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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.19  
(NOVEMBER 2011)**

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**ENVIRON**

Ref.: WSDWHCMSEI00\_0\_0210L.11

12<sup>th</sup> Dec 2011

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

By Post

Attention: Mr. Johnny Ho

Dear Sir,

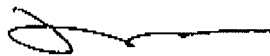
**Re: Contact No. 9/WSD/08  
Laying of Western Cross Harbour Main and Associated Land Mains from West  
Kowloon to Sai Ying Pun  
Monthly Environmental Monitoring and Audit Report No. 19**

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 19 by Email on 7<sup>th</sup> Dec 2011 (entitled "9/WSD/08 - Draft Monthly Report (Nov 11)") and the subsequent revision of the report by Email on 9<sup>th</sup> Dec 2011

We are pleased to inform you that we have no comment on the captioned revised 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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## EXECUTIVE SUMMARY

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

This monthly Environmental Monitoring and Audit (EM&A) report No.19 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in November 2011.

### Site Activities

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

- Re-installation of the vertical seawall (Portion J);
- Connection of the land portion of the submarine pipeline;
- Cut / break the external concrete coating of the surplus 1200mm dia steel water main (Portion H1 & H2);
- Reinstatement of the sloping seawall (Portion H1 & H2);
- Reinstatement of the sloping seawall in West Kowloon (Portion I);
- Placing of Rock Fill Material (Grade 75) to the submarine main (Portion I); and
- Placing of Rock Armour (Type 2) to the submarine main.

### 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): 5 Occasions at KS6, 4 Occasions at KY3, CGa and RWM
- Evening-time Noise Monitoring (1900-2300): 3 Occasions at KS6, CGa, RWM and KY3
- Night-time Noise Monitoring (2300-0700 of next day): 0 Occasion
- Holiday-time Noise Monitoring (0700-1900 on Holiday): 4 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 13 Occasions at 9 monitoring stations and 4 control stations
- Weekly-site inspection: 5 Occasions

### Noise Monitoring

No exceedance of Action Level of noise monitoring was recorded in this reporting month since no complaint on noise issue was received. No exceedance in Limit Level was recorded according to the noise monitoring results in this reporting month.

### Water Quality Monitoring

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

### Site Inspection

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

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
ET Weekly site inspection	01, 08, 16, 23 and 29 November 2011
Monthly Joint site inspection	16 November 2011

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 complaint, notification of summons and prosecution 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) 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 November 2011.

## 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:

- *Re-installation of the vertical seawall (Portion J);*
- *Connection of the land portion of the submarine pipeline;*
- *Cut / break the external concrete coating of the surplus 1200mm dia steel water main (Portion H1 & H2);*



- Reinstatement of the sloping seawall (Portion H1 & H2);
- Reinstatement of the sloping seawall in West Kowloon (Portion I);
- Placing of Rock Fill Material (Grade 75) to the submarine main (Portion I); and
- Placing of Rock Armour (Type 2) to the submarine main.

#### 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/003/06	00110024	15/04/11	14/04/12
		ET/EN/003/10	00531142	24/05/11	23/05/12
		ET/EN/003/13	00593620	08/09/11	07/09/12
Sound Level Calibrator	Rion NC-73 Sound Level Calibrator	ET/EN/002/01	10196943	12/11/10 07/11/11	11/11/11 06/11/12
Anemometer	AZ Instrument AZ 8908	EN/001/03	9101259	10/11/11	09/11/12
Anemometer	AZ Instrument AZ 8908	EN/001/04	9101231	10/11/10	09/11/11

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

#### 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

Totally 5 occasions at KS6 and 4 occasions at CGa, RWM and KY3 of day-time noise monitoring, 3 occasion of evening-time noise monitoring at KS6, CGa, RWM and KY3, 0 occasion of night-time noise monitoring and 4 occasions of holiday-time noise monitoring at KS6, CGa, RWM and KY3 were carried out in this reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received. Besides, no exceedances in Limit Level were recorded according to the noise monitoring results of this reporting month. 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*
Day-time	04/11/11	15:25	63.4	X
	11/11/11	16:00	65.4	X
	18/11/11	15:30	63.9	X
	25/11/11	09:35	64.8	X
	30/11/11	15:30	62.8	X
Evening-time	12/11/11	21:25	63.5	X
	12/11/11	21:30	64.0	X
	12/11/11	21:35	63.7	X
	19/11/11	21:05	63.4	X
	19/11/11	21:10	62.7	X
	19/11/11	21:15	62.5	X
	27/11/11	20:30	61.9	X
	27/11/11	20:35	62.0	X
	27/11/11	20:40	63.0	X



Monitoring Parameter	Date	KS6		
		Time	Result	Exceed*
Holiday-time	06/11/11	09:15	60.5	X
	06/11/11	09:20	61.0	X
	06/11/11	09:25	61.2	X
	13/11/11	15:25	63.5	X
	13/11/11	15:30	63.1	X
	13/11/11	15:35	63.0	X
	20/11/11	15:05	62.8	X
	20/11/11	15:10	61.9	X
	20/11/11	15:15	62.3	X
	27/11/11	16:20	64.8	X
	27/11/11	16:25	64.5	X
27/11/11	16:30	64.3	X	
Monitoring Parameter	Date	CGa		
Day-time	11/11/11	13:30	72.7	X
	14/11/11	11:30	74.1	X
	21/11/11	16:10	73.8	X
	28/11/11	15:35	74.1	X
Evening-time	12/11/11	20:00	69.9	X
	12/11/11	20:05	70.0	X
	12/11/11	20:10	70.0	X
	19/11/11	19:20	68.9	X
	19/11/11	19:25	69.6	X
	19/11/11	19:30	69.5	X
	27/11/11	19:00	69.6	X
	27/11/11	19:05	69.6	X
Holiday-time	06/11/11	10:25	67.7	X
	06/11/11	10:30	67.9	X
	06/11/11	10:35	67.4	X
	13/11/11	13:50	69.6	X
	13/11/11	13:55	69.7	X
	13/11/11	14:00	69.8	X
	20/11/11	16:00	69.1	X
	20/11/11	16:05	69.8	X
	20/11/11	16:10	69.6	X
	27/11/11	18:20	69.8	X
27/11/11	18:25	69.9	X	
27/11/11	18:30	69.8	X	
Monitoring Parameter	Date	RWM		
Day-time	11/11/11	14:05	61.1	X
	14/11/11	10:55	63.4	X
	21/11/11	16:45	60.7	X
	28/11/11	16:10	61.8	X
Evening-time	12/11/11	20:20	69.2	X
	12/11/11	20:25	69.7	X
	12/11/11	20:30	69.5	X
	19/11/11	19:40	68.3	X
	19/11/11	19:45	68.8	X
	19/11/11	19:50	69.1	X
	27/11/11	19:20	68.8	X
	27/11/11	19:25	69.0	X
Holiday-time	06/11/11	10:45	62.4	X
	06/11/11	10:50	63.0	X
	06/11/11	10:55	62.7	X
	13/11/11	14:10	61.5	X
	13/11/11	14:15	61.3	X
	13/11/11	14:20	61.1	X



Monitoring Parameter	Date	RWM		
		Time	Result	Exceed*
Holiday-time	20/11/11	16:20	61.4	X
	20/11/11	16:25	60.9	X
	20/11/11	16:30	60.5	X
	27/11/11	17:55	60.5	X
	27/11/11	18:00	60.8	X
	27/11/11	18:05	61.0	X
Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Day-time	11/11/11	14:40	60.4	X
	14/11/11	10:20	61.5	X
	21/11/11	17:20	59.9	X
	28/11/11	16:45	60.2	X
Evening-time	12/11/11	20:40	66.8	X
	12/11/11	20:45	66.5	X
	12/11/11	20:50	66.7	X
	19/11/11	20:00	66.5	X
	19/11/11	20:05	67.1	X
	19/11/11	20:10	66.9	X
	27/11/11	19:40	66.7	X
	27/11/11	19:45	66.3	X
	27/11/11	19:50	66.6	X
	27/11/11	19:50	66.6	X
Holiday-time	06/11/11	11:05	63.1	X
	06/11/11	11:10	62.9	X
	06/11/11	11:15	63.5	X
	13/11/11	14:30	60.3	X
	13/11/11	14:35	60.0	X
	13/11/11	14:40	59.9	X
	20/11/11	16:40	59.8	X
	20/11/11	16:45	60.1	X
	20/11/11	16:50	60.3	X
	27/11/11	17:35	59.7	X
	27/11/11	17:40	60.0	X
27/11/11	17:45	59.8	X	

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

The summary of noise exceedances is shown in Table 4.6.

Table 4.6 Summary of Impact Noise Exceedances in this reporting month

Exceedance Level	Daytime	Evening-time	Night-time	Holiday-time
Action	0	0	0	0
Cumulative	0	0	0	0
Limit	0	0	0	0
Cumulative	0	0	155	0

## 5.0 WATER QUALITY MONITORING

### 5.1 Monitoring Requirements

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

### 5.2 Monitoring Locations

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





Table 5.1 Water Quality Monitoring Stations

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

Remark (\*): Station R15 = WSD Seawater Intake

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

### 5.3 Monitoring Parameters

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

Table 5.2 Water Quality Monitoring Parameters

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

Table 5.3 Other relevant water quality parameters

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

### 5.4 Monitoring Frequency

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

Table 5.4 Monitoring Frequency of Impact Water Quality Monitoring

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



## 5.5 Monitoring Methodology and Equipment Used

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

### Location of the monitoring stations

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

### Water Depth measurement

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

### In-situ Water Quality Monitoring Equipment

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

### *Dissolved Oxygen, salinity and temperature measuring equipment*

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

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

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

### *Turbidity Measurement Instrument*

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

### Water Sampling and Sample Analysis

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

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

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



## 5.6 Details of site Equipment used for In-situ Measurement

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

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

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

Parameter	Model	Date of Calibration	Due Date	Equipment No.	Serial No.
Coordinate of Monitoring stations	Magellan GPS Navigator	-----	-----	ET/EW/005/03	211836B
Dissolved Oxygen (Saturation), Temperature and Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85D	24/09/11	23/12/11	ET/EW/008/003*	082100716
Turbidity	HACH Model 2100P Turbid Meter	13/10/11	12/01/12	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 <sup>th</sup> 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 &amp; 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 &amp; 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

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

November 2011						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
		▼		▼		▼
6	7	8	9	10	11	12
		▼		▼		▼
13	14	15	16	17	18	19
		▼		▼		▼
20	21	22	23	24	25	26
		▼		▼		▼
27	28	29	30			
		▼				

Remarks: ( ▼ ) = Marine water quality monitoring carried out by ET.

## 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 01, 08, 16, 23 and 29 November 2011 by ET. Monthly joint site inspection at 16 November 2011 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 finding

According to the summary of the ET weekly site inspections carried out in November 2011, it indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. No site inspection finding was recorded in this reporting month.

### 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;*
- *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
Construction Noise Permit (Sai Ying Pun)	GW-RS0877-11	26/09/11	25/03/12	<b>Group A</b> One Crane, mobile (diesel) (CNP 048) One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, $\leq 108\text{dB(A)}$ (CNP 101) <b>Group B</b> One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, $\leq 108\text{dB(A)}$ (CNP 101) <b>Group C</b> One Generator, silenced, $\leq 108\text{dB(A)}$ (CNP 101) One Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221) <b>Group D</b> One Generator, silenced, $\leq 108\text{dB(A)}$ (CNP 101) One Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221)
Construction Noise Permit (West Kowloon)	GW-RE0647-11	05/09/11	04/03/12	<b>Group A</b> One Air Compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone A) One Crane, mobile (diesel) (CNP 048) (Zone A) One Generator, standard (CNP 101) (Zone A) <b>Group B</b> Two Derrick barge (CNP 061) (Zone B) Two Generator, standard (CNP 101) (Zone B) Two Guard boats (Zone B) One Tug boat (CNP 221) (Zone B)
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
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 $\text{m}^3$ )	507.37		16135.56
	Broken Concrete (in $\text{m}^3$ )	0	---	0
	Reused in the Contract (in $\text{m}^3$ )	0	---	0
	Reused in other Projects (in $\text{m}^3$ )	0	---	0
	Disposal as Public Fill (in $\text{m}^3$ )	507.37	SENT Landfill	16135.56
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	0	Collected by recycling company	143
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in $\text{m}^3$ )	5.09	SENT Landfill	101.60
Dredged Materials*	Type 1 (in $\text{m}^3$ )	0	East Ninepin Mud Disposal Ground	160500
	Type 2 (in $\text{m}^3$ )	0	The East Sha Chau	104990

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



## **8.2 Advice on the Solid and Liquid Waste Management Status**

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

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

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste.

All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

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

## **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. No exceedance in Limit Level was recorded according to the noise monitoring results in this reporting month.

### **9.2 Summary of Environmental Complaints**

No complaint was 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**

Since no exceedance of Action and Limit Level of noise and water quality monitoring results was recorded in this reporting month, no further action was required to be taken.

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

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

Table 10.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		Summons served		Successful prosecution received	
November 2011	Cumulative	November 2011	Cumulative	November 2011	Cumulative
0	1	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 exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

No exceedance of Action Level of noise monitoring was recorded in this reporting month since no complaint on noise issue was received. No exceedance in Limit Level was recorded according to the noise monitoring results in this reporting month.

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

No complaint, prosecution or notification of summon 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; and
- 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:

- Re-instatement of the vertical seawall (Portion J);
- Connection of the land portion of the submarine pipeline (Portion H1 & H2); and
- Placing backfilling and armouring material (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; 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

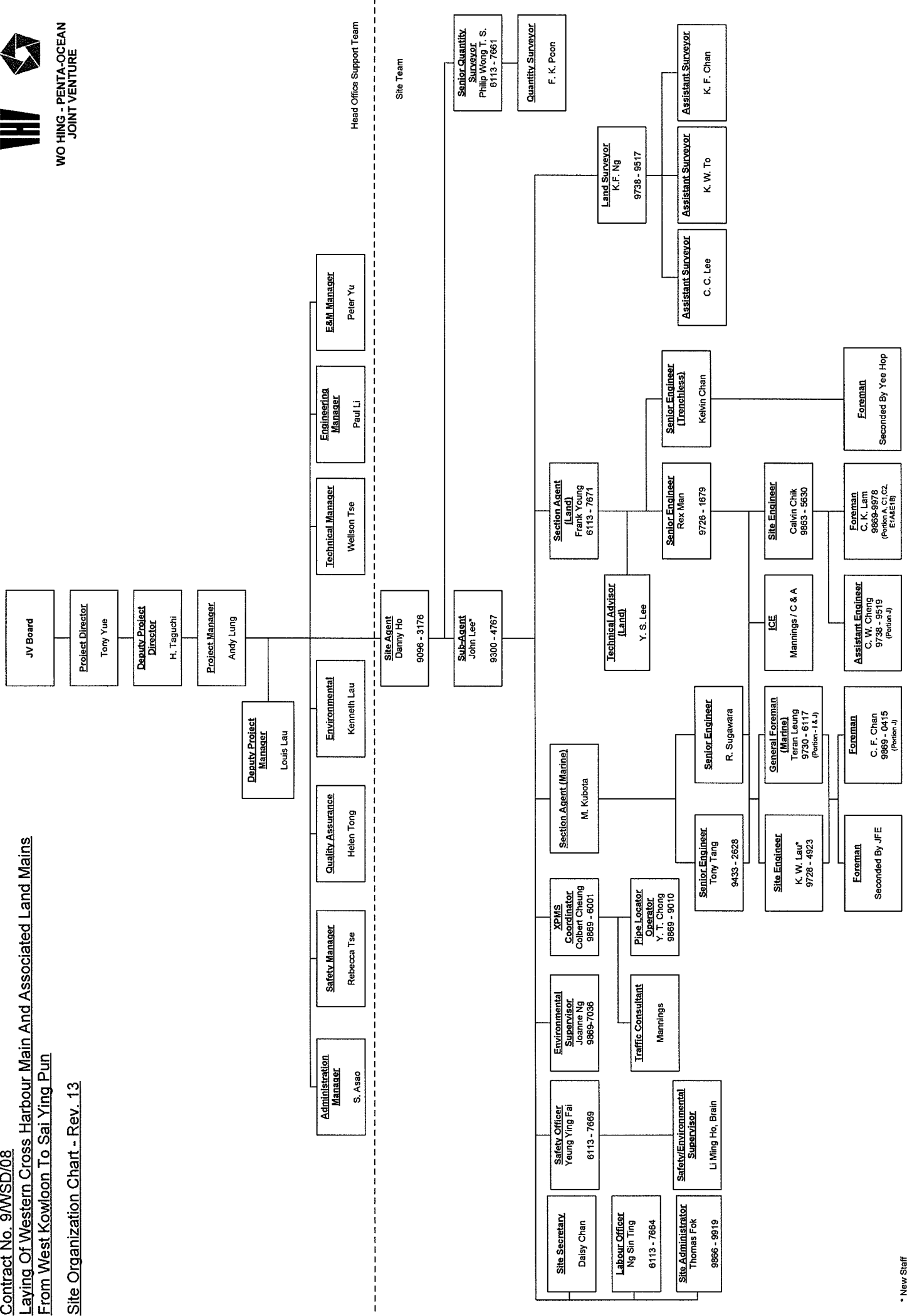
The proposed EM&A program of the coming month is attached in Appendix I.

- END OF REPORT -

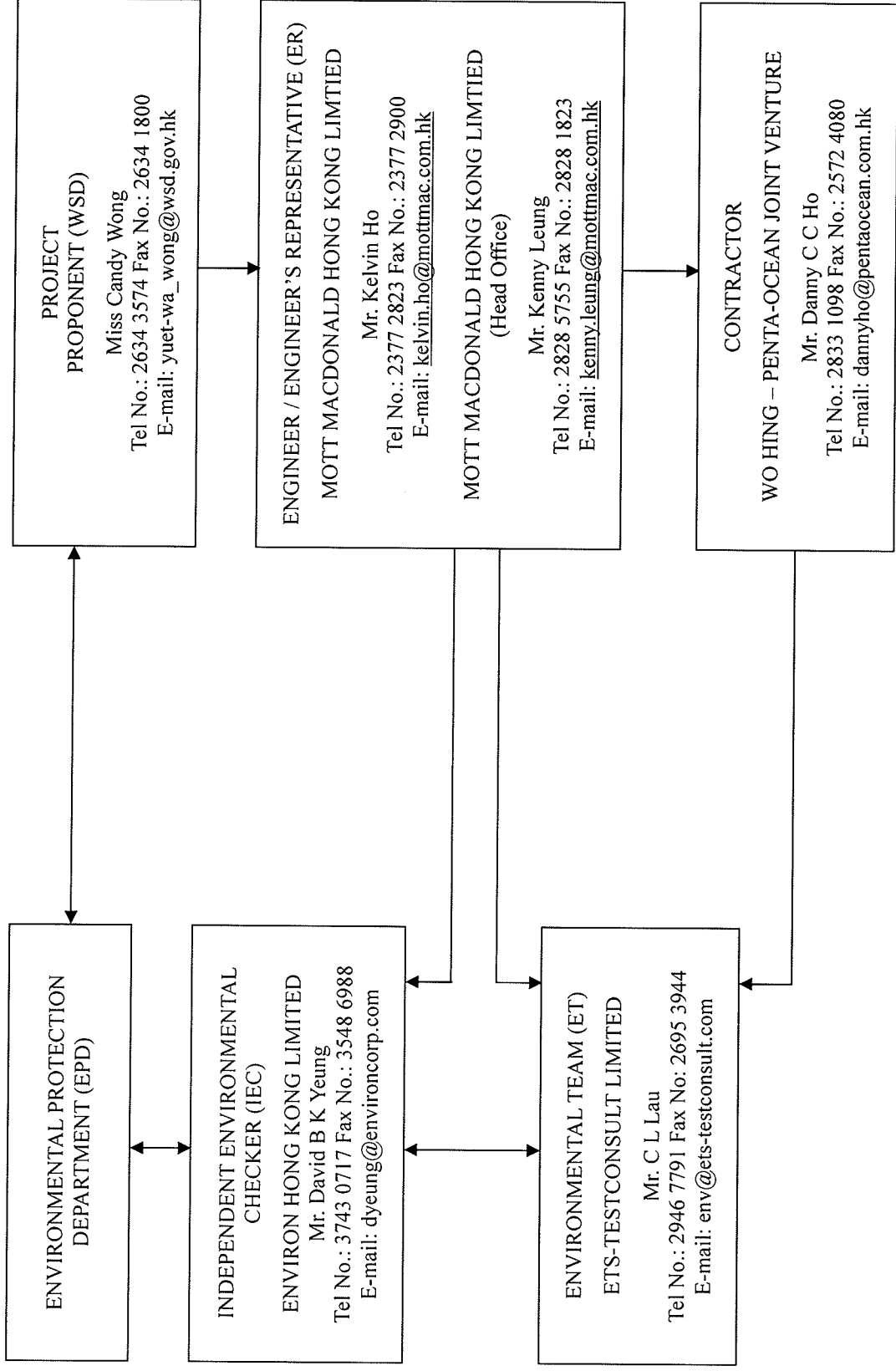


## **Appendix A**

### **Organization Chart and Lines of Communication**



\* New Staff



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. **06467**

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. :** Q02516

**Date of receipt :** 8-Nov-10

## Item Tested

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

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 12-Nov-10

**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).

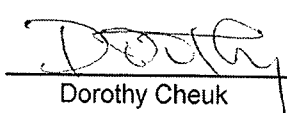
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	03926	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR
S041	Universal Counter	04461	SCL-HKSAR
S206	Sound Level Meter	04462	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:** 15-Nov-10



# Calibration Certificate

Certificate No. 06467

Page 2 of 2 Pages

Results :

## 1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value		Mfr's Spec.
	Before Adjust.	After Adjust.	
94 dB	93.52 dB	93.82 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.1$  dB

## 2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.988 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

## 3. Level Stability : 0.0 dB

Uncertainty :  $\pm 0.01$  dB

## 4. Total Harmonic Distortion : $< 0.3$ %

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 006 hPa

----- END -----



# Calibration Certificate

Certificate No. **16578**

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. :** Q12677

**Date of receipt :** 2-Nov-11

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 7-Nov-11

**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>Traceable to</u>
S014	Spectrum Analyzer	13535	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR
S041	Universal Counter	15610	SCL-HKSAR
S206	Sound Level Meter	04462	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:** 7-Nov-11

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. 16578

Page 2 of 2 Pages

Results :

## 1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.21 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.2$  dB

## 2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.989 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

## 3. Level Stability : 0.0 dB

Uncertainty :  $\pm 0.01$  dB

## 4. Total Harmonic Distortion : $< 0.4$ %

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % 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 : 1 005 hPa

----- END -----



# Calibration Certificate

Certificate No. 12016

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. :** Q10853

**Date of receipt :** 11-Apr-11

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00110024

## Test Conditions

**Date of Test :** 15-Apr-11

**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:

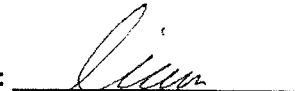
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

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.

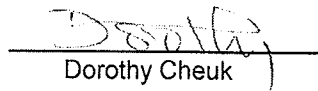
The test equipment used for calibration are traceable to International System of Units (SI).

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

Calibrated by :

  
P. F. Wong

Approved by :

  
Dorothy Cheuk

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: 18-Apr-11



# Calibration Certificate

Certificate No. 12016

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.0	94.2
		Slow		94.2
	L <sub>C</sub>	Fast		94.2
	L <sub>p</sub>	Fast		94.2
30 - 120	L <sub>A</sub>	Fast	94.0	94.1
		Slow		94.1
	L <sub>C</sub>	Fast		94.1
	L <sub>p</sub>	Fast		94.2
30 - 120	L <sub>A</sub>	Fast	114.0	114.0
		Slow		114.0
	L <sub>C</sub>	Fast		114.0
	L <sub>p</sub>	Fast		114.1

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.2$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.1$  dB

## 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	114.2	+0.1	$\pm 0.7$ dB
130	104.0	104.2	+0.1	
120	94.0	94.1(Ref.)	--	
110	84.0	84.0	-0.1	
100	74.0	74.2	+0.1	
90	64.0	64.1	0.0	
80	54.0	53.9	-0.1	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 12016

Page 3 of 3 Pages

## 3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	0.0	± 0.4 dB
	94.0	94.1 (Ref.)	--	
	95.0	95.1	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

### A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.0	- 39.4 dB, ± 1.5 dB
63 Hz	-26.6	- 26.2 dB, ± 1.5 dB
125 Hz	-16.5	- 16.1 dB, ± 1 dB
250 Hz	-8.9	- 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	+1.6	+ 1.2 dB, ± 1 dB
4 kHz	+1.5	+ 1.0 dB, ± 1 dB
8 kHz	-0.7	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.3	- 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	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
1/10 <sup>2</sup>	40.0	39.9	
1/10 <sup>3</sup>	40.0	40.0	± 1.0 dB
1/10 <sup>4</sup>	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 : 1 010 hPa.

----- END -----



# Calibration Certificate

Certificate No. 12737

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. :** Q11169

**Date of receipt :** 20-May-11

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00531142

## Test Conditions

**Date of Test :** 24-May-11

**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>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	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.

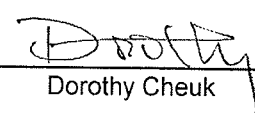
The test equipment used for calibration are traceable to International System of Units (SI).

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

Calibrated by :

  
P.F. Wong

Approved by :

  
Dorothy Cheuk

Date: 25-May-11

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

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# Calibration Certificate

Certificate No. 12737

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 <sub>A</sub>	Fast	94.0	94.0
		Slow		93.9
	L <sub>C</sub>	Fast		94.0
	L <sub>p</sub>	Fast		94.0
30 - 120	L <sub>A</sub>	Fast	94.0	94.0
		Slow		93.9
	L <sub>C</sub>	Fast		94.0
	L <sub>p</sub>	Fast		94.0
30 - 120	L <sub>A</sub>	Fast	114.0	114.0
		Slow		113.9
	L <sub>C</sub>	Fast		114.0
	L <sub>p</sub>	Fast		114.0

IEC Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 12737

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## 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	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.0	0.0	
100	74.0	74.0	0.0	
90	64.0	64.1	+0.1	
80	54.0	54.1	+0.1	

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	84.0	0.0	± 0.4 dB
	94.0	94.0 (Ref.)	--	
	95.0	95.0	0.0	± 0.2 dB

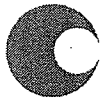
Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

### A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.6	- 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	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.3	+ 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	-6.7	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB



# Calibration Certificate

Certificate No. 12737

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 <sup>2</sup>	40.0	39.9	
1/10 <sup>3</sup>	40.0	39.9	± 1.0 dB
1/10 <sup>4</sup>	40.0	39.8	

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 : 1 003 hPa.  
4. The internal cal. Reference of UUT was drifted from 94.0 dB to 93.0 dB

----- END -----





# Calibration Certificate

Certificate No. **15347**

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. :** Q12215

**Date of receipt :** 7-Sep-11

## Item Tested

**Description :** Precision Integrating Sound Level Meter (ET/EN/003/13)

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00593620

## Test Conditions

**Date of Test :** 8-Sep-11

**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 Type1 and IEC 804 Type2 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>Traceable to</u>
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	04062	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:** 8-Sep-11

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

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# Calibration Certificate

Certificate No. 15347

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.0	93.7
		Slow		93.7
	L <sub>C</sub>	Fast		93.9
	L <sub>p</sub>	Fast		93.9
30 - 120	L <sub>A</sub>	Fast	94.0	93.7
		Slow		93.7
	L <sub>C</sub>	Fast		93.8
	L <sub>p</sub>	Fast		93.8
30 - 120	L <sub>A</sub>	Fast	114.0	113.6
		Slow		113.6
	L <sub>C</sub>	Fast		113.7
	L <sub>p</sub>	Fast		113.7

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

## 2. Level Stability : 0.1 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 dB

## 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) ± 0.7 dB
130	114.0	113.7	0.0	
130	104.0	103.7	0.0	
120	94.0	93.7(Ref.)	--	
110	84.0	83.7	0.0	
100	74.0	73.8	+0.1	
90	64.0	63.8	+0.1	
80	54.0	53.5	-0.2	

Uncertainty : ± 0.1 dB



# Calibration Certificate

Certificate No. 15347

Page 3 of 3 Pages

## 3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.7	0.0	± 0.4 dB
	94.0	93.7 (Ref.)	--	
	95.0	94.7	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 1.5 dB
63 Hz	-26.3	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.4	+ 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	-6.6	- 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	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
1/10 <sup>2</sup>	40.0	39.9	
1/10 <sup>3</sup>	40.0	39.9	± 1.0 dB
1/10 <sup>4</sup>	40.0	40.0	

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 : 1 000 hPa.

4. The internal calibration reference of UUT was drifted from 94.0 dB to 94.5 dB



# Calibration Certificate

Certificate No. **16576**

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. :** Q12677

**Date of receipt :** 2-Nov-11

## Item Tested

**Description :** Anemometer

**Manufacturer :** AZ Instrument

**Model :** AZ 8908

**Serial No. :** 9101259

## Test Conditions

**Date of Test :** 10-Nov-11

**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 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>Traceable to</u>
S223A	Std. Thermometer	13173	NIM-PRC
S155	Std. Anemometer	NSC20113098	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: 10-Nov-11

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

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# Calibration Certificate

Certificate No. 16576

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	2.3	2.5	± (3 % of reading + 1 dgt)
5.00	4.6	5.1	
10.00	9.4	10.3	
15.00	14.0	15.4	
20.00	18.8	20.7	

## 2. Temperature

Applied Value (°C)	UUT Reading (°C)	Mfr's Spec.
5.68	5.7	± 1 °C
25.98	25.7	
47.80	47.1	

Remark : 1. UUT: Unit-Under-Test

2. Uncertainty : ± (0.9% + 0.16 m/s) for Velocity, ± 0.25 °C for Temperature, for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 002 hPa

----- END -----



Hong Kong Calibration Ltd.

香港校正有限公司

# Calibration Certificate

Certificate No. 06466

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. : Q02516

Date of receipt : 8-Nov-10

## Item Tested

Description : Anemometer (EN/001/04)

Manufacturer : AZ Instrument

Model : AZ 8908

Serial No. : 9101231

## Test Conditions

Date of Test : 10-Nov-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure: T03, Z04.

## 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>Traceable to</u>
S223	Std. Thermometer	01631	NIM-PRC
S155	Std. Anemometer	NSC20104025	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 :

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: 10-Nov-10

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# Calibration Certificate

Certificate No. 06466

Page 2 of 2 Pages

Results :

## 1. Velocity

Applied Value (m/s)	UUT Reading (m/s)	Mfr's Spec.
2.50	2.5	± 3 % f.s. (f.s. = 35 m/s)
5.00	4.9	
10.00	9.5	
15.00	14.3	
20.00	19.1	

## 2. Temperature

Applied Value (°C)	UUT Reading (°C)	Mfr's Spec.
3.10	3.0	± 1 °C
23.98	24.0	
48.20	47.8	

Remark : 1. UUT: Unit-Under-Test

2. Uncertainty : ± 1.3 % or ± 0.05 m/s, whichever is greater for Velocity, ± 0.25 °C for Temperature, for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 011 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	
04/11/11	Sunny	15:25	15:55	63.4	65.8	60.5	0.2
11/11/11	Cloudy	16:00	16:30	65.4	67.1	61.0	0.6
18/11/11	Cloudy	15:30	16:00	63.9	65.7	62.2	0.4
25/11/11	Cloudy	09:35	10:05	64.8	66.7	62.5	0.6
30/11/11	Sunny	15:30	16:00	62.8	63.8	61.3	1.5

### 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	
11/11/11	Cloudy	13:30	14:00	72.7	75.2	67.8	0.3
14/11/11	Fine	11:30	12:00	74.1	76.5	65.8	0.1
21/11/11	Cloudy	16:10	16:40	73.8	75.7	68.3	0.8
28/11/11	Fine	15:35	16:05	74.1	76.4	68.1	0.4

### 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	
11/11/11	Cloudy	14:05	14:35	61.1	63.8	58.3	0.5
14/11/11	Fine	10:55	11:25	63.4	64.9	60.8	0.3
21/11/11	Cloudy	16:45	17:15	60.7	63.5	58.5	1.1
28/11/11	Fine	16:10	16:40	61.8	64.1	59.3	0.6

### 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	
11/11/11	Cloudy	14:40	15:10	60.4	62.7	56.5	0.5
14/11/11	Fine	10:20	10:50	61.5	63.8	60.1	0.3
21/11/11	Cloudy	17:20	17:50	59.9	62.6	57.1	1.1
28/11/11	Fine	16:45	17:15	60.2	61.8	58.3	0.5



## 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 (30min)	L10	L90	
12/11/11	Fine	21:25	21:30	63.5	66.7	56.3	0.3
12/11/11	Fine	21:30	21:35	64.0	66.9	56.5	0.3
12/11/11	Fine	21:35	21:40	63.7	66.5	56.4	0.3
19/11/11	Fine	21:05	21:10	63.4	64.1	60.7	0.5
19/11/11	Fine	21:10	21:15	62.7	63.5	59.5	0.6
19/11/11	Fine	21:15	21:20	62.5	63.2	59.1	0.6
27/11/11	Fine	20:30	30:35	61.9	63.2	58.1	0.3
27/11/11	Fine	20:35	20:40	62.0	63.5	57.9	0.3
27/11/11	Fine	20:40	20:45	63.0	64.5	59.8	0.3

### 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	
12/11/11	Fine	20:00	20:05	69.9	73.6	63.4	0.2
12/11/11	Fine	20:05	20:10	70.0	73.4	64.6	0.2
12/11/11	Fine	20:10	20:15	70.0	73.6	63.8	0.2
19/11/11	Fine	19:20	19:25	68.9	72.8	63.5	0.3
19/11/11	Fine	19:25	19:30	69.6	73.6	64.4	0.3
19/11/11	Fine	19:30	19:35	69.5	73.4	64.1	0.3
27/11/11	Fine	19:00	19:05	69.6	72.8	63.4	0.2
27/11/11	Fine	19:05	19:10	69.6	73.0	63.4	0.2
27/11/11	Fine	19:10	19:15	69.0	71.7	6.1	0.2

### 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	
12/11/11	Fine	20:20	20:25	69.2	73.1	63.0	0.2
12/11/11	Fine	20:25	20:30	69.7	73.3	62.8	0.2
12/11/11	Fine	20:30	20:35	69.5	73.0	63.2	0.2
19/11/11	Fine	19:40	19:45	68.3	72.0	61.7	0.5
19/11/11	Fine	19:45	19:50	68.8	72.7	62.4	0.4
19/11/11	Fine	19:50	19:55	69.1	72.9	62.8	0.5
27/11/11	Fine	19:20	19:25	68.8	72.4	63.3	0.2
27/11/11	Fine	19:25	19:30	69.0	72.8	63.5	0.2
27/11/11	Fine	19:30	19:35	68.6	72.0	62.9	0.2

### 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	
12/11/11	Fine	20:40	20:45	66.8	70.4	61.3	0.2
12/11/11	Fine	20:45	20:50	66.5	70.1	61.1	0.2
12/11/11	Fine	20:50	20:55	66.7	70.2	60.9	0.2
19/11/11	Fine	20:00	20:05	66.5	70.1	60.7	0.5
19/11/11	Fine	20:05	20:10	67.1	70.8	61.5	0.5
19/11/11	Fine	20:10	20:15	66.9	70.6	61.3	0.5
27/11/11	Fine	19:40	19:45	66.7	69.8	61.6	0.2
27/11/11	Fine	19:45	19:50	66.3	69.4	61.1	0.2
27/11/11	Fine	19:50	19:55	66.6	69.8	61.7	0.2



## 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 (30min)	L10	L90	
06/11/11	Fine	09:15	09:20	60.5	62.0	58.5	0.9
06/11/11	Fine	09:20	09:25	61.0	62.5	59.1	1.1
06/11/11	Fine	09:25	09:30	61.2	62.8	59.5	1.2
13/11/11	Fine	15:25	15:30	63.5	65.1	61.4	0.2
13/11/11	Fine	15:30	15:35	63.1	65.0	61.2	0.2
13/11/11	Fine	15:35	15:40	63.0	64.7	61.0	0.2
20/11/11	Fine	15:05	15:10	62.8	63.7	59.7	0.6
20/11/11	Fine	15:10	15:15	61.9	62.8	58.9	0.6
20/11/11	Fine	15:15	15:20	62.3	63.3	59.5	0.6
27/11/11	Sunny	16:20	16:25	64.8	66.8	62.1	0.2
27/11/11	Sunny	16:25	16:30	64.5	66.3	62.0	0.2
27/11/11	Sunny	16:30	16:35	64.3	65.9	61.7	0.2

### 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 (30min)	L10	L90	
06/11/11	Fine	10:25	10:30	67.7	69.0	64.2	0.8
06/11/11	Fine	10:30	10:35	67.9	69.4	65.0	0.7
06/11/11	Fine	10:35	10:40	67.4	68.8	63.6	0.8
13/11/11	Fine	13:50	13:55	69.6	71.1	64.8	0.1
13/11/11	Fine	13:55	14:00	69.7	71.0	66.5	0.1
13/11/11	Fine	14:00	14:05	69.8	70.8	66.7	0.1
20/11/11	Fine	16:00	16:05	69.1	72.3	62.5	0.2
20/11/11	Fine	16:05	16:10	69.8	73.4	63.3	0.2
20/11/11	Fine	16:10	16:15	69.6	72.9	63.0	0.2
27/11/11	Fine	18:20	18:25	69.8	72.4	66.5	0.2
27/11/11	Fine	18:25	18:30	69.9	72.7	66.7	0.2
27/11/11	Fine	18:30	18:35	69.8	72.1	66.1	0.2

### 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	
06/11/11	Fine	10:45	10:50	62.4	63.8	57.4	1.2
06/11/11	Fine	10:50	10:55	63.0	64.2	58.1	1.1
06/11/11	Fine	10:55	11:00	62.7	64.0	57.8	1.3
13/11/11	Fine	14:10	14:15	61.5	62.9	59.6	0.2
13/11/11	Fine	14:15	14:20	61.3	62.4	59.3	0.2
13/11/11	Fine	14:20	14:25	61.1	62.2	59.4	0.2
20/11/11	Fine	16:20	16:25	61.4	63.0	59.5	0.4
20/11/11	Fine	16:25	16:30	60.9	62.6	58.9	0.4
20/11/11	Fine	16:30	16:35	60.5	62.3	58.8	0.4
27/11/11	Fine	17:55	18:00	60.5	61.4	59.3	0.3
27/11/11	Fine	18:00	18:05	60.8	62.1	59.5	0.3
27/11/11	Fine	18:05	18:10	61.0	62.1	59.6	0.3



## Holiday-time Noise Monitoring

### 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	
06/11/11	Fine	11:05	11:10	63.1	64.4	57.3	1.2
06/11/11	Fine	11:10	11:15	62.9	64.1	56.8	1.4
06/11/11	Fine	11:15	11:20	63.5	64.8	57.6	1.1
13/11/11	Fine	14:30	14:35	60.3	61.5	59.0	0.2
13/11/11	Fine	14:35	14:40	60.0	61.2	58.9	0.2
13/11/11	Fine	14:40	14:45	59.9	61.1	58.9	0.2
20/11/11	Fine	16:40	16:45	59.8	61.2	57.1	0.3
20/11/11	Fine	16:45	16:50	60.1	61.6	57.5	0.4
20/11/11	Fine	16:50	16:55	60.3	61.7	57.9	0.4
27/11/11	Fine	17:35	17:40	59.7	60.5	58.6	0.4
27/11/11	Fine	17:40	17:45	60.0	60.9	58.8	0.4
27/11/11	Fine	17:45	17:50	59.8	60.5	58.7	0.4



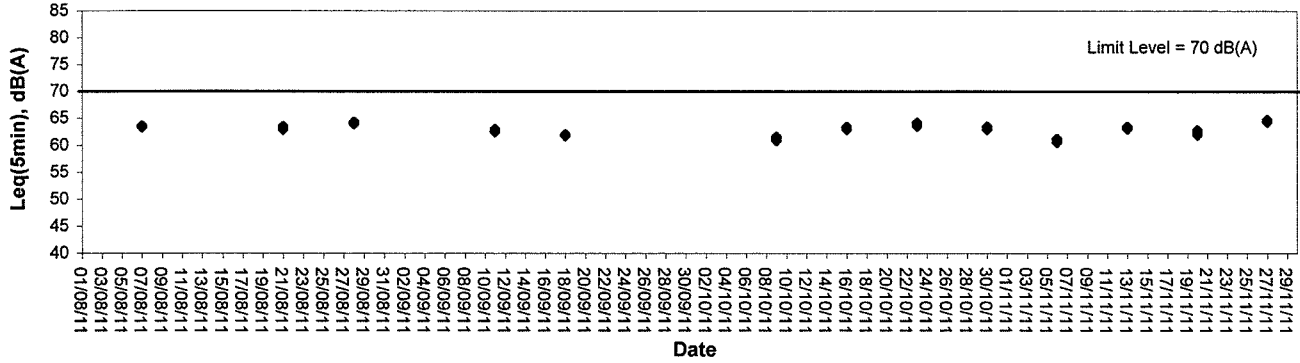
## **Appendix B3**

### **Graphical Plots of Impact Noise Monitoring Data**

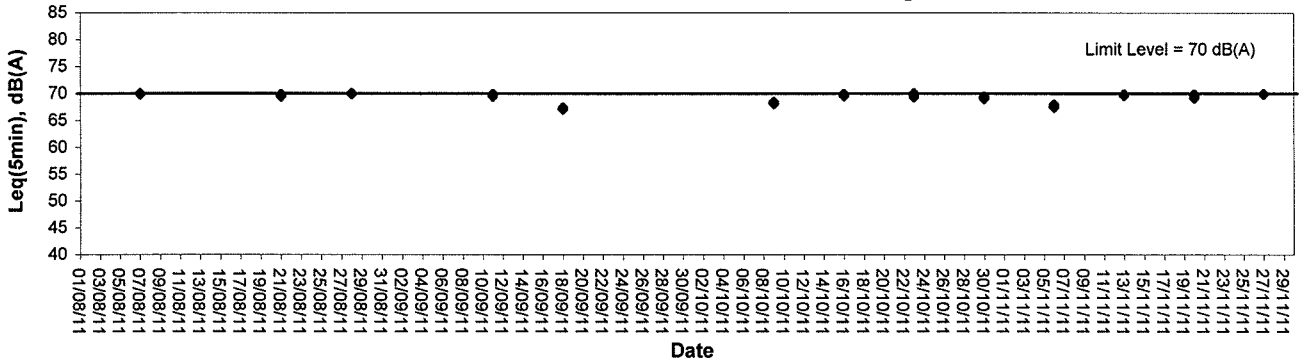


### Noise Monitoring (Holiday-time)

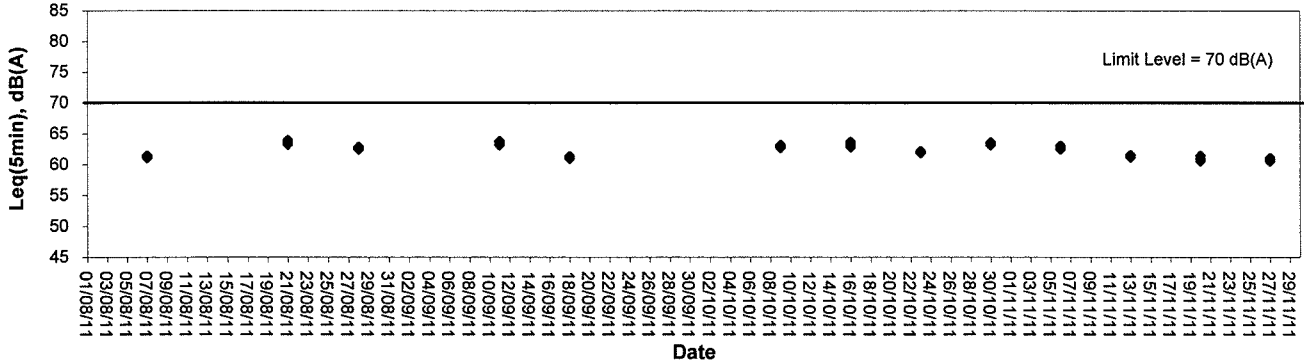
Noise level at KS6 - Podium at the Culliman



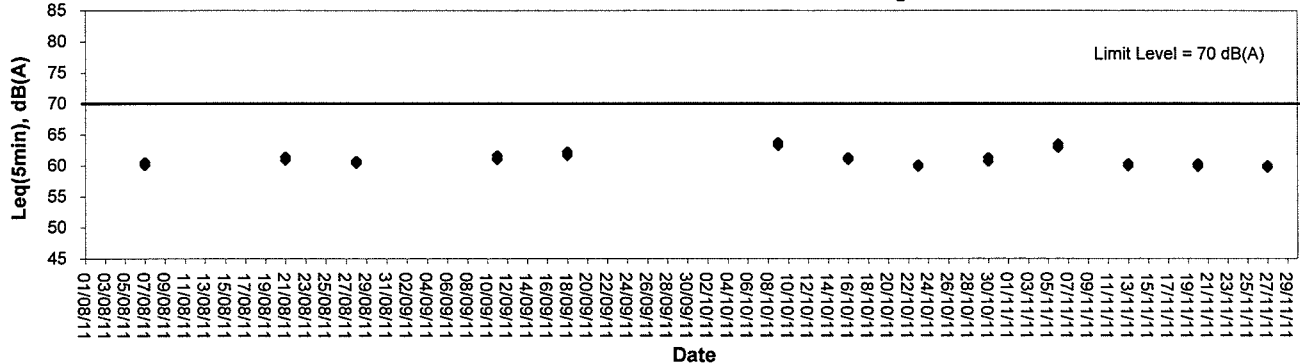
Noise level at CGA - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



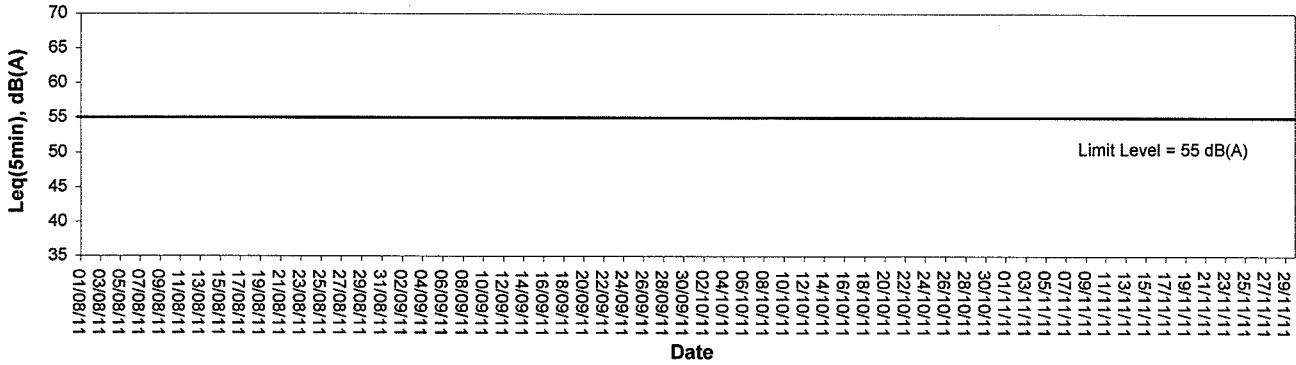
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



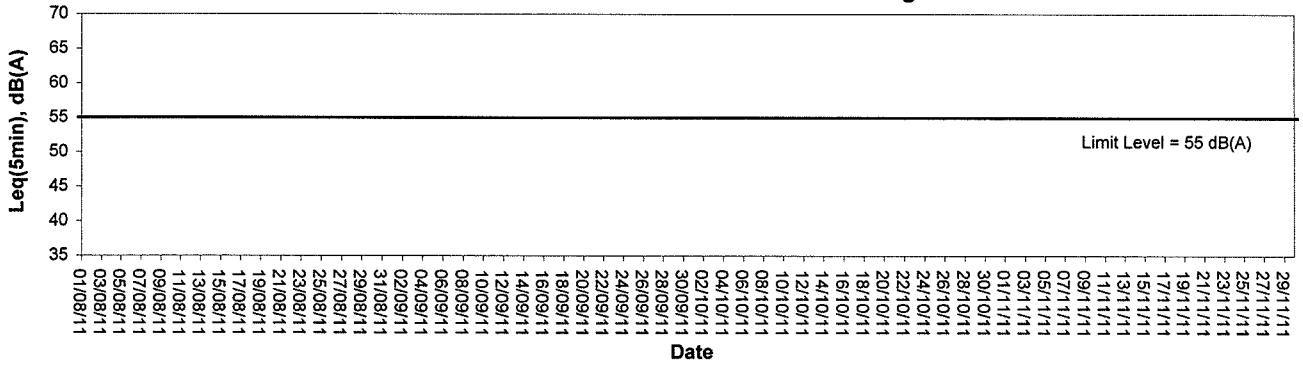


### Noise Monitoring (Night-time)

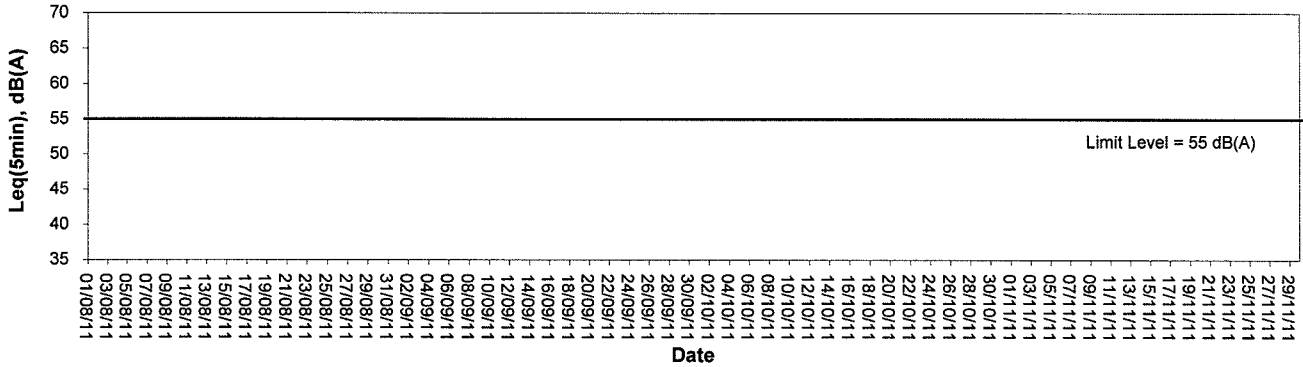
Noise level at KS6 - Podium at the Culliman



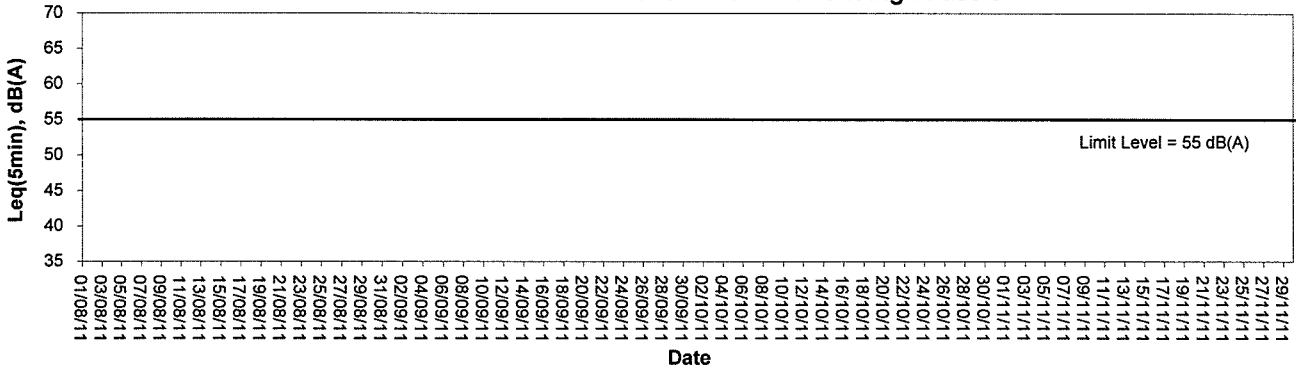
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



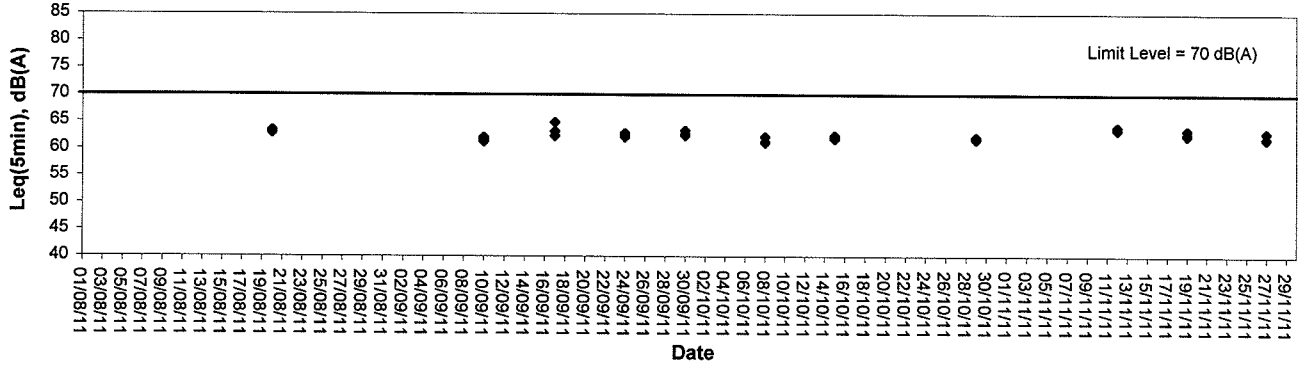
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



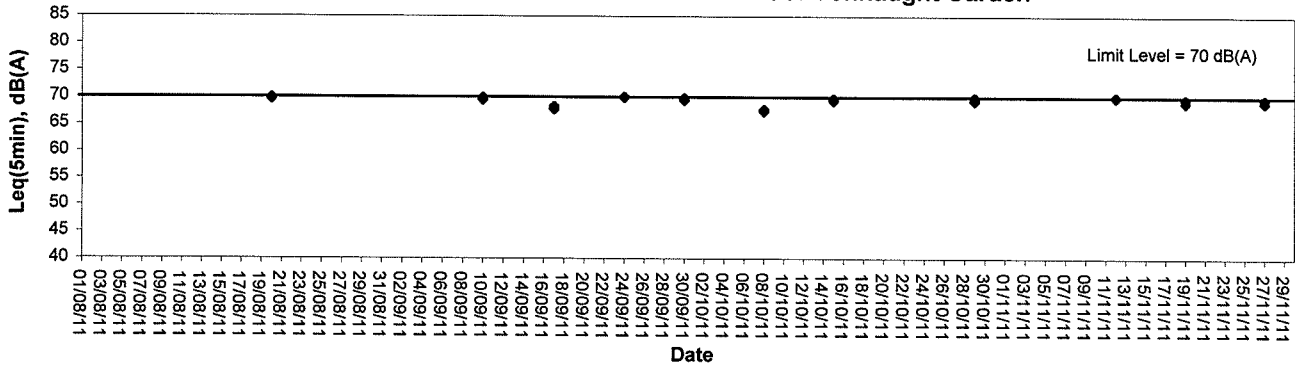


### Noise Monitoring (Evening-time)

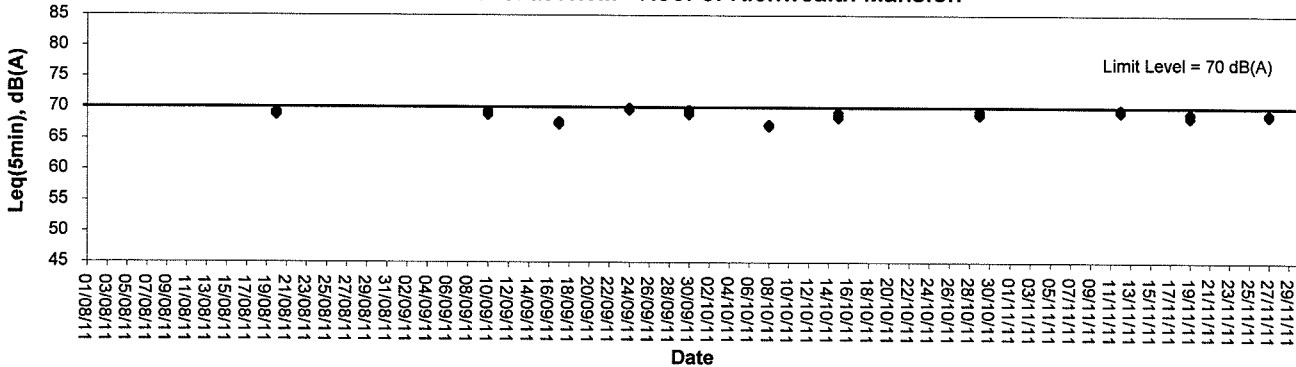
Noise level at KS6 - Podium at the Culliman



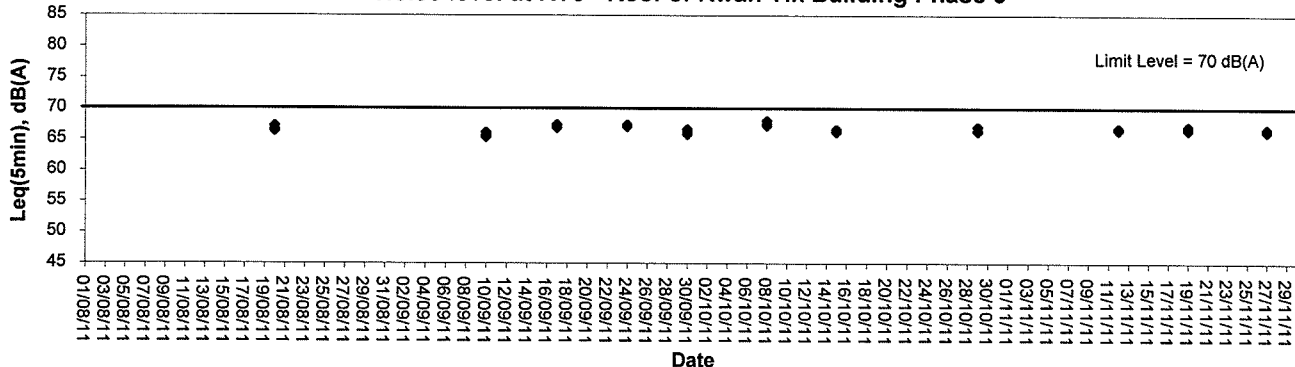
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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

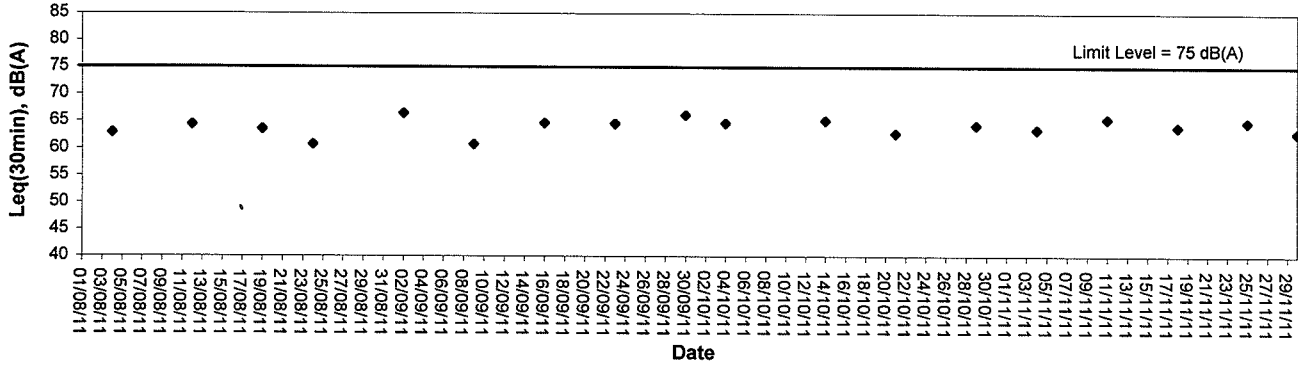




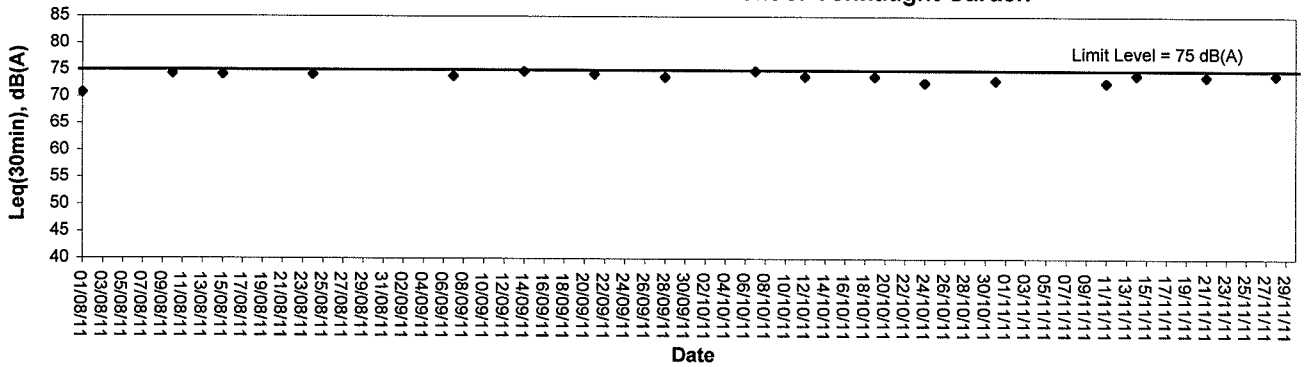


### Noise Monitoring (Day-time)

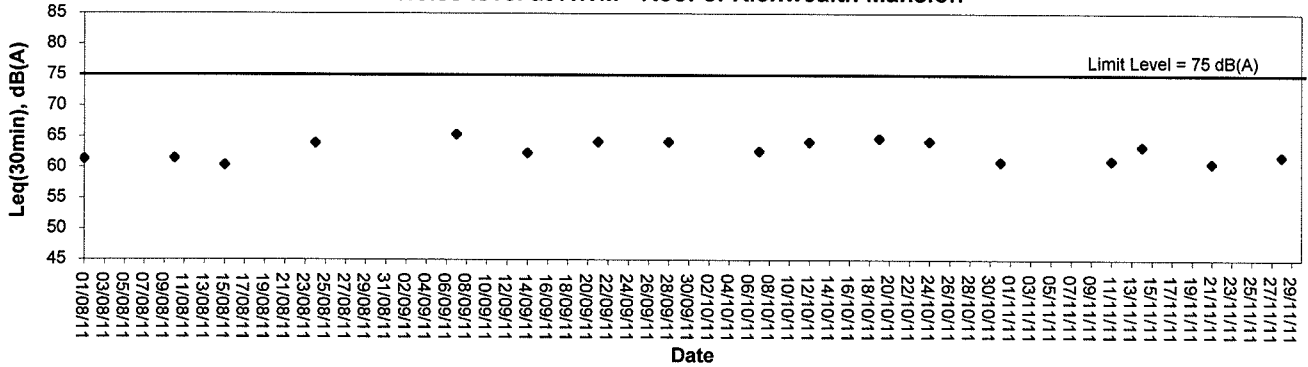
Noise level at KS6 - Podium at the Culliman



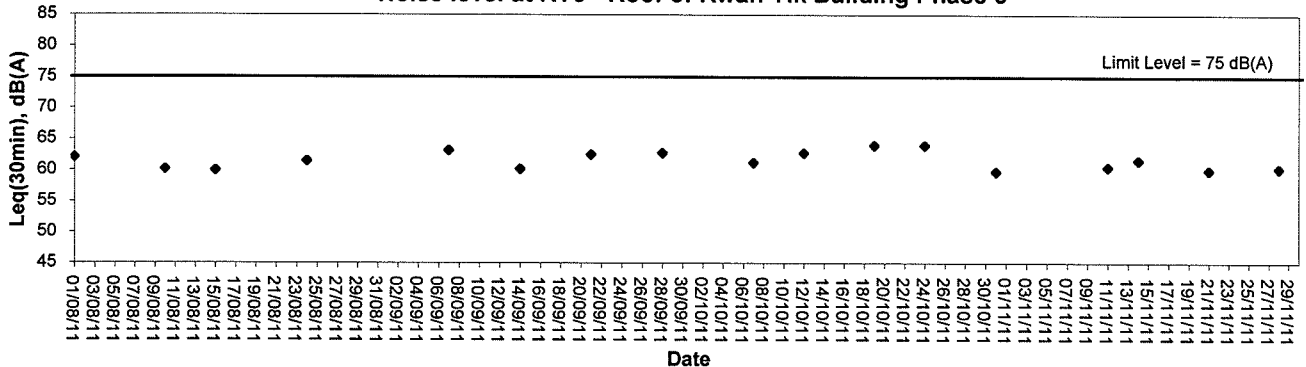
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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





## **Appendix C1**

### **Calibration Certificates for Impact Water Quality Monitoring Equipments**



## Performance Check of Turbidimeter

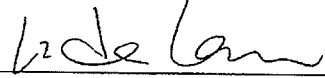

Equipment Ref. No. : ET/0505/007                      Manufacturer : HACH  
Model No. : 2100P                                      Serial No. : 08060 C 030281  
Date of Calibration : 13/10/2011                      Due Date : 12/01/2012

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.28	1.12
10-100 NTU	52.5	52.9	0.76
100-1000 NTU	543	530	2.34

Acceptance Criteria

Difference : <5 %

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

Checked by :                       Approved by : 



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/03      Manufacturer : YSI  
Model No. : 85D      Serial No. : 08L 100716  
Date of Calibration : 24/09/2011      Due Date : 23/12/2011

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

S/001/3

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.3	1.00

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 : h de laun

Approved by : [Signature]



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. :	<u>ET/EW/008/03</u>	Manufacturer :	<u>YSI</u>
Model No. :	<u>85D</u>	Serial No. :	<u>08L 100716</u>
Date of Calibration :	<u>24/09/2011</u>	Calibration Due Date :	<u>23/12/2011</u>

#### Temperature Verification

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

		Temperature (°C)		
Reference Thermometer reading	Measured	20.8	Corrected	20.5
DO Meter reading	Measured	20.7	Difference	0.2

#### Standardization of sodium thiosulphate ( $Na_2S_2O_3$ ) solution

Reagent No. of $Na_2S_2O_3$ titrant	<u>CPE/012/4.5/001/3</u>	Reagent No. of 0.025N $K_2Cr_2O_7$	<u>CPE/012/4.4/001/4</u>
		Trial 1	Trial 2
Initial Vol. of $Na_2S_2O_3$ (ml)		0.00	0.00
Final Vol. of $Na_2S_2O_3$ (ml)		40.50	40.00
Vol. of $Na_2S_2O_3$ used (ml)		40.50	40.00
Normality of $Na_2S_2O_3$ solution (N)		0.02469	0.02500
Average Normality (N) of $Na_2S_2O_3$ solution (N)			
Acceptance criteria, Deviation		Less than $\pm 0.001N$	

Calculation: Normality of  $Na_2S_2O_3$ ,  $N = 1 / ml Na_2S_2O_3$  used

#### Linearity Checking

##### Determination of dissolved oxygen content by Winkler Titration \*

Purging Time (min)	2		5		10	
	1	2	1	2	1	2
Initial Vol. of $Na_2S_2O_3$ (ml)	0.00	12.10	24.10	0.00	8.00	12.80
Final Vol. of $Na_2S_2O_3$ (ml)	12.10	24.10	32.00	8.00	12.80	17.70
Vol. (V) of $Na_2S_2O_3$ used (ml)	12.10	12.00	7.90	8.00	4.80	4.90
Dissolved Oxygen (DO), mg/L	8.07	8.01	5.27	5.34	3.20	3.27
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	8.09	8.12	8.11	8.07	8.01	8.04	0.81
5	5.38	5.42	5.40	5.27	5.34	5.31	1.77
10	3.08	3.12	3.10	3.20	3.27	3.24	4.26
Linear regression coefficient				0.99891			



### Internal Calibration Report of Dissolved Oxygen Meter

**Zero Point Checking**

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

**Salinity Checking**

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/9	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/9
-----------------------------	-------------------	-----------------------------	-------------------

**Determination of dissolved oxygen content by Winkler Titration \*\***

Salinity (ppt)	10		30	
	1	2	1	2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0	11.7	23.3	33.4
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.7	23.3	33.4	43.6
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	11.7	11.6	10.1	10.2
Dissolved Oxygen (DO), mg/L	7.81	7.74	6.74	6.77
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.92	7.89	7.905	7.81	7.74	7.78	1.66
30	7.09	7.13	7.11	6.74	6.8	6.77	4.9

**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

:

Approved by :



## **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			
01/11/11	1320-1332	23/Fine	Surface	1.0	26.4	31.2	31.2	6.28	6.25	90.4	89.9	4.11	4.09	4.24	6.5	6.5	6.9			
						31.2		6.21		89.4		4.06			6.4					
			Middle	8.4	26.0	31.5	31.5	6.01	6.04	86.5	87.0	4.20	4.24		6.6	6.8		6.6	6.8	
						31.5		6.07		87.4		4.28			7.0					
			Bottom	15.8	25.6	32.0	32.0	5.94	5.92	85.5	85.2	4.41	4.38		4.41	4.38		7.2	7.3	7.2
						32.0		5.89		84.8		4.35			7.4					
03/11/11	1710-1720	26/Fine	Surface	1.0	26.4	31.2	31.3	6.16	6.17	88.0	88.2	4.97	4.95	5.13	8.0	8.0	8.2			
						31.3		6.18		88.3		4.92			8.0					
			Middle	8.7	25.8	32.0	32.1	6.01	6.03	85.9	86.2	5.27	5.23		5.27	5.23		8.4	8.4	8.4
						32.0		6.05		86.5		5.19			8.4					
			Bottom	16.4	25.3	32.4	32.4	5.88	5.87	83.4	83.2	5.19	5.22		5.19	5.22		8.2	8.2	8.2
						32.3		5.85		83.0		5.24			8.2					
05/11/11	1710-1720	27/Fine	Surface	1.0	26.4	31.2	31.2	6.17	6.16	88.2	88.0	5.11	5.09	5.24	8.0	7.8	8.0			
						31.2		6.14		87.8		5.07			7.6					
			Middle	8.7	25.8	31.9	32.0	6.07	6.05	86.8	86.5	5.37	5.40		5.37	5.40		7.8	7.9	8.0
						32.0		6.03		86.2		5.43			8.0					
			Bottom	16.4	25.7	32.4	32.4	5.84	5.86	82.9	83.1	5.27	5.24		5.27	5.24		8.2	8.2	8.2
						32.4		5.87		83.3		5.20			8.2					
08/11/11	1800-1815	24/Cloudy	Surface	1.0	25.6	30.6	30.7	6.11	6.13	85.5	85.8	4.44	4.46	4.72	7.0	7.2	7.4			
						30.7		6.15		86.1		4.48			7.4					
			Middle	8.3	25.1	31.2	31.2	5.97	5.95	83.5	83.3	4.70	4.73		4.70	4.73		7.6	7.8	7.6
						31.2		5.93		83.0		4.75			8.0					
			Bottom	15.6	24.8	31.9	32.0	5.72	5.74	80.0	80.3	4.96	4.98		4.96	4.98		8.0	7.2	8.0
						32.0		5.75		80.5		5.00			6.4					
10/11/11	1851-1904	20/Cloudy	Surface	1.0	24.2	30.7	30.7	6.04	6.03	86.9	86.7	4.56	4.53	4.70	6.5	6.7	7.3			
						30.7		6.01		86.5		4.49			6.8					
			Middle	8.2	24.1	31.2	31.3	6.05	6.04	87.1	85.7	4.62	4.64		4.62	4.64		7.2	7.3	7.2
						31.3		6.02		84.3		4.65			7.4					
			Bottom	15.4	23.8	32.1	32.1	5.78	5.79	83.2	83.3	4.93	4.94		4.93	4.94		7.8	7.9	7.8
						32.0		5.79		83.4		4.95			8.0					
12/11/11	2005-2022	21/Fine	Surface	1.0	23.7	30.4	30.4	6.30	6.33	92.3	92.8	5.06	5.04	5.12	8.0	7.9	8.0			
						30.3		6.35		93.2		5.02			7.8					
			Middle	8.2	24.7	30.9	30.9	6.24	6.23	91.3	91.2	5.10	5.12		5.10	5.12		8.0	8.0	8.0
						30.8		6.21		91.0		5.13			8.0					
			Bottom	15.4	25.5	31.8	31.8	6.14	6.13	89.8	89.6	5.20	5.21		5.20	5.21		8.2	8.1	8.2
						31.8		6.11		89.4		5.22			8.0					
15/11/11	1127-1140	23/Fine	Surface	1.0	26.1	30.3	30.3	6.17	6.19	88.2	88.5	4.80	4.83	5.07	7.5	7.7	8.1			
						30.3		6.20		88.7		4.85			7.8					
			Middle	8.0	26.3	30.6	30.7	5.99	6.02	85.7	86.1	5.06	5.08		5.06	5.08		8.0	7.9	8.0
						30.7		6.04		86.4		5.10			7.8					
			Bottom	15.0	26.5	31.8	31.8	5.82	5.85	83.2	83.4	5.30	5.32		5.30	5.32		8.6	8.6	8.6
						31.7		5.88		83.5		5.33			8.6					
17/11/11	1405-1423	24/Drizzle	Surface	1.0	25.3	29.7	29.7	6.18	6.21	88.4	88.8	4.56	4.55	4.70	7.5	7.7	7.9			
						29.6		6.23		89.1		4.53			7.8					
			Middle	8.6	25.2	31.0	31.0	6.01	6.03	85.9	86.2	4.69	4.71		4.69	4.71		8.0	7.9	8.0
						30.9		6.05		86.5		4.72			7.8					
			Bottom	16.2	24.8	31.8	31.9	5.89	5.86	84.2	83.8	4.80	4.84		4.80	4.84		8.0	8.0	8.0
						31.9		5.83		83.4		4.88			8.0					
19/11/11	1607-1616	25/Cloudy	Surface	1.0	24.8	30.6	30.6	6.19	6.15	86.7	86.1	4.59	4.62	4.90	7.5	7.6	7.9			
						30.6		6.11		85.5		4.64			7.6					
			Middle	8.1	25.5	31.6	31.6	6.07	6.09	84.9	85.1	4.96	4.94		4.96	4.94		7.8	7.9	7.8
						31.6		6.10		85.3		4.92			8.0					
			Bottom	15.2	25.8	32.2	32.2	5.76	5.74	80.6	80.3	5.16	5.15		5.16	5.15		8.2	8.2	8.2
						32.2		5.71		79.9		5.13			8.2					
22/11/11	1810-1820	22/Cloudy	Surface	1.0	24.9	31.2	31.3	6.12	6.11	87.5	87.3	4.95	4.97	5.02	7.8	7.9	7.9			
						31.3		6.09		87.0		4.99			8.0					
			Middle	8.6	25.1	32.1	32.2	5.92	5.94	84.0	84.2	5.07	5.04		5.07	5.04		8.0	8.0	8.0
						32.2		5.95		84.4		5.01			8.0					
			Bottom	16.2	25.2	32.5	32.5	5.95	5.97	84.4	84.7	5.02	5.06		5.02	5.06		7.8	7.9	7.8
						32.4		5.98		84.9		5.09			8.0					
24/11/11	1821-1835	23/Fine	Surface	1.0	24.6	30.3	30.3	6.27	6.29	91.5	91.8	5.04	5.02	5.12	8.0	7.9	8.0			
						30.3		6.30		92.0		5.00			7.8					
			Middle	8.3	24.3	30.8	30.8	6.20	6.19	90.5	90.3	5.10	5.12		5.10	5.12		8.0	8.0	8.0
						30.7		6.17		90.1		5.13			8.0					
			Bottom	15.6	23.9	31.8	31.8	6.10	6.09	89.1	89.0	5.20	5.21		5.20	5.21		8.2	8.2	8.2
						31.7		6.08		88.8		5.22			8.2					
26/11/11	2024-2040	22/Cloudy	Surface	1.0	21.3	30.7	30.7	6.12	6.14	85.1	85.4	4.44	4.47	4.70	7.5	7.6	7.8			
						30.7		6.16		85.6		4.49			7.6					
			Middle	7.4	21.1	31.3	31.3	5.99	5.97	83.2	83.0	4.65	4.68		4.65	4.68		7.8	7.8	7.8
						31.3		5.95		82.7		4.70			7.8					
			Bottom	13.8	20.9	31.9	31.9	5.83	5.82	81.0	80.8	4.98	4.95		4.98	4.95		8.0	8.1	8.0
						31.9		5.80		80.6		4.91			8.2					
29/11/11	1742-1755	24/Fine	Surface	1.0	24.7	30.3	30.3	6.24	6.26	92.4	92.6	5.04	5.06	5.15	8.0	8.0	8.1			
						30.3		6.27		92.8		5.07			8.0					
			Middle	8.3	24.3	30.7	30.8	6.16	6.16	91.2	91.1	5.14	5.15		5.14	5.15		8.0	8.0	8.0
						30.8		6.15		91.0		5.16			8.0					
			Bottom	15.6	23.9	31.6	31.7	6.09	6.07	90.2	89.9	5.23	5.25		5.23	5.25		8.2	8.2	8.2
						31.7		6.05		89.5		5.27			8.2					



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	
01/11/11	1301-1312	23/Fine	Surface	1.0	26.4	31.2	31.2	6.23	6.21	89.7	89.4	4.01	4.05	4.23	6.4	6.4	7.2	
						31.1		6.19		89.1		4.08			6.4			
			Middle	8.4	26.1	31.6	31.6	6.09	6.11	87.7	87.9	4.25	4.22		7.4			7.3
						31.6		6.12		88.1		4.19			7.2			
			Bottom	15.8	25.6	32.1	32.1	5.96	5.94	85.8	85.5	4.38	4.41		8.0			8.0
						32.0		5.92		85.2		4.44			8.0			
03/11/11	1651-1702	26/Fine	Surface	1.0	26.5	31.3	31.3	6.18	6.17	88.3	88.1	4.88	4.91	5.12	8.0	8.0	8.1	
						31.2		6.15		87.9		4.93			8.0			
			Middle	8.7	25.9	32.0	32.0	5.97	5.96	85.3	84.9	5.03	5.06		8.2			8.2
						32.0		5.94		84.5		5.08			8.2			
			Bottom	16.4	25.4	32.3	32.3	5.95	5.97	85.0	85.3	5.44	5.41		8.4			8.2
						32.2		5.98		85.5		5.37			8.0			
05/11/11	1651-1702	27/Fine	Surface	1.0	26.5	31.2	32.0	6.20	6.22	88.6	88.9	5.07	5.04	5.35	7.6	7.5	8.0	
						31.2		6.24		89.2		5.01			7.4			
			Middle	8.7	26.0	32.0	32.0	6.03	6.05	86.2	86.5	5.49	5.52		8.2			8.2
						32.0		6.07		86.8		5.55			8.2			
			Bottom	16.4	25.7	32.4	32.4	5.91	5.89	83.9	83.6	5.52	5.49		8.4			8.4
						32.3		5.87		83.3		5.46			8.4			
08/11/11	1740-1756	24/Cloudy	Surface	1.0	25.6	30.6	30.6	6.08	6.06	85.1	84.8	4.50	4.53	4.80	6.8	6.7	7.1	
						30.6		6.04		84.5		4.55			6.6			
			Middle	8.2	25.1	31.2	31.2	5.94	5.92	83.1	82.9	4.78	4.81		6.8			6.8
						31.2		5.90		82.6		4.83			6.8			
			Bottom	15.4	24.8	32.0	32.1	5.76	5.78	80.6	80.9	5.04	5.06		7.8			7.9
						32.1		5.80		81.2		5.07			8.0			
10/11/11	1835-1846	20/Cloudy	Surface	1.0	24.3	30.7	30.7	6.15	6.13	88.6	88.3	4.30	4.31	4.58	6.4	6.5	6.9	
						30.7		6.11		87.9		4.31			6.6			
			Middle	8.5	24.0	31.3	31.3	5.94	5.97	85.5	85.9	4.57	4.56		6.8			6.8
						31.2		5.99		86.3		4.55			6.8			
			Bottom	16.0	23.9	32.0	32.0	5.86	5.83	84.6	84.1	4.86	4.87		7.4			7.5
						32.0		5.80		83.5		4.88			7.5			
12/11/11	1940-1955	21/Fine	Surface	1.0	23.8	30.3	30.3	6.24	6.26	91.4	91.8	4.94	4.95	5.03	7.6	7.7	7.9	
						30.3		6.28		92.1		4.96			7.8			
			Middle	8.1	24.8	30.8	30.9	6.18	6.17	90.4	90.3	5.01	5.02		7.8			7.9
						30.9		6.15		90.1		5.03			8.0			
			Bottom	15.2	25.5	31.8	31.8	6.03	6.05	88.2	88.5	5.09	5.11		8.2			8.1
						31.7		6.07		88.8		5.13			8.0			
15/11/11	1108-1118	23/Fine	Surface	1.0	26.0	30.2	30.2	6.04	6.03	86.4	86.3	4.92	4.94	5.12	7.8	7.9	8.3	
						30.2		6.02		86.1		4.96			8.0			
			Middle	8.2	26.4	30.7	30.8	5.93	5.92	84.8	84.7	5.14	5.17		8.4			8.4
						30.8		5.91		84.6		5.19			8.4			
			Bottom	15.4	26.4	31.7	31.7	5.74	5.77	83.8	83.3	5.24	5.27		8.6			8.6
						31.7		5.79		82.8		5.29			8.5			
17/11/11	1345-1401	24/Drizzle	Surface	1.0	25.4	29.6	29.6	6.31	6.29	90.2	89.9	4.44	4.46	4.64	7.6	7.5	7.8	
						29.6		6.26		89.5		4.48			7.4			
			Middle	8.5	25.3	31.0	31.0	6.14	6.12	87.8	87.5	4.67	4.64		7.8			7.9
						31.0		6.09		87.1		4.61			8.0			
			Bottom	16.0	24.8	31.9	31.9	5.91	5.95	84.5	85.1	4.85	4.82		8.0			8.0
						31.9		5.99		85.7		4.79			8.0			
19/11/11	1548-1559	25/Cloudy	Surface	1.0	24.8	30.7	30.7	6.22	6.21	87.1	86.9	4.47	4.44	4.72	7.4	7.4	7.7	
						30.7		6.20		86.6		4.41			7.4			
			Middle	8.2	25.4	31.5	31.6	6.08	6.07	85.1	85.8	4.69	4.71		7.6			7.7
						31.6		6.05		86.5		4.73			7.8			
			Bottom	15.4	25.8	32.1	32.1	5.84	5.87	81.8	82.2	5.01	5.02		8.0			8.0
						32.0		5.89		82.5		5.03			8.0			
22/11/11	1751-1802	22/Cloudy	Surface	1.0	24.9	31.2	31.2	6.19	6.17	88.5	88.2	5.01	5.04	5.17	8.0	7.9	8.1	
						31.1		6.15		87.9		5.07			7.8			
			Middle	8.6	25.0	32.1	32.1	5.98	5.97	85.5	85.3	5.15	5.13		8.2			8.1
						32.0		5.95		85.0		5.10			8.0			
			Bottom	16.2	25.2	32.4	32.5	5.89	5.88	83.6	83.4	5.38	5.34		8.4			8.3
						32.5		5.86		83.2		5.30			8.2			
24/11/11	1758-1812	23/Fine	Surface	1.0	24.6	30.3	30.3	6.36	6.35	92.9	92.7	5.01	5.00	5.09	8.2	8.1	8.0	
						30.2		6.33		92.4		4.98			8.0			
			Middle	8.2	24.4	30.8	30.8	6.26	6.24	91.4	91.1	5.08	5.09		7.8			7.9
						30.7		6.22		90.8		5.10			8.0			
			Bottom	15.4	24.0	31.8	31.8	6.15	6.14	89.8	89.6	5.16	5.18		8.0			8.0
						31.8		6.12		89.4		5.19			8.0			
26/11/11	2002-2020	22/Cloudy	Surface	1.0	21.4	30.6	30.7	6.13	6.11	85.2	84.9	4.50	4.53	4.75	7.6	7.6	7.8	
						30.7		6.08		84.5		4.55			7.6			
			Middle	8.0	21.1	31.2	31.3	5.91	5.89	82.1	81.8	4.75	4.77		7.8			7.8
						31.3		5.87		81.5		4.78			7.8			
			Bottom	15.0	20.9	32.0	32.0	5.71	5.73	79.3	79.6	4.93	4.95		8.0			8.0
						31.9		5.75		79.9		4.97			8.0			
29/11/11	1719-1732	24/Fine	Surface	1.0	24.7	30.2	30.3	6.30	6.29	93.2	93.0	4.97	4.99	5.08	7.8	7.8	7.9	
						30.3		6.27		92.8		5.00			7.8			
			Middle	8.2	24.3	30.7	30.7	6.21	6.20	91.9	91.7	5.07	5.09		8.0			8.0
						30.7		6.18		91.5		5.10			8.0			
			Bottom	15.4	24.0	31.7	31.7	6.11	6.09	90.4	90.1	5.16	5.18		8.0			8.0
						31.7		6.07		89.8		5.19			8.0			

**Mid-Flood Tide**

Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/11	1102-1114	23/Fine	Surface	1.0	26.4	31.1	31.2	6.21	6.17	90.0	89.5	4.14	4.10	4.30	7.0	aa	7.1	
						31.2		6.13		88.9		4.05			6.5			
			Middle	8.8	26.1	31.6	31.6	5.97	6.00	86.6	87.0	4.27	4.31		6.8			7.2
						31.5		6.03		87.4		4.35			7.6			
			Bottom	16.6	25.5	32.0	32.1	5.83	5.81	84.5	84.2	4.53	4.50		7.6			7.4
						32.1		5.78		83.8		4.47			7.2			
03/11/11	1452-1504	26/Fine	Surface	1.0	26.4	31.2	31.2	6.15	6.13	87.9	87.6	4.92	4.94	5.05	8.0	7.9	8.0	
						31.2		6.11		87.3		4.96			7.8			
			Middle	8.7	25.7	31.7	31.8	5.92	5.94	84.0	84.2	5.17	5.14		8.2			8.2
						31.8		5.95		84.4		5.10			8.2			
			Bottom	16.4	25.4	32.1	32.1	5.97	5.96	84.7	84.5	5.03	5.07		8.0			8.0
						32.1		5.94		84.3		5.10			8.0			
05/11/11	1452-1504	27/Fine	Surface	1.0	26.5	31.2	31.2	6.15	6.17	87.9	88.1	5.01	5.03	5.04	8.0	7.9	7.8	
						31.2		6.18		88.3		5.04			7.8			
			Middle	8.7	26.0	32.0	32.1	5.97	5.96	85.3	85.1	4.87	4.89		7.4			7.5
						32.1		5.94		84.9		4.90			7.6			
			Bottom	16.4	25.6	32.4	32.4	5.99	5.97	85.6	85.3	5.21	5.22		8.0			8.1
						32.3		5.95		85.0		5.23			8.2			
08/11/11	1540-1556	25/Drizzle	Surface	1.0	25.7	30.8	30.8	5.92	5.94	82.8	83.1	4.50	4.54	4.80	7.0	7.3	7.6	
						30.7		5.96		83.4		4.58			7.6			
			Middle	8.8	25.4	31.2	31.3	5.82	5.84	81.4	81.7	4.80	4.82		7.6			7.7
						31.3		5.85		81.9		4.84			7.8			
			Bottom	16.6	24.9	32.0	32.0	5.69	5.71	79.7	80.0	5.01	5.04		8.0			7.9
						31.9		5.73		80.2		5.06			7.8			
10/11/11	1641-1653	20/Cloudy	Surface	1.0	24.3	30.7	30.7	6.17	6.21	88.8	89.4	4.51	4.54	4.79	7.0	7.2	7.5	
						30.7		6.24		89.9		4.57			7.4			
			Middle	8.9	24.1	31.3	31.3	6.06	6.09	87.3	87.7	4.84	4.87		7.4			7.5
						31.3		6.12		88.1		4.89			7.6			
			Bottom	16.8	23.7	32.1	32.1	5.76	5.76	82.9	82.9	4.95	4.96		7.8			7.9
						32.1		5.75		82.8		4.97			8.0			
12/11/11	1735-1748	22/Fine	Surface	1.0	23.8	30.3	30.4	6.14	6.12	90.1	89.8	5.09	5.11	5.20	8.0	8.0	8.3	
						30.4		6.10		89.4		5.13			8.0			
			Middle	8.9	24.8	30.7	30.8	6.03	6.00	88.5	88.1	5.19	5.20		8.4			8.4
						30.8		5.97		87.6		5.21			8.4			
			Bottom	16.8	25.4	31.6	31.6	5.91	5.90	86.4	86.2	5.26	5.28		8.6			8.5
						31.6		5.88		86.0		5.29			8.4			
15/11/11	0916-0929	22/Fine	Surface	1.0	26.0	30.4	30.4	6.12	6.11	87.5	87.1	4.71	4.73	4.96	7.0	7.1	7.7	
						30.3		6.10		86.6		4.74			7.2			
			Middle	8.9	26.2	30.9	30.9	6.01	6.02	85.9	86.1	4.96	5.00		7.8			7.9
						30.9		6.03		86.2		5.04			8.0			
			Bottom	16.8	26.4	31.8	31.8	5.92	5.93	84.7	84.8	5.17	5.16		8.2			8.1
						31.7		5.94		84.9		5.14			8.0			
17/11/11	1145-1201	24/Drizzle	Surface	1.0	25.4	29.7	29.7	6.08	6.12	87.6	88.1	4.66	4.69	4.86	7.5	7.7	7.8	
						29.7		6.15		88.6		4.71			7.8			
			Middle	8.9	25.3	30.9	30.9	5.92	5.94	85.2	85.5	4.89	4.86		7.8			7.9
						30.9		5.96		85.8		4.83			8.0			
			Bottom	16.8	24.7	31.9	31.9	5.75	5.77	82.8	83.0	5.05	5.03		8.0			7.9
						31.8		5.78		83.2		5.01			7.8			
19/11/11	1356-1410	25/Cloudy	Surface	1.0	24.9	30.7	30.7	6.24	6.23	87.4	87.3	4.23	4.25	4.50	7.0	7.3	7.5	
						30.7		6.22		87.2		4.26			7.6			
			Middle	8.8	25.5	31.7	31.7	5.83	5.81	83.4	82.3	4.47	4.44		7.4			7.6
						31.7		5.79		81.1		4.41			7.8			
			Bottom	16.6	25.8	32.0	32.0	5.72	5.74	80.1	80.4	4.82	4.82		7.6			7.7
						32.0		5.76		80.6		4.81			7.8			
22/11/11	1552-1604	22/Cloudy	Surface	1.0	24.8	31.1	31.2	6.15	6.13	87.9	87.6	5.12	5.15	5.15	8.0	8.1	8.0	
						31.2		6.11		87.3		5.18			8.2			
			Middle	8.7	25.0	31.9	32.0	6.01	6.03	85.9	86.1	5.24	5.21		8.2			8.1
						32.0		6.04		86.3		5.17			8.0			
			Bottom	16.4	25.1	32.0	32.1	5.88	5.91	83.4	83.8	5.11	5.09		8.0			7.9
						32.1		5.93		84.2		5.07			7.8			
24/11/11	1559-1612	24/Fine	Surface	1.0	24.8	30.3	30.4	6.04	6.06	88.2	88.4	5.09	5.11	5.20	8.0	8.1	8.0	
						30.4		6.07		88.6		5.13			8.2			
			Middle	8.8	24.4	30.7	30.7	6.00	5.98	87.6	87.3	5.19	5.20		8.0			8.1
						30.7		5.95		86.9		5.21			8.2			
			Bottom	16.6	23.9	31.6	31.7	5.88	5.86	85.8	85.6	5.26	5.28		8.0			7.9
						31.7		5.84		85.3		5.29			7.8			
26/11/11	1812-1827	22/Fine	Surface	1.0	21.4	30.6	30.7	5.97	6.01	82.9	83.5	4.66	4.68	4.88	7.5	7.7	7.8	
						30.7		6.05		84.1		4.70			7.8			
			Middle	8.8	21.2	31.3	31.3	5.84	5.82	81.1	80.9	4.85	4.88		7.8			7.8
						31.3		5.80		80.6		4.90			7.8			
			Bottom	16.6	21.0	31.9	32.0	5.69	5.72	79.1	79.4	5.05	5.08		8.0			8.0
						32.0		5.74		79.7		5.10			8.0			
29/11/11	1518-1530	25/Fine	Surface	1.0	24.8	30.1	30.2	6.10	6.08	90.2	90.0	5.07	5.09	5.19	8.0	aa	8.2	
						30.2		6.06		89.7		5.11			8.2			
			Middle	8.8	24.4	30.7	30.8	5.97	5.96	88.4	88.2	5.17	5.19		8.2			8.2
						30.8		5.94		87.9		5.20			8.2			
			Bottom	16.6	24.0	31.6	31.6	5.88	5.87	87.1	86.9	5.27	5.29		8.2			8.3
						31.6		5.85		86.6		5.30			8.4			

**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		
01/11/11	1200-1212	23/Fine	Surface	1.0	26.4	31.1	31.1	6.23	6.19	89.7	89.2	4.12	4.10	4.26	7.4	7.3	7.5		
						31.1		6.15		88.6		4.07			7.2				
			Middle	8.4	26.1	31.5	31.6	6.02	6.05	86.7	87.2	87.6	87.2		4.24	4.26		7.6	7.5
						31.6		6.08		87.6		4.28			7.4				
			Bottom	15.8	25.6	32.0	32.0	5.96	5.93	85.8	85.3	85.3	85.3		4.39	4.43		7.6	7.6
						32.0		5.89		84.8		4.46			7.6				
03/11/11	1550-1602	26/Fine	Surface	1.0	26.5	31.3	31.3	6.27	6.26	89.6	89.4	4.94	4.98	4.99	7.8	7.7	7.9		
						31.2		6.24		89.2		5.01			7.6				
			Middle	8.6	25.7	31.9	32.0	6.06	6.05	86.6	86.4	86.2	86.4		5.02	5.05		8.0	8.0
						32.0		6.03		86.2		5.07			8.0				
			Bottom	16.2	25.4	32.2	32.2	6.02	6.04	86.0	86.3	86.3	86.3		4.99	4.95		7.8	7.9
						32.2		6.05		86.5		4.91			8.0				
05/11/11	1550-1602	27/Fine	Surface	1.0	26.4	31.2	31.2	6.21	6.20	88.8	88.6	5.05	5.07	5.17	7.8	7.7	7.9		
						31.1		6.18		88.3		5.09			7.6				
			Middle	8.7	26.0	32.1	32.1	5.89	5.88	83.6	83.5	83.3	83.5		5.21	5.26		8.0	8.1
						32.0		5.87		83.3		5.30			8.2				
			Bottom	16.4	25.7	32.4	32.4	5.90	5.92	83.7	83.8	83.7	83.8		5.17	5.19		8.0	7.9
						32.3		5.94		83.9		5.21			7.8				
08/11/11	1641-1655	25/Drizzle	Surface	1.0	25.8	30.7	30.7	6.11	6.13	85.5	85.8	4.34	4.36	4.61	6.6	6.6	7.2		
						30.7		6.15		86.1		4.37			6.6				
			Middle	8.2	25.3	31.3	31.3	6.03	6.00	84.4	83.9	83.4	83.9		4.65	4.67		7.2	7.3
						31.3		5.96		83.4		4.69			7.4				
			Bottom	15.4	25.0	31.9	32.0	5.80	5.82	81.2	81.5	81.7	81.5		4.78	4.81		7.6	7.7
						32.0		5.84		81.7		4.84			7.8				
10/11/11	1731-1744	20/Cloudy	Surface	1.0	24.3	30.7	30.7	6.22	6.23	89.6	89.7	4.44	4.47	4.71	6.6	6.7	7.3		
						30.7		6.23		89.7		4.50			6.8				
			Middle	8.1	24.0	31.3	31.3	6.12	6.12	88.1	88.0	87.9	88.0		4.69	4.73		7.2	7.3
						31.3		6.11		87.9		4.77			7.4				
			Bottom	15.8	23.7	32.0	32.0	5.77	5.76	83.1	83.0	82.8	83.0		4.89	4.92		7.6	7.8
						32.0		5.75		82.8		4.94			8.0				
12/11/11	1831-1845	22/Fine	Surface	1.0	23.9	30.3	30.3	6.22	6.23	91.1	91.3	4.97	4.99	5.07	7.6	7.7	8.1		
						30.2		6.24		91.4		5.01			7.8				
			Middle	8.6	24.8	30.9	30.9	6.15	6.14	90.2	90.0	89.8	90.0		5.09	5.08		8.0	8.1
						30.8		6.12		89.8		5.06			8.2				
			Bottom	16.2	25.4	31.8	31.8	6.01	6.03	87.9	88.1	88.3	88.1		5.12	5.14		8.6	8.5
						31.8		6.04		88.3		5.15			8.4				
15/11/11	1007-1019	22/Fine	Surface	1.0	26.0	30.5	30.5	6.14	6.13	87.8	87.7	4.82	4.85	4.94	7.6	7.6	7.8		
						30.5		6.12		87.5		4.87			7.6				
			Middle	8.4	26.3	30.8	30.9	5.82	5.84	83.2	83.5	83.8	83.5		4.99	4.97		7.8	7.8
						30.9		5.86		83.8		4.94			7.8				
			Bottom	15.8	26.4	31.7	31.7	5.80	5.84	82.9	83.5	84.1	83.5		5.03	5.02		8.0	7.9
						31.7		5.88		84.1		5.01			7.8				
17/11/11	1242-1258	24/Drizzle	Surface	1.0	25.3	29.6	29.7	6.08	6.11	86.9	87.3	4.47	4.50	4.69	7.6	7.6	7.7		
						29.7		6.13		87.7		4.52			7.6				
			Middle	8.6	25.3	30.9	31.0	5.99	5.98	85.7	85.6	85.4	85.6		4.72	4.70		7.8	7.7
						31.0		5.97		85.4		4.67			7.6				
			Bottom	16.2	24.8	31.8	31.9	5.79	5.83	82.8	83.4	83.9	83.4		4.91	4.89		8.0	7.9
						31.9		5.87		83.9		4.86			7.8				
19/11/11	1449-1459	25/Cloudy	Surface	1.0	25.0	30.8	30.8	6.21	6.24	86.9	87.2	4.28	4.32	4.47	7.0	7.0	7.3		
						30.8		6.26		87.5		4.36			7.0				
			Middle	8.3	25.4	31.8	31.8	5.96	5.94	83.4	83.1	82.7	83.1		4.44	4.47		7.2	7.3
						31.8		5.91		82.7		4.50			7.4				
			Bottom	15.6	25.6	32.1	32.1	5.83	5.83	81.6	81.6	81.5	81.6		4.62	4.63		7.6	7.6
						32.1		5.82		81.5		4.63			7.6				
22/11/11	1650-1702	22/Cloudy	Surface	1.0	24.8	31.1	31.2	6.21	6.19	88.8	88.5	5.09	5.12	5.13	7.8	7.9	8.0		
						31.2		6.17		88.2		5.14			8.0				
			Middle	8.6	25.1	32.1	32.1	6.01	6.03	85.9	86.1	86.3	86.1		5.05	5.07		8.0	7.9
						32.1		6.04		86.3		5.09			7.8				
			Bottom	16.2	25.1	32.4	32.4	5.89	5.87	83.6	83.3	83.0	83.3		5.21	5.19		8.2	8.1
						32.3		5.85		83.0		5.17			8.0				
24/11/11	1654-1708	24/Fine	Surface	1.0	24.7	30.3	30.4	6.28	6.30	91.7	92.0	5.03	5.01	5.10	8.0	7.9	8.0		
						30.4		6.32		92.3		4.99			7.8				
			Middle	8.4	24.4	30.8	30.8	6.20	6.19	90.5	90.4	90.2	90.4		5.09	5.10		8.0	7.9
						30.7		6.18		90.2		5.11			7.8				
			Bottom	15.8	23.9	31.7	31.7	6.07	6.06	88.6	88.4	88.2	88.4		5.18	5.19		8.2	8.1
						31.7		6.04		88.2		5.19			8.0				
26/11/11	1907-1920	22/Fine	Surface	1.0	21.3	30.7	30.7	6.14	6.10	85.3	84.8	4.60	4.63	4.83	7.4	7.5	7.8		
						30.7		6.06		84.2		4.66			7.6				
			Middle	8.3	21.1	31.3	31.4	5.90	5.92	82.0	82.2	82.4	82.2		4.83	4.85		7.8	7.8
						31.4		5.93		82.4		4.87			7.8				
			Bottom	15.6	20.9	32.0	32.1	5.74	5.76	79.7	80.0	80.3	80.0		5.05	5.02		8.0	8.0
						32.1		5.78		80.3		4.98			8.0				
29/11/11	1613-1626	25/Fine	Surface	1.0	24.7	30.3	30.3	6.17	6.20	91.3	91.8	5.03	5.01	5.11	7.8	7.8	8.0		
						30.2		6.23		92.2		4.99			7.8				
			Middle	8.4	24.4	30.7	30.8	6.11	6.08	90.4	90.0	89.5	90.0		5.13	5.12		8.0	8.0
						30.8		6.05		89.5		5.11			8.0				
			Bottom	15.8	24.0	31.6	31.6	5.97	5.95	88.4	88.1	87.8	88.1		5.17	5.19		8.2	8.2
						31.6		5.93		87.8		5.20			8.2				

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
01/11/11	1215-1227	23/Fine	Surface	1.0	26.3	31.1	31.1	6.21	6.24	89.4	89.9	4.14	4.17	4.33	7.8	7.7	7.8
						31.1		6.27		90.3		4.19			7.6		
			Middle	9.4	26.0	31.6	31.6	6.06	6.02	87.3	86.7	4.34	4.30		7.6	7.6	
						31.5		5.98		86.1		4.26			7.6		
			Bottom	17.8	25.5	32.1	32.1	5.81	5.84	83.7	84.1	4.49	4.52		8.0	8.0	
						32.1		5.86		84.4		4.55			8.0		
03/11/11	1605-1617	26/Fine	Surface	1.0	26.5	31.3	31.3	6.18	6.17	88.3	88.1	5.01	5.05	5.17	8.0	8.0	8.2
						31.3		6.15		87.9		5.09			8.0		
			Middle	9.3	25.6	32.0	32.0	5.99	5.97	85.6	85.3	5.21	5.19		8.2	8.2	
						31.9		5.95		85.0		5.17			8.2		
			Bottom	17.6	25.4	32.2	32.2	6.03	6.05	86.2	86.5	5.30	5.26		8.4	8.4	
						32.1		6.07		86.8		5.21			8.4		
05/11/11	1605-1617	27/Fine	Surface	1.0	26.5	31.2	31.3	6.25	6.23	89.3	89.1	4.92	4.95	5.03	7.4	7.5	7.8
						31.3		6.21		88.8		4.97			7.6		
			Middle	9.2	25.9	32.0	32.1	6.02	6.04	86.0	86.3	5.09	5.05		7.8	8.0	
						32.1		6.05		86.5		5.01			8.2		
			Bottom	17.4	25.7	32.3	32.3	5.87	5.86	83.3	83.1	5.12	5.10		8.0	7.9	
						32.2		5.84		82.9		5.07			7.8		
08/11/11	1700-1715	25/Drizzle	Surface	1.0	25.7	30.7	30.7	6.13	6.11	85.8	85.5	4.40	4.43	4.68	6.8	6.7	7.3
						30.6		6.08		85.1		4.45			6.6		
			Middle	9.3	25.3	31.2	31.3	5.90	5.93	82.6	83.0	4.67	4.70		7.2	7.3	
						31.3		5.95		83.3		4.72			7.4		
			Bottom	17.6	24.9	32.0	32.0	5.83	5.80	81.6	81.2	4.90	4.93		7.8	7.8	
						32.0		5.77		80.7		4.96			7.8		
10/11/11	1747-1759	20/Cloudy	Surface	1.0	24.3	30.6	30.7	6.10	6.08	87.8	87.6	4.30	4.29	4.61	6.4	6.3	7.1
						30.7		6.06		87.3		4.27			6.2		
			Middle	9.0	24.1	31.4	31.5	6.09	6.08	87.7	87.6	4.72	4.74		7.2	7.3	
						31.5		6.07		87.4		4.76			7.4		
			Bottom	17.0	23.6	32.1	32.1	5.83	5.85	83.9	84.2	4.79	4.81		7.6	7.7	
						32.1		5.86		84.4		4.82			7.8		
12/11/11	1852-1906	22/Fine	Surface	1.0	23.9	30.2	30.3	6.19	6.22	90.7	91.1	5.06	5.08	5.16	7.8	7.8	8.1
						30.3		6.24		91.4		5.09			7.8		
			Middle	9.1	24.9	30.9	30.9	6.10	6.09	89.5	89.3	5.18	5.16		8.2	8.2	
						30.9		6.07		89.0		5.14			8.2		
			Bottom	17.2	25.4	31.8	31.9	5.93	5.95	86.7	87.0	5.22	5.25		8.4	8.4	
						31.9		5.97		87.3		5.28			8.4		
15/11/11	1023-1035	22/Fine	Surface	1.0	26.0	30.4	30.5	6.19	6.16	88.5	88.0	4.43	4.42	4.67	6.4	6.5	7.0
						30.5		6.12		87.5		4.41			6.6		
			Middle	9.0	26.3	30.9	30.9	6.04	6.06	86.4	86.6	4.62	4.64		6.8	6.9	
						30.8		6.07		86.8		4.66			7.0		
			Bottom	17.0	26.5	31.8	31.8	5.76	5.78	82.4	82.6	4.96	4.94		7.8	7.7	
						31.7		5.79		82.8		4.92			7.6		
17/11/11	1301-1317	24/Drizzle	Surface	1.0	25.4	29.6	29.6	6.19	6.18	88.5	88.4	4.64	4.63	4.80	7.8	7.7	7.8
						29.6		6.17		88.2		4.61			7.6		
			Middle	9.6	25.2	31.1	31.1	5.95	5.98	85.1	85.5	4.78	4.81		7.8	7.7	
						31.1		6.01		85.9		4.83			7.6		
			Bottom	18.2	24.7	31.9	32.0	5.85	5.83	83.7	83.4	4.96	4.98		8.0	7.9	
						32.0		5.81		83.1		4.99			7.8		
19/11/11	1503-1516	25/Cloudy	Surface	1.0	24.9	30.7	30.7	6.14	6.13	85.9	85.7	4.52	4.53	4.79	7.4	7.4	7.7
						30.7		6.11		85.5		4.53			7.4		
			Middle	9.0	25.4	31.7	31.7	5.92	5.95	82.9	83.3	4.77	4.78		7.8	7.8	
						31.7		5.98		83.7		4.79			7.8		
			Bottom	17.0	25.7	32.0	32.0	5.87	5.88	82.2	82.3	5.07	5.05		8.0	8.0	
						32.0		5.88		82.3		5.03			8.0		
22/11/11	1705-1717	22/Cloudy	Surface	1.0	24.9	31.2	31.2	6.16	6.15	88.0	87.8	4.98	5.02	5.09	7.8	7.9	8.1
						31.1		6.13		87.6		5.05			8.0		
			Middle	9.2	25.0	32.0	32.0	5.95	5.97	85.0	85.3	5.15	5.13		8.2	8.1	
						31.9		5.99		85.6		5.10			8.0		
			Bottom	17.4	25.2	32.4	32.4	5.91	5.89	83.9	83.6	5.10	5.14		8.2	8.2	
						32.4		5.87		83.3		5.18			8.2		
24/11/11	1715-1728	24/Fine	Surface	1.0	24.7	30.3	30.3	6.24	6.26	91.1	91.3	5.06	5.04	5.15	8.0	7.9	8.0
						30.2		6.27		91.5		5.02			7.8		
			Middle	9.1	24.3	30.8	30.9	6.11	6.13	89.2	89.5	5.12	5.15		8.0	8.1	
						30.9		6.15		89.8		5.17			8.2		
			Bottom	17.2	23.8	31.8	31.8	6.02	6.01	87.9	87.8	5.24	5.26		8.0	8.1	
						31.8		6.00		87.6		5.28			8.2		
26/11/11	1924-1940	22/Fine	Surface	1.0	21.3	30.7	30.7	6.11	6.13	84.9	85.2	4.58	4.56	4.77	7.4	7.5	7.7
						30.6		6.15		85.4		4.53			7.6		
			Middle	9.2	21.1	31.4	31.5	5.92	5.90	82.2	81.9	4.74	4.76		7.6	7.7	
						31.5		5.87		81.5		4.78			7.8		
			Bottom	17.4	20.8	32.1	32.1	5.70	5.72	79.2	79.4	4.96	4.99		8.0	8.0	
						32.0		5.73		79.6		5.01			8.0		
29/11/11	1633-1647	25/Fine	Surface	1.0	24.8	30.3	30.3	6.25	6.24	92.5	92.4	5.05	5.07	5.19	8.0	8.0	8.2
						30.3		6.23		92.2		5.08			8.0		
			Middle	9.3	24.3	30.8	30.8	6.14	6.12	90.9	90.6	5.18	5.20		8.2	8.2	
						30.8		6.10		90.3		5.21			8.2		
			Bottom	17.6	23.9	31.7	31.7	5.99	5.98	88.7	88.5	5.32	5.31		8.4	8.3	
						31.7		5.96		88.2		5.30			8.2		

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
01/11/11	1234-1246	23/Fine	Surface	1.0	26.4	31.3	31.3	6.14	6.16	89.0	89.3	4.10	4.13	4.28	7.6	7.6	7.3
						31.2		6.17		89.5		4.16			7.5		
			Middle	7.0	26.2	31.4	31.5	6.04	6.03	87.6	87.5	4.31	4.27		7.5	7.3	
						31.5		6.02		87.3		4.23			7.0		
			Bottom	13.0	25.7	31.8	31.9	5.84	5.87	84.7	85.2	4.42	4.44		7.2	7.2	
						31.9		5.90		85.6		4.46			7.2		
03/11/11	1624-1636	26/Fine	Surface	1.0	26.5	31.2	31.2	6.12	6.14	87.5	87.7	4.91	4.94	5.08	8.0	8.0	8.1
						31.2		6.15		87.9		4.97			8.0		
			Middle	6.8	25.8	31.9	32.0	5.94	5.92	84.3	84.0	5.12	5.10		8.0	8.1	
						32.0		5.90		83.7		5.08			8.2		
			Bottom	12.6	25.5	32.2	32.3	5.98	5.97	85.5	85.3	5.18	5.21		8.2	8.3	
						32.3		5.95		85.0		5.23			8.4		
05/11/11	1624-1636	27/Fine	Surface	1.0	26.6	31.1	31.1	6.12	6.10	87.5	87.2	4.92	4.95	5.10	7.6	7.8	8.0
						31.1		6.08		86.9		4.98			8.0		
			Middle	6.8	26.1	32.0	32.0	5.97	5.96	85.3	85.1	5.03	5.06		8.0	8.0	
						31.9		5.94		84.9		5.08			8.0		
			Bottom	12.6	25.7	32.4	32.4	5.86	5.88	83.2	83.5	5.33	5.30		8.2	8.3	
						32.4		5.90		83.7		5.27			8.4		
08/11/11	1721-1735	24/Cloudy	Surface	1.0	25.7	30.7	30.7	5.96	5.99	83.4	83.8	4.47	4.51	4.77	6.8	6.9	7.4
						30.6		6.02		84.2		4.54			7.0		
			Middle	6.7	25.4	31.0	31.1	5.86	5.88	82.0	82.2	4.80	4.78		7.5	7.5	
						31.1		5.89		82.4		4.76			7.4		
			Bottom	12.4	25.1	31.7	31.8	5.70	5.72	79.8	80.0	5.01	5.03		7.8	7.9	
						31.8		5.73		80.2		5.05			8.0		
10/11/11	1813-1825	20/Cloudy	Surface	1.0	24.3	30.8	30.8	6.20	6.17	89.3	88.9	4.23	4.25	4.50	6.8	6.9	7.0
						30.8		6.14		88.4		4.26			7.0		
			Middle	6.6	24.0	31.2	31.2	5.89	5.91	84.8	85.0	4.46	4.48		6.5	6.7	
						31.2		5.92		85.2		4.49			6.8		
			Bottom	12.2	23.8	32.0	32.1	5.72	5.75	82.4	82.8	4.79	4.78		7.2	7.3	
						32.1		5.77		83.1		4.76			7.4		
12/11/11	1916-1930	21/Fine	Surface	1.0	23.8	30.4	30.4	6.31	6.29	92.4	92.2	5.03	5.01	5.10	7.6	7.8	8.0
						30.3		6.27		92.0		4.99			8.0		
			Middle	7.1	24.7	30.7	30.8	6.20	6.19	90.7	90.6	5.08	5.10		8.0	7.9	
						30.8		6.17		90.4		5.12			7.8		
			Bottom	13.2	25.3	31.5	31.6	6.10	6.08	89.2	88.9	5.17	5.19		8.2	8.3	
						31.6		6.06		88.6		5.20			8.4		
15/11/11	1046-1058	23/Fine	Surface	1.0	26.1	30.3	30.3	6.08	6.05	86.9	86.4	4.82	4.85	5.01	7.6	7.6	7.9
						30.3		6.01		85.9		4.88			7.5		
			Middle	6.5	26.3	30.8	30.8	5.96	5.93	85.2	84.8	4.98	4.97		8.0	7.9	
						30.8		5.90		84.4		4.95			7.8		
			Bottom	12.0	26.5	31.8	31.8	5.87	5.86	83.9	83.7	5.20	5.22		8.4	8.3	
						31.8		5.84		83.5		5.23			8.2		
17/11/11	1320-1338	24/Drizzle	Surface	1.0	25.4	29.7	29.7	6.44	6.26	88.0	87.7	4.59	4.61	4.73	7.8	7.9	8.0
						29.7		6.07		87.4		4.63			8.0		
			Middle	7.1	25.4	30.8	30.9	6.03	6.01	86.8	86.5	4.74	4.72		7.5	7.9	
						30.9		5.98		86.1		4.70			8.2		
			Bottom	13.2	25.0	31.8	31.8	5.92	5.90	85.2	84.9	4.82	4.85		8.2	8.3	
						31.8		5.87		84.5		4.87			8.4		
19/11/11	1527-1539	25/Cloudy	Surface	1.0	24.7	30.8	30.8	6.30	6.29	94.5	94.3	4.39	4.37	4.59	7.4	7.5	7.6
						30.7		6.27		94.1		4.34			7.5		
			Middle	6.6	25.6	31.7	31.7	6.24	6.25	87.3	87.5	4.52	4.55		7.5	7.6	
						31.7		6.26		87.6		4.58			7.6		
			Bottom	12.2	25.9	32.2	32.2	5.79	5.77	81.1	81.0	4.88	4.85		7.6	7.7	
						32.2		5.75		80.8		4.82			7.8		
22/11/11	1724-1736	22/Cloudy	Surface	1.0	24.8	31.2	31.2	6.27	6.26	89.1	89.2	4.97	5.02	5.11	7.8	7.9	8.0
						31.2		6.24		89.2		5.06			8.0		
			Middle	6.7	24.9	32.0	32.0	6.03	6.05	86.2	86.5	5.17	5.14		8.0	8.0	
						31.9		6.07		86.8		5.10			8.0		
			Bottom	12.4	25.2	32.3	32.4	5.94	5.92	84.3	84.0	5.20	5.17		8.2	8.1	
						32.4		5.90		83.7		5.14			8.0		
24/11/11	1738-1750	23/Fine	Surface	1.0	24.6	30.2	30.3	6.32	6.31	92.3	92.1	4.97	4.95	5.03	7.8	7.9	8.0
						30.3		6.29		91.8		4.93			8.0		
			Middle	6.9	24.4	30.6	30.7	6.23	6.22	91.0	90.8	5.02	5.03		8.0	7.9	
						30.7		6.20		90.5		5.04			7.8		
			Bottom	12.8	24.0	31.6	31.7	6.14	6.13	89.6	89.4	5.09	5.11		8.0	8.1	
						31.7		6.11		89.2		5.12			8.2		
26/11/11	1944-2000	22/Cloudy	Surface	1.0	21.3	30.7	30.7	6.15	6.17	85.4	85.7	4.48	4.51	4.67	7.4	7.5	7.6
						30.7		6.19		86.0		4.53			7.5		
			Middle	6.2	21.2	30.9	30.9	6.10	6.07	84.7	84.3	4.60	4.64		7.8	7.7	
						30.9		6.04		83.9		4.68			7.8		
			Bottom	11.4	21.0	31.3	31.3	5.86	5.88	81.4	81.7	4.83	4.86		7.8	7.8	
						31.3		5.90		82.0		4.88			7.8		
29/11/11	1657-1710	24/Fine	Surface	1.0	24.7	30.3	30.3	6.26	6.24	92.6	92.4	5.02	5.04	5.11	8.0	8.0	8.1
						30.2		6.22		92.1		5.05			8.0		
			Middle	6.9	24.4	30.6	30.6	6.17	6.15	91.3	91.0	5.09	5.11		8.0	8.1	
						30.6		6.13		90.7		5.12			8.2		
			Bottom	12.8	24.0	31.5	31.6	6.08	6.06	90.0	89.7	5.17	5.19		8.2	8.2	
						31.6		6.04		89.4		5.20			8.2		

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				
01/11/11	0944-0955	23/Fine	Surface	1.0	26.3	31.3	31.3	6.12	6.15	88.7	89.2	4.19	4.15	4.27	7.4	7.3	7.6				
						31.2		6.18		89.6		4.11			7.2						
			Middle	5.9	26.0	31.4	31.4	6.02	6.00	87.3	87.0	4.23	4.27		4.30			4.40	7.4	7.4	8.0
						31.4		5.97		86.6		4.37			8.0						
			Bottom	10.8	25.7	32.0	32.0	5.91	5.88	85.7	85.3	4.43	4.40		4.37			4.40	8.0	8.0	8.0
						31.9		5.85		84.8		4.07			8.0						
03/11/11	1334-1345	26/Fine	Surface	-1.0	26.4	31.0	31.1	6.33	6.31	90.5	90.2	4.07	4.10	4.68	7.6	7.7	7.9				
						31.7		6.04		86.3		5.01			7.8						
			Middle	6.1	25.8	31.6	31.7	6.02	6.03	86.0	86.2	5.01	5.05		5.08			4.91	8.0	7.9	8.0
						31.7		6.29		82.2		4.93			8.0						
			Bottom	11.2	25.2	32.0	32.0	5.84	5.82	82.9	82.6	4.88	4.91		4.93			4.91	8.0	8.0	8.0
						31.9		5.80		84.9		4.91			8.0						
05/11/11	1334-1345	27/Fine	Surface	1.0	26.6	31.1	31.1	6.12	6.10	87.5	87.2	4.37	4.41	4.78	6.6	6.7	7.4				
						31.1		6.08		86.9		4.45			6.8						
			Middle	6.2	25.8	31.9	32.0	6.01	6.03	85.9	86.1	5.01	4.99		4.96			4.93	7.4	7.5	8.0
						32.0		6.04		86.3		4.96			7.6						
			Bottom	11.4	25.6	32.3	32.3	5.97	5.96	85.3	85.1	4.95	4.93		4.91			4.93	8.0	7.9	8.0
						32.2		5.94		84.9		4.91			7.8						
08/11/11	1438-1453	25/Drizzle	Surface	1.0	25.7	30.8	30.9	5.99	6.03	83.8	84.3	4.57	4.60	4.80	7.6	7.7	7.8				
						30.9		6.06		84.8		4.62			7.8						
			Middle	5.7	25.4	31.2	31.2	5.90	5.88	82.6	82.3	4.77	4.80		4.82			5.01	7.6	7.7	8.1
						31.1		5.86		82.0		4.82			8.0						
			Bottom	10.4	25.0	31.8	31.8	5.70	5.72	79.8	80.1	4.99	5.01		5.03			5.07	8.2	8.1	8.2
						31.7		5.74		80.4		4.99			8.2						
10/11/11	1542-1555	20/Cloudy	Surface	1.0	24.4	30.7	30.7	6.18	6.19	88.9	89.1	4.62	4.64	4.83	7.2	7.2	7.6				
						30.7		6.20		89.3		4.66			7.2						
			Middle	5.6	24.1	31.2	31.2	6.13	6.15	88.3	88.5	4.78	4.77		4.76			5.07	7.4	7.5	8.0
						31.2		6.16		88.7		4.76			7.6						
			Bottom	10.2	23.8	32.1	32.2	5.82	5.85	83.2	84.0	5.09	5.07		5.04			5.09	8.0	8.0	8.2
						32.2		5.88		84.7		5.04			8.2						
12/11/11	1637-1649	22/Fine	Surface	1.0	23.9	30.3	30.3	6.11	6.10	89.5	89.4	5.07	5.09	5.18	8.2	8.2	8.2				
						30.3		6.08		89.2		5.11			8.2						
			Middle	6.1	24.8	30.7	30.7	6.02	6.01	88.1	88.0	5.16	5.18		5.19			5.26	8.4	8.4	8.6
						30.7		5.99		87.8		5.19			8.4						
			Bottom	11.2	25.3	31.6	31.6	5.93	5.91	86.7	86.4	5.24	5.26		5.28			5.26	8.6	8.1	8.6
						31.6		5.88		86.0		5.28			7.6						
15/11/11	0812-0824	22/Fine	Surface	1.0	25.9	30.4	30.4	6.09	6.06	87.1	86.3	5.12	5.14	5.03	8.6	8.5	8.2				
						30.3		6.02		85.5		5.16			8.4						
			Middle	5.6	26.1	30.9	30.9	5.97	5.94	85.4	84.9	5.02	5.03		5.04			4.91	8.4	8.3	8.0
						30.9		5.90		84.4		5.04			8.2						
			Bottom	10.2	26.5	31.7	31.8	5.72	5.74	81.8	82.0	4.90	4.91		4.91			5.14	8.0	7.9	7.8
						31.8		5.75		82.2		4.91			8.0						
17/11/11	1038-1052	24/Drizzle	Surface	1.0	25.3	29.7	29.7	6.03	6.04	86.8	87.0	4.79	4.77	4.85	7.8	7.8	8.0				
						29.6		6.05		87.1		4.74			7.8						
			Middle	6.1	25.2	30.8	30.8	5.97	5.95	86.0	85.6	4.81	4.84		4.87			4.95	8.0	7.9	8.2
						30.8		5.92		85.2		4.87			7.8						
			Bottom	11.2	24.9	31.7	31.7	5.83	5.82	84.0	83.8	4.92	4.95		4.98			5.14	8.2	8.2	8.2
						31.7		5.80		83.5		4.98			8.2						
19/11/11	1242-1256	26/Cloudy	Surface	1.0	25.0	30.8	30.8	6.23	6.24	87.2	88.2	4.92	4.91	4.97	7.8	7.9	7.9				
						30.8		6.24		89.2		4.90			8.0						
			Middle	5.6	25.6	31.8	31.8	5.94	5.96	84.9	84.3	4.89	4.85		4.80			5.14	7.8	7.8	8.1
						31.8		5.97		83.6		4.80			8.0						
			Bottom	10.2	25.9	32.1	32.1	5.80	5.84	82.9	83.4	5.12	5.14		5.16			5.14	8.2	8.1	8.2
						32.1		5.87		83.9		5.16			8.2						
22/11/11	1434-1445	22/Cloudy	Surface	1.0	24.8	31.0	31.0	6.18	6.16	88.3	88.1	4.97	5.02	5.15	7.8	7.9	8.0				
						31.0		6.14		87.8		5.06			8.0						
			Middle	6.1	25.0	32.0	32.0	6.03	6.05	86.2	86.5	5.17	5.14		5.11			5.31	7.8	7.9	8.2
						32.0		6.07		86.8		5.11			8.0						
			Bottom	11.2	25.2	32.4	32.4	5.91	5.93	83.9	84.2	5.34	5.31		5.27			5.31	8.4	8.3	8.2
						32.4		5.95		84.4		5.27			8.2						
24/11/11	1504-1516	24/Fine	Surface	1.0	24.8	30.4	30.4	6.15	6.14	89.8	89.6	5.12	5.14	5.21	8.0	7.9	8.1				
						30.3		6.12		89.4		5.15			7.8						
			Middle	5.9	24.5	30.7	30.7	6.03	6.05	88.0	88.3	5.20	5.22		5.23			5.29	8.2	8.1	8.2
						30.6		6.06		88.5		5.23			8.0						
			Bottom	10.8	24.1	31.5	31.5	5.91	5.94	86.3	86.7	5.27	5.29		5.31			5.29	8.2	8.2	8.2
						31.5		5.96		87.0		5.31			8.2						
26/11/11	1709-1725	22/Cloudy	Surface	1.0	21.5	30.6	30.6	6.02	6.04	83.6	83.9	4.63	4.65	4.84	7.6	7.6	7.8				
						30.6		6.05		84.1		4.67			7.6						
			Middle	5.7	21.4	30.7	30.8	5.88	5.90	81.7	82.0	4.81	4.83		4.84			5.04	7.8	7.8	8.0
						30.8		5.92		82.2		4.84			7.8						
			Bottom	10.4	21.1	31.4	31.4	5.74	5.76	79.7	80.0	5.01	5.04		5.07			5.04	8.0	8.0	8.0
						31.4		5.77		80.2		5.07			8.0						
29/11/11	1421-1433	25/Fine	Surface	1.0	24.8	30.2	30.3	6.13	6.11	90.7	90.4	5.11	5.13	5.22	8.0	8.0	8.1				
						30.3		6.09		90.1		5.15			8.0						
			Middle	5.9	24.4	30.6	30.6	6.01	6.00	88.9	88.8	5.21	5.23		5.24			5.32	8.2	8.2	8.2
						30.6		5.99		88.7		5.24			8.2						
			Bottom	10.8	24.1	31.5	31.5	5.92	5.91	87.6	87.5	5.30	5.32		5.33			5.32	8.0	8.1	8.1
						31.5		5.90		87.3		5.33			8.2						

**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
01/11/11	0925-0936	23/Fine	Surface	1.0	26.2	31.2	31.3	6.20	6.22	89.3	89.5	4.04	4.07	4.22	6.8	6.9	6.9
				6.8	26.0	31.3		6.23		89.7		4.09			7.0		
			Middle	6.8	26.0	31.5	31.5	6.06	6.07	87.3	87.5	4.25	4.22		6.8		
				12.6	25.7	31.5		6.08		87.6		4.19			7.0		
			Bottom	12.6	25.7	31.9	31.9	5.99	5.97	86.3	86.0	4.33	4.36		7.0		
				12.6	25.7	31.9		5.95		85.7		4.39			6.8		
03/11/11	1315-1326	26/Fine	Surface	1.0	26.4	30.9	31.0	6.15	6.13	87.9	87.6	4.14	4.18	4.61	7.8	8.0	8.0
				6.7	25.8	31.0		6.10		87.2		4.22			7.8		
			Middle	6.7	25.8	31.5	31.6	5.97	5.96	85.3	85.1	4.72	4.70		8.0		
				12.4	25.1	31.6		5.94		84.9		4.68			8.0		
			Bottom	12.4	25.1	31.9	31.9	5.99	5.97	85.6	85.3	4.90	4.94		8.2		
				12.4	25.1	31.8		5.95		85.0		4.97			8.4		
05/11/11	1315-1326	27/Fine	Surface	1.0	26.7	31.0	31.1	6.09	6.08	87.0	86.8	4.57	4.60	4.93	6.4	6.6	7.1
				6.7	26.0	31.1		6.06		86.6		4.62			6.8		
			Middle	6.7	26.0	31.8	31.8	5.92	5.94	84.6	84.8	4.92	4.90		6.8		
				12.4	25.5	31.8		5.95		85.0		4.87			7.0		
			Bottom	12.4	25.5	32.4	32.4	5.83	5.81	82.7	82.4	5.27	5.30		7.8		
				12.4	25.5	32.3		5.78		82.0		5.33			8.0		
08/11/11	1418-1433	25/Drizzle	Surface	1.6	25.7	30.8	30.8	6.01	6.03	84.1	84.4	4.50	4.53	4.74	7.2	7.3	7.7
				6.4	25.4	30.8		6.05		84.7		4.55			7.4		
			Middle	6.4	25.4	31.2	31.2	5.92	5.94	82.8	83.1	4.68	4.71		7.6		
				11.8	25.0	31.2		5.95		83.3		4.73			7.8		
			Bottom	11.8	25.0	31.9	31.9	5.84	5.81	81.7	81.3	4.95	4.98		8.0		
				11.8	25.0	31.9		5.78		80.9		5.00			8.2		
10/11/11	1522-1535	20/Cloudy	Surface	1.0	24.4	30.7	30.8	6.13	6.15	88.3	88.5	4.79	4.75	4.84	7.4	7.5	7.7
				6.5	24.2	30.8		6.16		88.7		4.71			7.6		
			Middle	6.5	24.2	31.2	31.2	6.11	6.10	87.9	87.8	4.89	4.85		7.8		
				12.0	23.8	31.2		6.09		87.7		4.81			7.8		
			Bottom	12.0	23.8	32.0	32.0	5.86	5.85	84.4	84.3	4.95	4.93		7.8		
				12.0	23.8	32.0		5.84		84.1		4.91			8.0		
12/11/11	1617-1630	22/Fine	Surface	1.0	24.0	30.4	30.4	6.22	6.20	91.1	90.9	4.99	5.01	5.09	7.6	7.7	8.1
				6.9	24.8	30.4		6.18		90.7		5.02			7.8		
			Middle	6.9	24.8	30.8	30.8	6.12	6.11	89.5	89.5	5.07	5.09		8.0		
				12.8	25.3	30.8		6.10		89.4		5.10			8.4		
			Bottom	12.8	25.3	30.7	31.3	6.02	6.00	88.0	87.7	5.16	5.18		8.2		
				12.8	25.3	31.8		5.97		87.3		5.19			8.4		
15/11/11	0751-0804	22/Fine	Surface	1.0	25.8	30.3	30.3	6.12	6.14	87.5	87.7	4.68	4.70	4.91	6.8	6.8	7.5
				6.5	26.1	30.3		6.15		87.9		4.72			6.8		
			Middle	6.5	26.1	30.9	30.9	6.09	6.07	87.1	86.8	4.92	4.96		7.6		
				12.0	26.5	30.9		6.05		86.5		4.99			7.8		
			Bottom	12.0	26.5	31.8	31.8	5.78	5.75	82.7	82.2	5.06	5.08		8.0		
				12.0	26.5	31.8		5.71		81.7		5.09			8.0		
17/11/11	1019-1033	24/Drizzle	Surface	1.0	25.3	29.7	29.7	6.16	6.14	88.1	87.8	4.56	4.59	4.72	7.2	7.4	7.7
				6.9	25.1	29.7		6.11		87.4		4.62			7.6		
			Middle	6.9	25.1	30.8	30.9	6.04	6.02	86.4	86.1	4.68	4.71		7.6		
				12.8	24.8	30.9		6.00		85.8		4.73			7.6		
			Bottom	12.8	24.8	31.7	31.7	5.94	5.91	84.9	84.4	4.83	4.86		8.0		
				12.8	24.8	31.7		5.87		83.9		4.88			8.0		
19/11/11	1223-1235	26/Cloudy	Surface	1.0	24.9	30.9	30.9	6.17	6.16	86.4	86.2	4.62	4.63	4.81	7.6	7.8	7.8
				6.4	25.7	30.8		6.14		85.3		4.86			7.8		
			Middle	6.4	25.7	31.7	31.8	6.09	6.12	85.3	85.1	4.86	4.84		8.0		
				11.8	25.9	31.7		6.14		84.9		4.81			8.0		
			Bottom	11.8	25.9	32.2	32.2	5.82	5.86	83.2	83.5	4.93	4.95		8.0		
				11.8	25.9	32.1		5.89		83.8		4.97			8.0		
22/11/11	1415-1426	22/Cloudy	Surface	1.0	24.8	30.9	31.0	6.07	6.06	86.8	86.6	5.01	5.04	5.03	7.8	7.9	7.9
				6.7	25.1	31.0		6.04		86.3		5.06			8.0		
			Middle	6.7	25.1	31.9	31.9	5.92	5.94	84.0	84.2	5.07	5.04		8.0		
				12.4	25.2	31.9		5.95		84.4		5.01			7.8		
			Bottom	12.4	25.2	32.4	32.4	5.95	5.97	84.4	84.7	4.98	5.03		7.8		
				12.4	25.2	32.4		5.99		85.0		5.07			8.0		
24/11/11	1446-1457	24/Fine	Surface	1.0	24.7	30.2	30.3	6.24	6.25	91.1	91.3	5.05	5.07	5.14	8.0	8.1	8.2
				6.9	24.4	30.3		6.26		91.4		5.08			8.2		
			Middle	6.9	24.4	30.8	30.8	6.18	6.16	90.2	89.9	5.14	5.15		8.0		
				12.8	24.0	30.7		6.14		89.6		5.15			8.2		
			Bottom	12.8	24.0	31.6	31.6	6.07	6.05	88.6	88.3	5.20	5.22		8.2		
				12.8	24.0	31.6		6.03		88.0		5.23			8.4		
26/11/11	1649-1705	22/Cloudy	Surface	1.0	21.5	30.5	30.6	6.08	6.11	84.5	84.9	4.47	4.50	4.73	7.6	7.6	7.6
				6.5	21.3	30.6		6.14		85.3		4.52			7.4		
			Middle	6.5	21.3	30.8	30.8	5.90	5.93	82.0	82.4	4.70	4.72		7.4		
				12.0	21.1	30.8		5.95		82.7		4.74			7.8		
			Bottom	12.0	21.1	31.5	31.5	5.81	5.82	80.7	80.9	4.96	4.98		7.6		
				12.0	21.1	31.5		5.83		81.0		4.99			8.0		
29/11/11	1402-1414	25/Fine	Surface	1.0	24.7	30.3	30.2	6.22	6.20	92.1	91.8	5.04	5.05	5.14	7.8	7.9	8.1
				6.9	24.3	30.1		6.18		91.5		5.06			8.0		
			Middle	6.9	24.3	30.6	30.7	6.11	6.10	90.4	90.2	5.13	5.15		8.0		
				12.8	23.9	30.7		6.08		89.9		5.16			8.2		
			Bottom	12.8	23.9	31.5	31.6	5.97	5.99	88.4	88.6	5.22	5.24		8.2		
				12.8	23.9	31.6		6.00		88.8		5.25			8.2		

Mid-Flood Tide

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/11	0910-0922	23/Fine	Surface	1.0	26.3	31.3	31.3	6.32	6.30	91.0	90.7	4.07	4.11	4.27	6.4	6.6	7.2
						31.3		6.27		90.3		4.15			6.8		
			Middle	6.4	26.0	31.5	31.5	6.04	6.03	87.0	86.8	4.27	4.25		7.2	7.4	
						31.4		6.01		86.5		4.22			7.5		
			Bottom	11.8	25.6	31.9	32.0	5.93	5.95	85.4	85.7	4.41	4.45		7.5	7.6	
						32.0		5.97		86.0		4.48			7.6		
03/11/11	1300-1312	26/Fine	Surface	1.0	26.4	30.9	30.9	6.21	6.20	88.8	88.6	3.97	4.02	4.07	7.0	7.1	7.3
						30.8		6.18		88.3		4.06			7.2		
			Middle	6.3	25.6	31.4	31.5	6.04	6.07	86.3	86.7	3.67	3.64		7.0	7.0	
						31.5		6.09		87.0		3.60			7.0		
			Bottom	11.6	25.2	31.9	31.9	5.85	5.83	83.0	82.8	4.53	4.57		7.5	7.7	
						31.9		5.80		82.6		4.61			7.8		
05/11/11	1300-1312	27/Fine	Surface	1.0	26.5	30.9	31.0	6.10	6.11	87.2	87.4	4.49	4.51	4.84	7.8	7.8	8.0
						31.0		6.12		87.5		4.53			7.8		
			Middle	6.4	25.8	31.9	31.9	5.87	5.86	82.3	82.6	4.93	4.90		8.0	8.0	
						31.8		5.84		82.9		4.87			8.0		
			Bottom	11.8	25.6	32.2	32.3	5.95	5.97	85.0	85.3	5.09	5.12		8.0	8.1	
						32.3		5.98		85.5		5.15			8.2		
08/11/11	1400-1414	25/Drizzle	Surface	1.0	25.7	30.8	30.9	6.08	6.10	85.1	85.4	4.53	4.55	4.73	7.2	7.3	7.7
						30.9		6.12		85.7		4.57			7.4		
			Middle	6.1	25.4	31.2	31.3	6.00	5.99	84.0	83.8	4.70	4.72		7.6	7.8	
						31.3		5.97		83.6		4.74			8.0		
			Bottom	11.2	25.0	31.8	31.9	5.80	5.82	81.2	81.4	4.90	4.93		8.0	7.9	
						31.9		5.83		81.6		4.96			7.8		
10/11/11	1500-1514	20/Cloudy	Surface	1.0	24.4	30.8	30.8	6.26	6.25	87.6	88.8	4.60	4.64	4.83	7.2	7.3	7.6
						30.8		6.24		89.9		4.67			7.4		
			Middle	6.2	24.1	31.3	31.3	6.02	6.04	86.7	86.9	4.86	4.87		7.4	7.5	
						31.2		6.05		87.1		4.87			7.5		
			Bottom	11.4	23.7	32.1	32.2	6.08	6.03	87.5	86.7	4.96	4.98		8.0	8.0	
						32.2		5.97		85.9		4.99			8.0		
12/11/11	1600-1613	22/Fine	Surface	1.0	24.0	30.3	30.4	6.21	6.23	91.0	91.4	5.03	5.04	5.13	7.4	7.5	7.7
						30.4		6.25		91.7		5.05			7.6		
			Middle	6.4	24.8	30.7	30.8	6.16	6.15	90.1	90.0	5.11	5.13		8.0	8.0	
						30.8		6.13		89.8		5.14			8.0		
			Bottom	11.8	25.3	31.6	31.7	6.04	6.03	88.3	88.1	5.20	5.21		7.5	7.6	
						31.7		6.01		87.9		5.22			7.6		
15/11/11	0730-0742	22/Fine	Surface	1.0	25.9	30.3	30.3	6.20	6.19	88.7	88.5	4.59	4.60	4.78	6.6	6.7	7.3
						30.3		6.17		88.2		4.61			6.8		
			Middle	6.2	26.2	30.8	30.8	6.11	6.08	87.4	87.0	4.79	4.83		7.0	7.3	
						30.8		6.05		86.5		4.86			7.5		
			Bottom	11.4	26.5	31.7	31.7	6.03	6.02	86.2	86.1	4.93	4.92		8.0	7.9	
						31.7		6.01		85.9		4.91			7.8		
17/11/11	1000-1016	24/Drizzle	Surface	1.0	25.2	29.6	29.7	6.24	6.22	89.2	88.9	4.46	4.44	4.55	7.4	7.5	7.6
						29.7		6.19		88.5		4.42			7.6		
			Middle	6.6	25.2	30.9	30.9	6.07	6.10	86.8	87.3	4.59	4.56		7.0	7.5	
						30.8		6.13		87.7		4.53			8.0		
			Bottom	12.2	24.9	31.7	31.8	6.02	6.00	86.1	85.8	4.67	4.66		8.0	7.8	
						31.8		5.98		85.5		4.65			7.6		
19/11/11	1200-1214	26/Cloudy	Surface	1.0	25.8	30.8	30.8	6.23	6.22	87.2	86.9	4.74	4.77	4.85	7.6	7.7	7.8
						30.8		6.20		86.5		4.79			7.8		
			Middle	6.0	26.0	31.4	31.5	6.02	6.05	84.3	84.6	4.92	4.93		7.8	7.9	
						31.5		6.07		84.9		4.93			8.0		
			Bottom	11.0	25.9	32.1	32.1	5.74	5.77	80.4	80.8	4.81	4.85		8.0	7.8	
						32.1		5.79		81.2		4.88			7.6		
22/11/11	1400-1412	22/Cloudy	Surface	1.0	24.7	30.8	30.9	6.12	6.11	87.5	87.3	4.82	4.86	4.97	7.6	7.7	7.9
						30.9		6.09		87.0		4.90			7.8		
			Middle	6.2	25.0	31.8	31.8	6.02	6.04	86.0	86.3	4.97	4.95		7.8	7.9	
						31.7		6.05		86.5		4.92			8.0		
			Bottom	11.4	25.1	32.5	32.4	5.99	5.97	85.6	85.3	5.11	5.09		8.0	8.0	
						32.3		5.95		85.0		5.07			8.0		
24/11/11	1430-1442	24/Fine	Surface	1.0	24.7	30.2	30.3	6.20	6.19	90.5	90.3	5.03	5.05	5.12	7.8	7.9	7.9
						30.3		6.17		90.1		5.06			8.0		
			Middle	6.4	24.5	30.8	30.8	6.11	6.10	89.2	89.1	5.10	5.12		7.8	7.9	
						30.8		6.09		88.9		5.13			8.0		
			Bottom	11.8	24.0	31.6	31.6	6.02	6.00	87.9	87.6	5.18	5.20		8.0	8.0	
						31.5		5.98		87.3		5.21			8.0		
26/11/11	1630-1645	22/Cloudy	Surface	1.0	21.5	30.5	30.5	6.05	6.08	84.1	84.5	4.54	4.57	4.78	8.0	7.8	7.9
						30.5		6.11		84.9		4.60			7.6		
			Middle	6.1	21.4	30.7	30.8	5.97	5.95	82.9	82.7	4.75	4.78		7.6	7.8	
						30.8		5.93		82.4		4.80			8.0		
			Bottom	11.2	21.2	31.4	31.5	5.80	5.82	80.6	80.9	5.02	5.00		8.0	8.0	
						31.5		5.84		81.1		4.97			8.0		
29/11/11	1345-1358	25/Fine	Surface	1.0	24.7	30.2	30.2	6.16	6.18	91.2	91.4	5.09	5.11	5.19	8.0	8.1	8.1
						30.2		6.19		91.6		5.12			8.2		
			Middle	6.4	24.4	30.6	30.6	6.08	6.07	90.0	89.8	5.17	5.19		8.2	8.1	
						30.6		6.05		89.5		5.20			8.0		
			Bottom	11.8	24.0	31.5	31.5	5.99	5.98	88.7	88.5	5.25	5.27		8.0	8.1	
						31.5		5.96		88.2		5.28			8.2		



**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	
01/11/11	1121-1132	23/Fine	Surface	1.0	26.4	31.2	31.2	6.19	6.22	89.1	89.6	4.02	4.05	4.21	6.8	6.8	7.1	
						31.2		6.25		90.0		4.08			6.8			
			Middle	6.1	26.2	31.4	31.4	6.10	6.09	87.8	87.6	4.22	4.20		4.17	7.0		6.9
						31.4		6.07		87.4		4.17			6.8			
			Bottom	11.2	25.8	31.9	31.9	5.94	5.98	85.5	86.0	4.34	4.38		4.34	7.4		7.5
						31.9		6.01		86.5		4.41			7.6			
03/11/11	1511-1522	26/Fine	Surface	1.0	26.4	31.2	31.2	6.19	6.18	88.5	88.3	4.88	4.91	4.97	7.8	7.9	8.0	
						31.1		6.16		88.0		4.93			8.0			
			Middle	5.9	25.6	31.8	31.9	6.04	6.06	86.3	86.6	4.98	4.95		4.91	7.8		7.9
						31.9		6.07		86.8		4.91			8.0			
			Bottom	10.8	25.3	32.2	32.3	5.86	5.88	83.2	83.5	5.04	5.07		5.09	8.2		8.2
						32.3		5.90		83.7		5.09			8.2			
05/11/11	1511-1522	27/Fine	Surface	1.0	26.5	31.2	31.2	6.19	6.17	88.5	88.2	4.87	4.89	4.91	7.4	7.6	7.7	
						31.2		6.15		87.9		4.90			7.8			
			Middle	6.1	25.9	31.9	32.0	5.86	5.88	83.2	83.5	4.94	4.91		4.87	8.0		7.8
						32.0		5.90		83.7		4.87			7.6			
			Bottom	11.2	25.4	32.4	32.4	5.81	5.80	82.5	82.3	4.89	4.93		4.96	7.4		7.6
						32.3		5.78		82.0		4.96			7.8			
08/11/11	1600-1615	25/Drizzle	Surface	1.0	25.8	30.7	30.7	5.99	6.02	83.8	84.2	4.42	4.43	4.65	6.8	6.8	7.5	
						30.7		6.04		84.5		4.44			6.8			
			Middle	5.9	25.6	31.0	31.0	5.90	5.88	82.6	82.3	4.58	4.61		4.63	7.4		7.6
						30.9		5.86		82.0		4.63			7.8			
			Bottom	10.8	25.2	31.4	31.5	5.78	5.80	80.9	81.1	4.87	4.91		4.87	8.0		8.1
						31.5		5.81		81.3		4.95			8.2			
10/11/11	1658-1710	20/Cloudy	Surface	1.0	24.3	30.6	30.7	6.36	6.32	91.6	91.0	4.36	4.35	4.58	6.4	6.5	7.0	
						30.7		6.27		90.3		4.34			6.6			
			Middle	6.2	24.0	31.2	31.2	6.04	6.03	86.4	86.6	4.56	4.54		4.52	6.8		6.8
						31.1		6.02		86.7		4.52			6.8			
			Bottom	11.4	23.6	32.2	32.2	5.93	5.92	85.4	85.3	4.83	4.85		4.86	7.6		7.7
						32.1		5.91		85.1		4.86			7.8			
12/11/11	1753-1807	22/Fine	Surface	1.0	23.9	30.4	30.4	6.27	6.26	91.9	91.8	5.03	5.04	5.10	8.0	7.9	8.1	
						30.4		6.25		91.6		5.04			7.8			
			Middle	5.9	24.7	30.8	30.7	6.18	6.17	90.7	90.6	5.09	5.10		5.11	8.0		8.1
						30.6		6.16		90.4		5.11			8.2			
			Bottom	10.8	25.3	31.5	31.5	6.08	6.06	88.9	88.6	5.15	5.16		5.17	8.4		8.4
						31.5		6.04		88.3		5.17			8.4			
15/11/11	0936-0944	22/Fine	Surface	1.0	26.0	30.5	30.5	6.21	6.23	88.8	89.1	4.50	4.53	4.81	6.6	6.7	7.3	
						30.5		6.25		89.4		4.55			6.8			
			Middle	6.1	26.3	30.8	30.8	6.11	6.10	87.4	87.2	4.82	4.85		4.88	7.2		7.3
						30.8		6.08		86.9		4.88			7.4			
			Bottom	11.2	26.4	31.9	31.9	5.84	5.83	83.5	83.3	5.05	5.07		5.08	7.8		7.9
						31.8		5.81		83.1		5.08			8.0			
17/11/11	1205-1219	24/Drizzle	Surface	1.0	25.4	29.6	29.7	6.18	6.15	88.4	88.0	4.50	4.54	4.64	7.8	7.8	8.0	
						29.7		6.12		87.5		4.57			8.0			
			Middle	6.2	25.4	30.8	30.8	6.06	6.03	86.7	86.2	4.62	4.65		4.68	8.0		8.0
						30.8		5.99		85.7		4.68			8.0			
			Bottom	11.4	24.9	31.8	31.8	5.90	5.87	84.4	84.0	4.75	4.74		4.73	8.2		8.2
						31.8		5.84		83.5		4.73			8.2			
19/11/11	1416-1428	25/Cloudy	Surface	1.0	24.9	30.7	30.8	6.13	6.15	85.8	86.1	4.17	4.16	4.49	7.0	7.0	7.4	
						30.8		6.17		86.4		4.14			7.0			
			Middle	6.1	25.5	31.6	31.6	5.92	5.94	82.9	83.1	4.40	4.40		4.39	7.4		7.2
						31.6		5.95		83.3		4.39			7.0			
			Bottom	11.2	25.7	32.0	32.1	5.81	5.83	81.3	81.6	4.89	4.91		4.92	7.8		7.9
						32.1		5.84		81.8		4.92			8.0			
22/11/11	1611-1622	22/Cloudy	Surface	1.0	24.7	31.1	31.1	6.09	6.08	87.0	86.8	5.21	5.19	5.30	8.2	8.1	8.3	
						31.1		6.06		86.6		5.17			8.0			
			Middle	6.0	25.0	32.0	32.1	5.92	5.91	84.0	83.8	5.36	5.33		5.30	8.4		8.3
						32.1		5.89		83.6		5.30			8.2			
			Bottom	11.0	25.2	32.1	32.2	5.97	5.96	84.7	84.5	5.41	5.38		5.34	8.6		8.5
						32.2		5.94		84.3		5.34			8.4			
24/11/11	1618-1630	24/Fine	Surface	1.0	24.8	30.3	30.3	6.25	6.23	91.3	91.0	5.01	5.03	5.10	7.8	7.9	8.1	
						30.2		6.21		90.7		5.04			8.0			
			Middle	5.9	24.5	30.6	30.7	6.17	6.16	90.1	90.0	5.08	5.10		5.12	8.2		8.1
						30.7		6.15		89.8		5.12			8.0			
			Bottom	10.8	24.0	31.5	31.6	6.09	6.08	88.9	88.8	5.17	5.19		5.20	8.2		8.2
						31.6		6.07		88.6		5.20			8.2			
26/11/11	1830-1845	22/Fine	Surface	1.0	21.5	30.7	30.7	6.06	6.08	84.2	84.5	4.69	4.72	4.84	7.6	7.7	7.8	
						30.7		6.10		84.7		4.75			7.8			
			Middle	5.9	21.4	31.0	31.0	5.89	5.91	81.8	82.1	4.81	4.84		4.86	7.8		7.8
						30.9		5.93		82.4		4.86			7.8			
			Bottom	10.8	21.1	31.5	31.6	5.72	5.74	79.5	79.8	4.93	4.95		4.97	8.0		7.9
						31.6		5.76		80.0		4.97			7.8			
29/11/11	1536-1549	25/Fine	Surface	1.0	24.8	30.2	30.2	6.24	6.23	92.4	92.2	5.04	5.06	5.14	7.8	7.9	8.0	
						30.1		6.21		91.9		5.08			8.0			
			Middle	5.8	24.4	30.5	30.6	6.16	6.14	91.2	90.9	5.13	5.14		5.15	8.0		8.0
						30.6		6.12		90.6		5.15			8.0			
			Bottom	10.6	24.1	31.5	31.5	6.05	6.03	89.5	89.1	5.21	5.22		5.23	8.2		8.2
						31.5		6.00		88.7		5.23			8.2			

**Mid-Flood Tide**

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average			
01/11/11	1146-1157	23/Fine	Surface	1.0	26.4	31.2	31.2	6.15	6.13	89.2	88.9	4.11	4.14	4.32	6.8	6.8	7.2			
						31.1		6.11		88.6		4.16			6.8					
			Middle	8.9	26.1	31.6	31.6	5.99	5.95	86.9	86.3	4.38	4.35		7.2	7.2		7.2	7.2	7.2
						31.6		5.91		85.7		4.31			7.2					
			Bottom	16.8	25.6	32.0	32.1	5.73	5.75	83.1	83.3	4.44	4.47		7.6	7.6		7.6	7.6	7.6
						32.1		5.76		83.5		4.50			7.6					
03/11/11	1536-1547	26/Fine	Surface	1.0	26.5	31.2	31.3	6.20	6.22	88.6	88.9	5.03	5.07	5.20	8.0	8.1	8.2			
						31.3		6.24		89.2		5.11			8.0					
			Middle	8.8	25.7	31.9	31.9	6.09	6.08	87.0	86.8	5.37	5.33		8.2	8.2		8.2	8.2	8.2
						31.9		6.06		86.6		5.29			8.2					
			Bottom	16.6	25.4	32.1	32.2	5.98	5.97	85.5	85.3	5.18	5.21		8.0	8.1		8.0	8.1	8.1
						32.2		5.95		85.0		5.23			8.0					
05/11/11	1536-1547	27/Fine	Surface	1.0	26.4	31.1	31.1	6.10	6.08	87.2	86.9	4.93	4.96	5.05	7.8	7.9	8.0			
						31.1		6.05		86.5		4.98			7.8					
			Middle	8.8	26.0	32.0	32.1	5.94	5.92	84.3	84.0	5.06	5.09		8.0	8.1		8.0	8.0	8.0
						32.1		5.90		83.7		5.11			8.0					
			Bottom	16.6	25.6	32.4	32.4	5.97	5.96	85.3	85.1	5.15	5.12		8.2	8.1		8.2	8.1	8.2
						32.3		5.94		84.9		5.08			8.2					
08/11/11	1621-1637	25/Drizzle	Surface	1.0	25.7	30.7	30.7	6.04	6.07	84.5	84.9	4.48	4.51	4.77	7.2	7.5	7.8			
						30.7		6.09		85.3		4.53			7.2					
			Middle	8.9	25.4	31.2	31.2	5.83	5.84	81.6	81.8	4.77	4.80		7.6	7.7		7.6	7.7	7.6
						31.2		5.85		81.9		4.83			7.6					
			Bottom	16.8	24.9	31.9	31.9	5.78	5.76	80.9	80.6	4.98	5.01		8.0	8.1		8.0	8.1	8.0
						31.9		5.74		80.3		5.04			8.0					
10/11/11	1715-1728	20/Cloudy	Surface	1.0	24.2	30.6	30.6	6.19	6.17	89.1	88.9	4.46	4.48	4.67	6.8	6.8	7.2			
						30.6		6.15		88.6		4.49			6.8					
			Middle	9.1	24.0	31.3	31.4	6.05	6.04	87.1	86.9	4.61	4.65		7.2	7.2		7.2	7.2	7.2
						31.4		6.02		86.7		4.68			7.2					
			Bottom	17.2	23.5	32.1	32.1	5.99	5.98	86.3	86.1	4.88	4.89		7.6	7.7		7.6	7.7	7.6
						32.1		5.96		85.8		4.90			7.6					
12/11/11	1812-1825	22/Fine	Surface	1.0	24.0	30.4	30.4	6.31	6.30	92.4	92.2	5.06	5.04	5.13	7.8	7.8	8.2			
						30.3		6.28		92.0		5.02			7.8					
			Middle	8.8	24.8	30.7	30.8	6.22	6.20	91.2	90.9	5.10	5.12		8.4	8.3		8.4	8.4	8.4
						30.8		6.17		90.5		5.13			8.4					
			Bottom	16.6	25.4	31.7	31.8	6.10	6.08	89.2	88.9	5.20	5.22		8.4	8.4		8.4	8.4	8.4
						31.8		6.05		88.5		5.24			8.4					
15/11/11	0949-1003	22/Fine	Surface	1.0	26.1	30.4	30.5	6.07	6.08	86.8	87.0	4.66	4.68	4.93	7.2	7.3	7.8			
						30.5		6.09		87.1		4.70			7.2					
			Middle	8.9	26.2	30.9	30.9	5.93	5.95	84.8	85.0	4.94	4.96		8.0	7.9		8.0	8.0	8.0
						30.9		5.96		85.2		4.98			8.0					
			Bottom	16.8	26.4	31.7	31.7	5.74	5.76	82.1	82.3	5.12	5.14		8.2	8.1		8.2	8.1	8.2
						31.7		5.77		82.5		5.16			8.2					
17/11/11	1226-1240	24/Drizzle	Surface	1.0	25.4	29.6	29.6	6.10	6.07	87.8	87.4	4.69	4.66	4.84	7.8	7.9	8.1			
						29.6		6.04		87.0		4.63			7.8					
			Middle	9.0	25.2	31.0	31.0	5.94	5.91	85.5	85.1	4.81	4.85		8.0	8.1		8.0	8.1	8.0
						30.9		5.88		84.7		4.88			8.0					
			Bottom	17.0	24.8	31.9	31.9	5.76	5.74	82.9	82.7	4.98	5.01		8.4	8.2		8.4	8.2	8.4
						31.9		5.72		82.4		5.03			8.4					
19/11/11	1432-1446	25/Cloudy	Surface	1.0	24.9	30.7	30.7	6.09	6.07	85.3	85.0	4.11	4.10	4.54	7.0	7.0	7.5			
						30.7		6.04		84.6		4.08			7.0					
			Middle	8.9	25.5	31.7	31.8	5.90	5.89	82.6	82.4	4.56	4.55		7.6	7.6		7.6	7.6	7.6
						31.8		5.87		82.2		4.53			7.6					
			Bottom	16.8	25.7	32.0	32.1	5.72	5.71	80.1	79.9	4.99	4.98		7.8	7.9		7.8	7.9	7.8
						32.1		5.70		79.7		4.96			7.8					
22/11/11	1636-1647	22/Cloudy	Surface	1.0	24.8	31.2	31.2	6.17	6.16	88.2	88.0	5.07	5.04	5.10	7.8	7.9	7.9			
						31.2		6.14		87.8		5.01			7.8					
			Middle	8.8	25.0	31.9	32.0	6.04	6.06	86.3	86.6	5.12	5.11		8.0	7.9		8.0	8.0	8.0
						32.0		6.07		86.8		5.09			8.0					
			Bottom	16.6	25.1	32.3	32.4	5.90	5.92	83.7	84.0	5.17	5.14		8.0	7.9		8.0	8.0	8.0
						32.4		5.94		84.3		5.11			8.0					
24/11/11	1634-1648	24/Fine	Surface	1.0	24.7	30.2	30.2	6.33	6.32	92.4	92.2	4.95	4.97	5.06	7.8	7.8	7.9			
						30.2		6.30		92.0		4.98			7.8					
			Middle	8.9	24.4	30.8	30.8	6.23	6.22	91.0	90.9	5.05	5.07		8.0	7.9		8.0	8.0	8.0
						30.8		6.21		90.7		5.08			8.0					
			Bottom	16.8	23.8	31.8	31.8	6.14	6.12	89.6	89.4	5.12	5.14		8.2	8.1		8.2	8.1	8.2
						31.7		6.10		89.1		5.15			8.2					
26/11/11	1848-1903	22/Fine	Surface	1.0	21.4	30.6	30.7	6.13	6.15	85.2	85.4	4.52	4.55	4.80	7.4	7.5	7.8			
						30.7		6.16		85.6		4.58			7.4					
			Middle	8.9	21.2	31.3	31.4	5.92	5.89	82.2	81.8	4.77	4.79		7.8	7.8		7.8	7.8	7.8
						31.4		5.86		81.4		4.81			7.8					
			Bottom	16.8	20.9	32.0	32.0	5.70	5.73	79.2	79.6	5.01	5.05		8.0	8.0		8.0	8.0	8.0
						32.0		5.75		79.9		5.08			8.0					
29/11/11	1554-1607	25/Fine	Surface	1.0	24.8	30.3	30.3	6.22	6.20	92.1	91.8	4.96	4.98	5.10	7.8	7.8	8.0			
						30.3		6.18		91.5		5.00			7.8					
			Middle	8.9	24.3	30.8	30.8	6.07	6.09	89.8	90.1	5.08	5.10		8.0	8.0		8.0	8.0	8.0
						30.8		6.10		90.3		5.12			8.0					
			Bottom	16.8	24.0	31.7	31.7	5.99	5.97	88.7	88.3	5.19	5.21		8.2	8.2		8.2	8.2	8.2
						31.6		5.94		87.9		5.22			8.2					

# Mid-Flood Tide

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/11	1010-1022	23/Fine	Surface	1.0	26.3	31.2	31.2	6.26	6.24	90.1	89.8	4.13	4.11	4.23	6.8	6.6	7.2	
						31.2		6.21		89.4		4.08			6.4			
			Middle	7.5	25.9	31.4	31.5	6.09	6.06	87.7	87.2	4.21	4.25		7.2			7.2
						31.5		6.02		86.7		4.28			7.2			
			Bottom	14.0	25.6	32.0	32.0	5.94	5.95	85.5	85.7	4.36	4.34		7.6			7.8
						32.0		5.96		85.8		4.32			8.0			
03/11/11	1400-1412	26/Fine	Surface	1.0	26.3	31.1	31.2	6.27	6.26	89.6	89.4	4.89	4.92	5.08	8.0	7.9	8.1	
						31.2		6.24		89.2		4.94			7.8			
			Middle	7.2	25.8	31.7	31.7	6.05	6.07	86.5	86.8	5.17	5.14		8.2			8.3
						31.7		6.09		87.0		5.10			8.4			
			Bottom	13.4	25.4	32.0	32.0	5.98	5.97	85.5	85.4	5.22	5.20		8.0			8.2
						32.0		5.96		85.2		5.17			8.0			
05/11/11	1400-1412	27/Fine	Surface	1.0	26.5	31.2	31.2	6.23	6.22	89.0	88.8	4.82	4.86	5.02	7.4	7.6	7.8	
						31.2		6.20		88.6		4.90			7.8			
			Middle	7.2	25.7	32.0	32.0	5.82	5.84	82.6	82.8	5.17	5.14		8.0			7.9
						31.9		5.85		83.0		5.10			7.8			
			Bottom	13.4	25.6	32.4	32.4	5.86	5.84	83.2	82.9	5.08	5.06		8.0			8.0
						32.4		5.81		82.5		5.04			8.0			
08/11/11	1500-1515	25/Drizzle	Surface	1.0	25.8	30.8	30.8	6.10	6.13	85.4	85.8	4.42	4.44	4.64	6.4	6.2	7.3	
						30.7		6.16		86.2		4.46			6.0			
			Middle	7.3	25.4	31.2	31.3	5.93	5.90	83.0	82.6	4.62	4.64		7.8			7.7
						31.3		5.87		82.1		4.66			7.6			
			Bottom	13.6	24.9	31.9	32.0	5.76	5.78	80.6	80.9	4.82	4.85		8.0			8.0
						32.0		5.80		81.2		4.87			8.0			
10/11/11	1559-1614	20/Cloudy	Surface	1.0	24.4	30.8	30.8	6.15	6.19	88.6	89.1	4.52	4.51	4.81	6.8	6.8	7.4	
						30.7		6.22		89.6		4.50			6.8			
			Middle	7.8	24.2	31.3	31.3	6.04	6.03	86.9	86.7	4.87	4.88		7.4			7.5
						31.3		6.01		86.5		4.88			7.6			
			Bottom	14.6	23.7	32.0	32.1	5.74	5.75	82.7	82.8	5.06	5.04		8.0			8.0
						32.1		5.76		82.9		5.02			8.0			
12/11/11	1657-1710	22/Fine	Surface	1.0	23.9	30.2	30.3	6.23	6.25	91.3	91.7	5.03	5.02	5.10	7.8	7.8	8.0	
						30.3		6.27		92.0		5.00			7.8			
			Middle	7.1	24.9	30.8	30.9	6.17	6.16	90.3	90.2	5.08	5.10		8.2			8.1
						30.9		6.14		90.0		5.12			8.0			
			Bottom	13.2	25.4	31.9	31.9	6.07	6.06	88.8	88.6	5.17	5.19		8.2			8.1
						31.8		6.04		88.3		5.20			8.0			
15/11/11	0830-0843	22/Fine	Surface	1.0	25.9	30.4	30.4	6.13	6.16	87.7	88.1	5.02	5.06	5.06	8.0	8.0	8.1	
						30.4		6.19		88.5		5.09			8.0			
			Middle	7.7	26.2	31.0	31.0	5.82	5.83	83.2	83.3	5.26	5.25		8.4			8.4
						31.0		5.83		83.4		5.23			8.4			
			Bottom	14.4	26.5	31.7	31.8	5.80	5.81	82.9	83.1	4.88	4.87		7.8			7.9
						31.8		5.82		83.2		4.85			8.0			
17/11/11	1100-1115	24/Drizzle	Surface	1.0	25.3	29.8	29.8	6.09	6.12	87.1	87.5	4.48	4.50	4.62	6.8	6.6	7.2	
						29.7		6.14		87.8		4.51			6.4			
			Middle	7.7	25.2	30.9	30.9	5.95	5.97	85.1	85.4	4.64	4.62		7.2			7.1
						30.9		5.99		85.7		4.60			7.0			
			Bottom	14.4	24.9	31.9	31.9	5.86	5.88	83.8	84.0	4.77	4.75		7.8			7.9
						31.9		5.89		84.2		4.72			8.0			
19/11/11	1304-1318	26/Cloudy	Surface	1.0	25.0	30.7	30.8	6.01	6.03	84.1	84.4	4.87	4.88	5.03	7.6	7.7	7.9	
						30.8		6.05		84.7		4.89			7.8			
			Middle	7.6	25.5	31.9	31.9	5.84	5.87	81.8	82.2	5.02	5.05		8.0			8.0
						31.8		5.89		82.5		5.07			8.0			
			Bottom	14.2	25.8	32.1	32.1	5.77	5.77	80.8	80.7	5.20	5.18		8.2			8.1
						32.0		5.76		80.6		5.15			8.0			
22/11/11	1500-1512	22/Cloudy	Surface	1.0	24.7	31.0	31.1	6.21	6.20	88.8	88.6	4.89	4.93	5.25	7.6	7.7	8.2	
						31.1		6.18		88.3		4.96			7.8			
			Middle	7.1	25.1	31.9	32.0	6.02	6.04	86.0	86.3	5.30	5.34		8.2			8.3
						32.0		6.05		86.5		5.37			8.4			
			Bottom	13.2	25.2	32.4	32.4	5.80	5.79	82.3	82.1	5.51	5.48		8.6			8.5
						32.3		5.77		81.9		5.44			8.4			
24/11/11	1523-1534	24/Fine	Surface	1.0	24.8	30.3	30.3	6.19	6.21	90.4	90.7	5.00	4.99	5.06	7.8	7.8	7.9	
						30.3		6.23		91.0		4.97			7.8			
			Middle	7.3	24.3	30.8	30.9	6.08	6.10	88.8	89.1	5.06	5.07		8.0			8.0
						30.9		6.12		89.4		5.08			8.0			
			Bottom	13.6	23.9	31.7	31.8	6.03	6.01	88.0	87.8	5.12	5.14		8.0			8.0
						31.8		5.99		87.5		5.15			8.0			
26/11/11	1731-1745	22/Cloudy	Surface	1.0	21.5	30.6	30.7	6.12	6.15	85.1	85.2	4.41	4.44	4.68	7.4	7.5	7.7	
						30.7		6.17		85.3		4.46			7.6			
			Middle	7.2	21.2	30.9	30.9	5.97	6.01	82.9	83.4	4.63	4.66		7.6			7.7
						30.8		6.04		83.9		4.68			7.8			
			Bottom	13.4	21.1	31.6	31.6	5.83	5.85	81.0	81.2	4.92	4.94		7.8			7.9
						31.5		5.86		81.4		4.95			8.0			
29/11/11	1440-1452	25/Fine	Surface	1.0	24.8	30.1	30.2	6.20	6.19	91.8	91.6	5.01	5.03	5.13	7.8	7.8	8.0	
						30.2		6.17		91.3		5.04			7.8			
			Middle	7.3	24.3	30.7	30.7	6.09	6.07	90.1	89.8	5.13	5.14		8.0			8.0
						30.6		6.05		89.5		5.15			8.0			
			Bottom	13.6	23.9	31.6	31.7	5.97	5.95	88.4	88.1	5.21	5.23		8.2			8.1
						31.7		5.93		87.8		5.24			8.0			

**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
01/11/11	1035-1047	23/Fine	Surface	1.0	26.3	31.3	31.3	6.34	6.31	91.3	90.9	4.16	4.18	4.29	6.6	6.8	7.4
						31.3		6.28		90.4		4.19			7.0		
			Middle	6.9	26.0	31.5	31.5	6.06	6.09	87.3	87.7	4.31	4.28		7.4	7.5	
						31.5		6.11		88.0		4.25			7.6		
			Bottom	12.8	25.7	32.0	32.0	5.98	5.95	86.1	85.7	4.39	4.42		7.8	7.9	
						31.9		5.92		85.2		4.44			8.0		
03/11/11	1425-1437	26/Fine	Surface	1.0	26.3	31.2	31.2	6.20	6.19	88.6	88.4	4.74	4.77	5.04	8.0	7.9	8.0
						31.1		6.17		88.2		4.80			7.8		
			Middle	6.8	25.8	31.7	31.7	6.02	6.04	86.0	86.3	4.96	4.94		7.6	8.0	
						31.6		6.05		86.5		4.91			8.4		
			Bottom	12.6	25.4	32.0	32.0	5.89	5.91	83.6	83.9	5.43	5.40		8.4	8.2	
						32.0		5.93		84.2		5.37			8.0		
05/11/11	1425-1437	27/Fine	Surface	1.0	26.4	31.2	31.2	6.18	6.17	88.3	88.1	4.77	4.81	5.09	7.4	7.5	7.9
						31.2		6.15		87.9		4.84			7.6		
			Middle	6.8	25.6	32.0	32.0	5.91	5.89	83.9	83.6	5.12	5.11		8.0	7.9	
						32.0		5.87		83.3		5.09			7.8		
			Bottom	12.6	25.7	32.4	32.4	5.98	5.96	85.5	85.2	5.33	5.36		8.4	8.3	
						32.3		5.94		84.9		5.38			8.2		
08/11/11	1520-1535	25/Drizzle	Surface	1.0	25.7	30.7	30.7	6.02	6.00	84.2	83.9	4.44	4.47	4.69	6.8	7.1	7.5
						30.7		5.97		83.5		4.50			7.4		
			Middle	6.9	25.4	31.2	31.2	5.89	5.87	82.4	82.1	4.67	4.70		7.8	7.7	
						31.2		5.84		81.7		4.72			7.6		
			Bottom	12.8	25.0	31.8	31.8	5.70	5.72	79.8	80.1	4.89	4.92		7.8	7.8	
						31.8		5.74		80.3		4.94			7.8		
10/11/11	1620-1633	20/Cloudy	Surface	1.0	24.4	38.7	38.7	6.21	6.23	89.4	89.7	4.17	4.18	4.49	6.2	6.3	6.9
						38.7		6.24		89.9		4.19			6.4		
			Middle	6.9	24.1	31.2	31.3	6.04	6.05	86.9	87.0	4.23	4.26		6.6	6.6	
						31.3		6.05		87.1		4.28			6.6		
			Bottom	12.8	23.7	32.1	32.1	5.70	5.71	82.1	82.2	5.02	5.03		8.0	7.9	
						32.1		5.71		82.2		5.04			7.8		
12/11/11	1716-1729	22/Fine	Surface	1.0	24.0	30.4	30.4	6.18	6.20	90.5	90.8	5.05	5.07	5.16	7.8	7.8	8.0
						30.3		6.21		91.1		5.08			7.8		
			Middle	6.9	24.7	30.9	30.9	6.11	6.10	89.4	89.3	5.14	5.16		8.0	8.0	
						30.9		6.09		89.2		5.17			8.0		
			Bottom	12.8	25.4	31.7	31.8	5.96	5.98	87.1	87.5	5.25	5.27		8.2	8.3	
						31.8		6.00		87.8		5.28			8.4		
15/11/11	0852-0906	22/Fine	Surface	1.0	25.9	30.4	30.4	6.20	6.19	88.7	88.6	4.82	4.83	4.93	7.8	7.7	7.8
						30.4		6.18		88.4		4.83			7.6		
			Middle	6.9	26.1	31.0	31.0	5.96	5.98	85.2	85.5	5.11	5.11		8.0	8.0	
						31.0		5.99		85.7		5.10			8.0		
			Bottom	12.8	26.5	31.8	31.8	5.88	5.87	84.1	84.0	4.82	4.87		7.6	7.7	
						31.8		5.86		83.8		4.91			7.8		
17/11/11	1122-1137	24/Drizzle	Surface	1.0	25.4	29.8	29.8	6.27	6.24	89.7	89.3	4.53	4.56	4.67	7.6	7.7	7.9
						29.8		6.21		88.8		4.58			7.8		
			Middle	6.9	25.2	31.0	31.0	6.12	6.09	87.5	87.0	4.66	4.68		8.0	8.0	
						30.9		6.05		86.5		4.69			8.0		
			Bottom	12.8	24.9	31.8	31.9	5.93	5.92	84.8	84.7	4.74	4.78		8.2	8.1	
						31.9		5.91		84.5		4.81			8.0		
19/11/11	1331-1343	26/Cloudy	Surface	1.0	24.9	30.8	30.8	6.11	6.15	85.5	86.0	4.82	4.81	4.89	7.8	7.7	7.9
						30.8		6.18		86.5		4.79			7.6		
			Middle	6.7	25.6	31.8	31.8	5.88	5.89	82.3	82.5	4.93	4.95		8.0	7.9	
						31.7		5.90		82.6		4.96			8.0		
			Bottom	12.4	25.9	32.0	32.0	5.86	5.84	82.0	81.8	4.92	4.93		8.0	8.0	
						32.0		5.82		81.5		4.93			8.0		
22/11/11	1525-1537	22/Cloudy	Surface	1.0	24.8	31.1	31.1	6.15	6.13	87.9	87.6	4.99	5.02	5.11	8.0	7.9	8.0
						31.1		6.11		87.3		5.05			7.8		
			Middle	6.8	25.1	32.0	32.0	5.94	5.92	84.3	84.0	5.21	5.18		8.2	8.1	
						32.0		5.90		83.7		5.14			8.0		
			Bottom	12.6	25.2	32.4	32.5	5.88	5.91	83.4	83.8	5.17	5.14		8.2	8.1	
						32.5		5.93		84.2		5.11			8.0		
24/11/11	1540-1552	24/Fine	Surface	1.0	24.7	30.3	30.3	6.27	6.26	91.5	91.4	5.02	5.04	5.12	8.0	7.9	8.0
						30.2		6.25		91.3		5.05			7.8		
			Middle	6.9	24.4	30.7	30.8	6.19	6.18	90.4	90.2	5.11	5.13		8.2	8.1	
						30.8		6.16		89.9		5.14			8.0		
			Bottom	12.8	23.9	31.7	31.7	6.08	6.06	88.8	88.5	5.19	5.21		8.2	8.1	
						31.6		6.04		88.2		5.22			8.0		
26/11/11	1750-1805	22/Cloudy	Surface	1.0	21.4	30.7	30.7	6.14	6.11	85.3	85.1	4.53	4.56	4.76	7.4	7.5	7.8
						30.7		6.07		84.8		4.58			7.6		
			Middle	6.9	21.2	30.9	30.9	5.84	5.86	81.2	81.4	4.70	4.72		7.8	7.8	
						30.9		5.87		81.6		4.74			7.8		
			Bottom	12.8	21.0	31.6	31.6	5.72	5.74	79.5	79.8	4.98	5.01		8.0	8.1	
						31.6		5.76		80.1		5.03			8.2		
29/11/11	1459-1510	25/Fine	Surface	1.0	24.8	30.1	30.1	6.24	6.23	92.4	92.2	5.05	5.06	5.14	7.8	7.8	8.0
						30.1		6.21		91.9		5.07			7.8		
			Middle	6.9	24.3	30.6	30.7	6.14	6.12	90.9	90.6	5.17	5.16		8.0	8.0	
						30.7		6.10		90.3		5.14			8.0		
			Bottom	12.8	24.0	31.6	31.6	6.01	5.99	88.9	88.7	5.19	5.21		8.0	8.1	
						31.6		5.97		88.4		5.22			8.2		

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
01/11/11	1900-1915	26/Fine	Surface	1.0	26.8	31.2	31.2	6.20	6.17	89.3	88.8	4.12	4.14	4.35	7.0	7.2	7.6
						31.2		6.13		88.2		4.16			7.4		
			Middle	7.6	26.5	31.5	31.6	6.08	6.05	87.5	87.1	4.32	4.33		7.6	7.7	
						31.6		6.02		86.6		4.34			7.8		
			Bottom	14.2	25.9	32.0	32.0	5.86	5.89	84.4	84.8	4.55	4.58		8.0	7.8	
						32.0		5.91		85.1		4.60			7.6		
03/11/11	0941-0953	24/Fine	Surface	1.0	26.2	30.8	30.9	6.15	6.18	87.9	88.4	4.18	4.15	4.33	7.0	7.2	7.5
						30.9		6.21		85.7		4.11			7.4		
			Middle	7.9	25.6	31.7	31.7	6.06	6.03	86.7	86.2	4.38	4.34		7.8	7.9	
						31.7		5.99		85.7		4.30			8.0		
			Bottom	14.8	25.1	32.1	32.2	5.89	5.86	84.2	83.8	4.49	4.51		8.2	7.3	
						32.2		5.83		83.4		4.53			6.4		
05/11/11	1059-1112	27/Cloudy	Surface	1.0	26.8	30.8	30.9	6.36	6.34	90.9	90.7	4.27	4.29	4.56	6.5	6.7	7.0
						30.9		6.32		90.4		4.30			6.8		
			Middle	7.5	26.4	31.9	31.9	6.26	6.24	89.5	89.2	4.44	4.43		6.8	6.9	
						31.8		6.21		88.8		4.41			7.0		
			Bottom	14.0	26.2	32.1	32.1	5.99	5.96	85.7	85.2	4.98	4.97		7.4	7.5	
						32.1		5.92		84.7		4.96			7.6		
08/11/11	1240-1252	23/Drizzle	Surface	1.0	25.6	30.7	30.7	6.17	6.21	86.4	87.0	4.19	4.17	4.32	6.5	6.7	6.9
						30.7		6.25		87.5		4.15			6.8		
			Middle	8.0	25.4	31.6	31.6	6.03	6.01	84.4	84.1	4.28	4.32		6.6	6.8	
						31.6		5.98		83.7		4.36			7.0		
			Bottom	15.0	25.2	32.0	32.0	5.78	5.81	80.9	81.3	4.52	4.48		7.2	7.1	
						32.0		5.83		81.6		4.43			7.0		
10/11/11	1354-1410	22/Cloudy	Surface	1.0	24.2	30.8	30.8	6.05	6.04	87.1	86.9	4.40	4.43	4.70	6.5	6.7	7.3
						30.8		6.02		86.6		4.45			6.8		
			Middle	8.1	23.9	31.7	31.7	5.90	5.88	84.9	84.6	4.68	4.70		7.0	7.2	
						31.7		5.86		84.3		4.72			7.4		
			Bottom	15.2	23.7	32.1	32.1	5.70	5.72	82.1	82.3	4.95	4.98		7.8	7.9	
						32.1		5.73		82.5		5.00			8.0		
12/11/11	1446-1458	22/Fine	Surface	1.0	23.9	30.2	30.2	6.26	6.28	91.4	91.7	4.98	4.95	5.09	8.0	7.8	8.1
						30.2		6.30		92.0		4.92			7.6		
			Middle	7.9	24.8	30.8	30.8	6.19	6.18	90.4	90.2	5.04	5.07		8.0	8.1	
						30.8		6.16		89.9		5.09			8.2		
			Bottom	14.8	25.3	31.8	31.8	5.96	5.99	87.0	87.5	5.28	5.27		8.2	8.3	
						31.8		6.02		87.9		5.25			8.4		
15/11/11	1704-1719	27/Fine	Surface	1.0	26.2	30.4	30.4	6.34	6.32	93.2	92.9	5.04	5.06	5.14	8.0	7.9	8.1
						30.3		6.30		92.6		5.07			7.8		
			Middle	7.8	26.4	30.6	30.7	6.25	6.23	92.2	91.8	5.12	5.14		8.2	8.1	
						30.7		6.21		91.4		5.15			8.0		
			Bottom	14.6	26.6	31.7	31.7	6.15	6.14	90.8	90.7	5.21	5.23		8.2	8.2	
						31.7		6.13		90.5		5.24			8.2		
17/11/11	1934-1950	23/Cloudy	Surface	1.0	24.9	29.8	29.8	5.97	6.00	85.3	85.7	4.76	4.81	5.05	7.5	7.8	8.0
						29.7		6.02		86.0		4.85			8.0		
			Middle	8.1	24.6	30.5	30.5	5.88	5.86	84.0	83.8	5.05	5.07		8.0	8.0	
						30.5		5.84		83.5		5.09			8.0		
			Bottom	15.2	24.1	31.6	31.6	5.70	5.73	81.5	81.9	5.24	5.27		8.2	8.2	
						31.6		5.75		82.2		5.29			8.2		
19/11/11	2110-2120.	25/Cloudy	Surface	1.0	24.5	31.3	31.3	6.09	6.07	87.0	86.8	5.11	5.09	5.31	8.0	8.1	8.3
						31.2		6.05		86.5		5.06			8.2		
			Middle	8.7	25.0	32.0	32.0	5.93	5.95	84.2	84.5	5.37	5.40		8.4	8.5	
						31.9		5.97		84.7		5.43			8.6		
			Bottom	16.4	25.1	32.1	32.1	5.97	5.96	84.7	84.5	5.50	5.46		8.4	8.4	
						32.1		5.94		84.3		5.41			8.4		
22/11/11	1221-1235	23/Cloudy	Surface	1.0	24.2	30.2	30.3	6.11	6.10	85.5	85.3	4.73	4.75	4.90	7.8	7.8	7.9
						30.3		6.08		85.1		4.77			7.8		
			Middle	7.2	24.9	31.5	31.5	6.27	6.24	89.0	87.9	4.84	4.83		7.6	7.7	
						31.5		6.20		86.8		4.82			7.8		
			Bottom	13.4	25.3	32.0	32.1	6.18	6.14	86.5	86.9	5.12	5.12		8.2	8.1	
						32.1		6.10		87.2		5.11			8.0		
24/11/11	1320-1338	20/Fine	Surface	1.0	24.6	30.2	30.2	6.19	6.16	91.0	90.6	4.96	4.95	5.08	8.0	7.8	8.0
						30.2		6.13		90.1		4.94			7.6		
			Middle	8.0	24.4	30.9	30.9	5.91	5.95	86.9	87.5	5.08	5.06		8.0	8.0	
						30.9		5.99		88.1		5.03			8.0		
			Bottom	15.0	23.8	31.8	31.8	5.81	5.78	85.4	85.0	5.19	5.22		8.2	8.2	
						31.8		5.75		84.5		5.25			8.2		
26/11/11	1505-1523	21/Cloudy	Surface	1.0	21.7	30.4	30.4	5.99	6.02	83.3	83.7	4.89	4.85	5.03	8.0	7.9	8.1
						30.4		6.04		84.0		4.81			7.8		
			Middle	7.9	21.6	30.8	30.8	5.91	5.91	82.1	82.1	4.99	5.03		8.0	8.1	
						30.8		5.90		82.0		5.06			8.2		
			Bottom	14.8	21.1	31.8	31.8	5.77	5.80	80.2	80.6	5.25	5.22		8.2	8.2	
						31.8		5.83		81.0		5.19			8.2		
29/11/11	1226-1238	22/Fine	Surface	1.0	24.7	30.2	30.2	6.15	6.18	84.9	85.3	4.97	4.94	5.15	8.0	8.0	8.2
						30.2		6.20		85.6		4.91			8.0		
			Middle	8.0	24.2	30.7	30.8	6.01	6.00	82.9	82.8	5.11	5.16		8.2	8.3	
						30.8		5.99		82.7		5.20			8.4		
			Bottom	15.0	23.8	31.7	31.7	5.89	5.86	81.3	80.9	5.38	5.36		8.2	8.2	
						31.6		5.83		80.5		5.33			8.2		

Mid-Ebb 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					
01/11/11	1840-1855	26/Fine	Surface	1.0	26.8	31.2	31.2	6.18	6.16	88.9	88.7	4.18	4.20	4.42	7.6	7.6	7.8					
						31.2		6.14		86.4		4.22			7.6							
			Middle	7.9	26.5	31.6	31.6	6.03	6.00	86.8	86.4	4.38	4.40		4.41	4.40		7.8	7.9	7.8		
						31.6		5.97		85.9		4.41			8.0							
			Bottom	14.8	26.0	32.0	32.0	5.84	5.86	84.1	84.3	4.64	4.67		4.69			4.63	8.0		8.0	7.0
						32.0		5.87		84.5		4.69			8.0							
03/11/11	0923-0934	24/Fine	Surface	1.0	26.3	30.8	30.8	6.29	6.27	89.9	89.7	4.16	4.20	4.40	6.8		6.8		7.5			
						30.8		6.25		89.4		4.23			6.8							
			Middle	8.0	25.6	31.7	31.7	6.02	6.05	86.1	86.5	4.36	4.39		4.42	4.63	7.4			7.6	7.0	
						31.6		6.08		86.9		4.42			7.8							
			Bottom	15.0	25.1	32.2	32.2	5.94	5.90	84.9	84.3	4.58	4.60		4.62		4.76	8.0		8.0		7.2
						32.1		5.85		83.7		4.62			8.0							
05/11/11	1041-1053	27/Cloudy	Surface	1.0	26.9	30.7	30.8	6.14	6.16	87.8	88.1	4.36	4.38	4.63	6.6			6.6	7.0			
						30.8		6.18		88.4		4.40			6.6							
			Middle	8.2	26.5	31.8	31.8	6.08	6.10	86.9	87.2	4.56	4.59		4.62	4.76		6.8		6.8	7.2	
						31.8		6.11		87.4		4.62			6.8							
			Bottom	15.4	26.1	32.1	32.1	5.88	5.91	84.1	84.5	4.90	4.92		4.94		4.91	7.4		7.7		8.1
						32.0		5.94		84.9		4.94			8.0							
08/11/11	1221-1232	23/Drizzle	Surface	1.0	25.7	30.7	30.8	6.27	6.25	87.8	87.5	4.12	4.17	4.34	6.2			6.3	6.7			
						30.8		6.22		87.1		4.21			6.4							
			Middle	8.1	25.5	31.6	31.6	6.06	6.02	84.8	84.2	4.35	4.33		4.31	4.91		6.6		6.7	8.0	
						31.5		5.97		83.6		4.31			6.8							
			Bottom	15.2	25.1	32.1	32.1	5.87	5.84	82.2	81.8	4.49	4.52		4.55		5.00	6.6		7.1		7.9
						32.1		5.81		81.3		4.55			7.5							
10/11/11	1335-1350	22/Cloudy	Surface	1.0	24.3	30.7	30.7	6.10	6.13	87.8	88.3	4.51	4.54	4.76	6.6			6.7	7.2			
						30.7		6.16		88.7		4.56			6.8							
			Middle	8.2	23.9	31.7	31.8	5.98	5.96	86.1	85.7	4.73	4.75		4.77	5.08		7.0		7.1	8.1	
						31.8		5.93		85.3		4.77			7.2							
			Bottom	15.4	23.7	32.1	32.1	5.72	5.74	82.3	82.6	4.96	5.00		5.03		5.09	7.2		7.9		8.1
						32.0		5.75		82.8		5.03			8.0							
12/11/11	1428-1439	22/Fine	Surface	1.0	23.9	30.2	30.3	6.38	6.37	93.1	92.9	4.89	4.87	5.02	7.8			7.8	8.1			
						30.3		6.35		92.7		4.85			7.8							
			Middle	7.8	24.7	30.9	30.9	6.12	6.15	89.4	89.8	4.99	5.03		5.06	5.08		8.0		8.0	8.1	
						30.8		6.18		90.2		5.06			8.0							
			Bottom	14.6	25.3	31.8	31.8	5.99	5.96	87.5	87.0	5.17	5.15		5.13		5.17	8.2		8.4		8.1
						31.7		5.92		86.4		5.13			8.5							
15/11/11	1639-1654	27/Fine	Surface	1.0	26.2	30.3	30.3	6.31	6.30	92.8	92.7	4.98	4.99	5.08	7.8			7.9	8.1			
						30.3		6.29		92.5		5.00			8.0							
			Middle	8.1	26.3	30.7	30.7	6.22	6.21	91.7	91.4	5.07	5.09		5.10	5.19		8.2		8.2	8.0	
						30.7		6.19		91.1		5.10			8.2							
			Bottom	15.2	26.7	31.6	31.7	6.12	6.10	90.4	90.1	5.16	5.17		5.18		5.23	8.2		8.1		8.0
						31.7		6.08		89.8		5.18			8.0							
17/11/11	1915-1930	23/Cloudy	Surface	1.0	25.0	29.8	29.8	6.00	6.03	85.8	86.2	4.72	4.77	5.01	7.6			7.7	8.0			
						29.8		6.05		86.5		4.81			7.8							
			Middle	8.2	24.6	30.5	30.5	5.90	5.88	84.3	84.0	5.02	5.04		5.06	5.08		8.0		8.0	8.1	
						30.5		5.86		83.7		5.06			8.0							
			Bottom	15.4	24.2	31.6	31.7	5.69	5.71	81.3	82.3	5.20	5.24		5.27		5.29	8.2		8.4		8.1
						31.7		5.73		83.3		5.27			8.5							
19/11/11	2051-2102	25/Cloudy	Surface	1.0	24.4	31.2	31.2	6.11	6.10	87.3	87.1	5.05	5.08	5.11	8.0			8.1	8.1			
						31.1		6.08		86.9		5.11			8.2							
			Middle	8.7	25.1	32.0	32.0	6.01	6.03	85.9	86.1	5.12	5.07		5.12	5.19		8.0		8.0	8.1	
						32.0		6.04		86.3		5.02			8.0							
			Bottom	16.4	25.1	32.1	32.1	5.92	5.94	84.0	84.2	5.21	5.19		5.17		5.23	8.2		8.1		8.0
						32.0		5.95		84.4		5.17			8.0							
22/11/11	1206-1219	23/Cloudy	Surface	1.0	24.3	30.4	30.4	6.30	6.28	88.2	87.9	4.80	4.83	4.91	7.8			7.7	7.8			
						30.3		6.26		87.6		4.85			7.6							
			Middle	8.3	24.9	31.5	31.6	6.13	6.12	85.8	85.6	4.99	4.99		4.98	5.05		7.8		7.9	8.1	
						31.6		6.10		85.4		4.98			8.0							
			Bottom	15.6	25.3	32.1	32.1	6.09	6.06	85.3	84.9	4.90	4.92		4.94		5.08	8.0		7.9		8.0
						32.1		6.03		84.4		4.94			7.8							
24/11/11	1300-1316	20/Fine	Surface	1.0	24.6	30.1	30.1	6.25	6.27	91.3	91.6	4.88	4.86	5.05	7.6			7.7	7.9			
						30.1		6.29		91.8		4.83			7.8							
			Middle	8.1	24.3	31.0	31.0	6.04	6.06	88.2	88.5	5.01	5.05		5.09	5.17		8.0		8.0	8.0	
						31.0		6.08		88.8		5.09			8.0							
			Bottom	15.2	23.7	31.7	31.8	5.94	5.91	86.7	86.2	5.22	5.23		5.24		5.29	8.2		8.1		8.1
						31.8		5.87		85.7		5.24			8.0							
26/11/11	1445-1501	21/Cloudy	Surface	1.0	21.6	30.5	30.5	5.93	5.94	83.0	83.2	4.74	4.75	4.92	7.6			7.6	7.8			
						30.5		5.95		83.3		4.76			7.6							
			Middle	8.0	21.5	30.8	30.9	5.82	5.84	81.5	81.7	4.95	4.93		4.90	5.08		7.8		7.8	8.0	
						30.9		5.85		81.9		4.90			7.8							
			Bottom	15.0	21.1	31.7	31.7	5.70	5.69	79.8	79.6	5.04	5.08		5.11		5.17	8.0		8.0		8.1
						31.7		5.67		79.4		5.11			8.0							
29/11/11	1208-1219	22/Fine	Surface	1.0	24.6	30.2	30.2	6.28	6.25	86.7	86.3	4.95	4.92	5.09	7.8			7.8	8.0			
						30.1		6.22		85.8		4.88			7.8							
			Middle	8.0	24.3	30.8	30.8	6.04	6.07	83.4	83.8	5.09	5.11		5.13	5.25		8.0		8.0	8.1	
						30.8		6.10		84.2		5.13			8.0							
			Bottom	15.0	23.9	31.6	31.7	5.85	5.88	80.7	81.2	5.29	5.25		5.20		5.29	8.2		8.1		8.1
						31.7		5.91		81.6		5.20			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			
01/11/11	1640-1654	27/Fine	Surface	1.0	26.8	31.1	31.2	5.97	6.00	85.9	86.4	4.38	4.41	4.67	7.5	7.7	7.7			
						31.2		6.03		86.8		4.43			7.8					
			Middle	8.4	26.3	31.5	31.6	5.88	5.86	84.6	84.3	4.66	4.68		4.66	4.68		8.0	8.0	8.0
						31.6		5.84		84.0		4.70			7.6					
			Bottom	15.8	25.9	32.1	32.1	5.70	5.73	82.1	82.5	4.91	4.93		4.93	4.93		7.6	7.7	7.7
						32.1		5.75		82.8		4.95			7.8					
03/11/11	0730-0742	24/Fine	Surface	1.0	26.3	30.8	30.8	6.14	6.11	88.4	87.9	4.35	4.36	4.52	7.8	7.9	8.0			
						30.8		6.07		87.4		4.37			7.8					
			Middle	8.2	25.5	31.6	31.7	5.86	5.88	84.4	84.6	4.56	4.53		4.56	4.53		8.0	8.0	8.0
						31.7		5.89		84.8		4.50			8.0					
			Bottom	15.4	25.1	32.1	32.2	5.77	5.75	83.1	82.8	4.63	4.66		4.63	4.66		8.2	8.2	8.2
						32.2		5.72		82.4		4.69			8.2					
05/11/11	0841-0855	26/Cloudy	Surface	1.0	26.8	30.8	30.8	6.21	6.23	88.8	90.2	4.86	4.87	4.97	7.5	7.7	7.8			
						30.8		6.24		91.5		4.88			7.8					
			Middle	8.4	26.7	31.6	31.7	6.01	6.03	85.9	86.2	4.99	4.96		4.99	4.96		7.6	7.8	7.8
						31.7		6.04		86.4		4.93			8.0					
			Bottom	15.8	26.2	31.9	32.0	5.72	5.74	81.8	82.1	5.09	5.07		5.09	5.07		8.0	8.0	8.0
						32.0		5.76		82.4		5.05			8.0					
08/11/11	1022-1034	23/Drizzle	Surface	1.0	25.7	30.8	30.8	6.16	6.12	86.9	86.3	4.35	4.37	4.54	6.5	6.6	7.1			
						30.7		6.08		85.7		4.39			6.6					
			Middle	8.2	25.4	31.5	31.6	5.88	5.85	82.9	82.5	4.52	4.55		4.52	4.55		7.2	7.2	7.2
						31.6		5.82		82.1		4.57			7.2					
			Bottom	15.4	25.1	32.0	32.1	5.75	5.73	81.1	80.8	4.73	4.71		4.73	4.71		7.6	7.5	7.5
						32.1		5.71		80.5		4.69			7.4					
10/11/11	1132-1147	22/Cloudy	Surface	1.0	24.2	30.7	30.8	5.92	5.95	85.2	85.6	4.60	4.63	4.87	7.0	7.0	7.6			
						30.8		5.97		85.9		4.66			7.0					
			Middle	8.4	24.0	31.4	31.5	5.80	5.82	83.5	83.7	4.85	4.88		4.85	4.88		7.8	7.7	7.7
						31.5		5.83		83.9		4.90			7.6					
			Bottom	15.8	23.7	32.1	32.1	5.69	5.71	81.9	82.1	5.08	5.10		5.08	5.10		8.0	8.1	8.1
						32.0		5.72		82.3		5.12			8.2					
12/11/11	1235-1247	22/Fine	Surface	1.0	23.9	30.3	30.3	6.11	6.12	89.8	90.0	5.14	5.10	5.28	8.0	8.0	8.2			
						30.3		6.13		90.1		5.06			8.0					
			Middle	8.2	24.8	30.9	30.9	5.98	6.00	87.9	88.1	5.32	5.30		5.32	5.30		8.0	8.1	8.1
						30.8		6.01		88.3		5.27			8.2					
			Bottom	15.4	25.3	31.8	31.8	5.87	5.86	86.3	86.1	5.47	5.45		5.47	5.45		8.4	8.4	8.4
						31.8		5.84		85.8		5.42			8.4					
15/11/11	1435-1448	27/Fine	Surface	1.0	26.2	30.2	30.2	6.16	6.14	90.6	90.3	5.12	5.10	5.18	8.5	8.2	8.1			
						30.2		6.12		90.0		5.07			7.8					
			Middle	8.3	26.5	30.8	30.8	6.04	6.03	89.1	88.8	5.19	5.20		5.19	5.20		7.8	7.9	7.9
						30.7		6.01		88.5		5.21			8.0					
			Bottom	15.6	26.6	31.6	31.7	5.95	5.94	87.9	87.7	5.24	5.25		5.24	5.25		8.2	8.3	8.3
						31.7		5.92		87.4		5.26			8.4					
17/11/11	1715-1730	23/Drizzle	Surface	1.0	25.1	29.7	29.7	5.95	5.97	85.0	85.3	4.80	4.83	5.03	8.0	7.9	8.0			
						29.7		5.98		85.5		4.86			7.8					
			Middle	8.2	24.7	30.6	30.6	5.79	5.81	84.2	83.8	4.97	5.00		4.97	5.00		8.2	8.2	8.2
						30.5		5.83		83.3		5.02			8.2					
			Bottom	15.4	24.2	31.9	32.0	5.69	5.71	81.3	81.6	5.23	5.25		5.23	5.25		8.0	8.0	8.0
						32.0		5.73		81.9		5.27			8.0					
19/11/11	1852-1904	25/Cloudy	Surface	1.0	24.7	31.1	31.1	6.15	6.17	87.9	88.1	4.87	4.89	5.09	8.0	8.0	8.1			
						31.1		6.18		88.3		4.91			8.0					
			Middle	8.7	25.1	31.8	31.9	6.01	6.03	85.9	86.1	5.21	5.20		5.21	5.20		8.2	8.2	8.2
						31.9		6.04		86.3		5.18			8.2					
			Bottom	16.4	25.2	32.1	32.2	5.94	5.96	84.3	84.5	5.17	5.20		5.17	5.20		8.0	8.1	8.1
						32.2		5.97		84.7		5.22			8.2					
22/11/11	1016-1028	22/Cloudy	Surface	1.0	24.1	30.3	30.4	6.06	6.04	84.8	84.5	4.29	4.33	4.52	6.6	6.7	7.0			
						30.4		6.01		84.1		4.36			6.8					
			Middle	8.0	25.1	31.4	31.4	5.74	5.72	80.4	80.1	4.56	4.57		4.56	4.57		7.0	7.0	7.0
						31.4		5.70		79.8		4.57			7.0					
			Bottom	15.0	25.4	32.1	32.1	5.79	5.81	81.1	81.9	4.66	4.68		4.66	4.68		7.2	7.2	7.2
						32.1		5.82		82.6		4.69			7.2					
24/11/11	1100-1116	20/Fine	Surface	1.0	24.6	30.1	30.1	6.08	6.07	89.4	89.2	5.07	5.05	5.21	8.0	8.0	8.2			
						30.1		6.05		88.9		5.02			8.0					
			Middle	8.4	24.4	30.9	31.0	5.83	5.85	85.7	86.0	5.23	5.21		5.23	5.21		8.2	8.2	8.2
						31.0		5.87		86.3		5.19			8.2					
			Bottom	15.8	23.7	31.8	31.8	5.75	5.73	84.5	84.2	5.40	5.38		5.40	5.38		8.4	8.3	8.3
						31.7		5.71		83.9		5.36			8.2					
26/11/11	1245-1301	21/Cloudy	Surface	1.0	21.7	30.5	30.5	5.89	5.93	82.5	83.0	5.17	5.14	5.32	8.0	8.0	8.3			
						30.5		5.96		83.4		5.11			8.0					
			Middle	8.3	21.5	30.8	30.8	5.78	5.81	80.9	81.3	5.36	5.33		5.36	5.33		8.4	8.3	8.3
						30.8		5.83		81.6		5.29			8.2					
			Bottom	15.6	21.1	31.7	31.7	5.71	5.70	79.9	79.7	5.47	5.49		5.47	5.49		8.4	8.5	8.5
						31.7		5.68		79.5		5.51			8.6					
29/11/11	1015-1027	22/Fine	Surface	1.0	24.7	30.1	30.2	6.15	6.11	85.5	85.0	5.14	5.19	5.37	8.0	8.1	8.3			
						30.2		6.07		84.4		5.23			8.2					
			Middle	8.2	24.3	30.8	30.8	5.87	5.91	81.6	82.1	5.39	5.37		5.39	5.37		8.4	8.3	8.3
						30.7		5.94		82.6		5.34			8.2					
			Bottom	15.4	23.9	31.7	31.7	5.70	5.73	79.2	79.6	5.52	5.55		5.52	5.55		8.6	8.6	8.6
						31.6		5.75		79.9		5.58			8.6					

**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	
01/11/11	1740-1755	27/Fine	Surface	1.0	26.8	31.2	31.3	6.20	6.18	89.2	89.0	4.21	4.24	4.46	7.6	7.5	7.9	
						31.3		6.16		88.7		4.27			7.4			
			Middle	7.8	26.4	31.6	31.6	6.05	6.03	87.1	86.8	4.44	4.42		4.40	8.0		8.0
						31.6		6.00		86.4		4.40			8.0			
			Bottom	14.6	26.0	32.1	32.1	5.88	5.90	84.6	84.9	4.68	4.71		4.73	8.2		8.2
						32.1		5.92		85.2		4.73			8.2			
03/11/11	0825-0837	24/Fine	Surface	1.0	26.3	30.9	30.9	6.16	6.14	88.1	87.8	4.22	4.24	4.40	7.6	7.7	8.0	
						30.9		6.12		87.5		4.26			7.8			
			Middle	8.0	25.6	31.6	31.6	5.97	6.01	85.4	85.9	4.42	4.39		4.35	8.2		8.1
						31.6		6.04		86.4		4.35			8.0			
			Bottom	15.0	25.1	32.1	32.1	5.84	5.81	83.5	83.1	4.54	4.57		4.59	8.2		8.2
						32.1		5.78		82.7		4.59			8.2			
05/11/11	0939-0952	26/Cloudy	Surface	1.0	26.8	30.8	30.8	6.09	6.12	87.1	87.5	4.15	4.18	4.47	6.4	6.5	6.8	
						30.8		6.15		87.9		4.20			6.6			
			Middle	7.8	26.5	31.6	31.7	5.94	5.95	84.9	85.1	4.39	4.36		4.33	6.8		6.7
						31.7		5.96		85.2		4.33			6.6			
			Bottom	14.6	26.1	31.9	32.0	5.70	5.74	81.5	81.8	4.89	4.87		4.84	7.4		7.3
						32.0		5.78		82.1		4.84			7.2			
08/11/11	1120-1132	23/Drizzle	Surface	1.0	25.7	30.8	30.8	6.14	6.13	86.0	85.8	4.20	4.23	4.41	6.6	6.7	7.0	
						30.8		6.11		85.5		4.25			6.8			
			Middle	8.1	25.5	31.6	31.6	5.89	5.90	82.5	82.6	4.38	4.41		4.44	6.8		6.9
						31.6		5.91		82.7		4.44			7.0			
			Bottom	15.2	25.2	32.1	32.1	5.77	5.76	80.8	80.7	4.62	4.60		4.57	7.6		7.5
						32.0		5.75		80.5		4.57			7.4			
10/11/11	1234-1250	22/Cloudy	Surface	1.0	24.3	30.7	30.8	6.12	6.14	88.1	88.4	4.52	4.54	4.77	6.8	6.7	7.3	
						30.8		6.16		88.7		4.55			6.6			
			Middle	8.2	23.9	31.5	31.5	6.01	6.00	86.5	86.3	4.76	4.78		4.80	7.2		7.3
						31.5		5.98		86.1		4.80			7.4			
			Bottom	15.4	23.7	32.1	32.1	5.79	5.78	83.3	83.1	4.96	4.99		5.02	7.8		7.9
						32.1		5.76		82.9		5.02			8.0			
12/11/11	1330-1342	22/Fine	Surface	1.0	23.9	30.2	30.2	6.26	6.23	91.4	91.0	4.92	4.93	5.10	7.6	7.7	7.9	
						30.2		6.20		90.5		4.94			7.8			
			Middle	7.9	24.8	30.9	30.9	6.11	6.08	89.2	88.7	5.05	5.08		5.11	8.0		8.0
						30.9		6.04		88.2		5.11			8.0			
			Bottom	14.8	25.3	31.7	31.7	5.89	5.87	86.0	85.7	5.33	5.30		5.26	8.2		8.1
						31.7		5.85		85.4		5.26			8.0			
15/11/11	1531-1544	27/Fine	Surface	1.0	26.2	30.2	30.3	6.27	6.26	92.2	92.1	5.02	5.00	5.09	7.8	7.7	7.9	
						30.3		6.25		91.9		4.98			7.6			
			Middle	7.7	26.5	30.6	30.6	6.14	6.16	90.6	90.8	5.08	5.10		5.11	7.8		7.9
						30.6		6.18		91.0		5.11			8.0			
			Bottom	14.4	26.7	31.7	31.7	6.10	6.08	90.1	89.8	5.15	5.16		5.17	8.2		8.2
						31.6		6.05		89.4		5.17			8.2			
17/11/11	1815-1832	23/Drizzle	Surface	1.0	24.9	29.8	29.8	6.12	6.14	87.5	87.8	4.85	4.88	5.04	7.8	7.7	7.9	
						29.7		6.16		88.0		4.90			7.6			
			Middle	8.2	24.6	30.5	30.6	6.03	6.00	86.2	85.8	4.99	5.02		5.05	8.0		8.0
						30.6		5.97		85.3		5.05			8.0			
			Bottom	15.4	24.2	31.8	31.9	5.71	5.74	81.6	82.0	5.20	5.22		5.24	7.8		7.9
						31.9		5.76		82.3		5.24			8.0			
19/11/11	1950-2002	25/Cloudy	Surface	1.0	24.6	31.1	31.1	6.22	6.20	88.9	88.6	4.95	4.97	5.07	7.6	7.7	7.9	
						31.0		6.17		88.2		4.99			7.8			
			Middle	8.4	25.2	31.9	31.9	6.01	6.03	85.9	86.1	5.07	5.10		5.13	8.0		8.0
						31.9		6.04		86.3		5.13			8.0			
			Bottom	15.8	25.3	32.0	32.0	5.88	5.91	83.4	83.8	5.15	5.13		5.10	8.0		8.0
						31.9		5.93		84.2		5.10			8.0			
22/11/11	1106-1118	22/Cloudy	Surface	1.0	24.2	30.5	30.5	6.13	6.15	85.7	86.0	4.52	4.54	4.80	7.6	7.7	7.8	
						30.5		6.16		86.2		4.56			7.8			
			Middle	7.7	25.1	31.6	31.6	5.87	5.89	82.2	82.4	4.72	4.81		4.89	7.8		7.8
						31.6		5.90		82.6		4.89			7.8			
			Bottom	14.4	25.3	32.1	32.1	5.82	5.83	81.5	81.7	5.07	5.06		5.04	8.0		8.0
						32.1		5.84		81.8		5.04			8.0			
24/11/11	1157-1213	20/Fine	Surface	1.0	24.5	30.1	30.2	6.20	6.19	90.5	90.4	4.96	4.99	5.15	7.8	7.9	8.1	
						30.2		6.18		90.2		4.91			8.0			
			Middle	8.1	24.3	31.0	31.0	5.99	5.97	87.5	87.2	5.19	5.15		5.11	8.2		8.1
						30.9		5.95		86.9		5.11			8.0			
			Bottom	15.2	23.8	31.8	31.8	5.83	5.81	85.1	84.8	5.33	5.31		5.29	8.4		8.3
						31.7		5.79		84.5		5.29			8.2			
26/11/11	1342-1358	21/Cloudy	Surface	1.0	21.7	30.4	30.4	5.95	5.99	82.7	83.3	4.91	4.93	5.09	8.0	8.0	8.1	
						30.4		6.03		83.8		4.94			8.0			
			Middle	8.0	21.6	30.8	30.9	5.80	5.81	80.6	80.8	5.14	5.11		5.14	8.2		8.1
						30.9		5.82		80.9		5.07			8.0			
			Bottom	15.0	21.1	31.7	31.8	5.76	5.74	80.1	79.8	5.28	5.24		5.20	8.2		8.2
						31.8		5.71		79.4		5.20			8.2			
29/11/11	1110-1122	22/Fine	Surface	1.0	24.7	30.2	30.2	6.18	6.21	85.3	85.7	4.93	4.95	5.12	7.8	7.8	8.0	
						30.1		6.23		86.0		4.97			7.8			
			Middle	7.9	24.3	30.8	30.8	6.09	6.07	84.0	83.7	5.15	5.11		5.06	8.0		8.0
						30.8		6.04		83.4		5.06			8.0			
			Bottom	14.8	23.9	31.6	31.6	5.98	5.95	82.5	82.1	5.28	5.31		5.34	8.2		8.3
						31.6		5.92		81.7		5.34			8.4			



Mid-Ebb Tide

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
01/11/11	1800-1815	27/Fine	Surface	1.0	26.8	31.2	31.2	6.10	6.09	87.8	87.6	4.16	4.18	4.39	6.8	6.9	7.3		
						31.2		6.07		87.4		4.19			7.0				
			Middle	8.9	26.4	31.5	31.6	5.92	5.95	85.2	85.6	4.37	4.39		4.37	4.39		6.8	7.2
						31.6		5.97		85.9		4.41			7.6				
			Bottom	16.8	25.9	32.1	32.1	5.84	5.82	84.1	83.8	4.66	4.60		4.66	4.60		7.8	7.8
						32.1		5.80		83.5		4.54			7.8				
03/11/11	0840-0852	24/Fine	Surface	1.0	26.3	30.8	30.9	6.11	6.15	87.4	87.9	4.28	4.24	4.42	7.8	7.7	8.0		
						30.9		6.18		88.4		4.19			7.6				
			Middle	8.8	25.6	31.7	31.7	5.95	5.97	85.1	85.4	4.38	4.41		4.38	4.41		8.2	8.2
						31.7		5.99		85.7		4.44			8.2				
			Bottom	16.6	25.0	32.2	32.2	5.82	5.81	83.2	83.1	4.64	4.61		4.64	4.61		8.0	8.0
						32.2		5.80		82.9		4.57			8.0				
05/11/11	0955-1006	26/Cloudy	Surface	1.0	26.8	30.9	30.9	6.27	6.28	89.7	89.8	4.30	4.32	4.59	6.4	6.5	6.9		
						30.9		6.28		89.8		4.34			6.6				
			Middle	8.9	26.5	31.8	31.8	5.92	5.95	84.7	85.1	4.47	4.52		4.47	4.52		6.4	6.7
						31.7		5.98		85.5		4.56			7.0				
			Bottom	16.8	26.2	32.1	32.1	5.77	5.76	82.5	82.3	4.92	4.94		4.92	4.94		7.4	7.5
						32.1		5.74		82.1		4.96			7.6				
08/11/11	1135-1147	23/Drizzle	Surface	1.0	25.7	30.7	30.8	6.12	6.15	85.7	86.1	4.28	4.25	4.44	6.6	6.7	7.2		
						30.8		6.17		86.4		4.22			6.8				
			Middle	8.8	25.5	31.5	31.5	5.96	5.95	83.4	83.2	4.48	4.44		4.48	4.44		7.0	7.0
						31.5		5.93		83.0		4.40			7.0				
			Bottom	16.6	25.1	32.0	32.0	5.82	5.81	81.5	81.3	4.61	4.63		4.61	4.63		7.8	7.9
						32.0		5.79		81.1		4.65			8.0				
10/11/11	1254-1310	22/Cloudy	Surface	1.0	24.3	30.7	30.8	6.12	6.14	88.1	88.4	4.52	4.54	4.77	6.8	6.7	7.3		
						30.8		6.16		88.7		4.55			6.6				
			Middle	8.8	23.8	31.5	31.5	6.01	6.00	86.5	86.3	4.76	4.78		4.76	4.78		7.2	7.3
						31.5		5.98		86.1		4.80			7.4				
			Bottom	16.6	23.7	32.1	32.1	5.79	5.78	83.3	83.1	4.96	4.99		4.96	4.99		7.8	7.9
						32.1		5.76		82.9		5.02			8.0				
12/11/11	1345-1357	22/Fine	Surface	1.0	23.9	30.3	30.3	6.09	6.13	88.9	89.5	5.03	5.00	5.18	8.0	7.9	8.1		
						30.3		6.17		90.1		4.97			7.8				
			Middle	8.6	24.8	30.8	30.9	5.99	5.96	87.5	87.1	5.16	5.18		5.16	5.18		8.0	8.1
						30.9		5.93		86.6		5.20			8.2				
			Bottom	16.2	25.2	31.8	31.8	5.78	5.76	84.4	84.1	5.31	5.35		5.31	5.35		8.2	8.3
						31.8		5.74		83.8		5.39			8.4				
15/11/11	1553-1606	27/Fine	Surface	1.0	26.2	30.2	30.2	6.29	6.28	92.5	92.3	4.94	4.96	5.04	7.8	7.8	8.0		
						30.2		6.26		92.0		4.97			7.8				
			Middle	8.6	26.5	30.7	30.8	6.18	6.18	91.2	91.0	5.03	5.04		5.03	5.04		8.0	8.0
						30.8		6.17		90.8		5.05			8.0				
			Bottom	16.2	26.7	31.6	31.7	6.11	6.10	90.2	90.0	5.11	5.13		5.11	5.13		8.2	8.1
						31.7		6.08		89.8		5.14			8.0				
17/11/11	1837-1852	23/Drizzle	Surface	1.0	25.0	29.7	29.7	6.01	6.03	85.9	86.2	4.74	4.77	4.99	8.0	8.0	8.1		
						29.7		6.05		86.5		4.80			8.0				
			Middle	8.8	24.6	30.5	30.6	5.86	5.88	83.7	84.0	4.96	5.00		4.96	5.00		8.2	8.2
						30.6		5.90		84.3		5.03			8.2				
			Bottom	16.6	24.1	31.9	32.0	5.68	5.70	81.2	81.5	5.25	5.21		5.25	5.21		8.0	8.1
						32.0		5.72		81.7		5.17			8.2				
19/11/11	2005-2017	25/Cloudy	Surface	1.0	24.5	31.2	31.2	6.15	6.17	87.9	88.1	5.05	5.03	5.17	8.0	8.0	8.2		
						31.2		6.18		88.3		5.01			8.0				
			Middle	9.2	25.1	32.0	32.0	5.98	5.96	85.5	85.2	5.29	5.32		5.29	5.32		8.4	8.4
						31.9		5.94		84.9		5.35			8.4				
			Bottom	17.4	25.2	32.1	32.2	5.90	5.87	83.7	83.3	5.18	5.15		5.18	5.15		8.0	8.1
						32.2		5.84		82.9		5.11			8.2				
22/11/11	1121-1134	22/Cloudy	Surface	1.0	24.2	30.6	30.6	6.21	6.24	86.9	87.4	4.37	4.38	4.67	6.8	6.9	7.5		
						30.6		6.27		87.8		4.39			7.0				
			Middle	8.7	25.0	31.6	31.7	5.99	6.03	85.7	86.2	4.55	4.53		4.55	4.53		7.6	7.5
						31.7		6.06		86.7		4.50			7.4				
			Bottom	16.4	25.3	32.0	32.1	5.79	5.84	81.1	81.8	5.11	5.10		5.11	5.10		8.2	8.1
						32.1		5.89		82.5		5.08			8.0				
24/11/11	1216-1232	20/Fine	Surface	1.0	24.6	30.2	30.2	6.11	6.12	89.2	89.4	5.16	5.13	5.31	8.0	7.9	8.2		
						30.2		6.13		89.5		5.09			7.8				
			Middle	8.8	24.4	30.9	30.9	5.88	5.90	85.8	86.1	5.34	5.31		5.34	5.31		8.4	8.3
						30.9		5.91		86.3		5.28			8.2				
			Bottom	16.6	23.8	31.7	31.8	5.70	5.73	83.2	83.7	5.47	5.49		5.47	5.49		8.4	8.5
						31.8		5.76		84.1		5.50			8.6				
26/11/11	1401-1417	21/Cloudy	Surface	1.0	21.7	30.3	30.4	6.00	5.99	83.4	83.2	5.04	5.01	5.20	8.0	7.9	8.1		
						30.4		5.97		83.0		4.97			7.8				
			Middle	8.7	21.6	30.9	30.9	5.86	5.84	81.5	81.2	5.19	5.21		5.19	5.21		8.0	8.1
						30.9		5.81		80.8		5.22			8.2				
			Bottom	16.4	21.0	31.8	31.8	5.74	5.74	79.8	79.7	5.34	5.38		5.34	5.38		8.4	8.4
						31.8		5.73		79.6		5.41			8.4				
29/11/11	1125-1137	22/Fine	Surface	1.0	24.7	30.1	30.1	6.14	6.13	84.7	84.5	5.08	5.06	5.26	8.0	7.9	8.2		
						30.1		6.11		84.3		5.04			7.8				
			Middle	8.8	24.2	30.7	30.8	5.98	5.95	82.5	82.1	5.24	5.27		5.24	5.27		8.2	8.2
						30.8		5.91		81.6		5.30			8.2				
			Bottom	16.6	23.8	31.7	31.7	5.76	5.74	79.5	79.2	5.49	5.46		5.49	5.46		8.6	8.5
						31.7		5.72		78.9		5.43			8.4				

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
01/11/11	1821-1835	26/Fine	Surface	1.0	26.8	31.1	31.2	6.21	6.23	89.4	89.7	4.20	4.23	4.45	7.6	7.8	7.8
						31.2		6.25		90.0		4.25			8.0		
			Middle	6.2	26.5	31.4	31.4	6.13	6.10	88.3	87.9	4.45	4.43		7.5	7.7	
						31.4		6.07		87.4		4.40			7.8		
			Bottom	11.4	26.0	31.9	32.0	5.89	5.91	84.8	85.1	4.68	4.71		7.8	7.9	
						32.0		5.93		85.3		4.73			8.0		
03/11/11	0858-0910	24/Fine	Surface	1.0	26.3	31.0	31.0	6.13	6.14	88.3	88.5	4.34	4.31	4.43	8.0	8.0	8.1
						31.0		6.15		88.6		4.28			8.0		
			Middle	6.2	25.6	31.5	31.6	6.03	6.01	86.8	86.5	4.40	4.44		8.0	8.1	
						31.6		5.98		86.1		4.47			8.2		
			Bottom	11.4	25.3	32.0	32.0	5.91	5.89	85.1	84.8	4.55	4.54		8.2	8.3	
						32.0		5.87		84.5		4.52			8.4		
05/11/11	1017-1030	27/Cloudy	Surface	1.0	26.9	30.8	30.8	6.23	6.22	89.1	88.9	4.14	4.15	4.49	6.4	6.5	6.9
						30.8		6.20		88.7		4.16			6.5		
			Middle	6.0	26.6	31.8	31.9	6.14	6.10	87.8	87.3	4.47	4.45		6.5	7.1	
						31.9		6.06		86.7		4.42			7.6		
			Bottom	11.0	26.1	32.2	32.2	5.87	5.84	83.9	83.4	4.86	4.87		7.2	7.2	
						32.1		5.80		82.9		4.88			7.2		
08/11/11	1315-1320	22/Cloudy	Surface	1.0	24.3	30.8	30.8	6.06	6.09	87.2	87.7	4.44	4.47	4.67	6.8	6.9	7.4
						30.8		6.12		88.1		4.49			7.0		
			Middle	6.4	24.1	31.4	31.5	5.92	5.94	85.2	85.5	4.62	4.65		7.5	7.4	
						31.5		5.96		85.8		4.68			7.2		
			Bottom	11.8	23.9	31.8	31.9	5.78	5.80	83.2	83.5	4.85	4.88		7.6	7.8	
						31.9		5.82		83.8		4.91			8.0		
10/11/11	1315-1330	22/Cloudy	Surface	1.0	24.3	30.8	30.8	6.06	6.09	87.2	87.7	4.44	4.47	4.67	6.8	6.9	7.4
						30.8		6.12		88.1		4.49			7.0		
			Middle	6.4	24.1	31.4	31.5	5.92	5.94	85.2	85.5	4.62	4.65		7.5	7.4	
						31.5		5.96		85.8		4.68			7.2		
			Bottom	11.8	23.9	31.8	31.9	5.78	5.80	83.2	83.5	4.85	4.88		7.6	7.8	
						31.9		5.82		83.8		4.91			8.0		
12/11/11	1403-1415	22/Fine	Surface	1.0	23.9	30.4	30.4	6.21	6.22	90.7	90.9	4.90	4.92	5.06	8.0	8.0	8.1
						30.3		6.23		91.0		4.94			8.0		
			Middle	6.2	24.9	30.7	30.7	6.15	6.13	89.8	89.5	5.09	5.05		8.0	8.0	
						30.7		6.10		89.1		5.01			8.2		
			Bottom	11.4	25.5	31.6	31.6	5.97	6.01	87.2	87.7	5.19	5.21		8.2	8.2	
						31.6		6.04		88.2		5.23			8.2		
15/11/11	1616-1629	27/Fine	Surface	1.0	26.1	30.3	30.4	6.26	6.25	92.0	91.8	5.02	5.04	5.11	8.0	7.8	8.1
						30.4		6.23		91.6		5.05			7.5		
			Middle	6.2	26.4	30.8	30.8	6.19	6.18	91.3	91.0	5.09	5.11		8.0	8.1	
						30.7		6.16		90.7		5.12			8.2		
			Bottom	11.4	26.6	31.5	31.5	6.10	6.09	90.1	89.9	5.17	5.18		8.2	8.3	
						31.5		6.07		89.7		5.19			8.4		
17/11/11	1858-1911	23/Cloudy	Surface	1.0	24.9	29.8	29.8	6.04	6.07	86.3	86.8	4.80	4.82	5.00	8.0	8.0	8.1
						29.7		6.10		87.2		4.84			8.0		
			Middle	6.3	24.7	30.3	30.4	5.92	5.94	84.6	84.9	4.95	4.98		8.0	8.1	
						30.4		5.96		85.2		5.01			8.2		
			Bottom	11.6	24.4	31.2	31.3	5.74	5.77	82.0	82.4	5.18	5.21		8.2	8.3	
						31.3		5.79		82.7		5.23			8.4		
19/11/11	2024-2036	25/Cloudy	Surface	1.0	24.6	31.2	31.2	6.06	6.05	86.6	86.4	4.94	5.46	5.34	8.0	8.0	8.3
						31.2		6.03		86.2		5.98			8.0		
			Middle	6.7	25.0	31.9	32.0	5.97	5.96	84.7	84.5	5.21	5.26		8.5	8.6	
						32.0		5.94		84.3		5.30			8.6		
			Bottom	12.4	25.1	32.2	32.2	5.99	5.97	85.6	85.3	5.33	5.30		8.6	8.4	
						32.2		5.95		85.0		5.27			8.2		
22/11/11	1142-1156	23/Cloudy	Surface	1.0	24.2	30.3	30.4	6.16	6.17	86.2	86.3	4.72	4.73	4.91	7.8	7.7	7.9
						30.4		6.17		86.4		4.73			7.6		
			Middle	6.3	25.0	31.6	31.6	6.07	6.06	84.9	84.8	4.92	4.94		7.8	8.0	
						31.6		6.05		84.7		4.96			8.2		
			Bottom	11.6	25.3	32.2	32.2	5.96	5.99	83.4	83.9	5.07	5.06		8.0	8.0	
						32.1		6.02		84.3		5.05			8.0		
24/11/11	1235-1253	20/Fine	Surface	1.0	24.6	30.1	30.2	6.22	6.19	90.8	90.4	4.90	4.94	5.09	7.8	7.9	8.0
						30.2		6.16		89.9		4.98			8.0		
			Middle	6.3	24.5	30.9	30.9	6.01	5.98	87.7	87.2	5.06	5.09		8.0	8.0	
						30.8		5.94		86.7		5.12			8.0		
			Bottom	11.6	24.0	31.7	31.7	5.82	5.84	85.0	85.2	5.27	5.23		8.2	8.1	
						31.7		5.85		85.4		5.18			8.0		
26/11/11	1420-1438	21/Cloudy	Surface	1.0	21.7	30.4	30.4	6.06	6.04	84.2	83.9	4.93	4.96	5.11	7.8	7.9	8.1
						30.3		6.01		83.5		4.98			8.0		
			Middle	6.2	21.6	30.6	30.6	5.88	5.91	81.7	82.1	5.13	5.11		8.5	8.4	
						30.6		5.93		82.4		5.09			8.2		
			Bottom	11.4	21.3	31.4	31.5	5.76	5.77	80.1	80.2	5.27	5.25		8.2	8.1	
						31.5		5.78		80.3		5.23			8.0		
29/11/11	1143-1155	22/Fine	Surface	1.0	24.7	30.3	30.3	6.14	6.16	85.3	85.6	4.99	5.01	5.13	7.8	7.9	8.0
						30.2		6.17		85.8		5.02			8.0		
			Middle	6.3	24.3	30.6	30.7	6.02	6.05	83.7	84.1	5.17	5.15		8.0	8.0	
						30.7		6.07		84.4		5.12			8.0		
			Bottom	11.6	24.1	31.5	31.5	5.95	5.91	82.7	82.2	5.22	5.24		8.2	8.2	
						31.5		5.87		81.6		5.26			8.2		

Mid-Ebb 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
01/11/11	1535-1550	27/Fine	Surface	1.0	26.8	31.2	31.3	6.06	6.04	87.2	86.9	4.40	4.43	4.63	8.2	8.1	8.1
						31.3		6.02		86.6		4.45			8.0		
			Middle	5.3	26.4	31.4	31.4	5.94	5.92	85.5	85.2	4.59	4.61		8.0	8.0	
						31.3		5.90		84.9		4.63			8.0		
			Bottom	9.6	26.1	31.8	31.9	5.73	5.75	82.5	82.8	4.83	4.85		8.2	8.3	
						31.9		5.77		83.0		4.87			8.4		
03/11/11	0618-0629	24/Fine	Surface	1.0	26.2	31.0	31.0	6.11	6.09	88.0	87.7	4.31	4.34	4.49	7.8	7.8	8.0
						30.9		6.07		87.4		4.36			7.8		
			Middle	5.4	25.5	31.6	31.6	5.88	5.85	84.7	84.3	4.53	4.50		8.0	7.9	
						31.5		5.82		83.8		4.47			7.8		
			Bottom	9.8	25.2	32.0	32.0	5.75	5.74	82.8	82.6	4.60	4.62		8.2	8.2	
						32.0		5.72		82.4		4.64			8.2		
05/11/11	0741-0754	25/Cloudy	Surface	1.0	26.9	30.8	30.8	6.10	6.15	87.2	87.9	4.59	4.63	4.84	7.0	7.1	7.6
						30.7		6.19		88.5		4.67			7.2		
			Middle	5.4	26.4	31.5	31.5	6.03	6.02	86.2	86.1	4.89	4.88		7.6	7.7	
						31.5		6.01		85.9		4.86			7.8		
			Bottom	9.8	26.1	31.9	31.9	5.99	5.95	85.7	85.1	5.03	5.02		7.8	7.9	
						31.9		5.90		84.4		5.01			8.0		
08/11/11	0904-0915	23/Drizzle	Surface	1.0	25.5	30.8	30.9	6.10	6.09	86.0	85.8	4.31	4.29	4.40	6.4	6.4	6.6
						30.9		6.07		85.6		4.27			6.4		
			Middle	5.6	25.4	31.4	31.4	5.84	5.87	82.3	82.8	4.39	4.41		6.8	6.7	
						31.4		5.90		83.2		4.42			6.6		
			Bottom	10.2	25.3	31.9	31.9	5.74	5.73	80.9	80.8	4.49	4.52		6.4	6.8	
						31.9		5.72		80.7		4.54			7.2		
10/11/11	1027-1042	23/Cloudy	Surface	1.0	24.3	30.6	30.7	5.89	5.88	84.8	84.6	4.67	4.70	4.85	6.8	6.9	7.4
						30.7		5.86		84.3		4.72			7.0		
			Middle	5.6	24.1	31.0	31.0	5.80	5.78	83.5	83.2	4.80	4.83		7.4	7.5	
						30.9		5.76		82.9		4.85			7.6		
			Bottom	10.2	23.8	31.6	31.7	5.69	5.71	81.9	82.2	5.01	5.04		7.8	7.9	
						31.7		5.73		82.5		5.06			8.0		
12/11/11	1123-1134	22/Fine	Surface	1.0	23.7	30.4	30.4	6.03	6.06	88.6	89.0	5.14	5.17	5.27	7.8	7.9	8.2
						30.3		6.08		89.4		5.19			8.0		
			Middle	5.3	24.7	30.7	30.8	5.94	5.92	87.3	87.0	5.23	5.26		8.2	8.1	
						30.8		5.89		86.6		5.28			8.0		
			Bottom	9.6	25.4	31.6	31.6	5.79	5.81	85.1	85.4	5.34	5.38		8.4	8.5	
						31.6		5.83		85.7		5.41			8.6		
15/11/11	1338-1350	27/Fine	Surface	1.0	26.3	30.2	30.2	6.13	6.12	90.1	89.9	5.09	5.11	5.19	8.0	8.1	8.2
						30.2		6.10		89.7		5.12			8.2		
			Middle	5.4	26.5	30.6	30.7	6.00	6.02	88.5	88.7	5.16	5.18		8.2	8.3	
						30.7		6.04		88.9		5.20			8.4		
			Bottom	9.8	26.7	31.7	31.7	5.89	5.91	87.0	87.3	5.27	5.28		8.2	8.3	
						31.6		5.93		87.6		5.29			8.4		
17/11/11	1610-1625	24/Cloudy	Surface	1.0	25.2	29.9	29.9	6.02	6.00	86.0	85.7	4.74	4.77	4.94	7.6	7.7	7.9
						29.8		5.97		85.3		4.80			7.8		
			Middle	5.6	25.0	30.3	30.4	5.92	5.91	84.6	84.5	4.96	4.97		7.8	7.9	
						30.4		5.90		84.3		4.98			8.0		
			Bottom	10.2	24.8	31.2	31.3	5.84	5.82	83.5	83.1	5.05	5.07		8.0	8.0	
						31.3		5.79		82.7		5.09			8.0		
19/11/11	1748-1759	25/Cloudy	Surface	1.0	24.8	30.9	30.9	6.07	6.06	86.8	86.6	4.43	4.40	4.84	7.4	7.3	7.8
						30.9		6.04		86.3		4.37			7.2		
			Middle	6.2	25.2	31.8	31.8	5.89	5.88	83.6	83.4	4.97	5.02		7.8	7.9	
						31.7		5.86		83.2		5.06			8.0		
			Bottom	11.4	25.3	32.1	32.1	5.95	5.93	84.4	84.1	5.08	5.11		8.0	8.1	
						32.1		5.90		83.7		5.14			8.2		
22/11/11	0912-0927	22/Cloudy	Surface	1.0	24.1	30.6	30.6	6.07	6.06	84.9	84.8	4.82	4.85	4.98	7.8	7.8	8.0
						30.6		6.05		84.7		4.88			7.8		
			Middle	5.4	24.9	31.5	31.5	5.85	5.83	83.7	83.4	4.95	4.97		8.0	8.0	
						31.5		5.81		83.1		4.98			8.0		
			Bottom	9.8	25.3	32.1	32.1	5.76	5.75	82.4	81.3	5.14	5.12		8.2	8.1	
						32.1		5.73		80.2		5.10			8.0		
24/11/11	0953-1007	20/Fine	Surface	1.0	24.5	30.3	30.3	6.13	6.10	90.1	89.6	5.15	5.17	5.29	8.0	8.1	8.2
						30.2		6.06		89.1		5.18			8.2		
			Middle	5.6	24.3	30.9	30.9	5.89	5.87	86.6	86.2	5.25	5.27		8.2	8.2	
						30.9		5.84		85.8		5.29			8.2		
			Bottom	10.2	23.8	31.7	31.7	5.79	5.76	85.1	84.7	5.42	5.45		8.4	8.4	
						31.6		5.73		84.2		5.47			8.4		
26/11/11	1138-1152	21/Cloudy	Surface	1.0	21.5	30.4	30.4	5.91	5.93	82.7	83.0	5.14	5.12	5.21	8.2	8.1	8.0
						30.3		5.94		83.2		5.09			8.0		
			Middle	5.4	21.5	30.6	30.6	5.96	5.94	83.4	83.2	5.19	5.20		7.8	7.9	
						30.6		5.92		82.9		5.21			8.0		
			Bottom	9.8	21.2	31.4	31.4	5.77	5.80	80.8	81.2	5.33	5.31		8.0	8.1	
						31.4		5.83		81.6		5.28			8.2		
29/11/11	0903-0914	22/Fine	Surface	1.0	24.6	30.2	30.3	6.05	6.04	84.1	83.9	5.07	5.10	5.23	7.8	7.9	8.2
						30.3		6.02		83.7		5.13			8.0		
			Middle	5.4	24.2	30.6	30.6	5.88	5.90	81.7	81.9	5.26	5.24		8.2	8.2	
						30.6		5.91		82.1		5.21			8.2		
			Bottom	9.8	24.0	31.5	31.5	5.82	5.79	80.9	80.5	5.33	5.34		8.4	8.4	
						31.5		5.76		80.1		5.35			8.4		

Mid-Ebb 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
01/11/11	1517-1530	27/Fine	Surface	1.0	26.7	31.2	31.2	6.12	6.14	88.1	88.3	4.34	4.36	4.54	8.4	8.1	8.0
						31.2		6.15		88.5		4.37			7.8		
			Middle	6.2	26.4	31.4	31.4	6.03	6.01	86.8	86.5	4.50	4.53		7.8		
						31.4		5.98		86.1		4.55			8.0		
			Bottom	11.4	26.0	32.0	32.0	5.90	5.88	84.9	84.6	4.72	4.75		8.0		
						32.0		5.86		84.3		4.78			8.2		
03/11/11	0600-0611	24/Fine	Surface	1.0	26.1	31.0	31.0	6.15	6.18	87.9	88.4	4.27	4.24	4.38	7.0	7.0	7.5
						31.0		6.21		88.8		4.21			7.0		
			Middle	6.2	25.5	31.6	31.6	6.09	6.07	87.1	86.8	4.34	4.37		7.6		
						31.6		6.04		86.4		4.39			7.6		
			Bottom	11.4	25.1	32.0	32.1	5.85	5.88	83.7	84.1	4.58	4.55		8.0		
						32.1		5.91		84.5		4.51			8.0		
05/11/11	0720-0733	25/Cloudy	Surface	1.0	26.8	30.7	30.7	6.28	6.26	89.8	89.5	4.41	4.41	4.69	6.6	6.7	7.1
						30.7		6.24		89.2		4.40			6.8		
			Middle	6.1	26.5	31.6	31.6	6.20	6.17	88.7	88.3	4.72	4.75		7.0		
						31.6		6.14		87.8		4.77			7.2		
			Bottom	11.2	26.2	31.9	31.9	5.97	5.96	85.4	85.2	4.93	4.92		7.6		
						31.9		5.94		84.9		4.91			7.4		
08/11/11	0845-0856	23/Drizzle	Surface	1.0	25.6	30.8	30.9	6.16	6.20	86.2	86.7	4.20	4.17	4.29	6.6	6.5	6.6
						30.9		6.23		87.2		4.13			6.4		
			Middle	6.3	25.4	31.5	31.5	5.93	5.90	83.0	82.6	4.26	4.29		6.6		
						31.5		5.87		82.2		4.31			6.8		
			Bottom	11.6	25.3	31.9	32.0	5.77	5.79	80.8	81.0	4.45	4.41		6.8		
						32.0		5.80		81.2		4.37			6.6		
10/11/11	1004-1020	23/Cloudy	Surface	1.0	24.2	30.6	30.6	6.03	6.05	86.8	87.0	4.57	4.60	4.82	6.6	6.7	7.3
						30.6		6.06		87.2		4.62			6.8		
			Middle	6.4	24.1	31.0	31.0	5.95	5.93	85.6	85.3	4.77	4.80		7.2		
						31.0		5.90		85.0		4.82			7.4		
			Bottom	11.8	23.8	31.8	31.8	5.79	5.81	83.3	83.6	5.03	5.06		8.0		
						31.8		5.83		83.9		5.08			7.8		
12/11/11	1105-1116	22/Fine	Surface	1.0	23.8	30.3	30.4	6.24	6.21	91.1	90.7	4.95	4.97	5.09	7.6	7.8	8.1
						30.4		6.18		90.2		4.98			8.0		
			Middle	6.1	24.7	30.8	30.8	6.10	6.12	89.1	89.3	5.09	5.08		7.8		
						30.8		6.13		89.5		5.06			8.2		
			Bottom	11.2	25.4	31.7	31.7	5.97	5.98	87.2	87.4	5.25	5.23		8.4		
						31.6		5.99		87.5		5.21			8.6		
15/11/11	1317-1330	27/Fine	Surface	1.0	26.1	30.1	30.2	6.24	6.23	91.7	91.5	5.01	5.00	5.09	8.0	7.9	8.0
						30.2		6.21		91.3		4.98			7.8		
			Middle	6.2	26.5	30.7	30.7	6.14	6.13	90.6	90.3	5.07	5.09		8.0		
						30.7		6.11		89.9		5.10			8.2		
			Bottom	11.4	26.7	31.5	31.6	6.02	6.01	88.9	88.7	5.17	5.18		8.0		
						31.6		5.99		88.5		5.19			8.2		
17/11/11	1548-1605	24/Cloudy	Surface	1.0	25.1	29.8	29.8	6.12	6.10	87.5	87.2	4.61	4.63	4.82	7.8	7.8	8.0
						29.8		6.07		86.8		4.65			7.8		
			Middle	6.4	25.0	30.5	30.5	5.92	5.94	84.6	84.9	4.80	4.83		8.0		
						30.5		5.96		85.2		4.85			8.0		
			Bottom	11.8	24.7	31.3	31.3	5.80	5.83	82.9	83.3	5.04	5.01		8.2		
						31.3		5.86		83.7		4.98			8.0		
19/11/11	1730-1740	25/Cloudy	Surface	1.0	24.9	30.8	30.9	6.11	6.10	87.3	87.1	4.15	4.19	4.82	7.0	7.1	7.8
						30.9		6.08		86.9		4.22			7.2		
			Middle	6.9	25.2	31.7	31.7	5.95	5.97	85.0	85.3	5.01	5.05		8.0		
						31.7		5.98		85.5		5.09			8.0		
			Bottom	12.8	25.2	32.0	32.1	5.98	5.96	85.5	85.2	5.17	5.21		8.2		
						32.1		5.94		84.9		5.25			8.2		
22/11/11	0853-0908	22/Cloudy	Surface	1.0	24.2	30.5	30.6	6.19	6.21	86.7	87.0	4.56	4.54	4.79	7.4	7.5	7.7
						30.6		6.23		87.2		4.51			7.6		
			Middle	6.0	25.0	31.8	31.8	6.17	6.16	86.4	87.1	4.76	4.78		7.8		
						31.7		6.14		87.8		4.79			7.6		
			Bottom	11.0	25.3	32.1	32.1	5.91	5.93	83.9	84.2	5.04	5.06		8.0		
						32.1		5.95		84.5		5.08			8.0		
24/11/11	0934-0948	20/Fine	Surface	1.0	24.4	30.2	30.2	6.18	6.21	90.2	90.6	4.89	4.92	5.05	7.8	7.8	8.0
						30.2		6.23		91.0		4.95			7.8		
			Middle	6.3	24.2	30.8	30.8	5.98	6.01	87.3	87.7	5.07	5.04		8.0		
						30.8		6.03		88.0		5.01			8.0		
			Bottom	11.6	23.9	31.6	31.6	5.88	5.90	85.8	86.1	5.19	5.20		8.2		
						31.6		5.92		86.4		5.21			8.0		
26/11/11	1119-1133	21/Cloudy	Surface	1.0	21.6	30.3	30.3	6.03	6.01	83.8	83.6	4.94	4.96	5.08	7.8	7.8	8.0
						30.3		5.99		83.3		4.97			7.8		
			Middle	6.2	21.5	30.7	30.7	5.93	5.91	82.4	82.2	5.10	5.08		8.0		
						30.6		5.89		81.9		5.05			8.0		
			Bottom	11.4	21.2	31.4	31.5	5.73	5.76	79.6	80.1	5.16	5.20		8.2		
						31.5		5.79		80.5		5.24			8.2		
29/11/11	0845-0856	22/Fine	Surface	1.0	24.6	30.3	30.3	6.09	6.11	84.0	84.3	4.90	4.91	5.03	7.8	7.8	7.9
						30.2		6.13		84.6		4.92			7.8		
			Middle	6.3	24.1	30.6	30.7	5.99	5.97	82.7	82.4	5.01	5.00		8.0		
						30.7		5.95		82.1		4.98			7.8		
			Bottom	11.6	24.0	31.5	31.5	5.84	5.85	80.6	80.8	5.15	5.17		8.0		
						31.5		5.86		80.9		5.19			8.2		

Mid-Ebb Tide

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/11	1500-1513	27/Fine	Surface	1.0	26.7	31.2	31.3	6.16	6.13	88.7	88.3	4.31	4.34	4.53	8.2	7.9	7.9
						31.3		6.10		87.8		4.36			7.6		
			Middle	5.8	26.4	31.5	31.5	6.04	6.02	86.9	86.7	4.48	4.51		7.6	7.8	
						31.4		6.00		86.4		4.53			8.0		
			Bottom	10.6	26.0	31.9	32.0	5.92	5.94	85.2	85.5	4.70	4.74		8.0	7.9	
						32.0		5.96		85.8		4.77			7.8		
03/11/11	0545-0557	24/Fine	Surface	1.0	26.2	30.9	31.0	6.27	6.26	89.7	89.5	4.12	4.15	4.28	6.8	6.8	7.2
						31.0		6.24		89.2		4.17			6.8		
			Middle	6.0	25.5	31.6	31.6	6.02	6.05	86.1	86.5	4.24	4.28		7.0	7.0	
						31.6		6.07		86.8		4.32			7.0		
			Bottom	11.0	25.2	32.0	32.0	5.96	5.95	85.2	85.0	4.43	4.40		8.0	7.8	
						32.0		5.93		84.8		4.37			7.6		
05/11/11	0700-0714	25/Cloudy	Surface	1.0	26.9	30.7	30.7	6.30	6.31	90.1	90.2	4.22	4.27	4.59	6.2	6.3	7.0
						30.7		6.31		90.2		4.31			6.4		
			Middle	5.5	26.5	31.4	31.5	6.19	6.17	88.5	88.2	4.57	4.59		6.8	6.9	
						31.5		6.15		87.9		4.60			7.0		
			Bottom	10.0	26.1	31.9	31.9	6.04	6.07	86.4	86.8	4.96	4.93		8.0	7.8	
						31.9		6.09		87.1		4.90			7.6		
08/11/11	0830-0842	23/Drizzle	Surface	1.0	25.6	30.8	30.8	6.18	6.16	86.5	86.2	4.17	4.20	4.31	6.2	6.4	6.6
						30.8		6.13		85.8		4.22			6.6		
			Middle	6.1	25.3	31.4	31.5	5.95	5.97	83.3	83.6	4.34	4.32		6.8	6.7	
						31.5		5.99		83.9		4.29			6.5		
			Bottom	11.2	25.3	32.0	32.0	5.89	5.87	82.5	82.2	4.41	4.42		6.5	6.7	
						31.9		5.84		81.8		4.43			6.8		
10/11/11	0945-1000	23/Cloudy	Surface	1.0	24.3	30.6	30.7	5.98	5.96	86.1	85.8	4.64	4.66	4.84	6.8	6.7	7.2
						30.7		5.94		85.5		4.68			6.6		
			Middle	6.3	24.1	31.1	31.2	5.89	5.88	84.8	84.6	4.83	4.85		7.0	7.0	
						31.2		5.86		84.3		4.87			7.0		
			Bottom	11.6	23.8	31.7	31.8	5.70	5.73	82.1	82.5	5.04	5.02		8.0	8.0	
						31.8		5.76		82.9		4.99			8.0		
12/11/11	1050-1102	22/Fine	Surface	1.0	23.7	30.4	30.4	6.15	6.14	89.8	89.6	4.86	4.89	5.00	7.6	7.7	7.9
						30.4		6.12		89.4		4.91			7.8		
			Middle	5.9	24.6	30.7	30.8	6.01	6.04	87.7	88.1	5.02	4.99		8.0	8.0	
						30.8		6.06		88.5		4.96			8.0		
			Bottom	10.8	25.4	31.6	31.7	5.95	5.92	86.9	86.4	5.11	5.14		8.0	8.1	
						31.7		5.88		85.8		5.16			8.2		
15/11/11	1300-1313	27/Fine	Surface	1.0	26.2	30.2	30.3	6.18	6.17	90.8	90.6	4.93	4.95	5.04	7.6	7.7	7.9
						30.3		6.15		90.4		4.96			7.8		
			Middle	5.6	26.4	30.7	30.8	6.07	6.06	89.5	89.2	5.03	5.04		7.8	7.9	
						30.8		6.04		88.9		5.05			8.0		
			Bottom	10.2	26.6	31.6	31.6	5.95	5.96	87.9	88.1	5.11	5.13		8.0	8.1	
						31.6		5.97		88.2		5.14			8.2		
17/11/11	1530-1544	24/Cloudy	Surface	1.0	25.2	29.9	29.9	6.05	6.07	86.5	86.8	4.70	4.68	4.86	7.0	7.1	7.3
						29.8		6.09		87.1		4.66			7.2		
			Middle	6.3	25.0	30.5	30.5	5.91	5.93	84.5	84.7	4.83	4.86		7.0	7.0	
						30.4		5.94		84.9		4.88			7.0		
			Bottom	11.6	24.8	31.2	31.3	5.82	5.84	83.2	84.0	5.01	5.04		7.5	7.7	
						31.3		5.85		84.8		5.06			7.8		
19/11/11	1715-1727	25/Cloudy	Surface	1.0	24.7	30.8	30.8	6.09	6.07	87.0	86.8	4.21	4.26	4.68	7.2	7.4	7.7
						30.7		6.05		86.5		4.30			7.6		
			Middle	6.3	25.1	31.6	31.7	5.92	5.94	84.0	84.2	4.93	4.87		7.8	7.7	
						31.7		5.95		84.4		4.80			7.5		
			Bottom	11.6	25.3	32.0	32.0	5.90	5.92	83.7	84.0	4.88	4.91		8.0	7.9	
						31.9		5.94		84.3		4.93			7.8		
22/11/11	0830-0846	22/Cloudy	Surface	1.0	24.2	30.4	30.4	6.27	6.24	87.8	87.3	4.97	4.95	5.06	7.8	7.9	8.0
						30.4		6.20		86.8		4.92			8.0		
			Middle	6.2	25.0	31.4	31.5	5.94	5.97	83.2	83.6	5.14	5.16		8.2	8.1	
						31.5		5.99		83.9		5.17			8.0		
			Bottom	11.4	25.3	32.0	32.0	5.77	5.76	80.8	80.7	5.10	5.08		8.0	7.9	
						32.0		5.75		80.5		5.06			7.8		
24/11/11	0915-0931	20/Fine	Surface	1.0	24.5	30.3	30.3	6.11	6.13	89.2	89.4	4.97	4.95	5.07	7.2	7.4	7.9
						30.3		6.14		89.6		4.93			7.6		
			Middle	6.1	24.3	30.8	30.9	5.93	5.92	86.6	86.5	5.03	5.07		8.0	8.0	
						30.9		5.91		86.3		5.10			8.0		
			Bottom	11.2	23.9	31.6	31.7	5.82	5.84	85.0	85.3	5.24	5.20		8.5	8.3	
						31.7		5.86		85.6		5.16			8.0		
26/11/11	1100-1116	21/Cloudy	Surface	1.0	21.6	30.4	30.4	5.97	5.95	83.0	82.7	4.83	4.80	4.90	7.8	7.7	7.8
						30.3		5.92		82.3		4.76			7.6		
			Middle	6.0	21.5	30.7	30.7	5.90	5.93	82.0	82.4	4.89	4.90		7.8	7.9	
						30.7		5.95		82.7		4.91			8.0		
			Bottom	11.0	21.2	31.4	31.5	5.85	5.83	81.3	81.1	5.01	5.00		8.0	7.9	
						31.5		5.81		80.8		4.99			7.8		
29/11/11	0830-0842	22/Fine	Surface	1.0	24.5	30.3	30.3	6.26	6.23	86.4	85.9	5.03	5.00	5.13	8.0	7.9	8.0
						30.3		6.19		85.4		4.96			7.8		
			Middle	5.9	24.2	30.6	30.6	6.05	6.08	83.5	83.9	5.10	5.14		8.0	8.0	
						30.6		6.11		84.3		5.17			8.0		
			Bottom	10.8	24.0	31.6	31.6	5.97	5.99	82.4	82.7	5.28	5.26		8.0	8.1	
						31.5		6.01		82.9		5.23			8.2		

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	
01/11/11	1700-1715	27/Fine	Surface	1.0	26.8	31.2	31.2	6.15	6.17	88.5	88.8	4.22	4.25	4.47	7.2	7.3	7.6	
						31.2		6.19		89.1		4.27			7.4			
			Middle	5.3	26.5	31.3	31.4	6.07	6.05	87.4	87.1	4.41	4.43		7.8			7.7
						31.4		6.03		86.8		4.45			7.6			
			Bottom	9.6	26.3	31.8	31.9	5.89	5.87	84.8	84.5	4.70	4.72		7.8			7.9
						31.9		5.85		84.2		4.74			8.0			
03/11/11	0748-0759	24/Fine	Surface	1.0	26.2	30.9	30.9	6.19	6.18	88.5	88.4	4.27	4.30	4.44	7.8	7.8	8.0	
						30.8		6.17		88.2		4.33			7.8			
			Middle	5.5	25.7	31.5	31.5	6.04	6.07	86.4	86.8	4.49	4.45		8.0			8.0
						31.5		6.10		87.2		4.41			8.0			
			Bottom	10.0	25.3	32.1	32.1	5.92	5.91	84.7	84.6	4.53	4.56		8.2			8.2
						32.0		5.90		84.4		4.58			8.2			
05/11/11	0904-0917	26/Cloudy	Surface	1.0	26.8	30.8	30.8	6.20	6.18	88.7	88.4	4.32	4.36	4.62	6.8	6.7	7.2	
						30.7		6.16		88.1		4.39			6.6			
			Middle	5.4	26.5	31.7	31.7	6.10	6.10	87.2	87.2	4.56	4.58		7.0			7.3
						31.7		6.09		87.1		4.59			7.6			
			Bottom	9.8	26.1	32.1	32.1	5.81	5.83	83.1	83.4	4.93	4.92		7.6			7.7
						32.1		5.85		83.7		4.90			7.8			
08/11/11	1041-1052	23/Drizzle	Surface	1.0	25.7	30.9	30.9	6.21	6.20	86.9	86.8	4.24	4.28	4.43	6.6	6.7	7.1	
						30.9		6.19		86.7		4.32			6.8			
			Middle	5.7	25.6	31.5	31.5	6.04	5.99	84.1	83.7	4.47	4.44		7.2			7.1
						31.4		5.94		83.2		4.41			7.0			
			Bottom	10.4	25.4	31.9	31.9	5.79	5.83	81.1	81.6	4.55	4.57		7.2			7.4
						31.9		5.86		82.0		4.59			7.6			
10/11/11	1152-1207	22/Cloudy	Surface	1.0	24.3	30.7	30.7	6.05	6.07	87.1	87.4	4.42	4.45	4.66	6.6	6.7	7.1	
						30.7		6.09		87.6		4.47			6.8			
			Middle	5.9	24.2	30.8	30.8	5.97	5.95	85.9	85.6	4.62	4.64		7.0			7.0
						30.7		5.93		85.3		4.66			7.0			
			Bottom	10.8	24.0	31.6	31.6	5.82	5.80	83.8	83.5	4.92	4.90		7.8			7.7
						31.6		5.78		83.2		4.88			7.6			
12/11/11	1253-1304	22/Fine	Surface	1.0	23.8	30.4	30.4	6.22	6.20	90.8	90.5	5.03	5.01	5.14	8.0	7.9	8.1	
						30.3		6.17		90.1		4.99			7.8			
			Middle	5.5	24.9	30.8	30.8	6.09	6.06	88.9	88.5	5.09	5.13		8.0			8.1
						30.8		6.03		88.0		5.17			8.2			
			Bottom	10.0	25.5	31.6	31.6	5.93	5.92	86.6	86.4	5.22	5.27		8.4			8.4
						31.6		5.90		86.1		5.31			8.4			
15/11/11	1454-1507	27/Fine	Surface	1.0	26.2	30.2	30.2	6.24	6.23	91.7	91.5	5.02	5.04	5.11	8.0	8.0	8.2	
						30.1		6.21		91.3		5.05			8.0			
			Middle	5.4	26.4	30.5	30.6	6.17	6.16	91.0	90.7	5.10	5.12		8.2			8.3
						30.6		6.14		90.4		5.13			8.4			
			Bottom	9.8	26.7	31.5	31.6	6.06	6.05	89.5	89.3	5.18	5.19		8.2			8.3
						31.6		6.03		89.1		5.20			8.4			
17/11/11	1735-1750	23/Drizzle	Surface	1.0	25.1	29.7	29.8	6.14	6.12	87.8	87.4	4.83	4.86	5.00	7.8	7.9	8.0	
						29.8		6.09		87.0		4.89			8.0			
			Middle	5.8	25.0	30.0	30.0	5.90	5.93	84.3	84.8	4.95	4.98		7.8			7.9
						30.0		5.96		85.2		5.00			8.0			
			Bottom	10.6	24.6	30.9	31.0	5.77	5.79	82.5	82.8	5.15	5.18		8.2			8.2
						31.0		5.81		83.0		5.20			8.2			
19/11/11	1911-1922	25/Cloudy	Surface	1.0	24.6	31.1	31.1	6.21	6.19	88.8	88.5	4.73	4.77	4.94	7.6	7.7	7.9	
						31.0		6.17		88.2		4.80			7.8			
			Middle	6.0	25.2	31.9	31.9	6.04	6.06	86.3	86.6	4.96	5.00		7.8			7.9
						31.9		6.08		86.9		5.04			8.0			
			Bottom	11.0	25.1	32.2	32.2	5.87	5.89	83.0	83.4	5.09	5.05		8.0			8.0
						32.2		5.90		83.7		5.01			8.0			
22/11/11	1032-1045	22/Cloudy	Surface	1.0	24.1	30.5	30.5	6.18	6.16	86.5	86.2	4.39	4.41	4.64	6.8	7.1	7.4	
						30.5		6.14		85.9		4.42			7.4			
			Middle	5.3	25.1	31.3	31.4	5.88	5.87	84.1	83.6	4.69	4.69		7.0			7.3
						31.4		5.85		83.1		4.68			7.6			
			Bottom	9.6	25.3	32.1	32.1	5.81	5.81	81.3	81.3	4.87	4.84		7.8			7.8
						32.0		5.80		81.2		4.81			7.8			
24/11/11	1120-1134	20/Fine	Surface	1.0	24.6	30.3	30.3	6.12	6.15	89.4	89.8	5.05	5.02	5.16	8.0	7.9	8.1	
						30.3		6.17		90.1		4.99			7.8			
			Middle	5.7	24.5	30.8	30.9	5.89	5.93	86.0	86.5	5.14	5.16		8.2			8.1
						30.9		5.96		87.0		5.17			8.0			
			Bottom	10.4	24.0	31.6	31.6	5.79	5.80	84.5	84.7	5.27	5.31		8.2			8.3
						31.6		5.81		84.8		5.34			8.4			
26/11/11	1305-1319	21/Cloudy	Surface	1.0	21.6	30.3	30.3	6.07	6.05	84.4	84.1	4.99	5.03	5.16	7.8	7.9	8.1	
						30.3		6.02		83.7		5.06			8.0			
			Middle	5.6	21.7	30.6	30.7	5.86	5.89	81.5	81.9	5.13	5.17		8.0			8.1
						30.7		5.92		82.3		5.21			8.2			
			Bottom	10.2	21.3	31.4	31.4	5.76	5.79	80.1	80.5	5.27	5.30		8.2			8.3
						31.4		5.81		80.8		5.32			8.4			
29/11/11	1033-1044	22/Fine	Surface	1.0	24.6	30.2	30.2	6.13	6.16	84.6	85.0	5.01	4.98	5.13	7.8	7.8	8.0	
						30.2		6.19		85.4		4.95			7.8			
			Middle	5.5	24.4	30.6	30.6	6.03	6.02	83.2	83.1	5.11	5.15		8.0			8.0
						30.6		6.01		82.9		5.18			8.0			
			Bottom	10.0	24.1	31.6	31.6	5.96	5.95	82.2	82.1	5.29	5.28		8.2			8.2
						31.5		5.94		82.0		5.26			8.2			

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	
01/11/11	1721-1735	27/Fine	Surface	1.0	26.8	31.2	31.2	6.05	6.08	87.1	87.5	4.29	4.31	4.54	7.4	7.5	7.9	
						31.2		6.11		87.9		4.32			7.6			
			Middle	8.4	26.4	31.6	31.6	5.87	5.89	84.5	84.8	4.50	4.53		8.0			7.9
						31.6		5.91		85.1		4.56			7.8			
			Bottom	15.8	25.9	32.2	32.2	5.78	5.75	83.2	82.8	4.75	4.78		8.2			8.3
						32.1		5.72		86.7		4.80			8.4			
03/11/11	0811-0822	24/Fine	Surface	1.0	26.3	30.8	30.9	6.02	6.06	86.7	87.2	4.39	4.35	4.51	7.8	7.8	8.0	
						30.9		6.09		87.7		4.30			7.8			
			Middle	8.4	25.6	31.7	31.7	5.87	5.85	84.5	84.2	4.45	4.48		8.0			8.0
						31.6		5.82		83.8		4.51			8.0			
			Bottom	15.8	25.1	32.1	32.2	5.71	5.73	82.2	82.5	4.74	4.70		8.2			8.2
						32.2		5.74		82.7		4.66			8.2			
05/11/11	0924-0936	26/Cloudy	Surface	1.0	26.9	30.9	30.9	6.32	6.34	90.4	90.6	4.40	4.39	4.57	6.6	6.6	6.9	
						30.8		6.35		90.8		4.37			6.6			
			Middle	8.4	26.5	31.8	31.8	6.21	6.22	88.8	89.0	4.50	4.49		6.8			6.8
						31.7		6.23		89.1		4.48			6.8			
			Bottom	15.8	26.0	32.0	32.0	5.94	5.97	84.9	85.1	4.87	4.85		7.0			7.4
						32.0		5.99		85.2		4.82			7.8			
08/11/11	1106	1117	Surface	1.0	25.6	30.7	30.7	6.05	6.08	85.3	85.8	4.36	4.33	4.50	6.8	6.7	7.1	
						30.7		6.11		86.2		4.29			6.6			
			Middle	8.5	25.4	31.6	31.6	5.80	5.82	81.8	82.1	4.49	4.52		7.2			7.3
						31.5		5.84		82.3		4.55			7.4			
			Bottom	16.0	25.2	32.1	32.1	5.71	5.72	80.5	80.7	4.64	4.66		7.2			7.3
						32.1		5.73		80.8		4.68			7.4			
10/11/11	1213-1230	22/Cloudy	Surface	1.0	24.3	30.7	30.8	6.00	5.98	86.4	86.1	4.55	4.58	4.82	7.6	7.5	7.8	
						30.8		5.96		85.8		4.61			7.4			
			Middle	8.7	23.9	31.5	31.5	5.85	5.82	84.2	83.8	4.80	4.83		7.8			7.8
						31.5		5.79		83.3		4.86			7.8			
			Bottom	16.4	23.7	32.1	32.1	5.67	5.69	81.6	82.3	5.02	5.05		8.0			8.1
						32.1		5.70		82.9		5.07			8.2			
12/11/11	1316-1327	22/Fine	Surface	1.0	23.9	30.2	30.3	6.07	6.11	89.2	89.8	5.01	5.05	5.21	7.8	7.8	8.2	
						30.3		6.15		90.4		5.08			7.8			
			Middle	8.3	24.7	30.9	30.9	5.91	5.93	86.9	87.2	5.24	5.22		8.4			8.3
						30.9		5.95		87.5		5.19			8.2			
			Bottom	15.6	25.3	31.8	31.8	5.82	5.81	85.6	85.5	5.40	5.38		8.4			8.4
						31.7		5.80		85.3		5.36			8.4			
15/11/11	1512-1525	27/Fine	Surface	1.0	26.3	30.1	30.2	6.22	6.20	91.4	91.1	5.04	5.05	5.14	7.8	7.9	8.1	
						30.2		6.18		90.8		5.06			8.0			
			Middle	8.4	26.5	30.6	30.7	6.11	6.10	90.1	89.9	5.12	5.14		8.2			8.1
						30.7		6.09		89.6		5.16			8.0			
			Bottom	15.8	26.7	31.7	31.8	5.99	5.98	88.5	88.3	5.21	5.22		8.2			8.3
						31.8		5.96		88.0		5.23			8.4			
17/11/11	1757-1812	23/Drizzle	Surface	1.0	25.0	29.8	29.8	6.05	6.03	86.5	86.2	4.78	4.81	5.01	8.0	8.1	8.2	
						29.8		6.00		85.8		4.84			8.2			
			Middle	8.7	24.6	30.6	30.6	5.87	5.86	83.9	83.7	4.98	5.01		8.2			8.3
						30.6		5.84		83.5		5.04			8.4			
			Bottom	16.4	24.2	31.9	31.9	5.67	5.69	81.0	81.3	5.17	5.21		8.0			8.1
						31.9		5.70		81.5		5.24			8.2			
19/11/11	1936-1947	25/Cloudy	Surface	1.0	24.6	31.2	31.2	6.19	6.17	88.5	88.2	5.01	5.05	5.06	8.0	8.0	8.0	
						31.1		6.15		87.9		5.08			8.0			
			Middle	8.7	25.1	32.0	32.0	6.06	6.04	86.6	86.3	4.94	4.96		7.8			7.9
						31.9		6.01		85.9		4.98			8.0			
			Bottom	16.4	25.3	32.1	32.2	5.93	5.92	84.2	84.0	5.21	5.18		8.2			8.1
						32.2		5.90		83.7		5.14			8.0			
22/11/11	1049-1102	22/Cloudy	Surface	1.0	24.1	30.6	30.6	6.21	6.23	86.9	87.2	4.45	4.43	4.61	7.4	7.5	7.6	
						30.5		6.25		87.5		4.40			7.6			
			Middle	8.6	25.2	31.5	31.5	5.91	5.92	82.7	83.7	4.43	4.45		7.6			7.5
						31.5		5.92		84.7		4.47			7.6			
			Bottom	16.2	25.4	32.0	32.0	5.87	5.85	82.2	82.7	4.93	4.95		7.8			7.9
						32.0		5.82		83.2		4.97			8.0			
24/11/11	1141-1155	20/Fine	Surface	1.0	24.6	30.2	30.2	6.09	6.12	89.5	89.9	5.13	5.15	5.34	8.2	8.1	8.3	
						30.1		6.14		90.3		5.17			8.0			
			Middle	8.5	24.4	31.0	31.0	5.93	5.89	87.2	86.6	5.31	5.34		8.4			8.3
						31.0		5.85		86.0		5.37			8.2			
			Bottom	16.0	23.8	31.8	31.8	5.74	5.76	84.4	84.6	5.52	5.54		8.6			8.5
						31.8		5.77		84.8		5.55			8.4			
26/11/11	1326-1340	21/Cloudy	Surface	1.0	21.7	30.5	30.5	5.94	5.96	83.2	83.5	5.02	5.06	5.23	8.0	8.0	8.2	
						30.4		5.98		83.7		5.09			8.0			
			Middle	8.4	21.5	30.9	30.9	5.88	5.86	82.3	82.1	5.25	5.24		8.2			8.2
						30.8		5.84		81.8		5.23			8.2			
			Bottom	15.8	21.1	31.7	31.8	5.69	5.72	79.7	80.1	5.39	5.41		8.4			8.4
						31.8		5.74		80.4		5.42			8.4			
29/11/11	1056-1107	22/Fine	Surface	1.0	24.7	30.1	30.1	6.11	6.09	84.9	84.6	5.09	5.13	5.32	8.0	8.1	8.3	
						30.1		6.06		84.2		5.17			8.2			
			Middle	8.4	24.3	30.7	30.7	5.89	5.91	81.9	82.1	5.31	5.34		8.2			8.3
						30.7		5.92		82.3		5.36			8.4			
			Bottom	15.8	23.9	31.7	31.7	5.73	5.76	79.6	80.1	5.54	5.50		8.6			8.5
						31.7		5.79		80.5		5.45			8.4			

Mid-Ebb Tide

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/11	1555-1610	27/Fine	Surface	1.0	26.8	31.2	31.3	6.18	6.20	88.9	89.2	4.32	4.30	4.48	7.6	7.7	7.9	
						31.3		6.22		89.5		4.27			7.8			
						31.5		6.05		87.1		4.44			8.0			
			Middle	6.9	26.4	31.4	31.5	6.09	6.07	87.6	87.4	4.49	4.47		8.0			8.0
						32.0		5.82		83.8		4.65			8.2			
						32.0		5.88		84.6		4.70			8.0			
			Bottom	12.8	26.0	30.9	30.9	6.23	6.21	89.1	88.8	4.19	4.16		6.8			6.6
						30.9		6.19		88.5		4.13			6.4			
						31.5		6.01		85.9		4.32			7.2			
03/11/11	0642-0654	24/Fine	Surface	1.0	26.2	31.5	31.5	6.05	6.03	86.5	86.2	4.32	4.31	4.30	7.0	7.1	7.2	
						31.5		6.05		86.5		4.29			7.0			
						32.1		5.93		84.8		4.41			7.8			
			Middle	6.8	25.4	32.0	32.1	5.91	5.92	84.5	84.7	4.46	4.44		8.0			7.9
						32.0		5.91		84.5		4.46			8.0			
						32.0		5.91		84.5		4.46			8.0			
			Bottom	12.6	25.2	30.8	30.8	6.12	6.15	87.5	88.0	4.82	4.85		7.6			7.6
						30.8		6.18		88.4		4.88			7.6			
						31.6		6.08		86.9		4.93			7.8			
05/11/11	0802-0813	25/Cloudy	Surface	1.0	26.9	31.5	31.6	6.02	6.05	86.1	86.5	4.91	4.92	4.97	7.8	7.8	7.8	
						31.5		6.02		86.1		4.91			7.8			
						32.0		5.78		82.7		5.12			8.0			
			Middle	7.2	26.6	32.0	32.0	5.74	5.76	82.1	82.4	5.13	5.13		8.0			8.0
						32.0		5.74		82.1		5.13			8.0			
						32.0		5.74		82.1		5.13			8.0			
			Bottom	13.4	26.1	30.9	30.9	6.29	6.27	88.1	87.8	4.19	4.22		6.4			6.5
						30.9		6.25		87.5		4.24			6.6			
						31.5		6.01		84.1		4.38			6.8			
08/11/11	0930-0942	23/Drizzle	Surface	1.0	25.6	31.4	31.5	6.05	6.03	84.7	84.4	4.34	4.36	4.35	7.4	7.1	7.1	
						32.0		5.87		82.2		4.46			7.6			
						32.0		5.83		81.6		4.51			8.0			
			Middle	6.9	25.4	30.6	30.7	6.04	6.07	86.9	87.4	4.52	4.55		6.6			6.7
						30.7		6.10		87.8		4.58			6.8			
						31.0		5.96		85.8		4.70			7.0			
			Bottom	12.8	23.8	31.0	31.0	5.90	5.93	84.9	85.4	4.74	4.72		7.4			7.2
						31.9		5.72		82.3		4.90			7.6			
						31.9		5.77		83.0		4.95			8.0			
10/11/11	1050-1105	23/Cloudy	Surface	1.0	24.2	30.3	30.3	6.36	6.34	92.9	92.6	4.97	4.95	5.06	7.8	7.7	8.1	
						30.3		6.32		92.3		4.93			7.6			
						30.7		6.16		89.9		5.10			7.8			
			Middle	6.8	24.7	30.7	30.7	6.19	6.18	90.4	90.2	5.04	5.07		9.0			8.4
						31.7		6.06		88.5		5.18			8.2			
						31.6		6.03		88.0		5.15			8.0			
			Bottom	12.6	25.3	30.3	30.3	6.22	6.20	91.4	91.1	5.06	5.08		8.0			8.0
						30.2		6.18		90.8		5.09			8.0			
						30.7		6.11		90.1		5.19			8.2			
15/11/11	1357-1410	27/Fine	Surface	1.0	26.2	30.8	30.8	6.08	6.10	89.5	89.8	5.17	5.18	5.17	8.2	8.2	8.2	
						30.8		6.08		89.5		5.17			8.2			
						31.8		5.99		88.5		5.24			8.4			
			Middle	6.8	26.5	31.7	31.8	5.96	5.98	88.0	88.3	5.27	5.26		8.5			8.5
						31.7		5.96		88.0		5.27			8.5			
						31.7		5.96		88.0		5.27			8.5			
			Bottom	12.6	26.6	30.6	30.6	6.12	6.13	85.7	85.8	4.92	4.94		8.0			7.9
						30.5		6.14		85.9		4.96			7.8			
						31.4		5.89		82.5		5.12			8.0			
17/11/11	1632-1647	24/Cloudy	Surface	1.0	25.1	31.5	31.5	5.92	5.91	82.9	82.7	5.14	5.13	5.08	8.0	8.0	8.0	
						31.5		5.92		82.9		5.14			8.0			
						32.1		5.86		82.0		5.17			8.2			
			Middle	6.9	24.9	32.0	32.1	5.85	5.86	83.7	82.9	5.19	5.18		8.2			8.2
						32.0		5.85		83.7		5.19			8.2			
						32.0		5.85		83.7		5.19			8.2			
			Bottom	13.2	25.3	30.3	30.3	6.27	6.24	91.5	91.1	4.95	4.93		7.8			7.7
						30.3		6.21		90.7		4.91			7.6			
						30.9		6.08		88.8		5.13			8.0			
24/11/11	1015-1030	20/Fine	Surface	1.0	24.5	30.8	30.9	6.01	6.05	87.7	88.3	5.06	5.10	5.10	8.0	8.0	7.9	
						30.8		6.01		87.7		5.06			8.0			
						31.7		5.94		86.7		5.28			8.2			
			Middle	6.9	24.3	31.7	31.7	5.90	5.92	86.1	86.4	5.26	5.27		8.0			8.1
						31.7		5.90		86.1		5.26			8.0			
						31.7		5.90		86.1		5.26			8.0			
			Bottom	12.8	23.8	30.4	30.4	5.96	5.99	82.8	83.2	4.85	4.87		7.8			7.8
						30.4		6.01		83.5		4.88			7.8			
						30.7		5.87		81.6		5.02			8.0			
26/11/11	1200-1215	21/Cloudy	Surface	1.0	21.6	31.6	30.8	5.84	5.86	81.2	81.4	4.98	5.00	5.01	7.8	7.9	7.9	
						30.8		5.84		81.2		4.98			7.8			
						31.6		5.80		80.6		5.12			8.0			
			Middle	6.8	21.4	31.6	31.6	5.75	5.78	79.9	80.3	5.18	5.15		8.0			8.0
						31.6		5.75		79.9		5.18			8.0			
						31.6		5.75		79.9		5.18			8.0			
			Bottom	12.6	21.1	30.2	30.2	6.32	6.30	87.2	87.0	4.97	4.96		7.8			7.8
						30.2		6.28		86.7		4.94			7.8			
						30.7		6.07		83.8		5.04			8.0			
29/11/11	0927-0939	22/Fine	Surface	1.0	24.6	30.6	30.7	6.14	6.11	84.7	84.3	5.12	5.08	5.11	8.0	8.0	8.0	
						30.6		6.14		84.7		5.12			8.0			
						31.6		6.03		83.2		5.31			8.2			
			Middle	6.9	24.2	31.6	31.6	5.99	6.01	82.7	83.0	5.25	5.28		8.0			8.1
						31.6		5.99		82.7		5.25			8.0			
						31.6		5.99		82.7		5.25			8.0			



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
01/11/11	1618-1632	27/Fine	Surface	1.0	26.8	31.1	31.2	6.15	6.13	88.5	88.2	4.29	4.31	4.51	7.6	7.8	8.0
						31.2		6.11		87.9		4.33			8.0		
			Middle	6.4	26.4	31.4	31.4	6.02	5.98	86.6	86.1	4.46	4.49		8.0		
						31.4		5.94		85.5		4.51			8.2		
			Bottom	11.8	26.0	31.9	31.9	5.80	5.82	83.5	83.8	4.72	4.75		8.2		
						31.9		5.84		84.1		4.77			8.2		
03/11/11	0705-0717	24/Fine	Surface	1.0	26.2	31.0	31.0	6.17	6.21	88.2	88.8	4.07	4.11	4.26	6.4	6.5	6.8
						30.9		6.25		89.4		4.15			6.6		
			Middle	6.3	25.5	31.6	31.6	6.12	6.10	87.5	87.2	4.22	4.24		6.8		
						31.5		6.08		86.9		4.26			6.8		
			Bottom	11.6	25.2	32.1	32.1	5.98	5.97	85.5	85.3	4.44	4.42		7.2		
						32.1		5.95		85.1		4.39			7.2		
05/11/11	0820-0834	25/Cloudy	Surface	1.0	26.9	30.7	30.8	6.04	6.12	89.2	89.0	4.16	4.18	4.51	6.4	6.5	7.0
						30.8		6.20		88.7		4.19			6.6		
			Middle	6.4	26.5	31.5	31.5	6.14	6.16	87.8	87.7	4.39	4.41		6.8		
						31.5		6.17		87.6		4.42			6.8		
			Bottom	11.8	26.2	32.1	32.1	5.79	5.83	82.8	83.3	4.96	4.95		7.4		
						32.1		5.86		83.8		4.93			7.8		
08/11/11	0955-1007	23/Drizzle	Surface	1.0	25.6	30.8	30.8	6.18	6.22	86.5	87.1	4.28	4.25	4.39	6.6	6.5	6.8
						30.8		6.26		87.6		4.21			6.4		
			Middle	6.4	25.3	31.4	31.4	6.09	6.06	85.3	84.9	4.40	4.38		6.8		
						31.4		6.03		84.4		4.36			6.6		
			Bottom	11.8	25.3	31.9	31.9	5.89	5.92	82.5	82.9	4.56	4.55		7.2		
						31.9		5.95		83.3		4.53			7.4		
10/11/11	1110-1125	23/Cloudy	Surface	1.0	24.3	30.7	30.7	6.11	6.13	87.9	88.2	4.48	4.51	4.74	6.6	6.5	7.2
						30.7		6.15		88.5		4.54			6.4		
			Middle	6.4	24.0	31.1	31.1	5.94	5.93	85.5	85.4	4.69	4.71		6.8		
						31.0		5.92		85.2		4.72			7.4		
			Bottom	11.8	23.7	31.9	32.0	5.80	5.77	83.5	83.1	4.97	5.00		7.8		
						32.0		5.74		82.6		5.02			8.0		
12/11/11	1210-1222	22/Fine	Surface	1.0	23.8	30.4	30.4	6.34	6.31	92.6	92.1	4.89	4.92	5.04	7.8	7.8	8.1
						30.4		6.27		91.5		4.95			7.8		
			Middle	6.2	24.6	30.8	30.8	6.21	6.17	90.7	90.1	5.01	5.04		8.2		
						30.7		6.13		89.5		5.06			8.0		
			Bottom	11.4	25.4	31.7	31.7	6.02	6.06	87.9	88.4	5.13	5.17		8.4		
						31.7		6.09		88.9		5.21			8.2		
15/11/11	1416-1429	27/Fine	Surface	1.0	26.3	30.2	30.2	6.25	6.23	91.9	91.6	5.03	5.05	5.14	8.0	8.1	8.3
						30.1		6.21		91.3		5.07			8.2		
			Middle	6.4	26.5	30.6	30.7	6.15	6.14	90.7	90.4	5.14	5.15		8.4		
						30.7		6.12		90.1		5.15			8.4		
			Bottom	11.8	26.6	31.6	31.6	6.04	6.03	89.2	89.0	5.20	5.21		8.6		
						31.6		6.01		88.8		5.22			8.4		
17/11/11	1653-1708	24/Cloudy	Surface	1.0	25.2	29.8	29.8	6.08	6.12	86.9	87.4	4.70	4.73	4.95	7.4	7.5	7.8
						29.7		6.15		87.9		4.76			7.6		
			Middle	6.3	24.9	30.4	30.4	5.95	5.93	85.0	84.7	4.95	4.98		7.8		
						30.4		5.90		84.3		5.00			8.0		
			Bottom	11.6	24.7	31.3	31.3	5.84	5.82	83.5	83.2	5.12	5.14		8.0		
						31.3		5.80		82.9		5.15			8.2		
19/11/11	1827-1837	25/Cloudy	Surface	1.0	24.7	31.0	31.0	6.18	6.16	88.3	88.1	4.59	4.62	4.93	7.8	7.7	7.9
						31.0		6.14		87.8		4.64			7.6		
			Middle	6.7	25.2	31.9	31.9	6.02	6.04	86.0	86.3	5.07	5.04		8.0		
						31.8		6.05		86.5		5.01			8.0		
			Bottom	12.4	25.3	32.2	32.2	5.85	5.83	83.0	82.8	5.12	5.14		8.2		
						32.2		5.81		82.5		5.16			8.0		
22/11/11	0954-1008	22/Cloudy	Surface	1.0	24.1	30.6	30.6	6.12	6.11	85.7	86.5	4.80	4.79	4.89	7.8	7.7	7.9
						30.6		6.10		87.2		4.78			7.6		
			Middle	6.2	24.9	31.5	31.5	6.07	6.04	84.9	84.5	4.96	4.89		8.0		
						31.4		6.01		84.1		4.81			7.8		
			Bottom	11.4	25.2	32.0	32.0	5.70	5.74	79.8	81.2	4.97	4.98		8.0		
						32.0		5.77		82.5		4.99			8.0		
24/11/11	1037-1052	20/Fine	Surface	1.0	24.5	30.2	30.3	6.30	6.33	92.0	92.4	4.86	4.90	5.02	7.6	7.7	7.9
						30.3		6.35		92.7		4.93			7.8		
			Middle	6.4	24.3	30.8	30.9	6.15	6.14	89.8	89.6	4.99	5.02		7.8		
						30.9		6.12		89.4		5.04			8.0		
			Bottom	11.8	23.9	31.6	31.7	5.96	6.00	87.0	87.5	5.11	5.14		8.2		
						31.7		6.03		88.0		5.17			8.0		
26/11/11	1222-1237	21/Cloudy	Surface	1.0	21.6	30.3	30.4	5.99	5.96	83.3	82.9	4.87	4.83	4.96	7.8	7.7	7.9
						30.4		5.93		82.4		4.79			7.6		
			Middle	6.3	21.5	30.8	30.8	5.91	5.90	82.1	82.0	4.95	4.97		7.8		
						30.8		5.89		81.9		4.99			8.0		
			Bottom	11.6	21.2	31.6	31.6	5.83	5.81	81.0	80.8	5.10	5.09		8.0		
						31.5		5.79		80.5		5.08			8.2		
29/11/11	0950-1002	22/Fine	Surface	1.0	24.6	30.2	30.3	6.20	6.23	85.6	86.0	4.84	4.88	4.99	7.6	7.7	7.8
						30.3		6.25		86.3		4.91			7.8		
			Middle	6.2	24.2	30.7	30.7	6.16	6.14	85.0	84.7	4.96	4.98		7.8		
						30.7		6.11		84.3		4.99			7.8		
			Bottom	11.4	24.0	31.5	31.6	6.01	6.08	82.9	83.2	5.17	5.13		8.0		
						31.6		6.15		83.5		5.09			7.8		

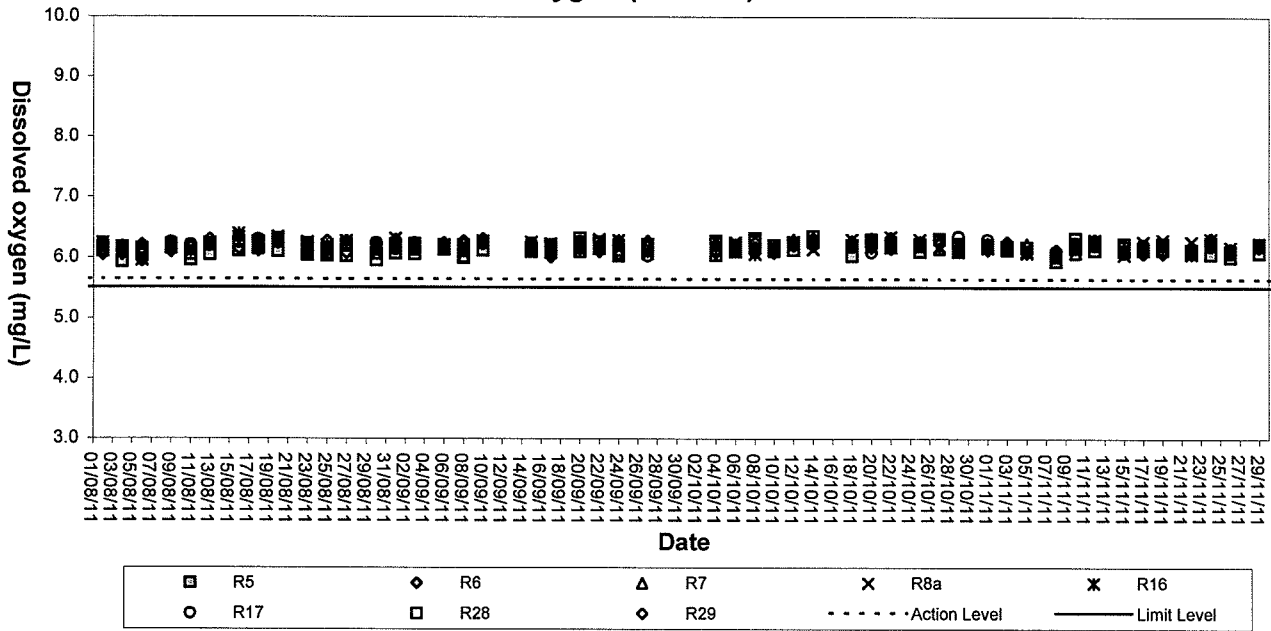


## **Appendix C3**

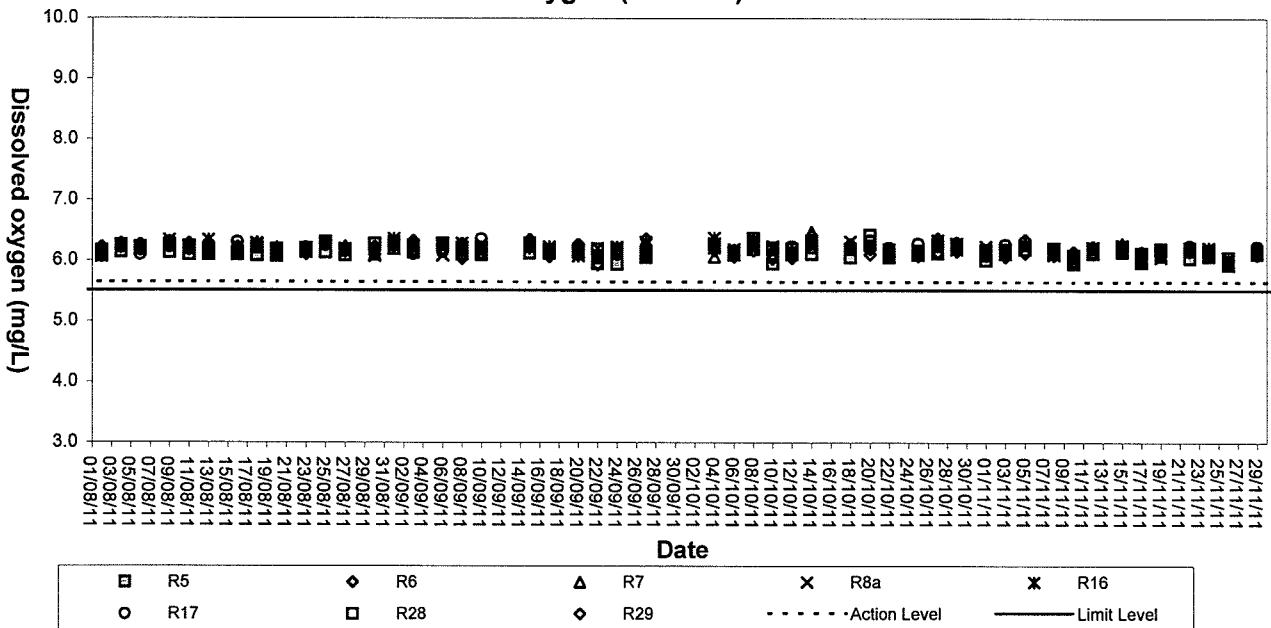
### **Graphical Plots of Impact Water Quality Monitoring Data**



### Dissolved Oxygen (Surface) at Mid-Flood Tide

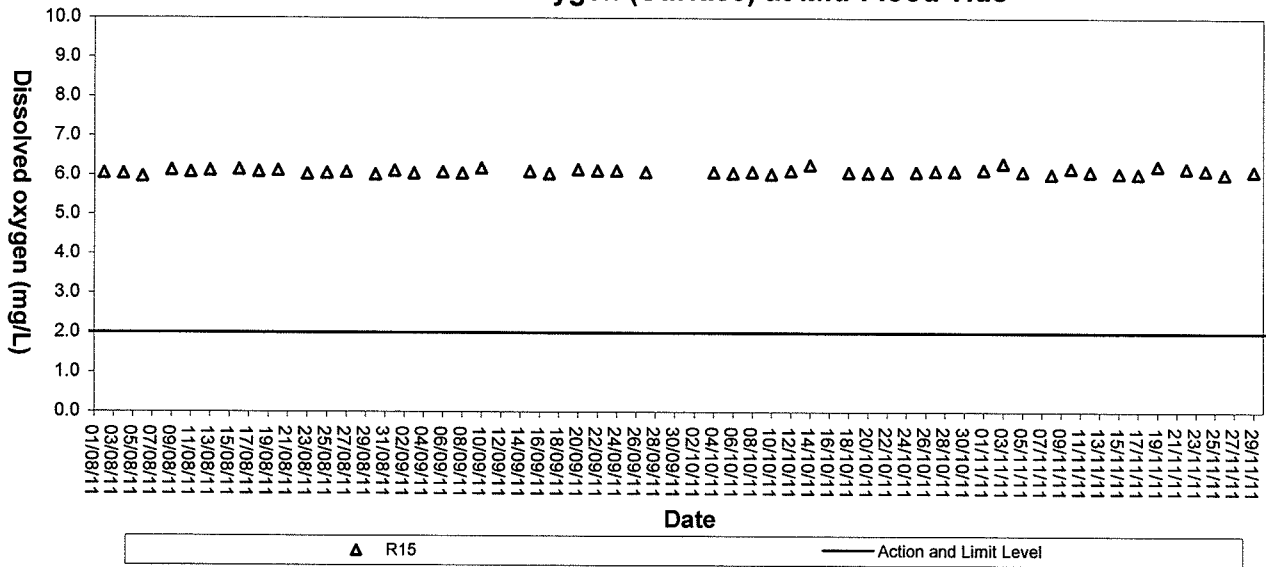


### Dissolved Oxygen (Surface) at Mid-Ebb Tide





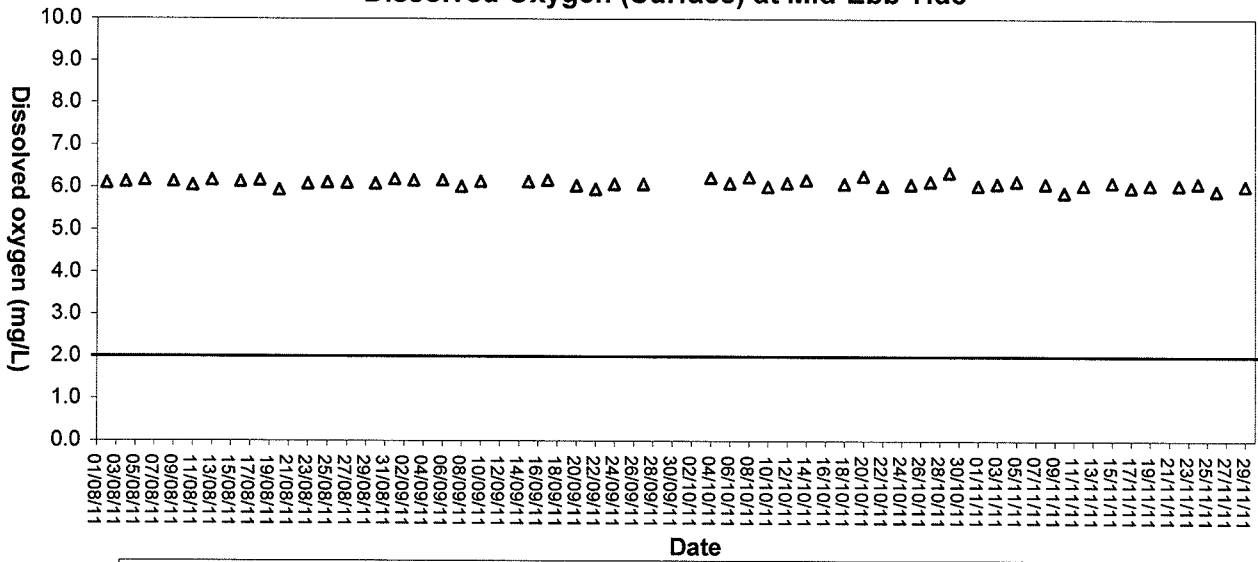
### Dissolved Oxygen (Surface) at Mid-Flood Tide



▲ R15

— Action and Limit Level

### Dissolved Oxygen (Surface) at Mid-Ebb Tide

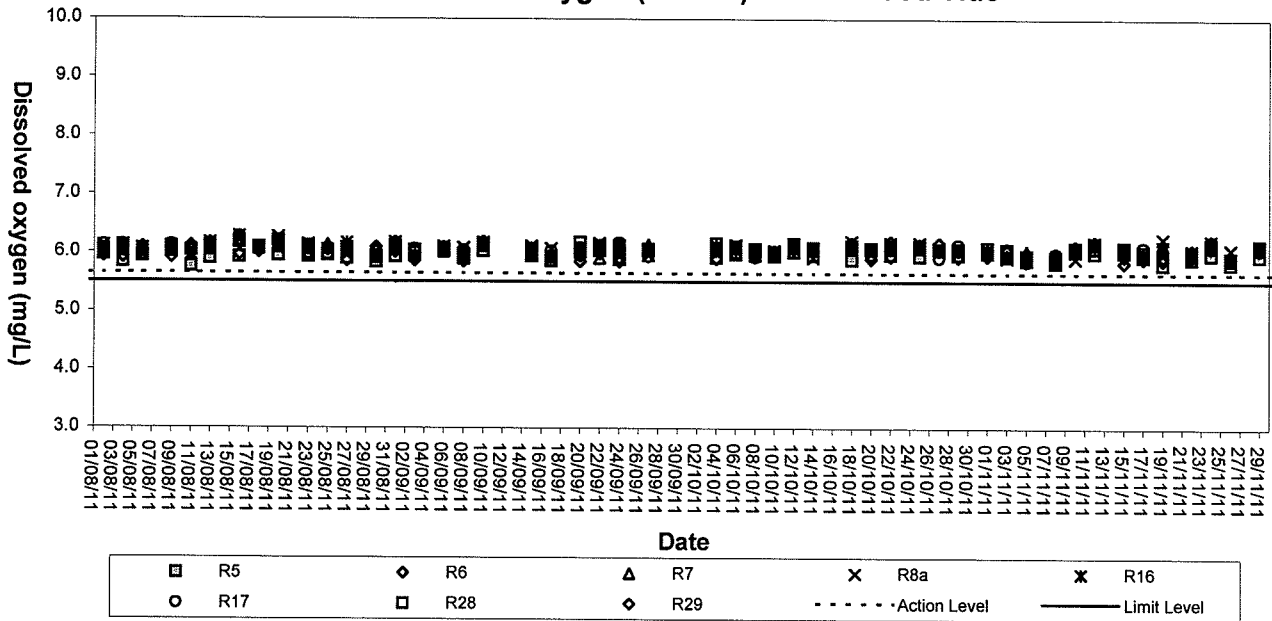


▲ R15

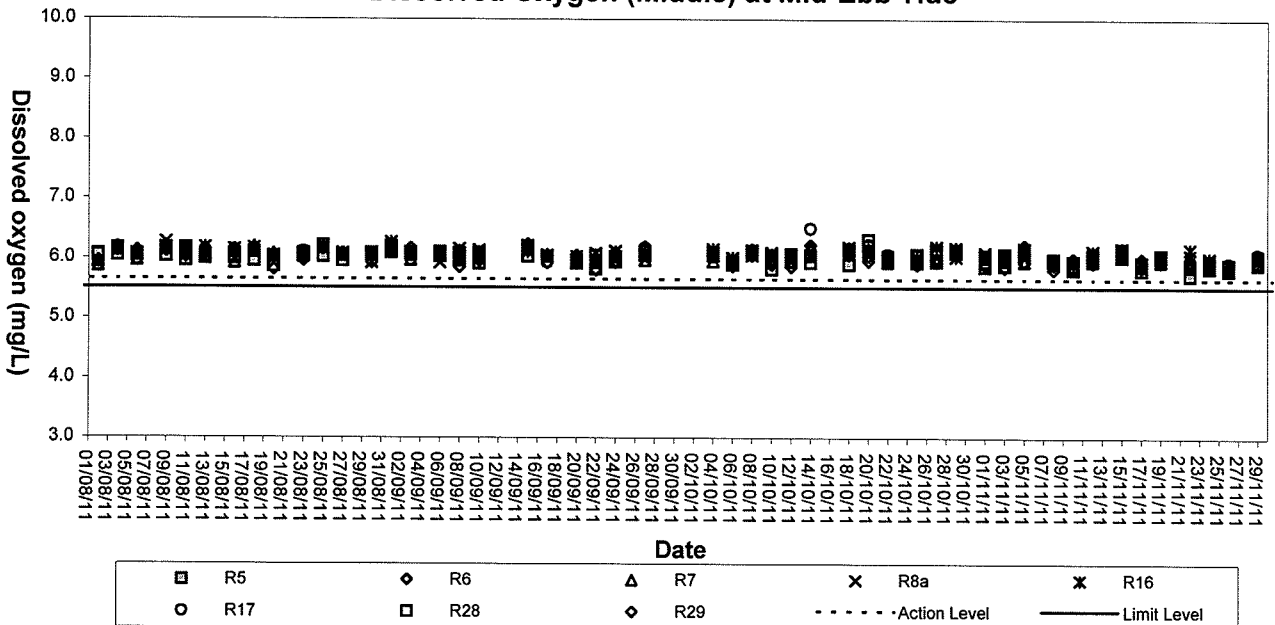
— Action and Limit Level



### Dissolved Oxygen (Middle) at Mid-Flood Tide

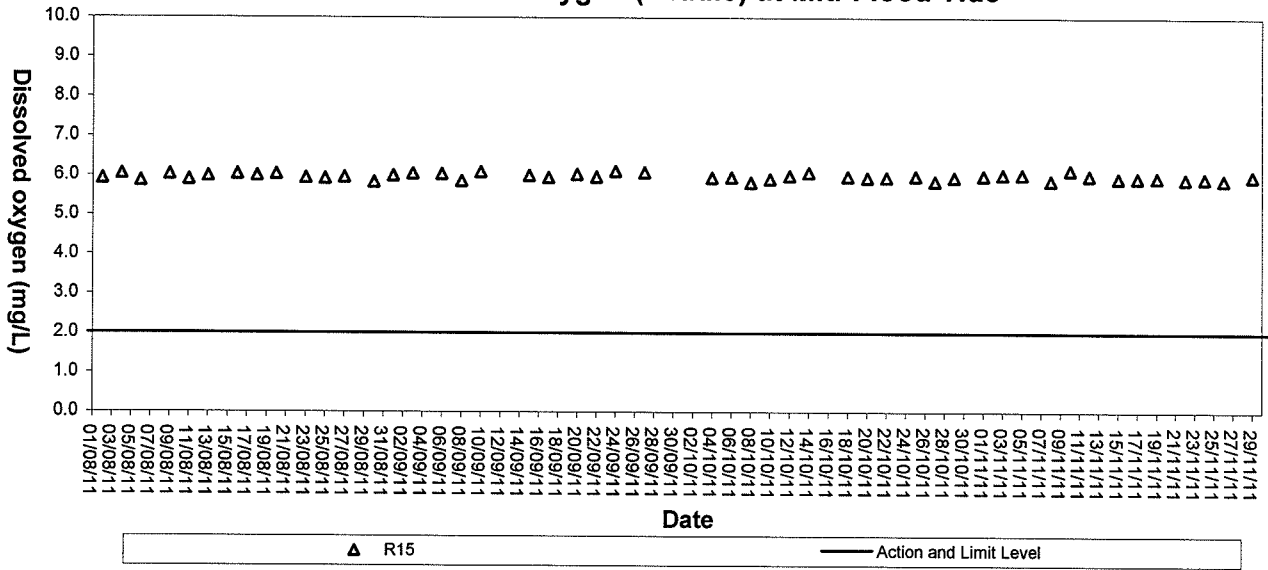


### Dissolved Oxygen (Middle) at Mid-Ebb Tide

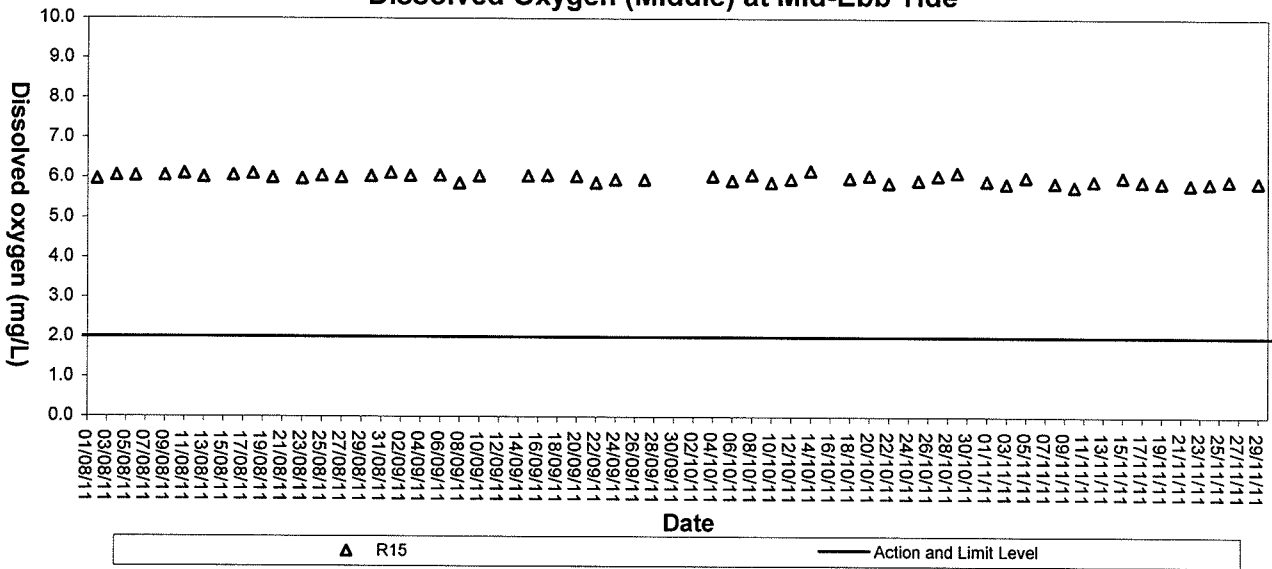




### Dissolved Oxygen (Middle) at Mid-Flood Tide



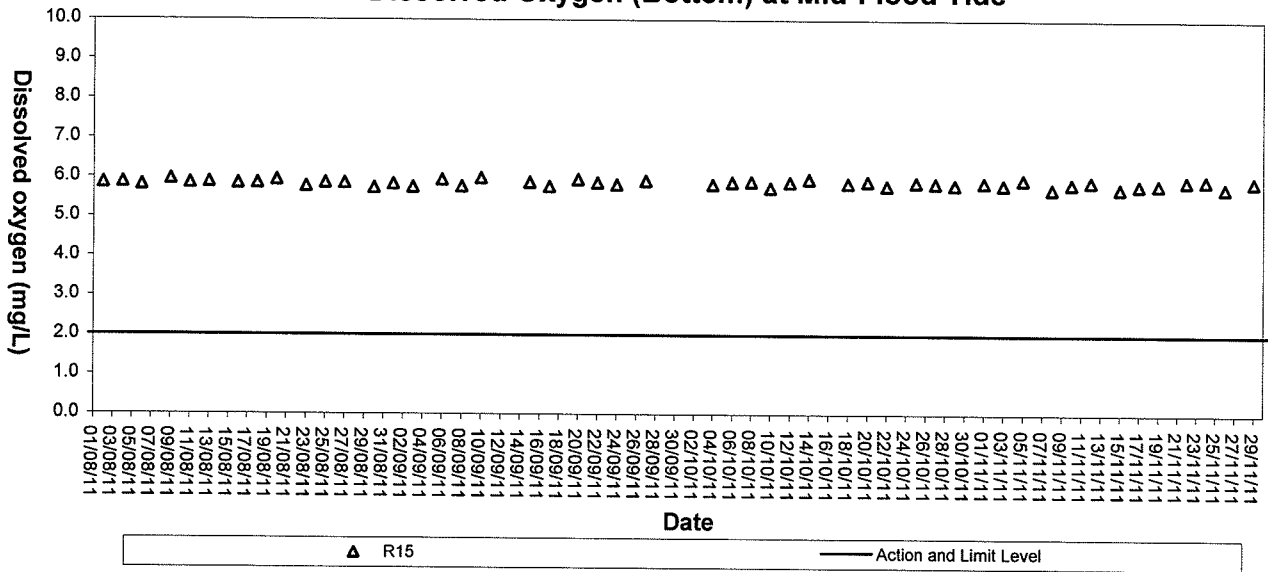
### Dissolved Oxygen (Middle) at Mid-Ebb Tide







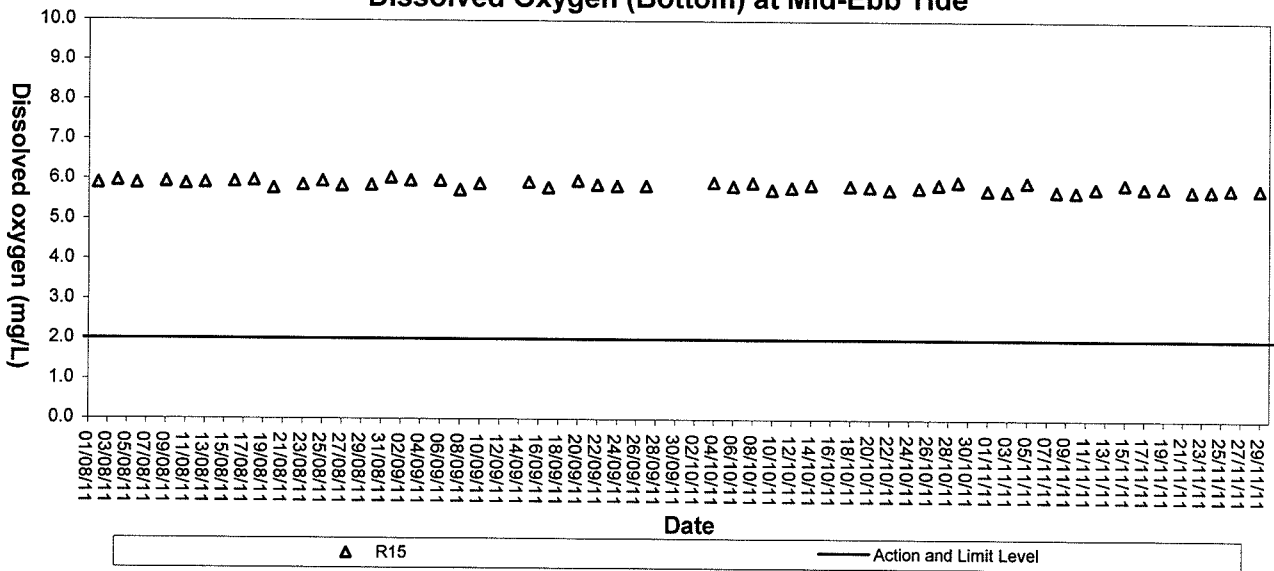
### Dissolved Oxygen (Bottom) at Mid-Flood Tide



▲ R15

— Action and Limit Level

### Dissolved Oxygen (Bottom) at Mid-Ebb Tide



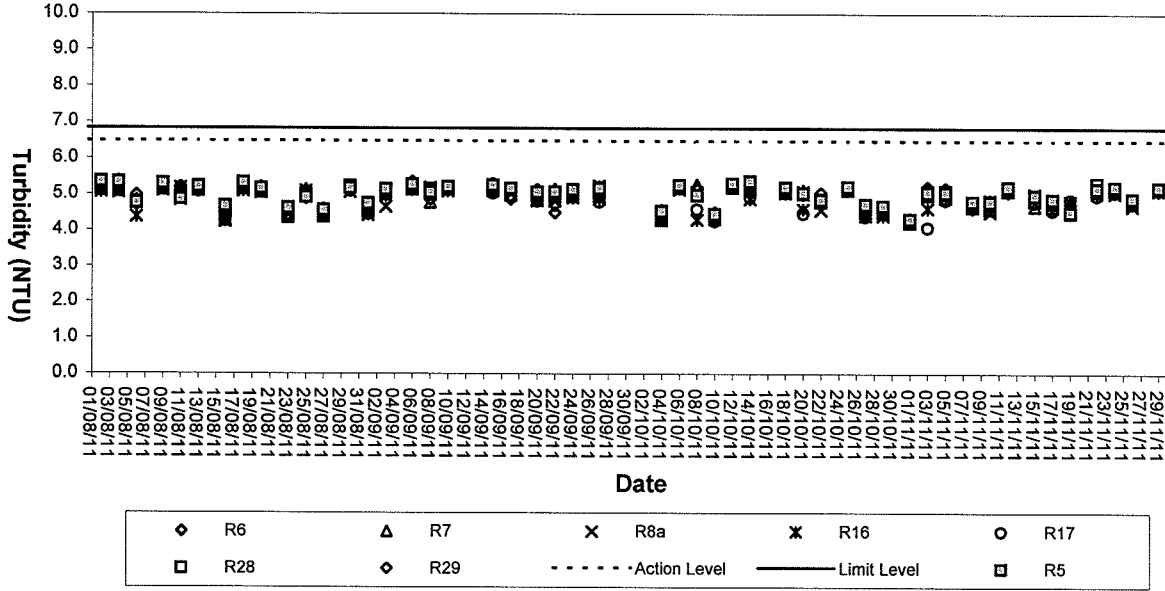
▲ R15

— Action and Limit Level

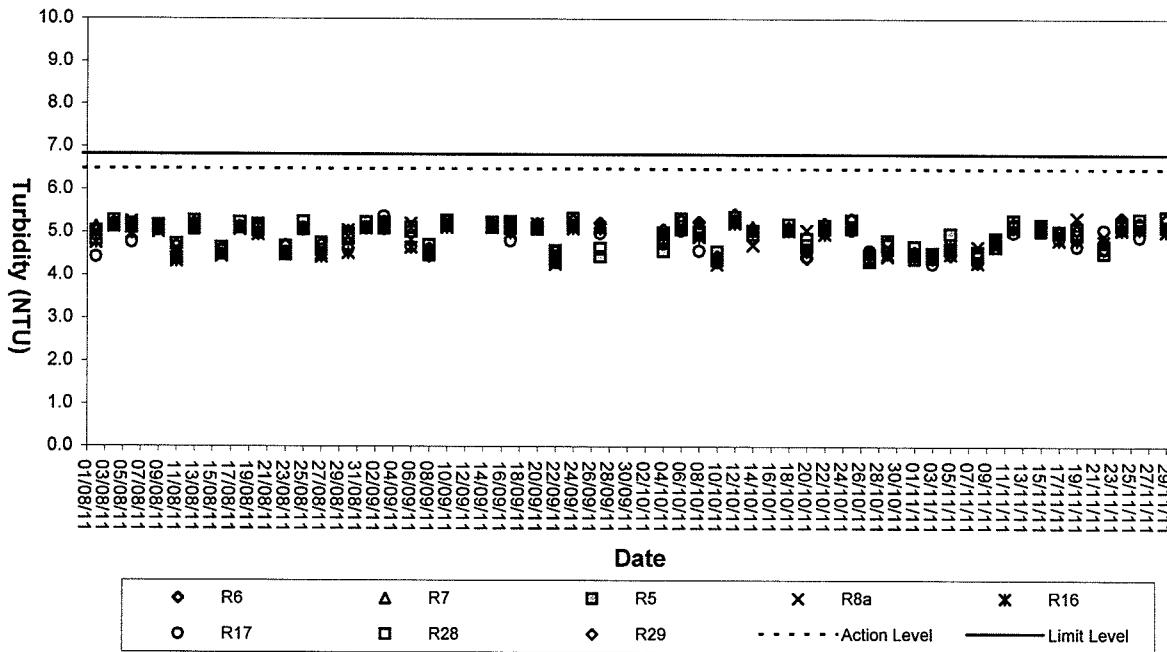




**Turbidity (Depth-average) at Mid-Flood Tide**

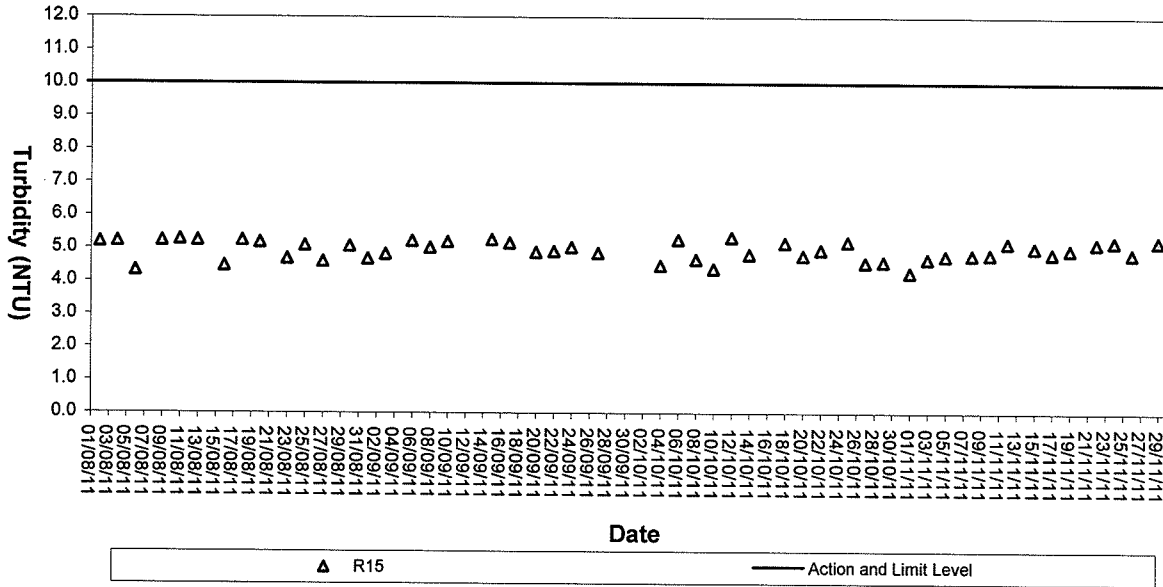


**Turbidity (Depth-average) at Mid-Ebb Tide**

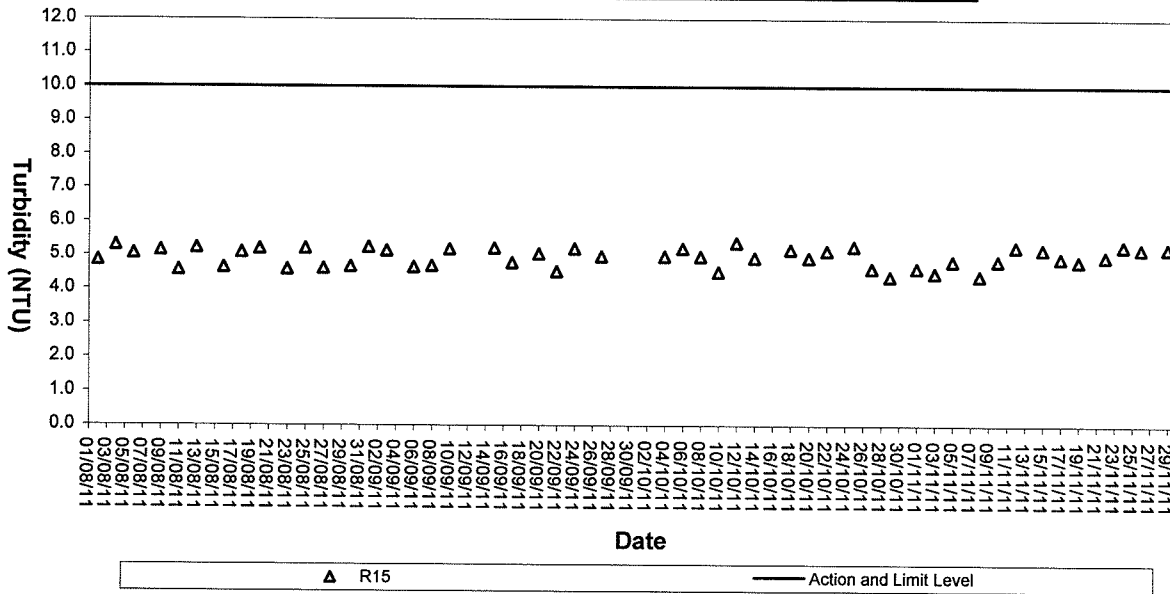




### Turbidity (Depth-average) of R15 at Mid-Flood Tide

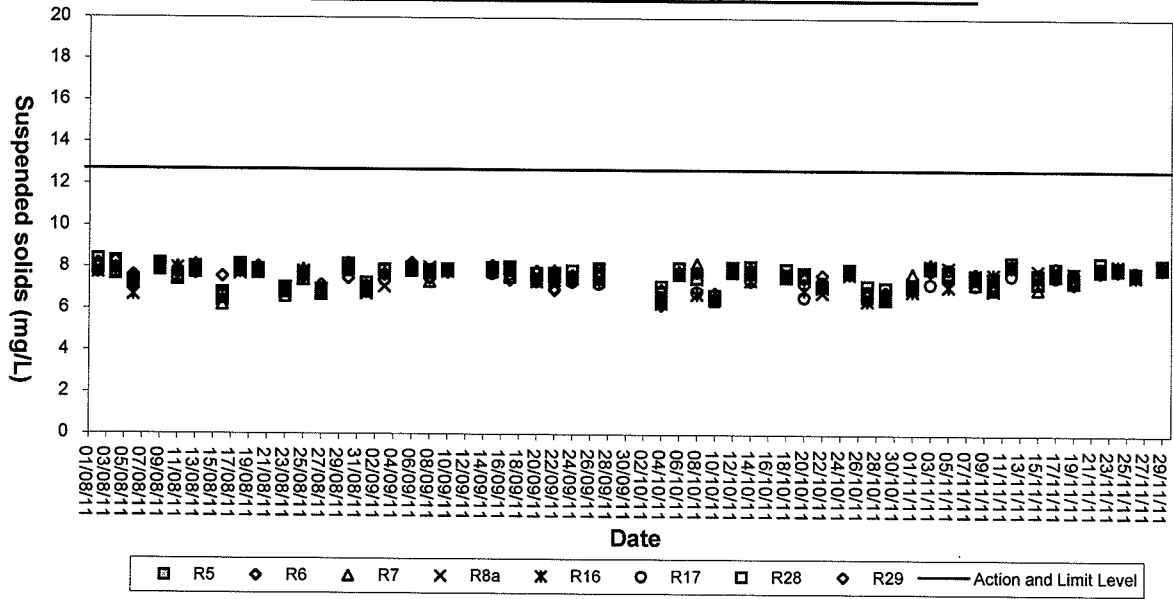


### Turbidity (Depth-average) of R15 at Mid-Ebb Tide

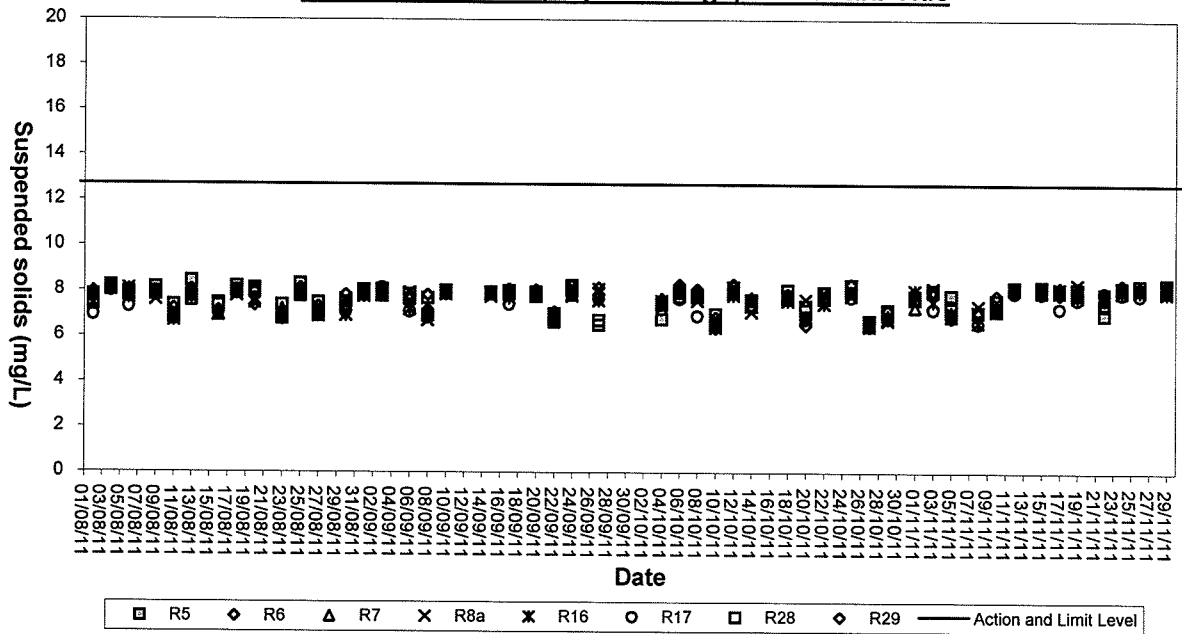




### Suspended solids (Depth-average) at Mid-Flood Tide

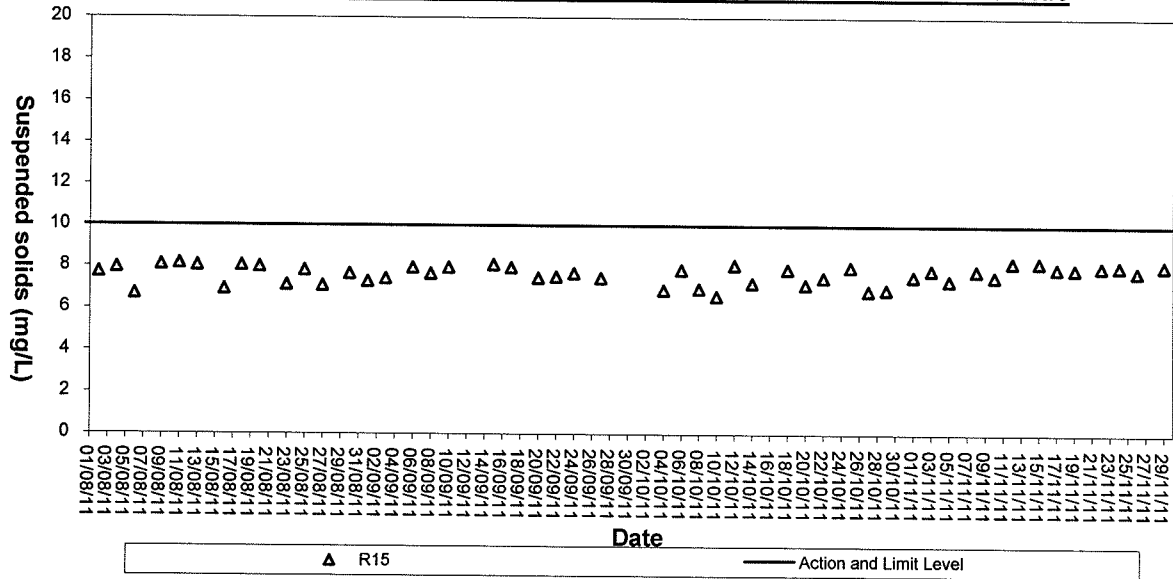


### Suspended Solids (Depth-average) at Mid-Ebb Tide

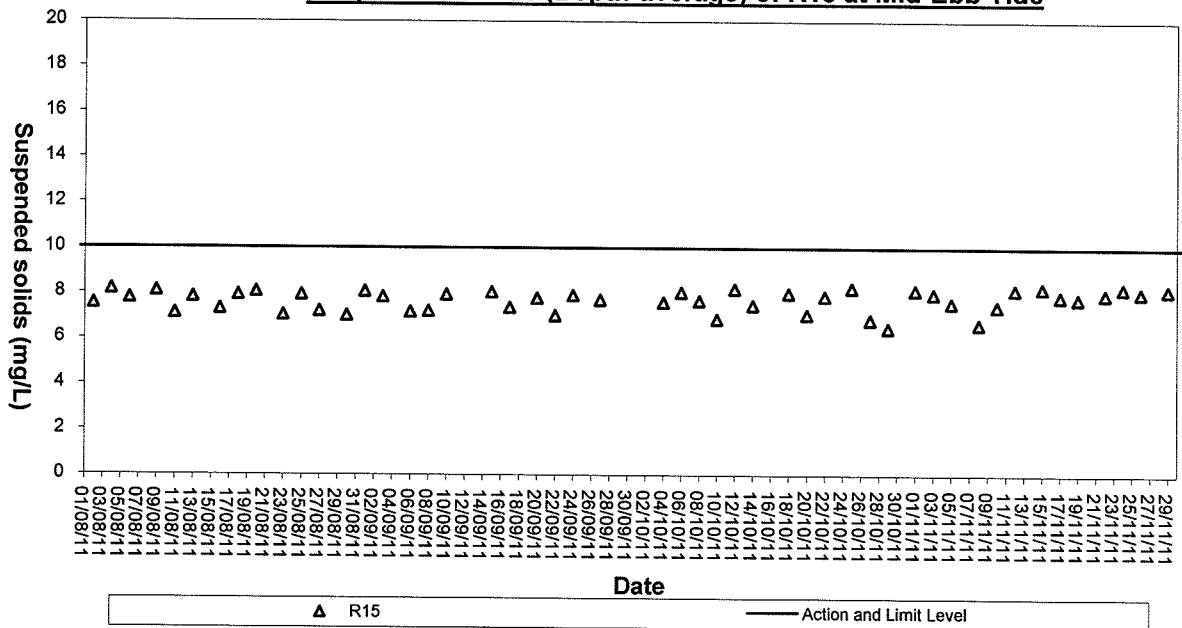




### Suspended solids (Depth-average) of R15 at Mid-Flood Tide



### 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 @
01/11/11	93.2	R5FS	0.0	R8FS	107.8
	105.1	R8FM	0.0	R17FM	104.2
	106.5	R17FB	6.5	C1FB	92.5
	104.1	C2FS	0.0	C4FB	104.0
	98.8	R5ES	0.0	R8ES	97.9
	102.9	R8EM	6.5	R17EM	98.1
	101.6	R17EB	0.0	C1EB	104.1
	107.4	C2ES	0.0	C4EB	95.9
03/11/11	93.4	R5FS	0.0	R8FS	105.9
	105.9	R8FM	6.1	R17FM	96.1
	105.6	R17FB	0.0	C1FB	100.0
	107.0	C2FS	0.0	C4FB	94.3
	103.3	R5ES	6.1	R8ES	92.3
	104.1	R8EM	0.0	R17EM	103.8
	104.0	R17EB	6.5	C1EB	98.0
	100.0	C2ES	0.0	C4EB	102.1
05/11/11	100.2	R5FS	0.0	R8FS	103.9
	107.1	R8FM	0.0	R17FM	105.7
	101.6	R17FB	0.0	C1FB	107.7
	102.7	C2FS	6.5	C4FB	102.0
	100.4	R5ES	0.0	R8ES	103.9
	100.2	R8EM	0.0	R17EM	103.9
	105.9	R17EB	6.5	C1EB	102.1
	99.2	C2ES	0.0	C4EB	96.1
08/11/11	103.9	R5FS	0.0	R8FS	98.1
	95.9	R8FM	0.0	R17FM	95.8
	107.9	R17FB	7.4	C1FB	101.9
	102.1	C2FS	0.0	C4FB	100.0
	95.8	R5ES	6.9	R8ES	98.0
	97.5	R8EM	0.0	R17EM	90.4
	94.4	R17EB	0.0	C1EB	91.7
	103.6	C2ES	0.0	C4EB	93.9
10/11/11	94.5	R5FS	6.9	R8FS	94.3
	92.9	R8FM	0.0	R17FM	103.9
	103.5	R17FB	0.0	C1FB	98.1
	107.4	C2FS	7.4	C4FB	98.1
	104.8	R5ES	0.0	R8ES	95.8
	101.7	R8EM	0.0	R17EM	98.0
	102.8	R17EB	6.1	C1EB	94.0
	97.8	C2ES	0.0	C4EB	105.7
12/11/11	101.9	R5FS	0.0	R8FS	103.8
	107.5	R8FM	6.1	R17FM	104.0
	106.8	R17FB	0.0	C1FB	98.0
	106.0	C2FS	0.0	C4FB	105.7
	97.1	R5ES	0.0	R8ES	105.7
	95.5	R8EM	0.0	R17EM	98.0
	93.0	R17EB	0.0	C1EB	105.8
	97.5	C2ES	0.0	C4EB	95.9

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 @
15/11/11	96.2	R5FS	0.0	R8FS	108.0
	101.4	R8FM	0.0	R17FM	94.0
	92.3	R17FB	6.1	C1FB	104.3
	100.4	C2FS	0.0	C4FB	101.9
	101.2	R5ES	6.1	R8ES	100.0
	97.7	R8EM	0.0	R17EM	95.9
	104.5	R17EB	0.0	C1EB	98.0
	104.8	C2ES	6.1	C4EB	92.3
17/11/11	99.8	R5FS	0.0	R8FS	104.1
	103.6	R8FM	6.5	R17FM	102.0
	98.0	R17FB	0.0	C1FB	96.0
	100.4	C2FS	0.0	C4FB	96.2
	98.6	R5ES	0.0	R8ES	92.0
	93.7	R8EM	0.0	R17EM	102.1
	97.0	R17EB	6.5	C1EB	107.5
	94.4	C2ES	6.5	C4EB	96.1
19/11/11	92.5	R5FS	0.0	R8FS	108.3
	104.6	R8FM	0.0	R17FM	92.5
	98.0	R17FB	6.1	C1FB	102.0
	97.0	C2FS	6.5	C4FB	103.9
	101.2	R5ES	0.0	R8ES	96.0
	106.3	R8EM	6.1	R17EM	96.0
	98.3	R17EB	0.0	C1EB	100.0
	100.0	C2ES	0.0	C4EB	98.0
22/11/11	103.0	R5FS	0.0	R8FS	95.7
	103.6	R8FM	6.1	R17FM	100.0
	103.7	R17FB	0.0	C1FB	101.9
	101.0	C2FS	6.1	C4FB	96.1
	100.4	R5ES	7.4	R8ES	100.0
	101.9	R8EM	0.0	R17EM	107.7
	104.6	R17EB	6.1	C1EB	97.9
	94.8	C2ES	6.5	C4EB	100.0
24/11/11	92.5	R5FS	0.0	R8FS	98.0
	92.3	R8FM	6.1	R17FM	105.9
	93.3	R17FB	6.1	C1FB	100.0
	99.2	C2FS	0.0	C4FB	94.6
	99.8	R5ES	0.0	R8ES	104.3
	107.5	R8EM	6.1	R17EM	93.9
	104.5	R17EB	0.0	C1EB	104.3
	96.3	C2ES	0.0	C4EB	94.1
26/11/11	104.3	R5FS	0.0	R8FS	95.9
	101.9	R8FM	0.0	R17FM	104.3
	94.3	R17FB	6.5	C1FB	94.2
	106.4	C2FS	0.0	C4FB	95.7
	98.2	R5ES	0.0	R8ES	92.5
	105.7	R8EM	6.1	R17EM	95.8
	103.0	R17EB	6.1	C1EB	98.1
	100.4	C2ES	0.0	C4EB	105.7

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 @
29/11/11	107.4	R5FS	0.0	R8FS	95.9
	93.7	R8FM	6.1	R17FM	94.1
	101.6	R17FB	0.0	C1FB	107.8
	94.3	C2FS	0.0	C4FB	106.0
	94.5	R5ES	0.0	R8ES	100.0
	105.5	R8EM	0.0	R17EM	98.0
	95.3	R17EB	6.1	C1EB	100.0
	93.8	C2ES	0.0	C4EB	96.2

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%.





## **Appendix D**

### **Event-Action Plans**



## Event and Action Plan for Construction Noise

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



## Event and Action Plan for Water Quality for Construction Phase

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



## Event and Action Plan for Water Quality for Construction Phase

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



## **Appendix E**

### **Work Programme**

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
	General Information							
	Key Dates		1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
SI-1010	Approval & Consent - XP, TTA, MS & Temp Works.	180	07SEP09 A	05MAR10	07SEP09 A	06DEC09 A	218d	0
SI-1020	Approval & Consent - XP, TTA, MS & Temp Works.	120	01DEC09 A	16MAR10	01DEC09 A	25APR10	40d	0
SI-1030	Portion H2 Cycle Track & Footpath Proposal	60	07SEP09 A	08OCT09 A	07SEP09 A	08OCT09 A	0	0
SI-1040	Portion H2 Diversion Route For Cycle Track	90	07SEP09 A	17FEB10	07SEP09 A	08OCT12	962d	0
SI-1050	Portion H2 Submission For Hoarding Mural Design	30	18FEB10	19MAR10	07OCT10	05NOV12	962d	0
SI-1060	Portion H2 Set Up For Hoarding Approved Design	120	05OCT09 A	14APR10	05OCT09 A	14APR10	41d	0
SI-2010	Initial & Utilities Survey (Except E2 & K)	45	16FEB12	31MAR12	01NOV11	15DEC11	-107d	0
SI-2020	Completion of Section 1 Works	0	15DEC11	15DEC11	15DEC11	15DEC11	0	0
SI-3010	MTRCL Consent For Works Commencement	180	07SEP09 A	05MAR10	07SEP09 A	14APR10	40d	0
SI-3020	MTRCL Structure Stability Monitoring	270	28MAY10	21FEB11	05JAN11	01OCT11	228d	0
SI-3030	Portion C1 Pipe Works CH195.0-237.5 (O)	90	24JUN10	21SEP10	16MAY11	16JUN11	266d	70d
SI-3030A1	Preparation & Submission of Risk Assessment	40	22FEB10	02APR10	02NOV10	11DEC10	253d	0
SI-3030A2	Preparation & Submission of Method Statement	40	22FEB10	02APR10	02NOV10	11DEC10	253d	0
SI-3030B1	Excavation & Shoring	80	28MAY10	15AUG10	12DEC10	01MAY11	253d	55d
SI-3030B2	Pipe Laying & Welding	50	17JUL10	04SEP10	31JAN11	21MAY11	198d	0
SI-3030B3	Backfilling & Reinstatement	10	05SEP10	14SEP10	22MAY11	31MAY11	198d	0
SI-3040A2	Portion C1 Trough Construction CH237.5-290.0	60	06MAR10	04MAY10	15APR10	13JUN10	40d	0
SI-3040A3	Preparation & Submission of Risk Assessment	28	17JUL10	13AUG10	15MAR11	11APR11	241d	0
SI-3040A4	Preparation & Submission of Method Statement	28	17JUL10	13AUG10	15MAR11	11APR11	241d	0
SI-3040B1	Installation of Settlement Marker	3	31JUL10	02AUG10	31MAY11	31MAY11	241d	0
SI-3040B2	Excavation & Shoring For Pipe Trough (Stage 1)	15	15SEP10	29SEP10	01APR11	15APR11	198d	0
SI-3040B3	Formation & Blinding For Trough	3	10SEP10	02OCT10	16APR11	18APR11	198d	0
SI-3040B4	Formwork & Reinforcement For Trough	3	10OCT10	12OCT10	19APR11	28APR11	198d	0
SI-3040B5	Concrete Surrounding For Trough	3	13OCT10	15OCT10	29APR11	01MAY11	198d	0
SI-3050	Portion C1 Pipe Works CH237.5-290 (PT)	10	05MAY10	23JUN10	22DEC10	09FEB11	198d	0
SI-3050B1	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	17MAY11	26MAY11	198d	0
SI-3050B2	Concrete Surrounding for installed Watermain	5	16NOV10	15NOV10	02JUN11	01JUN11	198d	0
SI-3050B3	Backfilling of Pipe Trough	5	16NOV10	20NOV10	02JUN11	02JUN11	198d	0
SI-3050B4	Backfilling & Reinstatement	10	21NOV10	30NOV10	07JUN11	16JUN11	198d	0
SI-3060	Portion C1 Pipe Works CH290.0-325.5 (O)	83	01DEC10	21FEB11	17JUN11	07SEP11	198d	0

3 Months Rolling Program (Sept 2011)

Wo Hing - Penta-Ocean Joint Venture

Enrbar  
Progress bar  
Critical bar  
Start time  
Finish milestone post

Act ID	Description	Orig Start		Early Start		Late Start		Total Float		2011											
		Start	Finish	Start	Finish	Start	Finish	Start	Finish	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
SI-4020	Area C1 Portional Pipe Testing	30/12/2010	23/01/2011	23/01/2011	02/02/2011	02/02/2011	31/01/2011	22/21	32/20												
SI-4020	Portion E1A Pipe Works CH387.5-476.9 (O)	18/03/2010	12/09/2010	12/09/2010	24/10/2010	24/10/2010	19/02/2011	16/01	16/01												
SI-4020A2	Preparation & Submission of Risk Assessment	4/03/2010	11/04/2010	11/04/2010	10/05/2010	10/05/2010	18/09/2010	16/01	16/01												
SI-4020A3	Preparation & Submission of Method Statement	4/03/2010	11/04/2010	11/04/2010	10/05/2010	10/05/2010	18/09/2010	16/01	16/01												
SI-4020A4	Preparation & Submission of Temp. Works	4/03/2010	11/04/2010	11/04/2010	10/05/2010	10/05/2010	18/09/2010	16/01	16/01												
SI-4020B1	Stage 1 U/D & Trial Pit (CH380-420)	52/03/2010	23/06/2010	23/06/2010	10/07/2010	10/07/2010	30/10/2010	16/01	16/01												
SI-4020B2	Fabrication of Access Shaft	30/12/2010	12/09/2010	12/09/2010	19/01/2011	19/01/2011	20/04/2011	16/01	16/01												
SI-4020B3	Excavation & Support for Trenchless Works	45/12/2010	25/01/2011	25/01/2011	01/02/2011	01/02/2011	04/04/2011	16/01	16/01												
SI-4020B4	Pipe Laying & Joint Connection	20/26/2010	15/02/2011	15/02/2011	05/04/2011	05/04/2011	24/04/2011	16/01	16/01												
SI-4020B5	Backfilling & Reinstatement	7/10/2010	22/02/2011	22/02/2011	25/04/2011	25/04/2011	31/05/2011	16/01	16/01												
SI-4020C1	Existing Trees Relocation	4/19/2010	22/06/2010	22/06/2010	03/07/2010	03/07/2010	06/06/2011	28/81	28/81												
SI-4020C11	Stage 2 U/D & Trial Pit (CH420-CH480)	10/23/2010	10/07/2010	10/07/2010	07/08/2010	07/08/2010	16/06/2011	28/81	28/81												
SI-4020C2	Excavation & Shoring	50/02/2010	21/07/2010	21/07/2010	17/08/2010	17/08/2010	05/09/2011	28/81	28/81												
SI-4020C3	Pipe Laying & Connection (Welding)	25/22/2010	15/08/2010	15/08/2010	06/09/2010	06/09/2010	30/09/2011	28/81	28/81												
SI-4020C4	Backfilling & Reinstatement	7/16/2010	22/08/2010	22/08/2010	31/08/2010	31/08/2010	06/09/2011	28/81	28/81												
SI-4020D1	Stage 3 U/D & Trial Pit (CH480-576.9)	6/01/2011	06/09/2011	06/09/2011	07/09/2011	07/09/2011	06/09/2011	0	0												
SI-4020D2	Excavation & Shoring	92/07/2011	06/09/2011	06/09/2011	07/09/2011	07/09/2011	06/09/2011	0	0												
SI-4020D3	Pipe Laying & Connection (Welding)	25/07/2011	10/07/2011	10/07/2011	07/08/2011	07/08/2011	01/07/2011	0	0												
SI-4020D4	Backfilling & Reinstatement	16/02/2011	17/07/2011	17/07/2011	02/07/2011	02/07/2011	17/07/2011	0	0												
SI-4030	Portion E1A Pipe Works CH576.9-585.9 (TL-B)	108/23/2011	10/06/2011	10/06/2011	02/07/2011	02/07/2011	17/07/2011	129/2	129/2												
SI-4030B1	Fabrication of Access Shaft	55/27/2011	20/06/2011	20/06/2011	12/07/2011	12/07/2011	05/08/2011	166/0	166/0												
SI-4030B2	Excavation & Support for Trenchless Works	50/21/2011	09/07/2011	09/07/2011	09/07/2011	09/07/2011	24/08/2011	166/0	166/0												
SI-4030B3	Pipe Laying & Joint Connection	15/10/2011	24/08/2011	24/08/2011	09/07/2011	09/07/2011	09/07/2011	166/0	166/0												
SI-4030B4	Backfilling & Reinstatement	6/25/2011	01/09/2011	01/09/2011	10/07/2011	10/07/2011	17/07/2011	258/0	258/0												
SI-4040	Area E1A Portional Pipe Testing	14/10/2011	31/07/2011	31/07/2011	18/07/2011	18/07/2011	31/07/2011	0	107/0												
SI-4040	Portion E1B Diversion of Existing Storm Drain	50/13/2010	01/10/2010	01/10/2010	06/05/2011	06/05/2011	24/06/2011	235/0	235/0												
SI-4040A1	Trees Transplanting (LCS Consent Required)	5/09/2010	30/04/2011	30/04/2011	31/01/2011	31/01/2011	31/01/2011	139/0	139/0												
SI-4040A2	Temporary Relocation of Existing Storm Drain	60/14/2010	12/10/2010	12/10/2010	31/01/2011	31/01/2011	31/01/2011	139/0	139/0												
SI-4040A3	Temporary Relocation of Existing Storm Drain	60/14/2010	12/10/2010	12/10/2010	31/01/2011	31/01/2011	31/01/2011	139/0	139/0												
SI-4040A4	Excavation for Irrigation Pipe Perm. Diversion	20/28/2010	18/08/2011	18/08/2011	24/08/2011	24/08/2011	12/08/2011	-97/0	-97/0												
SI-4040A5	Irrigation Pipe Installation	10/19/2010	28/08/2011	28/08/2011	28/08/2011	28/08/2011	07/07/2011	-97/0	-97/0												
SI-4040B1	Excavation for Storm Drain Diversion	29/29/2010	18/08/2011	18/08/2011	24/08/2011	24/08/2011	12/08/2011	-97/0	-97/0												
SI-4040B2	Backfilling & Reinstatement	25/19/2010	12/08/2011	12/08/2011	08/07/2011	08/07/2011	07/07/2011	-97/0	-97/0												
SI-4040B3	Excavation & Shoring for Pipe Trough (Stage 1)	11/15/02/2011	22/06/2011	22/06/2011	08/07/2011	08/07/2011	17/07/2011	-97/0	-97/0												
SI-4040B4	Excavation & Shoring for Pipe Trough (Stage 1)	40/13/06/2011	22/06/2011	22/06/2011	01/04/2011	01/04/2011	10/04/2011	139/0	139/0												
SI-4040B5	Pipe Laying & Support Casting	25/15/2010	08/06/2011	08/06/2011	25/06/2011	25/06/2011	09/07/2011	184/0	281/0												
SI-4040B6	Backfilling & Reinstatement	20/09/2010	28/06/2011	28/06/2011	04/07/2011	04/07/2011	23/07/2011	-97/0	-97/0												
SI-4040B7	Preparation & Submission of Risk Assessment	26/19/2010	18/08/2010	18/08/2010	03/09/2010	03/09/2010	23/07/2011	-107/0	-107/0												
SI-4040B8	Submission & Approval of Method Statement	28/19/2010	18/08/2010	18/08/2010	02/07/2010	02/07/2010	29/07/2010	225/0	332/0												
SI-4040B9	Installation & Connection of DN600A SWM	8/14/2011	21/08/2010	21/08/2010	30/07/2010	30/07/2010	06/08/2010	-107/0	-107/0												
SI-4040C1	Support & Fixing of DN600A SWM	3/22/2011	24/08/2010	24/08/2010	07/09/2010	07/09/2010	09/08/2010	-107/0	-107/0												
SI-4040C2	Portion E1B DN600A SWM Works CH0.0-7.1 (O)	30/24/2010	23/08/2010	23/08/2010	23/08/2010	23/08/2010	21/08/2010	182/0	182/0												
SI-4040C3	Main Laying & Connection With Trough Portion	8/03/2011	10/04/2011	10/04/2011	18/09/2010	18/09/2010	15/09/2010	-107/0	-107/0												
SI-4040C4	Excavation & Shoring	120/11/2011	22/08/2010	22/08/2010	24/08/2010	24/08/2010	21/08/2010	182/0	182/0												
SI-4040C5	Excavation & Shoring	30/24/2010	23/08/2010	23/08/2010	24/08/2010	24/08/2010	24/08/2010	-107/0	-107/0												
SI-4040C6	Excavation & Shoring	4/09/2011	12/09/2010	12/09/2010	24/08/2010	24/08/2010	27/08/2010	-107/0	-107/0												
SI-4040C7	Excavation & Shoring	30/23/2010	22/08/2010	22/08/2010	22/08/2010	22/08/2010	20/08/2010	182/0	182/0												
SI-4040C8	Excavation & Shoring	14/29/2010	12/09/2010	12/09/2010	27/08/2010	27/08/2010	20/08/2010	-107/0	-107/0												
SI-4040C9	Excavation & Shoring	2/13/2011	14/09/2010	14/09/2010	29/08/2010	29/08/2010	29/08/2010	-107/0	-107/0												
SI-4040D1	Excavation & Shoring	60/15/2010	20/09/2010	20/09/2010	30/08/2010	30/08/2010	04/09/2010	-107/0	-107/0												
SI-4040D2	Excavation & Shoring	40/23/2010	31/08/2010	31/08/2010	11/09/2010	11/09/2010	19/09/2010	139/0	139/0												
SI-4040D3	Excavation & Shoring for Pipe Trough (Stage 2)	15/01/2011	15/09/2011	15/09/2011	20/06/2011	20/06/2011	04/07/2011	139/0	139/0												

Early bar  
 Process bar  
 Critical bar  
 Summary bar  
 Start/finish point  
 Finish milestone point

**3 Months Rolling Program (Sept 2011)**

**Wo Hing - Penta-Ocean Joint Venture**

SRI:CGE  
 FINISH DATE: 05/NOV/12  
 DATE: 04/JAN/10  
 RUN DATE: 23/SEP/11  
 PAGE NUMBER: 2A  
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At ID	Description	Early Start		Early Finish		Late Start	Late Finish	Free Float	
		Orig Dur	Start	End	End			Total Float	Float
SI-44450	Portion E1B Pipe Works CH650.5-677.4 (PT)	20	11OCT10	09DEC10	17APR11	09JUN11	182d	0	182d
SI-44500B1	Pipe Laying & Reinforcement	25	16FEB11	12MAR11	05JUL11	29JUL11	139d	0	139d
SI-44500B2	Backfilling & Reinstatement	20	13MAR11	01APR11	30JUL11	18AUG11	139d	0	139d
SI-44600	Portion E1B Pipe Works CH677.4-695.9 (O)	40	22FEB11	02APR11	08SEP11	17OCT11	193d	0	193d
SI-44600B1	Portion E1B Pipe Works CH677.4-695.9 (O)	30	02MAY11	13MAY11	18SEP11	17OCT11	139d	0	139d
SI-44700	Portion E1B Pipe Works CH695.9-698.5 (UC)	20	10DEC10	29DEC10	10JUN11	29JUN11	182d	54d	54d
SI-44700B1	Portion E1B Pipe Works CH695.9-698.5 (UC)	30	02APR11	11MAY11	17SEP11	11MAY11	139d	0	139d
SI-44800	Portion E1B DN600B SWM Works CH0.0-7.1	30	23JUL10	21AUG10	10FEB11	11MAR11	202d	0	202d
SI-44800B1	Portion E1B DN600B SWM Works CH0.0-7.1	30	25SEP11	24OCT11	18SEP11	17OCT11	7d	90d	90d
SI-44900	Portion E2 DN800B SWM Works CH7.1-63.7	50	23JUL10	10SEP10	21JAN11	11MAR11	182d	0	182d
SI-44900B1	Portion E2 DN800B SWM Works CH7.1-63.7	65	21JUL11	24SEP11	05APR11	09JUN11	-107d	0	-107d
SI-45000	Portion E2 DN600B SWM Works 63.7-67.9 (O)	30	11SEP10	10OCT10	12MAR11	10APR11	182d	0	182d
SI-45000B1	Portion E2 DN600B SWM Works 63.7-67.9 (O)	20	25SEP11	14OCT11	10JUN11	29JUN11	-107d	0	-107d
SI-45100	Area E1B+E2 SWM Portional Pipe Testing	14	03APR11	16APR11	18OCT11	31OCT11	139d	305d	305d
SI-45100B1	Area E1B+E2 SWM Portional Pipe Testing	14	23JAN12	05FEB12	18OCT11	31OCT11	-37d	10d	10d
Portion E1C - E1D									
SI-47100	Portion E1C DN300 FWM Works CH0.0-50.0	50	05MAR10	29APR10	27SEP10	15NOV10	206d	0	206d
SI-47100B1	Submission & Approval of Risk Assessment	28	19FEB10	19MAR10	13SEP10	10OCT10	266d	0	266d
SI-47100B2	Submission & Approval of Method Statement	28	19FEB10	19MAR10	13SEP10	10OCT10	206d	59d	59d
SI-47100B3	Submission & Approval of Temp. Work	28	19FEB10	19MAR10	13SEP10	10OCT10	206d	59d	59d
SI-47100B4	Installation & Connection of DN300 FWM	50	17MAY10*	05JUL10	11OCT10	29NOV10	147d	0	147d
SI-47100B5	Support & Fixing of DN300 FWM	40	06JUL10	14AUG10	30NOV10	08JAN11	147d	0	147d
SI-47200	E1C DN300 FWM Diversions Main Testing	8	24APR10	01MAY10	03APR11	10APR11	344d	0	344d
SI-47200B1	E1C Exis DN300 FWM Diversion & Demolition	8	15AUG10	22AUG10	09JAN11	16JAN11	147d	0	147d
SI-47300	E1C Exis DN300 FWM Diversion & Demolition	30	02MAY10	31MAY10	11APR11	10MAY11	344d	0	344d
SI-47300B1	Issuance of Temp. Water Supply Suspension Notice	14	22SEP10	05OCT10	18FEB11	01MAR11	147d	0	147d
SI-47300B2	Shut Off Existing DN300 FWM	2	05OCT10	07OCT10	02MAR11	03MAR11	147d	0	147d
SI-47300B3	DN300 Diversion Main Connect to Existing	2	05OCT10	07OCT10	02MAR11	03MAR11	147d	0	147d
SI-47300B4	Removal of Existing DN300 FWM	28	08OCT10	04NOV10	04MAY11	31MAY11	147d	0	147d
SI-47400	Portion E1C DN800 SWM Works CH0.0-52.0	80	05NOV10	23JAN11	11MAY11	29JUL11	187d	8d	8d
SI-47400B1	Portion E1C DN800 SWM Works CH0.0-52.0	120	05NOV10	04MAY11	01APR11	29JUL11	147d	0	147d
SI-47500	Portion E1C DN800 SWM Works CH52.0-50.0	80	01FEB11	21APR11	30JUL11	17OCT11	179d	0	179d
SI-47600	Portion E1C DN800 SWM Works CH52.0-50.0	80	01MAY11	23MAY11	30JUL11	17OCT11	147d	0	147d
SI-47600B1	Area E1C Portional Pipe Testing	14	22APR11	05MAY11	18OCT11	31OCT11	179d	286d	286d
SI-47600B2	Area E1C Portional Pipe Testing	14	24MAY11	06JUN11	18OCT11	31OCT11	147d	0	147d
Portion E2									
SI-50100	Portion E2 Marine Dept Advance Notice	90	07OCT09 A	20FEB10	07OCT09 A	20FEB10	0	0	0
SI-50200	WHITCL Consent For Works Within Tunnel Area	120	07SEP09 A	20FEB10	07SEP09 A	20FEB10	0	0	0
SI-50300	Chamber Modification - 180 Days of Portion E2	65	07JAN10 A	14MAY10 A	07JAN10 A	14MAY10 A	0	0	0
SI-50400	Portion E2 Trial Run	60	08NOV09 A	14NOV09 A	08NOV09 A	14NOV09 A	0	0	0
SI-50500	Portion E2 Trial Pit & Utilities Detection	15	21FEB10	07MAR10	21FEB10	07MAR10	0	0	0
SI-50600	Portion E2 Initial & Utilities Survey	15	21FEB10	07MAR10	21FEB10	07MAR10	95d	31d	31d
SI-50700	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	27MAR11	14JUN11	30JUN11	17SEP11	107d	0	107d
SI-50800	Portion E2 Pipe Works CH752.5-780.5 (O)	30	16JUL11	14AUG11	19SEP11	17OCT11	64d	171d	171d
SI-50900	Portion E2 Pipe Works CH752.5-780.5 (O)	30	03JAN12	01FEB12	19SEP11	17OCT11	-107d	0	-107d
SI-50900A1	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	03SEP10	01NOV10	209d	0	209d
SI-50900A2	Preparation & Submission of Method Statement	60	06FEB10	06APR10	03SEP10	01NOV10	209d	0	209d
SI-50900A3	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	03SEP10	01NOV10	209d	0	209d
SI-50900B1	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	16MAY10	02NOV10	11DEC10	209d	94d	94d
SI-50900B2	Jacking Pit Set-up (TL-C)	20	19AUG10	28AUG10	12DEC10	21DEC10	115d	0	115d
SI-50900C1	Sleeve Pipe Installation by Jacking	20	29AUG10	17SEP10	22DEC10	10JAN11	115d	0	115d
SI-50950	TL-C FWM Sleeve Installation CH790.5-977.7 (A1-A3)	40	12MAY11	20JAN11	15JUL11	23AUG11	64d	0	64d
SI-50950B1	Pipe Laying & Connection	30	02DEC10	20JAN11	07MAR11	25APR11	95d	0	95d
SI-50950B2	Sleeve Pipe Grouting	10	21JAN11	30JAN11	29APR11	05MAY11	95d	0	95d
SI-50950B3	Backfilling & Reinstatement	30	31JAN11	01MAR11	06MAY11	04JUN11	95d	0	95d
SI-51000	Portion E2 Pipe Works CH977.7-985.5 (O)	28	21JUN11	15JUL11	24AUG11	17SEP11	64d	0	64d
SI-51100A	Portion E2 Pipe Works CH977.7-985.5 (O)	29	02MAR11	26MAR11	05JUN11	23JUN11	95d	0	95d
SI-51100B	TL-E SWM Sleeve Jacking CH90.0-225.5	120	04OCT10	31JAN11	07DEC10	05APR11	64d	0	64d
SI-51100B1	Preparation & Submission of Risk Assessment	60	08FEB10*	06APR10	12MAY10	10JUL10	95d	0	95d

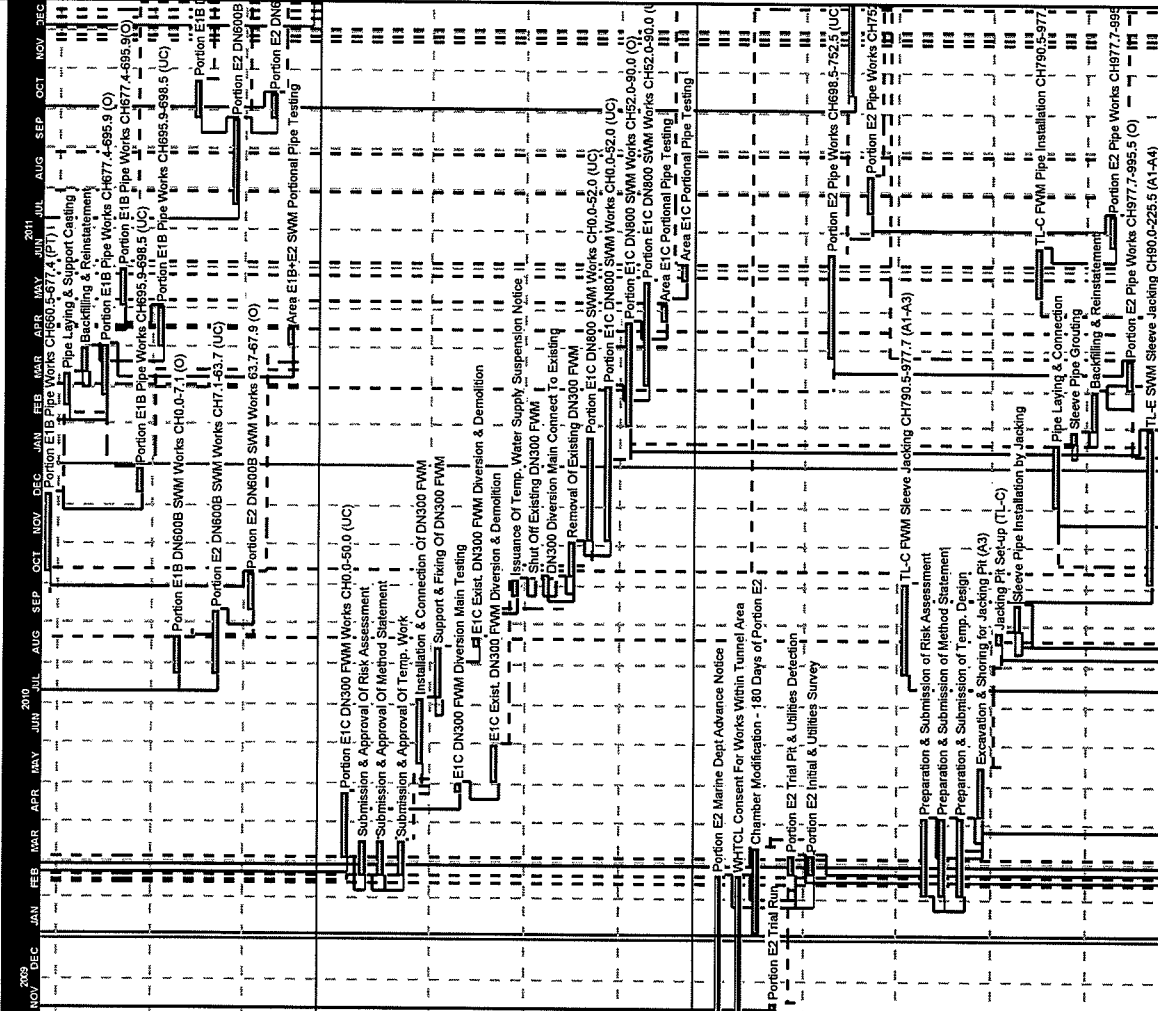
**Legend:**

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start/finish bar
- Finish measure point

3 Months Rolling Program (Sept 2011)

Wo Hing - Penta-Ocean Joint Venture

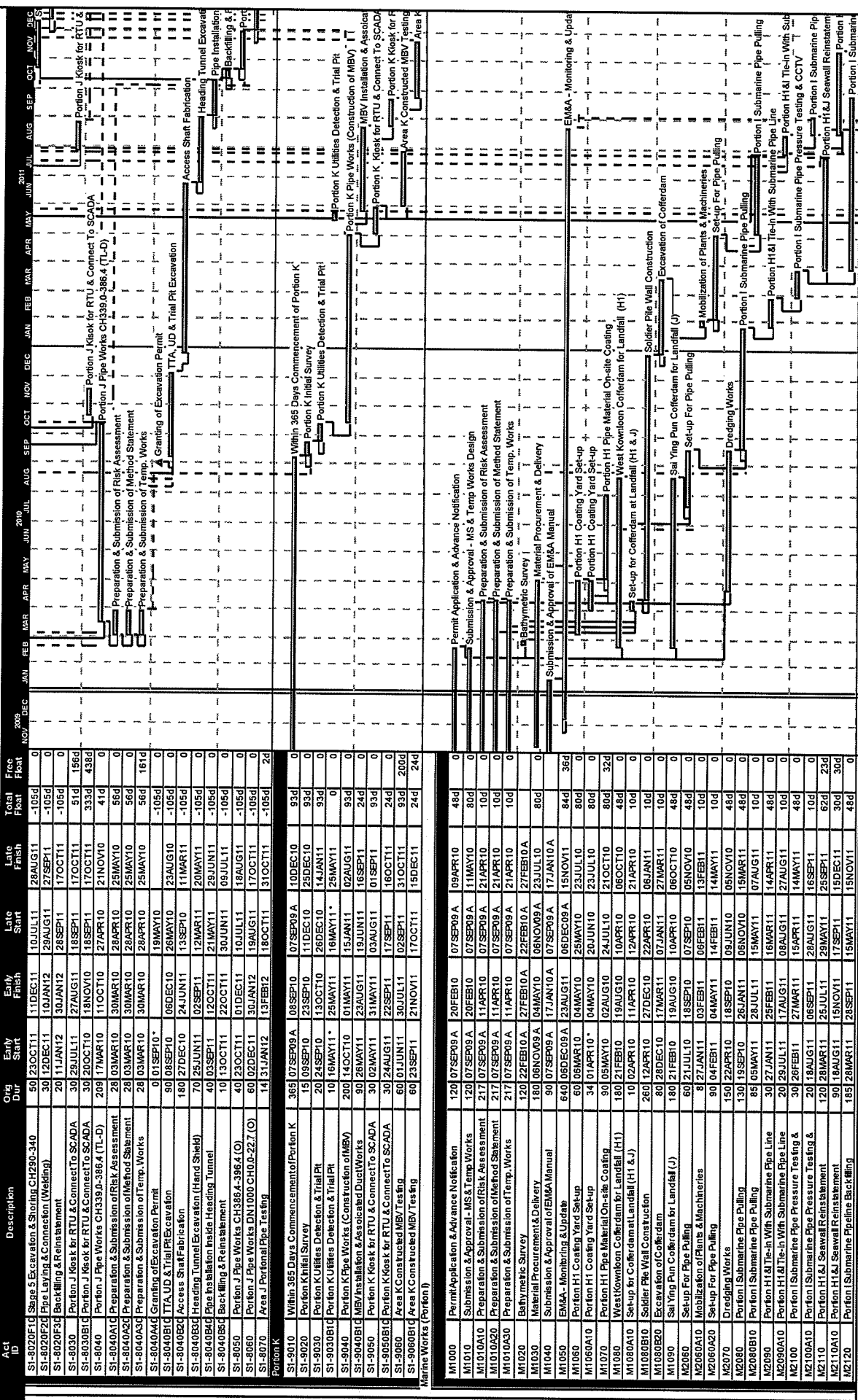
SI-50950  
 07SEP09  
 05NOV07  
 04JAN10  
 19SEP11  
 3A  
 CHINA OVERSEAS LTD.



NOV/DEC  
 JAN/FEB  
 MAR/APR  
 MAY/JUN  
 JUL/AUG  
 SEP/OCT  
 NOV/DEC  
 2009  
 2010  
 2011



Act ID	Description	Orig. Dur.	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SI-5110A2C	Preparation & Submission of Method Statement	60	06FEB10	06APR10	12MAY10	10JUL10	95d	0														
SI-5110A3C	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	12MAY10	10JUL10	95d	0														
SI-5110B1C	Excavation & Shoring for Jacking Pit (A4)	50	07APR10	28MAY10	11JUL10	29AUG10	95d	0														
SI-5110B2C	Excavation & Shoring for Receiving Pit (A1)	30	30MAY10	28JUN10	02SEP10	10OCT10	95d	0														
SI-5110B3C	Excavation & Shoring for Receiving Pit (A1)	42	29JUN10	09AUG10	02OCT10	12NOV10	95d	0														
SI-5110C1C	Sleeve Pipe Installation by Jacking	9	10AUG10	19AUG10	13NOV10	21NOV10	95d	0														
SI-5115B1C	TL-E DN800 SWM Pipe Installation	25	23MAY10	16APR11	09FEB11	09FEB11	64d	0														
SI-5115B2C	TL-E DN800 SWM Pipe Installation	30	08OCT10	06NOV10	11JAN11	09FEB11	95d	0														
SI-5115B3C	Sleeve Pipe Grouting	10	07NOV10	18NOV10	01APR11	10MAY11	145d	0														
SI-5115B4C	Backfilling & Reinstatement of Jacking Pit	30	17APR11	11MAY11	20JUN11	14JUL11	64d	0														
SI-5120A	Portion E2 DN800 SWM Works CH225.0-252.0	25	17DEC10	28JUL10	06MAY11	04JUN11	145d	50d														
SI-5130A1C	TL-F SWM Sleeve Jacking CH252.0-432.0	142	06MAY10	08DEC10	08DEC10	05FEB11	305d	0														
SI-5130A2C	Preparation & Submission of Method Statement	60	06FEB10	06APR10	08DEC10	05FEB11	305d	0														
SI-5130A3C	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	08DEC10	05FEB11	305d	164d														
SI-5130B1C	Excavation & Shoring for Jacking Pit (A3)	14	18SEP10	17OCT10	10FEB11	19FEB11	141d	26d														
SI-5135B1C	TL-F DN800 SWM Pipe Installation	50	07FEB11	22MAY11	06APR11	06MAY11	64d	0														
SI-5135B2C	Pipe Laying & Connection	25	07NOV10	01DEC10	10FEB11	06MAY11	95d	0														
SI-5135B3C	Sleeve Pipe Grouting	10	02DEC10	11DEC10	09AUG11	18AUG11	250d	0														
SI-5135B4C	Backfilling & Reinstatement	30	12DEC10	10JAN11	19AUG11	17SEP11	250d	50d														
SI-5140A	Area E2 Portional Pipe Testing	14	02FEB12	19FEB12	18OCT11	31OCT11	-107d	0														
SI-5140B1C	Area E2 Portional Pipe Testing	14	01APR11	14APR11	18OCT11	31OCT11	200d	307d														
SI-6010	Portion F Pipe Works CH995.5-1240.5 (O)	180	23NOV10	21MAY11	23NOV10	21MAY11	0	0														
SI-6010B1C	Stage 1 Excavation & Shoring CH1060-1240.5	100	24MAR10	01JUL10	02MAY11	09JUN11	343d	0														
SI-6010B2C	Formation Trimming	10	02JUL10	10JUL10	19JUN11	19JUN11	343d	0														
SI-6010B3C	Pipe Laying & Connection (Welding)	30	12JUL10	10AUG10	20JUN11	19JUL11	343d	0														
SI-6010B4C	Backfilling & Reinstatement	50	11AUG10	28SEP10	20JUL11	07SEP11	343d	63d														
SI-6010C1C	Stage 2 Excavation & Shoring CH995.5-1060	40	02DEC10	10JAN11	08SEP11	17OCT11	280d	131d														
SI-6020A1C	Portion F DN800 SWM Works CH432.0-494.7	120	26JUL10	12NOV10	26JUL10	22NOV10	0	0														
SI-6030	Area F2 Portional Pipe Testing	120	12NOV10	11MAY11	20JUN11	31OCT11	220d	71d														
SI-6040B1C	Area E2 Portional Pipe Testing	14	23MAY11	04JUN11	18OCT11	31OCT11	149d	256d														
SI-7010	Portion H1 Temporary Access Road	80	26DEC09A	31JAN10	26DEC09A	05MAR10	33d	2d														
SI-7020	Portion H1 Pipe Works CH1466.5-1516.5 (O)	40	20JUL11	28AUG11	20JUL11	28AUG11	0	0														
SI-7030	Portion H1 Pipe Works CH1516.5-1544.7 (O-S)	50	29AUG11	17OCT11	29AUG11	17OCT11	0	0														
SI-7040	Area H1 Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11	31OCT11	0	107d														
SI-8010	Portion J Pipe Works CH100-48.0 (O-S/Wa)	40	29JUL11	06SEP11	12NOV10	07SEP11	41d	146d														
SI-8020	Portion J Pipe Works CH48.0-339.0 (O)	300	02OCT10	28JUL11	12NOV10	07SEP11	41d	0														
SI-8020B1C	Stage 1 Excavation & Shoring CH250-290 S1	55	22JUN10*	15AUG10	29AUG10	22OCT10	68d	0														
SI-8020B2C	Pipe Laying & Connection (Welding)	20	15AUG10	04SEP10	23OCT10	11NOV10	68d	0														
SI-8020B3C	Associated Chamber Construction	30	03SEP10	04OCT10	12NOV10	11DEC10	68d	0														
SI-8020B4C	Backfilling & Reinstatement	15	05OCT10	19OCT10	12DEC10	26DEC10	68d	0														
SI-8020B5C	Stage 1 Excavation & Shoring CH250-290 S2	20	27FEB11	18MAY11	06MAY11	25MAY11	68d	0														
SI-8020B6C	Associated Chamber Construction	15	18APR11	02MAY11	25JUN11	09JUL11	68d	173d														
SI-8020C1C	Stage 2 Excavation & Shoring CH180-250	55	20OCT10	13DEC10	27DEC10	19FEB11	68d	0														
SI-8020C2C	Pipe Laying & Connection (Welding)	30	14DEC10	12JAN11	20FEB11	21MAY11	68d	0														
SI-8020C3C	Associated Chamber Construction	30	13JAN11	11FEB11	22MAY11	20APR11	68d	0														
SI-8020C4C	Backfilling & Reinstatement	15	12FEB11	21APR11	10JUL11	13AUG11	68d	0														
SI-8020D1C	Stage 3 Excavation & Shoring CH140-180	35	11OCT10*	14NOV10	10JUL11	13AUG11	272d	0														
SI-8020D2C	Pipe Laying & Connection (Welding)	20	15NOV10	04DEC10	14AUG11	02SEP11	272d	0														
SI-8020D3C	Associated Chamber Construction	30	05DEC10	03JAN11	09SEP11	02OCT11	272d	0														
SI-8020D4C	Backfilling & Reinstatement	15	04JAN11	18JAN11	03OCT11	17OCT11	272d	377d														
SI-8020E1C	Stage 4 Excavation & Shoring CH48-CH140	50	30MAY11	18JUL11	19JUL11	28AUG11	41d	0														
SI-8020E2C	Pipe Laying & Connection (Welding)	20	19JUL11	07AUG11	29AUG11	18SEP11	41d	0														
SI-8020E3C	Associated Chamber Construction	20	08AUG11	27AUG11	18SEP11	07OCT11	41d	0														
SI-8020E4C	Backfilling & Reinstatement	10	28AUG11	06SEP11	08OCT11	17OCT11	41d	146d														



Act ID	Description	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
SI-8020F10	Stage 3 Excavation & Shorting CH930-340	50	23OCT11	10JUL11	28AUG11	-105d	0
SI-8020F20	Backfilling & Connection (Welding)	30	12DEC11	10JAN12	29AUG11	-105d	0
SI-8020F30	Backfilling & Reinstatement	20	11JAN12	28SEP11	17OCT11	-105d	0
SI-8030	Portion J Kiosk for RTU & Connect To SCADA	30	28JUL11	27AUG11	18SEP11	51d	156d
SI-8040	Portion J Pipe Works CH939.0-386.4 (TL-D)	209	17MAR10	11OCT10	27APR10	333d	438d
SI-8040A10	Preparation & Submission of Risk Assessment	28	03MAR10	30MAR10	29APR10	56d	0
SI-8040A30	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	29APR10	56d	0
SI-8040A40	Preparation & Submission of Temp. Works	28	03MAR10	30MAR10	29APR10	56d	161d
SI-8040A40	Granting of Excavation Permit	0	01SEP10*	19MAY10	25MAY10	-105d	0
SI-8040B10	TTA, UD & Trial Pit Excavation	80	08SEP10	06DEC10	23AUG10	-105d	0
SI-8040B20	Access Shaft Fabrication	180	27DEC10	24JUN11	11MAR11	-105d	0
SI-8040B30	Heading Tunnel Excavation (Hand Shield)	70	25JUN11	02SEP11	13SEP10	-105d	0
SI-8040B40	Pipe Installation Inside Heading Tunnel	40	03SEP11	12OCT11	21MAY11	-105d	0
SI-8040B50	Backfilling & Reinstatement	10	13OCT11	22OCT11	30JUN11	-105d	0
SI-8050	Portion J Pipe Works CH936.4-386.4 (O)	40	23OCT11	01DEC11	10JUL11	-105d	0
SI-8060	Portion J Pipe Works DN1000 CH930-22.7 (O)	60	02DEC11	30JAN12	19AUG11	-105d	0
SI-8070	Area K Portional Pipe Testing	14	31JAN12	13FEB12	18OCT11	-105d	2d
<b>Portion K</b>							
SI-9010	Within 365 Days Commencement of Portion K	365	07SEP09 A	08SEP10	07SEP09 A	93d	0
SI-9020	Portion K Initial Survey	15	09SEP10	11DEC10	10DEC10	93d	0
SI-9030	Portion K Utilities Detection & Trial Pit	20	24SEP10	13OCT10	26DEC10	14JAN11	93d
SI-9030B10	Portion K Utilities Detection & Trial Pit	10	16MAY11*	29MAY11*	16MAY11*	0	0
SI-9040	Portion K Pipe Works (Construction of MBV)	200	14OCT10	01MAY11	15JAN11	02AUG11	93d
SI-9040B10	MBV Installation & Associated Duct Works	50	28MAY11	23AUG11	19JUN11	16SEP11	24d
SI-9050	Portion K Kiosk for RTU & Connect To SCADA	30	02MAY11	31MAY11	03AUG11	01SEP11	93d
SI-9050B10	Portion K Kiosk for RTU & Connect To SCADA	30	24AUG11	22SEP11	17SEP11	16OCT11	24d
SI-9060	Area K Constructed MBV Testing	60	01JUN11	30JUL11	02SEP11	31OCT11	93d
SI-9060B10	Area K Constructed MBV Testing	60	23SEP11	21NOV11	17OCT11	15DEC11	24d
<b>Marine Works (Portion K)</b>							
M1000	Permit Application & Advance Notification	120	07SEP09 A	20FEB10	07SEP09 A	09APR10	48d
M1010	Submission & Approval - MS & Temp Works Design	120	07SEP09 A	20FEB10	07SEP09 A	11MAY10	80d
M1010A10	Preparation & Submission of Risk Assessment	217	07SEP09 A	11APR10	07SEP09 A	21APR10	10d
M1010A20	Preparation & Submission of Method Statement	217	07SEP09 A	11APR10	07SEP09 A	21APR10	10d
M1010A30	Preparation & Submission of Temp. Works	217	07SEP09 A	11APR10	07SEP09 A	21APR10	10d
M1020	Bathymetric Survey	120	22FEB10 A	27FEB10 A	22FEB10 A	27FEB10 A	0
M1030	Material Procurement & Delivery	180	06NOV09 A	04MAY10	06NOV09 A	23JUL10	80d
M1040	Submission & Approval of EM&A Manual	90	07SEP09 A	17JAN10 A	07SEP09 A	17JAN10 A	0
M1050	EM&A - Monitoring & Update	640	06DEC09 A	23AUG11	06DEC09 A	15NOV11	84d
M1060	Portion H1 Coating Yard Set-up	60	05MAR10	04MAY10	25MAY10	23JUL10	80d
M1060A10	Portion H1 Coating Yard Set-up	34	01APR10*	04MAY10	20JUN10	23JUL10	80d
M1070	Portion H1 Pipe Material On-site Coating	90	05MAY10	19AUG10	24JUL10	21OCT10	80d
M1080	West Kowloon Cofferdam for Landfall (H1)	180	21FEB10	19AUG10	10APR10	06OCT10	48d
M1080A10	Set-up for Cofferdam at Landfall (H1 & J)	10	02APR10	11APR10	12APR10	21APR10	10d
M1080B10	Soldier Pile Wall Construction	260	12APR10	27DEC10	22APR10	06JAN11	10d
M1080B20	Excavation of Cofferdam	80	28DEC10	17MAR11	07JAN11	27MAR11	10d
M1090	Sai Ying Pun Cofferdam for Landfall (J)	180	21FEB10	19AUG10	10APR10	06OCT10	48d
M2060A10	Mobilization of Plants & Machinery	8	27JAN11	03FEB11	06FEB11	13FEB11	10d
M2060A20	Set-up for Pipe Pulling	90	04FEB11	04MAY11	14MAY11	14MAY11	10d
M2070	Dredging Works	150	22APR10	18SEP10	09JUN10	05NOV10	48d
M2080	Portion I Submarine Pipe Pulling	130	19SEP10	26JAN11	06NOV10	15MAR11	48d
M2090	Portion H1 & Tie-in With Submarine Pipe Line	85	05MAY11	28JUL11	19MAY11	07AUG11	10d
M2090A10	Portion H1 & Tie-in With Submarine Pipe Line	20	28JUL11	17AUG11	08AUG11	27AUG11	10d
M2100	Portion I Submarine Pipe Pressure Testing &	30	26FEB11	27MAR11	19APR11	14MAY11	48d
M2100A10	Portion I Submarine Pipe Pressure Testing &	20	18AUG11	06SEP11	28AUG11	16SEP11	10d
M2110	Portion H1 & Seawall Reinstatement	120	28MAR11	25MAY11	25MAY11	25SEP11	23d
M2110A10	Portion H1 & Seawall Reinstatement	90	18AUG11	15NOV11	17SEP11	15DEC11	30d
M2120	Portion I Submarine Pipeline Backfilling	185	29MAR11	28SEP11	15MAY11	15NOV11	48d

Start date: 07 SEP09  
 Finish date: 05 NOV12  
 Data date: 04 JAN10  
 Run date: 03 SEP11  
 Page number: 5A  
 Page number: 5A  
 C. Chinvarera & Partners, Inc.

3 Months Rolling Program (Sept 2011)

Contract No. 01/NSD/08  
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Bur	Early		Late		Total Float	Free Float	2011																				
			Start	Finish	Start	Finish			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
M2120A10	Portion 1 Submarine Pipeline Backfilling	150	30MAY11	26OCT11	19JUL11	15DEC11	50d	50d																					
M2130	CP Test Box Installation (On Land)	60	28MAR11	26MAY11	26MAY11	31OCT11	158d	125d																					
M2130A10	CP Test Box Installation (On Land)	60	07SEP11	05NOV11	17SEP11	15NOV11	10d	0																					
M2140	CP Test (Close Interval Potential Survey)	30	29SEP11	28OCT11	16NOV11	15DEC11	48d	48d																					
M2140A10	CP Test (Close Interval Potential Survey)	30	06NOV11	05DEC11	16NOV11	15DEC11	10d	10d																					
M2150	Completion of Section 1 Works	0		15DEC11*	15DEC11*	15DEC11*	0	0																					
+Section 2																													
+Section 4																													
+Section 5																													

Start date: 07SEP09  
Finish date: 05NOV12  
Draw date: 04JAN10  
Run date: 09SEP11  
Plot number: GA  
c:\Program Files\Autodesk\...

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

3 Months Rolling Program (Sept 2011)

Wo Hing - Penta-Ocean Joint Venture



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## **Appendix F**

### **ET Weekly Site Inspection Records**

### WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	01 November 2011	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	WONG PETER 1/11/11		JNK Lau	C.L. Lau

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy  
 Condition : Calm / (Light) / Breeze / Strong  
 Wind :  
 Temperature : 25 °C  
 Humidity : High / (Moderate) / Low

#### 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	
<b>Noise Impact</b>					
▪	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.	✓			
<b>Water Quality</b>					
<b>Mitigation Measures for Dredging</b>					
▪	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day.			✓	No dredging work was observed.
▪	Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
▪	Deployment of silt screen should be at the sea water intake at Kowloon South 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	✓			
▪	Dredging 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				No dredging work was observed.
▪	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	
<b>Water Quality</b>				
<b>Mitigation Measures for other Construction Activities</b>				
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>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</li> <li>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</li> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	✓			
<b>Waste Management</b>				
<b>C&amp;D Materials</b>				
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	✓			✓
<b>Chemical Waste</b>				
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Waste Management</b>				
<b>General Refuse</b>				
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.	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>				
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			√	No dredging work was observed.
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			√	No dredging work was observed.
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.			√	No dredging work was observed.
<b>Site Practices</b>				
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	√			
<b>Waste Reduction Measures</b>				
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	
<b>Marine Ecology</b>					
▪	Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day for dredging.			√	No dredging work was observed.
▪	Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
▪	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.	√			
<b>Good Site Practices</b>					
•	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.	√			
▪	Oil leakage from machinery, vehicle and plant should be prevented.	√			
▪	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
▪	A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			


**Summary of the Weekly Site Inspection:**

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

**Remark**

No new item was found during the site inspection and audit on 01 November 2011.

The floating rubbish in Portion H was collected.

Inspected by	Name	Signature	Date
	C. L. Lau		01 November 2011

Contract No. 9/WSD/08

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

Photos



Photo\_111101\_001 (Floating rubbish in Portion H was collected)

**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	8 November 2011	Inspected by	RE [Signature]	IEC	Contractor	ET
Time	09:30	Name	MIXIAK [Signature]		JNS [Signature]	C.L. Law [Signature]

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

**Environmental Checklist**

**Fugitive Dust Emission**

Implementation Stages*	Remark		
	Yes	No	Not Obs / N/A
<ul style="list-style-type: none"> <li>Dust control / mitigation measures shall be provided to prevent dust nuisance.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>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</li> </ul>	✓		
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>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.</li> </ul>			✓
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Vehicle speed should be limited to 10 kph except on completed access roads.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>			✓
<ul style="list-style-type: none"> <li>The public road around the site entrance should be kept clean and free from dust.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Vehicle and equipment should be switched off while not in use.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>All plant and equipment should be well maintained e.g. without black smoke emission.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Open burning should be prohibited.</li> </ul>	✓		

Environmental Checklist	Implementation Stages*			Remark	
	Yes	No	Not Obs N/A		
<b>Noise Impact</b>					
▪ 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.	✓				
<b>Water Quality</b>					
<b>Mitigation Measures for Dredging</b>					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day.			✓	No dredging work was observed.	
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.	
▪ 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	✓				
▪ Dredging 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	✓				
				✓	No dredging work was observed.

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
<b>Water Quality</b>					
<b>Mitigation Measures for other Construction Activities</b>					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> 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	√			
▪	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	√			
▪	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.	√			
▪	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				√
<b>Waste Management</b>					
<b>C&amp;D Materials</b>					
▪	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.				√
<b>Chemical Waste</b>					
▪	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	
<b>Waste Management</b>				
<b>General Refuse</b>				
▪ 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.	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>				
▪ 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			√	No dredging work was observed.
▪ 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			√	No dredging work was observed.
▪ 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.			√	No dredging work was observed.
<b>Site Practices</b>				
▪ 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	√			
<b>Waste Reduction Measures</b>				
▪ 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	
<b>Marine Ecology</b>				
▪ Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day for dredging.			✓	No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			✓	No dredging work was observed.
▪ 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.	✓			
<b>Good Site Practices</b>				
• 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.	✓			
▪ Oil leakage from machinery, vehicle and plant should be prevented.	✓			
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	✓			
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	✓			




**Summary of the Weekly Site Inspection:**

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

**Remark**

No new item was found during the site inspection and audit on 08 November 2011.

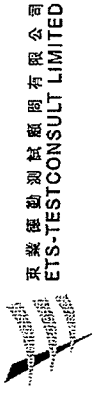
The Contractor was reminded to clean the rain water in trip trays after rain.

Inspected by	Name	Signature	Date
	C. L. Lau		08 November 2011

Contract No. 9/MSD/08

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun



Photos

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WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	16 November 2011	Inspected by	RE <u>Justin Ye</u>	IEC	Justin Ye	Contractor	SNG	ET
Time	14:00	Name	<u>Justin Ye</u>		<u>Justin Ye</u>			C.L. Lau

Weather : Sunny / Fine (Cloudy) Drizzle / Rain / Storm / Hazy  
 Condition : Calm (Light) / Breeze / Strong  
 Wind :  
 Temperature : 23°C  
 Humidity : High (Moderate) / Low

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 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.	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Noise Impact</b>				
▪ 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 sited 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day.			✓	No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
▪ 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	✓			
▪ Dredging 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			✓	No dredging work was observed.
▪ 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	
<b>Water Quality</b>					
<b>Mitigation Measures for other Construction Activities</b>					
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>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</li> <li>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</li> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	✓				
<b>Waste Management</b>					
<b>C&amp;D Materials</b>					
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recycling system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	✓		✓		
<b>Chemical Waste</b>					
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	✓				


Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
<b>Waste Management</b>					
<b>General Refuse</b>					
<input type="checkbox"/>	General refuse should be stored in enclosed bins or compaction units separate from C&D material.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	<input checked="" type="checkbox"/>			
<b>Marine Dredged Sediment (During transportation and disposal)</b>					
<input type="checkbox"/>	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			<input checked="" type="checkbox"/>	No dredging work was observed.
<input type="checkbox"/>	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			<input checked="" type="checkbox"/>	No dredging work was observed.
<input type="checkbox"/>	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.			<input checked="" type="checkbox"/>	No dredging work was observed.
<b>Site Practices</b>					
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Training of site personnel in proper waste management and chemical handling procedures	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Provision of sufficient waste disposal points and regular collection of waste	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	<input checked="" type="checkbox"/>			
<b>Waste Reduction Measures</b>					
<input checked="" type="checkbox"/>	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Proper storage and site practices to minimise the potential for damage or contamination of construction materials	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	<input checked="" type="checkbox"/>			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
<b>Marine Ecology</b>				
Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day for dredging.			√	No dredging work was observed.
Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
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.	√			
<b>Good Site Practices</b>				
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.	√			
Oil leakage from machinery, vehicle and plant should be prevented.	√			
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

**Summary of the Weekly Site Inspection:**

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

**Remark**  
 No new item was found during the site inspection and audit on 16 November 2011.

Inspected by	Name	Signature	Date
	C. L. Lau		16 November 2011



Contract No. 9/WSD/08

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



東業測試顧問有限公司  
ETS-TESTCONSULT LIMITED

Photos

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**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	23 November 2011	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name			JNG	C.L. Lau

Weather

Condition : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy  
Wind : Calm / Light / Breeze / Strong

Temperature : 22°C  
Humidity : High / Moderate / Low

**Environmental Checklist**

**Fugitive Dust Emission**

	Implementation Stages*			Remark
	Yes	No	Not Obs	
• 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	
<b>Noise Impact</b>				
▪ 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day.			✓	No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
▪ 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	✓			
▪ Dredging 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	✓		✓	No dredging work was observed.
▪ 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	
<b>Water Quality</b>				
<b>Mitigation Measures for other Construction Activities</b>				
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>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</li> <li>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</li> <li>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.</li> <li>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 1794). 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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	√			
<b>Waste Management</b>				
<b>C&amp;D Materials</b>				
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>			√	
<b>Chemical Waste</b>				
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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</li> </ul>	√			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
<b>Waste Management</b>					
<b>General Refuse</b>					
<input checked="" type="checkbox"/>	General refuse should be stored in enclosed bins or compaction units separate from C&D material.				
<input checked="" type="checkbox"/>	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.				
<input checked="" type="checkbox"/>	An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.				
<b>Marine Dredged Sediment (During transportation and disposal)</b>					
<input checked="" type="checkbox"/>	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			<input checked="" type="checkbox"/>	No dredging work was observed.
<input checked="" type="checkbox"/>	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			<input checked="" type="checkbox"/>	No dredging work was observed.
<input checked="" type="checkbox"/>	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.			<input checked="" type="checkbox"/>	No dredging work was observed.
<b>Site Practices</b>					
<input checked="" type="checkbox"/>	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				
<input checked="" type="checkbox"/>	Training of site personnel in proper waste management and chemical handling procedures				
<input checked="" type="checkbox"/>	Provision of sufficient waste disposal points and regular collection of waste				
<input checked="" type="checkbox"/>	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.				
<input checked="" type="checkbox"/>	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers				
<b>Waste Reduction Measures</b>					
<input checked="" type="checkbox"/>	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals				
<input checked="" type="checkbox"/>	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				
<input checked="" type="checkbox"/>	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				
<input checked="" type="checkbox"/>	Proper storage and site practices to minimise the potential for damage or contamination of construction materials				
<input checked="" type="checkbox"/>	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste				

	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
<b>Environmental Checklist</b>				
<b>Marine Ecology</b>				
• Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day for dredging.			√	No dredging work was observed.
• Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
• 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.	√			
<b>Good Site Practices</b>				
• 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.	√			
• Oil leakage from machinery, vehicle and plant should be prevented.	√			
• Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
• A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Contract No. 9/WSD/08

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




**Summary of the Weekly Site Inspection:**

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

Remark

No new item was found during the site inspection and audit on 23 November 2011.

Inspected by	Name	Signature	Date
	C. L. Lau		23 November 2011

Contract No. 9/WSD/08

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

Photos

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**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	29 November 2011	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name				

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

**Environmental Checklist**

**Fugitive Dust Emission**

Implementation Stages*	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
<ul style="list-style-type: none"> <li>Dust control / mitigation measures shall be provided to prevent dust nuisance.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>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</li> </ul>	✓			
<ul style="list-style-type: none"> <li>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;</li> </ul>	✓			
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓		✓	
<ul style="list-style-type: none"> <li>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.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>Vehicle speed should be limited to 10 kph except on completed access roads.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>	✓		✓	
<ul style="list-style-type: none"> <li>The public road around the site entrance should be kept clean and free from dust.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>Vehicle and equipment should be switched off while not in use.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>All plant and equipment should be well maintained e.g. without black smoke emission.</li> </ul>	✓			
<ul style="list-style-type: none"> <li>Open burning should be prohibited.</li> </ul>	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Noise Impact</b>				
▪ 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day.			✓	No dredging work was observed.
▪ Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
▪ 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	✓			
▪ Dredging 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	✓			No dredging work was observed.
▪ 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	
<b>Water Quality</b>					
<b>Mitigation Measures for other Construction Activities</b>					
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>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</li> <li>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</li> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	✓				
<b>Waste Management</b>					
<b>C&amp;D Materials</b>					
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	✓		✓		
<b>Chemical Waste</b>					
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	✓				

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Waste Management</b>				
<b>General Refuse</b>				
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.	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>				
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			√	No dredging work was observed.
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			√	No dredging work was observed.
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.			√	No dredging work was observed.
<b>Site Practices</b>				
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	√			
<b>Waste Reduction Measures</b>				
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	
<b>Marine Ecology</b>				
▪ Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day for dredging.			√	No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
▪ 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.	√			
<b>Good Site Practices</b>				
• 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.	√			
▪ Oil leakage from machinery, vehicle and plant should be prevented.	√			
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

**Summary of the Weekly Site Inspection:**

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

Remark

No new item was found during the site inspection and audit on 29 November 2011.

Inspected by	Name	Signature	Date
	C. L. Lau		29 November 2011

Photos

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## **Appendix G**

### **Implementation Schedule of Mitigation Measures**





Environmental Protection Measures		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
<b>Noise Impact</b>						
▪	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	✓			
<b>Water Quality</b>						
<b>Mitigation Measures for Dredging</b>						
▪	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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	✓			
<b>Mitigation Measures for other Construction Activities</b>						
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	All areas	✓			
▪	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	All areas	✓			
▪	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.	All areas				✓
▪	An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.	All areas				✓
▪	The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silt water to public roads and drains	All areas				✓
▪	Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	All areas	✓			

	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
<b>Environmental Protection Measures</b>				
<b>Water Quality</b>				
<b>Mitigation Measures for other Construction Activities</b>				
<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> </ul>	All areas	√		
<b>Waste Management</b>				
<b>C&amp;D Materials</b>				
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	All areas			√
All areas				√
All areas	√			
All areas	√			
<b>Chemical Waste</b>				
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	All areas	√		
All areas	√			
All areas	√			
<b>General Refuse</b>				
<ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material.</li> <li>A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material.</li> <li>An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</li> </ul>	All areas	√		
All areas	√			
All areas	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>				
<ul style="list-style-type: none"> <li>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</li> <li>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</li> <li>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.</li> </ul>	Marine			√
Marine				√
Marine				√
<b>Good Site Practices</b>				
<ul style="list-style-type: none"> <li>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</li> <li>Training of site personnel in proper waste management and chemical handling procedures</li> <li>Provision of sufficient waste disposal points and regular collection of waste</li> </ul>	All areas	√		
All areas	√			
All areas	√			





東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## **Appendix H**

### **Site General Layout plan**

**NOTES :**

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/0302 TO 0303.

**LEGEND :**

- PROPOSED FRESH WATERWAY
- PROPOSED SALT WATERWAY
- PROPOSED WORKS LAKE
- GRAVEL / Silt
- SECTION A (SECTION 1)
- SECTION B
- SECTION C (SECTION 2)
- SECTION D
- SECTION E
- SECTION F
- SECTION G (SECTION 3)
- SECTION H
- SECTION I
- SECTION J
- SECTION K
- SECTION L
- SECTION M
- SECTION N
- SECTION O
- SECTION P
- SECTION Q
- SECTION R
- SECTION S
- SECTION T
- SECTION U
- SECTION V
- SECTION W
- SECTION X
- SECTION Y
- SECTION Z

WORKS AREA WITH NEW 14.1M TO 16.1M PUBLIC CARDS WORKING AREA FLOORING TO BE FACED OFF OF THE SITE IMMEDIATELY AS PART OF TEMPORARY TRAFFIC MANAGEMENT WORKS. CONSTRUCTION DETAILS REFER TO THE STANDARD SPECIFICATIONS FOR ROADWORK (2014).

**Section 4**

02	14/04/08	PL	TRUCKER ACCESSION NO. 8	PL	SKC
03	14/04/08	PL	TRUCKER ACCESSION NO. 5	PL	SKC
04	14/04/08	PL	TRUCKER ACCESSION NO. 1	PL	SKC
05	14/04/08	PL	TRUCKER ACCESSION NO. 3	PL	SKC
06	14/04/08	PL	TRUCKER ACCESSION NO. 2	PL	SKC
07	14/04/08	PL	TRUCKER ACCESSION NO. 7	PL	SKC
08	14/04/08	PL	TRUCKER ACCESSION NO. 4	PL	SKC
09	14/04/08	PL	TRUCKER ACCESSION NO. 6	PL	SKC
10	14/04/08	PL	TRUCKER ACCESSION NO. 9	PL	SKC
11	14/04/08	PL	TRUCKER ACCESSION NO. 10	PL	SKC
12	14/04/08	PL	TRUCKER ACCESSION NO. 11	PL	SKC
13	14/04/08	PL	TRUCKER ACCESSION NO. 12	PL	SKC
14	14/04/08	PL	TRUCKER ACCESSION NO. 13	PL	SKC
15	14/04/08	PL	TRUCKER ACCESSION NO. 14	PL	SKC
16	14/04/08	PL	TRUCKER ACCESSION NO. 15	PL	SKC
17	14/04/08	PL	TRUCKER ACCESSION NO. 16	PL	SKC
18	14/04/08	PL	TRUCKER ACCESSION NO. 17	PL	SKC
19	14/04/08	PL	TRUCKER ACCESSION NO. 18	PL	SKC
20	14/04/08	PL	TRUCKER ACCESSION NO. 19	PL	SKC
21	14/04/08	PL	TRUCKER ACCESSION NO. 20	PL	SKC

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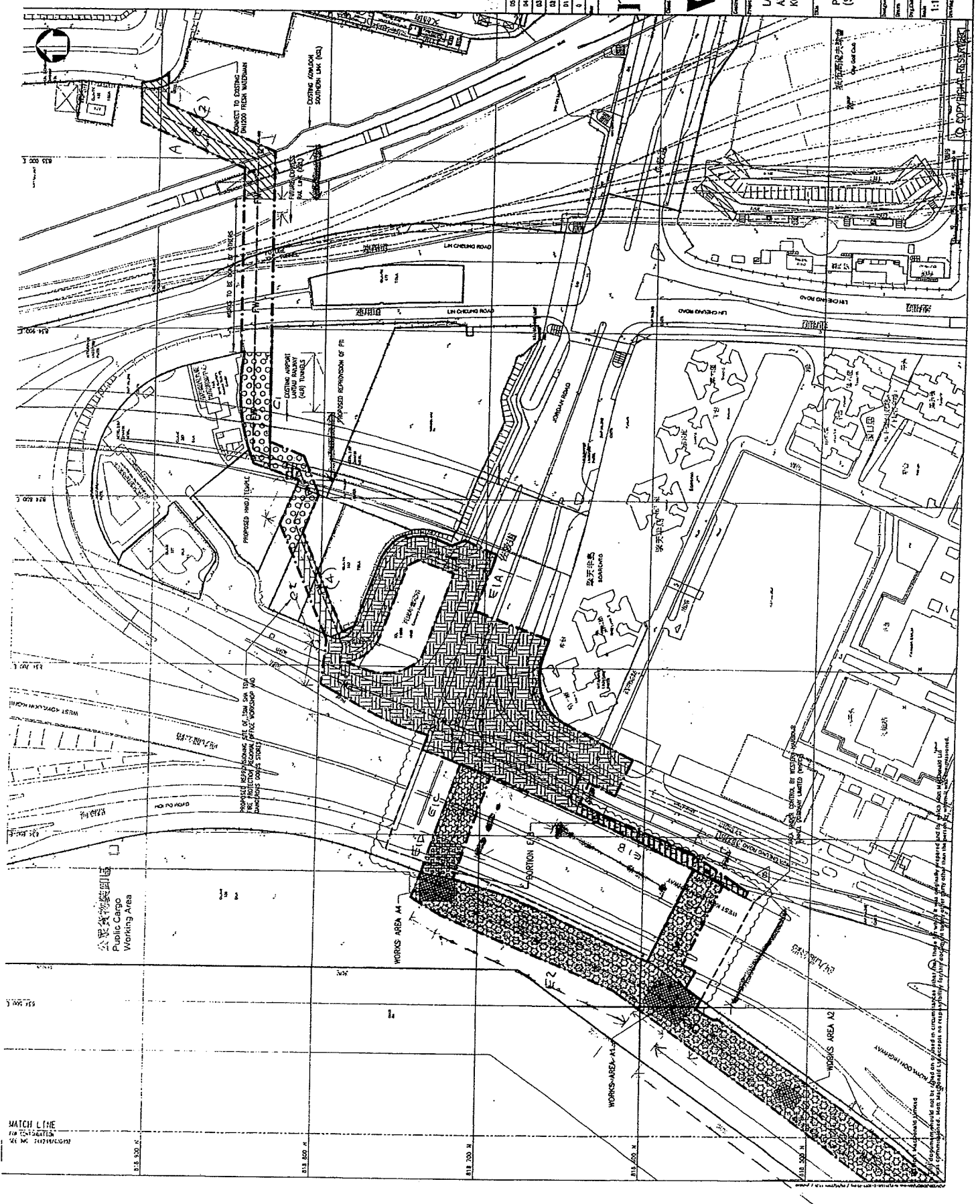
THE GOVERNMENT OF THE HONG KONG  
 SPECIAL ADMINISTRATIVE REGION  
 WATER SUPPLIES DEPARTMENT

97/MSD/08

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

POSSESSION OF SITE  
 (SHEET 1 OF 5)

Project No.	97/MSD/08	Scale	1:1000 (BA1)
Date	24/12/07	Author	YH
Checked	YH	Approved	YH
Drawn	YH	Checked	YH
Project	97/MSD/08	Sheet No.	TEN
Project Name	Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sa Ying Piuk	Sheet Total	05



MATCH LINE  
 FOR 241239/0302  
 81.8 500 N  
 81.8 500 E

WORKS AREA M  
 WORKS AREA A2  
 WORKS AREA A1

NOTES

1. THIS DRAWING SHALL BE KEPT IN CONFORMANCE WITH DRAWING NOS. 241239/G/0300 AND 3100 OF DMS.
2. ALL LEGEND SYMBOLS REFER TO DRAWING NO. 241239/G/0300.

02	APR 09	1	TENDER ADDENDUM NO. 4	1	PL
01	MAR 09	1	TENDER ADDENDUM NO. 3	1	PL
0	FEB 09	1	TENDER NO. 1	1	PL
Rev	Date	Issue	Description	By	Appr.

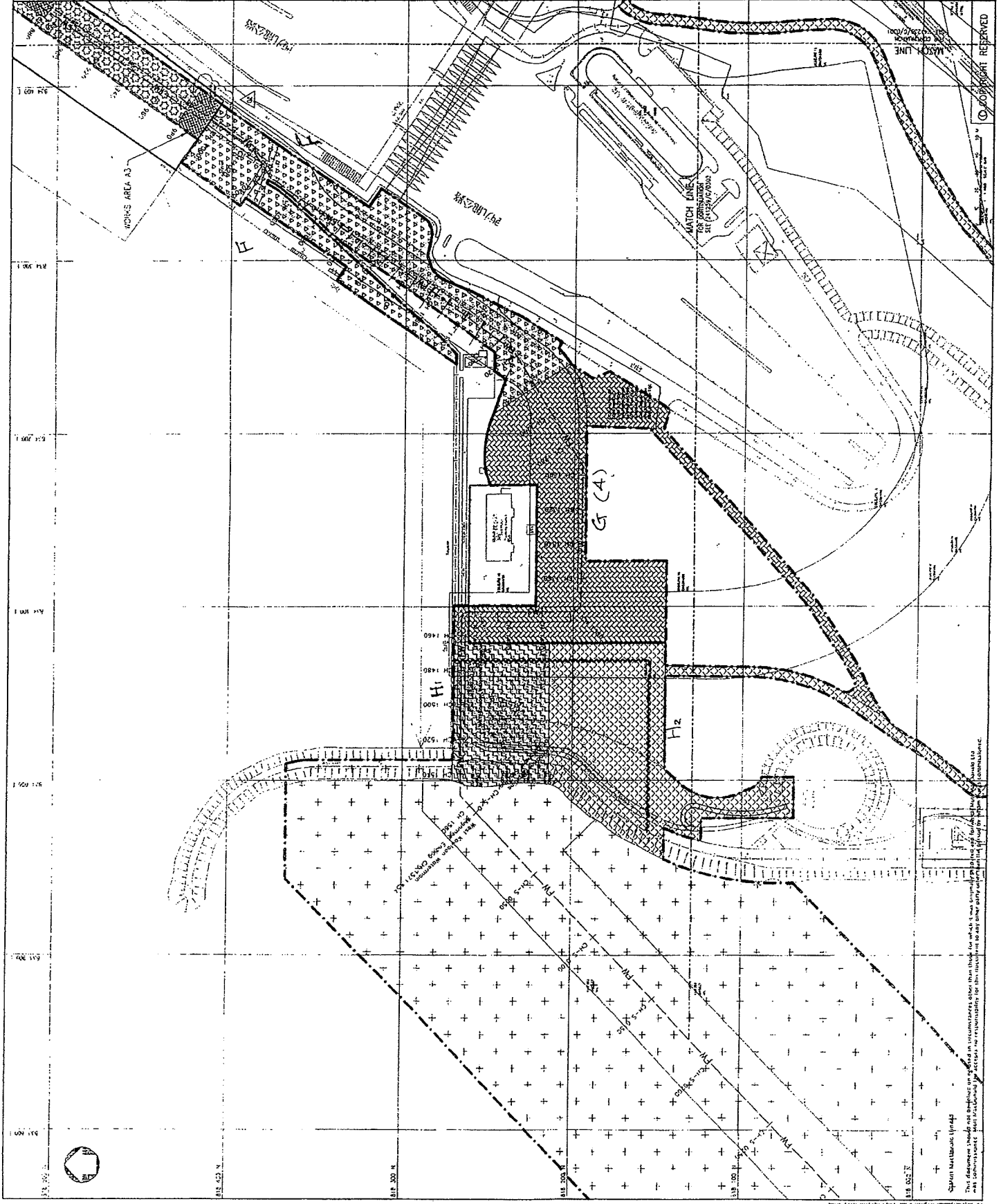
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 WATER SUPPLIES DEPARTMENT

Contract No. 9/NSD/08  
 Project: LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SHING FUN

POSSESSION OF SITE  
 (SHEET 2 OF 5)

Author	NSC	Check	PL	Scale	1:1000
Drawn	PL	Approved	PL	Date	24/12/08
Checked	PL	Issue	PL	Project	241239
Scale	1:1000	Sheet No.	01	Total Sheets	5
Project	241239	Sheet No.	01	Total Sheets	5
Scale	1:1000	Sheet No.	01	Total Sheets	5
Project	241239	Sheet No.	01	Total Sheets	5
Scale	1:1000	Sheet No.	01	Total Sheets	5
Project	241239	Sheet No.	01	Total Sheets	5



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- THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.

CD	DATE	BY	REVISION
01	14/08/08	MM	ISSUE FOR TENDER
02	14/08/08	MM	ISSUE FOR TENDER
03	14/08/08	MM	ISSUE FOR TENDER
04	14/08/08	MM	ISSUE FOR TENDER

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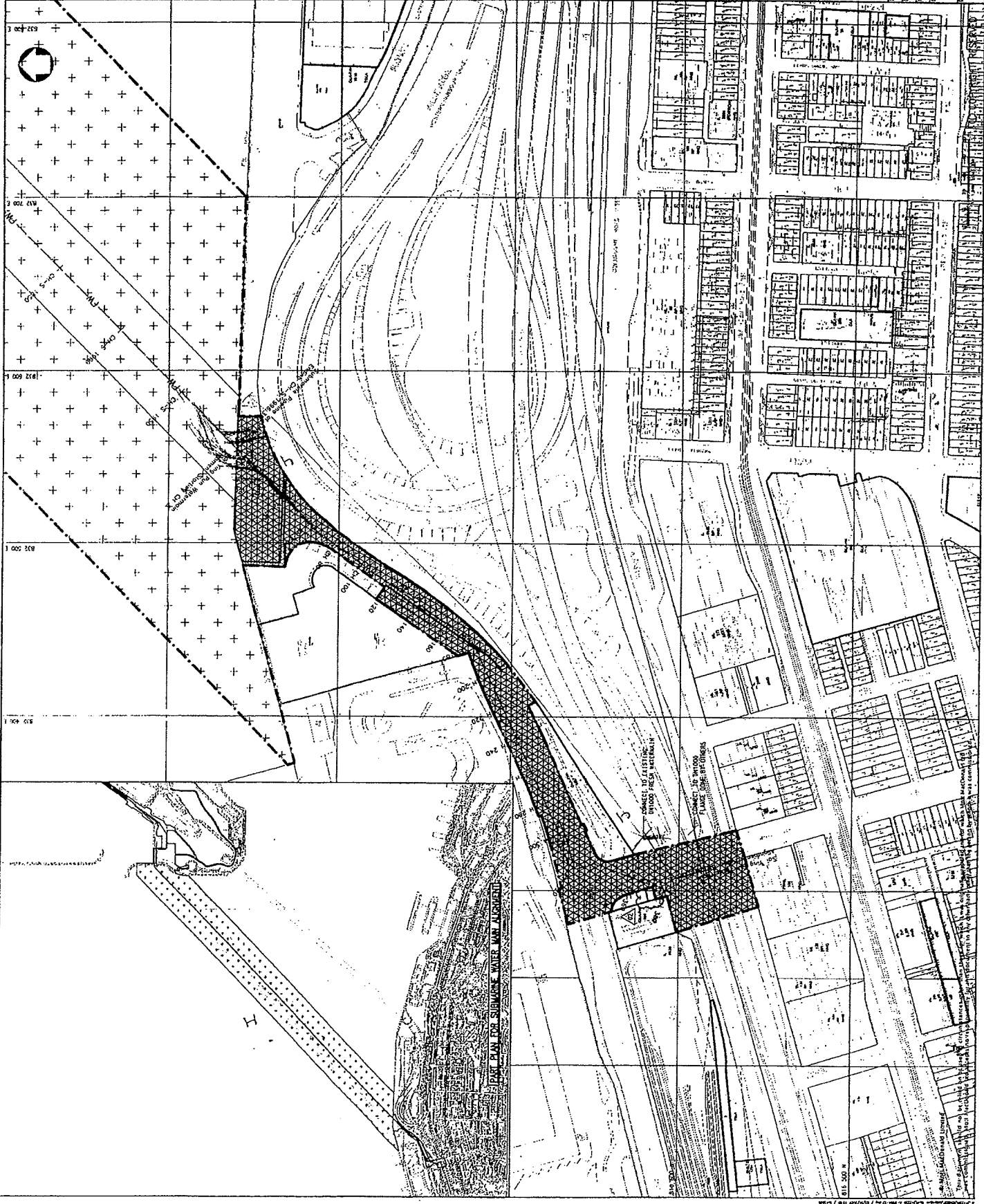
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9/MSD/08

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

POSSESSION OF SITE  
 (SHEET 4 OF 5)

Scale	1:1000	Project No.	911239
Sheet No.	041	Drawn By	MM
Checked By	MM	Reviewed By	MM
Approved By	MM	Date	14/08/08
Author	MM	Project Manager	MM
Client	MM	Contract No.	241239/G/0304
Revision	02	Sheet Count	05



**NOTES**

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

02	FEB 09	✓	REVISION ADDRESS NO. 2	2/12/09
01	JAN 09	✓	TEMPORARY ADDRESS NO. 1	14/12/08
00	DEC 08	✓	ISSUE FOR TENDER	14/12/08
Rev	Date	Drawn	Checked	By

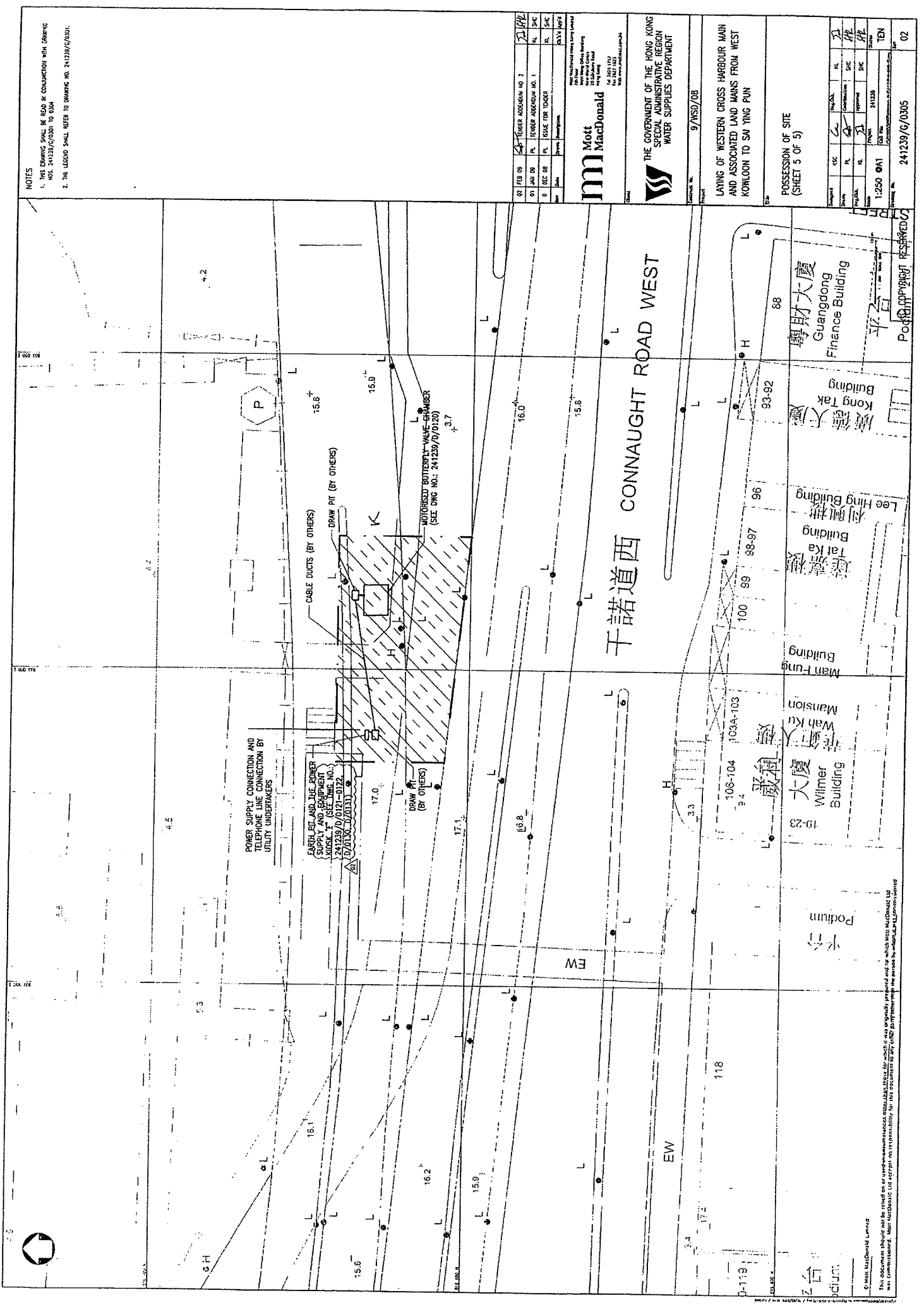
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**THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT**

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

POSSESSION OF SITE (SHEET 5 OF 5)

Scale	1:250	DAI	DATE	24/12/08
Sheet No.	5	OF	5	
Project No.	97/WS/08			



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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)  
 November 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01-Nov WQM Mid-Flood 09:00 - 13:00 Mid-Ebb 15:00 - 18:30 SI	02-Nov	03-Nov WQM Mid-Ebb 05:30 - 09:30 Mid-Flood 12:00 - 16:00	04-Nov NM (WK-Daytime)	05-Nov WQM Mid-Ebb 07:00 - 11:00 Mid-Flood 13:00 - 17:00
06-Nov	07-Nov	08-Nov	09-Nov	10-Nov	11-Nov	12-Nov
NM Holiday (West Kowloon) (Sai Ying Pun)		WQM Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00 SI		WQM Mid-Ebb 09:45 - 13:45 Mid-Flood 15:00 - 19:00	NM (WK-Daytime) NM (SYP-Daytime)	WQM Mid-Ebb 10:50 - 14:50 Mid-Flood 16:00 - 20:00 NM Evening-time (West Kowloon) (Sai Ying Pun)
13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov
NM Holiday (West Kowloon) (Sai Ying Pun)	NM (SYP-Daytime)	WQM Mid-Flood 07:30 - 11:30 Mid-Ebb 13:00 - 16:00		WQM Mid-Flood 10:00 - 14:00 Mid-Ebb 15:30 - 18:30	NM (WK-Daytime)	WQM Mid-Flood 12:00 - 16:00 Mid-Ebb 17:15 - 21:00 NM Evening-time (West Kowloon) (Sai Ying Pun)
20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov
NM Holiday (West Kowloon) (Sai Ying Pun)	NM (SYP-Daytime)	WQM Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00	SI	WQM Mid-Ebb 09:15 - 13:00 Mid-Flood 14:30 - 18:30	NM (WK-Daytime)	WQM Mid-Ebb 11:15 - 15:00 Mid-Flood 16:30 - 20:30
27-Nov	28-Nov	29-Nov	30-Nov			
NM Holiday (West Kowloon) (Sai Ying Pun) NM Evening-time (West Kowloon) (Sai Ying Pun)	NM (SYP-Daytime)	WQM Mid-Ebb 08:30 - 12:30 Mid-Flood 13:45 - 17:00 SI	NM (WK-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)  
 December 2011

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



## **Appendix J**

### **Daily Dredging Summary**

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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/11-039	East Ninepin Mud Disposal Ground
27-Jul-2010	0	0	32,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
28-Jul-2010	0	0	32,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
29-Jul-2010	0	0	32,800	EP/MD/11-039	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



<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
05-Sep-2010	2,400	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
01-Nov-2010	1,000	2	117,400	EP/MD/11-069	South Cheung Chau
02-Nov-2010	500	1	117,900	EP/MD/11-069	South Cheung Chau
03-Nov-2010	1,000	2	118,900	EP/MD/11-069	South Cheung Chau
04-Nov-2010	1,000	2	119,900	EP/MD/11-069	South Cheung Chau
05-Nov-2010	500	1	120,400	EP/MD/11-069	South Cheung Chau
06-Nov-2010	500	1	120,900	EP/MD/11-069	South Cheung Chau

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
07-Nov-2010	500	1	121,400	EP/MD/11-069	South Cheung Chau
08-Nov-2010	0	0	121,400	EP/MD/11-069	South Cheung Chau
09-Nov-2010	500	1	121,900	EP/MD/11-069	South Cheung Chau
10-Nov-2010	300	1	122,200	EP/MD/11-069	South Cheung Chau
11-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
12-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
13-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
14-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
15-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
16-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
17-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
18-Nov-2010	1,500	3	123,700	EP/MD/11-069	South Cheung Chau
19-Nov-2010	1,000	2	124,700	EP/MD/11-069	South Cheung Chau
20-Nov-2010	1,500	3	126,200	EP/MD/11-069	South Cheung Chau
21-Nov-2010	1,000	2	127,200	EP/MD/11-069	South Cheung Chau
22-Nov-2010	1,500	3	128,700	EP/MD/11-069	South Cheung Chau
23-Nov-2010	1,000	2	129,700	EP/MD/11-069	South Cheung Chau
24-Nov-2010	2,000	4	131,700	EP/MD/11-069	South Cheung Chau
25-Nov-2010	1,000	2	132,700	EP/MD/11-069	South Cheung Chau
26-Nov-2010	1,800	4	134,500	EP/MD/11-069	South Cheung Chau
27-Nov-2010	1,000	2	135,500	EP/MD/11-069	South Cheung Chau
28-Nov-2010	1,500	3	137,000	EP/MD/11-069	South Cheung Chau
29-Nov-2010	2,000	4	139,000	EP/MD/11-069	South Cheung Chau
30-Nov-2010	1,500	3	140,500	EP/MD/11-069	South Cheung Chau
01-Dec-2010	1,000	2	141,500	EP/MD/11-069	South Cheung Chau
02-Dec-2010	1,500	3	143,000	EP/MD/11-069	South Cheung Chau
03-Dec-2010	1,000	2	144,000	EP/MD/11-069	South Cheung Chau
04-Dec-2010	1,500	3	145,500	EP/MD/11-069	South Cheung Chau
05-Dec-2010	1,000	2	146,500	EP/MD/11-069	South Cheung Chau
06-Dec-2010	500	1	147,000	EP/MD/11-069	South Cheung Chau
07-Dec-2010	1,500	3	148,500	EP/MD/11-069	South Cheung Chau
08-Dec-2010	1,000	2	149,500	EP/MD/11-069	South Cheung Chau
09-Dec-2010	1,000	2	150,500	EP/MD/11-069	South Cheung Chau
10-Dec-2010	1,500	3	152,000	EP/MD/11-069	South Cheung Chau
11-Dec-2010	500	1	152,500	EP/MD/11-069	South Cheung Chau
12-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
13-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
14-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
15-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
16-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
17-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
18-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
19-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
20-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
21-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
22-Dec-2010	500	1	154,000	EP/MD/11-069	South Cheung Chau
23-Dec-2010	0	0	154,000	EP/MD/11-069	South Cheung Chau
24-Dec-2010	0	0	154,000	EP/MD/11-069	South Cheung Chau
25-Dec-2010	500	1	154,500	EP/MD/11-069	South Cheung Chau
26-Dec-2010	0	0	154,500	EP/MD/11-069	South Cheung Chau
27-Dec-2010	500	1	155,000	EP/MD/11-069	South Cheung Chau
28-Dec-2010	500	1	155,500	EP/MD/11-069	South Cheung Chau
29-Dec-2010	500	1	156,000	EP/MD/11-069	South Cheung Chau
30-Dec-2010	500	1	156,500	EP/MD/11-069	South Cheung Chau
31-Dec-2010	500	1	157,000	EP/MD/11-069	South Cheung Chau
01-Jan-2011	500	1	157,500	EP/MD/11-069	South Cheung Chau
02-Jan-2011	500	1	158,000	EP/MD/11-069	South Cheung Chau
03-Jan-2011	1,000	2	159,000	EP/MD/11-069	South Cheung Chau
04-Jan-2011	0	0	159,000	EP/MD/11-069	South Cheung Chau
05-Jan-2011	500	1	159,500	EP/MD/11-069	South Cheung Chau
06-Jan-2011	500	1	160,000	EP/MD/11-069	South Cheung Chau
07-Jan-2011	0	0	160,000	EP/MD/11-069	South Cheung Chau
08-Jan-2011	500	1	160,500	EP/MD/11-069	South Cheung Chau

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninetin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
09-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
10-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
11-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
12-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
13-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
14-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
15-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
16-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
17-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
18-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
19-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
20-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
21-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
22-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
23-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
24-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
25-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
26-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
27-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
28-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
29-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
30-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
31-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
01-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
02-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
03-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
04-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
05-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
06-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
07-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
08-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
09-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
10-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
11-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
12-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
13-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
14-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
15-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
16-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
17-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
18-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
19-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
20-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
21-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
22-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
23-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
24-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
25-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
26-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
27-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
28-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
01-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
02-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
03-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
04-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
05-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
06-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
07-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
08-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
09-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
10-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
11-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
12-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
13-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
14-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
15-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
16-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
17-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
18-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
19-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
20-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
21-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
22-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
23-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
24-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
25-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
26-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
27-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
28-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
29-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
30-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
31-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
01-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
02-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
03-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
04-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
05-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
06-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
07-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
08-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
09-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
10-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
11-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
12-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
13-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
14-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
15-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
16-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
17-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
18-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
19-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
20-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
21-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
22-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
23-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
24-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
25-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
26-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
27-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
28-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
29-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
30-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
01-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
02-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
03-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
04-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
05-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
06-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
07-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
08-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
09-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
10-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
11-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
12-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
13-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
14-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground



<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
15-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
16-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
17-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
18-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
19-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
20-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
21-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
22-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
23-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
24-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
25-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
26-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
27-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
28-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
29-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
30-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
31-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
<b>TOTAL =</b>	<b>160,500</b>	<b>274</b>			

<b>Wo Hing - Penta-Ocean Joint Venture</b>				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
<b>Summary of Dumping Qty. of Type 2 Marine Sediment</b>				
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
<b>Summary of Dumping Qty. of Type 2 Marine Sediment</b>				
Date	Dumping qty (m <sup>3</sup> )	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	--

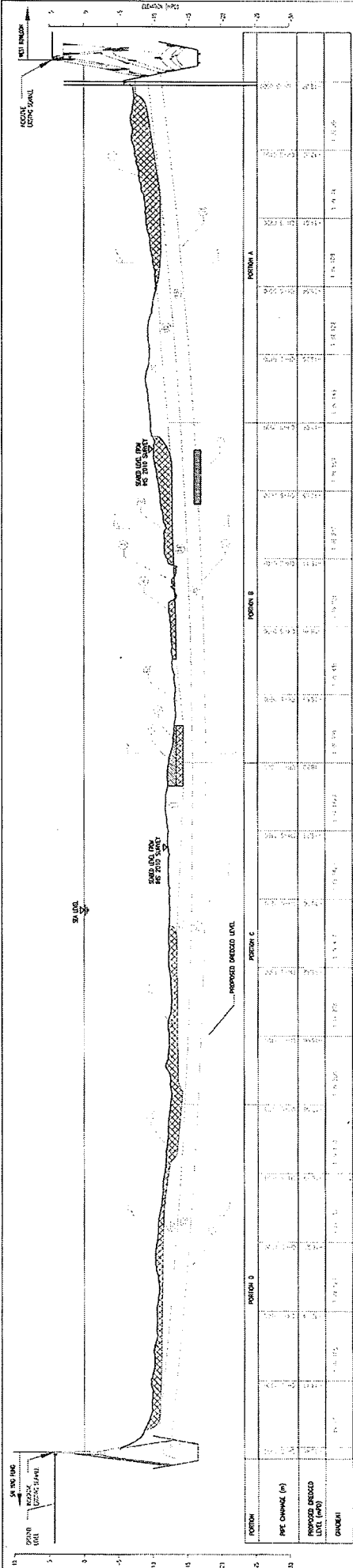
<b>Wo Hing - Penta-Ocean Joint Venture</b>				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
<b>Summary of Dumping Qty. of Type 2 Marine Sediment</b>				
<b>Date</b>	<b>Dumping qty (m<sup>3</sup>)</b>	<b>Barge Load per day</b>	<b>Accumulated Dumping Qty.</b>	<b>Permit No.</b>
	(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	
(dump 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
<b>TOTAL =</b>	<b>104,990</b>	<b>155</b>		



NOTE:

- LOGISTIC OF DREDGING  
 STAGE 1 -- TYPE 2 MARINE SEDIMENT  
 ① --> ② --> ③ --> ④ --> ⑤ --> ⑥ --> ⑦ --> ⑧  
 STAGE 2 -- TYPE 1 MARINE SEDIMENT  
 ④ --> ⑩ --> ⑪  
 STAGE 3 -- TYPE 1 MARINE SEDIMENT  
 ⑫ --> ⑬ --> ⑭ --> ⑮ --> ⑯ --> ⑰  
 STAGE 4 -- TYPE 10 MARINE SEDIMENT  
 ⑰ --> ⑱ --> ⑲  
 STAGE 5 -- TYPE 1 MARINE SEDIMENT  
 ⑲ --> ⑳ --> ㉑ --> ㉒ --> ㉓

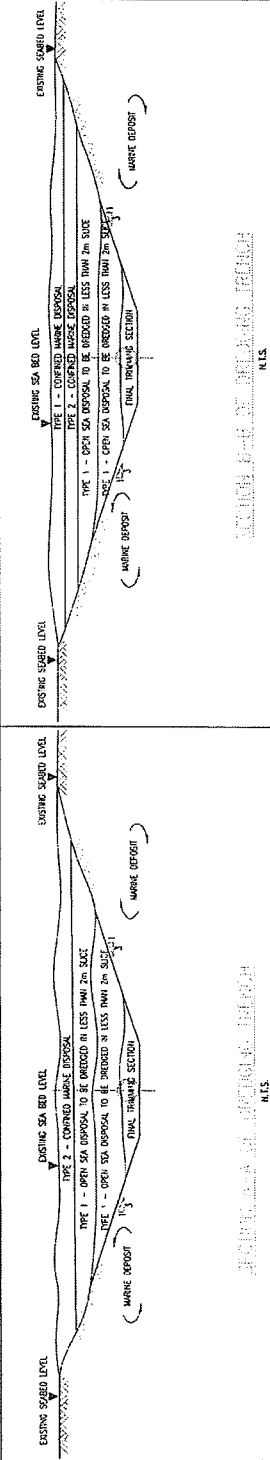
IF SIMILAR DISPOSAL SITE IS DEDICATED FOR TYPE 10 AND TYPE 1, MARINE SEDIMENT DREDGING LOGISTIC AT ㉑ WILL BE DELETED AND INCLUDED IN ⑲ AND ㉒



LONGITUDINAL SECTION OF DREDGING TRENCH

West Kowloon

Sai Ying Pun



LEGEND:

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

THE NUMBER INDICATE THE SEQUENCE OF DREDGING

CONTRACTOR WO HING-PENTAOCEAN JOINT VENTURE 和興五洲聯合	CONTRACT NO. 91/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun	DRAW BY STANLEY LEUNG	TONY TANG	SCALE DWG No.	NTS SK-D-002
	DRAWING TITLE: DREDGING LOGISTIC	DATE 08 Apr 2010	CHECKED BY STANLEY LEUNG	REVISION D	



## **Appendix K**

### **Complaint Log**



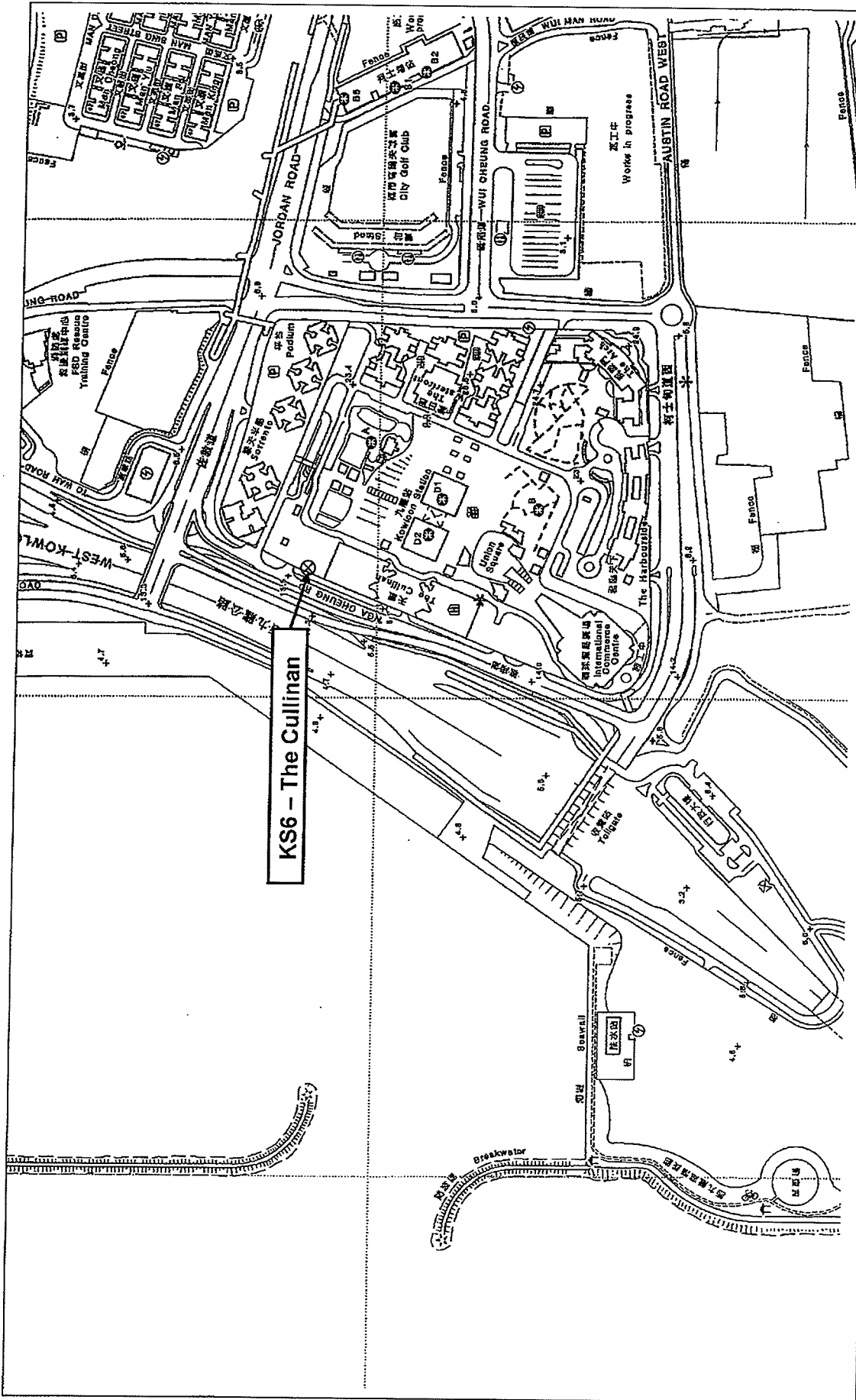
## Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Portion I – Launch Barge	08/07/2011	One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance.	<p><u>Details of ET Follow up Action(s):</u> During the weekly site inspection on 08 July 2010, the Contractor has provided portable chemical toilet and warning notice on the barge. No urinating was observed during the weekly site inspection.</p> <p><u>Details of Action(s) Taken by the Contractor:</u></p> <ol style="list-style-type: none"> <li>1. Meeting has been arranged on 29 June 2011 to discuss the safety and environmental issues on launching barge.</li> <li>2. New disciplinary system has been in place to prevent the same inappropriate act of workers from happening.</li> <li>3. Additional sanitary facilities have been added on the barge and the nearby area to facilitate the workers need.</li> </ol>	Closed



東業德勤测试顾问有限公司  
ETS-TESTCONSULT LIMITED

## Figures

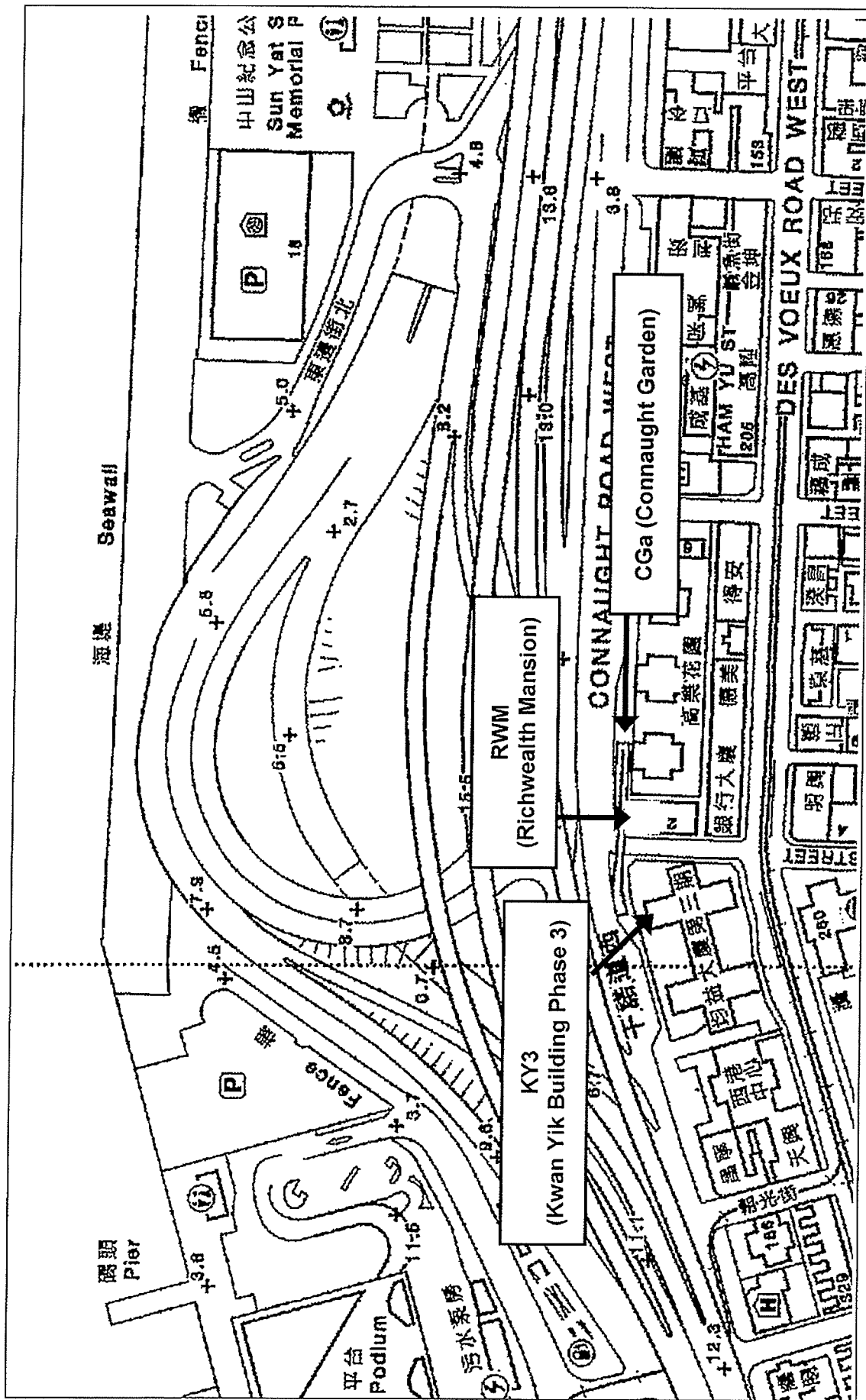


Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon





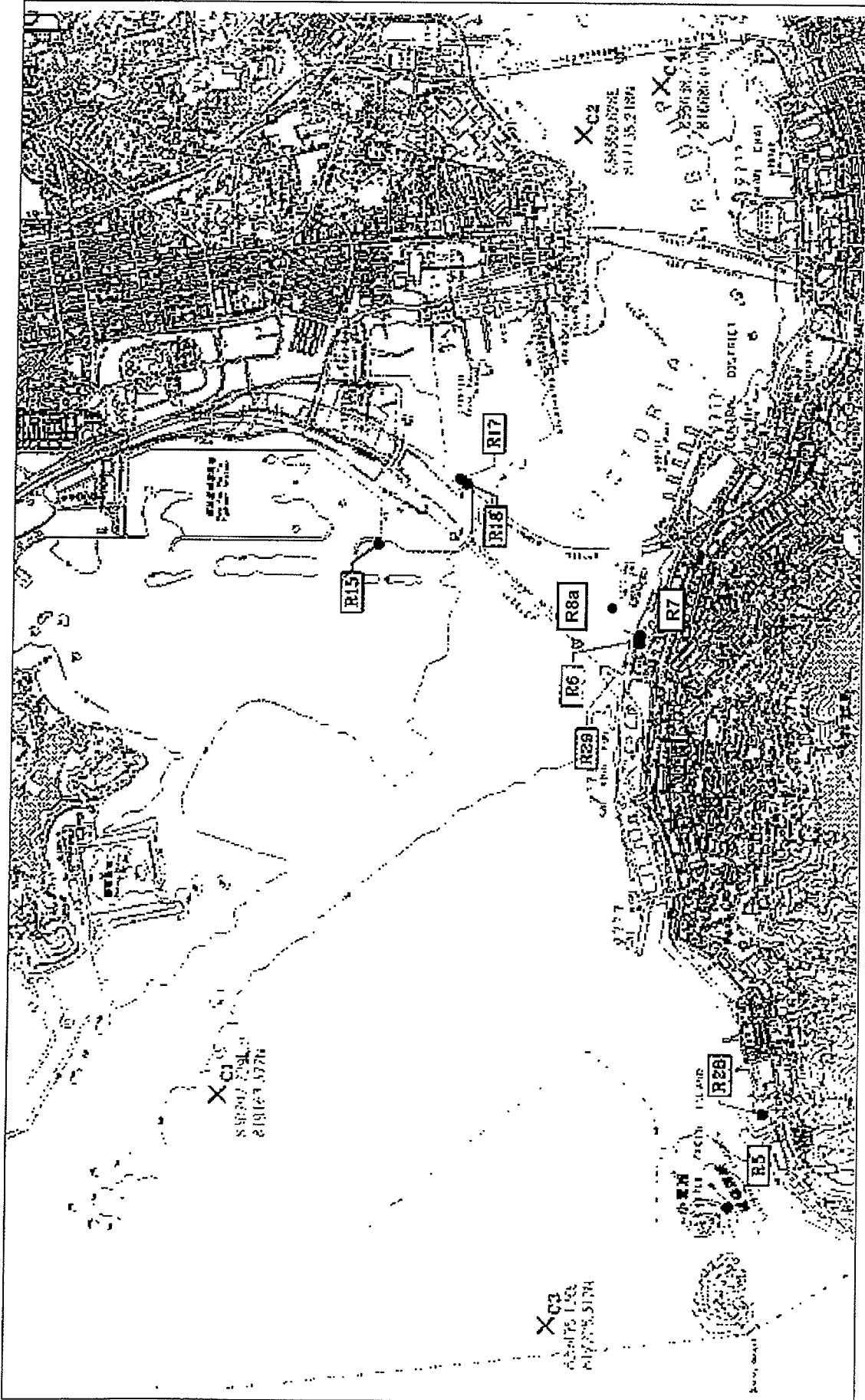
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun

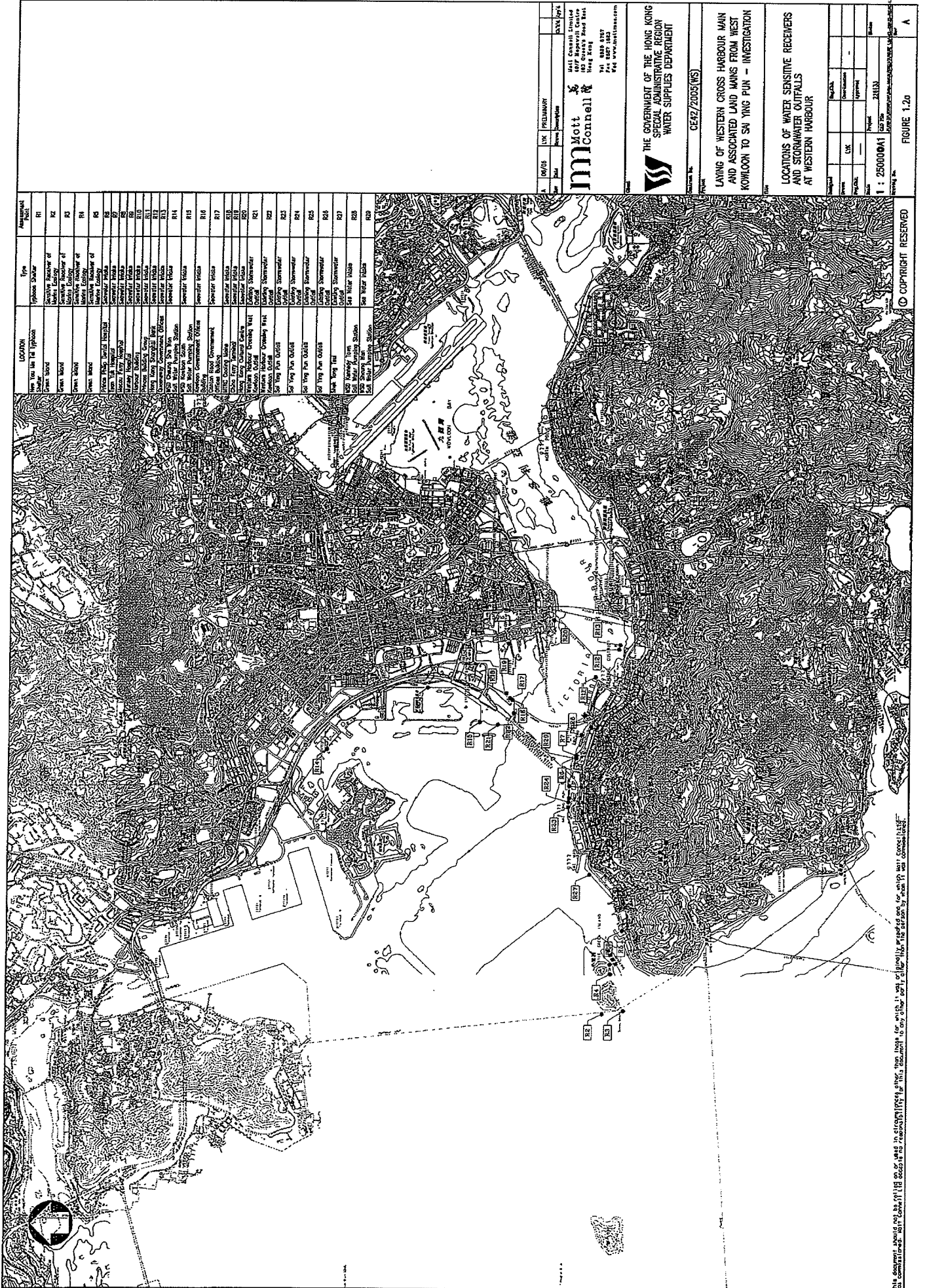


東業德測測試顧問有限公司  
ETS-TESTCONSULT LIMITED



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

Figure 3  
Locations of Water Quality Monitoring Stations



Amendment No.	Type	LOCATION	Remarks
R1	Open Channel	From Tin Tin to Tin Tin	
R2	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R3	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R4	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R5	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R6	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R7	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R8	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R9	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R10	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R11	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R12	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R13	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R14	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R15	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R16	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R17	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R18	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R19	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R20	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R21	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R22	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R23	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R24	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R25	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R26	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R27	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R28	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R29	Sanitary Receiver	Sanitary Receiver of Tin Tin	
R30	Sanitary Receiver	Sanitary Receiver of Tin Tin	

DATE	NO.	REVISED	BY	DATE
<b>Mott MacDonald</b> 441 Connaught Estate 445 Connaught Road West Hong Kong Tel: 852 2577 7777 Fax: 852 2577 7778 www.mottmac.com				
<b>THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION</b> <b>WATER SUPPLIES DEPARTMENT</b>				
Project No. CE42/2005(NS)				
<b>LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO TIN YING PUN - INVESTIGATION</b>				
<b>LOCATIONS OF WATER SENSITIVE RECEIVERS AND STORMWATER OUTFALLS AT WESTERN HARBOUR</b>				
Scale	1 : 250000	Map No.	23113	Sheet
Project No.	CE42/2005(NS)	Map No.	23113	Sheet
Project No.	CE42/2005(NS)	Map No.	23113	Sheet





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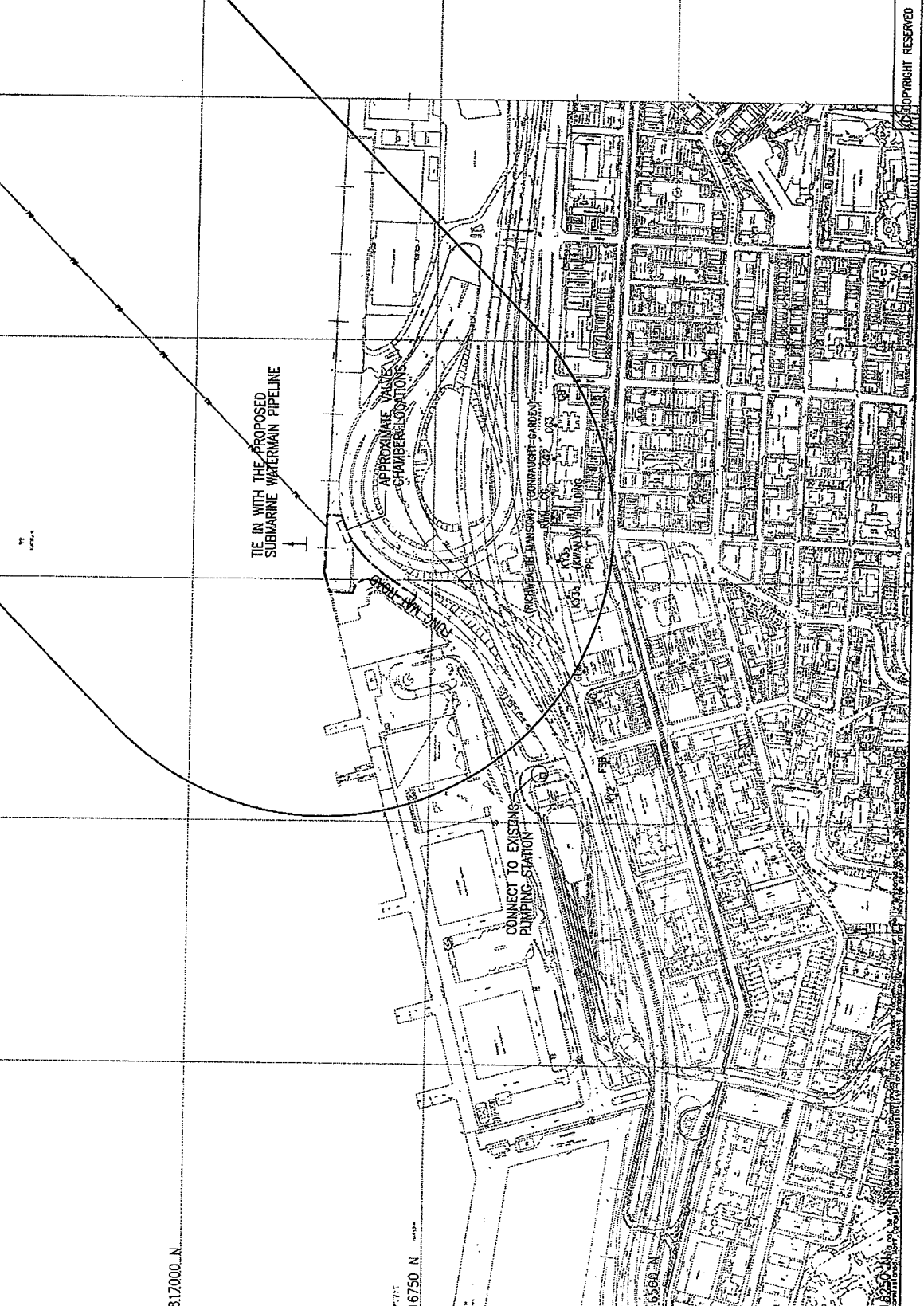
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FIGURE 1.2a  
 A



**LEGEND:**

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



833000 E  
832750 E  
832500 E  
832250 E  
832000 E

817000 N

816750 N

816500 N

COURTSHIP RESERVED

Drawn	CHK	PRELIMINARY	DATE	BY

**Mott  
Connell**  
 407 Des Voeux Road  
 407 Des Voeux Road  
 Hong Kong  
 Tel: 8522 6377  
 Fax: 8522 6820  
 Web: www.mottconnell.com

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

Project: CE42/2008(W)

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

LOCATIONS OF NOISE SENSITIVE RECEIVERS IN SAI YING PUN

Author	Checked	Approved
Drawn	Reviewed	Accepted
Scale	1 : 20000A1	Date
Project No.		Sheet No.
Project Name		Sheet Title

**LEGEND:**

PROPOSED ROUTE OF 1200P FRESH WATER MAIN



NOISE SENSITIVE RECEIVERS



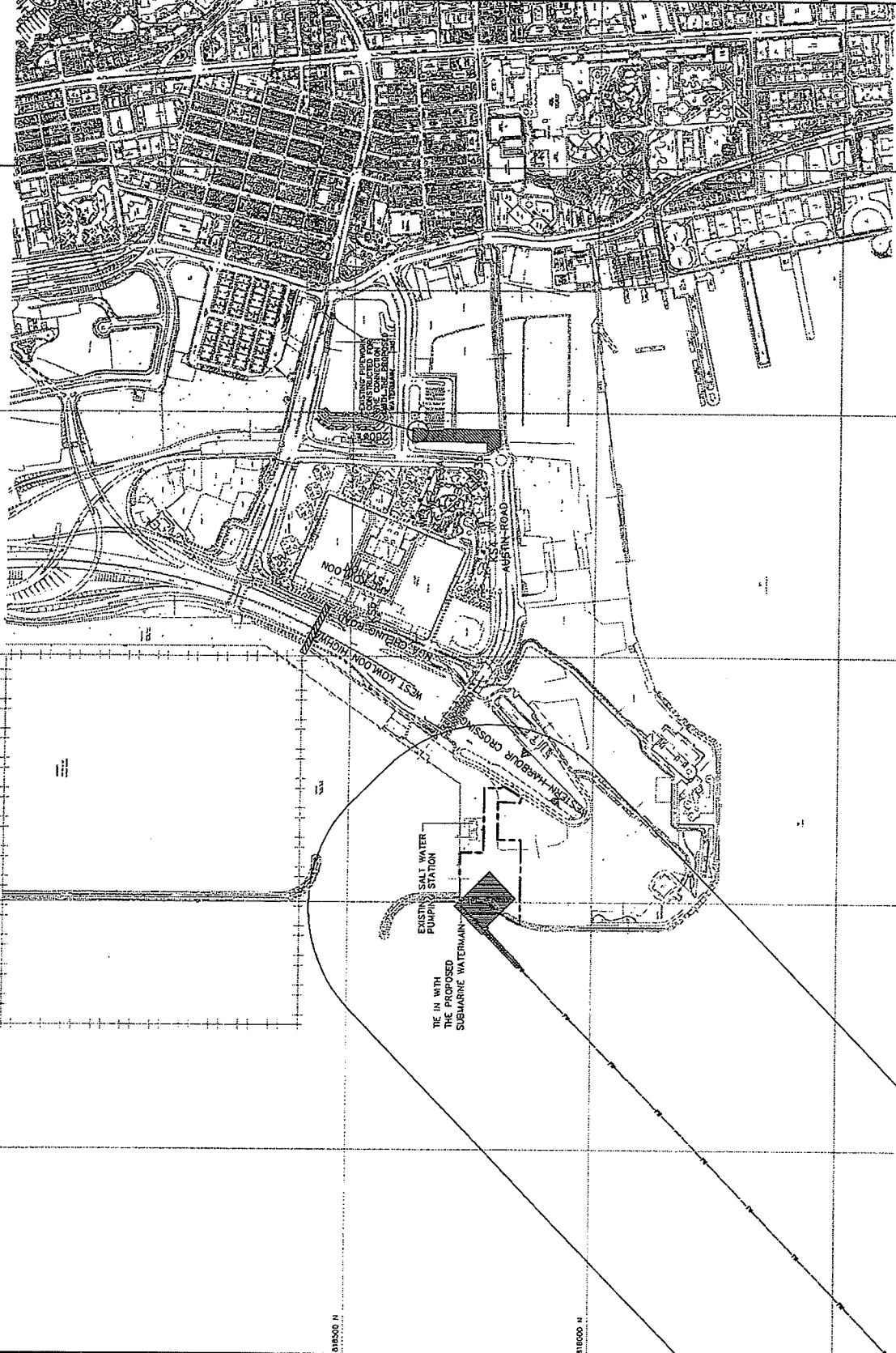
TEMPORARY PLATFORM



300M NOISE ASSESSMENT BOUNDARY



WORKS AREA BOUNDARY



DATE: 20/05/14  
 PREPARED BY: Mott MacDonald  
 CHECKED BY: Mott MacDonald  
 APPROVED BY: Mott MacDonald  
 PROJECT NO: 024/2005(WC)  
 PROJECT NAME: LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN - INVESTIGATION

**Mott MacDonald**  
 Mott MacDonald Limited  
 303-305 Queen's Road Central  
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THE GOVERNMENT OF THE HONG KONG  
 SPECIAL ADMINISTRATIVE REGION  
 WATER SUPPLIES DEPARTMENT

LOCATION OF NOISE SENSITIVE RECEIVERS IN WEST KOWLOON

Drawn by:	
Checked by:	
Approved by:	
Scale:	1:4000001
Sheet No.:	
Project No.:	
Project Name:	

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FIGURE 1.2c

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