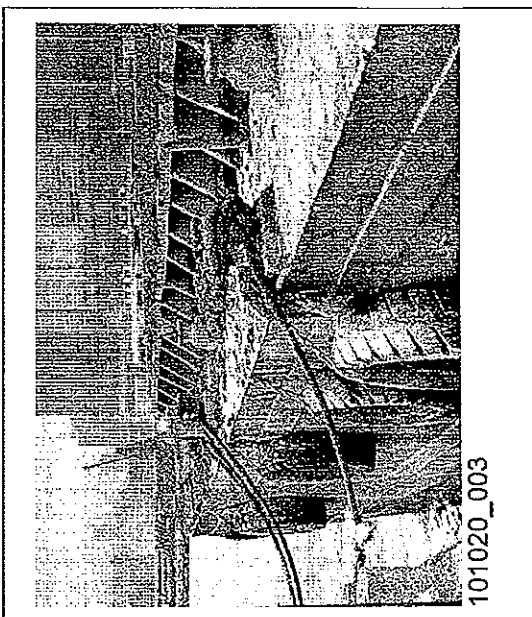
Remark

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

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

Photos



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

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	28/10/10	Inspected by	RE Nelson	IEC	Jin	Contractor	John Lee	ET	Lede Lan
Time	14:15	Name	Nelson Chan	Justin Ye		Justin Ye			Lede Lan

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy : 24°C
 Condition : Calm / Light Breeze / Strong : High / Moderate / Low
 Wind

Environmental Checklist

Fugitive Dust Emission	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓			
The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓			
The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓			
Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit.	✓			
The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.			✓	
Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓			
The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓			
All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓			
Vehicle speed should be limited to 10 kph except on completed access roads.	✓			
Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	✓			✓
The public road around the site entrance should be kept clean and free from dust.	✓			
Vehicle and equipment should be switched off while not in use.	✓			
All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
Open burning should be prohibited.	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
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 construction 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. 94MSD/08
 Laying of Western Cross Harbour Main and Associated Land Means
 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 W CZs. 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 W CZ 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.	✓			
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	✓			

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

Implementation Stages*	Remark		
	Yes	No	Not Obs
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.	√		

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

Summary of the Weekly Site Inspection:

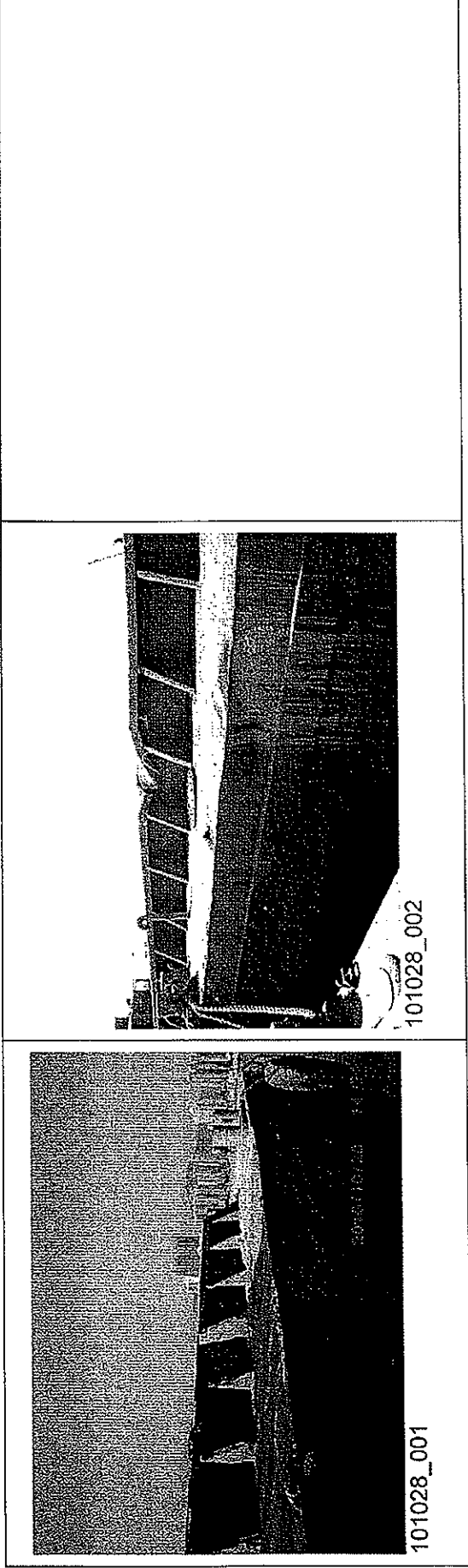
Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Follow up action to item 3 on 20/10/10, no dredged materials were noted on the deck of the barge at Portion I.	Closed	---	101028_001 & 101028_002	----

Remark

Inspected by	Name Linda Law	Signature <i>Linda Law</i>	Date 28 October 2010

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

Photos





Appendix G

Implementation Schedule of Mitigation Measures



Environmental Mitigation Implementation Schedule

	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
Environmental Protection Measures				
Air Quality				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	√		
▪ Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	All areas	√		
▪ The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	All areas	√		
▪ The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	All areas	√		
▪ Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;	All areas	√		
▪ The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.	Site Egress			√
▪ Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	All haul roads	√		
▪ The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	All areas	√		
▪ All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	All areas	√		
▪ Vehicle speed should be limited to 10 kph except on completed access roads.	All areas	√		
▪ Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	All areas	√		
▪ The public road around the site entrance should be kept clean and free from dust.	All areas	√		
▪ Vehicle and equipment should be switched off while not in use.	All areas	√		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√		
▪ Open burning should be prohibited.	All areas	√		
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	All areas	√		
▪ 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.	All areas	√		
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√		
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	√		
▪ 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.	All areas	√		
▪ 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.	All areas	√		



		Location		Implementation Status		
				Implemented	Partially Implemented	Not Implemented
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 silty 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 W CZs		All areas	√			



		Location	Implementation Status		
			Implemented	Partially Implemented	Not Implemented
Environmental Protection Measures					
Water Quality					
Mitigation Measures for other Construction Activities					
▪	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.	All areas	√		
▪	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.	All areas	√		
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	All areas	√		
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.	All areas			√
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.	All areas			√
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed.	All areas	√		
▪	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					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	All areas	√		
▪	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.	All areas	√		
▪	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					
▪	General refuse should be stored in enclosed bins or compaction units separate from C&D material.	All areas	√		
▪	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	All areas	√		
▪	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)					
▪	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	Marine	√		
▪	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	Marine	√		
▪	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					
▪	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	All areas	√		
▪	Training of site personnel in proper waste management and chemical handling procedures	All areas	√		
▪	Provision of sufficient waste disposal points and regular collection of waste	All areas	√		



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

Environmental Protection Measures		Location	Implementation Status		
			Implemented	Partially implemented	Not Implemented
Waste Management					
Good Site Practices					
▪	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.	All areas	√		
▪	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	All areas	√		
Waste Reduction Measures					
▪	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	All areas	√		
▪	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	All areas	√		
▪	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	All areas	√		
▪	Proper storage and site practices to minimise the potential for damage or contamination of construction materials	All areas	√		
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	All areas	√		
Marine Ecology					
▪	Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	Marine	√		
▪	Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	Marine	√		
▪	Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	Marine	√		
▪	Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	Marine	√		
Good Site Practices					
▪	The Environmental Permit should be displaced conspicuously on site.	All areas	√		
▪	Construction noise permits should be posted at site entrance or available for site inspection.	All areas	√		
▪	Chemical storage area provided with lock and located on sealed areas.	All areas	√		
▪	All chemicals should be placed at the banded area with adequate bund capacity (>110% of largest tank).	All areas	√	√	
▪	Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	√		
▪	All generators, fuel and oil storage are within bundle areas.	All areas	√		
▪	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	All areas	√		
▪	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.	All areas	√	√	



Appendix H

Site General Layout plan

NOTES :
 1. THE DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NO. 241239/0/001 TO 004.
 LEGEND :
 PROPOSED FRESH WATER MAIN
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 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

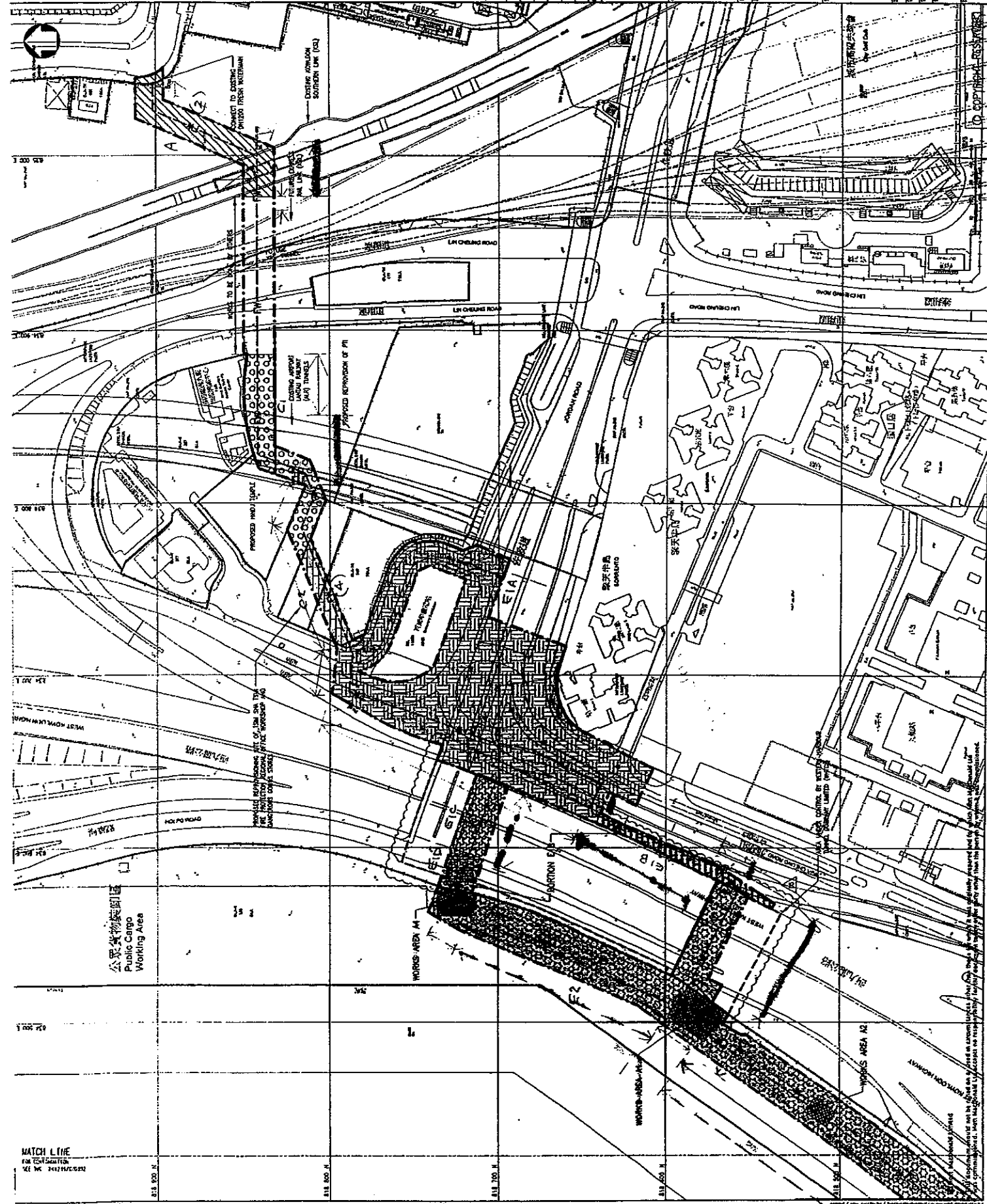
9 / WS / 0/08

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

POSSESSION OF SITE
 (SHEET 1 OF 5)

Scale	1:1000	Drawn by	241239	Checked by	
Date	01/11/08	Project No.	241239	Drawn by	
		Scale	1:1000	Drawn by	
		Date	01/11/08	Drawn by	
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		Date	01/11/08	Drawn by	

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		Date	01/11/08	Drawn by	
		Scale	1:1000	Drawn by	
		Date	01/11/08	Drawn by	



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 FOR CONTINUATION
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NOTES

1. THIS DRAWING SHALL BE BASED ON CORRELATION WITH DRAWING NOS. 241239/6/0301 AND 043 TO 0403.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/6/0301.

DATE OF ISSUE	21/11/02
DATE OF REVISION	
NO. OF SHEETS	1
TOTAL NO. OF SHEETS	1
PROJECT NO.	97/WSD/08
PROJECT NAME	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

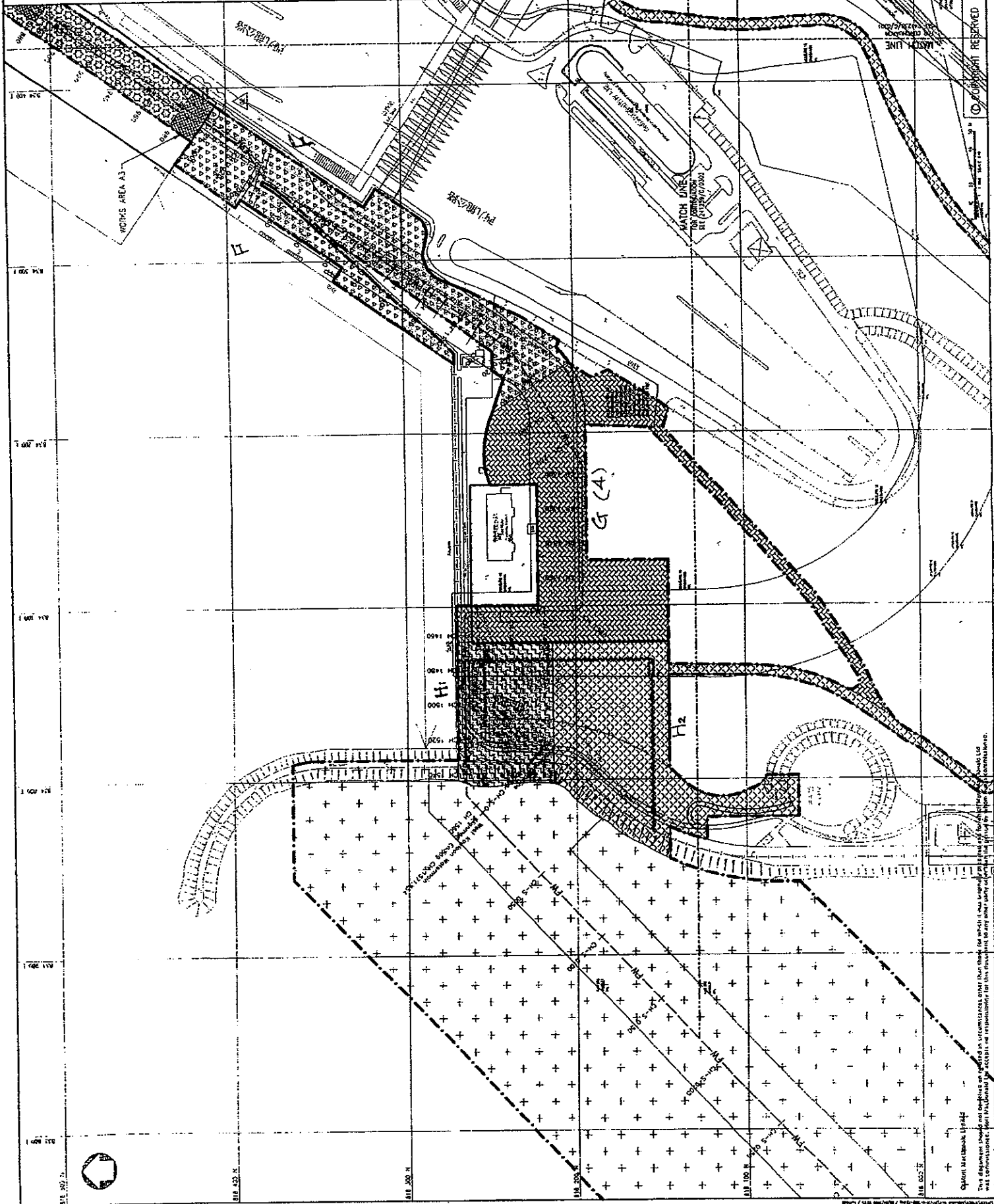
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PROJECT NO. 97/WSD/08
 LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 2 OF 5)

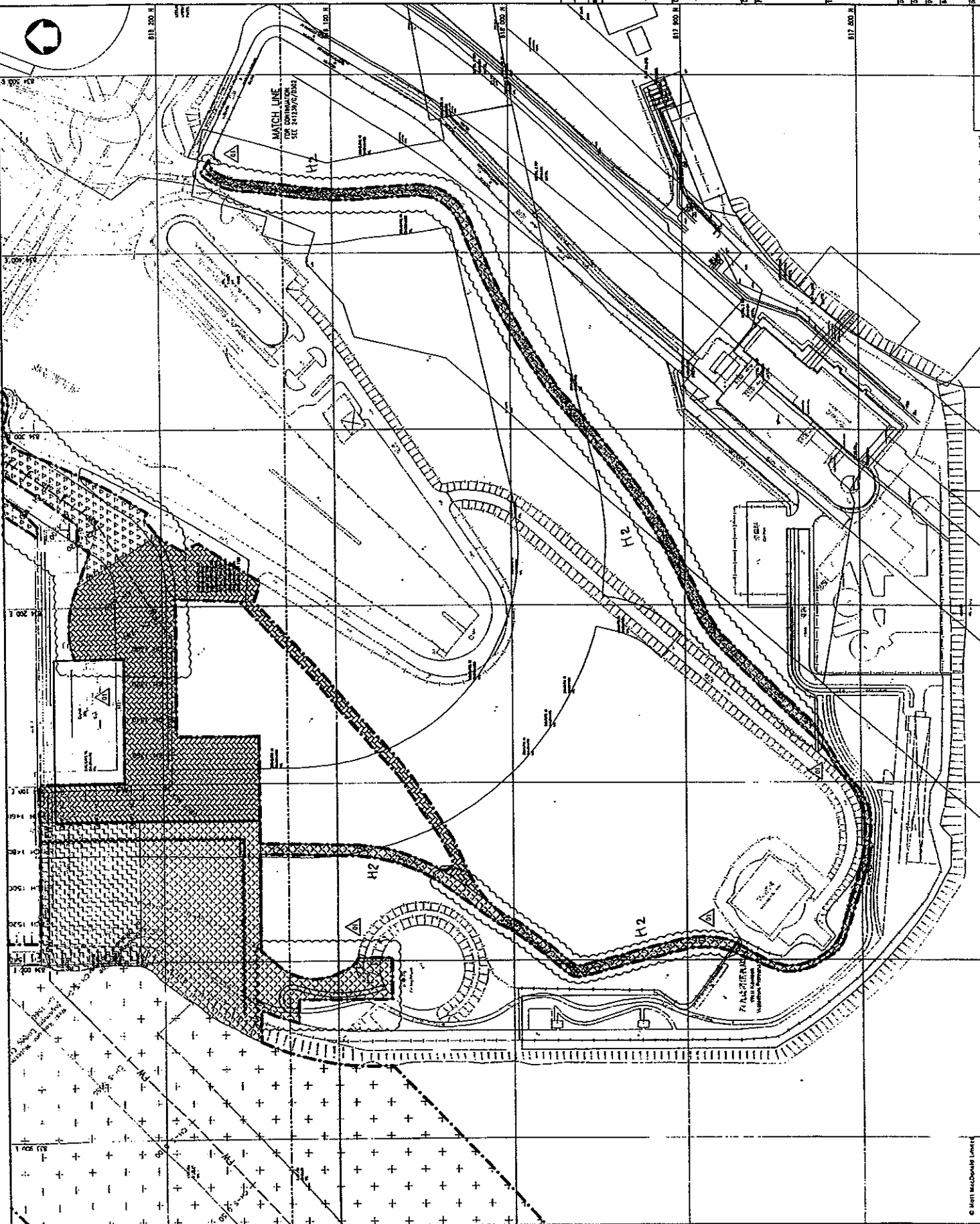
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PROJECT NAME	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN
SCALE	1:1000
DATE	21/11/02
DESIGNED BY	041
CHECKED BY	041
APPROVED BY	
DATE OF ISSUE	21/11/02
DATE OF REVISION	
NO. OF SHEETS	1
TOTAL NO. OF SHEETS	1



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NOTES :

1. THE DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 941238/03/01 TO 03/02 AND 03/03 TO 03/05.
2. THE LEGEND SHALL REFER TO DRAWING NO. 941238/03/01.



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

97/WS/08
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 3 OF 5)

Scale	1:1000 001	1:1000 002	1:1000 003	1:1000 004	1:1000 005	1:1000 006	1:1000 007	1:1000 008	1:1000 009	1:1000 010	1:1000 011	1:1000 012	1:1000 013	1:1000 014	1:1000 015	1:1000 016	1:1000 017	1:1000 018	1:1000 019	1:1000 020	1:1000 021	1:1000 022	1:1000 023	1:1000 024	1:1000 025	1:1000 026	1:1000 027	1:1000 028	1:1000 029	1:1000 030	1:1000 031	1:1000 032	1:1000 033	1:1000 034	1:1000 035	1:1000 036	1:1000 037	1:1000 038	1:1000 039	1:1000 040	1:1000 041	1:1000 042	1:1000 043	1:1000 044	1:1000 045	1:1000 046	1:1000 047	1:1000 048	1:1000 049	1:1000 050	1:1000 051	1:1000 052	1:1000 053	1:1000 054	1:1000 055	1:1000 056	1:1000 057	1:1000 058	1:1000 059	1:1000 060	1:1000 061	1:1000 062	1:1000 063	1:1000 064	1:1000 065	1:1000 066	1:1000 067	1:1000 068	1:1000 069	1:1000 070	1:1000 071	1:1000 072	1:1000 073	1:1000 074	1:1000 075	1:1000 076	1:1000 077	1:1000 078	1:1000 079	1:1000 080	1:1000 081	1:1000 082	1:1000 083	1:1000 084	1:1000 085	1:1000 086	1:1000 087	1:1000 088	1:1000 089	1:1000 090	1:1000 091	1:1000 092	1:1000 093	1:1000 094	1:1000 095	1:1000 096	1:1000 097	1:1000 098	1:1000 099	1:1000 100
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941238/03/033

NOTES :

1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 241239/G/0301 TO 0303 AND 0304.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.

NO.	DATE	BY	REVISION
01	10/10/08	PL	ISSUE FOR TENDER
02	02/02/09	PL	ISSUE FOR TENDER
03	02/02/09	PL	ISSUE FOR TENDER
04	02/02/09	PL	ISSUE FOR TENDER

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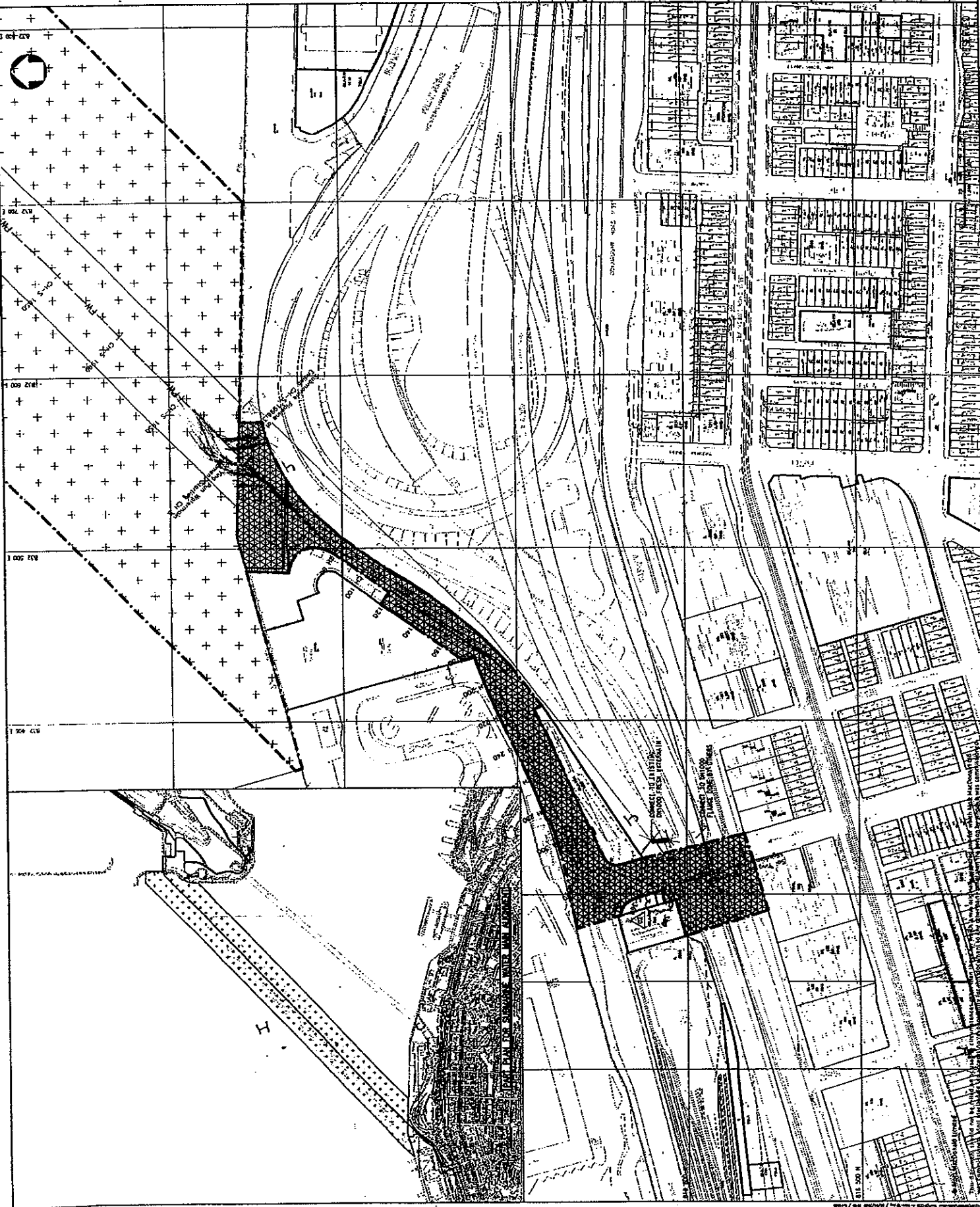
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 WATER SUPPLIES DEPARTMENT

9/MSD/08

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

POSSESSION OF SITE
 (SHEET 4 OF 5)

SCALE	1:1000
DATE	241239
PROJECT	241239
NO.	02
REV.	01
DATE	241239
BY	PL
CHECKED	PL
APPROVED	PL
DATE	241239



NOTES

1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. 241239/03001 TO 03004.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/03001.

01	FEB 09	4	REVISION	NO. 2	1/192
02	JUN 09	PL	DESIGN APPROVAL	NO. 1	1/192
03	DEC 08	PL	ISSUE FOR TENDER	1/1	1/192
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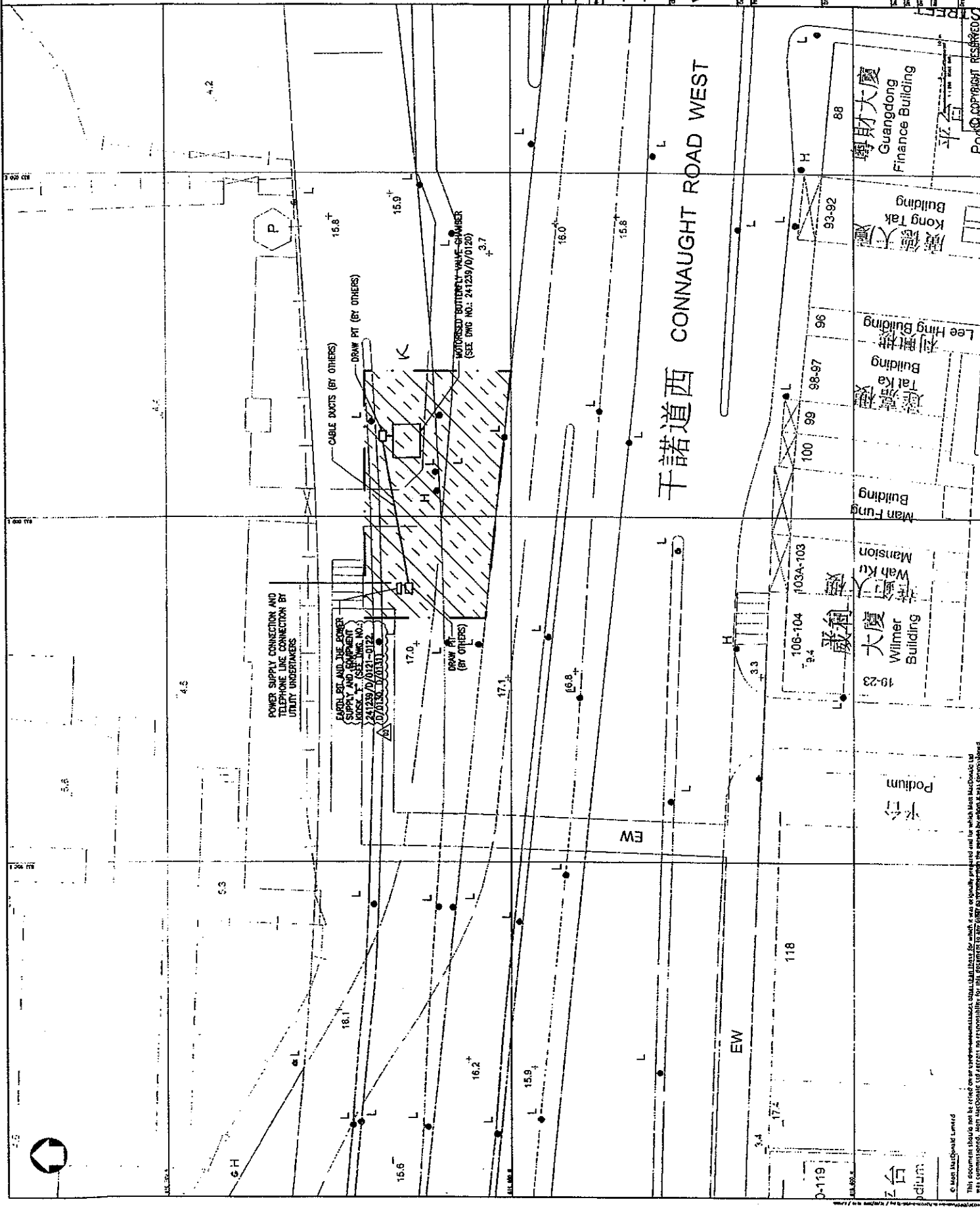
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WATER SUPPLIES DEPARTMENT

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

POSSESSION OF SITE (SHEET 5 OF 5)

Drawn	CHK	REV	DATE	BY
Scale	1:250	0A1	241239	TEN
Project No.	241239	03001	03001	02



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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)
October 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					Holiday	WQM Mid-Ebb 06:30 - 10:45 Mid-Flood 13:00 - 17:30 NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (Sai Ying Pun)
NM Holiday (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon)	03-Oct NM (SYP-Daytime)	04-Oct WQM Mid-Ebb 07:30 - 12:00 Mid-Flood 14:00 - 18:30 SI	05-Oct WQM Mid-Ebb 09:30 - 14:00 Mid-Flood 15:00 - 19:30	06-Oct WQM Mid-Ebb 09:30 - 14:00 Mid-Flood 15:00 - 19:30	07-Oct NM (WK-Daytime)	08-Oct WQM Mid-Flood 11:00 - 15:15 Mid-Ebb 16:45 - 21:00 NM Evening-time (West Kowloon) (Sai Ying Pun)
NM Holiday (West Kowloon) (Sai Ying Pun)	10-Oct NM (SYP-Daytime)	11-Oct WQM Mid-Flood 07:30 - 12:00 Mid-Ebb 14:00 - 17:30 SI	12-Oct WQM Mid-Ebb 05:00 - 09:00 Mid-Flood 11:00 - 15:30	13-Oct NM (WK-Daytime)	14-Oct WQM Mid-Ebb 05:00 - 09:00 Mid-Flood 11:00 - 15:30	15-Oct Holiday NM Night-time (Sai Ying Pun) NM Holiday (West Kowloon) (Sai Ying Pun)
NM Holiday (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon)	17-Oct NM (SYP-Daytime)	18-Oct WQM Mid-Ebb 08:30 - 13:00 Mid-Flood 14:30 - 19:00	19-Oct WQM Mid-Ebb 08:30 - 13:00 Mid-Flood 14:30 - 19:00 WQM cancelled due to bad weather (Typhoon Signal No.3)	20-Oct NM (SYP-Daytime)	21-Oct WQM Mid-Ebb 08:30 - 13:00 Mid-Flood 14:30 - 19:00 WQM cancelled due to bad weather (Typhoon Signal No.3)	22-Oct WQM Mid-Ebb 10:00 - 14:30 Mid-Flood 16:00 - 20:30 NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (Sai Ying Pun)
NM Holiday (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon)	24-Oct NM (SYP-Daytime)	25-Oct WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 12:00 - 16:00	26-Oct WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 13:00 - 17:00	27-Oct NM (WK-Daytime) NM (SYP-Daytime)	28-Oct WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 13:00 - 17:00 SI	29-Oct WQM Mid-Ebb 05:00 - 09:00 Mid-Flood 11:00 - 15:30 NM Evening-time (West Kowloon) (Sai Ying Pun)
NM Holiday (West Kowloon) (Sai Ying Pun)	31-Oct NM (SYP-Daytime)					

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)
November 2010**

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



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 / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
30-Apr-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
04-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
31-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
04-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-Jun-2010	1,400	2	1,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-Jun-2010	1,400	2	2,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-Jun-2010	2,100	3	4,900	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-Jun-2010	2,800	4	7,700	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-Jun-2010	2,100	3	9,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-Jun-2010	2,700	4	12,500	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-Jun-2010	2,800	4	15,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-Jun-2010	2,100	3	17,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-Jun-2010	2,800	4	20,200	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-Jun-2010	2,100	3	22,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-Jun-2010	2,100	3	24,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-Jun-2010	2,100	3	26,500	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-Jun-2010	2,100	3	28,600	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-Jun-2010	700	1	29,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-Jun-2010	2,100	3	31,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-Jun-2010	1,400	2	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-Jun-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground

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 / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
04-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-Jul-2010	700	1	33,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
31-Jul-2010	1,400	2	34,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
01-Aug-2010	2,100	3	37,000	EP/MD/11-039	East Ninepin Mud Disposal Ground
02-Aug-2010	1,400	2	38,400	EP/MD/11-039	East Ninepin Mud Disposal Ground
03-Aug-2010	700	1	39,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
04-Aug-2010	700	1	39,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
05-Aug-2010	700	1	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
06-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
07-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
08-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
09-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
10-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
11-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
12-Aug-2010	1,400	2	41,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
13-Aug-2010	1,400	2	43,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
14-Aug-2010	2,100	3	45,400	EP/MD/11-039	East Ninepin Mud Disposal Ground
15-Aug-2010	2,100	3	47,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
16-Aug-2010	2,100	3	49,600	EP/MD/11-039	East Ninepin Mud Disposal Ground
17-Aug-2010	700	1	50,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
18-Aug-2010	1,400	2	51,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
19-Aug-2010	1,400	2	53,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
20-Aug-2010	2,100	3	55,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
21-Aug-2010	1,400	2	56,600	EP/MD/11-039	East Ninepin Mud Disposal Ground
22-Aug-2010	700	1	57,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
23-Aug-2010	0	0	57,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
24-Aug-2010	1,400	2	58,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
25-Aug-2010	1,400	2	60,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
26-Aug-2010	2,100	3	62,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
27-Aug-2010	2,100	3	64,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
28-Aug-2010	0	0	64,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
29-Aug-2010	1,400	2	65,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
30-Aug-2010	1,400	2	67,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
31-Aug-2010	2,100	3	69,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
01-Sep-2010	1,400	2	70,600	EP/MD/11-039	East Ninepin Mud Disposal Ground
02-Sep-2010	2,100	3	72,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
03-Sep-2010	2,100	3	74,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
04-Sep-2010	2,800	4	77,600	EP/MD/11-039	East Ninepin Mud Disposal Ground

Wo Hing - Penta-Ocean Joint Venture					
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West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
05-Sep-2010	2,100	3	79,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
06-Sep-2010	1,400	2	81,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
07-Sep-2010	0	0	81,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
08-Sep-2010	700	1	81,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
09-Sep-2010	1,400	2	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
10-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
11-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
12-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
13-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
14-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
15-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
16-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
17-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
18-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
19-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
20-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
21-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
22-Sep-2010	700	1	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
23-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
24-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
25-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
26-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
27-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
28-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
29-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
30-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
01-Oct-2010	500	1	84,400	EP/MD/11-069	South Cheung Chau
02-Oct-2010	500	1	84,900	EP/MD/11-069	South Cheung Chau
03-Oct-2010	1,000	2	85,900	EP/MD/11-069	South Cheung Chau
04-Oct-2010	1,000	2	86,900	EP/MD/11-069	South Cheung Chau
05-Oct-2010	500	1	87,400	EP/MD/11-069	South Cheung Chau
06-Oct-2010	1,000	2	88,400	EP/MD/11-069	South Cheung Chau
07-Oct-2010	1,500	3	89,900	EP/MD/11-069	South Cheung Chau
08-Oct-2010	1,000	2	90,900	EP/MD/11-069	South Cheung Chau
09-Oct-2010	500	1	91,400	EP/MD/11-069	South Cheung Chau
10-Oct-2010	0	0	91,400	EP/MD/11-069	South Cheung Chau
11-Oct-2010	1,500	3	92,900	EP/MD/11-069	South Cheung Chau
12-Oct-2010	1,000	2	93,900	EP/MD/11-069	South Cheung Chau
13-Oct-2010	2,000	4	95,900	EP/MD/11-069	South Cheung Chau
14-Oct-2010	2,000	4	97,900	EP/MD/11-069	South Cheung Chau
15-Oct-2010	1,500	3	99,400	EP/MD/11-069	South Cheung Chau
16-Oct-2010	2,000	4	101,400	EP/MD/11-069	South Cheung Chau
17-Oct-2010	2,000	4	103,400	EP/MD/11-069	South Cheung Chau
18-Oct-2010	2,000	4	105,400	EP/MD/11-069	South Cheung Chau
19-Oct-2010	1,500	3	106,900	EP/MD/11-069	South Cheung Chau
20-Oct-2010	1,000	2	107,900	EP/MD/11-069	South Cheung Chau
21-Oct-2010	0	0	107,900	EP/MD/11-069	South Cheung Chau
22-Oct-2010	0	0	107,900	EP/MD/11-069	South Cheung Chau
23-Oct-2010	500	1	108,400	EP/MD/11-069	South Cheung Chau
24-Oct-2010	2,000	4	110,400	EP/MD/11-069	South Cheung Chau
25-Oct-2010	1,500	3	111,900	EP/MD/11-069	South Cheung Chau
26-Oct-2010	1,000	2	112,900	EP/MD/11-069	South Cheung Chau
27-Oct-2010	1,000	2	113,900	EP/MD/11-069	South Cheung Chau
28-Oct-2010	0	0	113,900	EP/MD/11-069	South Cheung Chau
29-Oct-2010	1,000	2	114,900	EP/MD/11-069	South Cheung Chau
30-Oct-2010	500	1	115,400	EP/MD/11-069	South Cheung Chau
31-Oct-2010	1,000	2	116,400	EP/MD/11-069	South Cheung Chau
TOTAL =	116,400	185			

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Summary of Dumping Qty. of Type 2 Marine Sediment				
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.
	(bulk volume)		(bulk volume)	
05-May-2010	440	1	440	EP/MD/10-086
06-May-2010	1,280	3	1,720	EP/MD/10-086
07-May-2010	0	0	1,720	EP/MD/10-086
08-May-2010	0	0	1,720	EP/MD/10-086
09-May-2010	1,400	2	3,120	EP/MD/10-086
10-May-2010	1,400	2	4,520	EP/MD/10-086
11-May-2010	1,300	2	5,820	EP/MD/10-086
12-May-2010	1,800	3	7,620	EP/MD/10-086
13-May-2010	1,200	2	8,820	EP/MD/10-086
14-May-2010	0	0	8,820	EP/MD/10-086
15-May-2010	0	0	8,820	EP/MD/10-086
16-May-2010	600	1	9,420	EP/MD/10-086
17-May-2010	1,200	2	10,620	EP/MD/10-086
18-May-2010	700	1	11,320	EP/MD/10-086
19-May-2010	2,000	3	13,320	EP/MD/10-086
20-May-2010	1,400	2	14,720	EP/MD/10-086
21-May-2010	1,400	2	16,120	EP/MD/10-086
22-May-2010	2,100	3	18,220	EP/MD/10-086
23-May-2010	1,400	2	19,620	EP/MD/10-086
24-May-2010	1,400	2	21,020	EP/MD/10-086
25-May-2010	1,300	2	22,320	EP/MD/10-086
26-May-2010	1,400	2	23,720	EP/MD/10-086
27-May-2010	1,300	2	25,020	EP/MD/10-086
28-May-2010	1,400	2	26,420	EP/MD/10-086
29-May-2010	600	1	27,020	EP/MD/10-086
30-May-2010	2,100	3	29,120	EP/MD/11-012
31-May-2010	700	1	29,820	EP/MD/11-012
01-Jun-2010	1,900	3	31,720	EP/MD/11-012
02-Jun-2010	1,220	2	32,940	EP/MD/11-012
03-Jun-2010	1,300	2	34,240	EP/MD/11-012
04-Jun-2010	1,200	2	35,440	EP/MD/11-012
05-Jun-2010	1,400	2	36,840	EP/MD/11-012
06-Jun-2010	600	1	37,440	EP/MD/11-012
07-Jun-2010	0	0	37,440	EP/MD/11-012
08-Jun-2010	500	1	37,940	EP/MD/11-012
09-Jun-2010	0	0	37,940	EP/MD/11-012
10-Jun-2010	600	1	38,540	EP/MD/11-012
11-Jun-2010	1,200	2	39,740	EP/MD/11-012
12-Jun-2010	1,400	2	41,140	EP/MD/11-012
13-Jun-2010	1,400	2	42,540	EP/MD/11-012
14-Jun-2010	0	0	42,540	EP/MD/11-012
15-Jun-2010	0	0	42,540	EP/MD/11-012
16-Jun-2010	0	0	42,540	EP/MD/11-012
17-Jun-2010	0	0	42,540	EP/MD/11-012
18-Jun-2010	0	0	42,540	EP/MD/11-012
19-Jun-2010	0	0	42,540	EP/MD/11-012

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Summary of Dumping Qty. of Type 2 Marine Sediment				
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.
	(bulk volume)		(bulk volume)	
20-Jun-2010	0	0	42,540	EP/MD/11-012
21-Jun-2010	0	0	42,540	EP/MD/11-012
22-Jun-2010	0	0	42,540	EP/MD/11-012
23-Jun-2010	0	0	42,540	EP/MD/11-012
24-Jun-2010	0	0	42,540	EP/MD/11-012
25-Jun-2010	0	0	42,540	EP/MD/11-012
26-Jun-2010	0	0	42,540	EP/MD/11-012
27-Jun-2010	0	0	42,540	EP/MD/11-012
28-Jun-2010	0	0	42,540	EP/MD/11-012
29-Jun-2010	0	0	42,540	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	52,640	EP/MD/11-024
05-Jul-2010	2,850	4	55,490	EP/MD/11-024
06-Jul-2010	1,400	2	56,890	EP/MD/11-024
07-Jul-2010	1,400	2	58,290	EP/MD/11-024
08-Jul-2010	2,700	4	60,990	EP/MD/11-024
09-Jul-2010	2,100	3	63,090	EP/MD/11-024
10-Jul-2010	2,100	3	65,190	EP/MD/11-024
11-Jul-2010	1,400	2	66,590	EP/MD/11-024
12-Jul-2010	2,150	3	68,740	EP/MD/11-024
13-Jul-2010	2,100	3	70,840	EP/MD/11-024
14-Jul-2010	700	1	71,540	EP/MD/11-024
15-Jul-2010	2,100	3	73,640	EP/MD/11-024
16-Jul-2010	2,100	3	75,740	EP/MD/11-024
17-Jul-2010	700	1	76,440	EP/MD/11-024
18-Jul-2010	700	1	77,140	EP/MD/11-024
19-Jul-2010	2,100	3	79,240	EP/MD/11-024
20-Jul-2010	2,100	3	81,340	EP/MD/11-024
(18 July 2010)				
21-Jul-2010	700	1	82,040	EP/MD/11-024
22-Jul-2010	600	1	82,640	EP/MD/11-024
23-Jul-2010	1,400	2	84,040	EP/MD/11-024
24-Jul-2010	1,400	2	85,440	EP/MD/11-024
25-Jul-2010	1,400	2	86,840	EP/MD/11-024
26-Jul-2010	1,450	2	88,290	EP/MD/11-024
27-Jul-2010	2,200	3	90,490	EP/MD/11-024
28-Jul-2010	1,450	2	91,940	EP/MD/11-024
29-Jul-2010	1,500	2	93,440	EP/MD/11-024
30-Jul-2010	0	0	93,440	--
31-Jul-2010	0	0	93,440	--
01-Aug-2010	0	0	93,440	--
02-Aug-2010	0	0	93,440	--

Wo Hing - Penta-Ocean Joint Venture				
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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.	Permit No.
	(bulk volume)		(bulk volume)	
03-Aug-2010	0	0	93,440	
04-Aug-2010	0	0	93,440	
05-Aug-2010	700	1	94,140	
(Dumped on 06-Aug-10)				
06-Aug-2010	1,500	2	95,640	EP/MD/11-053
07-Aug-2010	700	1	96,340	EP/MD/11-053
08-Aug-2010	2,100	3	98,440	EP/MD/11-053
09-Aug-2010	1,500	2	99,940	EP/MD/11-053
10-Aug-2010	1,500	2	101,440	EP/MD/11-053
11-Aug-2010	700	1	102,140	EP/MD/11-053
12-Aug-2010	0	0	102,140	EP/MD/11-053
13-Aug-2010	0	0	102,140	EP/MD/11-053
14-Aug-2010	0	0	102,140	EP/MD/11-053
15-Aug-2010	0	0	102,140	EP/MD/11-053
16-Aug-2010	0	0	102,140	EP/MD/11-053
17-Aug-2010	0	0	102,140	EP/MD/11-053
18-Aug-2010	0	0	102,140	EP/MD/11-053
19-Aug-2010	0	0	102,140	EP/MD/11-053
20-Aug-2010	0	0	102,140	EP/MD/11-053
21-Aug-2010	0	0	102,140	EP/MD/11-053
22-Aug-2010	0	0	102,140	EP/MD/11-053
23-Aug-2010	0	0	102,140	EP/MD/11-053
24-Aug-2010	0	0	102,140	EP/MD/11-053
25-Aug-2010	0	0	102,140	EP/MD/11-053
26-Aug-2010	0	0	102,140	EP/MD/11-053
27-Aug-2010	0	0	102,140	EP/MD/11-053
28-Aug-2010	1,400	2	103,540	EP/MD/11-053
29-Aug-2010	700	1	104,240	EP/MD/11-053
30-Aug-2010	0	0	104,240	EP/MD/11-053
31-Aug-2010	750	1	104,990	EP/MD/11-053
01-Sep-2010	0	0	104,990	EP/MD/11-053
02-Sep-2010	0	0	104,990	EP/MD/11-053
03-Sep-2010	0	0	104,990	EP/MD/11-053
04-Sep-2010	0	0	104,990	EP/MD/11-053
05-Sep-2010	0	0	104,990	EP/MD/11-053
TOTAL =	104,990	155		

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 Tat 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
			1238	1264	0	-17						
07-05-2010	07:00	19:00	1264	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
			1280	1316	0	+17						
11-05-2010	07:00	23:00	1316	1368	0	+17	19:00	23:00	1348	1368	0	+17
12-05-2010	07:00	23:00	1320	1368	0	-17	19:00	23:00	1348	1368	0	-17
13-05-2010	07:00	23:00	1368	1424	0	-17	19:00	23:00	1400	1424	0	-17
14-05-2010	-	-	-	-	-	-	-	-	-	-	-	-
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
			1416	1432	0	-15.5						
18-05-2010	07:00	23:00	1432	1468	0	+15	19:00	23:00	1452	1468	0	+15
19-05-2010	07:00	23:00	1424	1484	0	-15	19:00	23:00	1476	1484	0	-15
20-05-2010	07:00	23:00	1480	1500	0	+12.7	19:00	22:00	1480	1496	0	+14.1
			1472	1496	0	+14.1						
21-05-2010	07:00	23:00	1496	1536	0	+12.9	19:00	23:00	1496	1516	0	-12.9
			1496	1516	0	-12.9						
22-05-2010	07:00	23:00	1516	1572	0	-14.0	19:00	23:00	1564	1572	0	-14.0
			1536	1540	0	+13.1			1536	1540	0	+13.1
23-05-2010	07:00	23:00	1540	1592	0	+16.6	19:00	23:00	1580	1592	0	+16.6
24-05-2010	07:00	23:00	1572	1620	0	-17	19:00	23:00	1592	1620	0	-17
25-05-2010	07:00	23:00	1620	1656	0	+17	19:00	23:00	1608	1636	0	-17
			1608	1636	0	-17						
26-05-2010	07:00	23:00	1636	1660	0	-17	19:00	23:00	1664	1680	0	+17
			1656	1680	0	+17						
27-05-2010	07:00	23:00	1660	1708	0	-17	19:00	23:00	1680	1692	0	+16.8
			1680	1692	0	+16.8						
28-05-2010	07:00	23:00	1692	1712	0	+17	19:00	23:00	1716	1736	0	-16
			1708	1736	0	-16						
29-05-2010	07:00	23:00	1712	1752	0	+16	19:00	23:00	1748	1752	0	+16
			1736	1756	0	-16			1736	1756	0	-16
30-05-2010	07:00	23:00	1856	1800	0	-15	19:00	23:00	1752	1780	0	+16
			1752	1780	0	+16						
31-05-2010	07:00	23:00	1780	1820	0	+15	19:00	23:00	1800	1824	0	-15
			1800	1824	0	-15						
01-06-2010	07:00	23:00	1824	1848	0	-14	19:00	23:00	1820	1844	0	+14
			1820	1844	0	+14						
02-06-2010	07:00	23:00	1844	1876	0	+14	19:00	23:00	1848	1864	0	-14
			1848	1864	0	-14						
03-06-2010	07:00	23:00	1872	1908	0	+13	19:00	19:45	1864	1868	0	-13
			1864	1876	0	-13						
04-06-2010	07:00	23:00	1888	1932	0	-13	19:00	23:00	1868	1932	0	-13
05-06-2010	07:00	23:00	1908	1960	0	+12	19:00	23:00	1944	1960	0	+12
06-06-2010	07:00	23:00	1932	1960	0	-12	19:00	21:00	1960	1970	0	+12
			1960	1970	0	+12						
07-06-2010	07:00	23:00	1960	1970	0	-16	19:00	20:00	1974	1980	0	+12
			1970	1980	0	+12						
08-06-2010	07:00	14:40	1250	1300	0	+19	-	-	-	-	-	-
09-06-2010	07:00	23:00	-	-	-	-	-	-	-	-	-	-
10-06-2010	07:00	23:00	1300	1390	+19	-19	19:00	23:00	1300	1390	+4	+19
11-06-2010	07:00	23:00	1390	1530	+16	-16	19:00	23:00	1490	1530	+16	-16
12-06-2010	07:00	23:00	1530	1665	+18	-18	19:00	23:00	1630	1665	+18	-18
13-06-2010	07:00	23:00	1665	1780	+18	-18	19:00	23:00	1750	1780	+18	-18
	23:00	07:00	1130	1142	-4	-21	23:00	07:00	1130	1142	-4	-21
14-06-2010	07:00	07:00	1142	1174	-4.7	-20.7	19:00	07:00	1162	1174	-4.7	-20.7
15-06-2010	07:00	07:00	1130	1162	+4.7	+20.7	19:00	07:00	1142	1162	+4.7	+20.7
16-06-2010	07:00	07:00	1162	1214	+4.7	+20.7	19:00	07:00	1182	1214	+4.7	+20.7
17-06-2010	07:00	07:00	1214	1222	+4.7	+20.7						
18-06-2010	07:00	07:00	1174	1210	-4.7	-20.7	19:00	07:00	1186	1210	-4.7	-20.7
19-06-2010	07:00	07:00	1130	1190	+8	-8	19:00	07:00	1158	1190	+8	-8
20-06-2010	07:00	07:00	1190	1238	+8.5	-8.5	19:00	07:00	1214	1238	+8.5	-8.5
			1266	1210	-4.5	-20.5	19:00	07:00	1222	1210	-4.5	-20.5
			1226	1250	+4.5	+20.5			1226	1250	+4.5	+20.5
21-06-2010	07:00	07:00	1250	1282	+5.5	+20.5						
			1238	1150	+8.5	-8.5	19:00	07:00	1262	1150	+8.5	-8.5
22-06-2010	07:00	07:00	1266	1302	-5.5	-20.5	19:00	07:00	1266	1302	-5.5	-20.5
			1262	1298	+8.5	-8.5			1262	1298	+8.5	-8.5
			1150	1162	+8.5	-8.5			1150	1162	+8.5	-8.5
23-06-2010	07:00	07:00	1282	1326	+5.5	+20.5						
			1298	1338	+8.5	-8.5	19:00	07:00	1324	1338	+8.5	-8.5
			1162	1188	+8.5	-8.5			1162	1188	+8.5	-8.5
24-06-2010	07:00	07:00	1346	1358	-5.5	-20.5						
			1338	1364	+7.5	-7.5	19:00	07:00	1350	1364	+7.5	-7.5
			1188	1208	+8.5	-8.5			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
			1362	1366	+5	+20			1362	1366	+5	+20
27-06-2010	07:00	23:00	1326	1448	+7.5	+20.5	19:00	23:00	1400	1448	+7.5	+20.5
			1400	1436	-7.5	-20.5			1400	1436	-7.5	-20.5

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

Predcing Location of GD "Shun Tat 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
28-06-2010	07:00	23:00	1448	1480	+7.5	+20						
			1444	1468	+7.5	-7.5	19:00	23:00	1448	1468	+7.5	-7.5
			1436	1456	-7.5	-20			1436	1456	-7.5	-20
29-06-2010	07:00	23:00	1456	1500	-7.5	-20						
			1468	1500	+7.5	-7.5	19:00	20:00	1496	1500	+7.5	-7.5
			1076	1100	0	-16	23:00	07:00	1076	1100	0	-16
30-06-2010	07:00	07:00	1048	1076	0	-16						
			1064	1100	0	+16	19:00	07:00	1064	1100	0	+16
			1020	1064	0	+16	19:00	07:00	1020	1048	0	+16
01-07-2010	07:00	07:00	1032	1048	0	-16			1032	1036	0	-16
			1000	1032	0	16	19:00	07:00	1000	1008	0	16
			992	1020	0	+16			992	1020	0	+16
03-07-2010	07:00	18:00	968	992	0	+16	-	-				
			944	968	0	+16						
			956	1000	0	-16	19:00	07:00	956	1000	0	-16
05-07-2010	07:00	07:00	944	976	0	-16						
			798	850	0	+17	19:00	07:00	798	832	0	+17
			838	850	0	-17			838	850	0	-17
06-07-2010	07:00	07:00	782	838	0	-17	20:50	07:00	782	826	0	-17
			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						
			696	750	0	-17	19:00	07:00	696	750	0	-17
			666	710	0	+17	19:00	07:00	666	670	0	+17
09-07-2010	07:00	07:00	682	710	0	-17			682	710	0	-17
			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	634	0	+17	19:00	07:00	602	626	0	+17
13-07-2010	07:00	07:00	570	602	0	+17	19:00	07:00	570	598	0	+17
			574	602	0	-17			574	582	0	-17
			558	570	0	+17	21:00	07:00	558	570	0	+17
14-07-2010	07:00	07:00	562	574	0	-17			562	574	0	-17
			546	562	0	-17						
			530	558	0	+17	21:15	07:00	530	558	0	+17
16-07-2010	07:00	07:00	526	546	0	-17	19:00	07:00	526	538	0	-17
			526	536	0	+17			526	530	0	+17
			-	-								
17-07-2010	07:00	19:00	-	-			-	-				
			260	300	0	-17	19:00	23:00	260	276	0	-17
			248	300	0	+17	19:00	21:15	248	256	0	+17
20-07-2010	07:00	23:00	232	260	0	-15						
			224	248	0	+15	19:00	23:00	224	236	0	+15
			216	232	0	-15						
21-07-2010	07:00	19:00	-	-			-	-				
			208	224	0	+15						
			204	224	0	+15	19:00	23:00	204	224	0	+15
24-07-2010	07:00	23:00	176	200	0	-15						
			176	184	0	-15	19:00	20:50	176	184	0	-15
			172	176	0	-15	21:00	23:00	172	176	0	-15
25-07-2010	07:00	23:00	200	204	0	+15	21:00	23:00	200	204	0	+15
			172	200	0	+15						
			172	192	0	+15	19:00	22:40	172	192	0	+15
26-07-2010	07:00	23:00	168	172	0	+15						
			148	172	0	-15						
			152	168	0	+15	19:20	23:00	152	168	0	+15
27-07-2010	07:00	23:00	128	152	0	+15						
			128	136	0	+15	19:00	21:00	128	136	0	+15
			124	128	0	+15	21:45	23:00	124	128	0	+15
28-07-2010	07:00	23:00	124	148	0	-15						
			124	136	0	-15	19:00	20:20	124	136	0	-15
			116	124	0	-15	20:30	23:00	116	124	0	-15
29-07-2010	07:00	23:00	88	116	0	-15						
			88	100	0	-15	19:00	20:45	88	100	0	-15
			1480	1528	+5	+20.5						
30-07-2010	07:00	23:00	1480	1528	+5	+20.5	19:00	22:45	1480	1528	+5	+20.5
			1500	1508	+7.5	-7.5	19:00	22:45	1500	1508	+7.5	-7.5
			1500	1548	-5	-20.5						
31-07-2010	07:00	23:00	1508	1516	+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
01-08-2010	07:00	23:00	1540	1548	+7.5	-7.5	20:30	23:00	1540	1548	7.5	-7.5
			1528	1572	+5	+20.5						
			1548	1568	-5	-20.5						
02-08-2010	07:00	19:00	1548	1556	+7.5	-7.5						
			1556	1576	7.5	-7.5	19:00	23:00	1556	1576	7.5	-7.5
			1572	1608	+5	+20.5						
03-08-2010	07:00	23:00	1576	1596	+7.5	-7.5						
			1568	1620	-5	-20.5						
			1596	1604	-7.5	+7.5	21:10	23:00	1596	1604	-7.5	+7.5
04-08-2010	07:00	23:00	1604	1612	-7.5	+7.5	19:00	21:40	1604	1612	-7.5	+7.5
			1608	1636	+7.5	+20.5						
			112	124	0	+15						
06-08-2010	07:00	23:00	84	112	0	+15	19:00	23:00	84	112	0	+15
			76	84	0	+15	19:00	23:00	76	84	0	+15
			68	76	0	+15			68	76	0	+15

Wo Hing – Penta-Ocean Joint Venture

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

Dredging Location of GD "Shun Tat 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
08-08-2010	07:00	23:00	60	68	0	+15						
			72	88	0	-15						
			56	72	0	-15	19:00	23:00	56	72	0	-15
09-08-2010	07:00	23:00	52	56	0	-15			52	56	0	-15
			36	52	0	-15						
			20	36	0	-15	19:00	23:00	20	36	0	-15
10-08-2010	07:00	19:00	56	60	0	+15			56	60	0	+15
			32	48	0	+15						
			0	32	0	+15	19:00	22:55	0	32	0	+15
11-08-2010	07:00	07:00	0	20	0	-15			0	20	0	-15
			1118	1130	-5	-20	01:30	07:00	1118	1130	-5	-20
			1110	1118	-5	-20						
12-08-2010	07:00	07:00	1122	1130	+7.5	-7.5						
			1110	1122	+7.5	-7.5	19:00	07:00	1110	1122	+7.5	-7.5
			1122	1130	+5	+20			1122	1130	+5	+20
13-08-2010	07:00	07:00	1114	1122	+5	+20						
			1086	1114	+5	+20	19:00	07:00	1086	1114	+5	+20
			1102	1110	+7.5	-7.5						
14-08-2010	07:00	07:00	1098	1110	-5	-20	19:00	21:30	1098	1110	-5	-20
			1078	1086	-5	-20			1078	1086	-5	-20
			1078	1102	+7.5	-7.5	23:30	07:00	1078	1102	+7.5	-7.5
15-08-2010	07:00	07:00	1070	1078	+7.5	-7.5						
			1070	1098	-5	-20	19:00	20:10	1070	1098	-5	-20
			1066	1078	+5	+20	20:20	02:30	1066	1078	+5	+20
16-08-2010	07:00	07:00	1066	1070	+7.5	-7.5			1066	1070	+7.5	-7.5
			1058	1066	+7.5	-7.5	03:25	07:00	1058	1066	+7.5	-7.5
			1026	1070	-5	-17.5						
17-08-2010	07:00	07:00	1046	1058	+7.5	-7.5	21:55	02:30	1046	1058	+7.5	-7.5
			1030	1046	-7.5	+7.5	02:30	07:00	1030	1046	-7.5	+7.5
			1026	1036	-7.5	+7.5						
18-08-2010	07:00	07:00	1038	1066	+5	+17.5	19:00	23:05	1038	1066	+5	+17.5
			1018	1038	+5	+17.5	02:35	07:00	1018	1038	+5	+17.5
			1018	1026	-7.5	+7.5						
19-08-2010	07:00	07:00	986	1018	+5	+17.5	19:00	20:50	986	1018	+5	+17.5
			1006	1026	-5	-17.5	20:55	02:50	1006	1026	-5	-17.5
			1010	1018	-7.5	+7.5			1010	1018	-7.5	+7.5
20-08-2010	07:00	07:00	1002	1010	-7.5	+7.5	03:25	06:00	1002	1010	-7.5	+7.5
			994	1002	+7.5	-7.5						
			978	994	+7.5	-7.5	19:00	07:00	978	994	+7.5	-7.5
21-08-2010	07:00	07:00	966	1006	-5	-17.5			966	1006	-5	-17.5
			958	986	+5	+17.5						
			970	978	+7.5	-7.5						
22-08-2010	07:00	07:00	950	970	+7.5	-7.5	19:00	07:00	950	970	+7.5	-7.5
			942	950	+7.5	-7.5			942	950	+7.5	-7.5
			938	942	+7.5	-7.5						
23-08-2010	07:00	07:00	942	966	-5	-17.5	19:00	01:35	942	966	-5	-17.5
			938	958	+5	+17.5			938	958	+5	+17.5
			-	-	-	-						
24-08-2010	07:00	07:00	628	640	+7.5	-7.5						
			612	628	+7.5	-7.5	21:10	02:15	612	628	+7.5	-7.5
			596	620	+7.5	-7.5						
25-08-2010	07:00	07:00	580	596	+7.5	-7.5	22:10	03:15	572	596	+7.5	-7.5
			572	580	+7.5	-7.5	03:35	07:00	572	580	+7.5	-7.5
			552	572	+7.5	-7.5						
26-08-2010	07:00	07:00	536	552	+7.5	-7.5	19:55	01:50	536	552	+7.5	-7.5
			528	536	+7.5	-7.5	02:30	07:00	528	536	+7.5	-7.5
			520	528	+7.5	-7.5						
27-08-2010	07:00	07:00	564	572	-20	-5						
			588	620	+7.5	-7.5	19:00	00:50	588	620	+7.5	-7.5
			564	588	+7.5	-7.5						
28-08-2010	07:00	07:00	540	564	+7.5	-7.5	00:00	07:00	540	564	+7.5	-7.5
			552	564	-5	-20			552	564	-5	-20
			520	552	-5	-20						
29-08-2010	07:00	07:00	564	580	+5	+20						
			520	564	+5	+20	19:00	22:20	520	564	+5	+20
			512	520	-7	+7	22:25	07:00	512	520	-7	+7
30-08-2010	07:00	07:00	508	512	-7	+7			508	512	-7	+7
			500	508	-7	-5						
			850	870	0	+17.5	19:00	00:50	850	870	0	+17.5
31-08-2010	07:00	07:00	850	870	0	-17.5			850	870	0	-17.5
			914	922	+7.5	-7.5	01:00	06:00	914	922	+7.5	-7.5
			914	938	+5	+17.5	19:00	07:00	914	938	+5	+17.5
01-09-2010	07:00	07:00	910	914	+5	+17.5			910	914	+5	+17.5
			918	938	+7.5	-7.5			918	938	+7.5	-7.5
			926	938	-5	-17.5			926	938	-5	-17.5
02-09-2010	07:00	07:00	910	926	-5	-17.5	19:00	21:15	910	926	-5	-17.5
			902	918	+7.5	-7.5	22:35	03:45	902	918	+7.5	-7.5
			902	914	+5	-17.5	05:05	07:00	902	914	+5	-17.5
03-09-2010	07:00	07:00	878	902	+5	+17.5						
			902	910	-5	-17.5						
			882	902	-5	-17.5	19:35	01:15	882	902	-5	-17.5
04-09-2010	07:00	07:00	894	902	+7.5	-7.5	04:25	07:00	894	902	+7.5	-7.5
			870	894	+7.5	-7.5						
			850	878	+5	+17.5	19:35	07:00	850	878	+5	+17.5
04-09-2010	07:00	07:00	858	882	-5	-17.5			858	882	-5	-17.5
			846	858	-5	-17.5						
			854	870	+7.5	-7.5	19:00	07:00	854	870	+7.5	-7.5

Wo Hing – Penta-Ocean Joint Venture

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

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

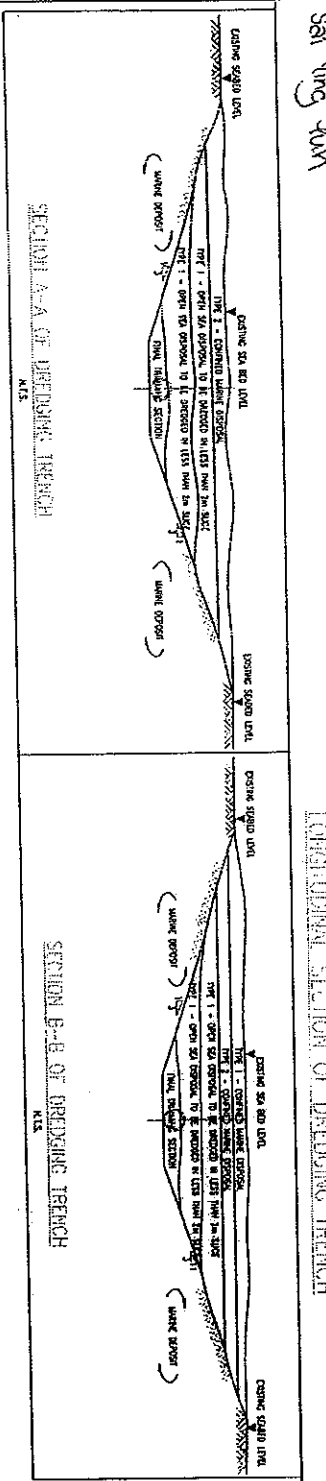
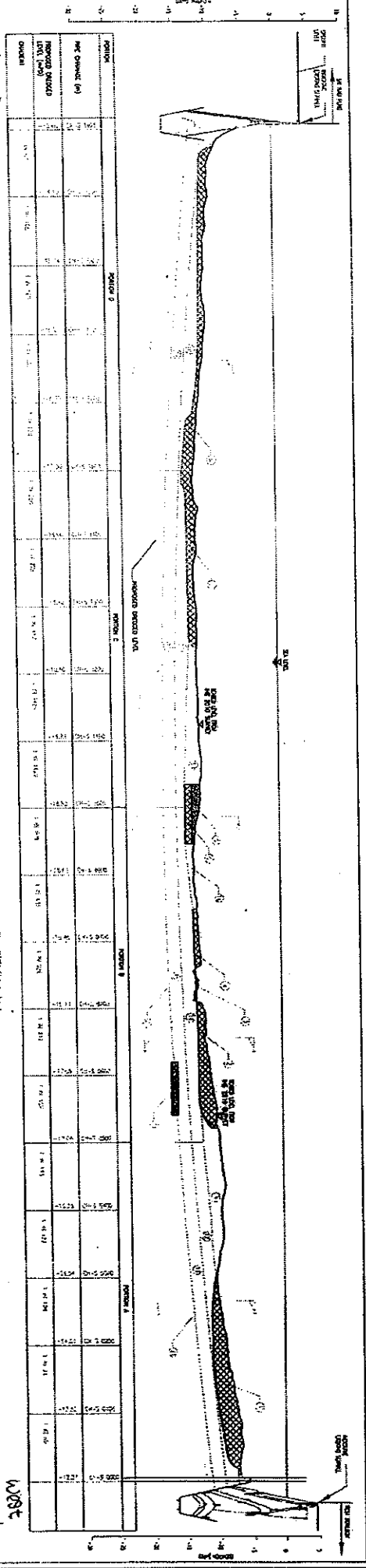
Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)							
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to		
05-09-2010	07:00	06:00	822	846	-5	-17.5			822	846	-5	-17.5		
			834	850	+5	+17.5			834	850	+5	+17.5		
			822	834	+5	+17.5								
			834	854	+7.5	-7.5			19:00	06:00	834	854	+7.5	-7.5
			814	834	+7.5	-7.5					814	834	+7.5	-7.5
06-09-2010	07:00	07:00	798	822	-5	-17.5			798	822	-5	-17.5		
			810	822	+5	+17.5								
			810	814	+5	+17.5			19:00	07:00	810	814	+5	+17.5
			794	814	+7.5	-7.5					794	814	+7.5	-7.5
			778	794	+7.5	-7.5					778	794	+7.5	-7.5
07-09-2010	07:00	23:00	778	798	-5	-17.5			778	798	-5	-17.5		
			766	778	+7.5	-7.5								
			778	798	+5	+17.5			19:00	20:55	778	798	+5	+17.5
08-09-2010	07:00	19:00	-	-			-	-						
09-09-2010	07:00	19:00	-	-			-	-						
10-09-2010	07:00	19:00	-	-			-	-						
11-09-2010	07:00	19:00	-	-			-	-						
12-09-2010	07:00	19:00	-	-			-	-						
13-09-2010	07:00	19:00	-	-			-	-						
14-09-2010	07:00	19:00	-	-			-	-						
15-09-2010	07:00	19:00	-	-			-	-						
16-09-2010	07:00	19:00	-	-			-	-						
17-09-2010	07:00	19:00	-	-			-	-						
18-09-2010	07:00	19:00	-	-			-	-						
19-09-2010	07:00	19:00	-	-			-	-						
20-09-2010	07:00	19:00	-	-			-	-						
21-09-2010	07:00	07:00	444	452	+7.5	-7.5	20:30	04:30	444	452	+7.5	-7.5		
22-09-2010	07:00	19:00	-	-			-	-						
23-09-2010	07:00	19:00	-	-			-	-						
24-09-2010	07:00	19:00	-	-			-	-						
25-09-2010	07:00	19:00	-	-			-	-						
26-09-2010	07:00	19:00	-	-			-	-						
27-09-2010	07:00	23:00	440	444	+7.5	-7.5	20:35	21:00	440	444	+7.5	-7.5		
28-09-2010	07:00	19:00	-	-			-	-						
29-09-2010	07:00	23:00	432	444	+7.5	-7.5	19:00	23:00	432	444	+7.5	-7.5		
30-09-2010	07:00	19:00	-	-			-	-						
01-10-2010	07:00	23:00	429	432	+7.5	-7.5	19:00	23:00	429	432	+7.5	-7.5		
02-10-2010	07:00	07:00	440	452	+7.5	-7.5								
			754	778	+17.5	+5	19:00	23:30	754	778	+17.5	+5		
			770	778	-17.5	-5	04:35	07:00	770	778	-17.5	-5		
03-10-2010	07:00	07:00	746	770	-5	-17.5								
			734	754	+7.5	-7.5	19:00	22:55	734	754	+7.5	-7.5		
			742	754	+5	+17.5	04:25	07:00	742	754	+5	+17.5		
04-10-2010	07:00	07:00	726	742	+5	+17.5								
			722	734	+7.5	-7.5	00:15	07:00	722	734	+7.5	-7.5		
05-10-2010	07:00	07:00	718	722	+7.5	-7.5								
			710	746	-5	-17.5	19:00	07:00	710	746	-5	-17.5		
			702	726	+5	+17.5			702	726	+5	+17.5		
06-10-2010	07:00	07:00	706	718	+7.5	-7.5								
			698	710	-5	-17.5	19:00	07:00	698	710	-5	-17.5		
			690	706	+7.5	-7.5			690	706	+7.5	-7.5		
			682	690	+7.5	-7.5			682	690	+7.5	-7.5		
			666	702	+17.5	+5			666	702	+17.5	+5		
			682	698	-5	-17.5			682	698	-5	-17.5		
			662	682	-5	-17.5								
07-10-2010	07:00	07:00	654	682	+7.5	-7.5	19:00	07:00	654	682	+7.5	-7.5		
			638	662	-5	-17.5			638	662	-5	-17.5		
			646	654	+7.5	-7.5			646	654	+7.5	-7.5		
			650	666	+5	+17.5			650	666	+5	+17.5		
			606	650	+5	+17.5	19:00	21:55	606	650	+5	+17.5		
			632	650	+7.5	-7.5	19:00	19:15	632	650	+7.5	-7.5		
			572	638	-5	-17.5	19:00	06:00	572	638	-5	-17.5		
08-10-2010	07:00	07:00	602	606	+5	+17.5			602	606	+5	+17.5		
			580	602	+5	+17.5								
			640	646	+7.5	-7.5								
			512	520	+5	+20								
			496	512	+5	+20	19:00	07:00	496	512	+5	+20		
			508	520	-5	-20			508	520	-5	-20		
			500	508	-5	-20								
12-10-2010	07:00	07:00	492	500	-5	-20	19:00	20:50	492	500	-5	-20		
			492	500	+7.5	-7.5			492	500	+7.5	-7.5		
			480	492	+7.5	-7.5	21:15	04:00	480	492	+7.5	-7.5		
			472	480	-5	-20	04:00	07:00	472	480	-5	-20		
			472	496	+5	+20								
13-10-2010	07:00	07:00	476	480	+7.5	-7.5	19:00	07:00	476	480	+7.5	-7.5		
			460	472	-5	-20			460	472	-5	-20		
			456	460	-5	-20			456	460	-5	-20		
			468	472	+5	+20								
			472	476	+7.5	-7.5								
14-10-2010	07:00	07:00	448	456	-5	-20	19:00	20:50	448	456	-5	-20		
			462	468	+5	+20			462	468	+5	+20		
			452	462	+5	+20	20:55	01:50	452	462	+5	+20		
			448	452	+5	+20	06:30	07:00	448	452	+5	+20		
			436	472	+7.5	-7.5								
			424	436	+7.5	-7.5	19:00	23:10	424	436	+7.5	-7.5		
			436	448	-5	-20	23:15	04:15	436	448	-5	-20		
15-10-2010	07:00	07:00	444	452	+5	+20	04:20	07:00	444	452	+5	+20		
			420	436	-5	-20								
16-10-2010	07:00	07:00	420	436	-5	-20								

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		
17-10-2010	07:00	07:00	420	432	+20	+5								
			412	420	-5	-20	19:00	06:30	412	420	-5	-20		
			416	424	+7.5	-7.5			416	424	+7.5	-7.5		
			436	444	+20	+5			436	444	+20	+5		
			432	436	+20	+5			432	436	+20	+5		
			400	412	+7.5	-7.5								
			404	420	+5	+20								
18-10-2010	07:00	07:00	392	404	+5	+20	19:00	00:00	392	404	+5	+20		
			404	436	-5	-20			404	436	-5	-20		
			440	460	+7.5	-7.5	00:45	05:15	440	460	+7.5	-7.5		
			436	440	+7.5	-7.5	05:25	06:30	436	440	+7.5	-7.5		
			396	400	+7.5	-7.5	07:00	07:00	396	400	+7.5	-7.5		
			376	396	+7.5	-7.5								
			368	392	+20	+5								
19-10-2010	07:00	07:00	376	404	-5	-20	19:00	23:30	376	404	-5	-20		
			436	460	+5	+20	00:10	05:00	436	460	+5	+20		
			372	376	-5	-20	05:30	07:00	372	376	-5	-20		
			360	376	+7.5	-7.5								
			348	360	+7.5	-7.5								
			356	372	-5	-20	19:00	20:05	356	372	-5	-20		
			360	368	+5	+20	21:20	02:45	360	368	+5	+20		
20-10-2010	07:00	23:00	456	480	-5	-20			456	480	-5	-20		
			436	456	-5	-20	02:50	07:00	436	456	-5	-20		
			356	360	+5	+20			356	360	+5	+20		
			340	348	+7.5	-7.5								
			336	340	+7.5	-7.5	19:00	21:10	336	340	+7.5	-7.5		
			348	356	+5	+20			348	356	+5	+20		
			340	348	+5	+20	21:20	23:00	340	348	+5	+20		
21-10-2010	07:00	19:00	-	-			-	-						
22-10-2010	07:00	19:00	-	-			-	-						
23-10-2010	07:00	07:00	336	356	-5	-20	19:00	22:40	336	356	-5	-20		
			430	460	+7.5	-7.5	23:30	03:20	430	460	+7.5	-7.5		
24-10-2010	07:00	07:00	320	334	+5	+20								
			328	336	+7.5	-7.5								
			296	320	+20	+5								
			316	336	-5	-17.5	19:00	23:00	316	336	-5	-17.5		
			480	500	-5	-20	00:00	02:00	480	500	-5	-20		
			460	500	+5	+20	02:05	07:00	460	500	+5	+20		
			320	328	+7.5	-7.5			320	328	+7.5	-7.5		
25-10-2010	07:00	23:00	284	316	-5	-17.5								
			284	304	+7.5	-7.5	19:00	23:00	284	304	+7.5	-7.5		
			280	284	+7.5	-7.5			280	284	+7.5	-7.5		
26-10-2010	07:00	23:00	260	296	+5	+17.5								
			276	280	+7.5	-7.5								
			264	276	+7.5	-7.5	19:00	23:00	264	276	+7.5	-7.5		
			260	284	-5	-17.5			260	284	-5	-17.5		
			252	264	+7.5	-7.5			252	264	+7.5	-7.5		
27-10-2010	07:00	19:00	248	252	+7.5	-7.5			248	252	+7.5	-7.5		
			188	260	+5	+17.5								
			240	248	+7.5	-7.5								
28-10-2010	07:00	23:00	256	260	-5	-17.5								
			240	256	-5	-17.5	19:00	22:00	240	256	-5	-17.5		
			216	240	0	-12.5			216	240	0	-12.5		
29-10-2010	07:00	23:00	236	240	+12.5	0	22:45	23:00	236	240	+12.5	0		
			204	236	0	+12.5								
			180	216	0	-12.5	19:00	22:55	180	216	0	-12.5		
30-10-2010	07:00	23:00	176	204	+12.5	0	19:00	21:50	176	204	+12.5	0		
			172	180	0	-12.5			172	180	0	-12.5		
			168	172	0	-12.5	22:05	23:00	168	172	0	-12.5		
31-10-2010	07:00	23:00	140	168	0	-12.5	19:00	23:00	140	168	0	-12.5		
			136	176	0	+12.5			136	176	0	+12.5		
			128	136	0	+12.5			128	136	0	+12.5		



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 -> ⑲ -> ⑳

STAGE 3 - TYPE 1 MARINE SEDIMENT
 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 1D MARINE SEDIMENT
 ① -> ② -> ③ -> ④ -> ⑤ -> ⑥ -> ⑦ -> ⑧ -> ⑨ -> ⑩ -> ⑪ -> ⑫ -> ⑬ -> ⑭ -> ⑮ -> ⑯ -> ⑰ -> ⑱ -> ⑲ -> ⑳

STAGE 5 - TYPE 1 MARINE SEDIMENT
 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 1D AND TYPE 1 MARINE SEDIMENT DREDGING LOGISTIC AT ⑳ WILL BE DELETED AND INCLUDED IN ㉑ AND ㉒.

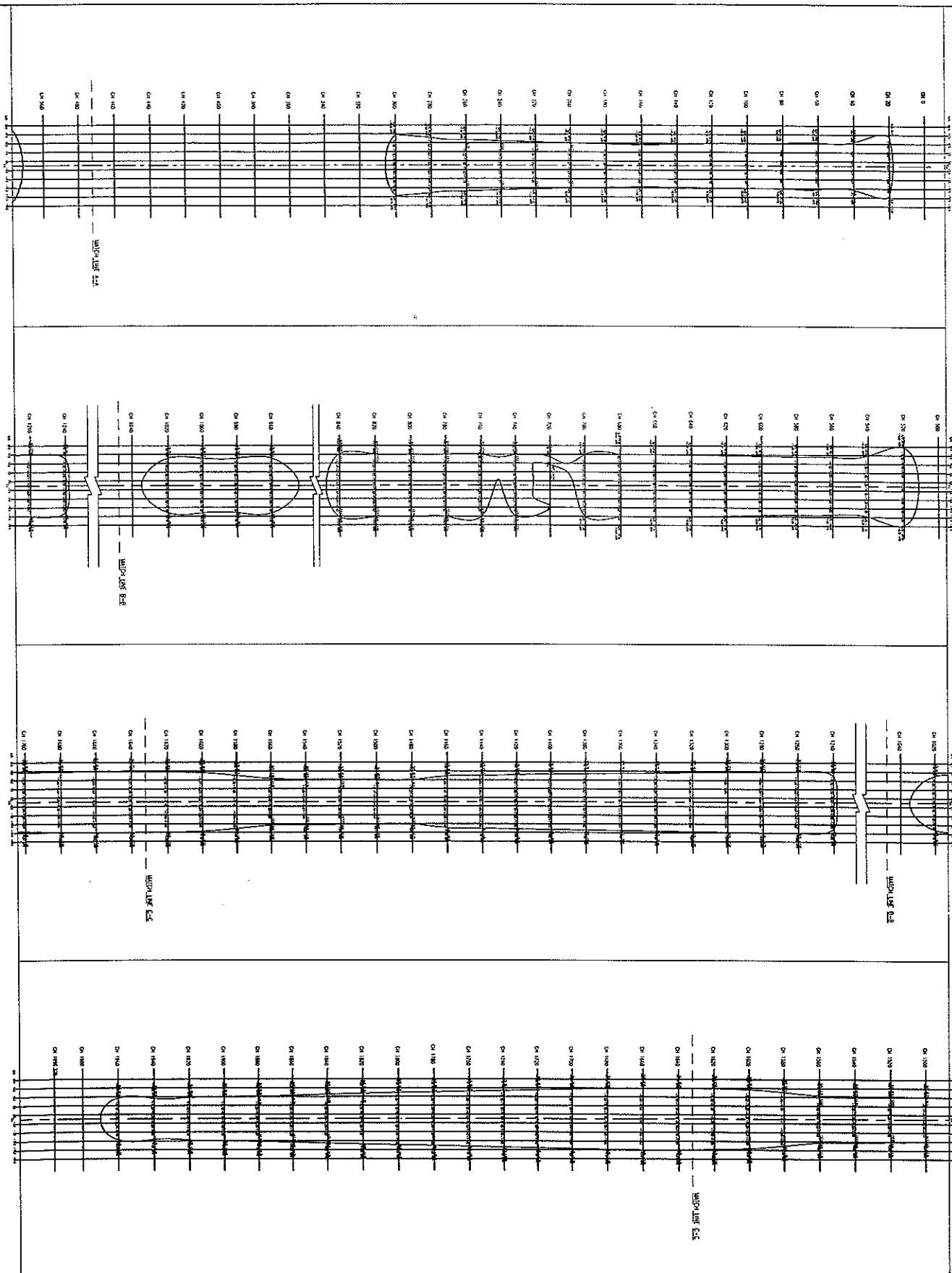
LEGEND:

- TYPE 1 - OPEN SEA DISPOSAL
- TYPE 1D - 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-PENTA OCEAN JOINT VENTURE 和興五洲聯合	CONTRACT NO. 91WSPD08 Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun DRAWING TITLE DREDGING LOGISTIC
DRAW BY TONY TANG	SCALE NTS
CHECKED BY STANLEY LEUNG	DWG No. BK-D-002
DATE 08 Apr 2010	REVISION D

NOTES :



No.	Description	Unit	Quantity	Value
1	Construction	m ²		
2	Excavation	m ³		
3	Structural	m ²		
4	Roofing	m ²		
5	Painting	m ²		
6	Electrical	m		
7	Plumbing	m		
8	Mechanical	m		
9	Other	m		
10	Subtotal			
11	Grand Total			

CONTRACT TITLE :
 LIVING OF SEWERAGE TREATMENT PLANT
 AND ASSOCIATED CIVIL WORKS FROM WEST
 HONG KONG TO SHANGHAI
 (CONTRACT NO. S/2002/08)

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

Contractor
M M Moti
 Moti Macdonald
 Ltd Macdonald Hong Kong Limited

Main Contractor
W H W
 WO HING - PING-DEAN JOINT VENTURE
 和興建築

Scale : 1:50 (A1)
 Date : 17 APR 2002
 Drawn By : 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)

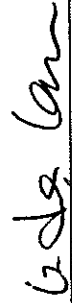

Date and Time of Noise Monitoring: 02 October 2010 (2300-2400) at KY3, RWM and CGa
Construction Works carried out during the monitoring: Dredging of Type 1 marine sediment at Point I (CH778 to CH754) on 02 October 2010 (1720 to 2330)
Corresponding CNP: GW-RE0188-10 (01 September 2010 to 20 October 2010)

Monitoring Location	Measured Value, dB(A)	Action Level	Limit Level, dB(A)	Possible Reason(s) for the Exceedance	Action to be taken	Remark
KY3	57.0 56.8 56.6	When one documented complaint is received	55	Dredging works were temporarily stopped during the monitoring, from 02 October 2010 (2330) to 03 October 2010 (0435). 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 and range of background noise level from 2300-2400 * is 58.5dB(A) and between 55.1dB(A) and 62.9dB(A). The impact monitoring results were found below 58.5dB(A) and within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
RWM	55.7 56.4 56.6	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH846 to CH822, 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 and range of background noise level from 2300-2400 * is 60.5dB(A) and between 52.8dB(A) and 67.3dB(A). The impact monitoring results were found below 60.5dB(A) and within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
CGa	57.4 56.9 56.4	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH846 to CH822, 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 and range of background noise level from 2300-2400 * is 63.3dB(A) and between 60.2dB(A) and 66.1dB(A). The impact monitoring results were found below 63.3dB(A) and the range of baseline noise level. 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 2300-0100 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).

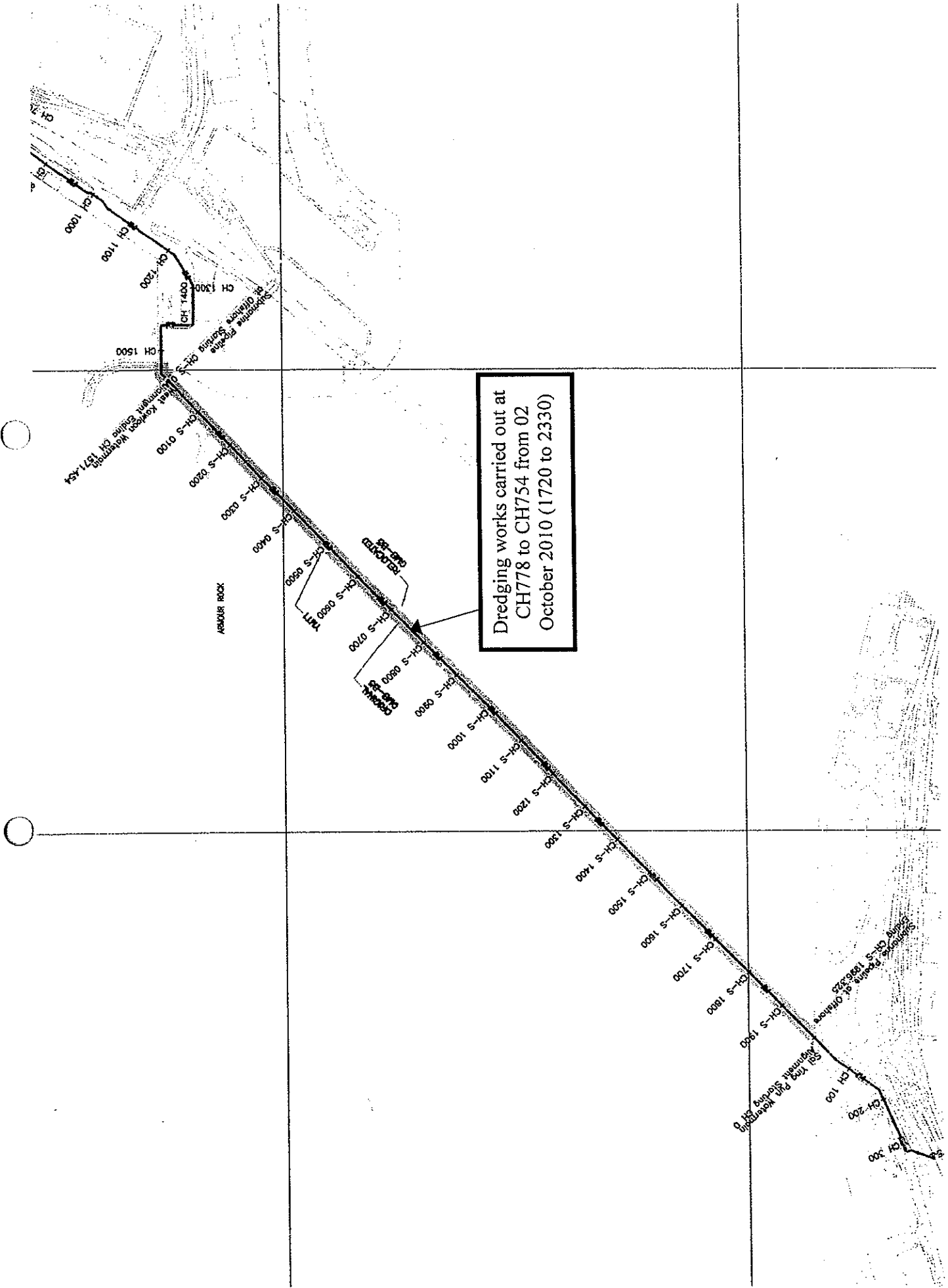
Attachment

Night-time Noise monitoring data sheet (02 October 2010)
Summary of Baseline Noise Monitoring at KY3, RWM and CGa (2300-2400)
Location plan show the construction works carried out on 02 October 2010 (1720-2330)

Prepared by: 
Checked by: 

(Linda Law) (Senior Environmental Officer)
(C. L. Lau) (Environmental Teamer Leader)

Date: **04 October 2010**
Date: **04 October 2010**



Dredging works carried out at
 CH778 to CH754 from 02
 October 2010 (1720 to 2330)

Submarine Pipeline at Offshore
 Sill Trestle Pile Headings CH 100, 200, 300
 CH 100
 CH 200
 CH 300
 CH 1500
 CH 1600
 CH 1700
 CH 1800
 CH 1900
 CH 2000
 CH 2100
 CH 2200
 CH 2300
 CH 2400
 CH 2500
 CH 2600
 CH 2700
 CH 2800
 CH 2900
 CH 3000
 CH 3100
 CH 3200
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 CH 8700
 CH 8800
 CH 8900
 CH 9000
 CH 9100
 CH 9200
 CH 9300
 CH 9400
 CH 9500
 CH 9600
 CH 9700
 CH 9800
 CH 9900
 CH 10000

ARMOUR ROCK

Sill Trestle Pile Headings
 CH 100, 200, 300



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		2/10/10								
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.)		Aion NL-31 (SN: 00531142)			(SN:)			(SN:)		
Sound Pressure Calibrator (Model and Serial No.)		Aion NC-73 (SN: 10196943)			(SN:)			(SN:)		
Weather Condition		Fine			Fine			Fine		
Temperature (°C)		28°C			28°C			28°C		
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)		1.3	1.5	1.4	1.4	1.6	1.5	1.2	1.4	1.5
L _{eq} , dB(A)		57.4	56.9	56.4	55.7	56.4	56.6	57.0	56.8	56.6
L ₁₀ , dB(A)		59.8	59.1	58.8	57.9	58.2	58.5	59.1	58.8	58.5
L ₅₀ , dB(A)		53.2	52.7	52.3	51.4	52.0	52.3	52.5	52.1	51.9
Major Construction Noise Source(s) During Measurement		/			/			/		
Other Noise Source(s) During Measurement		vehicles passing by			/			/		
Remarks		The result was not exceeded the Limit Level.			The result was not exceeded the Limit Level.			The result 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	Mak Yoi Wai	Mak	2/10/10
Checked by	Linda Lam	Linda Lam	3/10/10

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) - 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	63.8
Min Leq(5min)	59.3	58.3	58.4	61.4	60.0	55.0	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)

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: 15 October 2010 (2345) to 16 October 2010 (0032) at KY3, RWM and CGa
Construction Works carried out during the monitoring: Dredging of Type 1 marine sediment at Point I (CH448 to CH436) from 15 October 2010 (2315) to 16 October 2010 (0415)
Corresponding CNP: GW-RE0188-10 (01 September 2010 to 20 October 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	60.3 60.9 61.0	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH448 to CH436, 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 and range of background noise level from 2300-0100 * is 58.0dB(A) and between 53.5dB(A) and 62.9dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
RWM	61.5 61.2 61.0	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH448 to CH436, 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 and range of background noise level from 2300-0100 * is 59.8dB(A) and between 52.8dB(A) and 67.3dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
CGa	61.5 61.2 61.7	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH448 to CH436, 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 and range of background noise level from 2300-0100 * is 62.6dB(A) and between 58.7dB(A) and 66.1dB(A). The impact monitoring results were found below 62.6dB(A) and within the range of baseline noise level. 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 2300-0100 is in high level (around 60dB(A)) at all monitoring stations. As a result, baseline noise data measured between 2300-0100 at CGa, RWM, KY3 are more suitable for being as background indicator (instead of 2300-0700 of next day).

Attachment

Night-time Noise monitoring data sheet (15 to 16 October 2010)
Summary of Baseline Noise Monitoring at KY3, RWM and CGa (2300-0100)
Location plan shown the construction works carried out on 15-16 October 2010 (2315-0415)

Linda Law
C. L. Lau

Prepared by: _____
Checked by: _____

(Linda Law) (Senior Environmental Officer)
(C. L. Lau) (Environmental Team Leader)

Date: 18 October 2010
Date: 18 October 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		15-10-10 - 16-10-10								
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.)		Koon HL-31 (S/N: 905311-42)								
Sound Pressure Calibrator (Model and Serial No.)		Caste 61607 (S/N: 18861)								
Weather Condition		Cloudy			Cloudy			Cloudy		
Temperature (°C)		26			26			26		
Type of Measurement		Free Field / <u>Facade</u>			Free Field / <u>Facade</u>			Free Field / <u>Facade</u>		
Measurement Period (min)		5			5			5		
Calibration before Measurement, dB(A)	Before	98.0			98.0			98.0		
	After	98.0			98.0			98.0		
Measurement Time	From	23:45	23:50	23:55	00:00	00:05	00:10	00:17	00:22	00:27
	To	23:50	23:55	24:00	00:05	00:10	00:15	00:22	00:27	00:32
Wind Strength (m/s)		0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0
L _{eq} , dB(A)		61.5	61.2	61.7	61.5	61.2	61.0	60.3	60.9	61.0
L ₁₀ , dB(A)		66.0	65.9	68.0	63.4	63.9	63.7	62.2	62.5	62.6
L ₅₀ , dB(A)		57.2	58.3	59.0	55.4	55.9	56.1	54.1	53.9	54.8
Major Construction Noise Source(s) During Measurement		/			/			/		
Other Noise Source(s) During Measurement		Vehicles passing by			/			/		
Remarks		The result was not exceeded the Limit Level.			The result was not exceeded the Limit Level.			The result 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	Li Kin	[Signature]	15-10-10
Checked by	Linda Lam	[Signature]	16-10-10 / 10 hda 16/10/10

Summary of Baseline Noise Monitoring (Night-time:2300-0100) - 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)	57.3	59.9	56.4	60.7	57.9	57.7	56.8	57.2	57.0	59.5	56.8	57.7	57.2	57.0
Max Leq(5min)	60.8	61.5	59.4	62.9	61.7	61.9	60.2	58.4	59.7	61.6	59.1	61.5	59.4	59.5
Min Leq(5min)	54.2	58.5	54.3	58.6	55.1	54.6	53.8	56.0	54.9	57.8	53.7	55.3	54.4	53.5

Overall Average, Leq(5-min) 58.0 dB(A)

Max 62.9 dB(A)

Min 53.5 dB(A)

Summary of Baseline Noise Monitoring (Night-time:2300-0100) - 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)	60.2	60.6	59.4	63.9	61.0	56.6	55.6	58.1	56.4	57.9	57.3	57.4	62.1	61.3
Max Leq(5min)	62.1	64.1	61.9	67.3	63.1	57.7	57.6	59.3	57.3	59.4	62.1	59.2	64.7	63.6
Min Leq(5min)	56.8	57.0	56.2	57.4	58.9	55.5	52.8	56.9	55.1	55.6	54.8	55.9	59.5	58.0

Overall Average, Leq(5-min) 59.8 dB(A)
 Max 67.3 dB(A)
 Min 52.8 dB(A)

Summary of Baseline Noise Monitoring (Night-time 2300-0100) - CG (Connaught Garden)

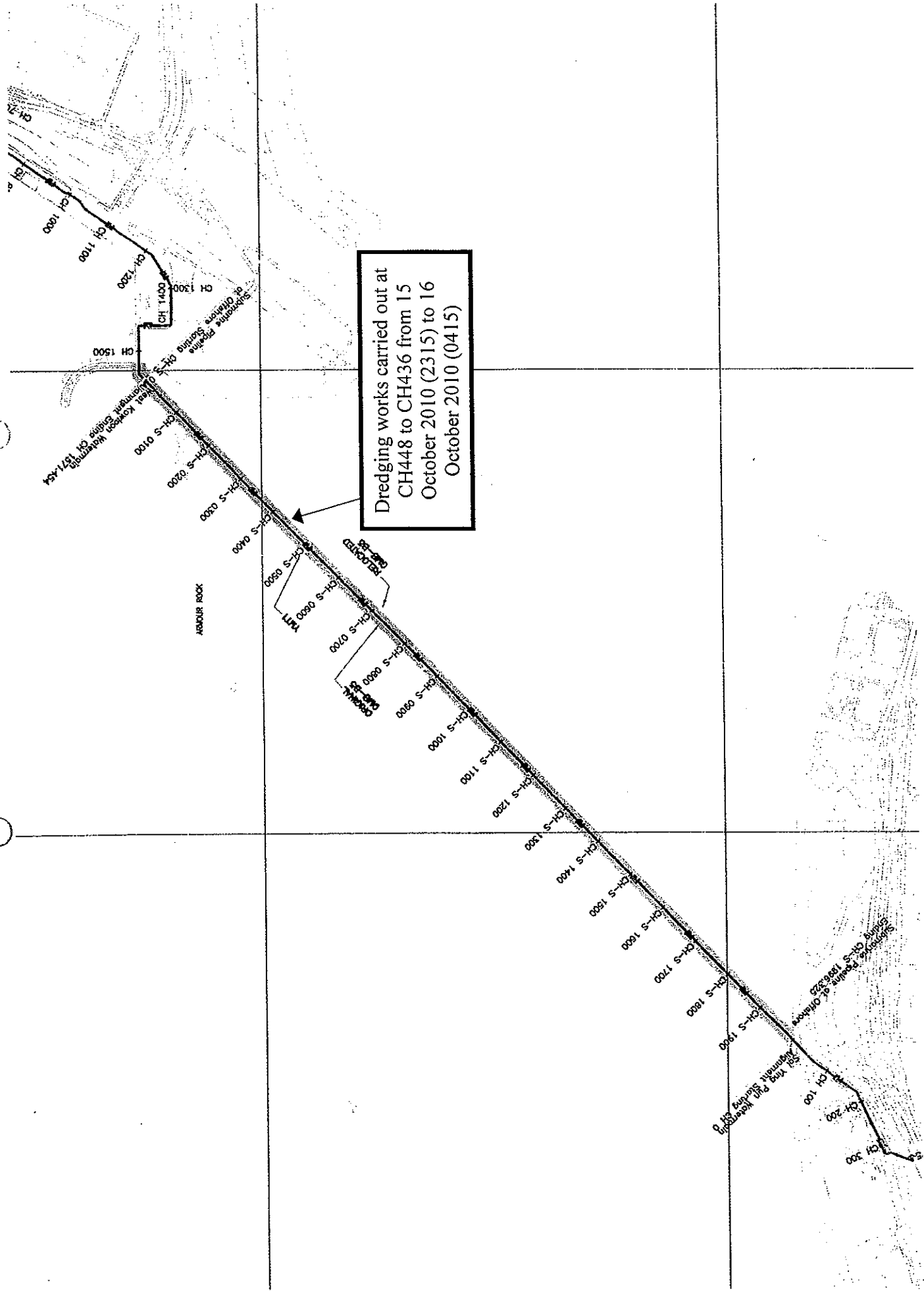
Date	11/01/10	12/01/10	13/01/10	14/01/10	15/01/10	16/01/10	17/01/10	18/01/10	19/01/10	20/01/10	21/01/10	22/01/10	23/01/10	24/01/10
Daily Average, Leq(5min)	62.8	62.7	62.6	62.8	63.5	63.5	62.5	62.3	61.7	61.4	60.9	63.6	63.2	62.2
Max Leq(5min)	64.6	64.7	64.4	64.2	65.0	66.1	64.6	63.7	63.6	63.0	63.6	64.7	65.3	64.0
Min Leq(5min)	60.0	59.7	59.7	59.9	61.1	60.8	59.0	60.2	59.5	59.5	58.7	61.2	59.3	59.3

Overall Average, Leq(5-min) **62.6** dB(A)

Max **66.1** dB(A)

Min **58.7** dB(A)

Dredging works carried out at
CH448 to CH436 from 15
October 2010 (2315) to 16
October 2010 (0415)





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: 23 October 2010 (2330) to 24 October 2010 (0320) at KS6, KY3, RWM and CGa
Construction Works carried out during the monitoring: Dredging of Type 1 marine sediment at Point I (CH460 to CH430) from 23 October 2010 (2330) to 24 October 2010 (0320)
Corresponding CNP: GW-RE0502-10 (21 October 2010 to 20 April 2011)

Monitoring Location	Measured Value, dB(A)	Action Level	Limit Level, dB(A)	Possible Reason(s) for the Exceedance	Action to be taken	Remark
KS6	56.1	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH460 to CH430, 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 and range of background noise level from 0000-0100 * is 58.5dB(A) and between 55.1dB(A) and 62.9dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	56.6					
	55.5					
KY3	58.8	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH448 to CH436, 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 and range of background noise level from 2300-0100 * is 58.0dB(A) and between 53.5dB(A) and 62.9dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	58.6					
	58.5					
RWM	61.7	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH448 to CH436, 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 and range of background noise level from 2300-0100 * is 59.8dB(A) and between 52.8dB(A) and 67.3dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	61.0					
	61.0					
CGa	61.9	When one documented complaint is received	55	Dredging works were carried out by using one grab dredger (with one split hopper barge) at CH448 to CH436, 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 and range of background noise level from 2300-0100 * is 62.6dB(A) and between 58.7dB(A) and 66.1dB(A). The impact monitoring results were found below 62.6dB(A) and within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil
	61.9					
	61.7					

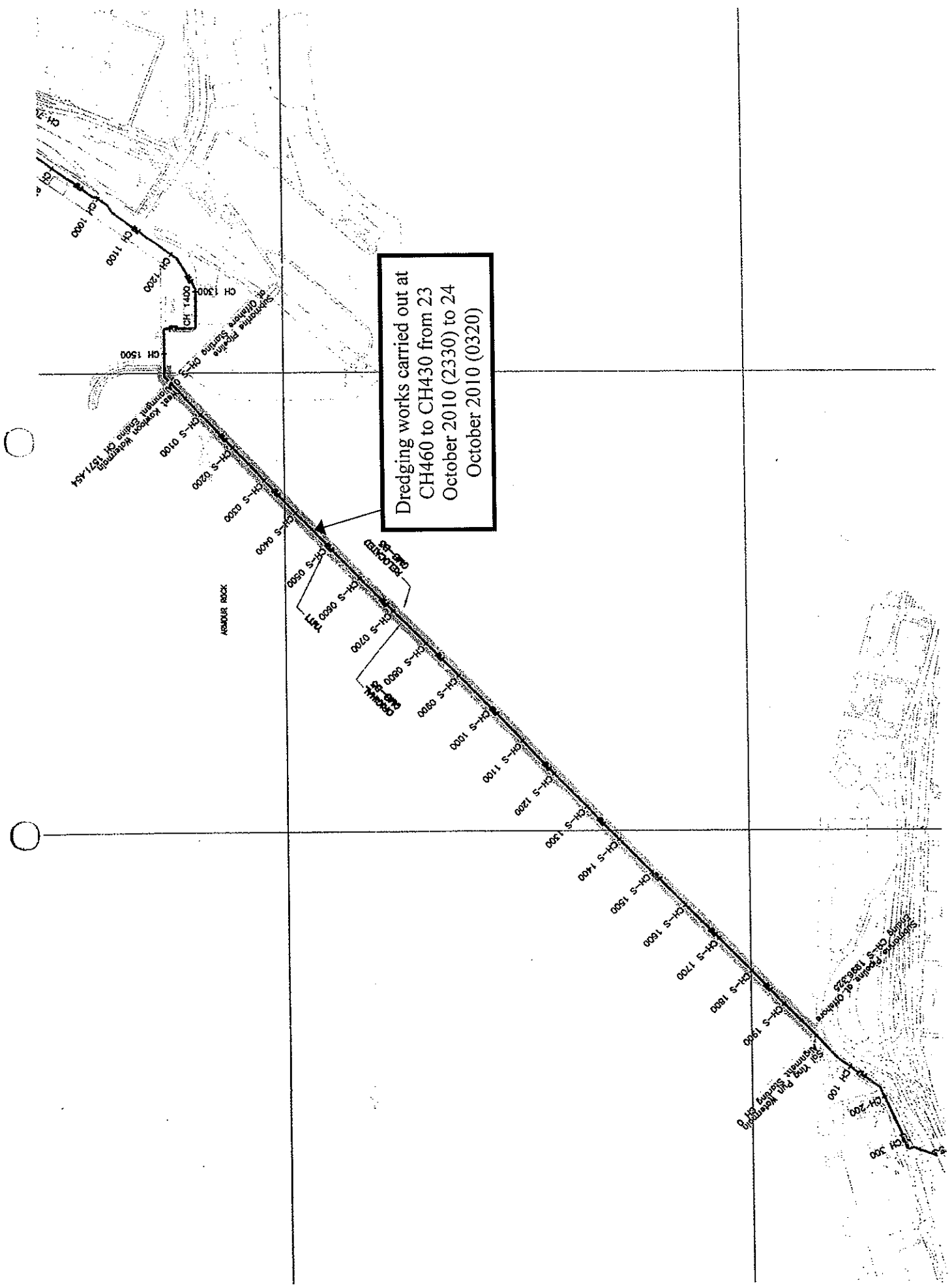
Remark (*): Refer to the baseline data, it shows that the range of noise level during 2300-0700 is very large (around from 52dB(A) to 67dB(A)) and noise from 2300-0100 is in high level (around 60dB(A)) at all monitoring stations. As a result, baseline noise data measured between 2300-0100 at CGa, RWM, 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 sheets (23 to 24 October 2010)
Summary of Baseline Noise Monitoring at KS6 (0000-0100), KY3, RWM and CGa (2300-0100)
Location plan shown the construction works carried out on 23-24 October 2010 (2330-0320)

Prepared by: (Linda Law) (Senior Environmental Officer) Date: 25 October 2010
Checked by: (C. L. Lau) (Environmental Teamer Leader) Date: 25 October 2010

Dredging works carried out at
CH460 to CH430 from 23
October 2010 (2330) to 24
October 2010 (0320)



Summary of Baseline Noise Monitoring (Night-time:2300-0100) - 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)	57.3	59.9	56.4	60.7	57.9	57.7	56.8	57.2	57.0	59.5	56.8	57.7	57.2	57.0
Max Leq(5min)	60.8	61.5	59.4	62.9	61.7	61.9	60.2	58.4	59.7	61.6	59.1	61.5	59.4	59.5
Min Leq(5min)	54.2	58.5	54.3	58.6	55.1	54.6	53.8	56.0	54.9	57.8	53.7	55.3	54.4	53.5

Overall Average, Leq(5-min) 58.0 dB(A)

Max 62.9 dB(A)

Min 53.5 dB(A)

Summary of Baseline Noise Monitoring (Night-time:2300-0100) - 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)	60.2	60.6	59.4	63.9	61.0	56.6	55.6	58.1	56.4	57.9	57.3	57.4	62.1	61.3
Max Leq(5min)	62.1	64.1	61.9	67.3	63.1	57.7	57.6	59.3	57.3	59.4	62.1	59.2	64.7	63.6
Min Leq(5min)	56.8	57.0	56.2	57.4	58.9	55.5	52.8	56.9	55.1	55.6	54.8	55.9	59.5	58.0

Overall Average, Leq(5-min) 59.8 dB(A)
 Max 67.3 dB(A)
 Min 52.8 dB(A)

Summary of Baseline Noise Monitoring (Night-time 2300-0100) - 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)	62.8	62.7	62.6	62.8	63.5	63.5	62.5	62.3	61.7	61.4	60.9	63.6	63.2	62.2
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)	60.0	59.7	59.7	59.9	61.1	60.8	59.0	60.2	59.5	59.5	58.7	81.2	59.3	59.3

Overall Average, Leq(5-min) 62.6 dB(A)

Max 66.1 dB(A)

Min 58.7 dB(A)

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	56.3	60.6	56.7	57.4	60.1	59.0	55.5
Max Leq(5min)	58.5	58.5	63.6	59.5	59.5	60.5	58.3	57.8	61.1	60.2	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)



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		24 Oct 2010					
Monitoring Location		KS6 - Podium at the Cullinan			KS4b - Footpath of West Kowloon Waterfront Promenade		
Sound Level Meter (Model and Serial No.)		R10N-NC-31 (S/N: 00593620)			R10N-NC-31 (S/N: 00593620)		
Sound Pressure Calibrator (Model and Serial No.)		R10N-NC-73 (S/N: 00196943)			R10N-NC-73 (S/N: 00196943)		
Weather Condition		Fair			Fair		
Temperature (°C)		25			25		
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	00:45	00:50	00:55	00:20	00:25	00:30
	To	00:50	00:55	01:00	00:25	00:30	00:35
Wind Strength (m/s)		1.2	1.2	1.2	1.4	1.4	1.4
L _{eq} , dB(A)		56.1	56.6	55.5	54.6	55.0	54.7
L ₁₀ , dB(A)		57.5	57.4	56.6	56.2	56.1	56.0
L ₅₀ , dB(A)		54.2	54.2	53.8	48.9	48.2	48.2
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.		

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. Lwan	[Signature]	24 Oct 2010
Checked by	[Signature]	[Signature]	24/10/10



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 Sai Ying Pun during 1900-2300 / 2300-0700 / 0700-1900 (Holiday) Data Record Sheet

Date of Monitoring		23 Oct 2010								
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.)		R10A-NL-31 (SN: 00593620)			R10A-NL-31 (SN: 00593620)			R10A-NL-31 (SN: 00593620)		
Sound Pressure Calibrator (Model and Serial No.)		R10A-NC-73 (SN: 10196943)			R10A-NC-73 (SN: 10196943)			R10A-NC-73 (SN: 10196943)		
Weather Condition		F2N7			F2N7			F2N7		
Temperature (°C)		25			25			25		
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	23:05	23:10	23:15	23:23	23:28	23:33	23:44	23:49	23:54
	To	23:10	23:15	23:20	23:28	23:33	23:38	23:49	23:54	23:59
Wind Strength (m/s)		1.0	1.0	1.0	0.8	0.8	0.8	1.1	1.1	1.1
L _{eq} , dB(A)		61.9	61.9	61.7	61.7	61.0	61.0	58.8	58.6	58.5
L ₁₀ , dB(A)		64.5	64.1	62.9	62.5	62.8	62.1	59.3	59.1	59.1
L ₅₀ , dB(A)		58.4	59.5	59.4	59.3	58.4	58.2	54.9	54.7	54.7
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)

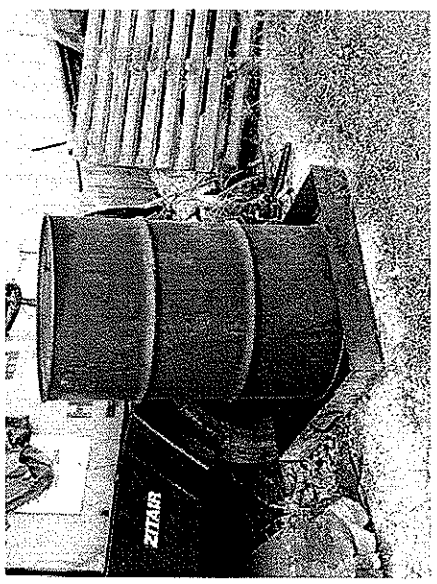
	Name	Signature	Date
Recorded by	K. M. Kwok	[Signature]	23 Oct 2010
Checked by	L. de Lou	[Signature]	23/10/10



Appendix L

Contractor's Follow up Actions to ET Weekly Site Inspections

Photo of Follow-up Action

 <p>Photo Ref. : 01</p>		

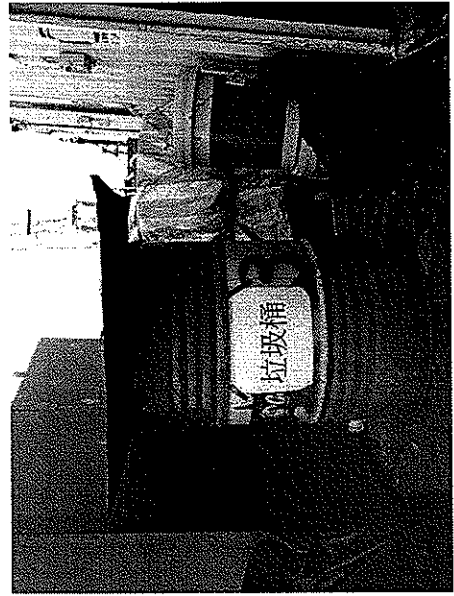
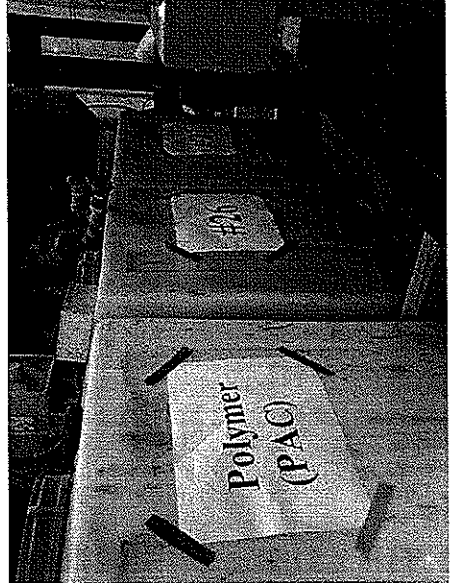
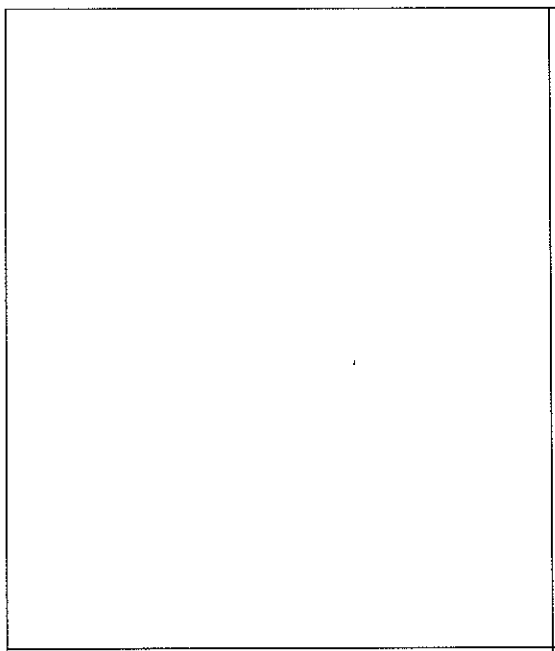
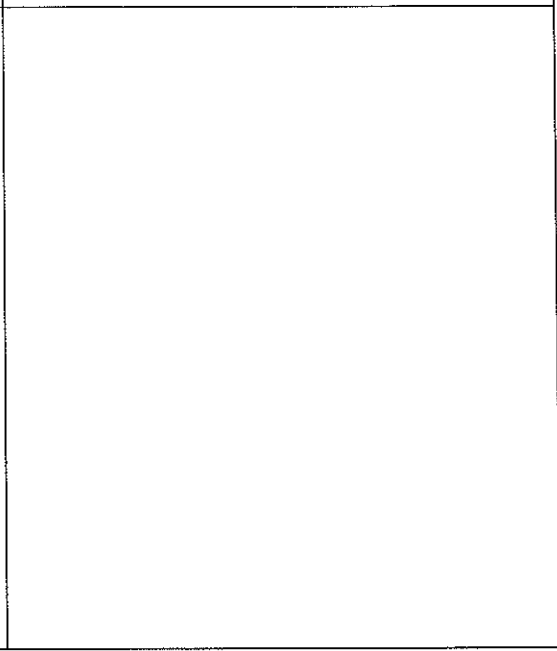
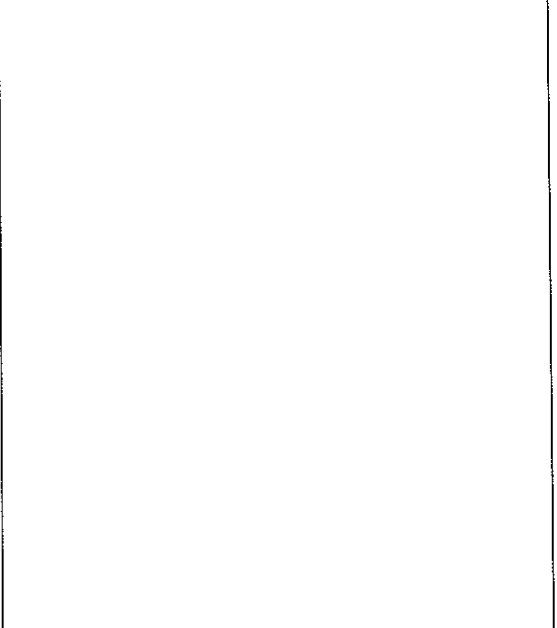
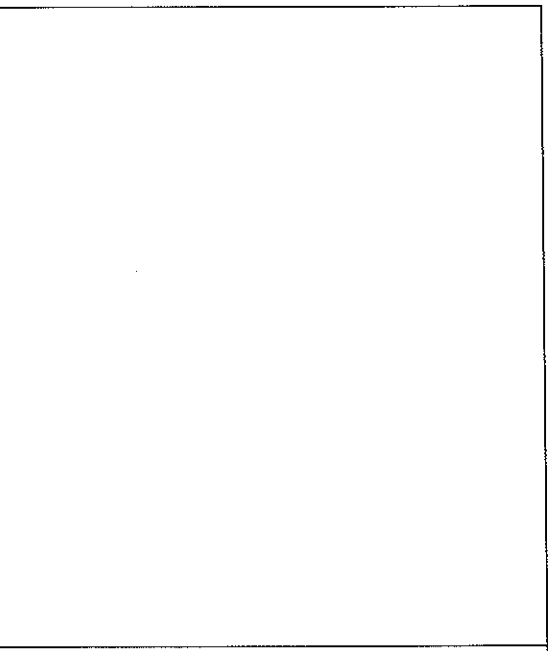
Contract No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Follow-up Action of the Weekly Site Inspection by the Contractor

Inspection Date : 12 October 2010

Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
1.	No label and cover were provided for a rubbish bin at Portion J.	Provision of proper label to the rubbish bin in Portion "J" of the Site	12 Oct 2010	01
2.	Appropriate chemical labels should be provided for the chemicals used for the sedimentation tank at Portion J before use. (Reminder)	Provision of proper label to distinguish different chemicals for the sedimentation tank at Portion "J" of the Site	12 Oct 2010	02

Photo of Follow-up Action

 <p>Photo Ref : 01</p>	 <p>Photo Ref 02</p>				
--	---	---	--	---	--



Follow-up Action of the Weekly Site Inspection by the Contractor

Inspection Date : 20 October 2010

Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
1.	IEC suspected the visibility of the discharge water at Portion J was at a low level.	<p>Water sample was taken at Portion J at 18:00 to check the visibility.</p> <p>The water sample was compared with the Total Suspended Solids Standard Water (30mg/L) to check the visibility (i.e. the limit of discharge of suspended solids is 30mg/L in the Discharge License no. WT00005800-2010, issued by EPD).</p> <p>The comparison was conducted in the Contractor's accommodation at about 18:35.</p> <p>The result of visual inspection showed that the visibility of water sample was acceptable by compare with Total Suspended Solids Standard Water (30mg/L).</p> <p>Tool box training will be conducted to workers in order to strengthen the current practice of ensuring the discharge water quality. The current practice is as follows:</p> <ol style="list-style-type: none"> 1. Daily check no leakage of the tank before pumping water. 2. Check sufficient chemicals are placed in appropriate container for wastewater treatment. 3. Daily check visibility and pH of the discharge water. 4. The related work will be suspended immediately if any non-compliance was observed. The related works can be resumed until the process of the works is reviewed and the non-compliance is / are rectified. 	20 Oct 2010	01, 02, 03, 04, 05 & 06



Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
2.	<p>Dredged materials were noted accumulated on the deck of the barge at Portion I. The Contractor arranged a worker to clean up the dredged materials immediately (Photo 101020_004).</p>	<p>This is an established procedure to arrange barge crew to shovel the remained dredged materials to the hopper cargo of split hopper barge for each barge load / break time during dredging works.</p> <p>The barge crew were arranged to shovel the material in the morning session on 20 Oct 2010 during the break time of the dredging operations (please refer to photo record 01a, 02a).</p> <p>The cleaning works was continued after the maintenance and repairing works of the steel wire of the grab bucket of the dredger (please refer to photo record 03a, 04a).</p> <p>The cleaning works was completed at 18:15 (05a, 06a).</p> <p>An inspection will be arranged to check the garb bucket can be tightly closed to ensure no leakage of dredged materials.</p> <p>We will arrange a tool-box training to remind the grab bucket operators regarding :</p> <ul style="list-style-type: none"> ● drain all seawater from the bucket before transport the grab bucket to split hopper barge ; ● carefully transport the grab bucket to split hopper barge ; ● ensure all dredged materials are loaded to split hopper barge and no remaining materials are attached in the grab bucket prior return to the dredging location. 	20 Oct 2010	01a, 02a, 03a, 04a, 05a & 06a
		<p>An inspection of the conditions of the grab bucket was conducted on 22 Oct 2010. And maintenance and repairing works was carried out on the even day.</p> <p>A trial was conducted on 23 Oct 2010 by grabbing seawater within the frame type silt curtain to ensure the grab bucket is tightly closed. And the result is satisfactory.</p>	22 Oct 2010	--

Photo of Follow-up Action



Photo Ref : 01 – Wastewater discharging to discharge point



Photo Ref : 02 – Wastewater sampling at the discharge point



Photo Ref : 03 – Wastewater sampling completed

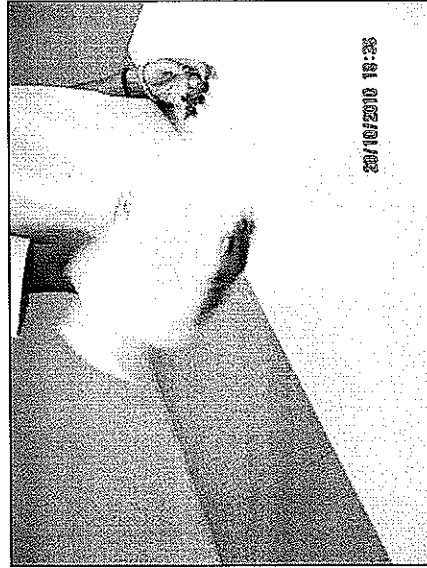


Photo Ref : 04 – Shaking the wastewater sample

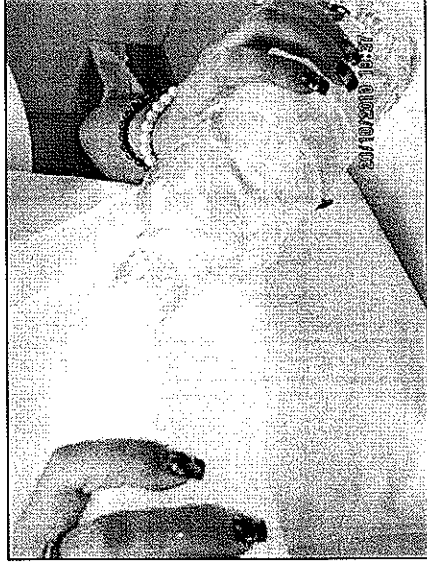


Photo Ref : 05 – Pouring the wastewater into a bottle for visual inspection

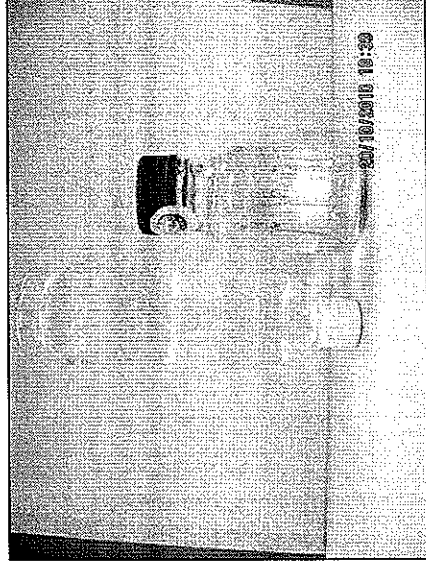


Photo Ref : 06 – Visual inspection was conducted. The wastewater sample compared with Total Suspended Solids Standard Water (30mg/L)

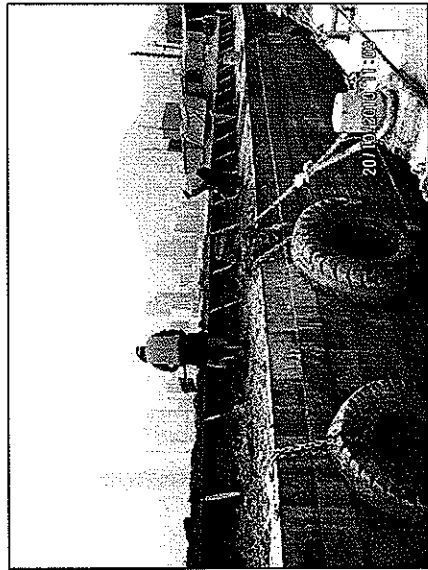


Photo Ref : 01a – Barge crew shoveling the dredged materials to the hopper cargo

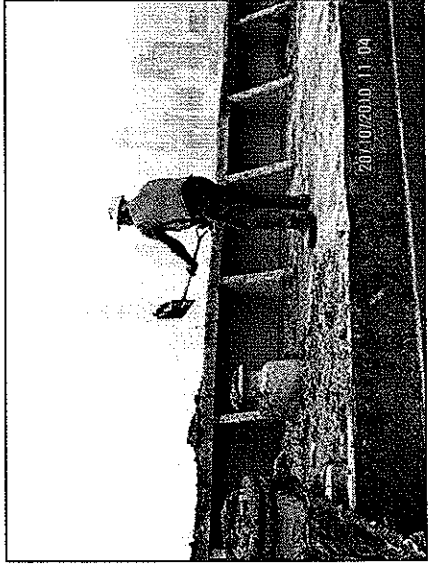


Photo Ref : 02a – Barge crew shoveling the dredged materials to the hopper cargo

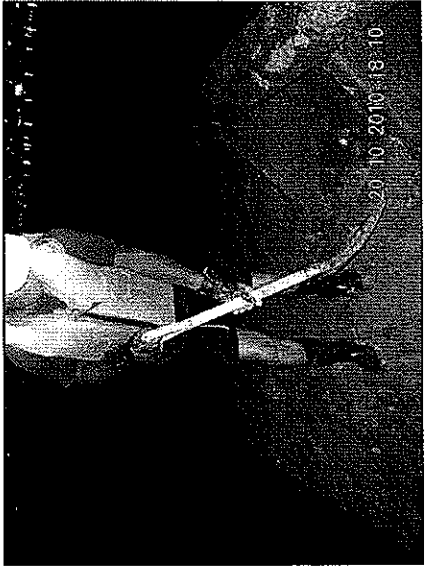


Photo Ref : 03a –Barge crew resumed cleaning works



Photo Ref : 04a – Cleaning works was in progress



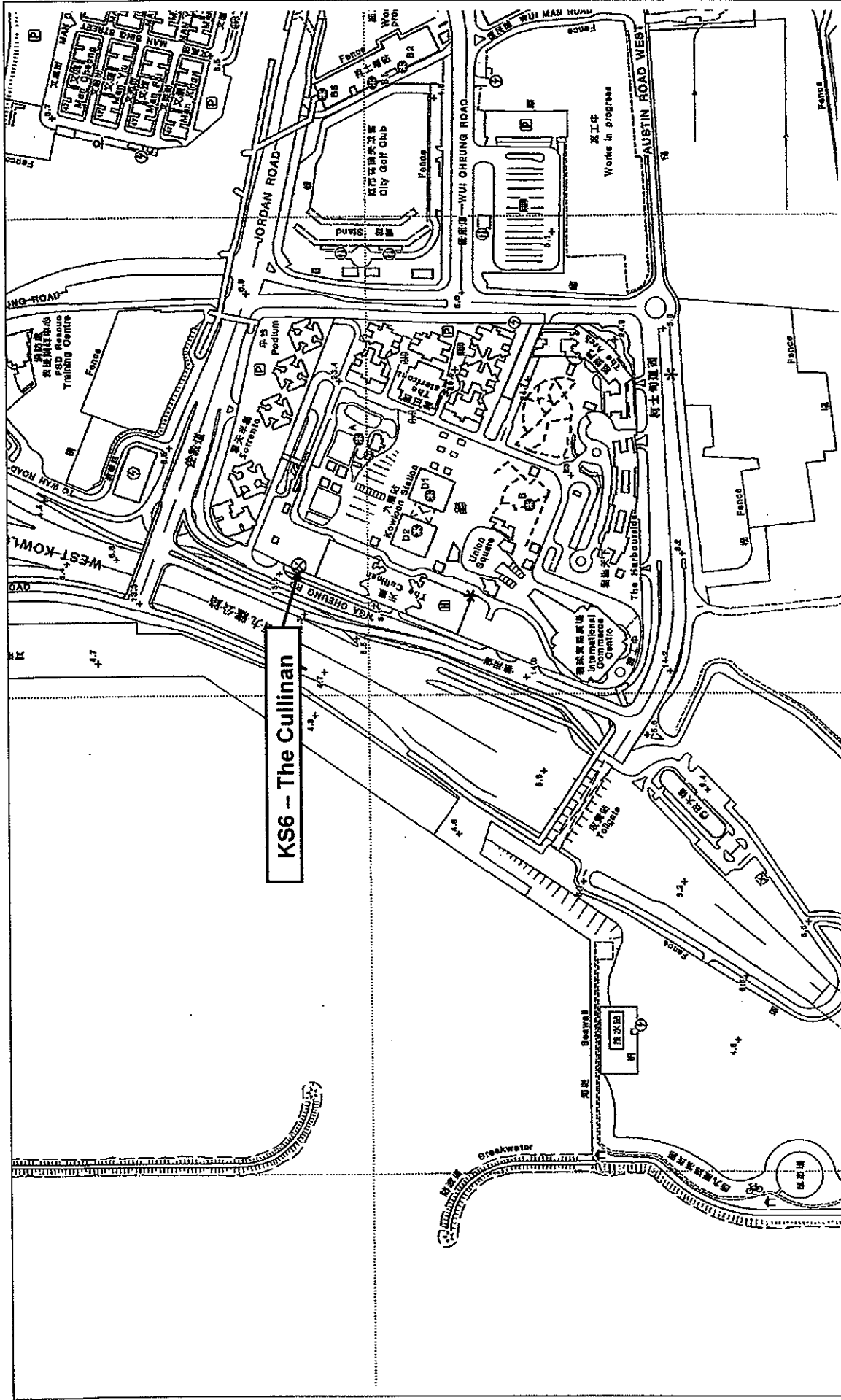
Photo Ref : 05a – The conditions of the deck after cleaning works



Photo Ref : 06a – Another view of the conditions of the deck after cleaning works



Figures



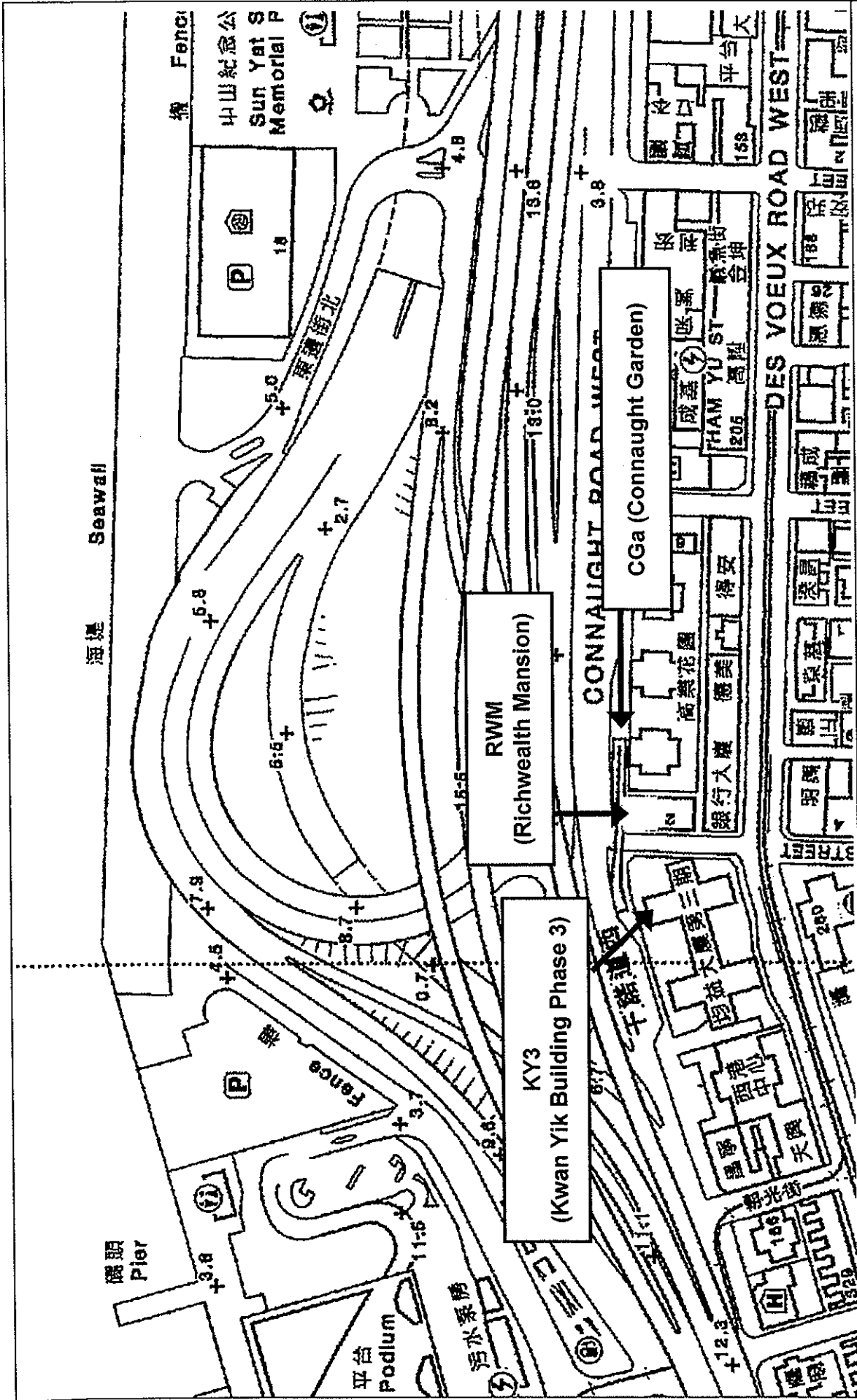
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



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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 2
Locations of Noise Monitoring Stations at Sai Ying Pun



Agreement Point	Type	Location
R1	Upflow Station	San Tin Tai Upflow Station
R2	Sanitary Receiver of Sewer	San Tin Tai Sewer
R3	Sanitary Receiver of Sewer	San Tin Tai Sewer
R4	Sanitary Receiver of Sewer	San Tin Tai Sewer
R5	Sanitary Receiver of Sewer	San Tin Tai Sewer
R6	Sanitary Receiver of Sewer	San Tin Tai Sewer
R7	Sanitary Receiver of Sewer	San Tin Tai Sewer
R8	Sanitary Receiver of Sewer	San Tin Tai Sewer
R9	Sanitary Receiver of Sewer	San Tin Tai Sewer
R10	Sanitary Receiver of Sewer	San Tin Tai Sewer
R11	Sanitary Receiver of Sewer	San Tin Tai Sewer
R12	Sanitary Receiver of Sewer	San Tin Tai Sewer
R13	Sanitary Receiver of Sewer	San Tin Tai Sewer
R14	Sanitary Receiver of Sewer	San Tin Tai Sewer
R15	Sanitary Receiver of Sewer	San Tin Tai Sewer
R16	Sanitary Receiver of Sewer	San Tin Tai Sewer
R17	Sanitary Receiver of Sewer	San Tin Tai Sewer
R18	Sanitary Receiver of Sewer	San Tin Tai Sewer
R19	Sanitary Receiver of Sewer	San Tin Tai Sewer
R20	Sanitary Receiver of Sewer	San Tin Tai Sewer
R21	Sanitary Receiver of Sewer	San Tin Tai Sewer
R22	Sanitary Receiver of Sewer	San Tin Tai Sewer
R23	Sanitary Receiver of Sewer	San Tin Tai Sewer
R24	Sanitary Receiver of Sewer	San Tin Tai Sewer
R25	Sanitary Receiver of Sewer	San Tin Tai Sewer
R26	Sanitary Receiver of Sewer	San Tin Tai Sewer
R27	Sanitary Receiver of Sewer	San Tin Tai Sewer
R28	Sanitary Receiver of Sewer	San Tin Tai Sewer
R29	Sanitary Receiver of Sewer	San Tin Tai Sewer

DATE	DATE	DATE
REVISED	REVISED	REVISED
DATE	DATE	DATE
DATE	DATE	DATE

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

PROJECT NO. CE42/2003 (W5)

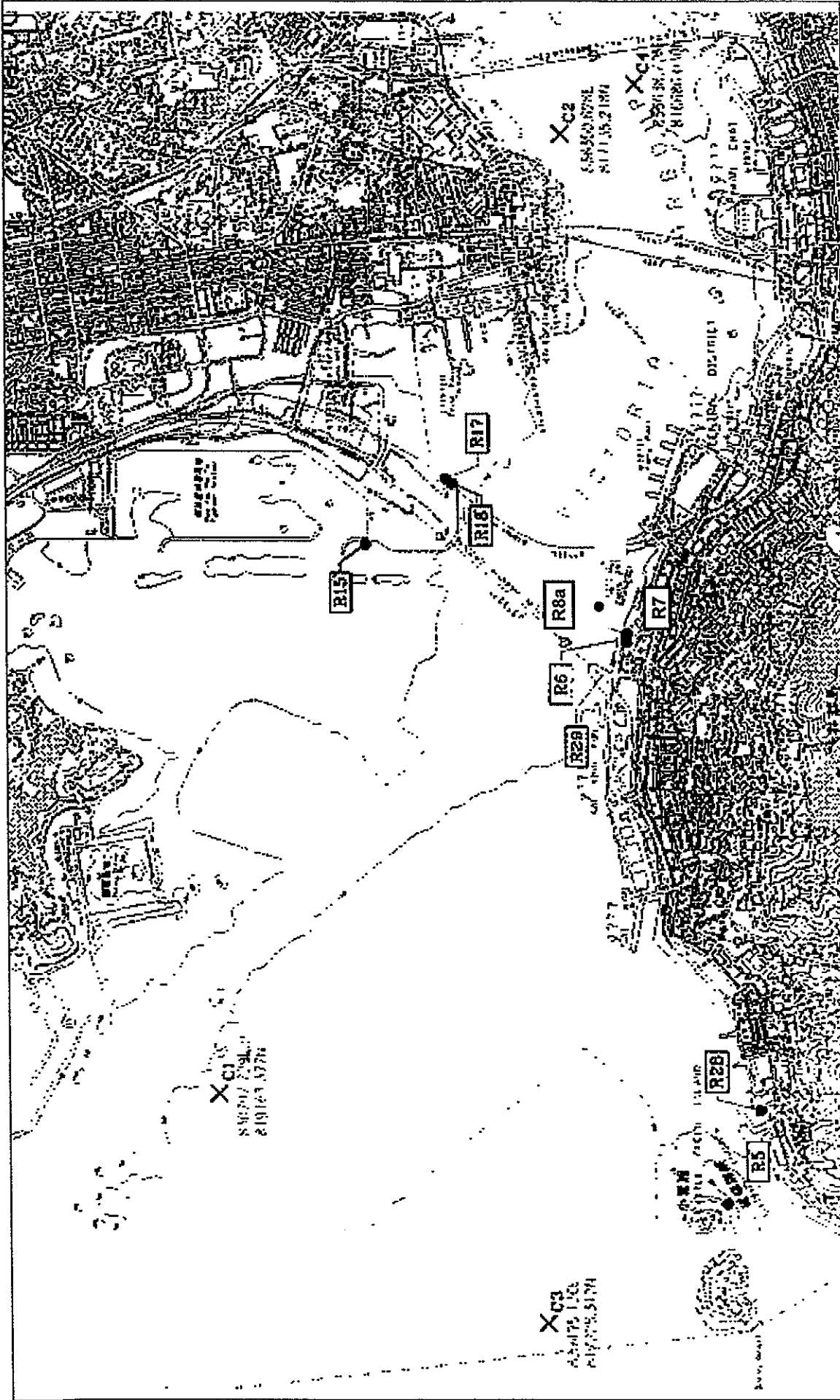
LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN - INVESTIGATION

LOCATIONS OF WATER SENSITIVE RECEIVERS
 AND STORMWATER OUTFALLS
 AT WESTERN HARBOUR

Scale	1:25000000
Sheet No.	20113
Project No.	CE42/2003 (W5)
Revision No.	1

FIGURE 1.20
 A

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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



東萊德測試顧問有限公司
ETS-TESTCONSULT LIMITED



LEGEND:

- PROPOSED ROUTE OF 1200R FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- 300M NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

A	DW/06	1/11	PRELIMINARY	DATE	BY
					WYK/06/04

Mott MacDonald
 407 Regency Centre
 100, Queen's Road East
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THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT

Contract No. CE42/2005(NS)

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

LOCATIONS OF NOISE SENSITIVE RECEIVERS IN SA YING PUN

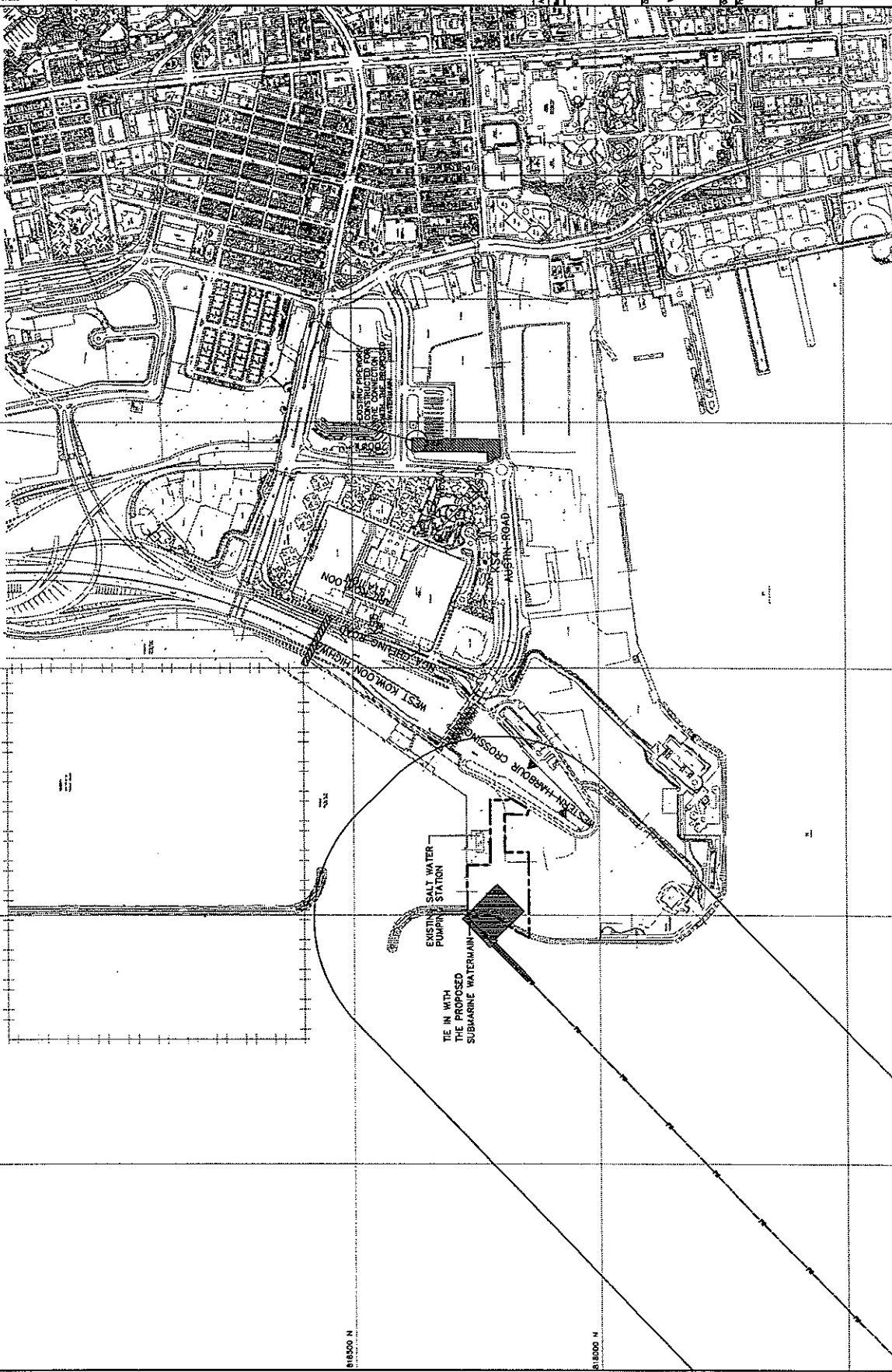
Prepared	Checked	Approved	Scale
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Project No. CE42/2005(NS)			

FIGURE 1.2b

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LEGEND:

- PROPOSED ROUTE OF 12009 FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- ▨ TEMPORARY PLATFORM
- 500m NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY



Project No.	CE42/2005(VS)
Client	THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
Contract No.	CE42/2005(VS)
Location	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN -- INVESTIGATION
Scale	1 : 4000000
Date	11/06/06
Sheet No.	A

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

LOCATION OF NOISE SENSITIVE RECEIVERS IN WEST KOWLOON

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Drawn by	
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Date	11/06/06
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