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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.13**

(MAY 2011)

Prepared by:



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16th Jun 2011

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

By Post

Attention: Ms. Candy Wong

Dear Ms. Wong

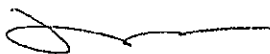
**Re: Contact No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains from West
Kowloon to Sai Ying Pun
Monthly Environmental Monitoring and Audit Report No. 13**

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 13 by Email on 13th Jun 2011 (entitled "9/WSD/08 - Draft Monthly EM&A Report (May 2011)") and the subsequent revision of the report by Email on 16th Jun 2011.

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

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

Yours sincerely,



David Yeung
Independent Environmental Checker

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

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EXECUTIVE SUMMARY

Under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(WS) 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.13 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in May 2011.

Site Activities

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

- Grouting works behind the existing vertical seawall (Portion J);
- Drilling of pipe pile (Portion H1 & H2);
- Preparation works for pipe pulling (Portion H1, H2 & J);
- Laying of the 18 mm dia. pilot wire (Portion J);
- Pulling of the 38 mm dia. pilot wire and 76 mm pulling wire from West Kowloon to Sai Ying Pun (Portion J)
- Pulling of the submarine pipe from West Kowloon to Sai Ying Pun (Portion J);
- Erection of noise barrier for concrete truck mixer (Portion H1 & H2);
- Transfer the stored pipes to the flattop pontoon (Portion I); and
- Pipe pulling works, including welding of the field joint, apply external coating, install steel wire mesh, install steel jacket to the field joint, concrete coating of the field joint, internal lining of the field welded joint and pipe pulling (Portion I).

Environmental Monitoring Progress

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

- Day-time Noise Monitoring (0700-1900 on normal weekday): 4 Occasions at KS6 and 4 Occasions at CGa, RWM and KY3
- Evening-time Noise Monitoring (1900-2300): 1 Occasion at KS6, CGa, RWM and KY3
- Night-time Noise Monitoring (2300-0700 of next day): 0 Occasion at KS6, CGa, RWM and KY3
- Holiday-time Noise Monitoring (0700-1900 on Holiday): 2 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 12 Occasions at 9 monitoring stations and 4 control stations
- Weekly-site inspection: 5 Occasions

Noise Monitoring

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

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

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	05, 12, 18, 25 and 31 May 2011
Monthly Joint site inspection	25 May 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 complaints, notification of summons and prosecutions with respect to environmental issues were received in this reporting month.



Change in Environmental Aspect in this Reporting Month

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

Future Key Issues

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

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



1.0 INTRODUCTION

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

This report documented the findings of EM&A Works conducted in May 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:

- Grouting works behind the existing vertical seawall (Portion J);
- Drilling of pipe pile (Portion H1 & H2);
- Preparation works for pipe pulling (Portion H1, H2 & J);
- Laying of the 18 mm dia. pilot wire (Portion J);
- Pulling of the 38 mm dia. pilot wire and 76 mm pulling wire from West Kowloon to Sai Ying Pun (Portion J)
- Pulling of the submarine pipe from West Kowloon to Sai Ying Pun (Portion J);



- Erection of noise barrier for concrete truck mixer (Portion H1 & H2);
- Transfer the stored pipes to the flattop pontoon (Portion I); and
- Pipe pulling works, including welding of the field joint, apply external coating, install steel wire mesh, install steel jacket to the field joint, concrete coating of the field joint, internal lining of the field welded joint and pipe pulling (Portion I).

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/003/13	00593620	14/09/10	13/09/11
		ET/EN/003/12	00773032	08/12/10	07/12/11
Sound Level Calibrator	Rion NC-73 Sound Level Calibrator	ET/EN/002/01	10196943	12/11/10	11/11/11
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 May 2011. Hence, noise monitoring at noise station CG was moved to another noise station CGa (pavement in front of Connaught Garden) temporarily until the completion of repairing and maintenance works at Connaught Garden since CGa locates close to the major site activities which are likely to have noise impacts and low disturbance to the occupants was observed during the noise monitoring. As a result, there were three noise monitoring locations, CGa (Pavement in front of Connaught Garden), RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3) selected to conduct impact environmental monitoring.

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

Table 4.3 Noise Monitoring Stations

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

4.5 Monitoring Methodology

Instrumentation

Integrating Sound Level Meters were employed for noise monitoring.

Operation/Analysis Procedures

- Sound Level Meter was set on a tripod at a height of 1.2m above the ground;
 - For free field measurement, the meter was positioned away from any nearby reflective surfaces.
 - The battery condition was checked to ensure the correct functioning of the meter;
 - Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting : A
 - Time weighting : Fast
 - Time measurement : 30 mins
 - Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1.0 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment;
 - During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
 - 3dB(A) correction had been added to the results if noise measurements were free-field;
- Noise measurement may be paused during periods of high intrusive noise (e.g. dog barking directly towards the receiver of noise level meter). If noise measurement was paused during high intrusive noise, the noise level meter would be resumed and continued the noise measurement and the



observations would also be recorded. Any pause intervals were not included in the measurement time; and

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

Maintenance and Calibration

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

4.6 Actions and Limit Levels

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

Table 4.4 Action and Limit Levels for Noise Monitoring

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

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

4.7 Event-Action Plans

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

4.8 Results

Totally 4 occasions at KS6 and 4 occasions at CGa, RWM and KY3 of day-time noise monitoring, 1 occasion of evening-time noise monitoring, 0 occasion of night-time noise monitoring and 2 occasions of holiday-time noise monitoring at all four noise monitoring stations (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 exceedance in Limit Level were recorded according to the noise monitoring results in 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	06/05/11	14:35	62.9	X
	13/05/11	15:30	62.4	X
	20/05/11	14:30	63.1	X
	27/05/11	11:40	63.7	X
Evening-time	29/05/11	20:10	65.7	X
	29/05/11	20:15	64.4	X
	29/05/11	20:20	64.0	X
Holiday-time	22/05/11	09:00	66.7	X
	22/05/11	09:05	65.2	X
	22/05/11	09:10	65.8	X
	29/05/11	09:45	61.2	X
	29/05/11	09:50	60.9	X
	29/05/11	09:55	62.5	X



Monitoring Parameter	Date	CGa		
		Time	Result	Exceed*
Day-time	04/05/11	11:15	74.0	X
	11/05/11	16:55	74.3	X
	18/05/11	14:00	71.5	X
	25/05/11	09:05	73.1	X
Evening-time	29/05/11	21:45	68.7	X
	29/05/11	21:50	69.1	X
	29/05/11	21:55	68.9	X
Holiday-time	22/05/11	14:00	69.3	X
	22/05/11	14:05	69.1	X
	22/05/11	14:10	68.7	X
	29/05/11	10:45	67.8	X
	29/05/11	10:50	68.2	X
	29/05/11	10:55	68.0	X
Monitoring Parameter	Date	RWM		
		Time	Result	Exceed*
Day-time	04/05/11	10:40	60.5	X
	11/05/11	16:15	61.3	X
	18/05/11	14:35	63.8	X
	25/05/11	10:10	63.5	X
Evening-time	29/05/11	22:05	67.7	X
	29/05/11	22:10	68.0	X
	29/05/11	22:15	68.3	X
Holiday-time	22/05/11	14:15	68.3	X
	22/05/11	14:20	69.1	X
	22/05/11	14:25	68.5	X
	29/05/11	11:05	62.4	X
	29/05/11	11:10	61.9	X
	29/05/11	11:15	62.1	X
Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Day-time	04/05/11	10:05	59.8	X
	11/05/11	15:40	59.5	X
	18/05/11	15:15	62.2	X
	25/05/11	10:15	63.3	X
Evening-time-time	29/05/11	22:25	68.5	X
	29/05/11	22:30	68.9	X
	29/05/11	22:35	68.6	X
Holiday-time	22/05/11	14:30	69.4	X
	22/05/11	14:35	68.7	X
	22/05/11	14:40	69.2	X
	29/05/11	11:25	61.4	X
	29/05/11	11:30	62.0	X
	29/05/11	11:35	62.2	X

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

The summary of noise exceedances is shown in Table 4.6.

Table 4.6 Summary of Impact Noise Exceedances in this reporting month

Exceedance Level	Daytime	Evening-time	Night-time	Holiday-time
Action	0	0	0	0
Cumulative	0	0	0	0
Limit	0	0	0	0
Cumulative	0	0	149	0



5.0 WATER QUALITY MONITORING

5.1 Monitoring Requirements

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

5.2 Monitoring Locations

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

Table 5.1 Water Quality Monitoring Stations

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

Remark (*): Station R15 = WSD Seawater Intake

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

5.3 Monitoring Parameters

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

Table 5.2 Water Quality Monitoring Parameters

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

Table 5.3 Other relevant water quality parameters

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

5.4 Monitoring Frequency

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



Table 5.4 Monitoring Frequency of Impact Water Quality Monitoring

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

5.5 Monitoring Methodology and Equipment Used

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

Location of the monitoring stations

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

Water Depth measurement

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

In-situ Water Quality Monitoring Equipment

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

Dissolved Oxygen, salinity and temperature measuring equipment

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

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

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

Turbidity Measurement Instrument

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

Water Sampling and Sample Analysis

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

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



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

5.6 Details of site Equipment used for In-situ Measurement

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

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

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

Parameter	Model	Date of Calibration	Due Date	Equipment No.	Serial No.
Coordinate of Monitoring stations	Magellan GPS Navigator	----	----	ET/EW/005/03	211836B
Dissolved Oxygen (Saturation), Temperature and Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85	22/02/11 21/05/11	21/05/11 20/08/11	ET/EW/008/002*	06C1998AD
Turbidity	HACH Model 2100P Turbid Meter	14/04/11	13/07/11	ET/0505/007*	08060C030281
Water Depth	Speedtech Instrument SM-5A	----	----	ET/EW/002/04	56657

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

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

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

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

Table 5.6 Summary of test method

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

5.8 Action and Limit Level

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



Table 5.7 Water Quality Action and Limit Levels

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

Notes: 1. "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity and SS, non-compliance of water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

5.9 Event and Action Plan

Please refer to the Appendix D for details.

5.10 Monitoring Duration and Period In this reporting month

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

May 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	31				

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 05, 12, 18, 25 and 31 May 2011 by ET. Monthly joint site inspection at 25 May 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 findings

According to the summary of the ET weekly site inspections carried out in May 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. Summary of the site inspection findings in this reporting month is shown in Table 6.1.

Table 6.1 Summary of Site Inspection Findings

Item	Aspect	Finding	Action(s) taken by the Contractor	ET Verification	Status of finding
1	Site Practice	Oil stains were found from a winch at Portion J during the weekly site inspection on 05/05/11.	<ul style="list-style-type: none"> Clean up the oil stains as chemical waste. (Photo Ref. 1 of the Contractor Follow-up Action – 09/05/11) 	During the subsequent weekly site inspection on 12/05/11, the oil stains were cleaned.	Closed
2	Site Practice	Rubbish was noted inside the silt screen at Kowloon South Salt Water Pumping Station during the weekly site inspection on 12/05/11.	<ul style="list-style-type: none"> Collect and dispose of the rubbish regularly. (Photo Ref. 1 of the Contractor Follow-up Action – 18/05/11) 	During the subsequent weekly site inspection on 18/05/11, the rubbish was cleaned.	Closed
3	Site Practice	Oil/paint cans were found on the Launching Barge during the weekly site inspection on 31/05/11.	<ul style="list-style-type: none"> The oil/paint cans were removed from the Launching Barge. (Photo Ref. 1 of the Contractor Follow-up Action – 08/06/11) 	Since the finding was observed in the last weekly site inspection on 31/05/11, it will be verified in the first weekly site inspection in the coming month.	Follow-up
4	Site Practice	Water leakage was observed from an air-conditioner at the Launching Barge during the weekly site inspection on 31/05/11	<ul style="list-style-type: none"> The water outlet of the air-conditioner was connected to an appropriate container. (Photo Ref. 3 & 4 of the Contractor Follow-up Action – 08/06/11) 	Since the finding was observed in the last weekly site inspection on 31/05/11, it will be verified in the first weekly site inspection in the coming month.	Follow-up
5	Site Practice	Large engine on the Launching Barge was found without container under the engine during the weekly site inspection on 31/05/11.	<ul style="list-style-type: none"> Drip tray was provided for the engine of crawler crane to prevent chemical leakage. (Photo Ref. 2 of the Contractor Follow-up Action – 08/06/11) 	Since the finding was observed in the last weekly site inspection on 31/05/11, it will be verified in the first weekly site inspection in the coming month.	Follow-up
6	Site	Lubricant was used for lubricating	<ul style="list-style-type: none"> Lubricant was 	Since the finding was	Follow-



	Practice	of the access to the Launching Barge during the weekly site inspection on 31/05/11.	removed from the access of the Launching Barge. (Photo Ref. 5 of the Contractor Follow-up Action – 08/06/11)	observed in the last weekly site inspection on 31/05/11, it will be verified in the first weekly site inspection in the coming month.	up
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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
Water Discharge Licence (West Kowloon)	WT00005347-2009	07/01/10	31/01/15	Effluent and all other wastewater arising from the construction site through Screen & Sedimentation Tank
Water Discharge Licence (Sai Yung Pun)	WT00005800-2010	14/01/10	31/01/15	Effluent arising from the construction site through Sedimentation Tank
Chemical Waste Producer	5213-217-W3086-01	13/10/09	End of Project	Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries
Construction Noise Permit (West Kowloon)	GW-RE0257-11	19/04/11	04/10/11	<p>Group A</p> <p>One Air Compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone A)</p> <p>One Crane, mobile (diesel) (CNP 048) (Zone A)</p> <p>One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A)</p> <p>One Generator, standard (CNP 101) (Zone B)</p> <p>Group B</p> <p>One Concrete lorry mixer (CNP 044) (Zone A)</p> <p>One Crane, mobile (diesel) (CNP 048) (Zone A)</p> <p>One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B)</p> <p>Two Crane, mobile (diesel) (CNP 048) (Zone B)</p> <p>One Derrick barge (CNP 061) (Zone B)</p> <p>Four Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B)</p> <p>Six Grinder, hand-held (electric) (CNP065) (Zone B)</p> <p>Two Guard boats (Zone B)</p> <p>Two Poker, vibratory, external (electric) (Zone B)</p> <p>One Tug boat (CNP 221) (Zone B)</p> <p>Group C</p> <p>One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A)</p> <p>One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B)</p> <p>One Grinder, hand-held (electric) (CNP065) (Zone B)</p> <p>One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B)</p> <p>Group D</p> <p>One Derrick barge (CNP 061) (Zone B)</p> <p>One dredger, grab (CNP 063) (Zone B)</p> <p>One Generator, standard (CNP 101) (Zone B)</p> <p>Two Guard boats (Zone B)</p> <p>One Tug boat (CNP 221) (Zone B)</p>



Construction Noise Permit (Sai Ying Pun)	GW-RS0352-11	26/04/11	10/10/11	<p>Group A One dredger, grab (CNP 063) Two Guard boats One Tug boats (CNP 221) One Hopper barge One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, 108dB(A) (CNP 101) One Derrick barge (CNP 061)</p> <p>Group 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, 108dB(A) (CNP 101)</p> <p>Group C Two Derrick barge (CNP 061) Three Guard boats One Tug boat (CNP 221) One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ Two Generator, silenced, 108dB(A) (CNP 101)</p> <p>Group D One Derrick barge (CNP 061) Two Guard boats One Tug boat (CNP 221) 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, 108dB(A) (CNP 101)</p> <p>Group E One Derrick barge (CNP 061) Two Guard boats One Tug boat (CNP 221) One Crane, mobile (diesel) (CNP 048) Two Generator, silenced, 108dB(A) (CNP 101) One Winch (electric) (CNP 262)</p> <p>Group F One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, 108dB(A) (CNP 101)</p>
Notification under APCO		Application had been submitted to EPD on 25/09/09 and approved from 29/09/09.		

8.0 WASTE MANAGEMENT

8.1 Monthly Waste Summary

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

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

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (in m ³)	415.91		13222.67
	Broken Concrete (in m ³)	0	---	0
	Reused in the Contract (in m ³)	0	---	0
	Reused in other Projects (in m ³)	0	---	0
	Disposal as Public Fill (in m ³)	415.91	SENT Landfill	13222.67
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	13	Collected by recycling company	117
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in m ³)	3.36	SENT Landfill	76.1
Dredged Materials*	Type 1 (in m ³)	0	East Ninepin Mud Disposal Ground	160500
	Type 2 (in 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. Besides, no exceedances in Limit Level were recorded according to the noise monitoring results in this reporting month.

9.2 Summary of Environmental Complaints

There was no complaint received in this reporting month.

9.3 Summary of Notification of Summons and Prosecution

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

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

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

10.2 Implementation Status of Event and Action Plan

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

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

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



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

Table 10.1 Summary of Environmental Complaints and Prosecutions

<i>Complaints logged</i>		<i>Summons served</i>		<i>Successful prosecution received</i>	
<i>April 2011</i>	<i>Cumulative</i>	<i>April 2011</i>	<i>Cumulative</i>	<i>April 2011</i>	<i>Cumulative</i>
0	0	0	0	0	0

11.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

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

Since no documented complaints on noise issue were received in this reporting month, no Action Level exceedances were recorded. Besides, no exceedances in Limit Level were 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 complaints, prosecutions or notifications of summons were received in this reporting month.

Recommendations

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

Air Quality

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

Noise

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

Water Quality

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

Chemical and Waste Management

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



12.0 FUTURE KEY ISSUES

12.1 Work Programme for the Coming Month

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

- Erection of the noise barrier for concrete truck mixer (Portion H1 & H2);
- Transfer the stored pipes to the flattop pontoon in Portion "I" (Portion H1 & H2);
- Pipe pulling works, including welding of the field joint, apply external coating, install steel wire mesh, install steel jacket to the field joint, concrete coating of the field joint, internal lining of the field welded joint and pipe pulling (Portion I); and
- Pulling of the submarine pipe from West Kowloon to Sai Ying Pun (Portion J).

12.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- Noise and dust impact due to construction works;
- Use and maintain silt curtain and silt screen properly;
- Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;
- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and
- Maintain good site practice to minimize environmental impacts at the site.

Mitigation measures to be required in the coming month:

Air Quality Impact

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

Noise

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

Water Quality Impact

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

Chemical and Waste Management

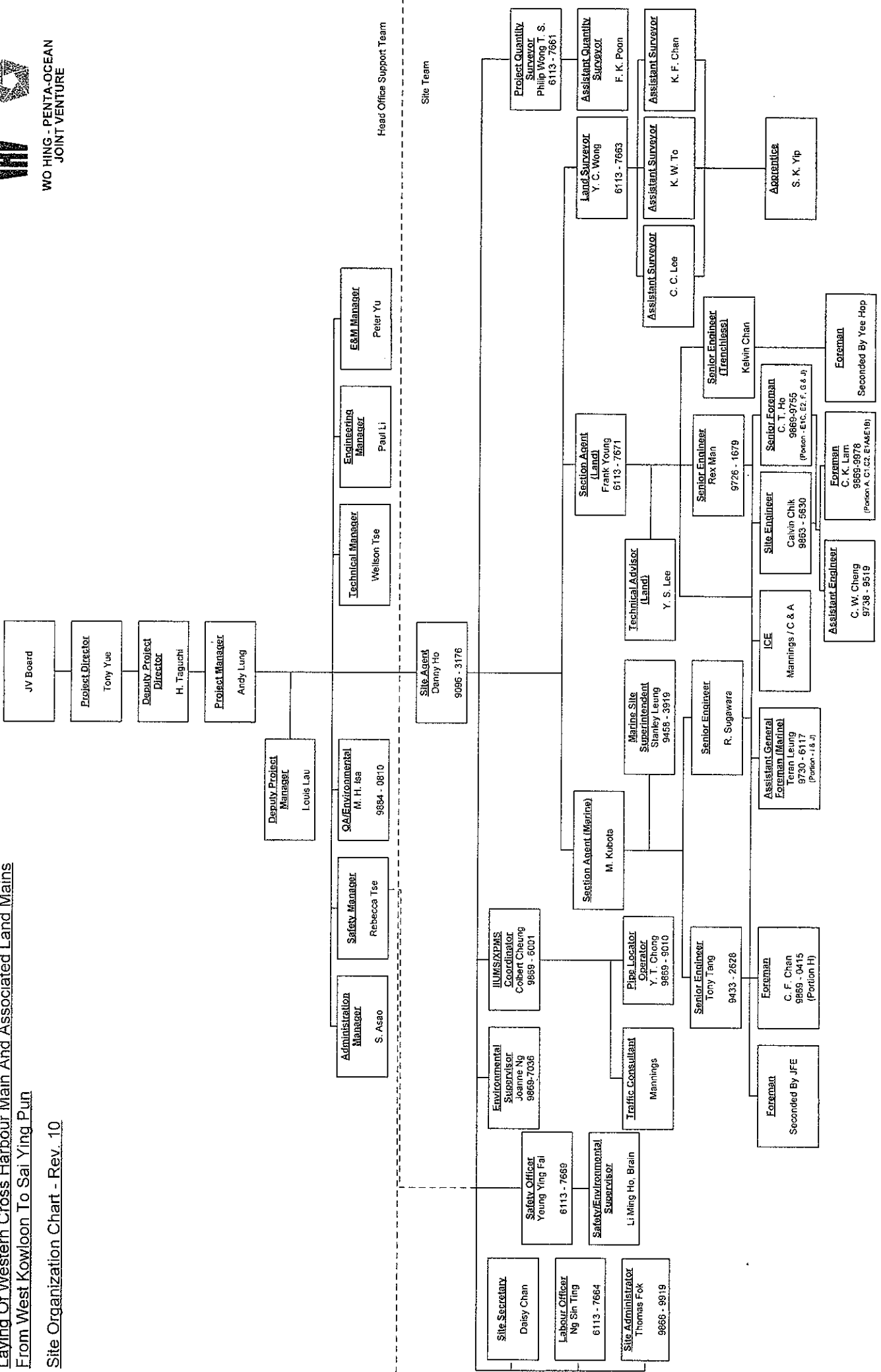
- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To maintain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

12.3 Monitoring Schedule for the Coming Month

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

Appendix A

Organization Chart and Lines of Communication





東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix B1

Calibration Certificates for Impact Noise Monitoring Equipment



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 : $(23 \pm 3)^{\circ}\text{C}$

Relative Humidity : $(50 \pm 25) \%$

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:

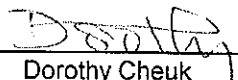
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

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: 18-Apr-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. 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 _A	Fast	94.0	94.2
		Slow		94.2
	L _C	Fast		94.2
	L _p	Fast		94.2
30 – 120	L _A	Fast	94.0	94.1
		Slow		94.1
	L _C	Fast		94.1
	L _p	Fast		94.2
30 – 120	L _A	Fast	114.0	114.0
		Slow		114.0
	L _C	Fast		114.0
	L _p	Fast		114.1

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 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)
130	114.0	114.2	+0.1	± 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 : ± 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 ²	40.0	39.9	
1/10 ³	40.0	40.0	± 1.0 dB
1/10 ⁴	40.0	39.9	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 010 hPa.

----- END -----



Calibration Certificate

Certificate No. **05083**

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. : Q02020

Date of receipt : 8-Sep-10

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 : 14-Sep-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

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

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


Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	00804	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: 14-Sep-10

This Certificate is issued by:

Hong Kong Calibration Ltd.

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

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Calibration Certificate

Certificate No. **05083**

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 _A	Fast	94.0	93.7
		Slow		93.7
	L _C	Fast		93.7
	L _p	Fast		93.8
30 – 120	L _A	Fast	94.0	93.7
		Slow		93.7
	L _C	Fast		93.7
	L _p	Fast		93.7
30 – 120	L _A	Fast	114.0	113.5
		Slow		113.5
	L _C	Fast		113.5
	L _p	Fast		113.5

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	113.9	+0.2	
130	104.0	103.9	+0.2	
120	94.0	93.7(Ref.)	--	
110	84.0	83.6	-0.1	
100	74.0	73.7	0.0	
90	64.0	63.7	0.0	
80	54.0	53.7	0.0	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 05083

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	83.6	-0.1	± 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	-40.2	- 39.4 dB, ± 1.5 dB
63 Hz	-26.8	- 26.2 dB, ± 1.5 dB
125 Hz	-16.7	- 16.1 dB, ± 1 dB
250 Hz	-9.2	- 8.6 dB, ± 1 dB
500 Hz	-3.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.5	+ 1.2 dB, ± 1 dB
4 kHz	+1.5	+ 1.0 dB, ± 1 dB
8 kHz	-0.6	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-0.6	- 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	40.0	± 0.5 dB
1/10 ²	40.0	40.1	
1/10 ³	40.0	40.2	± 1.0 dB
1/10 ⁴	40.0	40.2	

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 : 1 004 hPa.

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

----- END -----



Calibration Certificate

Certificate No. 07049

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. : Q02790

Date of receipt : 7-Dec-10

Item Tested

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

Manufacturer : Rion

Model : NL-31

Serial No. : 00773032

Test Conditions

Date of Test : 8-Dec-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

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

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

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	00804	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: 9-Dec-10

This Certificate is issued by:

Hong Kong Calibration Ltd.

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

Tel: 2425 8801 Fax: 2425 8646

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Calibration Certificate

Certificate No. **07049**

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 _A	Fast	94.0	93.9
		Slow		93.9
	L _C L _p	Fast		93.9
		Fast		94.0
30 - 120	L _A	Fast	94.0	93.9
		Slow		93.9
	L _C L _p	Fast		93.9
		Fast		93.9
30 - 120	L _A	Fast	114.0	113.7
		Slow		113.7
	L _C L _p	Fast		113.7
		Fast		113.7

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 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	114.0	+0.1	
130	104.0	104.0	+0.1	
120	94.0	93.9 (Ref.)	- -	
110	84.0	83.9	0.0	
100	74.0	73.9	0.0	
90	64.0	64.0	+0.1	
80	54.0	54.0	+0.1	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 07049

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	83.9	0.0	± 0.4 dB
	94.0	93.9 (Ref.)	--	
	95.0	94.9	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	-40.1	- 39.4 dB, ± 1.5 dB
63 Hz	-26.8	- 26.2 dB, ± 1.5 dB
125 Hz	-16.8	- 16.1 dB, ± 1 dB
250 Hz	-9.2	- 8.6 dB, ± 1 dB
500 Hz	-3.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.6	+ 1.2 dB, ± 1 dB
4 kHz	+1.6	+ 1.0 dB, ± 1 dB
8 kHz	-0.6	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.2	- 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 ²	40.0	40.0	
1/10 ³	40.0	40.1	± 1.0 dB
1/10 ⁴	40.0	40.1	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 008 hPa.

----- END -----



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.

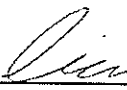
The results are shown in the attached page(s).

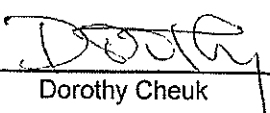
Main Test equipment used:

<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	± 1 dB

Uncertainty : ± 0.1 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.988 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.3 %

Mfr's Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 006 hPa

----- END -----



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



Hong Kong Calibration Ltd.

香港校正有限公司

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	
06/05/11	Sunny	14:35	15:05	62.9	64.8	61.8	0.4
13/05/11	Cloudy	15:30	16:00	62.4	63.5	61.3	0.9
20/05/11	Fine	14:30	15:00	63.1	63.9	61.4	1.3
27/05/11	Sunny	11:40	12:10	63.7	65.0	62.2	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	
04/05/11	Cloudy	11:15	11:45	74.0	76.3	67.8	0.2
11/05/11	Sunny	16:55	17:25	74.3	76.9	67.9	0.1
18/05/11	Sunny	14:00	14:30	71.5	73.7	64.8	0.7
25/05/11	Cloudy	09:05	09:35	73.1	75.4	68.2	0.3

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/05/11	Cloudy	10:40	11:10	60.5	64.1	58.0	0.5
11/05/11	Sunny	16:15	16:45	61.3	65.0	59.1	0.1
18/05/11	Sunny	14:35	15:05	63.8	66.0	60.3	0.9
25/05/11	Cloudy	09:40	10:10	63.5	65.8	61.1	0.5

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/05/11	Cloudy	10:05	10:35	59.8	62.3	56.1	0.8
11/05/11	Sunny	15:40	16:10	59.5	61.2	56.3	0.1
18/05/11	Sunny	15:15	15:45	62.2	64.5	59.9	0.9
25/05/11	Cloudy	10:15	10:45	63.3	64.9	60.6	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 (5min)	L10	L90	
29/05/11	Fine	20:10	20:15	65.7	68.6	59.3	2.1
29/05/11	Fine	20:15	20:20	64.4	67.3	59.2	2.4
29/05/11	Fine	20:20	20:25	64.0	66.7	59.0	1.9

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
29/05/11	Fine	21:45	21:50	68.7	70.5	64.9	0.9
29/05/11	Fine	21:50	21:55	69.1	70.9	65.3	0.8
29/05/11	Fine	21:55	22:00	68.9	70.7	65.0	0.7

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
29/05/11	Fine	22:05	22:10	67.7	69.4	63.6	1.1
29/05/11	Fine	22:10	22:15	68.0	69.8	64.1	0.9
29/05/11	Fine	22:15	22:20	68.3	70.2	64.6	1.2

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 (5min)	L10	L90	
29/05/11	Fine	22:25	22:30	68.5	70.8	64.7	1.0
29/05/11	Fine	22:30	22:35	68.9	71.1	65.2	0.8
29/05/11	Fine	22:35	22:40	68.6	70.9	64.9	1.3



Holiday-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
22/05/11	Drizzle	09:00	09:05	66.7	69.4	59.9	1.3
22/05/11	Drizzle	09:05	09:10	65.2	68.5	58.0	1.2
22/05/11	Drizzle	09:10	09:15	65.8	68.3	60.1	1.3
29/05/11	Fine	09:45	09:50	61.2	62.9	59.3	1.6
29/05/11	Fine	09:50	09:55	60.9	62.2	59.2	1.4
29/05/11	Fine	09:55	10:00	62.5	64.8	59.7	1.7

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
22/05/11	Drizzle	14:00	14:05	69.3	71.1	62.7	0.8
22/05/11	Drizzle	14:05	14:10	69.1	70.2	63.9	1.2
22/05/11	Drizzle	14:10	14:15	68.7	70.4	61.5	1.3
29/05/11	Fine	10:45	10:50	67.8	69.9	63.7	1.2
29/05/11	Fine	10:50	10:55	68.2	70.4	64.1	1.1
29/05/11	Fine	10:55	11:00	68.0	70.1	63.9	1.3

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
22/05/11	Drizzle	14:15	14:20	68.3	69.8	60.5	0.9
22/05/11	Drizzle	14:20	14:25	69.1	69.4	64.6	1.0
22/05/11	Drizzle	14:25	14:30	68.5	69.0	61.6	1.3
29/05/11	Fine	11:05	11:10	62.4	64.0	58.2	1.6
29/05/11	Fine	11:10	11:15	61.9	63.3	57.5	1.5
29/05/11	Fine	11:15	11:20	62.1	63.7	57.9	1.4

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
22/05/11	Drizzle	14:30	14:35	69.4	70.2	63.2	1.4
22/05/11	Drizzle	14:35	14:40	68.7	69.5	64.1	1.2
22/05/11	Drizzle	14:40	14:45	69.2	68.9	62.2	1.3
29/05/11	Fine	11:25	11:30	61.4	63.5	57.7	1.7
29/05/11	Fine	11:30	11:35	62.0	64.1	58.2	1.5
29/05/11	Fine	11:35	11:40	62.2	64.3	58.5	1.6



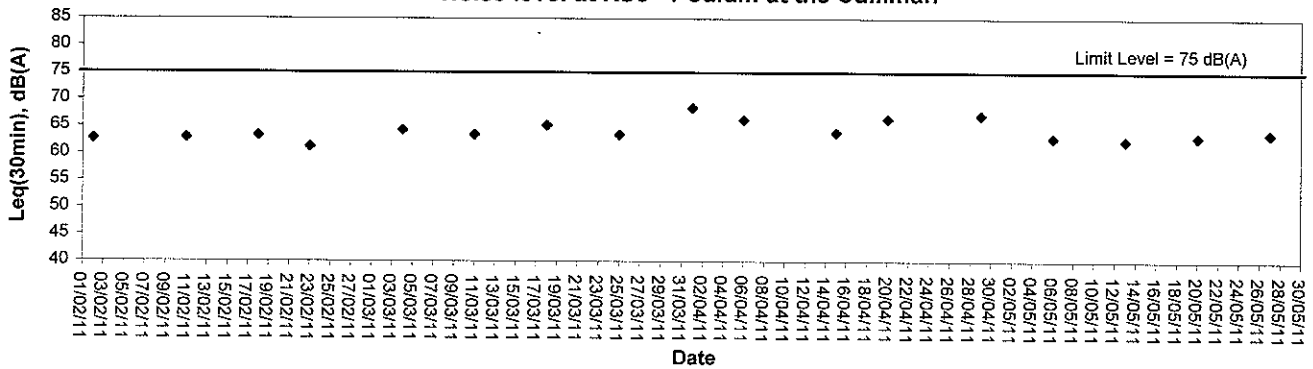
Appendix B3

Graphical Plots of Impact Noise Monitoring Data

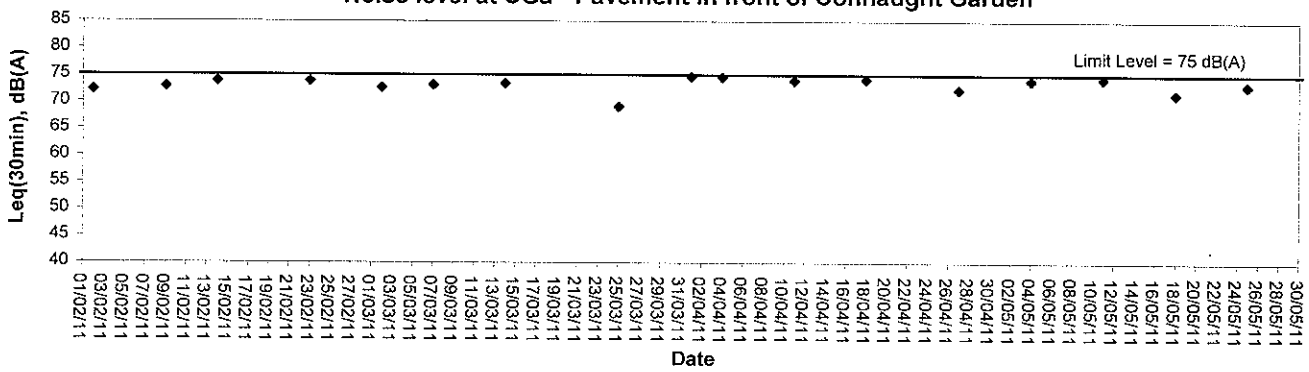


Noise Monitoring (Day-time)

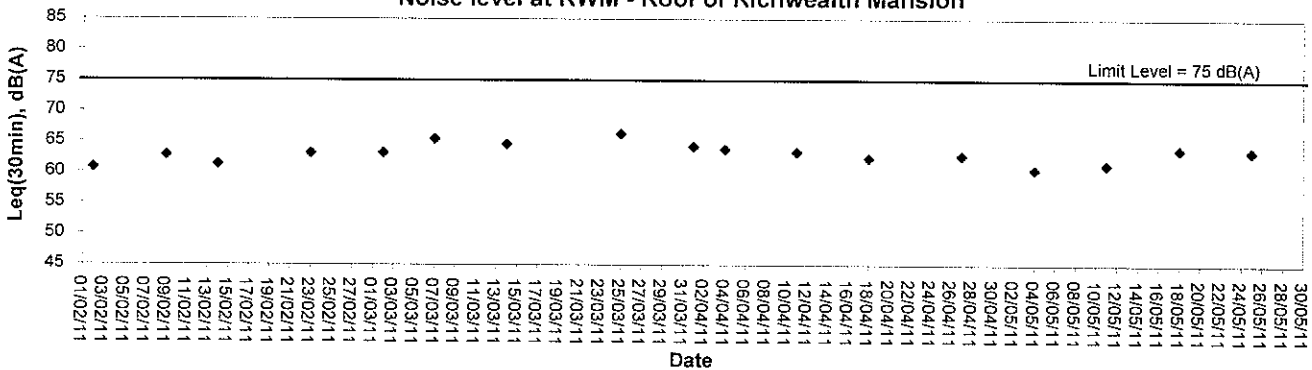
Noise level at KS6 - Podium at the Culliman



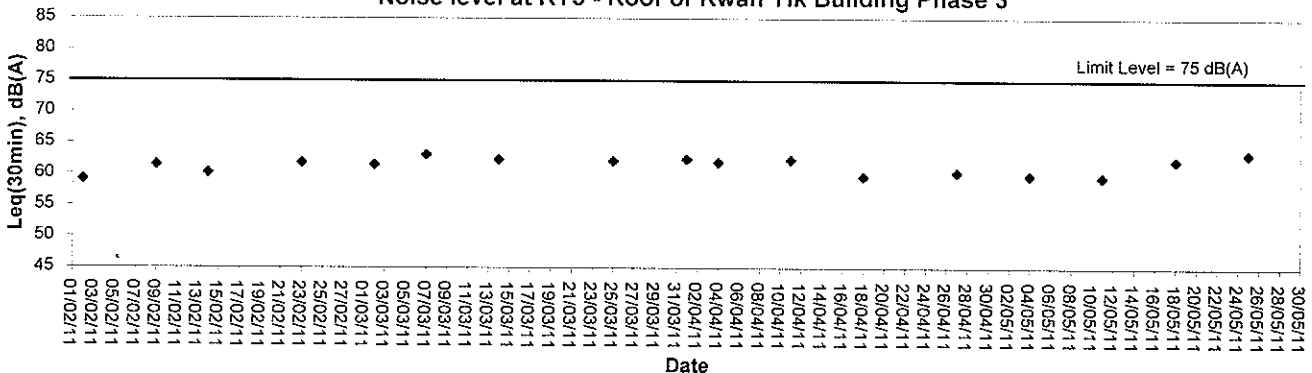
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



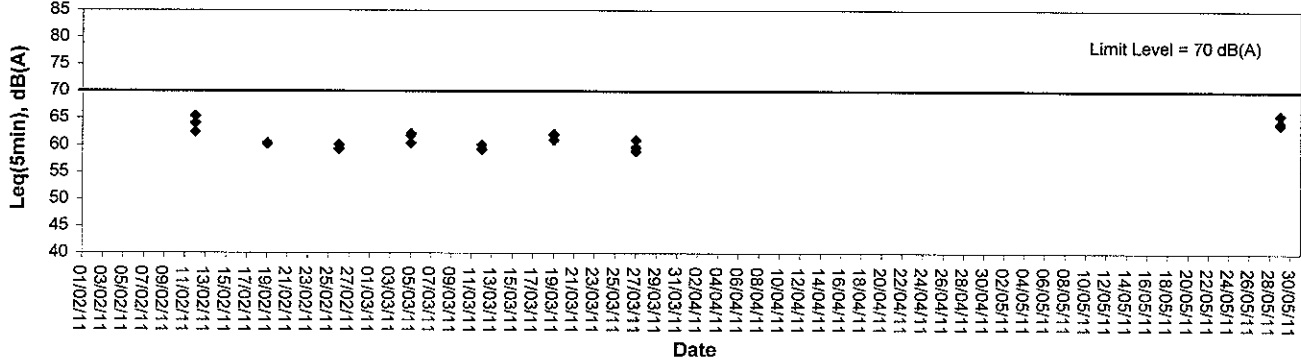
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



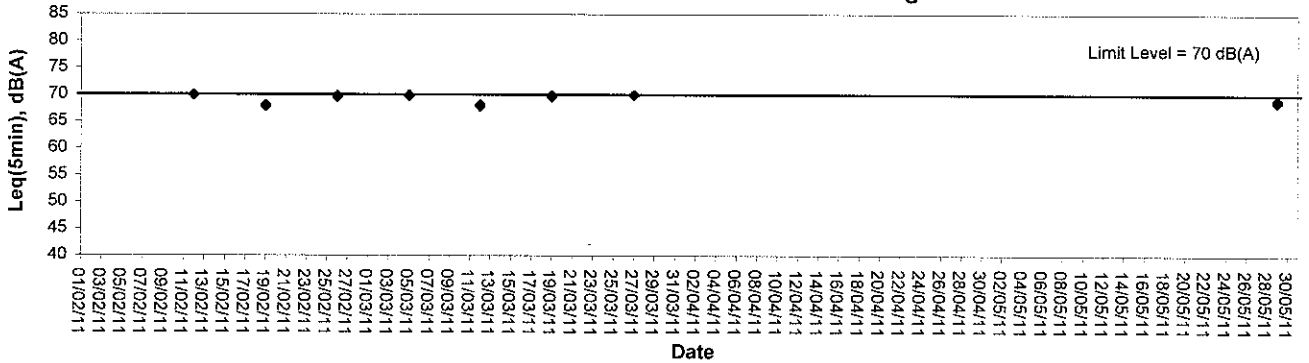


Noise Monitoring (Evening-time)

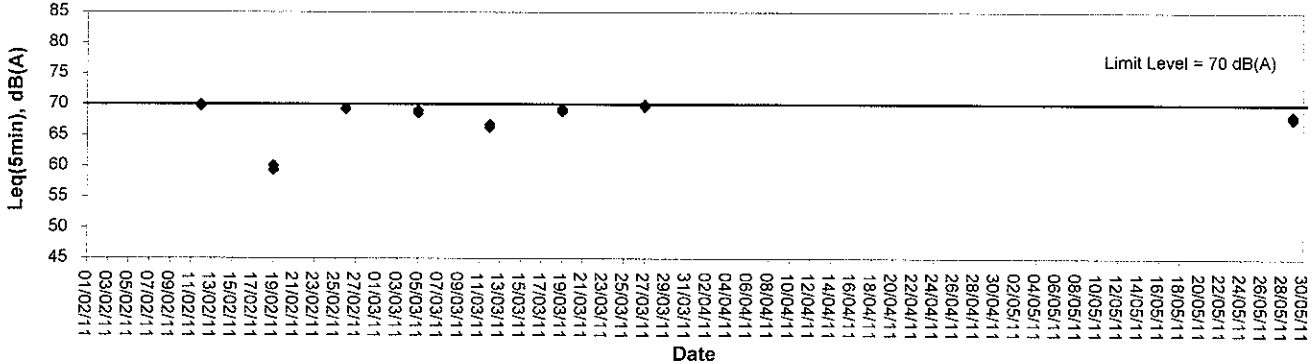
Noise level at KS6 - Podium at the Cullinan



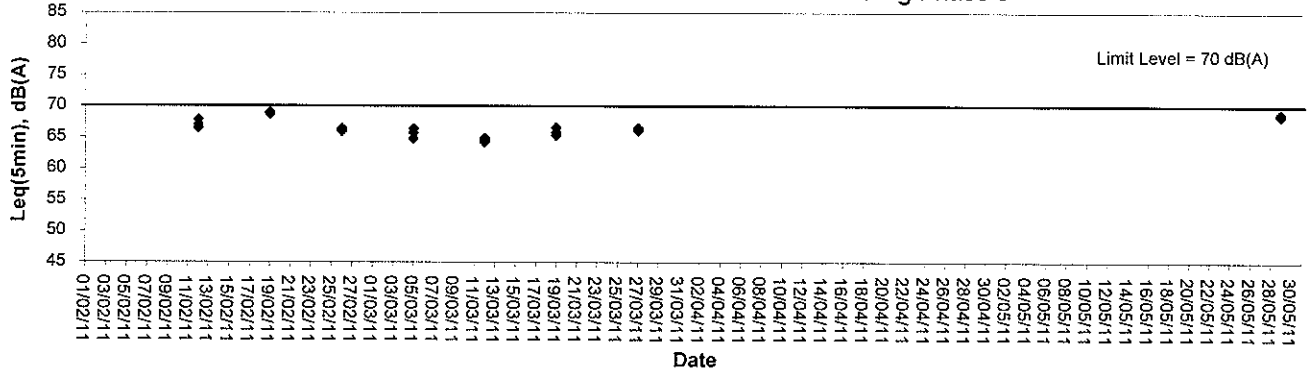
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



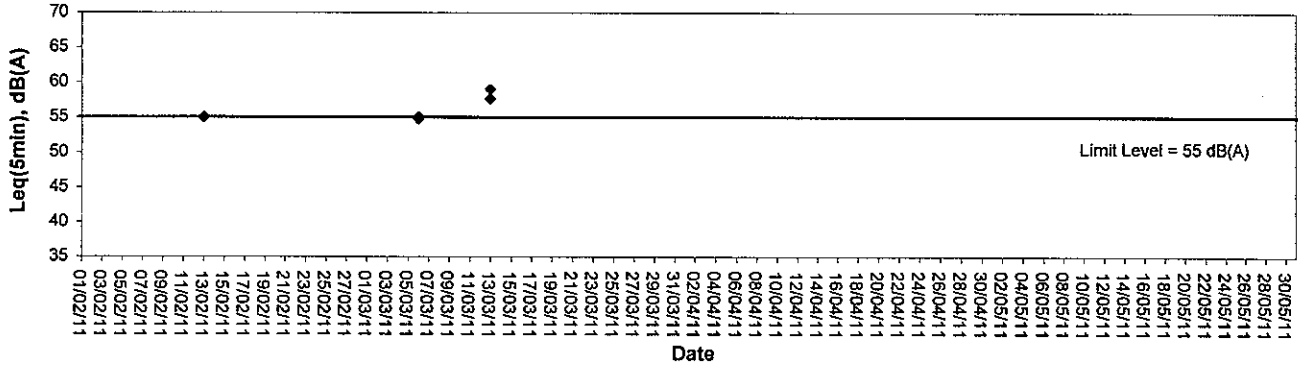
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



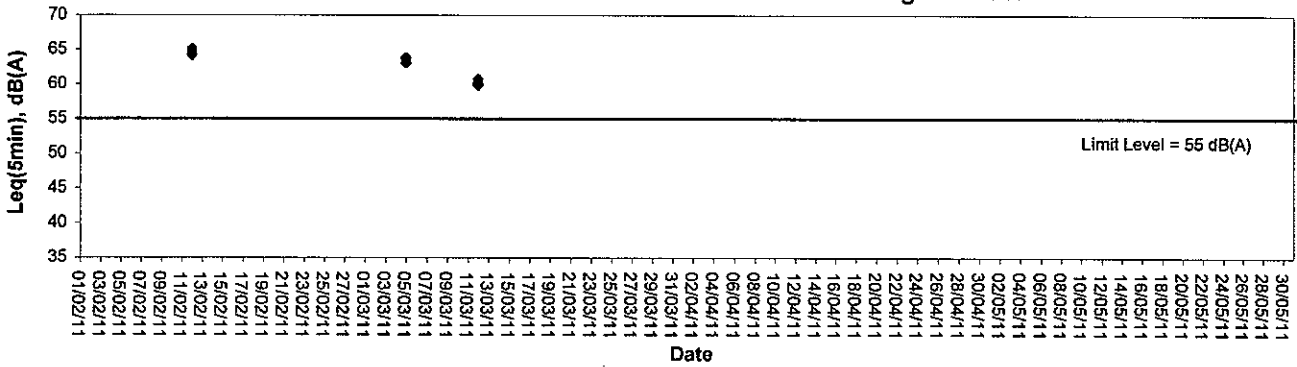


Noise Monitoring (Night-time)

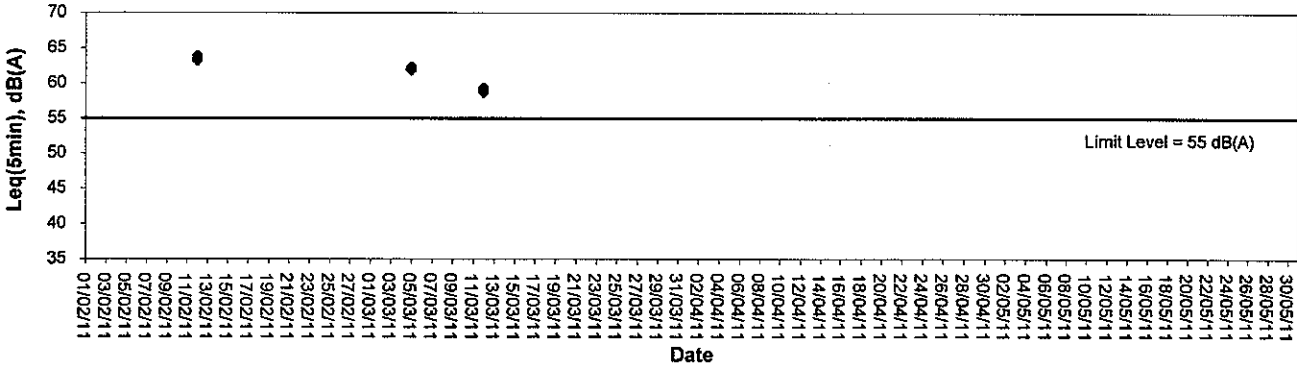
Noise level at KS6 - Podium at the Culliman



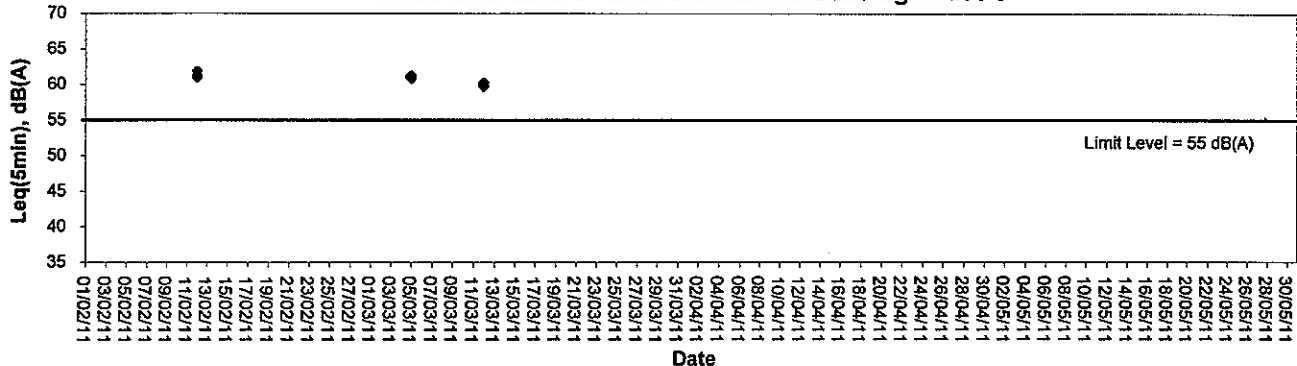
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



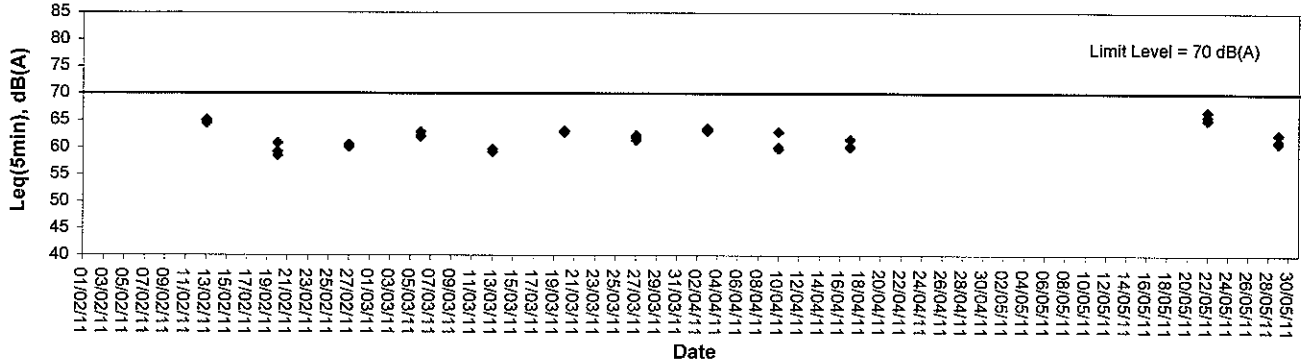
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



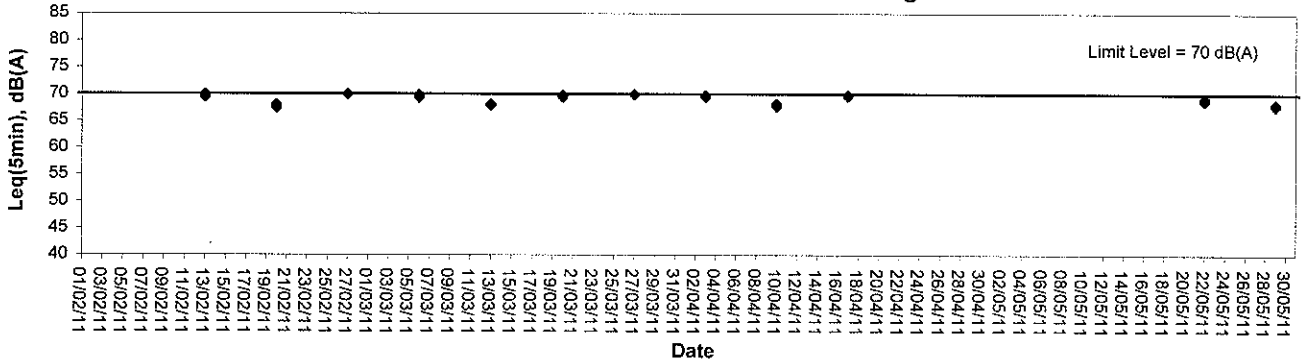


Noise Monitoring (Holiday-time)

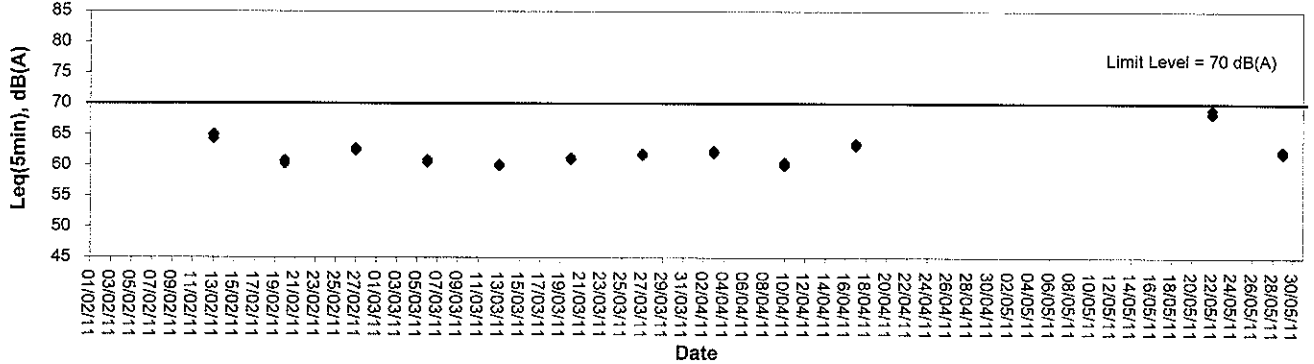
Noise level at KS6 - Podium at the Culliman



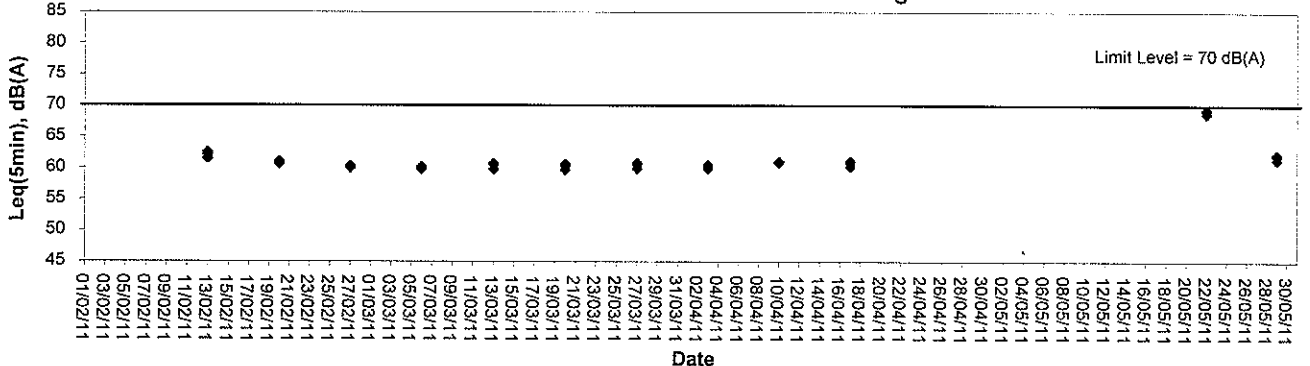
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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





東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix C1

Calibration Certificates for Impact Water Quality Monitoring Equipments



Performance Check of Salinity Meter

Equipment Ref. No. : E7/EW/008/002 Manufacturer : YSI

Model No. : 85 Serial No. : 060 1998 AD

Date of Calibration : 22/2/11 Due Date : 21/2/11⁵

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

J410

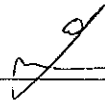
Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.2	0.67%

Acceptance Criteria

Difference : <10 %

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

Checked by : 

Approved by : 



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : ETIEW/008/002 Manufacturer : YSI
 Model No. : 85 Serial No. : 0601998AD
 Date of Calibration : 22/2/11 Calibration Due Date : 2/15/11

Temperature Verification

Ref. No. of Reference Thermometer : ET10521/001
 Ref. No. of Water Bath : ET10533/001

		Temperature (°C)		
Reference Thermometer reading	Measured	<u>20.0</u>	Corrected	<u>20.1</u>
DO Meter reading	Measured	<u>20.4</u>	Difference	<u>0.3</u>

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na₂S₂O₃ titrant : J418 Reagent No. of 0.025N K₂Cr₂O₇ : J419

	Trial 1	Trial 2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	<u>0</u>	<u>0</u>
Final Vol. of Na ₂ S ₂ O ₃ (ml)	<u>40.1</u>	<u>40.2</u>
Vol. of Na ₂ S ₂ O ₃ used (ml)	<u>40.1</u>	<u>40.2</u>
Normality of Na ₂ S ₂ O ₃ solution (N)	<u>0.02494</u>	<u>0.02488</u>
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)	<u>0.02491</u>	
Acceptance criteria, Deviation	Less than ± 0.001N	

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

Linearity Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
Trial	1	2	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	<u>0</u>	<u>11.75</u>	<u>0</u>	<u>9.80</u>	<u>0</u>	<u>6.55</u>
Final Vol. of Na ₂ S ₂ O ₃ (ml)	<u>11.75</u>	<u>23.55</u>	<u>9.80</u>	<u>19.50</u>	<u>6.55</u>	<u>13.05</u>
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	<u>11.75</u>	<u>11.80</u>	<u>9.80</u>	<u>9.70</u>	<u>6.55</u>	<u>6.50</u>
Dissolved Oxygen (DO), mg/L	<u>7.86</u>	<u>7.87</u>	<u>6.55</u>	<u>6.47</u>	<u>4.38</u>	<u>4.35</u>
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	<u>7.98</u>	<u>7.98</u>	<u>7.98</u>	<u>7.86</u>	<u>7.87</u>	<u>7.87</u>	<u>1.39</u>
5	<u>6.60</u>	<u>6.44</u>	<u>6.52</u>	<u>6.55</u>	<u>6.47</u>	<u>6.51</u>	<u>0.15</u>
10	<u>4.48</u>	<u>4.40</u>	<u>4.44</u>	<u>4.38</u>	<u>4.35</u>	<u>4.37</u>	<u>1.55</u>
Linear regression coefficient				<u>0.9993</u>			



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
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Salinity Checking

Reagent No. of NaCl (10ppt)	J417	Reagent No. of NaCl (30ppt)	J416
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*Determination of dissolved oxygen content by Winkler Titration ***

Salinity (ppt)	10		30	
	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	11.60	0	11.05
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.60	23.20	11.05	22.05
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.60	11.60	11.05	11.00
Dissolved Oxygen (DO), mg/L	7.74	7.74	7.39	7.36
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	7.83	7.77	7.80	7.74	7.74	7.74	0.77
30	7.30	7.28	7.29	7.39	7.36	7.38	1.23

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 : _____



Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008102 Manufacturer : YSI
Model No. : 85 Serial No. : 060 1998 AD
Date of Calibration : 2015/11 Due Date : 2018/11

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

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.2	0.67

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 : z Approved by : [Signature]



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : ET/EW1008/002 Manufacturer : YSI
 Model No. : 85 Serial No. : 0601998 AD
 Date of Calibration : 2/15/11 Calibration Due Date : 20/8/11

Temperature Verification

Ref. No. of Reference Thermometer : E710521/001
 Ref. No. of Water Bath : E710533/001

		Temperature (°C)		
Reference Thermometer reading	Measured	21.0	Corrected	21.0
DO Meter reading	Measured	20.9	Difference	0.1

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na ₂ S ₂ O ₃ titrant	Reagent No. of 0.025N K ₂ Cr ₂ O ₇	
	Trial 1	Trial 2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	0
Final Vol. of Na ₂ S ₂ O ₃ (ml)	40.1	40.1
Vol. of Na ₂ S ₂ O ₃ used (ml)	40.1	40.1
Normality of Na ₂ S ₂ O ₃ solution (N)	0.02494	0.02494
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)	0.02494	
Acceptance criteria, Deviation	Less than + 0.001N	

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

Lineality Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
Trial	1	2	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	11.70	0	9.85	0	6.50
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.70	23.40	9.85	19.75	6.50	13.05
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.70	11.70	9.85	9.90	6.50	6.55
Dissolved Oxygen (DO), mg/L	7.83	7.83	6.59	6.63	4.35	4.39
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.86	7.84	7.85	7.83	7.83	7.83	0.26
5	7.58	6.52	6.55	6.59	6.63	6.61	0.91
10	4.43	4.41	4.42	4.35	4.39	4.37	1.14
Linear regression coefficient				0.9991			



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
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Salinity Checking

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

Determination of dissolved oxygen content by Winkler Titration **

Salinity (ppt)	10		30	
	1	2	1	2
Trial				
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	a	11.65	0	11.00
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.65	23.25	11.00	22.00
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.65	11.60	11.00	11.00
Dissolved Oxygen (DO), mg/L	7.80	7.77	7.36	7.36
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	7.88	7.90	7.80	7.77	7.79	1.40
30	7.30	7.30	7.30	7.36	7.36	7.36	0.82

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						
03/05/11	2003-2015	25/Cloudy	Surface	1.0	23.4	29.9	29.9	6.36	6.38	88.4	88.6	4.82	4.84	5.02	7.5	7.6	8.0						
						29.8		6.39		88.8		4.86			7.6								
						30.7		6.23		86.5		4.98			8.0								
05/05/11	2121-2134	24/Cloudy	Surface	1.0	23.2	30.6	30.5	6.17	6.17	85.7	86.1	5.05	5.02		5.27			8.2	8.0	8.3			
						31.7		5.99		83.2		5.18						8.1					
						31.7		6.03		83.8		5.23						8.2					
07/05/11	2230-2240	28/Cloudy	Surface	1.0	23.4	30.5	30.5	6.18	6.17	87.1	86.9	5.17	5.15					5.27			8.0	8.0	8.3
						30.5		6.15		86.7		5.13									8.0		
						31.1		6.07		85.6		5.25									8.2		
07/05/11	2230-2240	28/Cloudy	Middle	8.4	22.4	31.1	31.1	6.02	6.05	84.9	85.3	5.29	5.27	5.39		8.1	8.2				8.7		
						31.7		5.89		83.6		5.37				8.6							
						31.6		5.92		84.1		5.40				8.8							
12/05/11	2059-2113	29/Cloudy	Surface	1.0	26.8	30.8	30.8	6.40	6.38	88.9	88.7	4.75	4.77		4.99	7.2			7.3	7.8			
						30.8		6.36		88.4		4.79				7.3							
						31.6		6.27		87.1		4.95				8.0							
14/05/11	1759-1813	25/Cloudy	Surface	1.0	25.3	31.6	31.6	6.24	6.26	86.7	86.9	5.01	4.98			5.02		7.8				7.9	8.4
						31.6		6.24		87.1		5.01						8.0					
						32.0		6.13		85.2		5.20						8.4					
17/05/11	1951-2001	26/Cloudy	Surface	1.0	24.7	32.0	32.0	6.09	6.06	84.6	84.9	5.25	5.23	5.14			8.3	8.4			8.5		
						30.7		6.09		85.3		4.97					8.0						
						30.6		6.02		84.3		4.94					8.0						
19/05/11	1605-1617	29/Sunny	Surface	1.0	24.4	31.9	31.9	5.99	5.98	83.9	84.3	5.12	5.14		5.16		8.2		8.0	8.1			
						31.2		6.04		84.6		5.16					8.3						
						30.3		6.12		86.6		5.13					8.1						
21/05/11	1205-1220	28/Sunny	Surface	1.0	23.5	31.3	31.3	6.06	6.09	84.8	85.3	4.95	4.97			5.24	8.0					8.2	8.4
						30.3		5.96		85.1		5.22					8.1						
						31.9		5.99		86.5		5.27					8.3						
24/05/11	1310-1322	24/Cloudy	Surface	1.0	25.4	31.6	31.6	5.92	5.94	82.9	83.1	5.21	5.20	5.24			8.6	8.5			9.0		
						31.7		5.95		83.3		5.19					8.4						
						30.3		6.01		84.1		5.01					8.2						
26/05/11	1500-1515	28/Cloudy	Surface	1.0	25.2	30.4	30.4	6.22	6.20	87.6	88.0	5.10	5.09		5.16		8.0		8.1	8.5			
						30.4		6.22		88.3		5.07					8.0						
						31.2		6.08		86.3		5.17					8.1						
28/05/11	1810-1822	31/Sunny	Surface	1.0	27.6	31.3	31.3	6.10	6.09	86.6	86.5	5.13	5.15			5.24	8.1					8.1	8.6
						31.9		5.96		84.6		5.26					8.3						
						31.9		5.99		85.1		5.22					8.1						
31/05/11	1943-1950	28/Cloudy	Surface	1.0	26.9	30.4	30.4	6.08	6.11	85.1	85.5	5.03	5.02	5.00			7.7	7.9			8.0		
						30.4		6.13		85.8		5.01					8.1						
						31.7		6.02		84.3		4.96					8.0						
31/05/11	1943-1950	28/Cloudy	Middle	8.2	26.2	31.7	31.7	5.98	6.00	83.7	84.0	5.02	4.99		5.00		7.7		7.9	8.0			
						31.7		5.98		83.7		5.02					8.2						
						32.1		6.08		85.1		5.01					8.2						
31/05/11	1943-1950	28/Cloudy	Bottom	15.4	25.3	32.2	32.2	6.09	6.09	85.3	85.2	4.98	5.00			5.00	8.0					8.1	8.1
						30.3		6.08		85.1		5.01					8.0						
						30.4		6.13		85.8		5.01					8.1						

Mid-Flood Tide

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
03/05/11	1947-1959	25/Cloudy	Surface	1.0	23.4	29.8	29.8	6.42	6.40	89.2	88.9	4.88	4.91	5.08	7.7	7.6	8.0		
				29.8	6.37	88.5		4.94		7.5									
			Middle	8.4	22.3	30.7	30.7	6.19	6.16	86.0	85.6	5.06			5.11			8.1	8.1
				30.7	6.13	85.2		5.11		8.0									
			Bottom	15.8	20.8	31.6	31.7	5.98	5.96	83.1	82.8	5.20			5.26			8.3	8.3
				31.7	5.93	82.4		5.26		8.2									
05/05/11	2057-2111	24/Cloudy	Surface	1.0	23.0	30.5	30.5	6.20	6.18	87.4	87.2	5.12	5.14	5.24	8.1	8.1	8.5		
				29.8	6.16	86.9		5.15		8.0									
			Middle	8.3	22.7	31.2	31.2	6.05	6.07	85.3	85.6	5.22			5.26			8.6	8.5
				31.1	6.09	85.9		5.32		8.4									
			Bottom	15.6	22.4	31.6	31.6	5.95	5.94	83.9	83.8	5.32			5.35			8.7	8.9
				31.5	5.93	83.6		5.35		9.0									
07/05/11	2214-2225	28/Cloudy	Surface	1.0	23.3	30.7	30.7	6.39	6.37	88.8	88.5	4.81	4.84	5.02	7.8	7.7	8.0		
				30.7	6.34	88.1		4.86		7.5									
			Middle	8.5	22.4	31.5	31.6	6.21	6.19	86.3	86.0	4.97			5.03			7.9	8.0
				31.6	6.16	85.6		5.03		8.1									
			Bottom	16.0	21.7	31.9	32.0	6.03	6.05	83.8	84.1	5.19			5.24			8.3	8.3
				32.0	6.07	84.3		5.24		8.3									
12/05/11	2036-2050	29/Cloudy	Surface	1.0	26.9	30.7	30.7	6.12	6.11	85.7	85.6	4.89	4.91	5.06	7.5	7.5	7.9		
				30.6	6.10	85.4		4.92		7.4									
			Middle	8.3	25.8	31.5	31.6	6.27	6.24	87.8	87.3	5.05			5.08			8.1	8.1
				31.6	6.20	86.8		5.08		8.0									
			Bottom	15.6	25.2	32.0	32.0	6.04	6.06	84.6	84.9	5.20			5.19			8.4	8.3
				31.9	6.08	85.1		5.19		8.2									
14/05/11	1733-1748	25/Cloudy	Surface	1.0	25.1	28.2	28.3	5.91	5.94	82.7	83.2	4.96	4.95	5.06	7.6	7.7	8.1		
				28.3	5.97	83.6		4.93		7.8									
			Middle	8.2	24.8	30.3	30.4	6.18	6.14	86.5	86.0	5.11			5.14			8.5	8.4
				30.4	6.10	85.4		5.14		8.3									
			Bottom	15.4	24.3	31.4	31.5	6.02	6.04	84.3	84.5	5.09			5.13			8.1	8.2
				31.5	6.05	84.7		5.13		8.2									
17/05/11	2009-2019	26/Cloudy	Surface	1.0	24.6	30.2	30.2	6.44	6.42	91.4	91.1	5.04	5.07	5.07	8.1	8.1	8.0		
				30.2	6.40	90.8		5.09		8.0									
			Middle	8.6	24.0	30.9	30.9	6.27	6.26	89.0	88.8	4.97			4.91			7.6	7.7
				30.9	6.24	88.6		4.91		7.8									
			Bottom	16.2	23.9	31.2	31.2	6.06	6.09	85.4	85.8	5.21			5.17			8.5	8.4
				31.1	6.12	86.2		5.17		8.2									
19/05/11	1545-1557	29/Sunny	Surface	1.0	24.4	30.4	30.4	6.18	6.20	87.8	88.0	5.03	5.05	5.12	7.8	7.9	8.1		
				30.3	6.21	88.2		5.06		8.0									
			Middle	8.2	23.9	31.3	31.3	6.12	6.11	86.9	86.7	5.10			5.14			7.5	7.7
				31.2	6.09	86.5		5.14		7.8									
			Bottom	15.4	23.7	31.9	31.9	6.00	5.99	85.2	85.0	5.18			5.20			8.2	8.1
				31.8	5.97	84.8		5.20		8.0									
21/05/11	1145-1200	28/Sunny	Surface	1.0	23.5	30.1	30.3	5.95	5.97	81.6	81.9	5.20	5.19	5.21	8.6	8.6	8.4		
				30.4	5.99	82.1		5.18		8.5									
			Middle	8.5	23.3	30.6	30.7	5.94	5.94	81.5	81.5	5.19			5.22			8.1	8.3
				30.8	5.93	81.4		5.22		8.4									
			Bottom	16.0	23.2	31.1	31.2	5.84	5.82	80.1	79.9	5.23			5.25			8.5	8.5
				31.3	5.80	79.6		5.25		8.5									
24/05/11	1251-1302	24/Cloudy	Surface	1.0	25.4	29.9	29.9	6.38	6.35	90.0	89.6	5.02	4.99	5.12	8.2	8.1	8.4		
				29.9	6.32	89.1		4.95		8.0									
			Middle	8.4	25.0	30.5	30.5	6.25	6.27	88.1	88.3	5.16			5.08			8.3	8.3
				30.5	6.28	88.5		5.08		8.3									
			Bottom	15.8	24.4	31.6	31.7	6.19	6.18	87.3	87.1	5.27			5.21			8.6	8.7
				31.7	6.16	86.9		5.21		8.8									
26/05/11	1441-1455	28/Cloudy	Surface	1.0	25.2	30.6	30.7	6.35	6.38	87.6	88.0	4.70	4.72	4.89	7.7	7.6	7.8		
				30.7	6.40	88.3		4.74		7.4									
			Middle	8.5	24.4	31.5	31.5	6.22	6.24	85.8	86.1	4.89			4.93			7.8	7.9
				31.5	6.26	86.3		4.93		8.0									
			Bottom	16.0	23.6	32.1	32.1	6.13	6.11	84.5	84.2	5.01			5.05			7.9	7.8
				32.0	6.08	83.9		5.05		7.7									
28/05/11	1751-1802	31/Sunny	Surface	1.0	27.5	31.5	31.5	6.37	6.36	90.4	90.2	5.07	5.10	5.33	8.0	8.1	8.5		
				31.5	6.34	90.0		5.13		8.2									
			Middle	8.6	25.6	32.0	32.0	6.12	6.10	86.9	86.6	5.27			5.18			8.4	8.3
				31.9	6.08	86.3		5.18		8.2									
			Bottom	16.2	25.2	32.6	32.6	5.95	5.97	83.8	84.1	5.68			5.67			9.3	9.2
				32.6	5.98	84.3		5.67		9.0									
31/05/11	1928-1937	28/Cloudy	Surface	1.0	27.0	30.4	30.4	6.19	6.20	86.7	86.8	4.96	4.95	5.02	7.8	7.8	7.9		
				30.3	6.21	86.9		4.93		7.8									
			Middle	8.4	26.1	31.7	31.8	6.07	6.06	84.9	84.8	4.99			5.04			8.3	8.4
				31.8	6.04	84.6		5.04		8.4									
			Bottom	15.8	25.5	32.0	32.0	5.97	5.99	83.6	83.9	5.08			5.10			7.4	7.5
				32.0	6.01	84.1		5.10		7.5									

Mid-Flood Tide



Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/05/11	1749-1804	25/Cloudy	Surface	1.0	23.4	29.8	29.8	6.08	6.12	84.5	85.0	5.12	5.15	5.30	8.2	8.1	8.5	
						29.8		6.15		85.4		5.17			8.0			
			Middle	8.7	22.2	30.6	30.6	5.92	5.94	82.2	82.5	5.28	5.32		5.30	8.5		8.6
						30.6		5.96		82.8		5.32			8.6			
			Bottom	16.4	20.9	31.7	31.7	5.83	5.85	81.0	81.3	5.41	5.47		5.44	8.8		8.9
						31.7		5.87		81.5		5.47			9.0			
05/05/11	1859-1912	24/Cloudy	Surface	1.0	23.2	30.5	30.6	6.16	6.14	86.9	86.6	5.08	5.10	5.20	8.5	8.3	8.4	
						30.6		6.12		86.3		5.12			8.1			
			Middle	8.7	22.7	31.1	31.2	6.04	6.06	85.2	85.4	5.20	5.21		5.21	8.7		8.6
						31.2		6.07		85.6		5.21			8.5			
			Bottom	16.4	22.3	31.7	31.7	5.96	5.94	84.0	83.8	5.28	5.31		5.30	8.3		8.2
						31.6		5.92		83.5		5.31			8.1			
07/05/11	2010-2024	28/Fine	Surface	1.0	23.3	30.6	30.7	6.25	6.24	86.8	86.6	5.10	5.13	5.28	8.0	7.9	8.4	
						30.7		6.22		86.4		5.16			7.8			
			Middle	8.7	22.4	31.4	31.5	6.12	6.10	85.0	84.8	5.25	5.30		5.28	8.5		8.6
						31.5		6.08		84.5		5.30			8.6			
			Bottom	16.4	21.4	32.0	32.0	5.91	5.93	82.1	82.3	5.41	5.44		5.43	8.9		8.9
						32.0		5.94		82.5		5.44			8.8			
12/05/11	1850-1902	30/Cloudy	Surface	1.0	26.8	30.9	30.9	6.17	6.15	86.4	86.1	4.95	4.99	5.08	7.7	7.8	8.1	
						30.8		6.12		85.7		5.03			7.8			
			Middle	8.9	25.9	31.7	31.8	6.09	6.10	85.3	85.4	5.14	5.18		5.16	8.4		8.4
						31.8		6.11		85.5		5.18			8.4			
			Bottom	16.8	25.3	32.0	32.1	6.03	6.04	84.4	84.6	5.07	5.10		5.09	8.0		8.1
						32.1		6.05		84.7		5.10			8.1			
14/05/11	1545-1556	25/Cloudy	Surface	1.0	25.3	28.3	28.4	6.17	6.14	86.4	85.9	4.86	4.92	5.07	7.5	7.6	8.0	
						28.4		6.10		85.4		4.97			7.7			
			Middle	8.9	24.8	30.2	30.3	6.04	6.03	84.6	84.4	5.26	5.21		5.24	8.5		8.4
						30.3		6.01		84.1		5.21			8.3			
			Bottom	16.8	24.4	31.7	31.7	5.85	5.87	81.9	82.2	5.03	5.08		5.06	8.0		8.1
						31.7		5.89		82.5		5.08			8.1			
17/05/11	1752-1804	26/Cloudy	Surface	1.0	25.1	30.1	30.2	6.52	6.50	92.5	92.3	5.21	5.26	5.48	8.5	8.6	8.9	
						30.2		6.48		92.0		5.30			8.6			
			Middle	8.7	24.3	30.6	30.6	6.17	6.16	87.6	87.4	5.57	5.53		5.53	9.2		9.1
						30.5		6.14		87.1		5.49			9.0			
			Bottom	16.4	24.1	31.1	31.2	6.10	6.12	86.0	86.2	5.68	5.62		5.65	9.3		9.2
						31.2		6.13		86.4		5.62			9.0			
19/05/11	1352-1404	29/Sunny	Surface	1.0	24.4	30.4	30.4	6.19	6.21	87.9	88.1	5.15	5.16	5.25	8.0	8.2	8.5	
						30.3		6.22		88.3		5.17			8.3			
			Middle	8.8	23.8	31.3	31.3	6.12	6.11	86.9	86.8	5.24	5.26		5.25	8.6		8.5
						31.2		6.10		86.6		5.26			8.4			
			Bottom	16.6	23.6	31.8	31.9	6.01	6.00	85.3	85.1	5.33	5.36		5.35	8.8		8.8
						31.9		5.98		84.9		5.36			8.7			
21/05/11	0947-1001	26/Cloudy	Surface	1.0	23.2	30.4	30.5	6.00	5.98	82.2	82.0	5.11	5.13	5.15	8.2	8.2	8.1	
						30.5		5.96		81.7		5.14			8.1			
			Middle	8.9	23.2	30.1	30.3	5.98	5.98	81.9	81.9	5.10	5.14		5.12	7.8		7.9
						30.4		5.97		81.8		5.14			8.0			
			Bottom	16.8	22.9	30.7	30.8	5.90	5.88	80.9	80.6	5.19	5.23		5.21	8.1		8.2
						30.8		5.86		80.3		5.23			8.3			
24/05/11	1052-1104	23/Cloudy	Surface	1.0	25.3	29.8	29.8	6.22	6.20	87.7	87.4	5.15	5.12	5.23	7.7	7.9	8.4	
						29.7		6.18		87.1		5.08			8.1			
			Middle	8.6	24.9	30.4	30.4	6.11	6.12	86.2	86.3	5.20	5.26		5.23	8.6		8.6
						30.4		6.13		86.4		5.26			8.5			
			Bottom	16.2	24.4	31.6	31.7	5.99	6.02	84.5	84.9	5.37	5.32		5.35	8.7		8.8
						31.7		6.04		85.2		5.32			8.9			
26/05/11	1246-1300	28/Fine	Surface	1.0	25.1	30.7	30.7	6.15	6.17	84.8	85.1	4.89	4.91	5.08	7.5	7.6	8.2	
						30.7		6.19		85.4		4.93			7.7			
			Middle	8.7	24.5	31.2	31.3	6.02	6.03	83.0	83.2	5.06	5.10		5.08	8.3		8.4
						31.3		6.04		83.3		5.10			8.5			
			Bottom	16.4	23.7	31.9	32.0	5.86	5.88	80.8	81.0	5.21	5.24		5.24	8.7		8.7
						32.0		5.89		81.2		5.26			8.6			
28/05/11	1552-1604	31/Sunny	Surface	1.0	27.9	31.4	31.5	6.39	6.38	90.7	90.5	5.21	5.20	5.23	8.5	8.4	8.4	
						31.5		6.36		90.3		5.18			8.3			
			Middle	8.7	25.7	32.0	32.0	6.21	6.20	88.1	87.9	5.17	5.22		5.20	8.1		8.1
						31.9		6.18		87.7		5.22			8.0			
			Bottom	16.4	25.7	32.5	32.5	6.04	6.06	85.1	85.4	5.33	5.27		5.30	8.7		8.8
						32.5		6.08		85.7		5.27			8.8			
31/05/11	1736-1749	28/Fine	Surface	1.0	27.0	30.4	30.4	6.16	6.14	86.2	85.9	4.87	4.89	5.01	7.5	7.7	8.0	
						30.3		6.11		85.5		4.91			7.9			
			Middle	8.9	26.1	31.6	31.7	6.06	6.04	84.8	84.6	5.07	5.13		5.10	8.2		8.2
						31.7		6.02		84.3		5.13			8.2			
			Bottom	16.8	25.7	32.0	32.1	5.94	5.92	83.2	82.9	5.04	5.01		5.03	8.1		8.1
						32.1		5.90		82.6		5.01			8.0			

Mid-Flood Tide

Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)		Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average
03/05/11	1850-1905	25/Cloudy	Surface	1.0	23.4	29.8	29.8	6.31	6.35	87.7	88.2	4.86	4.88	5.10	7.5	7.6	8.0	
						29.7		6.38		88.6		4.90			7.7			
			Middle	8.4	22.2	30.6	30.7	6.22	6.24	86.4	86.7	5.08	5.14		5.11	8.0		8.0
						30.7		6.26		87.0		5.14			7.9			
			Bottom	15.8	21.0	31.8	31.8	6.01	6.03	83.5	83.8	5.32	5.30		5.30	8.6		8.5
						31.7		6.05		84.0		5.27			8.4			
05/05/11	1953-2006	24/Cloudy	Surface	1.0	23.1	30.5	30.5	6.22	6.20	88.3	88.0	5.15	5.14	5.26	8.0	8.1	8.4	
						30.4		6.17		87.6		5.13			8.1			
			Middle	8.3	22.7	31.0	31.1	6.10	6.08	86.6	86.4	5.27	5.26		5.26	8.5		8.4
						31.1		6.06		86.1		5.24			8.3			
			Bottom	15.6	22.3	3.7	17.7	5.92	5.94	84.1	84.3	5.39	5.37		5.37	8.6		8.6
						31.6		5.95		84.5		5.35			8.6			
07/05/11	2118-2133	28/Fine	Surface	1.0	23.3	30.6	30.6	6.40	6.38	88.9	88.7	4.89	4.91	5.08	7.6	7.7	8.0	
						30.6		6.36		88.4		4.93			7.8			
			Middle	8.4	22.5	31.4	31.5	6.27	6.26	87.1	86.9	5.06	5.10		5.08	8.1		8.1
						31.5		6.24		86.7		5.10			8.0			
			Bottom	15.8	21.4	32.0	32.0	6.13	6.15	85.2	85.4	5.24	5.26		5.26	8.2		8.3
						31.9		6.16		85.6		5.28			8.4			
12/05/11	1938-1950	30/Cloudy	Surface	1.0	26.7	30.6	30.6	6.22	6.21	87.1	86.9	5.05	5.03	4.98	8.1	8.1	7.9	
						30.5		6.19		86.7		5.01			8.0			
			Middle	8.3	25.8	31.8	31.9	6.03	6.05	84.4	84.7	4.93	4.91		4.91	7.6		7.7
						31.9		6.07		84.9		4.89			7.8			
			Bottom	15.6	25.1	32.1	32.1	6.08	6.10	85.1	85.3	4.98	5.00		5.00	8.0		7.9
						32.0		6.11		85.5		5.02			7.8			
14/05/11	1631-1642	25/Cloudy	Surface	1.0	25.4	28.3	28.3	6.13	6.12	85.8	85.6	5.01	4.97	5.07	8.3	8.2	8.2	
						28.3		6.10		85.4		4.93			8.0			
			Middle	8.4	24.8	30.2	30.3	6.03	6.05	84.4	84.6	5.12	5.13		5.13	8.2		8.2
						30.3		6.06		84.8		5.14			8.2			
			Bottom	15.8	24.3	31.6	31.6	5.80	5.83	81.2	81.6	5.09	5.11		5.11	8.0		8.1
						31.6		5.85		81.9		5.13			8.2			
17/05/11	1850-1902	26/Cloudy	Surface	1.0	24.9	30.2	30.2	6.49	6.47	92.1	91.8	4.78	4.75	5.13	7.5	7.6	8.1	
						30.1		6.44		91.4		4.71			7.6			
			Middle	8.6	24.2	30.8	30.8	6.21	6.20	88.1	87.9	5.27	5.30		5.30	8.4		8.3
						30.8		6.18		87.7		5.32			8.2			
			Bottom	16.2	24.0	31.3	31.3	6.24	6.22	88.6	88.3	5.38	5.35		5.35	8.5		8.5
						31.2		6.20		88.0		5.31			8.5			
19/05/11	1450-1502	29/Sunny	Surface	1.0	24.4	30.3	30.3	6.23	6.21	88.5	88.2	5.05	5.07	5.18	8.1	8.1	8.3	
						30.3		6.18		87.8		5.09			8.1			
			Middle	8.4	23.8	31.3	31.3	6.12	6.14	86.9	87.1	5.17	5.19		5.19	8.2		8.3
						31.2		6.15		87.3		5.20			8.4			
			Bottom	15.8	23.6	31.9	31.9	5.99	6.02	85.1	85.5	5.29	5.28		5.28	8.5		8.4
						31.8		6.04		85.8		5.26			8.2			
21/05/11	1048-1103	26/Cloudy	Surface	1.0	23.2	30.1	30.2	6.01	6.00	82.4	82.2	5.10	5.12	5.20	7.7	7.9	8.2	
						30.3		5.98		82.0		5.14			8.0			
			Middle	8.3	23.1	30.6	30.7	5.89	5.90	80.9	81.0	5.21	5.24		5.24	8.6		8.5
						30.8		5.91		81.1		5.26			8.4			
			Bottom	15.6	23.3	31.1	31.2	5.86	5.87	80.4	80.5	5.23	5.25		5.25	8.3		8.3
						31.2		5.87		80.5		5.27			8.3			
24/05/11	1150-1202	23/Cloudy	Surface	1.0	25.3	29.7	29.8	6.31	6.33	89.0	89.3	4.91	4.95	5.06	7.6	7.7	8.0	
						29.8		6.35		89.5		4.98			7.8			
			Middle	8.4	24.9	30.4	30.5	6.26	6.24	88.3	88.0	5.08	5.06		5.06	8.1		8.1
						30.5		6.21		87.6		5.04			8.0			
			Bottom	15.8	24.4	31.7	31.7	6.10	6.12	86.0	86.3	5.19	5.16		5.16	8.2		8.1
						31.6		6.14		86.6		5.13			8.0			
26/05/11	1345-1400	28/Fine	Surface	1.0	25.2	30.7	30.7	6.34	6.36	87.4	87.7	4.71	4.63	4.88	7.6	7.6	7.8	
						30.7		6.38		88.0		4.55			7.5			
			Middle	8.4	24.4	31.3	31.3	6.22	6.24	85.8	86.1	4.89	4.92		4.92	7.9		7.8
						31.3		6.26		86.3		4.95			7.7			
			Bottom	15.8	23.7	31.8	31.9	6.09	6.12	84.0	84.4	5.06	5.08		5.08	8.1		8.1
						31.9		6.14		84.7		5.10			8.0			
28/05/11	1650-1702	31/Sunny	Surface	1.0	27.9	31.4	31.4	6.49	6.47	92.1	91.8	5.21	5.19	5.20	8.2	8.1	8.2	
						31.4		6.45		91.5		5.17			8.0			
			Middle	8.4	25.8	32.1	32.1	6.33	6.35	89.8	90.1	5.17	5.14		5.14	8.0		7.9
						32.1		6.37		90.4		5.11			7.8			
			Bottom	15.8	25.7	32.4	32.4	6.06	6.04	85.4	85.1	5.22	5.26		5.26	8.4		8.5
						32.3		6.02		84.8		5.30			8.5			
31/05/11	1828-1840	28/Fine	Surface	1.0	26.9	30.2	30.3	6.15	6.17	86.1	86.3	4.72	4.76	4.85	7.5	7.4	7.8	
						30.3		6.18		86.5		4.80			7.3			
			Middle	8.5	26.1	31.6	31.6	6.07	6.10	84.9	85.3	4.87	4.88		4.88	7.9		7.8
						31.5		6.12		85.7		4.89			7.7			
			Bottom	16.0	25.4	32.0	32.0	5.89	5.92	82.5	82.9	4.94	4.91		4.91	8.0		8.1
						32.0		5.94		83.2		4.88			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
03/05/11	1929-1942	25/Cloudy	Surface	1.0	23.4	29.8 29.9	29.9	6.38 6.33	6.36	88.6 87.9	88.3	4.80 4.85	4.83	4.97	7.7 8.0	7.9	7.9
			Middle	6.6	22.5	30.5 30.6	30.6	6.21 6.17	6.19	86.3 85.7	86.0	4.93 4.98	4.96		7.7 8.1		
			Bottom	12.2	21.0	31.3 31.4	31.4	6.06 6.00	6.03	84.2 83.4	83.8	5.11 5.16	5.14		8.0 8.0		
05/05/11	2037-2049	24/Cloudy	Surface	1.0	23.1	30.5 30.4	30.5	6.17 6.23	6.20	87.0 87.7	87.4	5.06 5.10	5.08	5.17	8.2 8.0	8.1	8.3
			Middle	6.9	22.8	31.0 30.9	31.0	6.10 6.08	6.09	86.6 86.3	86.5	5.16 5.18	5.17		8.3 8.1		
			Bottom	12.8	22.3	31.4 31.4	31.4	6.01 5.97	5.99	85.3 84.8	85.1	5.25 5.28	5.27		8.5 8.4		
07/05/11	2155-2208	28/Cloudy	Surface	1.0	23.4	30.7 30.8	30.8	6.43 6.37	6.40	89.3 88.5	88.9	4.79 4.83	4.81	4.96	7.7 7.7	7.7	7.9
			Middle	6.7	22.4	31.4 31.5	31.5	6.29 6.34	6.32	87.4 88.1	87.8	4.92 4.96	4.94		7.5 7.9		
			Bottom	12.4	21.8	31.8 31.9	31.9	6.23 6.17	6.20	86.5 85.7	86.1	5.12 5.16	5.14		8.1 8.2		
12/05/11	2014-2025	29/Cloudy	Surface	1.0	26.7	30.8 30.7	30.8	6.01 6.05	6.03	84.1 84.7	84.4	5.09 5.13	5.11	5.11	8.2 8.0	8.1	8.1
			Middle	6.7	25.8	31.6 31.7	31.7	6.17 6.15	6.16	86.4 86.1	86.3	5.19 5.16	5.18		8.2 8.1		
			Bottom	12.4	25.3	32.1 32.0	32.1	6.09 6.06	6.08	85.3 84.8	85.1	5.03 5.06	5.05		8.0 8.1		
14/05/11	1710-1722	25/Cloudy	Surface	1.0	25.3	28.3 28.4	28.4	6.01 6.04	6.03	84.1 84.6	84.4	5.10 5.19	5.15	5.09	8.1 8.3	8.2	8.2
			Middle	6.6	24.8	30.4 30.5	30.5	6.17 6.13	6.15	86.4 85.8	86.1	5.03 5.09	5.06		8.0 8.0		
			Bottom	12.2	24.5	31.5 31.4	31.5	6.14 6.11	6.13	85.9 85.5	85.7	5.05 5.07	5.06		8.2 8.3		
17/05/11	1924-1936	26/Cloudy	Surface	1.0	24.8	30.2 30.2	30.2	6.39 6.35	6.37	90.7 90.1	90.4	4.87 4.90	4.89	5.21	7.4 7.5	7.5	8.3
			Middle	6.7	24.1	30.7 30.8	30.8	6.21 6.18	6.20	88.1 87.7	87.9	5.40 5.47	5.44		9.0 9.0		
			Bottom	12.4	23.9	31.2 31.1	31.2	6.25 6.28	6.27	88.7 89.1	88.9	5.27 5.34	5.31		8.5 8.2		
19/05/11	1524-1534	29/Sunny	Surface	1.0	24.4	30.4 30.4	30.4	6.20 6.22	6.21	88.0 88.3	88.2	5.08 5.05	5.07	5.14	8.1 8.0	8.1	8.3
			Middle	6.8	23.8	31.1 31.1	31.1	6.14 6.11	6.13	87.2 86.8	87.0	5.13 5.15	5.14		8.3 8.1		
			Bottom	12.6	23.6	31.7 31.7	31.7	6.01 6.05	6.03	85.3 85.9	85.6	5.21 5.24	5.23		8.5 8.5		
21/05/11	1127-1140	28/Sunny	Surface	1.0	23.2	30.1 30.3	30.2	5.98 6.01	6.00	82.0 82.5	82.3	5.21 5.20	5.21	5.29	8.7 8.5	8.6	8.6
			Middle	6.8	23.2	30.4 30.6	30.5	5.97 5.94	5.96	81.8 81.5	81.7	5.30 5.31	5.31		8.8 8.7		
			Bottom	12.6	22.9	31.1 31.3	31.2	5.81 5.84	5.83	79.7 80.1	79.9	5.35 5.34	5.35		8.4 8.5		
24/05/11	1224-1236	24/Cloudy	Surface	1.0	25.3	29.8 29.7	29.8	6.41 6.45	6.43	89.7 90.3	90.0	4.93 4.88	4.91	5.01	7.7 7.5	7.6	8.0
			Middle	6.7	24.9	30.4 30.3	30.4	6.35 6.33	6.34	88.9 88.6	88.8	5.03 4.97	5.00		8.2 8.5		
			Bottom	12.4	24.5	31.6 31.5	31.6	6.24 6.29	6.27	87.4 88.1	87.8	5.10 5.15	5.13		8.1 8.0		
26/05/11	1422-1435	28/Cloudy	Surface	1.0	25.2	30.6 30.6	30.6	6.38 6.41	6.40	88.0 88.4	88.2	4.68 4.72	4.70	4.82	7.2 7.5	7.4	7.8
			Middle	6.7	24.8	30.9 31.0	31.0	6.30 6.26	6.28	86.9 86.3	86.6	4.80 4.85	4.83		8.0 8.1		
			Bottom	12.4	24.0	31.5 31.6	31.6	6.11 6.15	6.13	84.3 84.8	84.6	4.92 4.96	4.94		7.7 8.0		
28/05/11	1724-1736	31/Sunny	Surface	1.0	27.6	31.3 31.4	31.4	6.29 6.25	6.27	89.3 88.7	89.0	4.92 5.06	4.99	5.35	7.5 7.7	7.6	8.6
			Middle	6.7	25.5	32.1 32.1	32.1	6.07 6.04	6.06	85.5 85.1	85.3	5.54 5.58	5.56		9.3 9.0		
			Bottom	12.4	25.3	32.5 32.5	32.5	5.89 5.85	5.87	83.0 82.4	82.7	5.46 5.55	5.51		8.9 9.0		
31/05/11	1906-1918	28/Cloudy	Surface	1.0	26.9	30.3 30.2	30.3	6.23 6.20	6.22	87.2 86.8	87.0	4.75 4.77	4.76	4.89	7.2 7.3	7.3	7.7
			Middle	6.8	26.0	31.5 31.6	31.6	5.96 5.99	5.98	83.4 83.9	83.7	4.92 4.96	4.94		8.0 7.9		
			Bottom	12.6	25.6	32.0 32.1	32.1	5.90 5.93	5.92	82.6 83.0	82.8	4.98 4.95	4.97		7.9 7.7		

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
03/05/11	1641-1655	26/Fine	Surface	1.0	23.3	29.8 29.8	29.8	6.21 6.16	6.19	86.3 85.6	86.0	5.01 5.06	5.04	5.21	7.9 8.0	8.0	8.4
			Middle	5.9	22.5	30.3 30.2	30.3	6.02 6.05	6.04	83.6 84.0	83.8	5.21 5.26	5.24		8.4 8.6		
			Bottom	10.8	21.0	31.1 31.1	31.1	5.86 5.90	5.88	81.4 82.0	81.7	5.33 5.38	5.36		8.7 8.5		
05/05/11	1804-1816	24/Cloudy	Surface	1.0	23.1	30.4 30.5	30.5	6.13 6.09	6.11	87.0 86.5	86.8	5.17 5.21	5.19	5.28	8.1 8.4	8.3	8.4
			Middle	5.9	22.6	30.9 31.0	31.0	6.02 5.97	6.00	85.5 84.8	85.2	5.26 5.29	5.28		8.3 8.2		
			Bottom	10.8	22.3	31.6 31.5	31.6	5.91 5.88	5.90	83.3 82.9	83.1	5.36 5.38	5.37		8.6 8.7		
07/05/11	1906-1920	29/Fine	Surface	1.0	23.2	30.7 30.7	30.7	6.24 6.20	6.22	86.7 86.1	86.4	4.99 5.04	5.02	5.15	8.1 8.0	8.1	8.3
			Middle	6.0	22.6	31.4 31.5	31.5	6.13 6.10	6.12	85.2 84.7	85.0	5.12 5.16	5.14		8.3 8.3		
			Bottom	11.0	21.7	31.8 31.9	31.9	5.95 5.98	5.97	82.7 83.1	82.9	5.27 5.33	5.30		8.4 8.6		
12/05/11	1746-1800	31/Cloudy	Surface	1.0	26.9	30.8 30.7	30.8	6.09 6.11	6.10	85.3 85.5	85.4	4.99 5.03	5.01	5.11	7.9 7.8	7.9	8.0
			Middle	5.6	25.9	31.9 31.8	31.9	5.87 5.91	5.89	82.2 82.7	82.5	5.20 5.16	5.18		8.3 8.1		
			Bottom	10.2	25.4	31.9 32.0	32.0	5.80 5.84	5.82	81.2 81.8	81.5	5.15 5.11	5.13		8.1 8.0		
14/05/11	1438-1450	26/Cloudy	Surface	1.0	25.3	28.4 28.5	28.5	6.01 5.92	5.97	84.1 82.9	83.5	5.13 5.10	5.12	5.17	8.0 8.2	8.1	8.3
			Middle	5.7	24.7	30.4 30.3	30.4	5.98 5.95	5.97	83.7 83.3	83.5	5.18 5.23	5.21		8.4 8.5		
			Bottom	10.4	24.3	31.7 31.7	31.7	5.91 5.89	5.90	82.7 82.5	82.6	5.16 5.20	5.18		8.3 8.3		
17/05/11	1634-1645	26/Cloudy	Surface	1.0	25.4	30.1 30.1	30.1	6.40 6.44	6.42	90.8 91.4	91.1	4.89 4.80	4.85	5.02	7.9 8.0	8.0	8.0
			Middle	6.1	24.6	30.9 30.8	30.9	6.19 6.15	6.17	87.8 87.3	87.6	5.15 5.19	5.17		8.1 7.8		
			Bottom	11.2	24.1	31.3 31.3	31.3	6.02 6.05	6.04	84.8 85.3	85.1	5.09 5.01	5.05		8.2 8.0		
19/05/11	1234-1245	27/Sunny	Surface	1.0	24.5	30.4 30.3	30.4	6.12 6.08	6.10	86.9 86.3	86.6	5.13 5.17	5.15	5.25	7.8 8.0	7.9	8.4
			Middle	5.9	23.9	31.0 31.1	31.1	6.01 5.97	5.99	85.3 84.8	85.1	5.25 5.27	5.26		8.6 8.7		
			Bottom	10.8	23.5	31.8 31.7	31.8	5.91 5.88	5.90	83.9 83.5	83.7	5.34 5.36	5.35		8.9 8.6		
21/05/11	0844-0859	25/Cloudy	Surface	1.0	22.6	30.4 30.3	30.4	6.04 6.03	6.04	82.7 82.7	82.7	5.01 5.04	5.03	5.09	8.0 8.1	8.1	8.2
			Middle	5.8	22.6	30.4 30.0	30.2	5.96 5.95	5.96	81.7 81.6	81.7	5.06 5.11	5.09		8.4 8.2		
			Bottom	10.6	22.8	30.5 30.9	30.7	5.90 5.93	5.92	81.0 81.4	81.2	5.18 5.16	5.17		8.1 8.3		
24/05/11	0934-0945	21/Cloudy	Surface	1.0	25.2	29.8 29.9	29.9	6.29 6.26	6.28	88.7 88.3	88.5	5.03 5.09	5.06	5.16	8.3 8.5	8.4	8.4
			Middle	5.8	24.7	30.2 30.3	30.3	6.20 6.16	6.18	87.4 86.9	87.2	5.17 5.13	5.15		8.1 8.0		
			Bottom	10.6	24.5	31.5 31.4	31.5	6.07 6.12	6.10	85.6 86.3	86.0	5.31 5.25	5.28		8.7 8.6		
26/05/11	1144-1158	27/Fine	Surface	1.0	25.1	30.5 30.6	30.6	6.16 6.10	6.13	85.0 84.1	84.6	4.84 4.88	4.86	5.01	7.9 7.9	7.9	8.0
			Middle	6.1	24.7	31.1 31.1	31.1	6.01 6.05	6.03	82.9 83.4	83.2	4.95 4.99	4.97		8.2 8.0		
			Bottom	11.2	24.0	31.7 31.7	31.7	5.88 5.91	5.90	81.1 81.5	81.3	5.17 5.21	5.19		8.1 8.1		
28/05/11	1434-1445	31/Sunny	Surface	1.0	27.6	31.3 31.4	31.4	6.45 6.48	6.47	91.5 92.0	91.8	4.98 5.05	5.02	5.34	8.0 8.2	8.1	8.6
			Middle	5.9	25.3	32.0 31.9	32.0	6.15 6.18	6.17	87.3 87.7	87.5	5.37 5.41	5.39		8.6 8.7		
			Bottom	10.8	25.3	32.3 32.4	32.4	5.97 5.94	5.96	84.1 83.7	83.9	5.58 5.65	5.62		9.0 8.9		
31/05/11	1625-1638	29/Fine	Surface	1.0	26.9	30.2 30.3	30.3	6.05 6.01	6.03	84.7 84.1	84.4	5.02 5.09	5.06	5.11	8.2 8.0	8.1	8.3
			Middle	5.7	26.2	31.5 31.5	31.5	6.04 5.98	6.01	84.6 83.7	84.2	5.11 5.15	5.13		8.4 8.5		
			Bottom	10.4	25.5	31.9 32.0	32.0	5.86 5.81	5.84	82.0 81.3	81.7	5.16 5.14	5.15		8.6 8.3		

Mid-Flood Tide

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
03/05/11	1620-1635	26/Fine	Surface	1.0	23.2	29.8	29.8	6.41	6.43	89.0	89.3	4.87	4.90	5.04	7.4	7.5	7.9	
				6.6		22.3		29.7		6.44		89.5			4.93			7.5
			Middle	6.6	22.3	30.4	30.4	30.4	6.28	6.26	87.2	86.9	5.00		5.02			8.2
						30.4		6.23	86.5	5.04	8.0							
			Bottom	12.2	20.8	31.3	31.4	31.3	6.12	6.15	85.0	85.4	5.21		5.19			8.3
						31.4		6.17	85.7	5.17	8.1							
05/05/11	1746-1756	24/Cloudy	Surface	1.0	23.1	30.6	30.6	6.22	6.21	87.7	87.5	5.06	5.08	5.17	7.8	7.9	8.2	
				6.8		22.7		30.5		6.19		87.3			5.10			8.0
			Middle	6.8	22.7	31.2	31.2	31.2	6.07	6.09	86.2	86.4	5.16		5.18			8.2
						31.1		6.10	86.6	5.19	8.0							
			Bottom	12.6	22.3	31.5	31.6	31.6	5.92	5.94	83.5	83.7	5.27		5.26			8.6
						31.6		5.95	83.9	5.25	8.5							
07/05/11	1847-1900	29/Fine	Surface	1.0	23.1	30.7	30.7	6.44	6.43	89.5	89.3	4.82	4.85	5.02	7.7	7.8	8.0	
				6.6		22.5		30.6		6.41		89.0			4.87			7.9
			Middle	6.6	22.5	31.4	31.4	31.4	6.29	6.31	87.4	87.6	5.04		5.01			8.1
						31.4		6.32	87.8	4.98	8.0							
			Bottom	12.2	21.6	31.9	31.9	31.9	6.18	6.17	85.9	85.8	5.18		5.20			8.3
						31.9		6.16	85.6	5.22	8.1							
12/05/11	1722-1734	31/Cloudy	Surface	1.0	26.8	30.7	30.7	6.23	6.24	87.2	87.3	4.94	4.92	5.08	7.9	8.0	8.3	
				6.2		25.9		30.6		6.24		87.4			87.3			4.90
			Middle	6.2	25.9	31.8	31.8	31.8	6.08	6.09	85.1	85.3	5.14		5.14			8.5
						31.7		6.10	85.4	5.13	8.5							
			Bottom	11.4	25.5	32.0	32.0	32.0	6.01	6.03	84.1	84.4	5.20		5.19			8.6
						32.0		6.05	84.7	5.17	8.3							
14/05/11	1416-1428	26/Cloudy	Surface	1.0	25.3	28.3	28.4	6.06	6.08	84.8	85.1	5.02	5.04	5.13	7.8	7.9	8.1	
				6.4		24.8		28.4		6.09		85.3			5.05			7.9
			Middle	6.4	24.8	30.2	30.2	30.2	5.97	6.00	83.6	84.0	5.12		5.15			8.4
						30.1		6.03	84.4	5.17	8.3							
			Bottom	11.8	24.4	31.6	31.7	31.7	6.02	6.01	84.3	84.1	5.19		5.21			8.2
						31.7		5.99	83.9	5.22	8.2							
17/05/11	1615-1626	26/Cloudy	Surface	1.0	25.3	30.1	30.1	6.47	6.46	91.8	91.6	4.63	4.50	4.84	7.4	7.4	7.7	
				6.7		24.8		30.1		6.44		91.4			4.47			7.4
			Middle	6.7	24.8	30.8	30.8	30.8	6.27	6.26	89.0	88.8	4.87		4.91			7.6
						30.8		6.24	88.6	4.94	7.8							
			Bottom	12.4	24.2	31.3	31.3	31.3	6.18	6.17	87.7	87.5	5.15		5.13			8.2
						31.2		6.15	87.3	5.10	8.0							
19/05/11	1215-1226	27/Sunny	Surface	1.0	24.4	30.5	30.5	6.17	6.19	87.6	87.8	5.06	5.08	5.16	8.1	8.1	8.3	
				6.8		23.9		30.4		6.20		88.0			5.09			8.0
			Middle	6.8	23.9	31.1	31.2	31.2	6.10	6.09	86.6	86.5	5.16		5.17			8.2
						31.2		6.08	86.3	5.18	8.2							
			Bottom	12.6	23.6	31.9	31.9	31.9	5.97	5.99	84.8	85.0	5.25		5.25			8.6
						31.8		6.00	85.2	5.24	8.4							
21/05/11	0824-0838	25/Cloudy	Surface	1.0	22.6	30.1	30.2	6.03	6.02	82.7	82.6	5.06	5.04	5.09	7.8	7.9	8.1	
				6.4		22.6		30.2		6.01		82.4			5.01			8.0
			Middle	6.4	22.6	30.3	30.4	30.4	5.98	6.01	82.0	82.3	5.08		5.10			8.1
						30.4		6.03	82.6	5.11	7.9							
			Bottom	11.8	22.7	30.5	30.5	30.5	5.91	5.93	81.0	81.2	5.14		5.14			8.3
						30.4		5.94	81.4	5.14	8.2							
24/05/11	0915-0926	21/Cloudy	Surface	1.0	25.1	29.8	29.8	6.32	6.34	89.1	89.3	4.98	4.96	5.08	7.4	7.5	8.1	
				6.7		24.8		29.8		6.35		89.5			4.93			7.5
			Middle	6.7	24.8	30.3	30.3	30.3	6.23	6.26	87.8	88.2	5.11		5.08			8.4
						30.3		6.28	88.5	5.05	8.4							
			Bottom	12.4	24.4	31.5	31.6	31.6	6.17	6.14	87.0	86.6	5.22		5.20			8.6
						31.6		6.11	86.2	5.17	8.3							
26/05/11	1127-1140	27/Fine	Surface	1.0	24.9	30.5	30.5	6.34	6.37	87.4	87.9	4.78	4.80	4.93	7.5	7.4	7.9	
				6.5		24.6		30.5		6.40		88.3			4.81			7.3
			Middle	6.5	24.6	31.1	31.1	31.1	6.29	6.27	86.8	86.5	4.89		4.90			7.9
						31.1		6.25	86.2	4.90	7.8							
			Bottom	12.0	23.9	31.7	31.8	31.8	6.15	6.17	84.8	85.0	5.08		5.10			8.5
						31.8		6.18	85.2	5.12	8.6							
28/05/11	1415-1426	31/Sunny	Surface	1.0	27.4	31.2	31.3	6.37	6.36	90.4	90.2	5.14	5.11	5.18	8.1	8.1	8.1	
				6.6		25.3		31.3		6.34		90.0			5.08			8.0
			Middle	6.6	25.3	31.9	31.9	31.9	6.14	6.16	87.1	87.4	5.09		5.12			7.8
						31.9		6.17	87.6	5.15	8.0							
			Bottom	12.2	25.2	32.4	32.4	32.4	6.01	6.03	84.7	84.9	5.27		5.30			8.4
						32.3		6.04	85.1	5.33	8.5							
31/05/11	1554-1613	29/Fine	Surface	1.0	26.9	30.3	30.4	6.12	6.15	85.7	86.1	4.72	4.75	4.97	7.6	7.7	7.9	
				6.5		26.3		30.4		6.17		86.4			4.78			7.8
			Middle	6.5	26.3	31.6	31.7	31.7	5.93	5.92	83.0	82.9	5.09		5.07			8.2
						31.7		5.91	82.7	5.04	8.0							
			Bottom	12.0	25.6	32.1	32.1	32.1	5.90	5.89	82.6	82.5	5.08		5.09			8.0
						32.1		5.88	82.3	5.10	8.0							

Mid-Flood Tide

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/05/11	1833-1846	25/Cloudy	Surface	1.0	23.4	29.8 29.8	29.8	6.14 6.10	6.12	85.3 84.7	85.0	5.21 5.26	5.24	5.35	8.4 8.2	8.3	8.7
			Middle	8.9	22.1	30.7 30.7	30.7	5.94 5.90	5.92	82.5 82.0	82.3	5.31 5.38	5.35		8.7 8.8		
			Bottom	16.8	20.9	31.7 31.8	31.8	5.81 5.85	5.83	80.7 81.5	81.1	5.45 5.50	5.48		9.1 9.0		
05/05/11	1934-1947	24/Cloudy	Surface	1.0	23.2	30.4 30.4	30.4	6.15 6.19	6.17	86.7 87.3	87.0	5.07 5.12	5.10	5.22	8.0 8.0	8.0	8.4
			Middle	8.9	22.7	31.2 31.1	31.2	6.06 6.04	6.05	86.1 85.8	86.0	5.25 5.23	5.24		8.5 8.6		
			Bottom	16.8	22.4	31.8 31.7	31.8	5.89 5.94	5.92	83.6 84.3	84.0	5.32 5.34	5.33		8.7 8.4		
07/05/11	2100-2114	28/Fine	Surface	1.0	23.4	30.6 30.7	30.7	6.21 6.18	6.20	86.3 85.9	86.1	5.21 5.24	5.23	5.35	8.7 8.5	8.6	8.9
			Middle	8.9	22.4	31.5 31.5	31.5	6.12 6.07	6.10	85.0 84.3	84.7	5.33 5.38	5.36		8.9 8.8		
			Bottom	16.8	21.3	32.0 32.1	32.1	5.95 5.88	5.92	82.7 81.7	82.2	5.46 5.49	5.48		9.3 9.0		
12/05/11	1924-1935	30/Cloudy	Surface	1.0	26.8	30.7 30.6	30.7	6.13 6.18	6.16	85.8 86.5	86.2	4.89 4.85	4.87	5.01	7.9 7.6	7.8	8.0
			Middle	8.9	25.9	31.9 31.8	31.9	6.23 6.22	6.23	87.2 87.1	87.2	5.12 5.06	5.09		8.3 8.1		
			Bottom	16.8	25.2	32.0 32.0	32.0	6.07 6.01	6.04	84.9 84.1	84.5	5.05 5.08	5.07		8.0 8.0		
14/05/11	1617-1628	25/Cloudy	Surface	1.0	25.5	28.3 28.2	28.3	6.02 6.09	6.06	84.3 85.3	84.8	5.16 5.12	5.14	5.08	8.2 8.0	8.1	8.0
			Middle	8.8	24.8	30.3 30.3	30.3	5.87 5.96	5.92	82.2 83.4	82.8	5.03 5.06	5.05		8.1 8.0		
			Bottom	16.6	24.3	31.6 31.7	31.7	5.92 5.90	5.91	82.9 82.6	82.8	5.05 5.03	5.04		8.0 7.8		
17/05/11	1836-1847	26/Cloudy	Surface	1.0	25.0	30.1 30.1	30.1	6.58 6.54	6.56	93.4 92.8	93.1	5.09 5.15	5.12	5.16	8.1 8.0	8.1	8.3
			Middle	8.7	24.2	30.8 30.7	30.8	6.15 6.18	6.17	87.3 87.7	87.5	5.18 5.15	5.17		8.2 8.1		
			Bottom	16.4	24.0	31.2 31.1	31.2	6.11 6.08	6.10	86.1 85.7	85.9	5.15 5.21	5.18		8.7 8.9		
19/05/11	1436-1447	29/Sunny	Surface	1.0	24.5	30.4 30.3	30.4	6.18 6.16	6.17	87.8 87.5	87.7	5.11 5.08	5.10	5.18	8.2 8.1	8.2	8.3
			Middle	8.9	23.8	31.2 31.3	31.3	6.07 6.10	6.09	86.2 86.6	86.4	5.18 5.15	5.17		8.0 8.0		
			Bottom	16.8	23.6	31.9 31.9	31.9	5.93 5.95	5.94	84.2 84.5	84.4	5.27 5.30	5.29		8.7 8.5		
21/05/11	1026-1041	26/Cloudy	Surface	1.0	22.9	30.4 30.6	30.5	6.05 6.01	6.03	82.9 82.5	82.7	5.14 5.16	5.15	5.19	8.1 8.1	8.1	8.4
			Middle	8.7	23.1	30.4 30.8	30.6	6.02 5.97	6.00	82.6 81.9	82.3	5.19 5.21	5.20		8.3 8.2		
			Bottom	16.4	22.9	31.1 31.0	31.1	5.84 5.83	5.84	80.1 80.0	80.1	5.22 5.19	5.21		8.6 8.8		
24/05/11	1136-1147	23/Cloudy	Surface	1.0	25.3	29.7 29.7	29.7	6.19 6.24	6.22	87.3 88.0	87.7	5.14 5.18	5.16	5.29	8.4 8.5	8.5	8.7
			Middle	8.7	24.9	30.5 30.4	30.5	6.12 6.15	6.14	86.3 86.7	86.5	5.32 5.26	5.29		8.7 8.6		
			Bottom	16.4	24.4	31.7 31.7	31.7	6.01 6.06	6.04	84.7 85.4	85.1	5.39 5.45	5.42		9.1 9.1		
26/05/11	1326-1340	28/Fine	Surface	1.0	25.2	30.6 30.7	30.7	6.12 6.16	6.14	84.4 85.0	84.7	4.95 4.99	4.97	5.12	8.0 8.1	8.1	8.2
			Middle	9.0	24.4	31.3 31.3	31.3	6.08 6.03	6.06	83.9 83.2	83.6	5.08 5.13	5.11		8.4 8.1		
			Bottom	17.0	23.6	32.0 32.0	32.0	5.92 5.87	5.90	81.6 81.0	81.3	5.25 5.30	5.28		8.2 8.2		
28/05/11	1636-1647	31/Sunny	Surface	1.0	27.9	31.5 31.4	31.5	6.38 6.35	6.37	90.5 90.1	90.3	5.49 5.40	5.45	5.42	9.0 8.7	8.9	8.8
			Middle	8.7	25.8	32.1 32.0	32.1	6.20 6.24	6.22	88.0 88.6	88.3	5.38 5.42	5.40		8.3 8.6		
			Bottom	16.4	25.7	32.6 32.5	32.6	5.95 5.98	5.97	83.8 84.3	84.1	5.44 5.38	5.41		9.0 9.0		
31/05/11	1812-1825	28/Fine	Surface	1.0	27.0	30.2 30.3	30.3	6.09 6.14	6.12	85.3 86.0	85.7	4.92 4.89	4.91	4.97	7.5 7.6	7.6	7.9
			Middle	8.9	26.3	31.7 31.6	31.7	6.03 6.06	6.05	84.4 84.8	84.6	4.98 5.03	5.01		8.0 8.3		
			Bottom	16.8	25.4	32.1 32.1	32.1	6.08 6.05	6.07	85.1 84.7	84.9	5.02 4.95	4.99		8.0 7.8		

Mid-Flood Tide

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/05/11	1702-1715	26/Fine	Surface	1.0	23.4	29.7	29.8	6.40	6.38	88.9	88.7	4.91	4.94	5.19	7.8	7.9	8.3
						29.8		6.36		88.4		4.96			8.0		
			Middle	7.3	22.1	30.5	30.6	6.25	6.23	86.8	86.5	5.18	5.22		5.20		
05/05/11	1823-1834	24/Cloudy	Surface	1.0	23.2	30.6	30.6	6.15	6.17	87.3	87.6	5.12	5.14	5.24	8.3	8.4	8.7
						30.5		6.19		87.9		5.16			8.5		
			Middle	7.3	22.7	31.2	31.2	6.04	6.06	85.8	86.1	5.23	5.24		5.24		
07/05/11	1925-1939	29/Fine	Surface	1.0	23.3	30.7	30.8	6.41	6.39	89.0	88.8	4.80	4.82	5.03	7.7	7.8	8.1
						30.8		6.37		88.5		4.84			7.8		
			Middle	7.4	22.4	31.6	31.6	6.21	6.23	86.3	86.6	5.01	5.06		5.04		
12/05/11	1811-1821	31/Cloudy	Surface	1.0	26.9	30.7	30.7	6.05	6.07	84.7	84.9	4.80	4.82	4.84	7.7	7.8	7.7
						30.7		6.08		85.1		4.84			7.8		
			Middle	7.6	25.9	31.8	31.9	6.12	6.15	85.7	86.1	4.74	4.77		4.76		
14/05/11	1459-1511	26/Cloudy	Surface	1.0	25.3	28.5	28.5	6.11	6.10	85.5	78.4	5.02	5.05	5.14	8.1	8.1	8.2
						28.5		6.09		71.3		5.08			8.0		
			Middle	7.6	24.6	30.3	30.4	6.08	6.05	85.1	84.6	5.23	5.19		5.21		
17/05/11	1700-1712	26/Cloudy	Surface	1.0	25.3	30.2	30.2	6.52	6.50	92.5	92.2	4.92	4.90	5.08	7.7	7.9	8.0
						30.2		6.47		91.8		4.87			8.0		
			Middle	7.1	24.5	30.9	30.9	6.21	6.19	88.1	87.9	5.09	5.14		5.12		
19/05/11	1300-1312	27/Sunny	Surface	1.0	24.4	30.2	30.3	6.21	6.20	88.2	88.1	5.10	5.08	5.17	8.1	8.1	8.2
						30.3		6.19		87.9		5.06			8.1		
			Middle	7.3	23.8	31.3	31.3	6.11	6.10	86.8	86.7	5.14	5.18		5.16		
21/05/11	0905-0920	25/Cloudy	Surface	1.0	22.4	30.1	30.0	6.00	5.99	82.2	82.1	5.09	5.11	5.12	7.9	8.0	8.2
						29.8		5.98		81.9		5.12			8.0		
			Middle	7.7	22.4	30.3	30.4	6.01	6.00	82.3	82.1	5.10	5.09		5.10		
24/05/11	1000-1012	21/Cloudy	Surface	1.0	25.2	29.8	29.9	6.28	6.31	87.9	88.4	4.88	4.86	4.94	7.6	7.7	8.0
						29.9		6.34		88.8		4.84			7.8		
			Middle	7.3	24.8	30.4	30.4	6.24	6.23	87.4	87.3	4.91	4.96		4.94		
26/05/11	1203-1217	27/Fine	Surface	1.0	25.1	30.6	30.6	6.29	6.31	86.8	87.1	4.70	4.73	4.86	7.4	7.4	7.7
						30.6		6.33		87.3		4.75			7.4		
			Middle	7.3	24.6	31.1	31.2	6.22	6.20	85.8	85.5	4.83	4.87		4.85		
28/05/11	1500-1512	31/Sunny	Surface	1.0	27.8	31.4	31.4	6.52	6.50	92.5	92.3	5.37	5.41	5.25	8.8	8.9	8.4
						31.4		6.48		92.0		5.44			9.0		
			Middle	7.1	25.4	32.0	32.0	6.27	6.26	89.0	88.8	5.09	5.15		5.12		
31/05/11	1647-1658	29/Fine	Surface	1.0	27.0	30.1	30.2	6.18	6.19	86.5	86.7	4.93	4.95	4.99	7.7	7.9	8.0
						30.2		6.20		86.8		4.97			8.0		
			Middle	7.8	26.3	31.6	31.7	5.83	5.87	81.6	82.2	4.95	4.94		4.95		
31/05/11	1647-1658	29/Fine	Bottom	14.6	25.5	31.7	32.2	5.91	5.97	82.7	83.5	4.94	5.07	4.99	7.8	8.3	8.0
						32.2		5.95		83.3		5.05			8.4		
						32.1	32.2	5.98	5.97	83.7	83.5	5.08	5.07				

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
03/05/11	1724-1740	26/Fine	Surface	1.0	23.4	29.8 29.8	29.8	6.32 6.37	6.35	87.8 88.5	88.2	4.87 4.82	4.85	5.10	7.8 7.6	7.7	8.1
			Middle	6.9	22.3	30.5 30.5	30.5	6.28 6.22	6.25	87.2 86.4	86.8	5.09 5.13	5.11		8.2 8.0		
			Bottom	12.8	20.9	31.5 31.5	31.5	6.09 6.04	6.07	84.6 83.9	84.3	5.31 5.36	5.34		8.5 8.6		
05/05/11	1840-1852	24/Cloudy	Surface	1.0	23.2	30.4 30.5	30.5	6.14 6.18	6.16	86.6 87.1	86.9	5.09 5.13	5.11	5.20	8.2 8.0	8.1	8.3
			Middle	6.9	22.7	31.1 31.1	31.1	6.06 6.02	6.04	85.4 84.9	85.2	5.19 5.22	5.21		8.0 8.4		
			Bottom	12.8	22.4	31.7 31.7	31.7	5.87 5.90	5.89	82.8 83.2	83.0	5.27 5.31	5.29		8.6 8.3		
07/05/11	1947-2000	29/Fine	Surface	1.0	23.2	30.7 30.6	30.7	6.44 6.40	6.42	89.5 88.9	89.2	4.87 4.90	4.89	5.06	7.9 8.0	8.0	8.2
			Middle	6.9	22.5	31.2 31.3	31.3	6.27 6.22	6.25	87.1 86.4	86.8	5.05 5.09	5.07		8.1 8.0		
			Bottom	12.8	21.6	31.9 31.9	31.9	6.14 6.09	6.12	85.3 84.6	85.0	5.26 5.19	5.23		8.4 8.6		
12/05/11	1832-1835	31/Cloudy	Surface	1.0	26.9	30.8 30.7	30.8	6.13 6.16	6.15	85.4 86.2	85.8	4.79 4.86	4.83	4.97	7.6 7.8	7.7	7.9
			Middle	6.9	26.0	31.7 31.8	31.8	5.97 6.02	6.00	83.6 84.0	83.8	4.96 4.98	4.97		8.0 8.0		
			Bottom	12.8	25.3	32.0 32.1	32.1	6.09 6.04	6.07	85.0 84.6	84.8	5.09 5.12	5.11		8.2 8.0		
14/05/11	1522-1534	26/Cloudy	Surface	1.0	25.4	28.6 28.5	28.6	6.08 6.05	6.07	85.1 84.7	84.9	4.89 4.91	4.90	4.99	7.5 7.7	7.6	8.0
			Middle	6.8	24.8	30.3 30.2	30.3	6.10 6.07	6.09	85.4 84.9	85.2	4.97 4.90	4.94		8.0 7.8		
			Bottom	12.6	24.3	31.8 31.7	31.8	5.80 5.85	5.83	81.2 81.9	81.6	5.13 5.11	5.12		8.5 8.5		
17/05/11	1725-1737	26/Cloudy	Surface	1.0	25.2	30.2 30.2	30.2	6.40 6.44	6.42	86.6 91.4	89.0	5.09 5.01	5.05	5.42	7.9 8.0	8.0	8.8
			Middle	6.7	24.4	30.9 30.8	30.9	6.10 6.13	6.12	86.0 86.4	86.2	5.58 5.54	5.56		9.3 9.1		
			Bottom	12.4	24.3	31.0 31.1	31.1	6.03 6.07	6.05	85.0 85.5	85.3	5.62 5.66	5.64		9.5 9.2		
19/05/11	1325-1337	27/Sunny	Surface	1.0	24.5	30.4 30.3	30.4	6.17 6.15	6.16	87.6 87.3	87.5	5.12 5.08	5.10	5.19	8.4 8.5	8.5	8.3
			Middle	6.9	23.8	31.3 31.2	31.3	6.06 6.08	6.07	86.1 86.3	86.2	5.20 5.17	5.19		8.6 8.4		
			Bottom	12.8	23.6	31.9 31.9	31.9	5.94 5.97	5.96	84.3 84.8	84.6	5.29 5.30	5.30		8.1 8.0		
21/05/11	0927-0941	25/Cloudy	Surface	1.0	22.6	29.8 29.8	29.8	6.05 6.03	6.04	82.9 82.7	82.8	5.06 5.05	5.06	5.10	7.9 8.0	8.0	8.0
			Middle	6.9	22.9	30.2 30.3	30.3	5.96 5.95	5.96	81.7 81.6	81.7	5.14 5.15	5.15		8.2 8.0		
			Bottom	12.8	23.0	30.4 30.6	30.5	5.94 5.92	5.93	81.6 81.1	81.4	5.09 5.12	5.11		7.9 7.9		
24/05/11	1025-1037	21/Cloudy	Surface	1.0	25.2	29.8 29.8	29.8	6.43 6.45	6.44	90.7 90.9	90.8	4.86 4.91	4.89	4.99	7.4 7.7	7.6	7.7
			Middle	6.8	24.8	30.3 30.2	30.3	6.32 6.37	6.35	89.1 89.8	89.5	4.97 5.03	5.00		7.5 8.0		
			Bottom	12.6	24.5	31.4 31.5	31.5	6.21 6.25	6.23	87.6 88.1	87.9	5.12 5.07	5.10		7.8 7.8		
26/05/11	1224-1238	27/Fine	Surface	1.0	25.1	30.6 30.7	30.7	6.41 6.44	6.43	88.4 88.8	88.6	4.77 4.84	4.81	4.94	7.6 7.5	7.6	7.9
			Middle	6.9	24.6	31.1 31.1	31.1	6.27 6.31	6.29	86.5 87.0	86.8	4.90 4.96	4.93		8.0 8.1		
			Bottom	12.8	23.9	31.7 31.8	31.8	6.15 6.10	6.13	84.8 84.1	84.5	5.06 5.10	5.08		8.2 8.0		
28/05/11	1525-1537	31/Sunny	Surface	1.0	27.8	31.4 31.4	31.4	6.57 6.54	6.56	93.2 92.8	93.0	5.40 5.47	5.44	5.43	8.8 8.8	8.8	8.8
			Middle	6.8	25.5	31.9 32.0	32.0	6.11 6.09	6.10	86.7 86.4	86.6	5.27 5.21	5.24		8.2 8.3		
			Bottom	12.6	25.3	32.3 32.2	32.3	6.09 6.05	6.07	86.4 85.9	86.2	5.64 5.60	5.62		9.4 9.2		
31/05/11	1709-1723	29/Fine	Surface	1.0	27.0	30.2 30.3	30.3	6.07 6.15	6.11	84.9 86.1	85.5	4.90 4.86	4.88	5.00	7.7 7.6	7.7	8.0
			Middle	6.9	26.4	31.4 31.5	31.5	6.03 6.06	6.05	84.4 84.8	84.6	4.99 5.02	5.01		8.0 8.2		
			Bottom	12.8	25.5	32.2 32.7	32.5	5.96 6.02	5.99	83.4 84.3	83.9	5.09 5.12	5.11		8.3 8.1		

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
03/05/11	1348-1401	28/Cloudy	Surface	1.0	22.5	30.2	30.2	6.33	6.36	88.0	88.4	4.93	4.97	5.09	7.5	7.6	7.9
			Middle	8.1	21.9	30.6	30.6	6.23	6.26	86.6	87.0	5.12	5.10		7.6		
			Bottom	15.2	21.5	30.6	31.2	6.14	6.16	85.3	85.6	5.16	5.19		7.8		
05/05/11	1540-1552	24/Cloudy	Surface	1.0	23.6	30.5	30.5	6.09	6.08	86.4	86.2	5.01	5.03	5.29	8.3	8.2	8.6
			Middle	8.4	22.7	31.4	31.5	5.92	5.90	83.4	83.1	5.34	5.31		8.0		
			Bottom	15.8	22.5	31.9	32.0	5.84	5.82	82.3	82.0	5.57	5.54		8.2		
07/05/11	1640-1652	29/Sunny	Surface	1.0	22.8	30.4	30.4	6.25	6.29	87.5	88.0	4.89	4.92	5.01	7.5	7.7	7.9
			Middle	8.2	22.4	31.1	31.2	6.21	6.19	86.9	86.6	4.98	5.00		7.8		
			Bottom	15.4	21.8	31.9	31.9	6.08	6.07	85.1	84.9	5.08	5.11		8.0		
12/05/11	1540-1552	31/Sunny	Surface	1.0	26.2	30.8	30.8	6.41	6.44	90.4	90.8	4.92	4.89	4.99	7.8	7.9	8.1
			Middle	8.1	25.6	31.7	31.7	6.29	6.32	88.7	89.1	4.95	4.98		8.1		
			Bottom	15.2	25.0	31.9	31.9	6.17	6.21	87.0	87.5	5.07	5.11		8.3		
14/05/11	1222-1236	27/Cloudy	Surface	1.0	25.2	28.2	28.3	6.15	6.17	87.3	87.6	5.14	5.12	5.22	8.2	8.4	8.6
			Middle	8.3	24.5	30.2	30.2	6.03	6.05	85.6	85.9	5.21	5.22		8.5		
			Bottom	15.6	24.3	31.2	31.2	5.90	5.89	83.8	83.6	5.31	5.33		8.8		
17/05/11	1426-1438	23/Cloudy	Surface	1.0	25.5	30.1	30.2	6.36	6.39	90.3	90.7	4.83	4.85	4.97	7.5	7.6	8.0
			Middle	8.0	24.9	30.8	30.8	6.31	6.30	89.6	89.4	5.01	4.98		7.7		
			Bottom	15.0	24.4	31.8	31.8	6.22	6.19	88.3	87.9	5.05	5.09		8.1		
19/05/11	2136-2147	26/Cloudy	Surface	1.0	24.8	30.4	30.4	6.18	6.17	86.5	86.3	4.93	4.95	5.00	7.5	7.6	7.9
			Middle	7.4	23.7	31.3	31.4	6.09	6.11	85.3	85.5	4.98	4.95		7.6		
			Bottom	13.8	23.4	31.9	31.9	6.05	6.04	84.7	84.5	5.09	5.11		8.0		
21/05/11	1752-1815	27/Drizzle	Surface	1.0	23.6	30.8	30.8	6.22	6.24	85.8	86.0	4.80	4.82	5.01	7.7	7.9	8.3
			Middle	7.9	22.6	31.5	31.6	6.13	6.12	84.5	84.3	4.95	4.98		7.8		
			Bottom	14.8	21.5	32.1	32.1	5.92	5.94	81.6	81.9	5.25	5.23		8.1		
24/05/11	1838-1845	24/Cloudy	Surface	1.0	25.8	29.7	29.7	6.14	6.15	85.9	86.1	4.68	4.71	4.94	7.5	7.5	7.8
			Middle	7.6	25.2	30.6	30.7	6.03	6.06	84.4	84.9	4.96	4.94		7.6		
			Bottom	14.2	24.9	31.8	31.9	5.88	5.90	82.3	82.6	5.18	5.17		8.0		
26/05/11	2021-2036	27/Fine	Surface	1.0	25.3	30.5	30.5	6.20	6.19	91.8	91.6	5.05	5.07	5.18	8.2	8.2	8.1
			Middle	8.1	24.7	30.9	31.0	6.11	6.09	90.4	90.1	5.16	5.18		8.1		
			Bottom	15.2	24.4	31.7	31.7	5.98	5.97	88.5	88.3	5.27	5.29		8.3		
28/05/11	1246-1258	29/Sunny	Surface	1.0	26.4	31.4	31.4	6.31	6.34	89.6	90.0	4.97	4.95	5.07	8.5	8.6	8.3
			Middle	8.2	26.0	31.7	31.8	6.27	6.25	89.0	88.7	5.03	5.07		8.0		
			Bottom	15.4	25.4	32.2	32.2	6.12	6.15	86.9	87.4	5.21	5.19		8.3		
31/05/11	1315-1330	29/Fine	Surface	1.0	24.6	30.9	30.9	6.37	6.35	87.9	87.6	4.81	4.83	4.99	7.5	7.6	7.9
			Middle	7.9	23.8	31.4	31.4	6.17	6.19	85.1	85.3	4.94	4.97		7.6		
			Bottom	14.8	23.1	31.9	32.0	6.09	6.07	84.0	83.7	5.17	5.19		8.0		

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
03/05/11	1329-1340	28/Cloudy	Surface	1.0	22.5	30.1	30.1	6.32	6.29	87.8	87.4	4.91	4.94	5.05	7.7	7.9	8.1
			Middle	8.2	21.9	30.5	30.5	6.17	6.19	85.8	86.1	5.02	5.06		8.0		
			Bottom	15.4	21.4	31.1	31.1	6.09	6.11	84.7	84.9	5.18	5.16		8.3		
05/05/11	1521-1532	24/Cloudy	Surface	1.0	23.7	30.6	30.6	6.17	6.16	87.6	87.5	4.87	4.90	5.13	7.5	7.7	8.1
			Middle	8.4	22.7	31.5	31.5	5.95	5.97	84.4	84.7	5.12	5.15		7.9		
			Bottom	15.8	22.5	31.9	31.9	5.98	5.96	84.9	84.6	5.30	5.34		8.6		
07/05/11	1621-1632	29/Sunny	Surface	1.0	22.9	30.5	30.5	6.39	6.38	89.5	89.3	5.01	4.98	5.08	8.3	8.2	8.2
			Middle	8.1	22.4	31.2	31.2	6.26	6.27	87.6	87.8	5.06	5.09		8.0		
			Bottom	15.2	21.8	32.0	32.0	6.13	6.16	85.8	86.2	5.15	5.19		8.2		
12/05/11	1521-1532	31/Sunny	Surface	1.0	26.2	30.9	30.9	6.42	6.46	89.9	90.4	4.98	4.96	5.05	8.0	8.0	8.2
			Middle	8.3	25.5	31.7	31.7	6.36	6.34	89.0	88.8	5.02	5.04		7.9		
			Bottom	15.6	25.1	32.0	32.0	6.27	6.25	87.8	87.5	5.20	5.17		8.6		
14/05/11	1158-1212	27/Cloudy	Surface	1.0	25.1	28.3	28.3	6.20	6.19	88.0	87.8	5.11	5.10	5.21	8.1	8.1	8.6
			Middle	8.4	24.5	30.3	30.3	6.11	6.10	86.8	86.7	5.22	5.21		8.1		
			Bottom	15.8	24.3	31.3	31.3	5.93	5.94	84.2	84.4	5.34	5.32		8.8		
17/05/11	1408-1419	23/Cloudy	Surface	1.0	25.5	30.1	30.1	6.45	6.44	90.9	90.7	4.85	4.88	5.00	7.8	7.8	8.0
			Middle	8.2	24.8	30.9	30.9	6.29	6.32	88.7	89.1	5.02	5.00		8.0		
			Bottom	15.4	24.3	31.8	31.8	6.20	6.22	87.4	87.7	5.10	5.13		8.3		
19/05/11	2114-2125	26/Cloudy	Surface	1.0	24.9	30.2	30.3	5.97	5.99	83.6	83.9	4.86	4.88	5.02	7.4	7.5	7.9
			Middle	8.1	23.7	31.4	31.5	6.13	6.12	85.8	85.6	5.15	5.16		8.2		
			Bottom	15.2	23.3	31.8	31.8	5.88	5.86	82.3	82.0	5.01	5.02		8.0		
21/05/11	1733-1745	27/Drizzle	Surface	1.0	23.6	30.8	30.8	6.30	6.29	86.9	86.7	4.71	4.73	4.96	7.3	7.4	7.8
			Middle	8.2	22.6	31.6	31.6	6.13	6.15	84.5	84.8	4.90	4.93		7.9		
			Bottom	15.4	21.4	32.2	32.2	5.99	6.01	82.6	82.9	5.18	5.21		8.2		
24/05/11	1823-1829	24/Cloudy	Surface	1.0	25.8	29.8	29.8	6.27	6.25	87.8	87.5	4.85	4.83	4.95	7.6	7.6	8.0
			Middle	8.2	25.1	30.6	30.6	6.21	6.20	86.9	86.8	4.93	4.96		8.0		
			Bottom	15.4	24.7	31.9	31.9	6.05	6.07	84.7	84.5	5.08	5.07		8.4		
25/05/11	1957-2011	27/Fine	Surface	1.0	25.2	30.4	30.5	6.16	6.17	91.2	91.4	5.15	5.14	5.23	8.0	8.0	8.4
			Middle	7.8	24.6	30.9	30.9	6.07	6.08	89.8	90.0	5.22	5.23		8.4		
			Bottom	14.6	24.4	31.5	31.5	5.94	5.93	87.9	87.8	5.31	5.33		8.6		
28/05/11	1226-1237	29/Sunny	Surface	1.0	26.4	31.4	31.4	6.41	6.40	90.4	90.3	4.99	5.03	5.15	8.0	7.9	8.3
			Middle	8.1	25.9	31.8	31.8	6.34	6.33	89.4	89.2	5.14	5.16		8.5		
			Bottom	15.2	25.4	32.2	32.2	6.23	6.24	87.8	88.0	5.23	5.26		8.2		
31/05/11	1251-1306	29/Fine	Surface	1.0	24.6	30.9	30.9	6.29	6.32	86.8	87.1	4.94	4.96	5.13	8.0	7.9	8.2
			Middle	8.2	23.7	31.4	31.4	6.10	6.12	84.1	84.3	5.07	5.10		8.1		
			Bottom	15.4	23.0	32.1	32.1	6.02	5.99	83.0	82.6	5.29	5.32		8.6		

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
03/05/11	1133-1145	28/Cloudy	Surface	1.0	22.4	30.1 30.0	30.1	6.22 6.26	6.24	86.5 87.0	86.8	5.19 5.12	5.16	5.28	8.3 8.1	8.2	8.5
			Middle	8.4	21.8	30.6 30.5	30.6	6.17 6.13	6.15	85.8 85.2	85.5	5.27 5.31	5.29		8.4 8.1		
			Bottom	15.8	21.4	31.2 31.1	31.2	6.02 6.08	6.05	83.7 84.5	84.1	5.42 5.36	5.39		8.9 9.0		
05/05/11	1312-1324	24/Cloudy	Surface	1.0	23.7	30.4 30.3	30.4	6.25 6.28	6.27	88.7 89.1	88.9	5.06 5.09	5.08	5.17	7.7 8.1	7.9	8.5
			Middle	8.4	22.8	31.3 31.2	31.3	6.04 6.01	6.03	85.7 85.3	85.5	5.41 5.37	5.39		9.0 9.3		
			Bottom	15.8	22.6	31.9 31.9	31.9	5.85 5.81	5.83	82.4 81.9	82.2	5.03 5.08	5.06		8.4 8.4		
07/05/11	1422-1434	30/Sunny	Surface	1.0	23.0	30.5 30.5	30.5	6.24 6.19	6.22	87.4 86.7	87.1	5.03 5.08	5.06	5.15	8.0 8.1	8.1	8.2
			Middle	8.3	22.5	31.1 31.2	31.2	6.10 6.13	6.12	85.4 85.8	85.6	5.18 5.12	5.15		8.2 8.0		
			Bottom	15.6	21.9	32.0 31.9	32.0	6.02 6.06	6.04	84.3 84.8	84.6	5.23 5.26	5.25		8.5 8.6		
12/05/11	1322-1334	31/Sunny	Surface	1.0	26.3	30.8 30.9	30.9	6.22 6.28	6.25	87.7 88.5	88.1	5.15 5.09	5.12	5.22	8.3 8.3	8.3	8.5
			Middle	8.3	25.7	31.7 31.7	31.7	6.17 6.14	6.16	87.0 86.6	86.8	5.24 5.19	5.22		8.6 8.7		
			Bottom	15.6	25.2	32.0 32.0	32.0	6.04 6.09	6.07	85.2 85.9	85.6	5.30 5.35	5.33		8.5 8.3		
14/05/11	1000-1012	25/Drizzle	Surface	1.0	25.2	28.3 28.2	28.3	6.12 6.09	6.11	86.9 86.5	86.7	5.10 5.13	5.12	5.21	8.5 8.3	8.4	8.3
			Middle	8.4	24.5	30.3 30.2	30.3	5.97 6.00	5.99	84.8 85.2	85.0	5.19 5.22	5.21		8.1 8.0		
			Bottom	15.8	24.2	31.0 31.0	31.0	5.86 5.89	5.88	83.3 83.6	83.5	5.28 5.32	5.30		8.6 8.4		
17/05/11	1215-1227	24/Cloudy	Surface	1.0	25.5	30.2 30.2	30.2	6.19 6.22	6.21	87.3 87.7	87.5	5.14 5.19	5.17	5.29	8.2 8.5	8.4	8.6
			Middle	8.1	24.9	30.9 30.8	30.9	6.09 6.14	6.12	85.9 86.6	86.3	5.33 5.27	5.30		8.6 8.4		
			Bottom	15.2	24.4	31.8 31.9	31.9	6.03 5.96	6.00	85.0 84.0	84.5	5.43 5.40	5.42		8.8 8.9		
19/05/11	1926-1938	27/Fine	Surface	1.0	24.9	30.4 30.3	30.4	6.04 6.10	6.07	84.6 85.4	85.0	4.87 4.85	4.86	4.98	7.5 7.6	7.6	7.9
			Middle	8.5	23.9	31.2 31.2	31.2	5.99 6.06	6.03	83.9 84.8	84.4	4.95 4.93	4.94		8.0 7.8		
			Bottom	16.0	23.5	31.8 31.7	31.8	5.90 5.93	5.92	82.6 83.0	82.8	5.16 5.14	5.15		8.2 8.0		
21/05/11	1531-1545	27/Cloudy	Surface	1.0	23.5	30.8 30.8	30.8	6.17 6.14	6.16	85.1 84.7	84.9	4.95 4.99	4.97	5.16	7.5 7.4	7.5	8.0
			Middle	8.2	22.7	31.5 31.6	31.6	6.02 6.06	6.04	83.0 83.6	83.3	5.11 5.16	5.14		8.2 8.0		
			Bottom	15.4	21.6	32.2 32.1	32.2	5.81 5.86	5.84	80.1 80.8	80.5	5.35 5.40	5.38		8.4 8.7		
24/05/11	1635-1647	24/Cloudy	Surface	1.0	25.8	29.9 29.8	29.9	6.03 6.08	6.06	84.4 85.1	84.8	4.79 4.84	4.82	4.89	7.5 7.5	7.5	7.8
			Middle	8.4	25.1	30.7 30.6	30.7	6.05 6.01	6.03	84.7 84.1	84.4	4.86 4.81	4.84		7.9 8.0		
			Bottom	15.8	24.7	31.7 31.8	31.8	5.97 5.90	5.94	83.6 82.6	83.1	4.99 5.06	5.03		8.0 8.0		
26/05/11	1800-1812	28/Fine	Surface	1.0	25.4	30.3 30.3	30.3	6.12 6.10	6.11	90.6 90.3	90.5	5.14 5.16	5.15	5.24	8.2 8.1	8.2	8.4
			Middle	8.1	24.8	30.9 31.0	31.0	6.03 6.05	6.04	89.2 89.5	89.4	5.22 5.26	5.24		8.4 8.3		
			Bottom	15.2	24.4	31.6 31.6	31.6	5.93 5.96	5.95	87.8 88.2	88.0	5.31 5.34	5.33		8.7 8.5		
28/05/11	1024-1036	28/Sunny	Surface	1.0	26.3	31.3 31.4	31.4	6.25 6.27	6.26	88.8 89.0	88.9	5.07 5.02	5.05	5.15	8.5 8.1	8.3	8.3
			Middle	8.2	25.9	31.8 31.7	31.8	6.19 6.15	6.17	87.9 87.3	87.6	5.11 5.17	5.14		8.3 8.2		
			Bottom	15.4	25.4	32.2 32.1	32.2	6.06 6.11	6.09	86.1 86.8	86.5	5.23 5.27	5.25		8.5 8.4		
31/05/11	1049-1103	29/Fine	Surface	1.0	24.4	30.8 30.8	30.8	6.09 6.05	6.07	84.0 83.4	83.7	5.19 5.24	5.22	5.37	8.5 8.3	8.4	8.8
			Middle	8.2	23.7	31.3 31.4	31.4	5.94 5.90	5.92	81.9 81.4	81.7	5.36 5.40	5.38		8.7 8.8		
			Bottom	15.4	23.0	31.9 32.1	32.0	5.86 5.82	5.84	80.8 80.3	80.6	5.51 5.54	5.53		9.3 9.0		

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	Value	Average	Depth-average	Value
03/05/11	1229-1241	28/Cloudy	Surface	1.0	22.4	30.0	30.0	6.31	6.33	87.7	88.0	4.92	4.94	5.04	7.6	7.7	8.0
			Middle	8.3	21.9	30.5	30.5	6.19	6.21	85.4	85.6	5.07	5.03		8.1		
			Bottom	15.6	21.5	31.1	31.1	6.15	6.12	84.9	84.4	5.14	5.16		8.2		
05/05/11	1410-1422	24/Cloudy	Surface	1.0	23.6	30.5	30.5	6.20	6.22	88.0	88.3	5.19	5.22	5.11	8.1	8.2	8.1
			Middle	8.2	22.9	31.5	31.5	6.01	6.04	85.3	85.7	4.97	5.02		8.0		
			Bottom	15.4	22.7	32.0	32.0	5.97	5.95	84.7	84.4	5.06	5.10		8.3		
07/05/11	1520-1532	30/Sunny	Surface	1.0	22.9	30.6	30.6	6.45	6.43	90.3	90.0	4.97	4.99	5.12	7.9	7.8	8.1
			Middle	8.2	22.5	31.2	31.2	6.32	6.35	88.5	88.9	5.09	5.12		8.1		
			Bottom	15.4	21.9	31.9	31.9	6.20	6.23	86.8	87.2	5.28	5.25		8.4		
12/05/11	1420-1432	31/Sunny	Surface	1.0	26.3	30.8	30.9	6.33	6.35	88.6	88.9	4.95	4.97	5.07	8.0	7.9	8.1
			Middle	8.1	25.7	31.6	31.6	6.28	6.27	87.9	87.7	5.11	5.08		8.4		
			Bottom	15.2	25.1	32.0	32.0	6.16	6.13	86.2	85.8	5.14	5.17		8.2		
14/05/11	1054-1107	25/Drizzle	Surface	1.0	25.2	28.1	28.1	6.14	6.15	86.6	86.8	5.11	5.10	5.19	7.8	7.9	8.3
			Middle	8.1	24.5	30.2	30.3	6.07	6.05	85.6	85.3	5.21	5.19		8.0		
			Bottom	15.2	24.2	31.2	31.2	5.91	5.92	83.9	84.1	5.25	5.27		8.3		
17/05/11	1310-1322	24/Cloudy	Surface	1.0	25.5	30.2	30.3	6.31	6.28	89.6	89.2	4.92	4.89	5.00	7.6	7.7	8.0
			Middle	8.2	24.8	30.9	30.9	6.15	6.17	87.3	87.6	5.04	5.02		8.1		
			Bottom	15.4	24.4	31.9	31.9	6.03	6.06	85.6	86.0	5.13	5.11		8.0		
19/05/11	2013-2025	27/Fine	Surface	1.0	24.8	30.2	30.3	6.05	6.04	84.7	84.5	5.08	5.07	5.02	8.1	8.1	8.1
			Middle	7.8	23.8	31.1	31.2	5.94	5.93	83.2	83.0	4.90	4.90		7.8		
			Bottom	14.6	23.4	31.7	31.8	5.93	5.95	82.7	83.2	4.89	5.07		8.0		
21/05/11	1631-1645	27/Cloudy	Surface	1.0	23.4	30.8	30.8	6.24	6.26	86.1	86.4	4.71	4.74	4.97	7.6	7.6	8.0
			Middle	8.1	22.6	31.5	31.6	6.13	6.15	84.5	84.8	4.93	4.96		8.0		
			Bottom	15.2	21.4	32.1	32.2	6.00	6.03	82.8	83.1	5.20	5.22		8.4		
24/05/11	1723-1736	24/Cloudy	Surface	1.0	25.9	29.8	29.8	5.93	5.96	83.0	83.5	5.07	5.10	5.07	8.1	8.2	8.1
			Middle	7.9	25.0	30.6	30.7	6.02	6.05	84.3	84.7	5.09	5.07		8.0		
			Bottom	14.8	24.6	31.7	31.7	6.01	6.00	84.1	83.9	5.05	5.03		8.2		
26/05/11	1854-1907	28/Fine	Surface	1.0	25.3	30.4	30.4	6.16	6.18	91.2	91.4	5.08	5.09	5.17	8.1	8.1	8.2
			Middle	7.7	24.8	31.0	31.0	6.04	6.06	89.4	89.6	5.15	5.17		8.0		
			Bottom	14.4	24.4	31.6	31.6	5.91	5.93	87.5	87.8	5.25	5.26		8.4		
28/05/11	1124-1136	28/Sunny	Surface	1.0	26.2	31.3	31.4	6.36	6.35	89.7	89.5	5.01	4.99	5.12	7.7	7.8	7.9
			Middle	7.9	25.9	31.7	31.8	6.23	6.26	87.8	88.2	5.09	5.12		7.8		
			Bottom	14.8	25.4	32.1	32.1	6.16	6.14	86.9	86.6	5.28	5.25		8.3		
31/05/11	1149-1202	29/Fine	Surface	1.0	24.5	30.9	31.0	6.26	6.28	86.3	86.6	4.95	4.97	5.10	7.8	7.9	8.1
			Middle	8.0	23.8	31.5	31.5	6.15	6.14	84.8	84.6	5.06	5.08		8.0		
			Bottom	15.0	23.0	31.9	32.0	6.04	6.03	83.3	83.2	5.22	5.25		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
03/05/11	1245-1258	28/Cloudy	Surface	1.0	22.4	30.0 30.1	30.1	6.35 6.41	6.38	87.6 88.5	88.1	4.94 4.97	4.96	5.07	8.0 8.2	8.1	8.1
			Middle	8.7	21.8	30.4 30.4	30.4	6.29 6.26	6.28	86.8 86.4	86.6	5.10 5.04	5.07		8.3 8.1		
			Bottom	16.4	21.4	31.0 30.9	31.0	6.13 6.18	6.16	84.6 85.3	85.0	5.19 5.15	5.17		8.0 8.0		
05/05/11	1425-1437	24/Cloudy	Surface	1.0	23.6	30.5 30.5	30.5	6.30 6.34	6.32	89.4 90.0	89.7	5.06 5.15	5.11	5.17	8.1 8.3	8.2	8.2
			Middle	8.9	22.8	31.5 31.4	31.5	5.94 5.97	5.96	84.3 84.7	84.5	5.15 5.19	5.17		8.0 8.0		
			Bottom	16.8	22.7	31.9 32.0	32.0	5.88 5.85	5.87	82.9 82.4	82.7	5.20 5.28	5.24		8.6 8.4		
07/05/11	1535-1547	30/Sunny	Surface	1.0	23.0	30.5 30.6	30.6	6.36 6.34	6.35	88.4 88.1	88.3	4.99 4.93	4.96	5.06	8.0 7.7	8.1	8.1
			Middle	8.6	22.5	31.1 31.0	31.1	6.23 6.27	6.25	86.6 87.2	86.9	5.05 5.08	5.07		8.1 8.1		
			Bottom	16.2	21.8	31.8 31.8	31.8	6.18 6.15	6.17	85.9 85.5	85.7	5.18 5.14	5.16		8.5 8.3		
12/05/11	1435-1447	31/Sunny	Surface	1.0	26.3	30.9 30.9	30.9	6.34 6.29	6.32	89.4 88.7	89.1	4.91 4.96	4.94	5.05	7.6 7.6	8.0	8.0
			Middle	8.7	25.7	31.6 31.7	31.7	6.17 6.23	6.20	87.0 87.8	87.4	5.03 5.07	5.05		8.1 8.1		
			Bottom	16.4	25.2	31.9 32.0	32.0	6.08 6.11	6.10	85.7 86.2	86.0	5.12 5.18	5.15		8.2 8.0		
14/05/11	1114-1128	25/Drizzle	Surface	1.0	25.1	28.2 28.1	28.2	6.20 6.16	6.18	87.4 86.9	87.2	5.04 5.07	5.06	5.15	8.0 8.2	8.3	8.3
			Middle	8.9	24.5	30.3 30.3	30.3	6.07 6.05	6.06	85.6 85.3	85.5	5.13 5.16	5.15		8.1 8.1		
			Bottom	16.8	24.2	31.2 31.3	31.3	5.88 5.93	5.91	82.9 83.6	83.3	5.22 5.25	5.24		8.6 8.5		
17/05/11	1325-1337	24/Cloudy	Surface	1.0	25.5	30.2 30.2	30.2	6.38 6.42	6.40	90.0 90.5	90.3	4.97 5.01	4.99	5.11	7.5 7.8	8.0	8.0
			Middle	8.8	24.9	30.9 30.9	30.9	6.26 6.31	6.29	88.3 89.0	88.7	5.06 5.13	5.10		8.1 8.0		
			Bottom	16.6	24.3	31.8 31.9	31.9	6.17 6.21	6.19	87.0 87.6	87.3	5.27 5.21	5.24		8.4 8.3		
19/05/11	2028-2039	27/Fine	Surface	1.0	24.9	30.2 30.2	30.2	6.13 6.16	6.15	85.8 86.2	86.0	5.06 5.04	5.05	5.10	7.8 8.0	8.0	8.0
			Middle	8.9	23.7	31.2 31.2	31.2	5.98 6.04	6.01	83.7 84.6	84.2	5.08 5.12	5.10		8.4 8.2		
			Bottom	16.8	23.2	31.9 31.8	31.9	6.08 6.05	6.07	85.1 84.7	84.9	5.18 5.11	5.15		7.6 7.9		
21/05/11	1649-1702	27/Cloudy	Surface	1.0	23.3	30.7 30.7	30.7	6.30 6.23	6.27	86.9 85.9	86.4	4.75 4.80	4.78	4.98	7.5 7.4	7.7	7.7
			Middle	8.7	22.7	31.6 31.6	31.6	6.19 6.16	6.18	85.4 85.0	85.2	4.95 5.00	4.98		7.8 7.6		
			Bottom	16.4	21.4	32.3 32.2	32.3	6.06 6.08	6.07	83.6 83.9	83.8	5.18 5.22	5.20		8.0 7.9		
24/05/11	1739-1750	24/Cloudy	Surface	1.0	26.0	29.7 29.7	29.7	5.82 5.88	5.85	81.5 82.3	81.9	4.94 4.96	4.95	5.03	7.7 7.9	8.1	8.1
			Middle	8.9	25.1	30.8 30.7	30.8	5.93 5.97	5.95	83.0 83.6	83.3	5.06 5.01	5.04		8.4 8.5		
			Bottom	16.8	24.7	31.8 31.9	31.9	5.85 5.89	5.87	81.9 82.5	82.2	5.09 5.13	5.11		8.0 8.2		
26/05/11	1914-1928	28/Fine	Surface	1.0	25.4	30.4 30.3	30.4	6.13 6.17	6.15	90.7 91.3	91.0	5.12 5.16	5.14	5.23	8.1 8.0	8.5	8.5
			Middle	8.6	24.9	31.1 31.1	31.1	6.03 6.07	6.05	89.2 89.8	89.5	5.21 5.23	5.22		8.5 8.5		
			Bottom	16.2	24.5	31.7 31.6	31.7	5.89 5.92	5.91	87.2 87.6	87.4	5.31 5.34	5.33		8.8 9.0		
28/05/11	1139-1151	28/Sunny	Surface	1.0	26.3	31.4 31.4	31.4	6.41 6.44	6.43	90.1 90.8	90.5	4.87 4.93	4.90	5.02	7.9 8.1	8.2	8.2
			Middle	8.8	25.8	31.8 31.8	31.8	6.37 6.34	6.36	89.8 89.4	89.6	5.05 4.98	5.02		8.2 8.2		
			Bottom	16.6	25.4	32.2 32.2	32.2	6.25 6.30	6.28	88.1 88.8	88.5	5.19 5.11	5.15		8.4 8.3		
31/05/11	1206-1220	29/Fine	Surface	1.0	24.6	30.9 30.9	30.9	6.31 6.35	6.33	87.0 87.6	87.3	4.93 4.97	4.95	5.11	8.2 8.0	8.2	8.2
			Middle	8.7	23.8	31.5 31.6	31.6	6.20 6.25	6.23	85.5 86.2	85.9	5.07 5.13	5.10		8.1 8.0		
			Bottom	16.4	23.0	32.0 32.1	32.1	6.09 6.13	6.11	84.0 84.5	84.3	5.26 5.30	5.28		8.6 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
03/05/11	1304-1316	28/Cloudy	Surface	1.0	22.4	30.2	30.2	6.40	6.42	88.3	88.5	4.95	4.92	5.03	7.7	7.9	8.1
			Middle	6.3	21.9	30.6	30.6	6.31	6.34	87.1	87.5	4.99	5.03		8.0		
			Bottom	11.6	21.5	31.2	31.2	6.19	6.22	85.4	85.9	5.20	5.16		8.6		
05/05/11	1454-1506	24/Cloudy	Surface	1.0	23.6	30.5	30.6	6.11	6.10	86.7	86.5	4.96	5.02	5.08	7.6	7.7	7.9
			Middle	6.4	22.8	31.4	31.4	6.03	6.05	85.6	85.9	4.99	5.02		7.5		
			Bottom	11.8	22.4	31.8	31.8	5.97	5.96	84.7	84.5	5.23	5.20		8.4		
07/05/11	1554-1606	29/Sunny	Surface	1.0	23.0	30.5	30.5	6.42	6.45	89.2	89.6	4.92	4.90	5.00	7.6	7.6	7.9
			Middle	6.1	22.5	31.0	31.0	6.31	6.35	87.7	88.2	4.96	5.00		8.0		
			Bottom	11.2	21.9	31.7	31.8	6.26	6.24	87.0	86.7	5.11	5.09		8.0		
12/05/11	1454-1506	31/Sunny	Surface	1.0	26.3	30.7	30.8	6.38	6.41	89.3	89.7	4.83	4.85	4.95	7.8	7.9	7.9
			Middle	6.2	25.6	31.5	31.5	6.27	6.30	87.8	88.2	4.99	4.96		7.5		
			Bottom	11.4	25.1	31.8	31.8	6.16	6.19	86.2	86.6	5.08	5.06		8.2		
14/05/11	1137-1149	27/Cloudy	Surface	1.0	25.2	28.1	28.2	6.16	6.18	87.5	87.7	5.07	5.09	5.19	8.0	8.0	8.2
			Middle	6.4	24.6	30.1	30.1	6.07	6.08	86.2	86.4	5.16	5.18		8.0		
			Bottom	11.8	24.2	31.2	31.2	5.95	5.97	84.5	84.7	5.28	5.30		8.8		
17/05/11	1343-1355	23/Cloudy	Surface	1.0	25.4	30.3	30.3	6.36	6.34	90.3	90.0	4.98	4.96	5.05	7.9	8.0	8.0
			Middle	6.2	25.0	30.7	30.7	6.24	6.26	88.6	88.8	5.04	5.06		8.0		
			Bottom	11.4	24.6	31.6	31.7	6.13	6.16	87.0	87.4	5.17	5.14		8.2		
19/05/11	2048-2100	26/Cloudy	Surface	1.0	24.8	30.3	30.3	6.04	6.03	84.6	84.4	5.09	5.06	5.10	8.5	8.4	8.2
			Middle	6.2	23.8	31.3	31.4	5.98	5.95	83.7	83.3	5.12	5.16		8.2		
			Bottom	11.4	23.4	31.8	31.9	5.93	5.92	83.0	82.8	5.05	5.08		8.1		
21/05/11	1710-1724	27/Drizzle	Surface	1.0	23.5	30.8	30.8	6.31	6.33	87.0	87.3	4.73	4.75	4.93	7.4	7.5	7.8
			Middle	6.3	22.9	31.4	31.4	6.22	6.24	85.8	86.1	4.88	4.90		8.1		
			Bottom	11.6	21.7	31.9	31.9	6.07	6.09	83.7	84.0	5.10	5.13		8.2		
24/05/11	1759-1814	24/Cloudy	Surface	1.0	25.7	29.9	29.9	5.93	5.92	83.0	82.8	4.92	4.90	5.04	7.9	8.0	8.1
			Middle	6.4	25.0	30.4	30.5	5.99	6.02	83.9	84.3	5.03	5.07		8.2		
			Bottom	11.8	24.8	31.8	31.9	5.88	5.90	82.3	82.5	5.17	5.16		8.3		
26/05/11	1938-1949	27/Fine	Surface	1.0	25.3	30.4	30.4	6.21	6.20	91.9	91.8	5.08	5.10	5.19	8.1	8.2	8.1
			Middle	6.6	24.7	30.9	30.9	6.12	6.11	90.6	90.4	5.17	5.19		7.7		
			Bottom	12.2	24.3	31.4	31.4	6.02	6.01	89.1	88.9	5.27	5.28		8.0		
28/05/11	1158-1210	29/Sunny	Surface	1.0	26.3	31.3	31.3	6.39	6.37	90.7	90.5	4.85	4.87	4.98	7.5	7.7	8.1
			Middle	6.3	26.0	31.7	31.7	6.22	6.25	88.3	88.8	5.01	4.98		8.2		
			Bottom	11.6	25.5	31.9	32.0	6.17	6.16	87.6	87.4	5.12	5.10		8.1		
31/05/11	1227-1242	29/Fine	Surface	1.0	24.6	30.9	30.9	6.27	6.29	86.5	86.8	4.87	4.89	5.04	7.7	7.9	8.1
			Middle	6.3	24.2	31.2	31.3	6.15	6.17	84.8	85.1	4.97	5.00		8.0		
			Bottom	11.6	23.6	31.8	31.8	6.05	6.07	83.4	83.7	5.21	5.24		8.6		

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		
03/05/11	1020-1032	27/Cloudy	Surface	1.0	22.3	29.9	29.9	6.20	6.21	86.2	86.4	5.09	5.07	5.18	8.1	8.1	8.3		
			Middle	5.7	21.7	29.9		6.22		86.5		5.05			8.1				
			Bottom	10.4	21.3	30.2	6.14	85.3	5.21	8.4									
05/05/11	1204-1215	24/Cloudy	Surface	1.0	23.3	30.3	30.3	6.08	6.07	84.5	86.2	5.15	4.93		4.95	8.5		8.5	8.2
			Middle	5.7	22.8	30.9		6.01		83.5		5.28				8.1			
			Bottom	10.4	22.3	31.0	6.05	84.1	5.31	8.2									
07/05/11	1304-1315	29/Sunny	Surface	1.0	22.8	30.2	30.3	6.09	6.07	85.9	86.2	4.94	4.93	5.20		7.7	7.9	8.4	
			Middle	5.8	22.4	31.7		5.97		84.7		4.87				8.0			
			Bottom	10.6	21.8	31.8	5.94	83.7	4.94	8.6									
12/05/11	1204-1215	30/Sunny	Surface	1.0	26.2	31.8	31.8	5.95	5.97	84.4	84.7	4.99	5.02		5.25	8.0	8.1		8.5
			Middle	5.6	25.5	31.7		5.98		84.9		5.05				8.2			
			Bottom	10.2	25.1	30.5	6.27	87.8	5.12	8.8									
14/05/11	0905-0915	25/Drizzle	Surface	1.0	25.2	31.1	31.1	6.11	6.13	88.1	88.0	5.18	5.11	5.27		8.3	8.5	8.2	
			Middle	5.6	24.5	31.8		6.04		84.6		5.34				8.8			
			Bottom	10.2	24.1	31.5	6.01	84.1	5.29	8.5									
17/05/11	1103-1114	24/Cloudy	Surface	1.0	25.3	31.9	31.9	6.01	6.01	87.6	87.9	5.11	5.15		5.29	8.1	8.2		8.6
			Middle	5.7	24.7	31.8		6.01		84.5		5.38				8.6			
			Bottom	10.4	24.5	31.6	6.08	85.7	5.27	8.7									
19/05/11	1818-1829	27/Fine	Surface	1.0	24.5	31.7	31.7	6.14	6.11	86.6	86.6	5.22	5.25	5.09		8.7	8.6	8.2	
			Middle	5.3	23.6	31.9		6.02		84.9		5.33				8.0			
			Bottom	9.6	23.3	31.8	5.99	84.5	5.36	8.7									
21/05/11	1426-1440	28/Cloudy	Surface	1.0	23.3	31.8	31.8	6.08	6.10	85.2	86.6	5.26	5.28		5.13	8.0	8.1		8.3
			Middle	5.2	22.9	31.1		5.96		84.6		5.29				8.3			
			Bottom	9.4	21.8	30.8	6.13	83.7	5.37	8.9									
24/05/11	1518-1532	25/Cloudy	Surface	1.0	25.8	31.9	31.9	5.85	5.88	83.9	83.8	5.37	5.38	5.17		8.9	8.9	8.2	
			Middle	5.5	25.0	30.2		6.25		88.8		5.14				9.0			
			Bottom	10.0	24.5	30.4	6.21	86.7	5.01	8.4									
26/05/11	1704-1716	28/Fine	Surface	1.0	25.4	31.2	31.2	6.04	6.06	86.9	86.8	5.08	5.05		5.27	8.2	8.5		8.3
			Middle	5.6	24.8	31.3		6.08		85.1		5.14				8.6			
			Bottom	10.2	24.2	31.8	5.86	82.0	5.03	8.3									
28/05/11	0905-0916	27/Sunny	Surface	1.0	26.2	31.9	31.9	5.80	5.83	81.2	81.6	5.08	5.06	5.16		8.0	8.0	8.6	
			Middle	5.5	25.8	30.7		6.09		84.0		4.92				8.0			
			Bottom	10.0	25.5	30.7	6.02	83.0	4.97	8.5									
31/05/11	0945-1000	28/Fine	Surface	1.0	24.3	31.3	31.3	5.89	5.91	81.2	81.5	5.10	5.08		5.32	8.5	8.5		8.7
			Middle	5.6	24.0	31.7		5.79		79.9		5.34				8.7			
			Bottom	10.2	23.2	31.7	5.82	80.3	5.39	8.5									

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
03/05/11	1001-1012	27/Cloudy	Surface	1.0	22.2	30.0	30.0	6.34	6.31	88.1	87.7	4.96	4.99	5.10	7.8	7.9	8.1
			Middle	6.2	21.8	30.4		6.25		6.23		86.9			5.13		
			Bottom	11.4	21.3	31.1	6.21	6.14	86.3	5.07	8.0						
05/05/11	1145-1156	24/Cloudy	Surface	1.0	23.2	30.4	30.4	6.03	6.05	85.6	85.8	4.75	4.78	4.93	7.4	7.5	7.8
			Middle	6.3	22.8	31.3		5.89		5.91		83.0			4.92		
			Bottom	11.6	22.3	31.8	5.93	5.82	83.6	4.87	7.8						
07/05/11	1245-1256	29/Sunny	Surface	1.0	22.9	30.6	30.6	6.03	6.40	86.0	85.8	4.80	5.01	5.11	7.6	8.1	8.2
			Middle	6.3	22.4	31.2		5.89		6.30		83.0			4.92		
			Bottom	11.6	21.9	31.8	5.93	6.24	83.6	4.87	8.0						
12/05/11	1145-1156	30/Sunny	Surface	1.0	26.1	30.8	30.8	6.34	6.33	88.8	88.7	4.97	4.95	5.05	8.0	8.0	8.1
			Middle	6.3	25.6	31.5		6.28		6.26		87.9			5.09		
			Bottom	11.6	25.1	31.9	6.23	6.15	87.2	5.03	8.0						
14/05/11	0846-0858	25/Drizzle	Surface	1.0	25.1	28.3	28.3	6.19	6.18	87.9	87.7	5.07	5.10	5.20	8.1	8.3	8.4
			Middle	6.3	24.5	30.1		6.16		6.07		85.9			5.12		
			Bottom	11.6	24.2	31.1	6.05	5.94	86.5	5.19	8.2						
17/05/11	1045-1056	24/Cloudy	Surface	1.0	25.4	30.2	30.2	6.09	6.37	85.2	90.4	5.28	4.97	5.08	8.9	7.9	8.0
			Middle	6.1	24.8	30.8		5.96		6.22		87.9			5.12		
			Bottom	11.2	24.4	31.8	6.18	6.13	85.7	5.16	8.1						
19/05/11	1753-1805	27/Fine	Surface	1.0	24.6	30.4	30.4	6.22	6.05	86.6	84.7	5.19	5.06	5.11	7.6	7.7	7.9
			Middle	6.0	23.8	31.2		6.01		6.03		84.1			5.14		
			Bottom	11.0	23.4	31.9	6.05	5.98	84.7	5.18	8.0						
21/05/11	1407-1420	28/Cloudy	Surface	1.0	23.2	30.7	30.7	5.97	6.18	83.7	85.2	5.09	4.86	5.00	8.2	8.1	7.9
			Middle	6.3	22.8	31.4		5.98		6.06		83.6			4.96		
			Bottom	11.6	21.7	31.8	6.17	5.93	83.3	4.99	7.8						
24/05/11	1455-1506	25/Cloudy	Surface	1.0	25.8	29.9	29.9	6.26	6.28	87.6	87.9	4.84	4.85	5.00	7.6	7.7	8.0
			Middle	6.2	24.9	30.5		6.20		6.19		86.8			4.99		
			Bottom	11.4	24.7	31.6	6.17	6.07	86.4	5.05	8.2						
26/05/11	1646-1657	28/Fine	Surface	1.0	25.3	30.3	30.4	6.16	6.17	91.2	91.4	5.10	5.12	5.20	8.1	8.1	8.3
			Middle	6.2	24.8	31.0		6.10		6.09		90.3			5.23		
			Bottom	11.4	24.3	31.5	6.08	5.97	90.0	5.18	8.3						
28/05/11	0846-0857	27/Sunny	Surface	1.0	26.1	31.4	31.4	6.37	6.35	89.8	89.6	4.88	4.90	5.00	7.6	7.7	8.0
			Middle	6.3	25.7	31.7		6.27		6.28		88.4			5.02		
			Bottom	11.6	25.5	32.0	6.29	6.19	88.7	4.98	8.0						
31/05/11	0927-0940	28/Fine	Surface	1.0	24.2	30.8	30.8	6.21	6.33	87.6	87.3	5.13	5.06	5.21	7.9	7.9	8.3
			Middle	6.2	23.8	31.2		6.26		6.23		86.3			5.16		
			Bottom	11.4	23.0	31.8	6.20	6.08	85.5	5.21	8.5						

Mid-Ebb Tide

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/05/11	0945-0958	27/Cloudy	Surface	1.0	22.3	30.0	30.0	6.32	6.30	87.8	87.5	4.99	4.96	5.07	7.9	8.0	8.2
				6.0	21.7	29.9		6.27		86.0		4.93			8.0		
			11.0	21.2	30.4	6.19	86.6	5.04	8.1								
05/05/11	1130-1142	24/Cloudy	Surface	1.0	23.2	30.3	30.3	6.24	6.10	86.7	86.6	5.08	4.90	5.02	7.6	7.7	8.0
				5.9	22.7	30.2		6.12		86.3		4.93			7.7		
			10.8	22.8	31.0	5.95	84.5	5.22	8.2								
07/05/11	1230-1242	29/Sunny	Surface	1.0	22.9	30.6	30.6	6.06	6.35	83.6	88.2	5.15	4.96	5.05	7.6	7.9	8.0
				6.1	22.3	30.3		6.12		88.0		4.94			8.0		
			11.2	21.8	31.2	6.23	86.6	5.07	8.1								
12/05/11	1130-1142	30/Sunny	Surface	1.0	26.2	31.2	31.2	6.28	6.42	87.3	87.0	5.01	5.04	5.10	8.2	8.1	8.1
				6.2	25.6	31.9		6.06		84.2		5.19			8.2		
			11.4	25.1	31.8	6.12	85.1	5.14	8.0								
14/05/11	0830-0842	25/Drizzle	Surface	1.0	25.1	30.5	30.5	6.36	6.34	88.4	89.3	4.97	5.09	5.17	7.5	7.6	8.1
				5.9	24.6	31.6		6.35		89.9		5.11			8.1		
			10.8	24.1	31.9	6.26	87.6	5.24	8.6								
17/05/11	1030-1042	24/Cloudy	Surface	1.0	25.3	31.9	31.9	6.26	6.24	88.3	88.0	5.18	5.04	4.95	7.7	7.9	7.9
				6.3	24.8	30.7		6.33		89.3		4.96			8.0		
			11.6	24.5	30.7	6.36	89.7	4.92	8.0								
19/05/11	1730-1743	27/Fine	Surface	1.0	24.7	31.2	31.2	6.48	6.17	91.4	91.1	4.83	4.91	5.01	7.6	7.8	8.0
				5.6	23.9	30.4		6.18		86.5		4.90			7.8		
			10.2	23.5	31.1	6.03	84.4	5.06	8.2								
21/05/11	1350-1403	28/Cloudy	Surface	1.0	23.1	31.2	31.2	6.09	6.03	85.3	84.9	5.11	5.09	5.03	8.3	8.0	8.0
				6.2	22.7	31.8		6.09		83.4		5.05			8.0		
			11.4	21.7	30.8	6.16	83.3	5.01	8.3								
24/05/11	1430-1443	25/Cloudy	Surface	1.0	23.1	30.7	30.7	6.12	6.14	84.4	84.7	4.86	4.88	5.03	7.6	7.7	8.0
				5.9	22.7	30.8		6.05		85.0		4.90			7.7		
			10.8	21.7	31.3	6.01	83.5	4.98	8.0								
26/05/11	1630-1642	28/Fine	Surface	1.0	25.9	31.2	31.2	6.07	6.09	82.9	83.2	5.05	5.02	5.03	7.8	7.9	8.1
				5.9	25.0	31.8		6.07		84.9		4.96			7.8		
			10.8	24.7	31.4	6.05	84.3	5.08	8.0								
28/05/11	0830-0842	27/Sunny	Surface	1.0	25.4	31.5	31.5	6.20	6.19	91.8	91.6	5.09	5.10	5.18	7.9	8.0	8.0
				5.9	24.9	30.4		6.17		89.3		5.16			8.2		
			10.8	24.3	30.3	6.07	89.8	5.19	8.0								
31/05/11	0910-0923	28/Fine	Surface	1.0	26.1	31.5	31.5	6.29	6.30	89.3	89.5	4.99	4.97	5.09	7.8	7.8	8.2
				5.9	25.8	31.4		6.31		89.6		4.94			7.8		
			10.8	25.5	31.8	6.23	88.5	5.05	8.3								

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
03/05/11	1151-1202	28/Cloudy	Surface	1.0	22.4	30.0	30.0	6.33	6.30	88.0	87.6	4.99	4.97	5.09	7.8	7.7	8.1
						29.9		6.27		87.2		4.95			7.6		
			Middle	5.6	21.9	30.3		6.21		85.7		5.11			8.2		
					30.4	6.23	86.0	5.05	8.0	8.5	8.5	8.5					
					31.1	6.14	84.7	5.24	8.4								
Bottom	10.2	21.4	31.0	6.06	83.6	5.19	8.5										
05/05/11	1331-1342	24/Cloudy	Surface	1.0	23.7	30.5	30.5	6.29	6.28	89.3	89.1	5.21	5.19	5.25	8.6	8.5	8.3
						30.4		6.26		88.8		5.17			8.3		
			Middle	5.7	22.8	31.5		6.01		85.3		5.17			8.1		
					31.4	6.04	85.7	5.12	8.0	8.5	8.5	8.5					
					31.9	5.92	83.4	5.39	8.6								
Bottom	10.4	22.6	31.8	5.87	82.7	5.43	8.4										
07/05/11	1441-1452	30/Sunny	Surface	1.0	23.0	30.4	30.5	6.34	6.33	88.1	87.9	5.02	5.01	5.11	7.7	7.8	8.1
						30.5		6.31		87.7		4.99			7.8		
			Middle	5.7	22.4	31.1		6.22		86.5		5.15			8.2		
					31.1	6.26	87.0	5.08	8.1	8.3	8.3	8.3					
					31.7	6.15	85.5	5.19	8.2								
Bottom	10.4	21.9	31.7	6.13	85.2	5.24	8.4										
12/05/11	1341-1352	31/Sunny	Surface	1.0	26.3	30.9	30.9	6.39	6.37	89.5	89.2	4.91	4.89	5.00	7.9	8.0	7.8
						30.9		6.34		88.8		4.86			8.0		
			Middle	5.5	25.7	31.5		6.19		86.7		4.97			7.7		
					31.6	6.26	87.6	5.04	7.5	8.0	8.0	8.0					
					31.8	6.08	85.1	5.13	8.0								
Bottom	10.0	25.2	31.9	6.13	85.8	5.07	8.1										
14/05/11	1018-1030	25/Drizzle	Surface	1.0	25.2	28.2	28.2	6.22	6.20	88.3	88.1	5.05	5.07	5.16	8.0	8.0	8.3
						28.1		6.18		87.8		5.08			8.0		
			Middle	5.6	24.6	30.1		6.07		86.2		5.14			8.3		
					30.2	6.10	86.6	5.17	8.1	8.6	8.6	8.6					
					31.1	5.96	84.6	5.25	8.5								
Bottom	10.2	24.1	31.1	5.93	84.2	5.26	8.6										
17/05/11	1233-1244	24/Cloudy	Surface	1.0	25.4	30.3	30.3	6.28	6.31	89.5	89.0	4.98	4.95	5.05	7.9	8.0	8.1
						30.2		6.34		89.4		4.92			8.1		
			Middle	5.7	25.0	30.8		6.17		87.0		5.03			8.2		
					30.8	6.23	87.8	5.07	8.0	8.3	8.3	8.3					
					31.7	6.08	85.7	5.16	8.4								
Bottom	10.4	24.6	31.7	6.12	86.3	5.11	8.1										
19/05/11	1943-1955	27/Fine	Surface	1.0	24.8	30.2	30.3	6.12	6.16	85.7	86.2	5.06	5.09	5.03	7.9	8.0	7.9
						30.3		6.19		86.7		5.11			8.0		
			Middle	5.4	23.8	31.1		5.82		81.5		4.98			7.5		
					31.2	5.88	82.3	4.96	7.8	8.2	8.2	8.2					
					31.8	5.96	83.4	5.08	8.3								
Bottom	9.8	23.4	31.9	5.92	82.9	5.03	8.0										
21/05/11	1550-1605	27/Cloudy	Surface	1.0	23.4	30.7	30.8	6.27	6.25	86.5	86.2	4.81	4.83	4.98	7.6	7.6	8.0
						30.8		6.22		85.8		4.84			7.5		
			Middle	5.8	22.8	31.3		6.13		84.5		4.95			7.9		
					31.2	6.10	84.1	4.99	8.0	8.4	8.4	8.4					
					31.6	5.90	81.4	5.13	8.4								
Bottom	10.6	21.7	31.7	5.94	81.9	5.17	8.4										
24/05/11	1652-1705	24/Cloudy	Surface	1.0	25.9	29.8	29.8	6.14	6.13	85.9	85.7	5.02	5.05	5.03	8.3	8.5	8.2
						29.8		6.11		85.5		5.07			8.6		
			Middle	5.5	25.0	30.5		6.06		84.8		4.95			7.9		
					30.6	6.08	85.1	4.93	8.0	8.2	8.2	8.2					
					31.6	6.05	84.7	5.08	8.1								
Bottom	10.0	24.7	31.7	6.03	84.4	5.11	8.2										
26/05/11	1818-1830	28/Fine	Surface	1.0	25.4	30.3	30.4	6.17	6.16	91.3	91.1	5.13	5.11	5.19	7.7	7.9	8.0
						30.4		6.14		90.9		5.09			8.0		
			Middle	5.4	24.7	30.8		6.06		89.7		5.18			8.2		
					30.8	6.08	90.0	5.20	8.0	8.2	8.2	8.2					
					31.4	5.95	88.1	5.26	8.3								
Bottom	9.8	24.3	31.5	5.98	88.5	5.28	8.0										
28/05/11	1044-1055	28/Sunny	Surface	1.0	26.3	31.4	31.4	6.28	6.31	88.5	88.9	4.98	5.01	5.13	7.9	8.0	8.3
						31.3		6.33		89.3		5.04			8.1		
			Middle	5.6	26.0	31.7		6.21		87.6		5.17			8.2		
					31.6	6.24	88.0	5.09	8.2	8.7	8.7	8.7					
					32.0	6.13	86.4	5.21	8.6								
Bottom	10.2	25.6	32.0	6.15	86.7	5.26	8.8										
31/05/11	1108-1122	29/Fine	Surface	1.0	24.4	30.8	30.9	6.26	6.29	86.3	86.7	4.93	4.95	5.08	7.7	7.9	8.2
						30.9		6.31		87.0		4.97			8.0		
			Middle	5.9	24.1	30.5		6.21		85.6		5.05			8.3		
					30.8	6.24	86.1	5.01	8.1	8.5	8.5	8.5					
					31.4	6.13	84.5	5.23	8.4								
Bottom	10.8	23.7	31.3	6.17	85.1	5.28	8.5										

Mid-Ebb Tide

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
03/05/11	1214-1226	28/Cloudy	Surface	1.0	22.3	30.1	30.1	6.29	6.27	87.4	87.1	5.14	5.11	5.21	8.1	8.1	8.2
			Middle	8.7	21.8	30.5	30.5	6.24	6.14	86.7	85.4	5.08	5.23		8.0		
			Bottom	16.4	21.3	30.5	31.2	6.11	6.01	84.9	83.6	5.18	5.33		8.2		
05/05/11	1356-1407	24/Cloudy	Surface	1.0	23.6	30.5	30.5	6.17	6.17	85.8	87.5	5.23	5.26	5.14	8.6	8.6	8.3
			Middle	8.4	22.8	31.2	31.4	6.04	5.97	84.0	84.7	5.36	5.04		8.0		
			Bottom	15.8	22.5	31.2	32.0	5.98	5.97	83.1	84.7	5.29	5.11		8.1		
07/05/11	1506-1517	30/Sunny	Surface	1.0	23.0	30.6	30.6	6.18	6.27	87.3	87.1	5.19	5.16	5.27	8.0	8.1	8.5
			Middle	8.7	22.5	31.2	31.2	6.11	6.14	85.8	85.4	5.28	5.26		8.4		
			Bottom	16.4	21.9	31.9	31.9	6.05	6.04	84.1	84.0	5.40	5.38		8.9		
12/05/11	1406-1417	31/Sunny	Surface	1.0	26.2	30.8	30.8	6.24	6.21	88.0	87.6	5.22	5.19	5.29	7.9	8.2	8.0
			Middle	8.8	25.6	31.6	31.6	6.11	6.09	86.2	85.8	5.31	5.26		8.3		
			Bottom	16.6	25.2	31.9	32.0	5.94	5.98	83.8	84.3	5.36	5.40		8.0		
14/05/11	1034-1047	25/Drizzle	Surface	1.0	25.1	28.2	28.3	6.17	6.19	87.0	87.3	5.03	5.05	5.17	8.0	8.2	8.3
			Middle	8.3	24.5	30.3	30.3	6.06	6.07	86.1	86.2	5.16	5.17		8.1		
			Bottom	15.6	24.2	31.2	31.2	5.94	5.96	84.3	84.6	5.27	5.29		8.5		
17/05/11	1256-1307	24/Cloudy	Surface	1.0	25.5	30.3	30.3	6.26	6.24	88.9	88.6	5.09	5.07	5.16	8.0	8.0	8.3
			Middle	8.6	24.9	30.9	30.9	6.14	6.13	87.2	87.0	5.13	5.15		8.4		
			Bottom	16.2	24.3	31.8	31.8	6.02	6.04	85.5	85.7	5.22	5.26		8.2		
19/05/11	1959-2009	27/Fine	Surface	1.0	24.9	30.3	30.3	6.23	6.18	87.2	86.5	5.01	5.02	5.04	8.1	8.1	7.9
			Middle	8.6	23.9	31.2	31.3	5.85	5.86	81.9	82.0	4.93	4.95		7.6		
			Bottom	16.2	23.4	31.7	31.8	5.97	6.00	83.6	84.0	5.12	5.14		8.1		
21/05/11	1613-1627	27/Cloudy	Surface	1.0	23.5	30.8	30.9	6.18	6.17	85.2	85.0	4.97	4.99	5.17	7.8	7.7	8.0
			Middle	8.6	22.6	31.6	31.6	6.03	6.01	83.2	82.9	5.16	5.18		8.1		
			Bottom	16.2	21.4	32.2	32.2	5.82	5.81	80.3	80.1	5.31	5.34		8.0		
24/05/11	1708-1720	24/Cloudy	Surface	1.0	25.8	29.9	30.0	6.07	6.08	84.9	85.1	4.98	4.96	5.08	8.0	8.0	8.0
			Middle	8.7	25.1	30.7	30.8	5.93	5.95	83.0	83.2	5.09	5.11		7.9		
			Bottom	16.4	24.8	31.8	31.8	5.97	5.94	83.4	83.2	5.13	5.16		7.6		
26/05/11	1834-1848	28/Fine	Surface	1.0	25.4	30.5	30.5	6.20	6.19	91.8	91.6	5.11	5.09	5.19	8.2	8.2	8.2
			Middle	8.2	24.8	31.1	31.1	6.11	6.10	90.4	90.3	5.16	5.18		8.2		
			Bottom	15.4	24.4	31.5	31.6	5.92	5.93	87.6	87.7	5.28	5.29		8.4		
28/05/11	1109-1120	28/Sunny	Surface	1.0	26.3	31.3	31.3	6.22	6.20	88.3	88.1	5.26	5.23	5.34	8.1	8.2	8.5
			Middle	8.5	25.8	31.7	31.7	6.11	6.10	86.8	86.7	5.36	5.34		8.2		
			Bottom	16.0	25.3	32.2	32.2	5.99	6.02	85.1	85.5	5.41	5.45		8.6		
31/05/11	1130-1145	29/Fine	Surface	1.0	24.5	30.9	30.9	6.10	6.12	84.1	84.4	5.05	5.08	5.25	8.3	8.2	8.7
			Middle	8.7	23.7	31.4	31.4	5.98	5.97	82.5	82.3	5.21	5.24		8.0		
			Bottom	16.4	22.9	31.9	32.0	5.88	5.87	81.4	81.1	5.40	5.43		8.8		

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			
03/05/11	1045-1057	27/Cloudy	Surface	1.0	22.3	29.9	30.0	6.44	6.42	89.5	89.2	4.97	4.94	5.05	7.6	7.7	8.0			
				7.1	21.7	30.0		6.39		88.8		4.91			7.8					
			Middle	7.1	21.7	30.3	30.3	6.32	6.34	87.2	87.4	5.06	5.04		8.3			8.3		
Bottom	13.2	21.2		30.3	30.9	6.35	6.22	87.6	85.8	5.01	5.17	8.3	8.1							
	05/05/11	1230-1242	24/Cloudy	Surface	1.0	23.4	30.9	30.4	6.25	6.16	86.3	87.4	5.19		5.06			5.13	8.2	8.1
7.1					22.8	30.9	6.18		85.3		5.14		8.0							
Middle				6.8	22.8	30.4	31.4	6.17	6.03	87.6	85.5	5.10	5.13	8.1	8.2					
	Bottom	12.6	22.4	30.4	31.9	6.14	5.87	87.1	82.7	5.01	5.22	8.1	8.5							
07/05/11		1330-1342	29/Sunny	Surface	1.0	22.9	31.4	30.5	6.01	6.30	85.3	87.6	5.09	4.96	5.08	7.8	7.8		8.2	
	7.3				22.4	31.4	6.04		85.7		5.16		7.8							
	Middle			7.3	22.4	31.9	31.0	6.04	6.21	85.7	86.3	5.16	5.09	8.1		8.1				
Bottom		13.6	21.8	31.0	31.8	6.19	6.06	86.0	84.2	5.07	5.18	8.1	8.7							
	12/05/11	1230-1242	30/Sunny	Surface	1.0	26.1	31.7	30.8	6.03	6.39	83.8	90.1	5.21	4.88		5.02		7.8		7.7
7.2					25.6	31.8	6.08		84.5		5.14		7.8							
Middle				7.2	25.6	30.8	31.7	6.32	6.31	87.3	89.0	5.12	5.03	8.0	8.1					
	Bottom	13.4	25.0	31.6	32.0	6.33	6.22	89.3	87.7	4.99	5.14	8.0	8.1							
14/05/11		0922-0935	25/Drizzle	Surface	1.0	25.1	32.0	28.3	6.19	6.18	87.3	87.1	5.16	5.10	5.18		8.1	8.0	8.2	
	7.1				24.6	32.0	6.25		88.1		5.12		8.0							
	Middle			6.8	24.6	28.3	30.3	6.15	6.09	86.7	85.8	5.11	5.18	8.0		8.1				
Bottom		12.6	24.2	28.2	31.3	6.20	5.94	87.4	83.8	5.08	5.27	8.0	8.5							
	17/05/11	1127-1139	24/Cloudy	Surface	1.0	25.4	31.3	30.1	5.95	6.29	83.9	88.7	5.28	4.87		4.98	7.6			7.7
7.2					24.8	31.2	6.06		86.2		4.91		7.6							
Middle				7.2	24.8	30.3	30.8	6.11	6.16	85.4	86.8	5.15	4.98	8.1	8.1					
	Bottom	13.4	24.4	30.2	31.8	6.11	6.04	86.4	85.2	5.20	5.09	8.1	8.1							
19/05/11		1841-1853	27/Fine	Surface	1.0	24.6	31.8	30.5	6.02	6.07	84.9	85.0	5.11	5.12	5.13		8.1	8.2	8.2	
	7.2				23.8	31.7	6.04		85.4		5.11		8.2							
	Middle			7.2	23.8	31.8	31.3	6.02	5.99	86.6	83.9	5.09	5.07	8.2		7.9				
Bottom		13.4	23.4	31.2	31.8	5.96	5.84	87.4	81.8	5.04	5.22	8.2	8.6							
	21/05/11	1449-1502	28/Cloudy	Surface	1.0	23.4	31.7	30.7	5.85	6.25	81.9	86.2	5.23	4.85		5.02	7.5			7.5
7.1					22.7	31.8	6.02		81.6		4.80		7.6							
Middle				6.8	22.7	31.8	31.4	6.27	6.13	85.9	84.6	4.85	5.00	8.1	8.4					
	Bottom	12.6	21.7	30.7	31.8	6.23	6.02	86.5	83.1	4.80	5.23	8.1	7.9							
24/05/11		1542-1556	25/Cloudy	Surface	1.0	25.8	31.7	29.9	5.95	5.99	83.3	83.8	4.72	4.76	4.90		7.5	7.6	7.8	
	7.3				24.9	31.6	6.02		84.3		4.80		7.7							
	Middle			7.3	24.9	30.7	30.7	5.98	5.96	83.7	83.5	4.95	4.93	8.0		8.1				
Bottom		13.6	24.4	30.6	31.7	5.94	5.82	83.2	81.5	4.91	5.01	8.1	7.6							
	26/05/11	1723-1734	28/Fine	Surface	1.0	25.4	31.6	30.4	5.80	6.20	81.2	91.8	4.98	5.08		5.17	8.1			8.1
7.1					25.0	31.7	6.22		88.8		5.25		8.1							
Middle				6.8	25.0	31.1	31.1	6.08	6.10	88.2	90.3	5.16	5.18	8.2	8.3					
	Bottom	12.6	24.4	31.0	31.7	6.12	5.98	90.6	88.5	5.19	5.26	8.2	8.6							
28/05/11		0932-0944	27/Sunny	Surface	1.0	26.2	31.6	31.5	5.96	6.39	88.8	90.8	5.27	5.03	5.10		8.5	8.1	8.3	
	7.1				25.8	31.7	6.42		88.2		5.07		8.0							
	Middle			6.9	25.8	31.5	31.8	6.32	6.31	91.2	89.6	4.97	5.09	8.1		8.3				
Bottom		12.8	25.4	31.8	32.1	6.30	6.27	89.5	89.0	5.11	5.21	8.2	8.6							
	31/05/11	1005-1019	28/Fine	Surface	1.0	24.3	32.1	30.8	6.25	6.27	88.8	86.5	5.24	5.03		5.18	8.0			8.1
7.1					23.8	31.3	6.29		89.2		5.17		8.1							
Middle				6.9	23.8	30.8	31.3	6.18	6.16	86.2	84.9	5.06	5.17	8.1	7.9					
	Bottom	12.8	23.0	31.2	31.9	6.13	6.06	85.2	83.6	5.14	5.34	8.1	8.5							

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
03/05/11	1108-1120	27/Cloudy	Surface	1.0	22.3	29.9	29.9	6.34	6.36	88.1	88.3	4.98	5.01	5.12	7.5	7.6	7.9
						29.9		6.37		88.5		5.03			7.6		
			Middle	6.3	21.7	30.3	30.4	6.23	6.26	86.6	87.0	5.15	5.12		5.08		
30.4	6.28	87.3				5.08		7.8									
05/05/11	1245-1257	24/Cloudy	Surface	1.0	23.5	31.0	31.0	6.12	6.14	84.5	84.7	5.28	5.25	5.30	8.1	8.1	8.6
						31.0		6.15		84.9		5.22			8.1		
			Middle	6.4	22.7	30.3	31.5	6.21	6.05	88.1	85.8	5.17	5.40		5.10		
30.2	6.24	88.6				5.36		8.8									
07/05/11	1355-1407	29/Sunny	Surface	1.0	22.8	31.8	31.9	6.06	6.05	86.0	85.9	5.32	5.17	5.06	8.8	7.9	8.0
						31.9		6.06		86.9		5.15			8.0		
			Middle	6.2	22.3	30.4	31.1	6.21	6.24	88.9	87.4	5.04	5.08		5.11		
31.0	6.27	87.8				5.11		7.8									
12/05/11	1255-1307	30/Sunny	Surface	1.0	26.2	31.8	30.7	6.14	6.45	86.0	90.3	5.18	4.98	5.09	8.2	8.0	8.2
						31.9		6.12		85.7		5.15			8.0		
			Middle	6.4	25.6	30.7	31.5	6.47	6.34	89.3	88.8	4.94	5.08		5.01		
30.7	6.43	90.0				5.01		8.0									
14/05/11	0940-0952	25/Drizzle	Surface	1.0	25.2	31.5	30.2	6.31	6.06	88.3	85.5	5.06	5.20	5.20	8.5	8.4	8.4
						31.5		6.37		89.2		5.10			8.1		
			Bottom	11.8	24.2	31.9	31.1	6.27	5.92	87.8	83.5	5.23	5.28		5.17		
32.0	6.23	87.2				5.17		8.5									
17/05/11	1150-1202	24/Cloudy	Surface	1.0	25.4	28.1	28.1	6.14	6.17	87.2	87.6	5.13	5.11	5.10	8.2	8.1	8.2
						28.1		6.19		87.9		5.09			8.0		
			Middle	6.5	24.8	30.2	30.7	6.04	6.23	85.2	88.4	5.18	5.10		5.11		
30.2	6.08	85.7				5.21		8.2									
19/05/11	1902-1916	27/Fine	Surface	1.0	24.7	31.8	31.3	6.17	6.15	86.8	86.1	5.19	5.14	5.11	8.1	8.0	8.3
						31.8		6.17		87.6		5.23			8.0		
			Middle	6.3	23.9	31.1	31.8	6.08	5.91	85.2	82.8	5.21	5.04		5.10		
31.2	5.90	82.6				5.05		8.0									
21/05/11	1509-1522	28/Cloudy	Surface	1.0	23.4	31.8	31.8	5.98	5.97	83.7	83.6	5.14	4.83	4.98	8.3	7.9	8.0
						31.7		5.96		83.4		5.19			8.0		
			Middle	5.9	22.9	30.8	31.2	6.31	6.18	87.0	85.2	4.81	4.94		4.84		
30.7	6.26	86.3				4.84		8.0									
24/05/11	1607-1620	25/Cloudy	Surface	1.0	25.9	31.2	31.2	6.16	6.18	85.0	85.2	4.92	5.17	4.99	7.9	8.1	8.0
						31.2		6.19		85.4		4.96			8.0		
			Middle	6.4	25.0	31.7	31.8	6.01	6.04	82.9	83.3	5.15	5.17		5.17		
31.8	6.06	83.6				5.19		8.0									
26/05/11	1740-1752	28/Fine	Surface	1.0	25.3	30.6	30.6	6.05	6.03	84.7	84.4	5.03	5.06	5.22	8.1	8.1	8.3
						30.5		6.01		84.1		5.08			8.0		
			Middle	6.3	24.9	31.8	31.6	5.88	5.98	82.0	88.6	4.99	5.31		5.01		
31.9	5.91	82.7				5.01		8.2									
28/05/11	0957-1009	27/Sunny	Surface	1.0	26.2	31.6	31.6	5.97	6.17	88.4	91.3	5.33	5.14	5.22	8.4	8.1	8.3
						31.5		5.97		88.4		5.33			8.2		
			Middle	6.2	25.8	31.4	31.7	6.37	6.32	89.8	89.1	4.91	4.98		4.84		
31.3	6.39	90.1				4.84		8.0									
31/05/11	1026-1040	28/Fine	Surface	1.0	24.4	31.6	31.8	6.29	6.24	88.7	86.1	4.96	4.99	5.15	8.1	7.6	8.0
						31.7		6.34		89.4		4.99			7.6		
			Middle	6.5	23.8	32.0	31.2	6.18	6.18	87.1	85.3	5.14	5.15		5.17		
31.9	6.24	88.0				5.06		8.0									

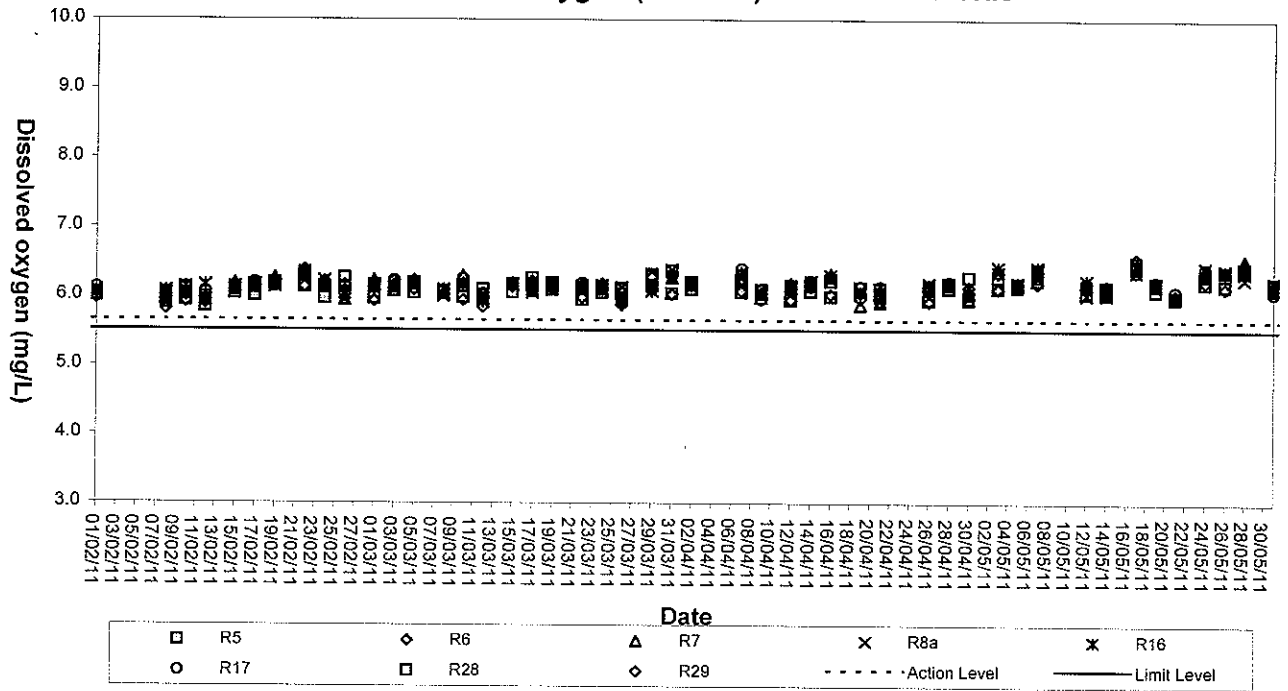


Appendix C3

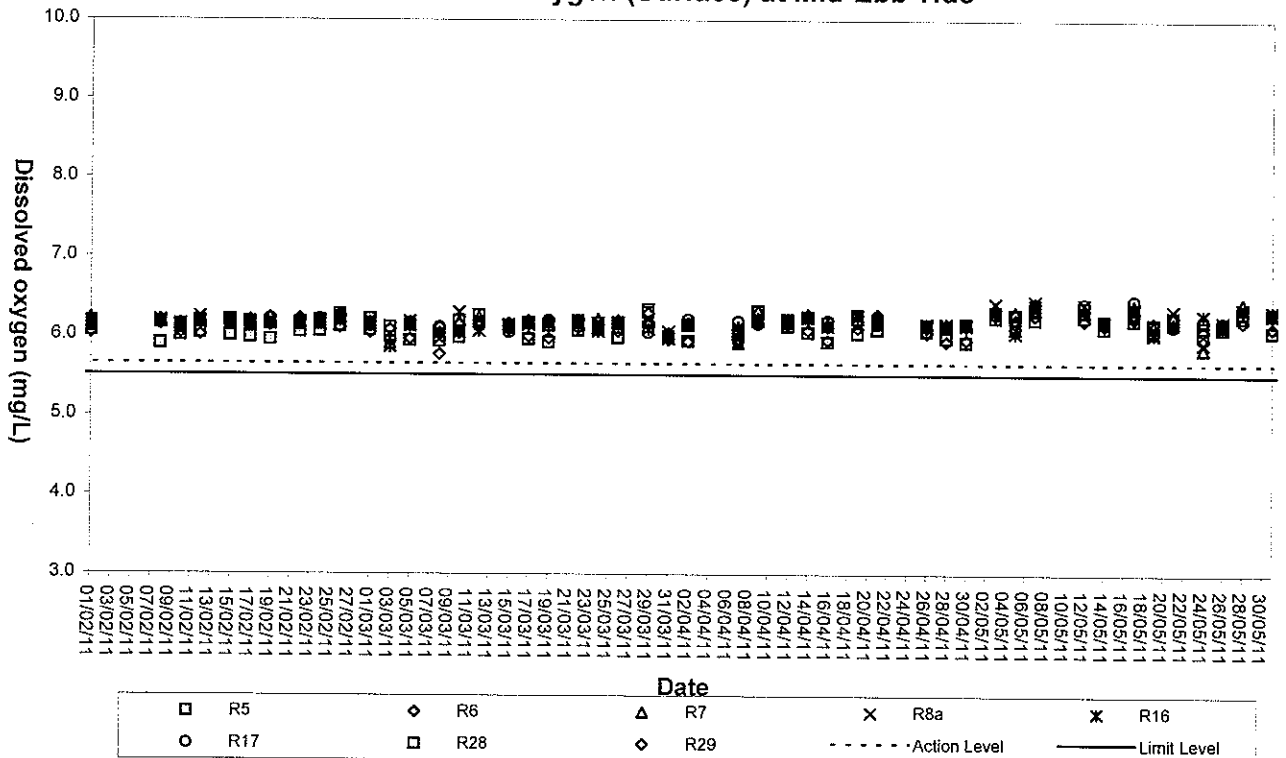
Graphical Plots of Impact Water Quality Monitoring Data



Dissolved Oxygen (Surface) at Mid-Flood Tide

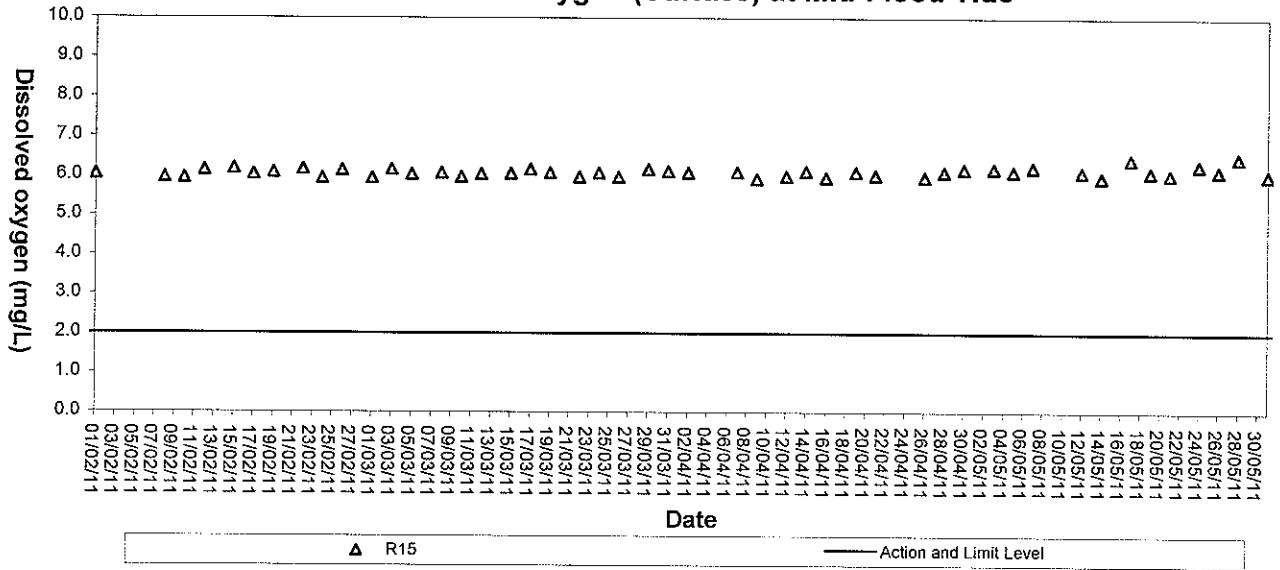


Dissolved Oxygen (Surface) at Mid-Ebb Tide





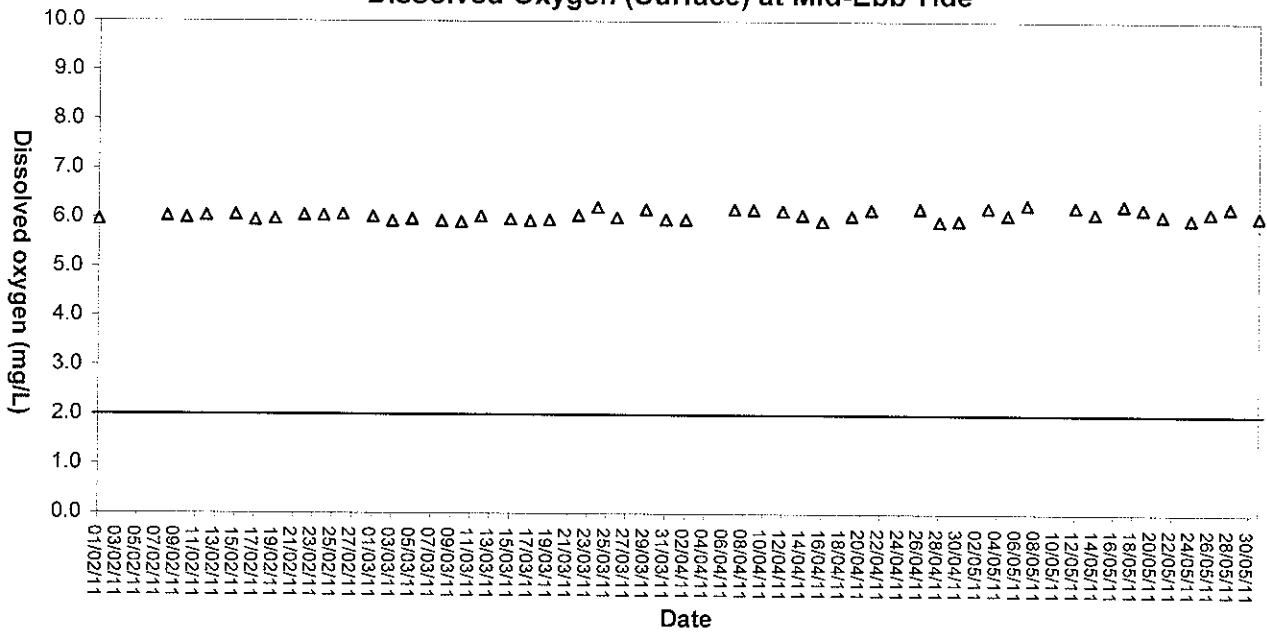
Dissolved Oxygen (Surface) at Mid-Flood Tide



▲ R15

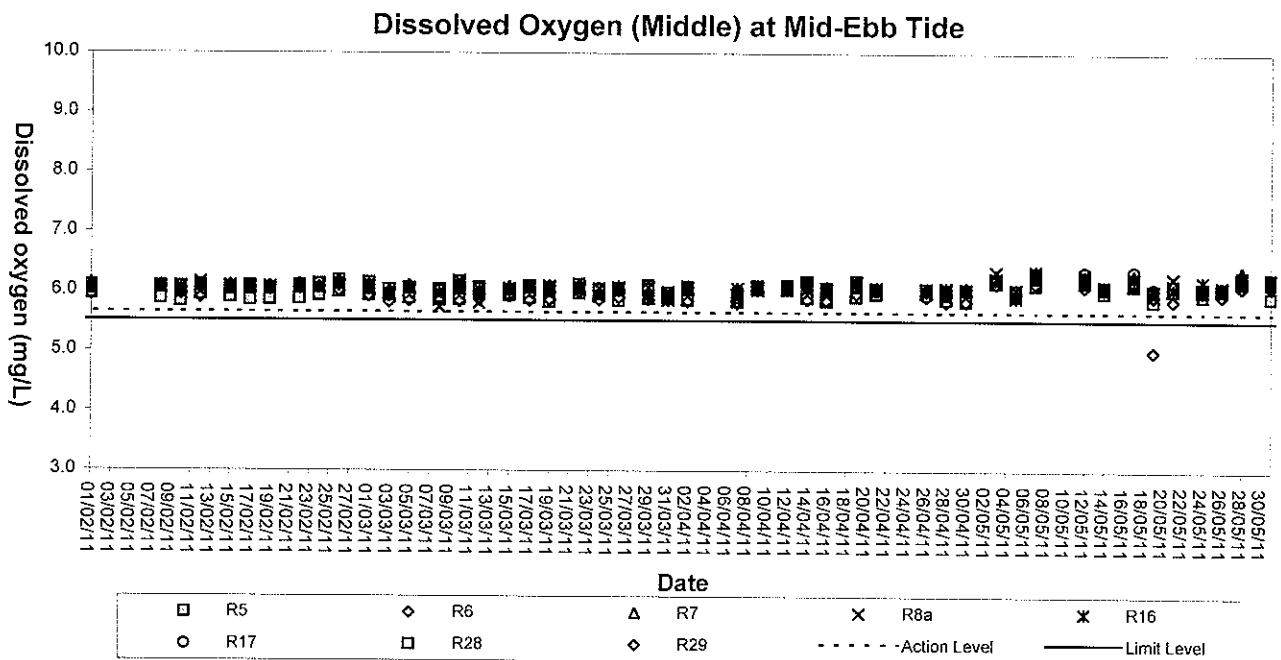
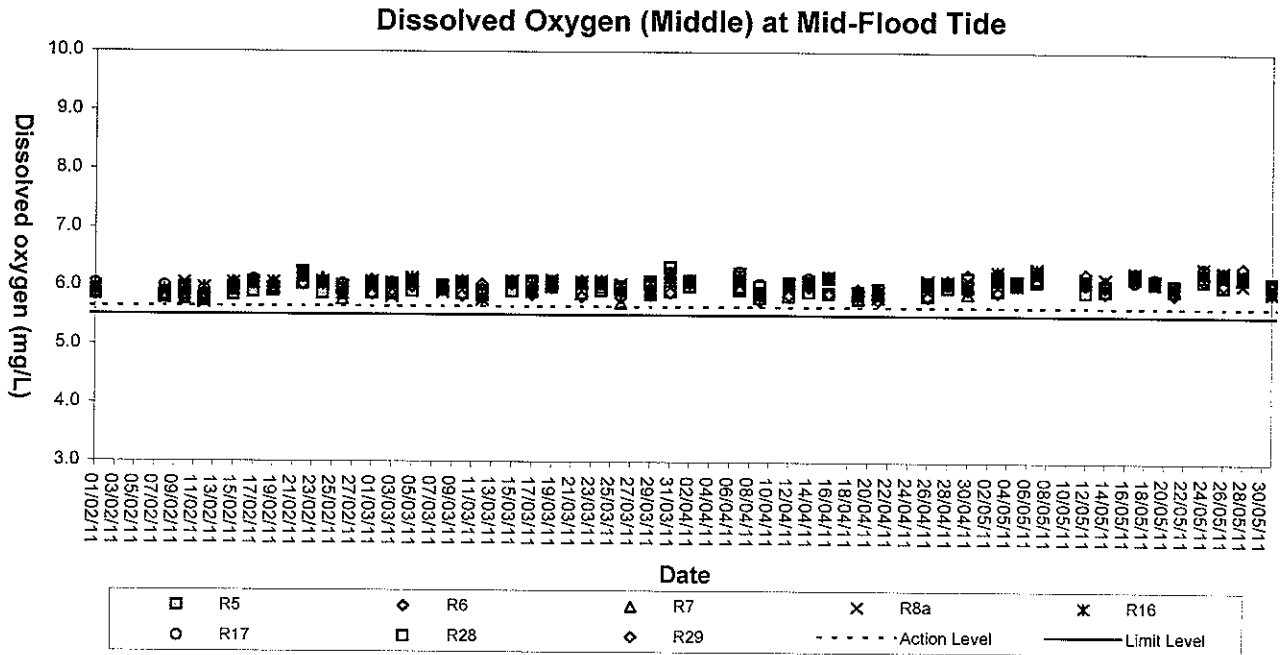
— Action and Limit Level

Dissolved Oxygen (Surface) at Mid-Ebb Tide



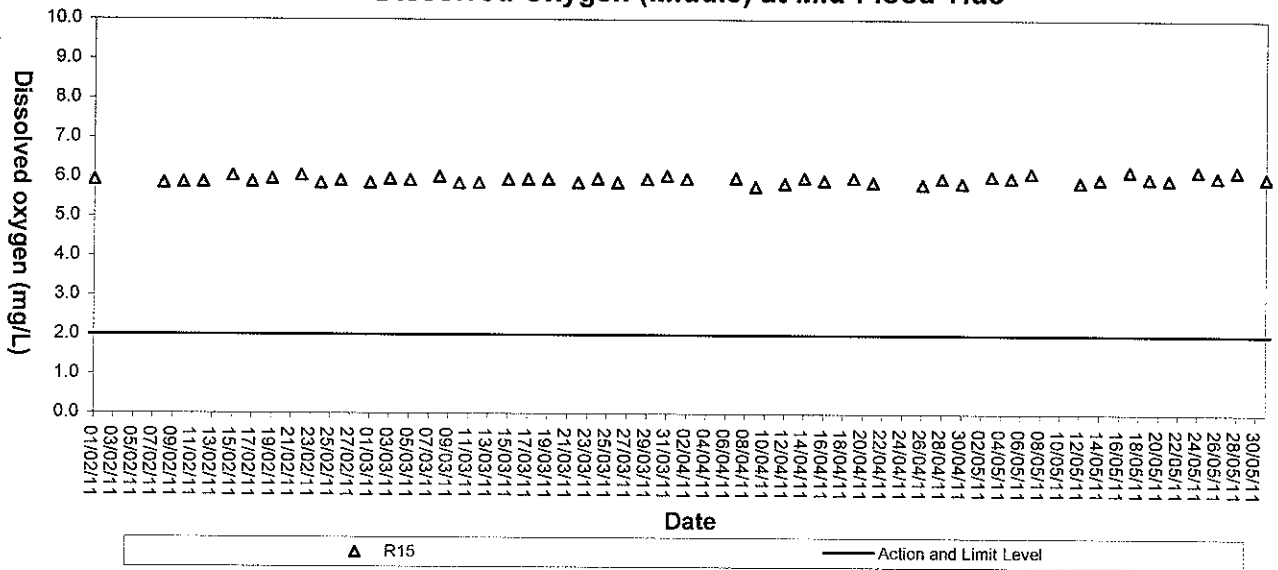
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— Action and Limit Level





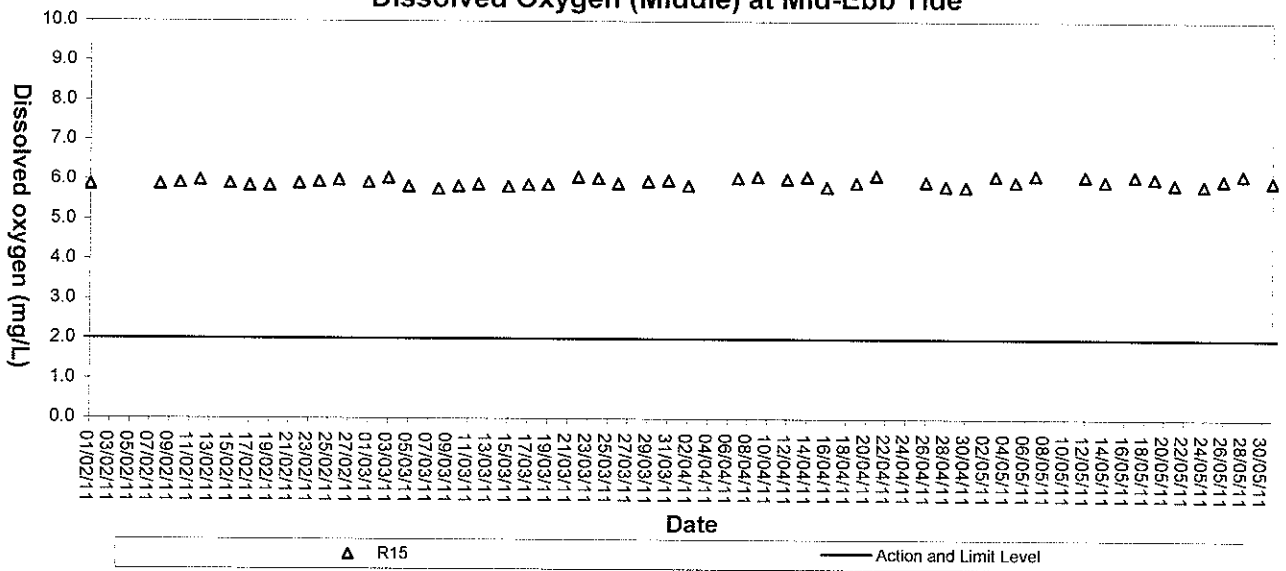
Dissolved Oxygen (Middle) at Mid-Flood Tide



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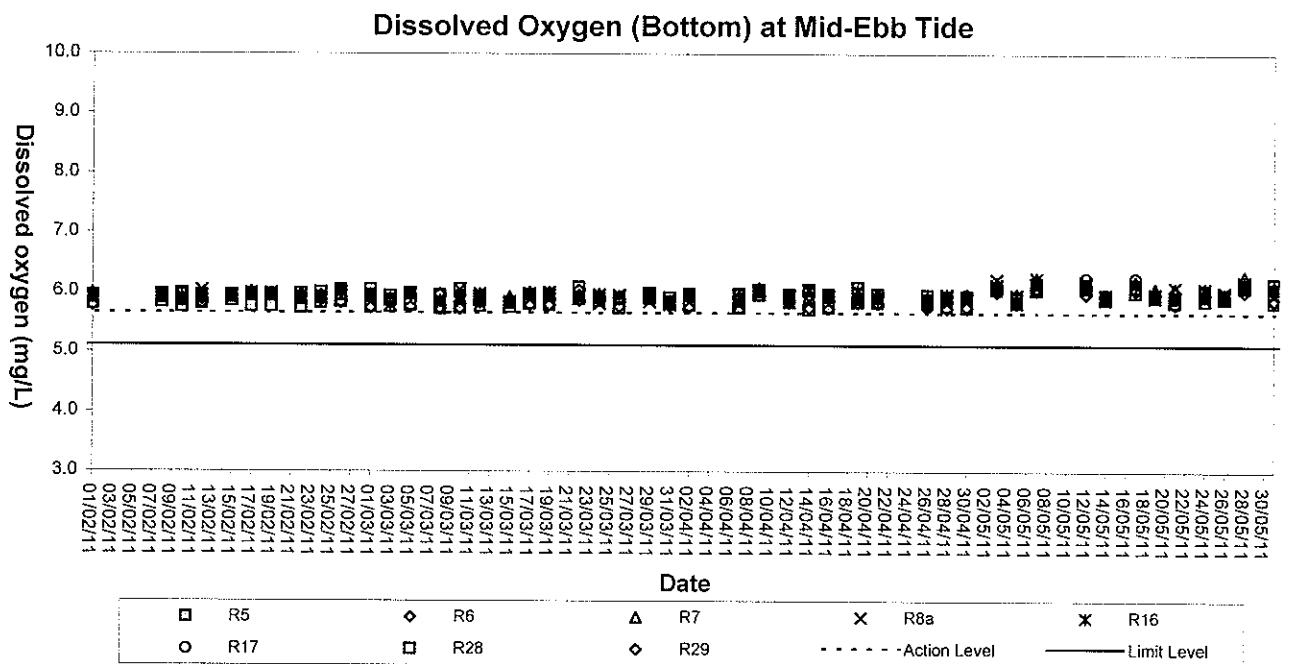
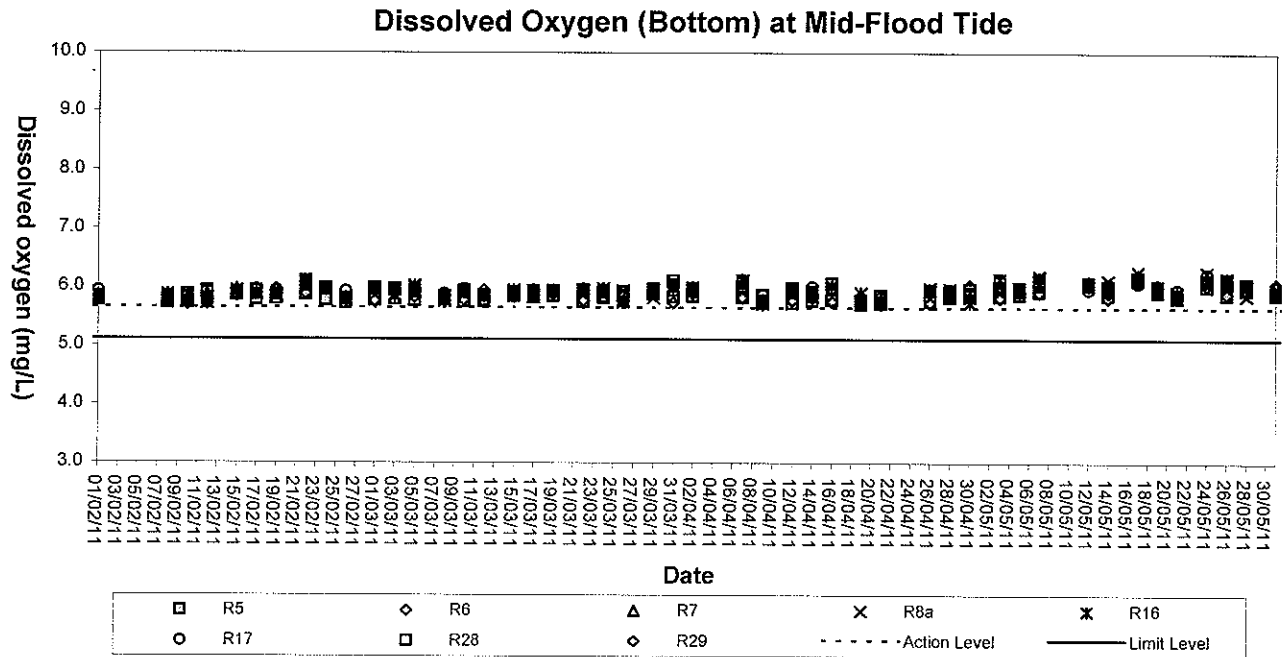
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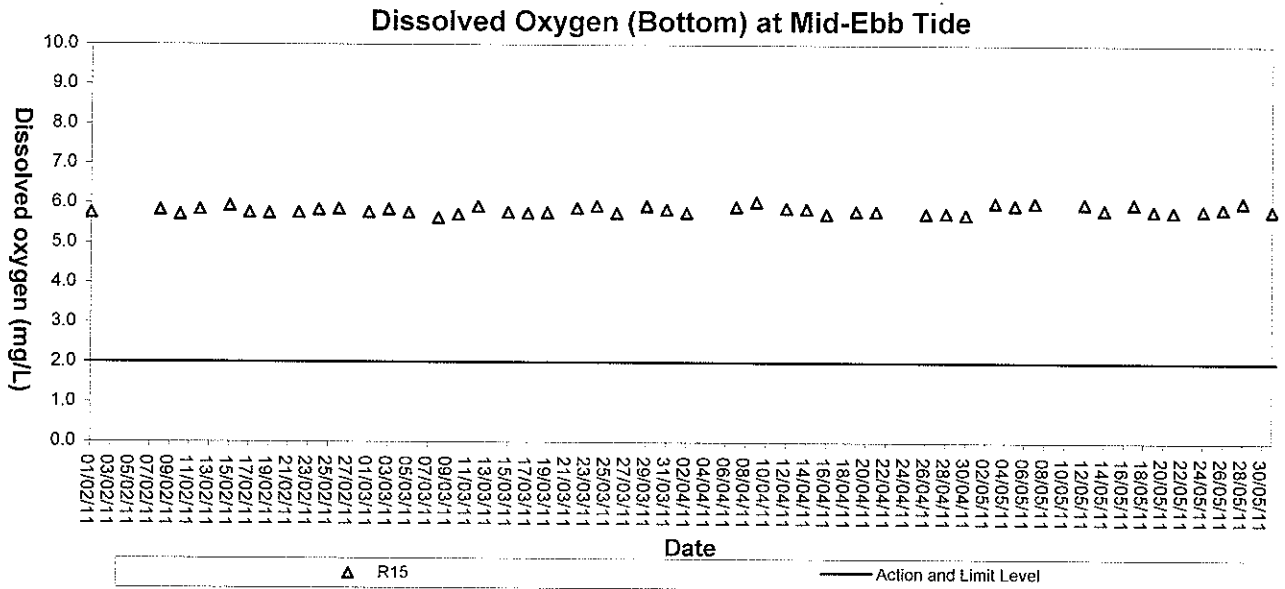
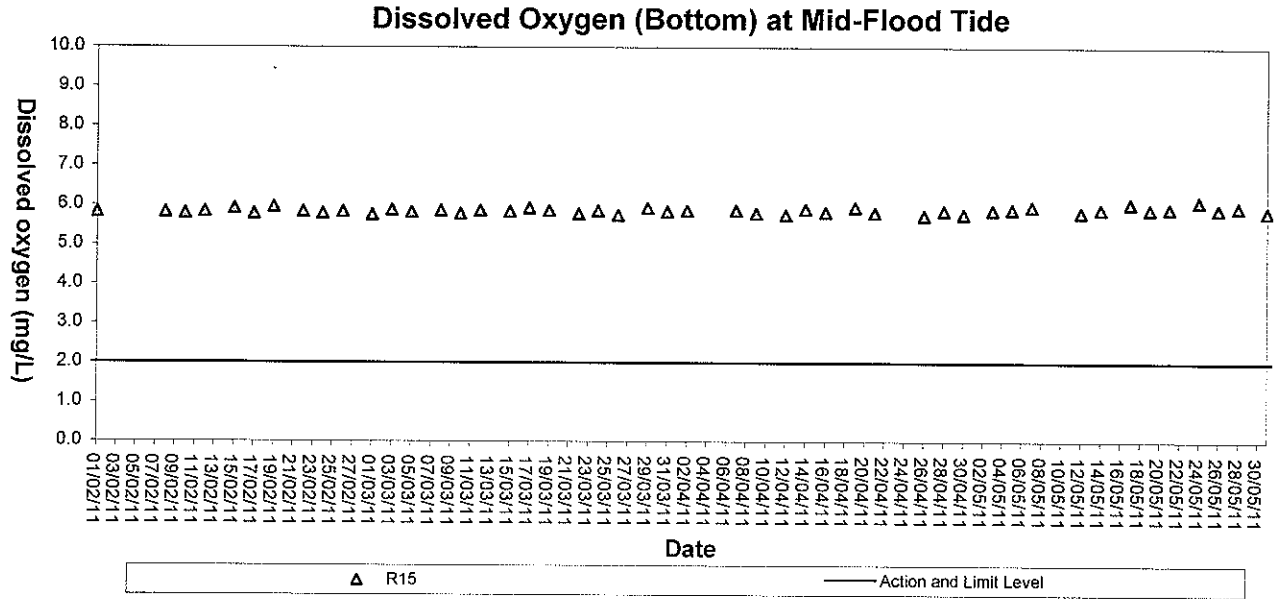
Dissolved Oxygen (Middle) at Mid-Ebb Tide



▲ R15

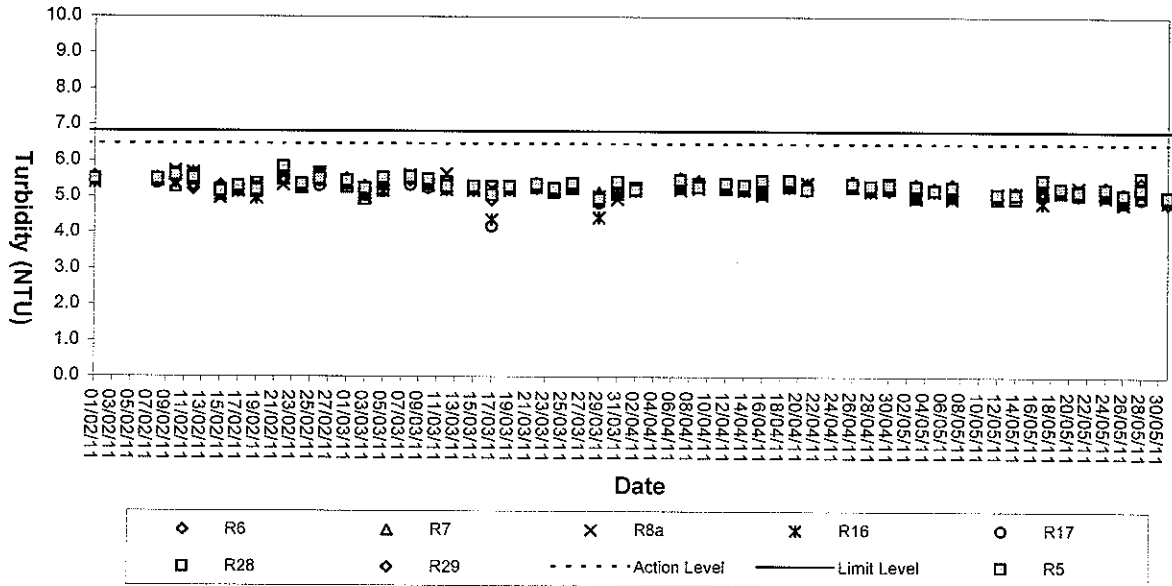
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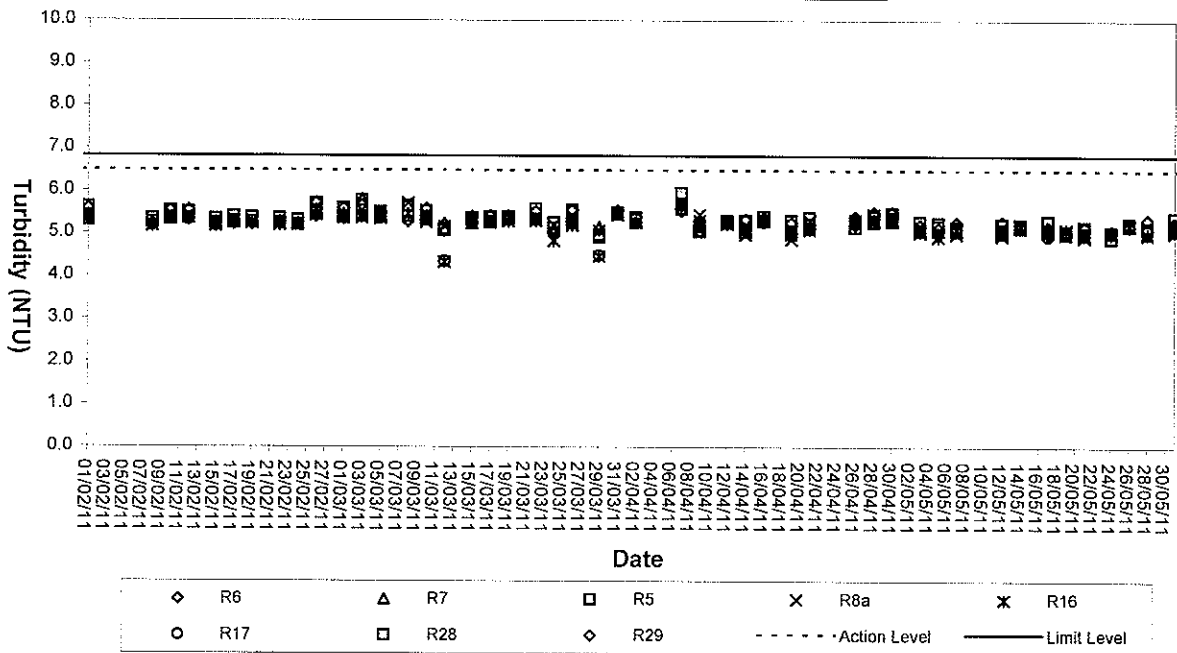




Turbidity (Depth-average) at Mid-Flood Tide

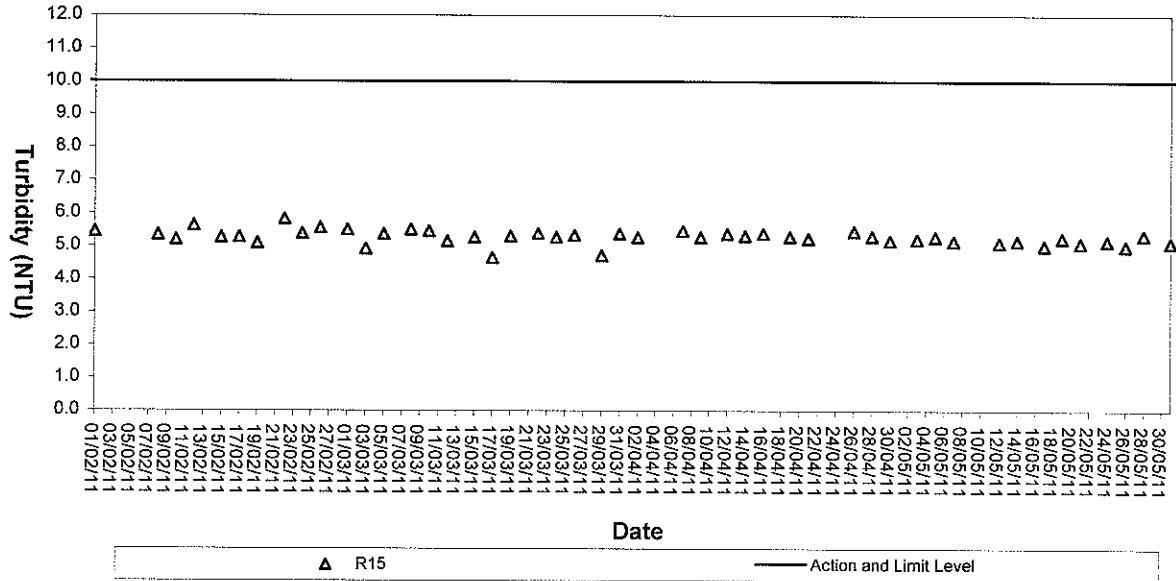


Turbidity (Depth-average) at Mid-Ebb Tide

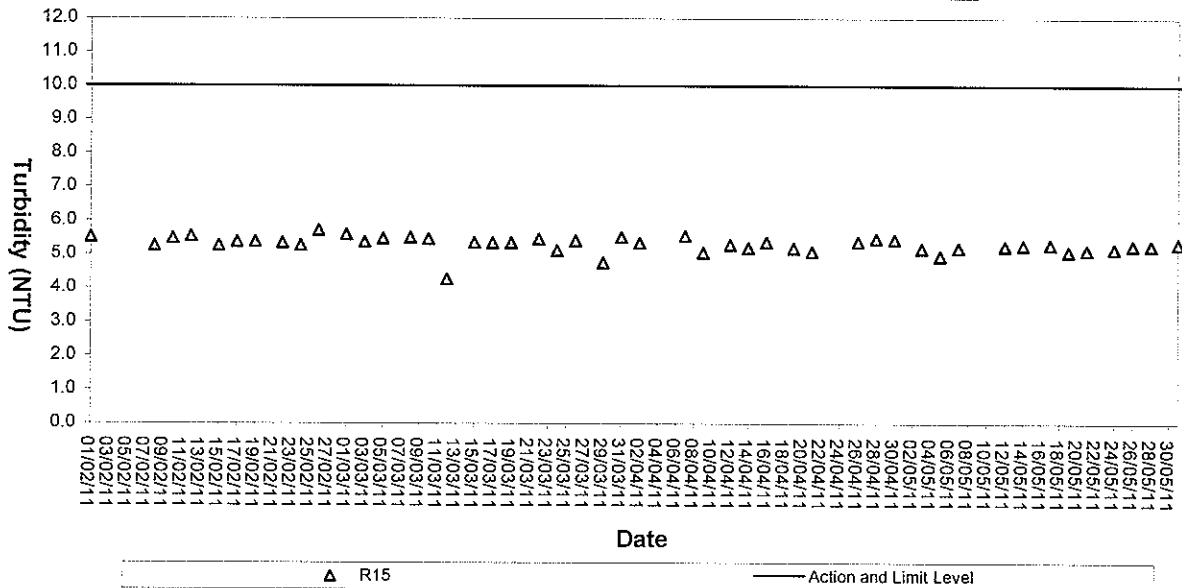




Turbidity (Depth-average) of R15 at Mid-Flood Tide

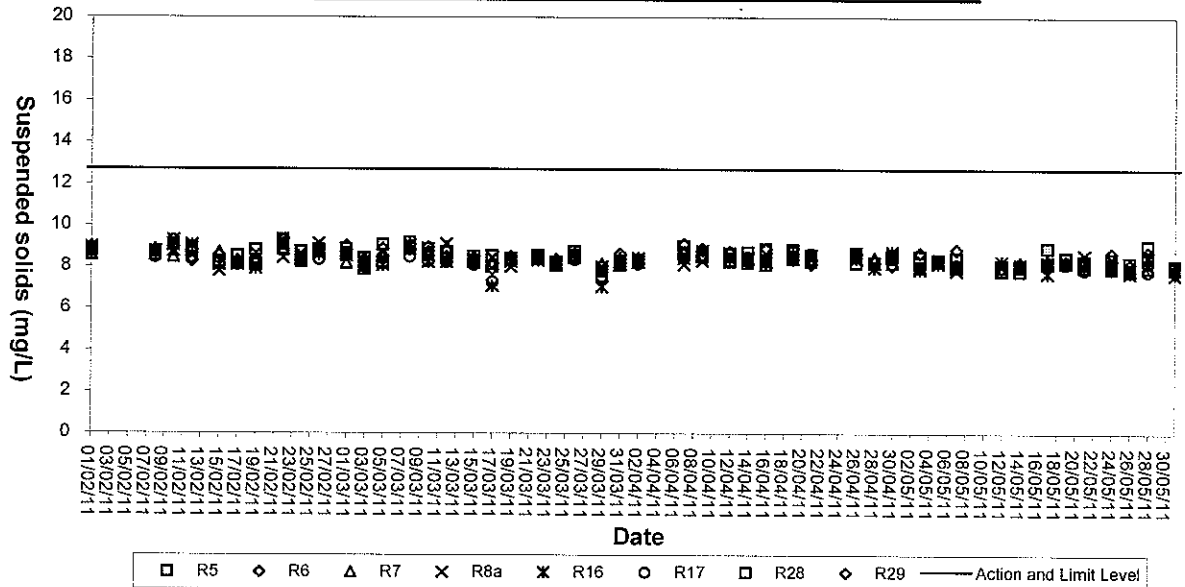


Turbidity (Depth-average) of R15 at Mid-Ebb Tide

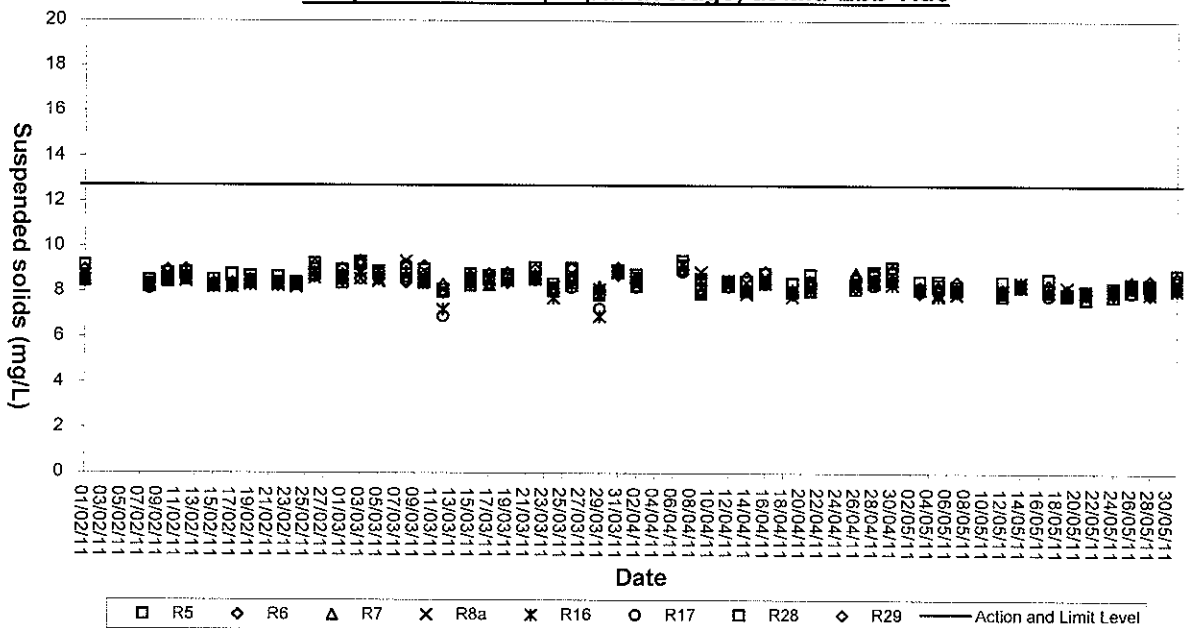




Suspended solids (Depth-average) at Mid-Flood Tide

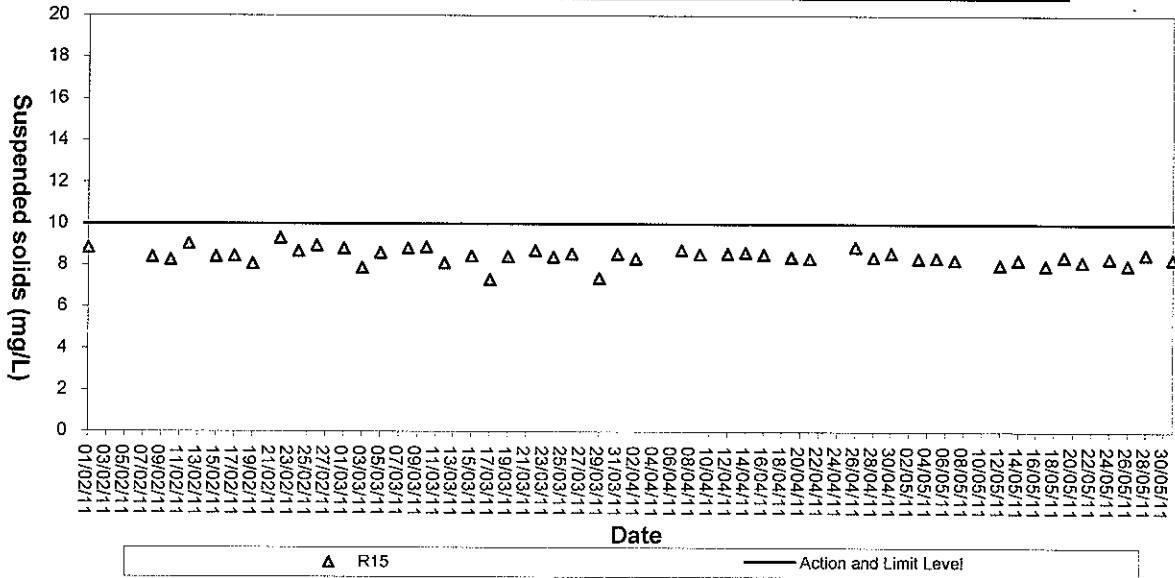


Suspended Solids (Depth-average) at Mid-Ebb Tide

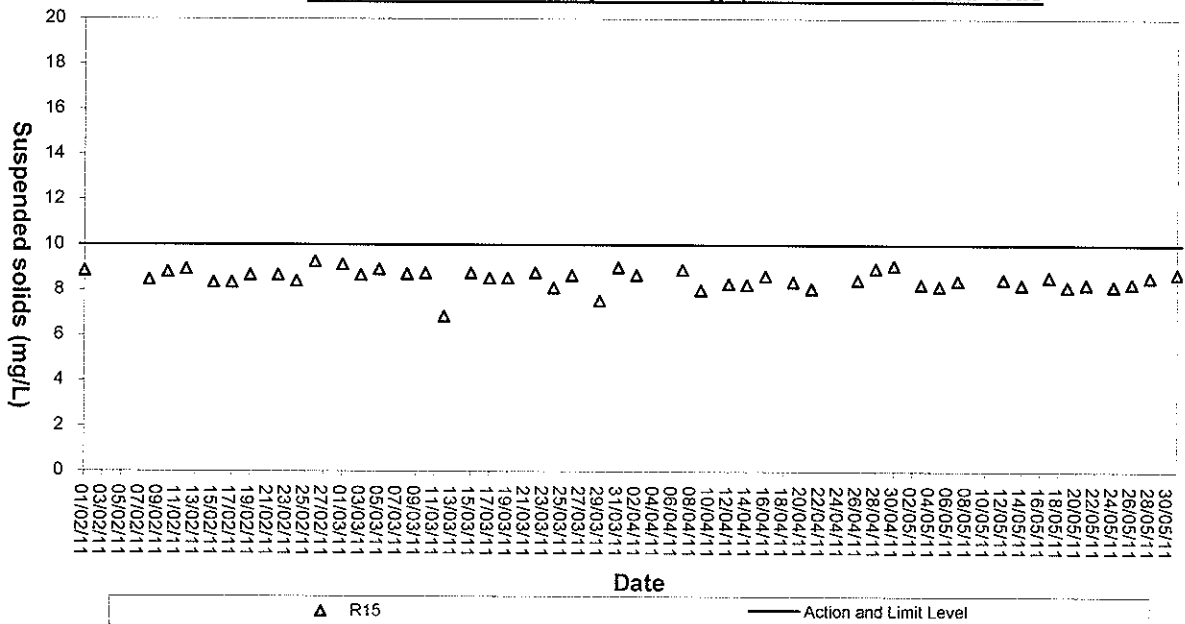




Suspended solids (Depth-average) of R15 at Mid-Flood Tide



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





東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix C4

QA/QC Results of Laboratory Analysis for Water Samples



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery ©
03/05/11	95.7	R5FS	3.1	R8FS	100.0
	94.8	R8FM	3.2	R17FM	101.9
	92.3	R17FB	3.0	C1FB	105.8
	104.4	C2FS	6.4	C4FB	96.0
	99.8	R5ES	3.1	R8ES	100.0
	97.2	R8EM	0.0	R17EM	109.8
	96.5	R17EB	2.9	C1EB	114.3
	100.6	C2ES	3.4	C4EB	104.2
05/05/11	98.2	R5FS	3.0	R8FS	92.3
	97.7	R8FM	3.1	R17FM	94.2
	97.4	R17FB	2.9	C1FB	106.1
	95.9	C2FS	0.0	C4FB	100.0
	100.6	R5ES	3.2	R8ES	102.1
	93.1	R8EM	6.2	R17EM	103.8
	98.8	R17EB	3.1	C1EB	112.5
	101.2	C2ES	3.1	C4EB	98.0
07/05/11	103.9	R5FS	3.1	R8FS	98.0
	99.4	R8FM	3.3	R17FM	98.1
	104.8	R17FB	3.5	C1FB	95.8
	98.8	C2FS	3.4	C4FB	106.0
	101.9	R5ES	6.1	R8ES	104.2
	99.8	R8EM	3.1	R17EM	112.2
	96.9	R17EB	3.2	C1EB	106.0
	103.5	C2ES	6.4	C4EB	104.1
12/05/11	95.7	R5FS	3.2	R8FS	90.6
	103.1	R8FM	3.1	R17FM	100.0
	106.8	R17FB	6.6	C1FB	101.9
	93.8	C2FS	6.4	C4FB	94.1
	94.9	R5ES	3.0	R8ES	98.0
	98.6	R8EM	3.3	R17EM	102.1
	98.8	R17EB	0.0	C1EB	114.3
	95.8	C2ES	3.2	C4EB	102.0
14/05/11	101.6	R5FS	3.3	R8FS	96.0
	102.1	R8FM	3.2	R17FM	96.0
	107.9	R17FB	3.1	C1FB	98.0
	97.7	C2FS	0.0	C4FB	95.8
	93.3	R5ES	3.0	R8ES	98.0
	100.0	R8EM	6.1	R17EM	100.0
	100.8	R17EB	2.8	C1EB	103.8
	96.0	C2ES	3.1	C4EB	100.0
17/05/11	93.3	R5FS	3.0	R8FS	106.4
	98.0	R8FM	2.7	R17FM	104.0
	101.4	R17FB	3.1	C1FB	92.3
	96.2	C2FS	3.3	C4FB	93.8
	98.2	R5ES	0.0	R8ES	92.3
	94.4	R8EM	6.1	R17EM	118.8
	96.9	R17EB	3.2	C1EB	112.0
	95.4	C2ES	6.4	C4EB	100.0

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



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
19/05/11	101.5	R5FS	2.7	R8FS	94.1
	94.7	R8FM	3.0	R17FM	100.0
	95.5	R17FB	2.7	C1FB	94.0
	103.5	C2FS	3.2	C4FB	93.9
	98.0	R5ES	3.1	R8ES	94.2
	92.3	R8EM	0.0	R17EM	109.8
	98.0	R17EB	3.0	C1EB	114.6
	98.2	C2ES	3.3	C4EB	96.2
21/05/11	104.9	R5FS	3.2	R8FS	92.3
	99.8	R8FM	2.9	R17FM	95.8
	92.4	R17FB	2.7	C1FB	104.2
	101.3	C2FS	3.1	C4FB	95.8
	103.5	R5ES	3.0	R8ES	96.1
	99.6	R8EM	6.5	R17EM	103.8
	96.0	R17EB	5.4	C1EB	105.9
	94.7	C2ES	3.1	C4EB	102.0
24/05/11	94.5	R5FS	6.1	R8FS	102.1
	98.8	R8FM	2.9	R17FM	102.0
	97.3	R17FB	5.4	C1FB	92.5
	107.5	C2FS	0.0	C4FB	93.8
	101.1	R5ES	3.2	R8ES	94.1
	92.8	R8EM	3.0	R17EM	112.5
	103.1	R17EB	2.7	C1EB	110.2
	102.2	C2ES	2.8	C4EB	104.1
26/05/11	95.5	R5FS	6.5	R8FS	104.3
	93.0	R8FM	3.0	R17FM	96.2
	104.9	R17FB	2.9	C1FB	98.1
	95.9	C2FS	3.2	C4FB	93.8
	96.3	R5ES	3.0	R8ES	94.0
	101.9	R8EM	2.8	R17EM	105.8
	104.2	R17EB	0.0	C1EB	104.0
	95.6	C2ES	3.1	C4EB	94.1
28/05/11	98.4	R5FS	6.5	R8FS	92.0
	92.7	R8FM	3.1	R17FM	93.6
	104.9	R17FB	2.7	C1FB	102.0
	99.0	C2FS	3.3	C4FB	106.0
	103.1	R5ES	2.8	R8ES	92.0
	99.0	R8EM	3.0	R17EM	114.9
	99.8	R17EB	2.7	C1EB	108.3
	102.0	C2ES	3.1	C4EB	98.0
31/05/11	98.4	R5FS	6.5	R8FS	92.0
	92.7	R8FM	3.1	R17FM	93.6
	104.9	R17FB	2.7	C1FB	102.0
	99.0	C2FS	3.3	C4FB	106.0
	103.1	R5ES	2.8	R8ES	92.0
	99.0	R8EM	3.0	R17EM	114.9
	99.8	R17EB	2.7	C1EB	108.3
	102.0	C2ES	3.1	C4EB	98.0

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



Appendix D

Event-Action Plans



Event and Action Plan for Construction Noise

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



Event and Action Plan for Water Quality for Construction Phase

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



Event and Action Plan for Water Quality for Construction Phase

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



東業機動測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix E

Work Programme

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Foot	2001																
								JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
General Information																								
Key Dates																								
KD-1010	Contract Commencement Date	0	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0																	
KD-1020	Contract Completion	0	07SEP09 A	05NOV12*	07SEP09 A	05NOV12*	0																	
KD-1030	Works Period of Section 1 Works (7310Days)	830	07SEP09 A	06NOV11	07SEP09 A	16DEC11	404																	
KD-1040	Works Period of Section 2 Works (4260Days)	449	07SEP09 A	08NOV10	07SEP09 A	29NOV10	226																	
KD-1050	Works Period of Section 4 Works (5490Days)	576	07SEP09 A	09MAR11	07SEP09 A	05APR11	278																	
KD-1060	Works Period of Section 5 Works (11560Days)	1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0																	
Preliminaries																								
B1-1000	Mobilization	90	07SEP09 A	06DEC09 A	07SEP09 A	06DEC09 A	0																	
B1-1110	Site Office	60	16NOV09 A	16JAN10	16NOV09 A	16JAN10	0																	
B1-1120	Maintenance/Service of Preliminary Items	938	17JAN10	09AUG12	17JAN10	09AUG12	0																	
B1-1130	Clearance & Demobilisation	88	10AUG12	05NOV12	10AUG12	05NOV12	0																	
B1-1140	Environmental Monitoring	1026	28DEC09 A	18OCT12	28DEC09 A	18OCT12	181																	
B1-1150	Material Approval For Water Mains & Accessories	100	07SEP09 A	18FEB10	07SEP09 A	04JUL10	136																	
B1-1160	Material Procurement & Delivery Start	60	28DEC09 A	01FEB10	28DEC09 A	03JUN10	126																	
B1-1168B	Delivery of Valve, Actuators, Flow Meter & E&M	400	14JUN10	18JUL11*	14JUN10	18JUL11*	0																	
B1-1170	CCTV & Monitoring Of Existing DSD Drainage	610	16JAN10	19SEP11	16APR10	16DEC11	882																	
B1-1180	Monitoring of H/O Structure	810	06MAR10	05NOV11	16APR10	16DEC11	416																	
Section 1																								
Land Works																								
General																								
S1-1010	Approval & Consent - XP, TTA, MS & Temp Works	180	07SEP09 A	05MAR10	07SEP09 A	27APR10	116																	
S1-1020	Trial Pit & Utilities Detection (Except E2 & K)	120	01DEC09 A	16MAR10	01DEC09 A	26APR10	410																	
S1-1030	Portion H2 Cycle Track & Footpath Proposal	40	07SEP09 A	09OCT09 A	07SEP09 A	09OCT09 A	0																	
S1-1040	Portion H2 Diversion Route For Cycle Track	60	07OCT09 A	28NOV09 A	07OCT09 A	28NOV09 A	0																	
S1-1060	Portion H2 Submission For Hoarding Mural Design	90	07SEP09 A	17FEB10	07SEP09 A	08OCT12	862																	
S1-1080	Portion H2 Set Up For Hoarding Approved Design	30	18FEB10	18MAR10	07OCT12	05NOV12	962																	
S1-1090	Initial & Utilities Survey (Except E2 & K)	120	05OCT09 A	04MAR10	05OCT09 A	15APR10	426																	
S1-2010	Final Pipe Testing & Reinstatement	48	01NOV11	15DEC11	02NOV11	16DEC11	16																	
S1-2020	Completion of Section 1 Works	0	16DEC11*	16DEC11*	16DEC11*	16DEC11*	0																	
Portion C1																								
S1-3010	MTRCL Consent For Works Commencement	180	07SEP09 A	05MAR10	07SEP09 A	15APR10	416																	
S1-3020	MTRCL Structure Stability Monitoring	270	28MAY10	21FEB11	06JAN11	02OCT11	223																	
S1-3030	Portion C1 Pipe Works CH195-D-237.5 (O)	90	24JUN10	21SEP10	20MAR11	17JUN11	269																	
S1-3030A10	Preparation & Submission of Risk Assessment	40	22FEB10*	02APR10	03NOV10	12DEC10	254																	
S1-3030A20	Preparation & Submission of Method Statement	40	22FEB10	02APR10	03NOV10	12DEC10	254																	
S1-3030A30	Preparation & Submission of Temp. Design	40	22FEB10	02APR10	03NOV10	12DEC10	254																	
S1-3030B10	Excavation & Shoring	80	28MAY10	15AUG10	13DEC10	02MAR11	199																	
S1-3030B20	Pipe Laying & Welding	50	17JUL10	04SEP10	01FEB11	22MAR11	199																	
S1-3030B30	Backfilling & Reinstatement	10	05SEP10	03MAY10	23MAR11	01APR11	199																	
S1-3040	Portion C1 Trough Construction CH237.5-290 (O)	60	06MAR10	04MAY10	16APR10	14JUN10	416																	
S1-3040A20	Preparation & Submission of Risk Assessment	28	17JUL10	13AUG10	16MAR11	12APR11	242																	
S1-3040A30	Preparation & Submission of Method Statement	28	17JUL10	13AUG10	16MAR11	12APR11	242																	
S1-3040A40	Preparation & Submission of Temp. Works	28	17JUL10	13AUG10	16MAR11	12APR11	242																	
S1-3040B10	Installation of Settlement Marker	3	13JUL10	02AUG10	30MAR11	01APR11	242																	
S1-3040B20	Excavation & Shoring For Pipe Trough (Stage 1)	15	15SEP10	29SEP10	02APR11	16APR11	199																	
S1-3040B30	Formwork & Blinding For Trough	3	30SEP10	02OCT10	17APR11	19APR11	199																	
S1-3040B40	Formwork & Reinforcement For Trough	10	03OCT10	02OCT10	20APR11	29APR11	199																	

Start date: 07SEP09
Finish date: 05NOV12
Data date: 04JAN10
Run date: 12MAY11
Page number: 1A
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3 Months Rolling Program (May 2011)

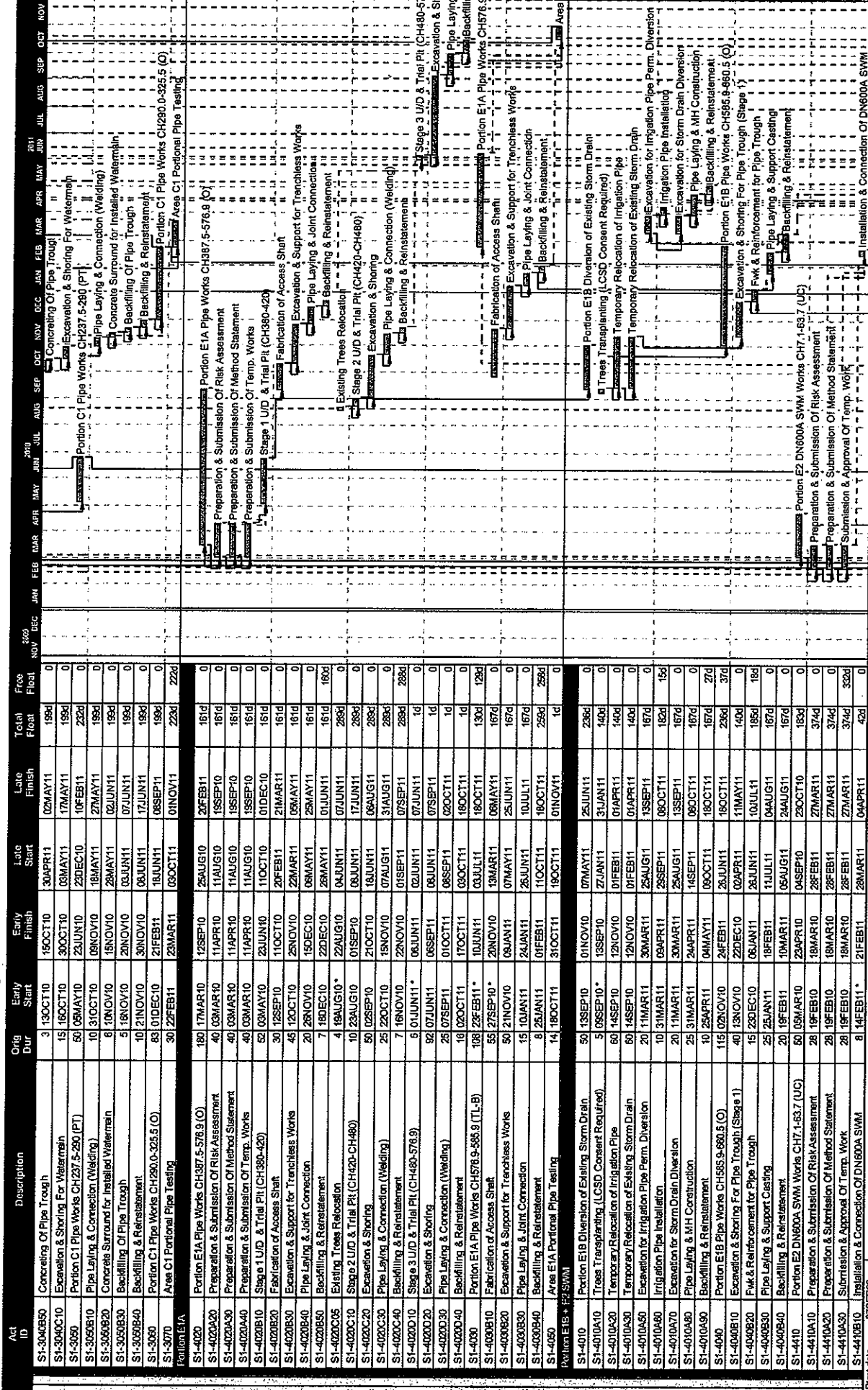
Legend:
█ Early bar
█ Progress bar
█ Critical bar
█ Summary bar
█ Start milestone point
█ Finish milestone point

Act ID	Description	Orig. Dur.		Early Start		Early Finish		Late Start		Late Finish		Total	
		Start	End	Start	End	Start	End	Start	End	Float	Free Float		
S1-3040B50	Concreting Of Pipe Trough	15	16OCT10	15OCT10	30APR11	15OCT10	30APR11	02MAY11	02MAY11	198d	0		
S1-3040C10	Excavation & Shoring For Watermain	15	16OCT10	16OCT10	03MAY11	16OCT10	03MAY11	17MAY11	17MAY11	198d	0		
S1-3050	Portion C1 Pipe Works CH237.5-290 (PT)	50	05MAY10	23JUN10	29DEC10	23JUN10	29DEC10	10FEB11	10FEB11	232d	0		
S1-3050B10	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	28MAY11	09NOV10	28MAY11	07JUN11	07JUN11	198d	0		
S1-3050B20	Concrete Surround for Installed Watermain	5	10NOV10	15NOV10	28MAY11	15NOV10	28MAY11	02JUN11	02JUN11	198d	0		
S1-3050B30	Backfilling Of Pipe Trough	5	16NOV10	20NOV10	03JUN11	20NOV10	03JUN11	07JUN11	07JUN11	198d	0		
S1-3050B40	Backfilling & Reinstatement	10	21NOV10	30NOV10	08JUN11	30NOV10	08JUN11	17JUN11	17JUN11	198d	0		
S1-3070	Portion C1 Pipe Works CH290.0-325.5 (C)	83	01DEC10	21FEB11	18JUN11	21FEB11	18JUN11	08SEP11	08SEP11	198d	0		
S1-3070	Area C1 Portional Pipe Testing	30	22FEB11	23MAR11	03OCT11	23MAR11	03OCT11	01NOV11	01NOV11	228d	0		
Portion E1A													
S1-4020	Portion E1A Pipe Works CH387.5-576.9 (C)	180	17MAR10	12SEP10	25AUG10	12SEP10	25AUG10	20FEB11	20FEB11	161d	0		
S1-4020A20	Preparation & Submission Of Risk Assessment	40	03MAR10	11APR10	11AUG10	11APR10	11AUG10	19SEP10	19SEP10	161d	0		
S1-4020A30	Preparation & Submission Of Method Statement	40	03MAR10	11APR10	11AUG10	11APR10	11AUG10	19SEP10	19SEP10	161d	0		
S1-4020A40	Preparation & Submission Of Temp. Works	40	03MAR10	11APR10	11AUG10	11APR10	11AUG10	19SEP10	19SEP10	161d	0		
S1-4020B10	Stage 1 U/D & Trial Pit (CH380-420)	52	03MAY10	11OCT10	20FEB11	11OCT10	20FEB11	01DEC10	01DEC10	161d	0		
S1-4020B20	Fabrication Of Access Shaft	30	12SEP10	11OCT10	20FEB11	12SEP10	20FEB11	05MAY11	05MAY11	161d	0		
S1-4020B30	Excavation & Support for Trenchless Works	45	12OCT10	26NOV10	06MAY11	26NOV10	06MAY11	25MAY11	25MAY11	161d	0		
S1-4020B40	Pipe Laying & Joint Connection	20	26NOV10	19DEC10	06MAY11	19DEC10	06MAY11	25MAY11	25MAY11	161d	0		
S1-4020B50	Backfilling & Reinstatement	7	16DEC10	22DEC10	04JUN11	22DEC10	04JUN11	07JUN11	07JUN11	160d	0		
S1-4020C05	Existing Trees Relocation	4	19AUG10	22AUG10	04JUN11	22AUG10	04JUN11	07JUN11	07JUN11	288d	0		
S1-4020C10	Stage 2 U/D & Trial Pit (CH420-CH480)	10	29AUG10	01SEP10	08JUN11	01SEP10	08JUN11	17JUN11	17JUN11	288d	0		
S1-4020C20	Excavation & Shoring	50	02SEP10	21OCT10	18JUN11	21OCT10	18JUN11	06AUG11	06AUG11	288d	0		
S1-4020C30	Pipe Laying & Connection (Welding)	25	22OCT10	19NOV10	07AUG11	19NOV10	07AUG11	31AUG11	31AUG11	288d	0		
S1-4020C40	Backfilling & Reinstatement	7	16NOV10	22NOV10	01SEP11	22NOV10	01SEP11	07SEP11	07SEP11	288d	0		
S1-4020D10	Excavation & Shoring	92	07JUN11	06SEP11	02JUN11	06SEP11	02JUN11	07JUN11	07JUN11	16d	0		
S1-4020D20	Pipe Laying & Connection (Welding)	26	07SEP11	01OCT11	08SEP11	01OCT11	08SEP11	02OCT11	02OCT11	16d	0		
S1-4020D40	Backfilling & Reinstatement	108	23FEB11	10JUN11	18OCT11	23FEB11	10JUN11	18OCT11	18OCT11	130d	128d		
S1-4030	Portion E1A Pipe Works CH476.9-588.9 (TL-B)	55	27SEP10	20NOV10	03MAY11	20NOV10	03MAY11	08MAY11	08MAY11	167d	0		
S1-4030B10	Fabrication Of Access Shaft	50	21NOV10	09JAN11	07MAY11	21NOV10	07MAY11	10JUL11	10JUL11	167d	0		
S1-4030B20	Excavation & Support for Trenchless Works	15	10JAN11	24JAN11	08JAN11	24JAN11	08JAN11	26JUN11	26JUN11	167d	0		
S1-4030B30	Pipe Laying & Joint Connection	8	25JAN11	01FEB11	11OCT11	01FEB11	11OCT11	18OCT11	18OCT11	259d	259d		
S1-4030B40	Backfilling & Reinstatement	14	19OCT11	31OCT11	19OCT11	31OCT11	19OCT11	01NOV11	01NOV11	16d	0		
Portion E1B & E2 SWM													
S1-4010	Portion E1B Diversion of Existing Storm Drain	50	18SEP10	01NOV10	07MAY11	18SEP10	07MAY11	25JUN11	25JUN11	286d	0		
S1-4010A10	Trees Transplanting (LQSD Consent Required)	5	09SEP10	19SEP10	27JAN11	19SEP10	27JAN11	31JAN11	31JAN11	140d	0		
S1-4010A20	Temporary Relocation of Existing Storm Drain	60	14SEP10	12NOV10	01FEB11	12NOV10	01FEB11	01APR11	01APR11	140d	0		
S1-4010A30	Excavation for Irrigation Pipe Perm. Diversion	20	11MAR11	30MAR11	28AUG11	30MAR11	28AUG11	13SEP11	13SEP11	167d	0		
S1-4010A40	Irrigation Pipe Installation	20	31MAR11	09APR11	29SEP11	09APR11	29SEP11	09OCT11	09OCT11	182d	182d		
S1-4010A70	Excavation for Storm Drain Diversion	20	11MAR11	30MAR11	28AUG11	30MAR11	28AUG11	13SEP11	13SEP11	167d	0		
S1-4010A80	Pipe Laying & MH Construction	25	31MAR11	24APR11	14SEP11	24APR11	14SEP11	09OCT11	09OCT11	167d	0		
S1-4010A90	Backfilling & Reinstatement	10	25APR11	04MAY11	09OCT11	04MAY11	09OCT11	18OCT11	18OCT11	27d	0		
S1-4040	Portion E1B Pipe Works CH585.9-660.5 (C)	115	02NOV10	21FEB11	26JUN11	02NOV10	21FEB11	18OCT11	18OCT11	268d	37d		
S1-4040B10	Excavation & Shoring For Pipe Trough (Stage 1)	40	13NOV10	22DEC10	11MAY11	13NOV10	11MAY11	10JUL11	10JUL11	186d	186d		
S1-4040B20	Finck & Reinforcement for Pipe Trough	15	23DEC10	10JUL11	28JUN11	23DEC10	28JUN11	11JUL11	11JUL11	167d	0		
S1-4040B30	Pipe Laying & Support Casting	25	25JAN11	18FEB11	04AUG11	25JAN11	18FEB11	04AUG11	04AUG11	167d	0		
S1-4040B40	Backfilling & Reinstatement	30	19FEB11	10MAR11	06AUG11	19FEB11	10MAR11	23OCT10	23OCT10	167d	0		
S1-4410	Portion E2 DN600A SWM Works CH17.1-63.7 (UC)	60	05MAR10	23APR10	04SEP10	05MAR10	23APR10	29OCT10	29OCT10	183d	0		
S1-4410A10	Preparation & Submission Of Risk Assessment	28	19FEB10	19MAR10	28FEB11	19MAR10	28FEB11	27MAR11	27MAR11	374d	0		
S1-4410A20	Preparation & Submission Of Method Statement	28	19FEB10	19MAR10	28FEB11	19MAR10	28FEB11	27MAR11	27MAR11	374d	0		
S1-4410A30	Submission & Approval Of Temp. Work	28	19FEB10	19MAR10	28FEB11	19MAR10	28FEB11	27MAR11	27MAR11	374d	332d		
S1-4410B10	Installation & Connection Of DN600A SWM	3	14FEB11	21FEB11	28MAR11	14FEB11	21FEB11	04APR11	04APR11	42d	0		

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

3 Months Rolling Program (May 2011)

Start date: 07SEP09
 Finish date: 06NOV12
 Data date: 04JAN10
 Run date: 12MAY11
 Page number: 2A
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Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
S1-3040B50	Concreting Of Pipe Trough	3	13OCT10	15OCT10	30APR11	02MAY11	198d	0
S1-3040C10	Excavation & Shoring For Watermain	15	16OCT10	30OCT10	03MAY11	17MAY11	198d	0
S1-3050	Portion C1 Pipe Works CH237.5-290 (PT)	50	06MAY10	23DEC10	29DEC10	23DEC10	232d	0
S1-3050B10	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	18MAY11	27MAY11	198d	0
S1-3050B20	Concrete Surround for Installed Watermain	6	10MAY10	16NOV10	28MAY11	02JUN11	198d	0
S1-3050B30	Backfilling Of Pipe Trough	5	18NOV10	20NOV10	03JUN11	07JUN11	198d	0
S1-3050B40	Backfilling & Reinstatement	10	21NOV10	30NOV10	05JUN11	12JUN11	198d	0
S1-3060	Portion C1 Pipe Works CH290.0-325.5 (O)	83	01DEC10	21FEB11	18JUN11	08SEP11	198d	0
S1-3070	Area C1 Portional Pipe Testing	30	22FEB11	23MAR11	03OCT11	01NOV11	222d	222d
Portion E1A								
S1-4020	Portion E1A Pipe Works CH387.5-576.9 (O)	180	17MAR10	12SEP10	25AUG10	20FEB11	161d	0
S1-4020A20	Preparation & Submission Of Risk Assessment	40	03MAR10	11APR10	11AUG10	19SEP10	161d	0
S1-4020A30	Preparation & Submission Of Method Statement	40	03MAR10	11APR10	11AUG10	19SEP10	161d	0
S1-4020A40	Preparation & Submission Of Temp. Works	40	03MAR10	11APR10	11AUG10	19SEP10	161d	0
S1-4020B10	Stage 1 U/D & Trial Pit (CH380-420)	52	03MAY10	23JUN10	11OCT10	01DEC10	161d	0
S1-4020B20	Fabrication of Access Shaft	30	12SEP10	11OCT10	20FEB11	21MAR11	161d	0
S1-4020B30	Excavation & Support for Trenchless Works	45	12OCT10	29NOV10	22MAR11	05MAY11	161d	0
S1-4020B40	Pipe Laying & Joint Connection	20	28NOV10	15DEC10	06MAY11	25MAY11	161d	0
S1-4020B50	Backfilling & Reinstatement	7	18DEC10	22DEC10	28MAY11	01JUN11	161d	162d
S1-4020C35	Existing Trees Relocation	4	18AUG10*	22AUG10	04JUN11	07JUN11	268d	0
S1-4020C10	Stage 2 U/D & Trial Pit (CH420-CH480)	10	23AUG10	01SEP10	06JUN11	17JUN11	268d	0
S1-4020C20	Excavation & Shoring	50	02SEP10	21OCT10	18JUN11	06AUG11	268d	0
S1-4020C30	Pipe Laying & Connection (Welding)	7	16NOV10	22NOV10	07AUG11	31AUG11	268d	0
S1-4020C40	Backfilling & Reinstatement	7	16NOV10	22NOV10	07SEP11	07SEP11	268d	0
S1-4020D10	Stage 3 U/D & Trial Pit (CH480-576.9)	6	01JUN11*	08JUN11	02JUN11	07JUN11	1d	0
S1-4020D20	Excavation & Shoring	92	07JUN11	06SEP11	03JUN11	07SEP11	1d	0
S1-4020D30	Pipe Laying & Connection (Welding)	25	07SEP11	01OCT11	06SEP11	02OCT11	1d	0
S1-4020D40	Backfilling & Reinstatement	16	02OCT11	17OCT11	03OCT11	18OCT11	1d	0
S1-4030	Portion E1A Pipe Works CH576.9-585.9 (TL-B)	108	27FEB11*	10JUN11	03JUL11	19OCT11	130d	129d
S1-4030B10	Fabrication of Access Shaft	55	27SEP10*	20MAY11	06MAY11	06MAY11	167d	0
S1-4030B20	Excavation & Support for Trenchless Works	50	21NOV10	09JAN11	07MAY11	25JUN11	167d	0
S1-4030B30	Pipe Laying & Joint Connection	15	10MAY11	24JAN11	26JUN11	10JUL11	167d	0
S1-4030B40	Backfilling & Reinstatement	8	23JAN11	01FEB11	11OCT11	16OCT11	258d	0
S1-4050	Area E1A Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11	01NOV11	1d	0
Portion E1B - 1st SWM								
S1-4010	Portion E1B Diversion of Existing Storm Drain	50	13SEP10	01NOV10	07MAY11	25JUN11	236d	0
S1-4010A10	Trees Transplanting (LCSD Consent Required)	5	03SEP10*	13SEP10	27JAN11	31JAN11	400d	0
S1-4010A20	Temporary Relocation of Existing Storm Drain	60	14SEP10	12NOV10	01FEB11	01APR11	400d	0
S1-4010A30	Temporary Relocation of Existing Storm Drain	60	14SEP10	12NOV10	01FEB11	01APR11	400d	0
S1-4010A50	Excavation for Irrigation Pipe Perm. Diversion	20	11MAR11	30MAR11	25AUG11	13SEP11	167d	0
S1-4010A60	Irrigation Pipe Installation	10	31MAR11	09APR11	29SEP11	09OCT11	167d	15d
S1-4010A70	Excavation for Storm Drain Diversion	20	11MAR11	30MAR11	25AUG11	13SEP11	167d	0
S1-4010A80	Pipe Laying & MH Construction	25	31MAR11	24APR11	14SEP11	08OCT11	167d	0
S1-4010A90	Backfilling & Reinstatement	10	25APR11	04MAY11	09OCT11	16OCT11	167d	27d
S1-4040	Portion E1B Pipe Works CH585.9-680.5 (O)	115	02NOV10	24FEB11	26JUN11	16OCT11	256d	37d
S1-4040B10	Excavation & Shoring For Pipe Trough (Stage 1)	40	13NOV10	22DEC10	02APR11	11MAY11	400d	0
S1-4040B20	Pipe Laying & Support Casting	15	23DEC10	06JAN11	28JUN11	10JUL11	182d	182d
S1-4040B30	Pipe Laying & Support Casting	25	25JAN11	18FEB11	11JUL11	04AUG11	167d	0
S1-4040B40	Backfilling & Reinstatement	20	19FEB11	10MAR11	05AUG11	24AUG11	167d	0
S1-4410	Portion E2 DN600A SWM Works CH7.1-63.7 (UC)	60	05MAY10	23APR10	04SEP10	23OCT10	183d	0
S1-4410A10	Preparation & Submission Of Risk Assessment	28	16FEB10	18MAR10	28FEB11	27MAR11	374d	0
S1-4410A20	Preparation & Submission Of Method Statement	28	16FEB10	18MAR10	28FEB11	27MAR11	374d	0
S1-4410B30	Submission & Approval Of Temp. Work	28	16FEB10	18MAR10	28FEB11	27MAR11	374d	322d
S1-4410B10	Installation & Connection Of DN600A SWM	8	14FEB11*	21FEB11	28MAR11	04APR11	42d	0

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

3 Months Rolling Program (May 2011)

Start date	07SEP09
Finish date	05NOV12
Data date	04JAN10
Run date	12MAY11
Page number	2A
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Act ID	Description	Order Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
S1-4410B20	Support & Fixing Of DN600A SWM	3	22FEB11	24FEB11	05APR11	07APR11	42d	0
S1-4420	Portion E1B DN600A SWM Works CH0.0-7.1 (O)	30	24APR10	23MAY10	24OCT10	23NOV10	183d	0
S1-4420B10	Excavation & Shoring	6	25FEB11	02MAR11	08APR11	13APR11	42d	0
S1-4420B20	Main Laying & Connection With Trough Portion	8	03MAR11	10MAR11	14APR11	21APR11	42d	0
S1-4430	Portion E2 DN600A SWM Works CH63.7-67.9 (O)	30	24MAY10	22JUN10	23NOV10	22DEC10	183d	0
S1-4430B10	Excavation & Shoring	6	11MAR11	18MAR11	22APR11	29APR11	42d	0
S1-4430B20	Main Laying & Connection With Trough Portion	4	18MAR11	22APR11	30APR11	03MAY11	42d	0
S1-4440	E1B Existing DN600 SWM Diversion & Demolition	30	23JUN10	22JUL10	23DEC10	21JAN11	183d	0
S1-4440A10	Issuance Of Temp. Water Supply Suspension Notice	14	09MAR11	22MAR11	20APR11	03MAY11	42d	0
S1-4440B10	Shut Off Of Existing DN600 SWM	2	23MAR11	24MAR11	04MAY11	05MAY11	42d	0
S1-4440B20	Removal Of Existing DN600 SWM	6	23MAR11	30MAR11	08MAY11	11MAY11	42d	0
S1-4450	Portion E1B Trough Construction Under Planter	60	24JUN10	22AUG10	11FEB11	11APR11	232d	49d
S1-4450B10	Excavation & Shoring For Pipe Trough (Stage 2)	40	23DEC10	31JAN11	12MAY11	30JUN11	140d	0
S1-4450B20	FWK & Reinforcement for Pipe Trough	15	01FEB11	15FEB11	21JUN11	05JUL11	140d	0
S1-4450B30	Pipe Laying & Support Casting	60	11OCT10	09DEC10	12APR11	10JUN11	183d	0
S1-4450B40	Backfilling & Reinstatement	25	16FEB11	12MAR11	06JUL11	30JUL11	140d	0
S1-4460	Portion E1B Pipe Works CH677.4-695.9 (O)	40	22FEB11	02APR11	08SEP11	19OCT11	198d	0
S1-4460B10	Portion E1B Pipe Works CH677.4-695.9 (O)	30	02MAY11	31MAY11	19SEP11	18OCT11	140d	0
S1-4470	Portion E1B Pipe Works CH695.9-698.5 (UC)	20	10DEC10	29DEC10	11JUN11	30JUN11	183d	54d
S1-4470B10	Portion E1B Pipe Works CH695.9-698.5 (UC)	30	02APR11	01MAY11	20AUG11	19SEP11	140d	0
S1-4480	Portion E1B DN600B SWM Works CH0.0-7.1 (O)	30	23JUL10	21AUG10	11FEB11	12MAR11	203d	20d
S1-4480B10	Portion E1B DN600B SWM Works CH0.0-7.1 (O)	30	30APR11	29MAY11	19SEP11	18OCT11	142d	2d
S1-4480B20	Portion E2 DN600B SWM Works CH7.1-63.7 (UC)	50	23JUL10	10SEP10	22JAN11	10JUN11	183d	0
S1-4490	Portion E2 DN600B SWM Works CH63.7-67.9 (O)	30	31MAR11	29APR11	12MAY11	10JUN11	42d	0
S1-4500	Portion E2 DN600B SWM Works CH67.9-69.9 (O)	30	11SEP10	10OCT10	13MAR11	11APR11	183d	0
S1-4510	Portion E2 DN600B SWM Works CH69.9-74.9 (O)	20	30APR11	18MAY11	11JUN11	30JUN11	42d	0
S1-4510B10	Area E1B-E2 SWM Portional Pipe Testing	14	03APR11	16APR11	19OCT11	01NOV11	198d	188d
S1-4510B20	Area E1B-E2 SWM Portional Pipe Testing	14	01JUN11	14JUN11	19OCT11	01NOV11	140d	138d
Portion E1C - E1D								
S1-4710	Portion E1C DN300 FWM Works CH0.0-50.0 (UC)	50	05MAR10	23APR10	28SEP10	16NOV10	207d	0
S1-4710A10	Submission & Approval Of Risk Assessment	28	19FEB10	18MAR10	14SEP10	11OCT10	207d	0
S1-4710A20	Submission & Approval Of Method Statement	28	19FEB10	18MAR10	14SEP10	11OCT10	207d	59d
S1-4710A30	Submission & Approval Of Temp. Work	28	19FEB10	18MAR10	14SEP10	11OCT10	207d	59d
S1-4710B10	Installation & Connection Of DN300 FWM	50	17MAY10*	05JUL10	12OCT10	30NOV10	146d	0
S1-4710B20	Support & Fixing Of DN300 FWM	40	06JUL10	14AUG10	01DEC10	03JAN11	148d	0
S1-4720	E1C Exst. DN300 FWM Diversion & Demolition	6	15AUG10	22AUG10	10JAN11	17JAN11	146d	0
S1-4720A10	E1C Exst. DN300 FWM Diversion & Demolition	30	02MAY10	31MAY10	12APR11	11MAY11	345d	157d
S1-4720A20	Issuance Of Temp. Water Supply Suspension Notice	14	22SEP10	05OCT10	17FEB11	02MAR11	146d	0
S1-4730A20	Shut Off Existing DN300 FWM	2	06OCT10	07OCT10	03MAR11	04MAR11	146d	0
S1-4730A30	DN300 Diversion Main Connect To Existing	2	06OCT10	07OCT10	03MAR11	04MAR11	146d	0
S1-4730A40	Removal Of Existing DN300 FWM	80	08OCT10	04NOV10	05MAR11	01APR11	146d	0
S1-4740	Portion E1C DN600 SWM Works CH0.0-52.0 (UC)	80	05NOV10	23JAN11	12MAY11	30JUL11	188d	8d
S1-4740B10	Portion E1C DN600 SWM Works CH0.0-52.0 (UC)	120	05NOV10	04MAY11	02APR11	30JUL11	148d	0
S1-4750	Portion E1C DN900 SWM Works CH52.0-90.0 (O)	80	01FEB11	21APR11	31JUL11	18OCT11	180d	0
S1-4750B10	Portion E1C DN600 SWM Works CH52.0-90.0 (UC)	80	05MAR11	29MAY11	31JUL11	18OCT11	146d	0
S1-4760	Area E1C Portional Pipe Testing	14	22APR11	05MAY11	16OCT11	01NOV11	179d	179d
S1-4760B10	Area E1C Portional Pipe Testing	14	24MAY11	06JUN11	19OCT11	01NOV11	148d	147d
Portion E2								
S1-5010	Portion E2 Marine Dept Advance Notice	90	07OCT09 A	20FEB10	07OCT09 A	21APR10	90d	0
S1-5020	WHYCL Consent For Works Within Tunnel Area	120	07SEP09 A	20FEB10	07SEP09 A	21APR10	60d	0
S1-5030	Chamber Modification - 180 Days of Portion E2	65	07JAN10 A	14MAR10 A	07JAN10 A	14MAR10 A		

07SEP09
Finish date

05NOV12
Data date

04JAN10
Run date

12MAY11
Page number

3A
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07SEP09
Early bar

05NOV12
Progress bar

04JAN10
Critical bar

12MAY11
Summary bar

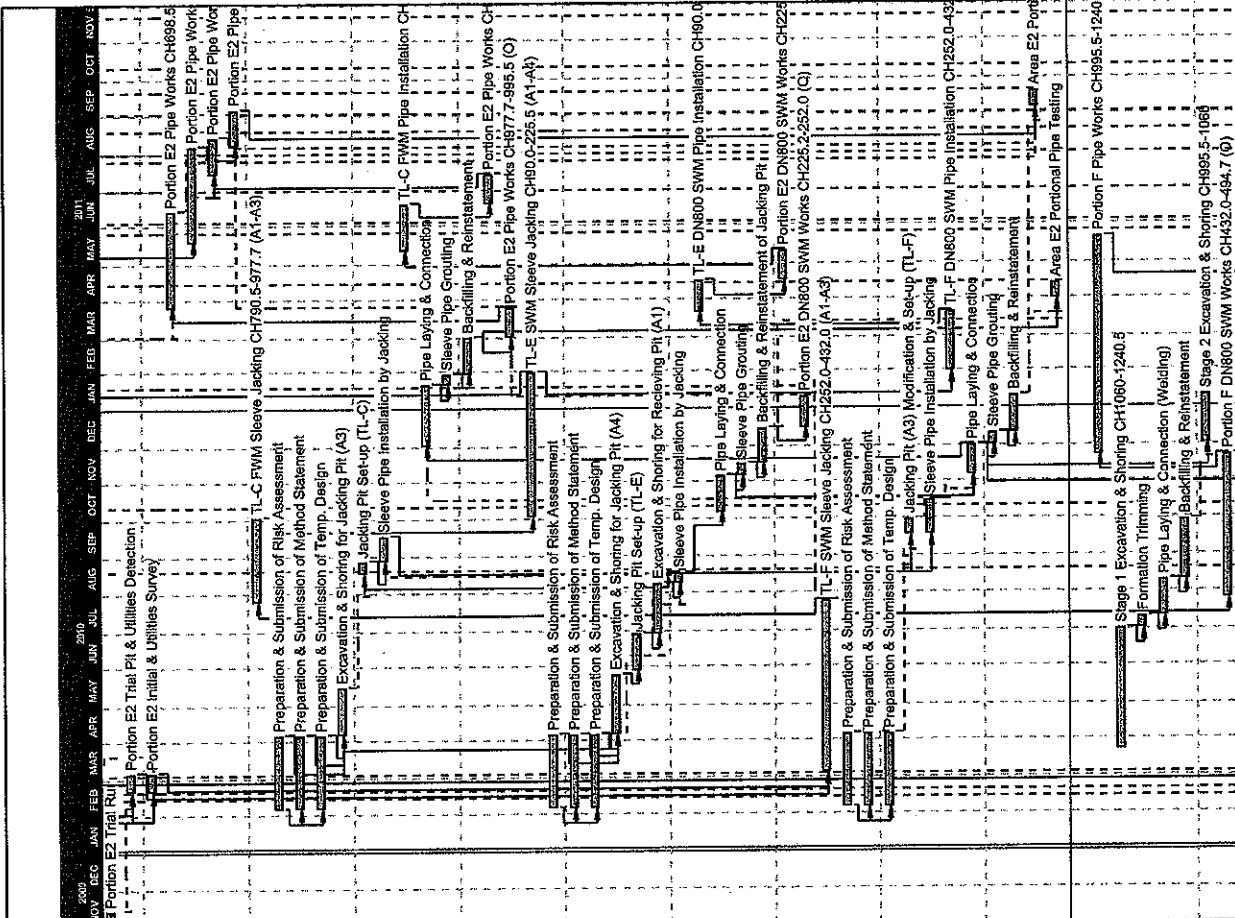
3A
Start milestone point

3A
Finish milestone point

3 Months Rolling Program (May 2011)

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
S1-5040	Portion E2 Trial Run	60	08NOV09	14NOV09	08NOV09	14NOV09	0	0
S1-5050	Portion E2 Trial Pit & Utilities Detection	15	21FEB10	07MAR10	22APR10	06MAY10	60d	0
S1-5060	Portion E2 Initial & Utilities Survey	15	21FEB10	07MAR10	22APR10	06MAY10	60d	0
S1-5070	Portion E2 Pipe Works CH895.5-922.5 (UC)	60	27MAR10	14JUN11	01JUL11	18SEP11	31d	0
S1-5070B10	Portion E2 Pipe Works CH895.5-922.5 (UC)	60	27MAR10	14JUN11	01JUL11	18SEP11	31d	0
S1-5080	Portion E2 Pipe Works CH795.5-922.5 (O)	30	08AUG10	06SEP11	19SEP11	18OCT11	42d	0
S1-5080A	Portion E2 Pipe Works CH795.5-922.5 (O)	30	08AUG10	06SEP11	19SEP11	18OCT11	42d	0
S1-5090	TL-C FVM Sleeve Jacking CH790.5-977.7 (A1-A3)	70	25JUL10	08OCT10	29SEP10	07DEC10	65d	0
S1-5090A10	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	04SEP10	02NOV10	210d	0
S1-5090A20	Preparation & Submission of Method Statement	60	08FEB10	06APR10	04SEP10	02NOV10	210d	0
S1-5090A30	Preparation & Submission of Temp. Design	60	08FEB10	06APR10	04SEP10	02NOV10	210d	0
S1-5090B10	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	16MAY10	03NOV10	12DEC10	216d	94d
S1-5090B20	Jacking Pit Set-up (TL-C)	10	18AUG10	29AUG10	13DEC10	22DEC10	116d	0
S1-5090C10	TL-C FVM Pipe Installation CH790.5-977.7	20	29AUG10	17SEP10	23DEC10	11JAN11	116d	0
S1-5095	Pipe Laying & Connection	50	02DEC10	20JAN11	08MAR11	26APR11	96d	0
S1-5095B10	Sleeve Pipe Grouting	30	31JAN11	01MAR11	07MAY11	03JUN11	96d	0
S1-5095B30	Backfilling & Reinstatement	25	21JUN11	15JUL11	25AUG11	18SEP11	65d	0
S1-5100	Portion E2 Pipe Works CH977.7-995.5 (O)	25	02MAR11	26MAR11	06JUN11	30JUN11	96d	0
S1-5100A	TL-E SWM Sleeve Jacking CH900.0-225.5 (A1-A4)	120	04OCT10	31JAN11	08DEC10	06APR11	65d	0
S1-5110	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	13MAY10	11JUL10	96d	0
S1-5110A20	Preparation & Submission of Method Statement	60	08FEB10	06APR10	13MAY10	11JUL10	96d	0
S1-5110A30	Preparation & Submission of Temp. Design	60	08FEB10	06APR10	13MAY10	11JUL10	96d	0
S1-5110B10	Excavation & Shoring for Jacking Pit (A4)	60	07APR10	28MAY10	12JUL10	30AUG10	96d	0
S1-5110B20	Jacking Pit Set-up (TL-E)	30	30MAY10	28JUN10	03SEP10	02OCT10	96d	0
S1-5110B30	Excavation & Shoring for Receiving Pit (A1)	42	29JUN10	09AUG10	09OCT10	13NOV10	96d	0
S1-5110C10	Sleeve Pipe Installation by Jacking	9	10AUG10	18AUG10	14NOV10	20JUN11	96d	0
S1-5115	TL-E DN800 SWM Pipe Installation CH180.0-225.5	25	23MAR11	16APR11	27MAY11	20JUN11	65d	0
S1-5115B10	Pipe Laying & Connection	10	07NOV10	06NOV10	02APR11	10FEB11	96d	0
S1-5115B20	Backfilling & Reinstatement of Jacking Pit	30	17NOV10	16DEC10	12PR11	11MAY11	146d	0
S1-5120	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	17APR11	11MAY11	2JUN11	15JUL11	146d	0
S1-5120A	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	17APR11	11MAY11	2JUN11	15JUL11	146d	0
S1-5130	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	142	06MAR10	25JUL10	05MAY10	23SEP10	60d	0
S1-5130A10	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	09DEC10	09FEB11	306d	0
S1-5130A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	09DEC10	09FEB11	306d	0
S1-5130A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	09DEC10	09FEB11	306d	0
S1-5130C10	Jacking Pit (A3) Modification & Set-up (TL-F)	14	18SEP10	01OCT10	07FEB11	20FEB11	142d	20d
S1-5135	TL-F DN800 SWM Pipe Installation CH252.0-432.0	30	18SEP10	17OCT10	12JAN11	10FEB11	168d	20d
S1-5135B10	Pipe Laying & Connection	50	01FEB11	22MAR11	07APR11	28MAY11	68d	0
S1-5135B20	Sleeve Pipe Grouting	25	07NOV10	01DEC10	11FEB11	07MAR11	96d	0
S1-5135B30	Backfilling & Reinstatement	10	02DEC10	10DEC10	10AUG11	19AUG11	251d	0
S1-5135S30	Area E2 Portional Pipe Testing	30	12DEC10	10JAN11	20AUG11	18SEP11	251d	50d
S1-5140	Area E2 Portional Pipe Testing	14	07SEP11	20SEP11	18OCT11	01NOV11	42d	41d
S1-5140B10	Area E2 Portional Pipe Testing	14	01APR11	14APR11	19OCT11	11NOV11	201d	200d
S1-6010	Portion F Pipe Works CH895.5-1240.5 (O)	180	23NOV10	21MAY11	22JAN11	20JUL11	60d	0
S1-6010B10	Stage 1 Excavation & Shoring CH1060-1240.5	100	24MAR10	01JUL10	03MAR11	10JUN11	344d	0
S1-6010B20	Formation Trimming	10	02JUL10	11JUL10	11JUN11	20JUN11	344d	0
S1-6010B30	Pipe Laying & Connection (Welding)	30	12JUL10	10AUG10	24JUN11	23JUL11	344d	0
S1-6010B40	Backfilling & Reinstatement	50	11AUG10	29SEP10	25SEP10	06SEP11	344d	63d
S1-6010C10	Stage 2 Excavation & Shoring CH895.5-1060	40	02DEC10	10JAN11	05SEP11	18OCT11	281d	131d
S1-6020	Portion F DN900 SWM Works CH432.0-494.7 (O)	120	26JUL10	22NOV10	24SEP10	21JAN11	60d	0

Start date	Finish date	Run date	Page number
07SEP09	05NOV12	04JAN10	4A
05NOV12	04JAN10	12MAY11	4A
04JAN10	12MAY11	12MAY11	4A
12MAY11	12MAY11	12MAY11	4A



3 Months Rolling Program (May 2011)

Legend:
 ■ Early bar
 ▨ Progress bar
 ▤ Critical bar
 ▩ Summary bar
 ▲ Start milestone point
 ▼ Finish milestone point

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	2009	2010	2011
S1-5040	Portion E2 Trial Run	60	09NOV09	14NOV09	09NOV09	14NOV09	0			
S1-5050	Portion E2 Trial Pit & Utilities Detection	15	21FEB10	07MAR10	22APR10	08MAY10	60d			
S1-5060	Portion E2 Initial & Utilities Survey	15	21FEB10	07MAR10	22APR10	08MAY10	60d			
S1-5070	Portion E2 Pipe Works CH895.5-752.5 (UC)	80	27MAR11	14JUN11	01JUL11	18SEP11	96d			
S1-5070B10	Portion E2 Pipe Works CH895.5-752.5 (UC)	80	27MAR11	14JUN11	01JUL11	18SEP11	96d			
S1-5080	Portion E2 Pipe Works CH752.5-790.5 (O)	30	16JUL11	14AUG11	18SEP11	18OCT11	55d			
S1-5080A	Portion E2 Pipe Works CH752.5-790.5 (O)	30	16JUL11	14AUG11	18SEP11	18OCT11	55d			
S1-5090	TL-C FVM Sleeve Jacking CH790.5-977.7 (A1-A3)	70	26JUL10	03OCT10	29SEP10	07DEC10	65d			
S1-5090A10	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	04SEP10	02NOV10	210d			
S1-5090A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	04SEP10	02NOV10	210d			
S1-5090B10	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	16MAY10	03NOV10	12DEC10	210d			
S1-5090B20	Jacking Pit Set-up (TL-C)	10	19AUG10	29AUG10	13DEC10	22DEC10	116d			
S1-5090C10	Sleeve Pipe Installation by Jacking	20	29AUG10	17SEP10	23DEC10	11JAN11	116d			
S1-5095	TL-C FVM Pipe Installation CH790.5-977.7	40	12MAY11	20JUN11	16JUL11	24AUG11	65d			
S1-5095B10	Pipe Laying & Connection	50	02DEC10	20JAN11	06MAR11	26APR11	96d			
S1-5095B20	Sleeve Pipe Grouting	10	21JAN11	30JAN11	27APR11	06MAY11	96d			
S1-5100	Backfilling & Reinstatement	30	31JAN11	01MAR11	07MAY11	03JUN11	96d			
S1-5100A	Portion E2 Pipe Works CH977.7-995.5 (O)	25	21JUN11	15JUL11	25AUG11	18SEP11	65d			
S1-5100B	Portion E2 Pipe Works CH977.7-995.5 (O)	25	21JUN11	15JUL11	25AUG11	18SEP11	65d			
S1-5100C10	TL-E SWM Sleeve Jacking CH990.0-225.5 (A1-A4)	120	04OCT10	31JAN11	09DEC10	06APR11	65d			
S1-5100A10	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	13MAY10	11JUL10	96d			
S1-5100A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	13MAY10	11JUL10	96d			
S1-5100B10	Excavation & Shoring for Jacking Pit (A4)	60	06FEB10	06APR10	13MAY10	11JUL10	96d			
S1-5100B20	Jacking Pit Set-up (TL-E)	50	07APR10	28MAY10	12JUL10	03OCT10	96d			
S1-5100B30	Excavation & Shoring for Receiving Pit (A1)	42	29JUN10	09AUG10	03OCT10	13NOV10	96d			
S1-5100C10	Sleeve Pipe Installation by Jacking	9	10AUG10	16AUG10	14NOV10	23MAY11	96d			
S1-5105	TL-E DN800 SWM Pipe Installation CH990.0-225.5	30	09OCT10	06NOV10	12JAN11	10FEB11	96d			
S1-5105B10	Pipe Laying & Connection	10	07NOV10	17NOV10	02APR11	11APR11	146d			
S1-5105B20	Backfilling & Reinstatement of Jacking Pit	30	17NOV10	16DEC10	12APR11	11MAY11	146d			
S1-5120	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	17APR11	11MAY11	21JUN11	15JUL11	65d			
S1-5120A	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	142	08MAR10	25JUL10	05MAY10	23SEP10	146d			
S1-5130	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	60	06FEB10	06APR10	09DEC10	09FEB11	306d			
S1-5130A10	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	09DEC10	09FEB11	306d			
S1-5130A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	09DEC10	09FEB11	306d			
S1-5130B10	Excavation & Shoring for Jacking Pit (A3)	14	18SEP10	01OCT10	07FEB11	27FEB11	142d			
S1-5130C10	Sleeve Pipe Installation by Jacking	30	18SEP10	17OCT10	12JAN11	10FEB11	26d			
S1-5135	TL-F DN800 SWM Pipe Installation CH252.0-432.0	50	01FEB11	22MAR11	07APR11	26MAY11	20d			
S1-5135B10	Pipe Laying & Connection	25	07NOV10	01DEC10	11FEB11	07MAR11	65d			
S1-5135B20	Sleeve Pipe Grouting	10	02DEC10	11DEC10	10AUG11	19AUG11	251d			
S1-5135B30	Backfilling & Reinstatement	30	12DEC10	10JAN11	20AUG11	18SEP11	251d			
S1-5140	Area E2 Portional Pipe Testing	14	07SEP11	20SEP11	19OCT11	01NOV11	42d			
S1-5140B10	Area E2 Portional Pipe Testing	14	01APR11	14APR11	19OCT11	01NOV11	201d			
Portion F										
S1-6010	Portion F Pipe Works CH995.5-1240.5 (O)	180	23NOV10	21MAY11	22JAN11	20JUL11	60d			
S1-6010B10	Stage 1 Excavation & Shoring CH1060-1240.5	100	24MAR10	01JUL10	03MAR11	10JUN11	344d			
S1-6010B20	Formation Trimming	10	02JUL10	11JUL10	11JUN11	20JUL11	344d			
S1-6010B30	Pipe Laying & Connection (Welding)	30	12JUL10	10AUG10	21JUN11	20JUL11	344d			
S1-6010B40	Backfilling & Reinstatement	50	11AUG10	28SEP10	21JUL11	06SEP11	344d			
S1-6010C10	Stage 2 Excavation & Shoring CH995.5-1060	40	02DEC10	10JAN11	06SEP11	16OCT11	281d			
S1-6020	Portion F DN800 SWM Works CH432.0-484.7 (O)	120	26JUL10	22NOV10	24SEP10	24JAN11	131d			



3 Months Rolling Program (May 2011)

Start date	Finish date	Run date	Page number	Client
07SEP09	05NOV12	04JAN10	4A	Prisma Systems, Inc.
04JAN10	12MAY11			

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
S1-8020A10	Portion F DN800 SWM Works CH432.0-494.7	120	12NOV10	11MAR11	21JUN11	18OCT11	221d	71d
S1-8030	Area F Portional Pipe Testing	14	22MAY11	04JUN11	19OCT11	01NOV11	150d	148d
S1-7010	Portion H1 Temporary Assess Road	80	29DEC09 A	31JUN10	29DEC09 A	08MAR10	33d	2d
S1-7020	Portion H1 Pipe Works CH1465.5-1516.5 (O)	40	22MAY11	30JUN11	21JUL11	29AUG11	60d	0
S1-7030	Portion H1 Pipe Works CH1516.5-1544.7 (C-S Well)	50	01JUL11	19AUG11	30AUG11	18OCT11	60d	0
S1-7040	Area H1 Portional Pipe Testing	14	29AUG11	02SEP11	19OCT11	01NOV11	60d	55d
S1-8010	Portion J Pipe Works CH0.0-48.0 (O-S Well)	40	23JUL11	06SEP11	06SEP11	18OCT11	42d	20d
S1-8020	Portion J Pipe Works CH48.0-339.0 (O)	30	02OCT10	28JUL11	13NOV10	08SEP11	42d	0
S1-8020B10	Stage 1 Excavation & Shoring CH250-290 S1	55	22JUN10*	30AUG10	23OCT10	23OCT10	69d	0
S1-8020B20	Pipe Laying & Connection (Welding)	20	18AUG10	04SEP10	24OCT10	12NOV10	69d	0
S1-8020B30	Associated Chamber Construction	30	05SEP10	04OCT10	13NOV10	12DEC10	69d	0
S1-8020B40	Backfilling & Reinstatement	15	05OCT10	19OCT10	13DEC10	27DEC10	69d	0
S1-8020B50	Stage 1 Excavation & Shoring CH250-290 S2	20	27FEB11	18MAR11	07MAY11	28MAY11	69d	0
S1-8020B70	Backfilling & Reinstatement	30	19MAR11	17APR11	27MAY11	25JUN11	69d	0
S1-8020C10	Stage 2 Excavation & Shoring CH180-250	55	20OCT10	13DEC10	28DEC10	20FEB11	69d	0
S1-8020C20	Pipe Laying & Connection (Welding)	30	14DEC10	12JAN11	21FEB11	22MAR11	69d	0
S1-8020C30	Associated Chamber Construction	30	13JAN11	11FEB11	23MAR11	21APR11	69d	0
S1-8020C40	Backfilling & Reinstatement	15	12FEB11	28FEB11	22APR11	08MAY11	69d	0
S1-8020D10	Stage 3 Excavation & Shoring CH140-180	35	11OCT10*	14NOV10	11JUL11	14AUG11	273d	0
S1-8020D20	Pipe Laying & Connection (Welding)	20	15NOV10	04DEC10	15AUG11	03SEP11	273d	0
S1-8020D30	Associated Chamber Construction	30	05DEC10	03JAN11	04SEP11	03OCT11	273d	0
S1-8020D40	Backfilling & Reinstatement	15	04JAN11	18JAN11	04OCT11	18OCT11	273d	251d
S1-8020E10	Stage 4 Excavation & Shoring CH48-CH140	50	19JUN11	07AUG11	11JUL11	29AUG11	22d	0
S1-8020E20	Pipe Laying & Connection (Welding)	20	08AUG11	27AUG11	30AUG11	18SEP11	22d	0
S1-8020E30	Associated Chamber Construction	20	29AUG11	18SEP11	18SEP11	09OCT11	22d	0
S1-8020E40	Backfilling & Reinstatement	10	17SEP11	26SEP11	09OCT11	18OCT11	22d	0
S1-8020F10	Stage 5 Excavation & Shoring CH290-340	50	03MAY11	21JUN11	11JUL11	28AUG11	69d	0
S1-8020F20	Pipe Laying & Connection (Welding)	30	22JUN11	21JUL11	30AUG11	28SEP11	69d	0
S1-8020F30	Backfilling & Reinstatement	20	22JUL11	10AUG11	29SEP11	18OCT11	69d	47d
S1-8030	Portion J Kiosk for RTU & Connect To SCADA	30	23JUL11	27AUG11	18SEP11	18OCT11	52d	30d
S1-8030B10	Portion J Kiosk for RTU & Connect To SCADA	30	21OCT10	18NOV10	19SEP11	18OCT11	334d	312d
S1-8040	Portion J Pipe Works CH339.0-386.4 (TL-D)	209	17MAR10	11OCT10	28APR10	22NOV10	42d	0
S1-8040A10	Preparation & Submission of Risk Assessment	28	03MAR10	30MAR10	06OCT10	02NOV10	217d	0
S1-8040A20	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	06OCT10	02NOV10	217d	0
S1-8040A30	Preparation & Submission of Temp. Works	28	03MAR10	30MAR10	06OCT10	02NOV10	217d	161d
S1-8040A40	Granting of Excavation Permit	0	01SEP10*	27OCT10	27OCT10	27NOV10	56d	0
S1-8040B10	TIA, UD & Trial Pit Excavation	25	08SEP10	02OCT10	03NOV10	27NOV10	56d	0
S1-8040B20	Access Shaft Fabrication	65	23OCT10	28DEC10	18DEC10	20FEB11	56d	0
S1-8040B30	Heading Tunnel Excavation (Hard Shield)	70	27DEC10	08MAR11	21FEB11	01MAY11	56d	0
S1-8040B40	Pipe Installation Inside Heading Tunnel	40	07MAR11	19APR11	02MAY11	10JUN11	56d	0
S1-8040B50	Backfilling & Reinstatement	10	16APR11	25APR11	11JUN11	20JUN11	56d	0
S1-8050	Portion J Pipe Works CH386.4-436.4 (O)	40	26APR11	04JUN11	21JUN11	30JUL11	56d	0
S1-8060	Portion J Pipe Works DN1000 CH0.0-22.7 (O)	80	05JUN11	23AUG11	31JUL11	19OCT11	58d	34d
S1-8070	Area J Portional Pipe Testing	14	27SEP11	10OCT11	19OCT11	01NOV11	22d	21d
S1-9010	Within 365 Days Commencement of Portion K	365	07SEP09 A	08SEP10	07SEP09 A	11DEC10	94d	0
S1-9020	Portion K Initial Survey	15	09SEP10	23SEP10	12DEC10	25DEC10	94d	0
S1-9030	Portion K Utilities Detection & Trial Pit	20	24SEP10	13OCT10	27DEC10	15JAN11	94d	0
S1-9040B10	Portion K Utilities Detection & Trial Pit	10	16MAY11*	16MAY11*	16MAY11*	29MAY11*	0	0
S1-9040	Portion K Pipe Works (Construction of MBV)	200	14OCT10	01MAY11	16JAN11	03AUG11	94d	0
S1-9040B10	MBV Installation & Associated Duct Works	90	26MAY11	23AUG11	20JUN11	17SEP11	25d	0

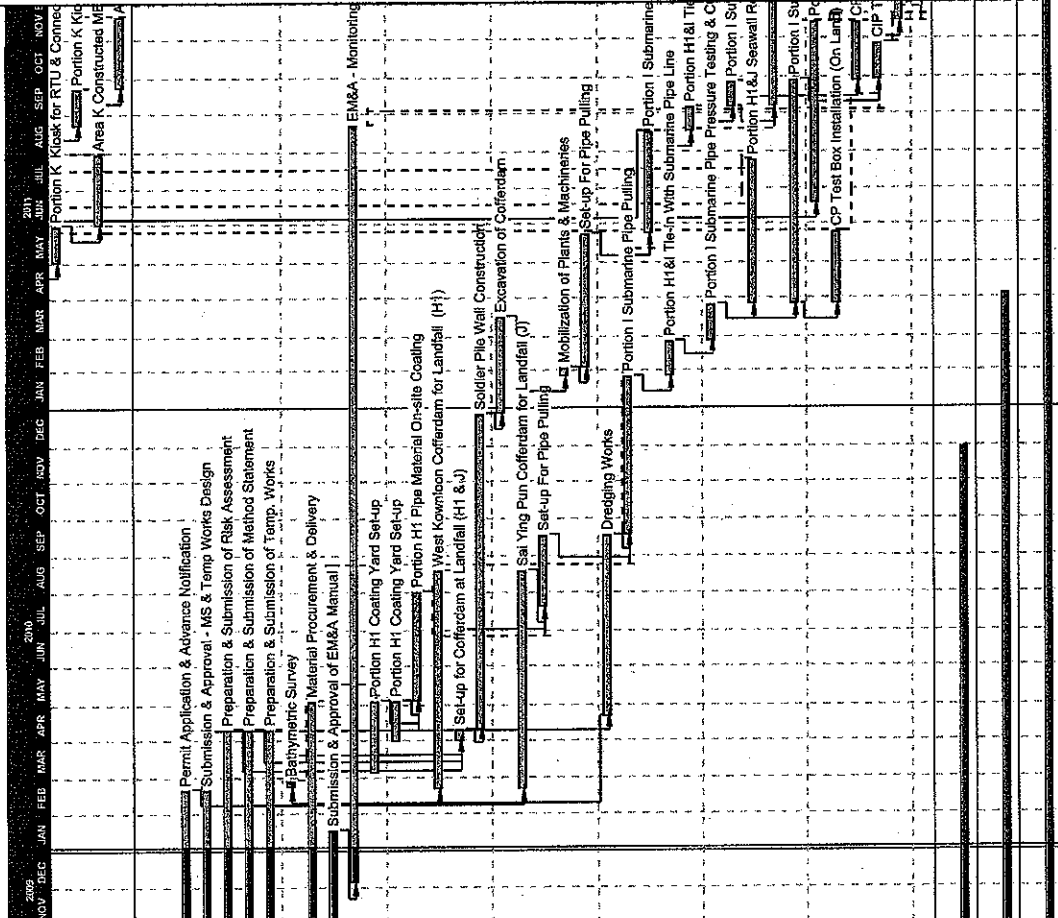
3 Months Rolling Program (May 2011)

Start date 07SEP09
 Finish date 05NOV12
 Data date 04JAN10
 Run date 12MAY11
 Page number 5A
 c:Prisma Systems, Inc.

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

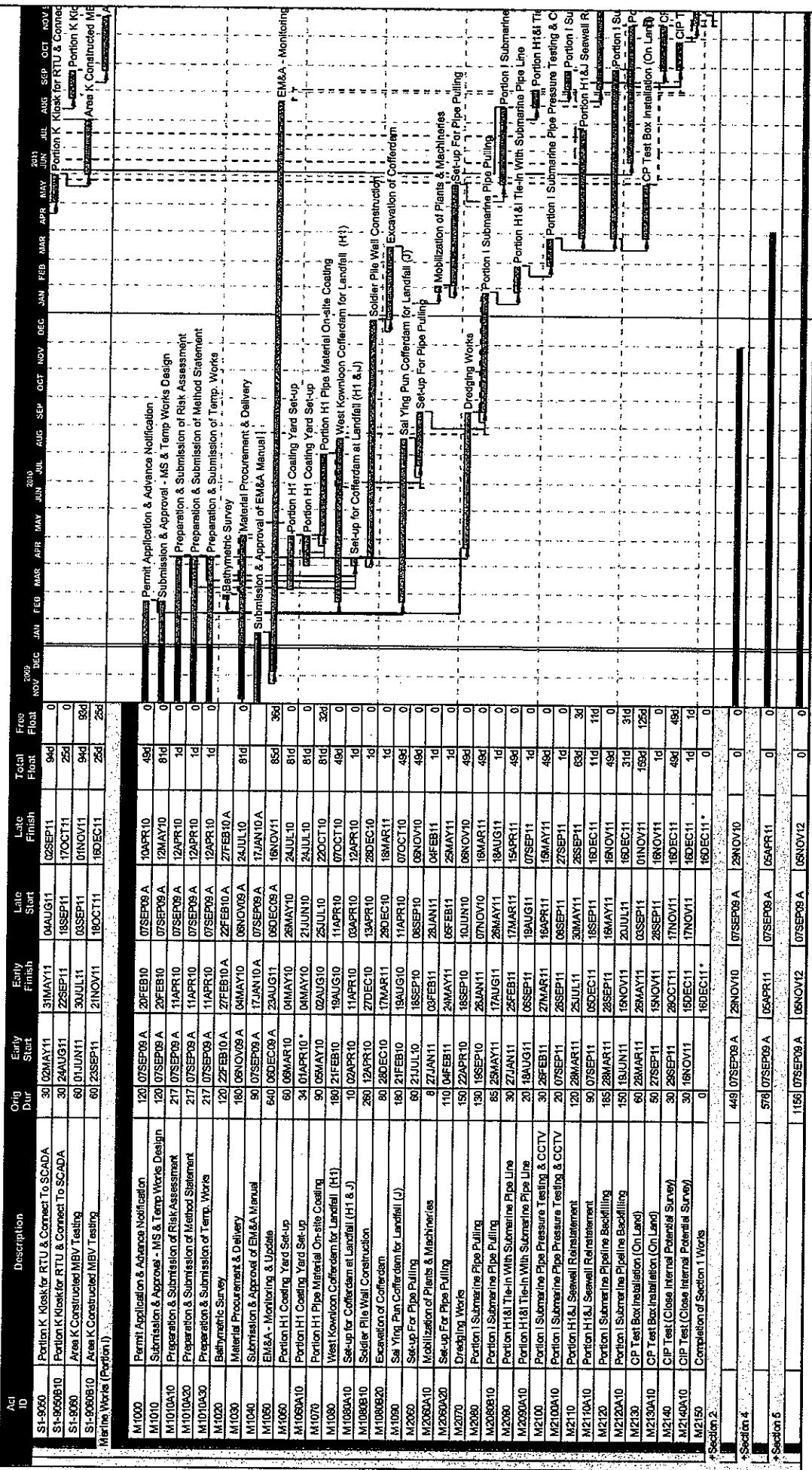
Wo Hing - Penta-Ocean Joint Venture

Act ID	Description	Orig Dur	Esty Start	Esty Finish	Late Start	Late Finish	Total Float	Free Float
M1000	Permit Application & Advance Notification	120	07SEP09 A	20FEB10	07SEP09 A	10APR10	49d	0
M1010	Submission & Approval - MS & Temp Works Design	120	07SEP09 A	20FEB10	07SEP09 A	12MAY10	81d	0
M1010A10	Preparation & Submission of Risk Assessment	217	07SEP09 A	11APR10	07SEP09 A	12APR10	1d	0
M1010A20	Preparation & Submission of Method Statement	217	07SEP09 A	11APR10	07SEP09 A	12APR10	1d	0
M1010A30	Preparation & Submission of Temp. Works	217	07SEP09 A	11APR10	07SEP09 A	12APR10	1d	0
M1020	Bathymetric Survey	120	22FEB10 A	27FEB10 A	22FEB10 A	27FEB10 A	0	0
M1030	Material Procurement & Delivery	180	06NOV09 A	19MAY10	06NOV09 A	24JUL10	81d	0
M1040	Submission & Approval of EM&A Manual	90	07SEP09 A	17JAN10 A	07SEP09 A	17JAN10 A	0	0
M1050	EM&A - Monitoring & Update	640	08DEC09 A	23AUG11	08DEC09 A	16NOV11	85d	36d
M1060	Portion H1 Coating Yard Set-up	60	06MAR10	04MAY10	06MAR10	24JUL10	81d	0
M1070	Portion H1 Pipe Material On-site Coating	30	05MAY10	02AUG10	05MAY10	20OCT10	81d	32d
M1080A10	West Kowloon Cofferdam for Landfall (H1)	180	21FEB10	19AUG10	21FEB10	07OCT10	49d	0
M1080A20	Setup for Cofferdam at Landfall (H1 & J)	10	02APR10	11APR10	03APR10	12APR10	1d	0
M1080B10	Solder Pile Wall Construction	260	12APR10	27DEC10	13APR10	29DEC10	1d	0
M1080B20	Excavation of Cofferdam	90	28DEC10	17MAY11	28DEC10	18MAY11	1d	0
M1090	Sai Ying Pun Cofferdam for Landfall (J)	180	21FEB10	19AUG10	11APR10	07OCT10	49d	0
M2060	Set-up For Pipe Pulling	80	21JUL10	19SEP10	08SEP10	09MAY10	49d	0
M2060A10	Mobilization of Plants & Machines	110	04FEB11	09FEB11	28MAY11	04FEB11	1d	0
M2060A20	Set-up For Pipe Pulling	110	04FEB11	24MAY11	09FEB11	28MAY11	1d	0
M2070	Dredging Works	150	22APR10	18SEP10	10JUN10	06NOV10	49d	0
M2080	Portion I Submarine Pipe Pulling	130	19SEP10	26JAN11	07NOV10	16MAY11	49d	0
M2080B10	Portion I Submarine Pipe Pulling	95	25MAY11	17AUG11	26MAY11	18AUG11	1d	0
M2090	Portion H1&J Tie-in With Submarine Pipe Line	30	27JAN11	26FEB11	17MAY11	15APR11	49d	0
M2090A10	Portion H1&J Tie-in With Submarine Pipe Line	20	18AUG11	09SEP11	19AUG11	07SEP11	1d	0
M2100	Portion I Submarine Pipe Pressure Testing & CCTV	30	29FEB11	27MAR11	16APR11	16MAY11	49d	0
M2100A10	Portion I Submarine Pipe Pressure Testing & CCTV	20	07SEP11	26SEP11	08SEP11	27SEP11	1d	0
M2110	Portion H1&J Seawall Reinstatement	120	28MAR11	25JUL11	30MAY11	28SEP11	69d	3d
M2110A10	Portion H1&J Seawall Reinstatement	90	07SEP11	05DEC11	16SEP11	16DEC11	11d	11d
M2120	Portion I Submarine Pipeline Backfilling	195	28MAR11	28SEP11	16MAY11	16NOV11	49d	0
M2120A10	Portion I Submarine Pipeline Backfilling	150	19JUN11	15NOV11	20JUL11	16DEC11	31d	31d
M2130	CP Test Box Installation (On Land)	60	28MAR11	26MAY11	09SEP11	16NOV11	159d	126d
M2130A10	CP Test Box Installation (On Land)	50	27SEP11	15NOV11	26SEP11	16NOV11	1d	0
M2140	CP Test (Close Interval Potential Survey)	30	25SEP11	28OCT11	17NOV11	16DEC11	49d	49d
M2140A10	CP Test (Close Interval Potential Survey)	30	16NOV11	15DEC11	17NOV11	16DEC11	1d	1d
M2150	Completion of Section 1 Works	0	16DEC11*	16DEC11*	16DEC11*	16DEC11*	0	0
Section 2								
		448	07SEP09 A	29NOV10	07SEP09 A	29NOV10	0	0
Section 4								
		579	07SEP09 A	05APR11	07SEP09 A	05APR11	0	0
Section 5								
		1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0	0



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Start date	Finish date	Run date	Page number	Page number	Page number
07SEP09	05NOV12	04JAN10	6A	6A	6A



3 Months Rolling Program (May 2011)

Wo Hing - Penta-Ocean Joint Venture

Start date	07SEP08
Finish date	06NOV12
Data date	04JAN10
Run date	12MAY11
Page number	6A
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Appendix F

ET Weekly Site Inspection Records

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

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	05/05/11	Inspected by	RE	IEC	Contractor	ET
Time	10:00	Name	WONG SIK HING	WONG SIK HING	WONG SIK HING	WONG SIK HING

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

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

	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Environmental Checklist				
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	√			
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	√			
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Compressors and generators should operate with door closed.	√			
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	√			
Water Quality				
Mitigation Measures for Dredging				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.	√			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 light 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	√			

	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Environmental Checklist				
Water Quality				
Mitigation Measures for other Construction Activities				
▪ Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√			
▪ 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, solum, 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 WCZs	√			
▪ Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√			
▪ Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ 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			√	
Waste Management				
C&D Materials				
▪ Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√	
▪ C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√	
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√	
▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√	
Chemical Waste				
▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√			
▪ Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√			
▪ The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√			

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


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

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Oil Stains were found from a winch at Portion J.	Follow-up	To clean up the oil stains as chemical waste.	110505_001	12/05/11

Remark

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Inspected by	Name	Signature	Date
	Linda Law		05 May 2011

Photos

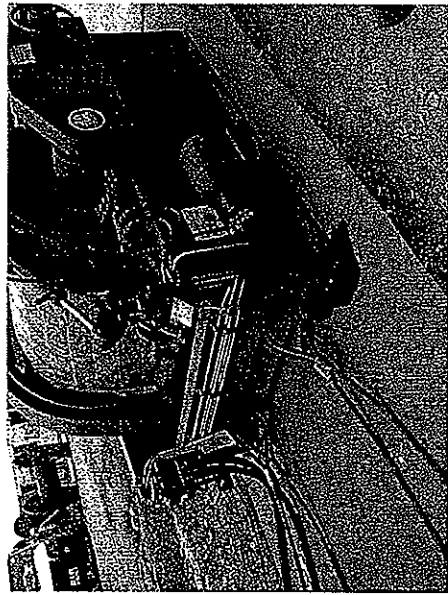


Photo 110505_001 (Portion J)

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	12/05/11	Inspected by	RE	IEC	Contractor	ET
Time	14:00	Name				Richard Ickelton

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong
 Temperature : 33°C
 Humidity : High / Moderate / Low

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

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Noise Impact				
• The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
• The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓			
• Noisy equipment and mobile plant shall always be site away from NSRs.	✓			
• Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
• Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
• Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓			
• Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓			
• Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
• Air compressors and hand held breakers should have noise labels.	✓			
• Compressors and generators should operate with door closed.	✓			
• Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓			
Water Quality				
Mitigation Measures for Dredging				
• Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.			✓	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, scurm, litter or other objectionable matter to be present in the water within the site or dumping grounds				
• Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	✓			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	
Water Quality					
Mitigation Measures for other Construction Activities					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	✓			
▪	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 burds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour W CZs	✓			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	✓			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	✓			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓			
▪	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			✓	
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			✓	
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			✓	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			✓	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			✓	
Chemical Waste					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	✓			
▪	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	✓			
▪	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	✓			



Implementation Stages*		Remark	
		Yes	No
Waste Management			
General Refuse			
√			
√			
√			
Marine Dredged Sediment (During transportation and disposal)			
			√ No dredging work was observed.
			√ No dredging work was observed.
			√ No dredging work was observed.
Site Practices			
√			
√			
√			
	√		Item 2
√			
Waste Reduction Measures			
√			
√			
√			
√			
√			

Implementation Stages*		Remark	
		Yes	No
Environmental Checklist			
Marine Ecology			
Use of one grab dredger only with a maximum production rate of 4,000m ³ 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.	✓		
Good Site Practices			
The Environmental Permit should be displaced conspicuously on site.	✓		
Construction noise permits should be posted at site entrance or available for site inspection.	✓		
Chemical storage area provided with lock and located on sealed areas.	✓		
All chemicals should be placed at the banded area with adequate band capacity (> 110% of largest tank).	✓		
Any unused chemicals or those with remaining functional capacity should be recycled.	✓		
All generators, fuel and oil storage are within bundle areas.	✓		
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
1	Follow up action to item 1 on 05/05/11, oil Stains found from a winch at Portion J were cleaned up.	---	---	110512_001	---
2	Rubbish was noted inside the silt screen at Kowloon South Salt Water Pumping Station.	Follow-up	To collect and dispose of the rubbish regularly.	110512_002	18/05/11

Remark

Inspected by	Name Linda Law
	Signature <i>Linda Law</i>
	Date 12 May 2011

Photos

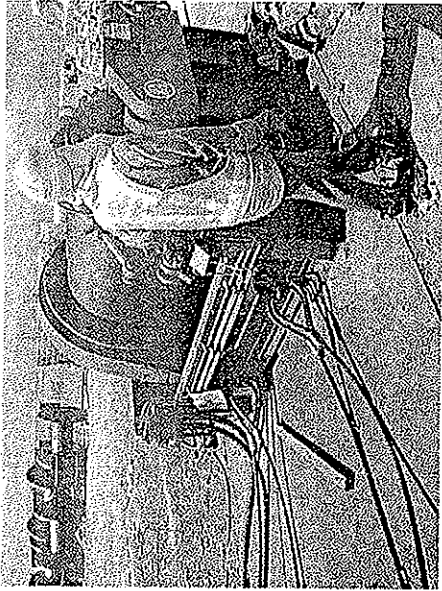


Photo 110512_001 (Portion J)



Photo 110512_002 (Portion H)

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	18/05/2011	Inspected by	RE [Signature]	IEC	Contractor	ET
Time	10:00	Name	[Signature]		JWG [Signature]	13026 [Signature]

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Calm (Light) Breeze / Strong
 Wind :
 Temperature : 27°C
 Humidity : High / Moderate (Low)

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

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	✓			
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓			
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓			
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Compressors and generators should operate with door closed.	✓			
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓			
Water Quality				
Mitigation Measures for Dredging				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.			✓	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, scurm, 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	
Water Quality					
Mitigation Measures for other Construction Activities					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√			
▪	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, scurm, 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 WCZs	√			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪	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				√
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√	
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√	
Chemical Waste					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√			
▪	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√			
▪	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√			

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

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Marine Ecology					
<input type="checkbox"/>	Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.			√	No dredging work was observed.
<input type="checkbox"/>	Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
<input type="checkbox"/>	Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√			
<input type="checkbox"/>	Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√			
Good Site Practices					
<input type="checkbox"/>	The Environmental Permit should be displaced conspicuously on site.	√			
<input type="checkbox"/>	Construction noise permits should be posted at site entrance or available for site inspection.	√			
<input type="checkbox"/>	Chemical storage area provided with lock and located on sealed areas.	√			
<input type="checkbox"/>	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
<input type="checkbox"/>	Any unused chemicals or those with remaining functional capacity should be recycled.	√			
<input type="checkbox"/>	All generators, fuel and oil storage are within bundle areas.	√			
<input type="checkbox"/>	Oil leakage from machinery, vehicle and plant should be prevented.	√			
<input type="checkbox"/>	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
<input type="checkbox"/>	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 bundled and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			



Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Follow up action to item 2 on 12/05/11, rubbish inside the silt screen at Kowloon South Salt Water Pumping Station was collected.	---	---	110518_001	---

Remark

No defective observation was recorded during the weekly site inspection.

Inspected by	Name Linda Law	Signature <i>Linda Law</i>	Date 18 May 2011
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Photos



Photo 110518_001 (Portion H)

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	25/05/2011	Inspected by	RE ABE Ekin Yip	IEC Initials	Contractor	JMG	ET	C.L. Lau
Time	14:00	Name	sm					

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

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
Fugitive Dust Emission				
<ul style="list-style-type: none"> ▪ 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 reinsulated 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	
Noise Impact					
<input checked="" type="checkbox"/>	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Noisy equipment and mobile plant shall always be site away from NSRs.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Air compressors and hand held breakers should have noise labels.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Compressors and generators should operate with door closed.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	<input checked="" type="checkbox"/>			
Water Quality					
Mitigation Measures for Dredging					
<input checked="" type="checkbox"/>	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.	<input checked="" type="checkbox"/>			No dredging work was observed.
<input checked="" type="checkbox"/>	Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.	<input checked="" type="checkbox"/>			No dredging work was observed.
<input checked="" type="checkbox"/>	Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>			No dredging work was observed.
<input checked="" type="checkbox"/>	The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	<input checked="" type="checkbox"/>			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
•	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped.	✓			
•	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, solum, 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 WCZ under the IM-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.			✓	
Waste Management					
C&D Materials					
•	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			✓	
•	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			✓	
•	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed.			✓	
•	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			✓	
Chemical Waste					
•	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	✓			
•	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	✓			
•	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	✓			

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


Implementation Stages*		Remark	
		Yes	No
Environmental Checklist			
Marine Ecology			
Use of one grab dredger only with a maximum production rate of 4,000m ³ 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.	√		
Good Site Practices			
The Environmental Permit should be displaced conspicuously on site.	√		
Construction noise permits should be posted at site entrance or available for site inspection.	√		
Chemical storage area provided with lock and located on sealed areas.	√		
All chemicals should be placed at the banded area with adequate bund capacity (> 110% of largest tank).	√		
Any unused chemicals or those with remaining functional capacity should be recycled.	√		
All generators, fuel and oil storage are within 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 defective observation was recorded during the weekly site inspection.

Inspected by	Name	Signature	Date
	C. L. Lau		25 May 2011

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun



英業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Photos

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WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	3/15/11	Inspected by	RE	IEC	Contractor	ET
Time	9:30	Name	W. H. K. (with initials)		J. J. (with signature)	C. h. Lam (with signature)

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

Environmental Checklist

Fugitive Dust Emission	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
<ul style="list-style-type: none"> Dust control / mitigation measures shall be provided to prevent dust nuisance. 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	
Noise Impact					
▪ The approved method of working, equipment, and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓				
▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓				
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	✓				
▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓				
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓				
▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓				
▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓				
▪ Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓				
▪ Air compressors and hand held breakers should have noise labels.	✓				
▪ Compressors and generators should operate with door closed.	✓				
▪ Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓				
Water Quality					
Mitigation Measures for Dredging					
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.			✓		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 Sail 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	
Water Quality					
Mitigation Measures for other Construction Activities					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√			
▪	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 WCs	√			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 194). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.		√		Item 2
▪	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				√
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√	
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√	
Chemical Waste					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√			
▪	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√			
▪	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√			

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

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Marine Ecology					
▪	Use of one grab dredger only with a maximum production rate of 4,000m ³ 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.	√			
Good Site Practices					
▪	The Environmental Permit should be displaced conspicuously on site.	√			
▪	Construction noise permits should be posted at site entrance or available for site inspection.	√			
▪	Chemical storage area provided with lock and located on sealed areas.	√			
▪	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
▪	Any unused chemicals or those with remaining functional capacity should be recycled.	√			
▪	All generators, fuel and oil storage are within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant should be prevented.		√		Item 1,3 & 4
▪	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
▪	A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			




Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Oil/paint cans were found on the Launching Barge.	Follow-up	To put the cans inside a tray to avoid oil leakage.	110531_001	08/06/11
2	Water leakage from an air-conditioner was found on the Launching Barge.	Follow-up	To connect the water outlet of the air-conditioner to an appropriate container.	110531_002 & 003	08/06/11
3	Large engine on the Launching Barge was found without container under the engine.	Follow-up	To place large tray under the engine or sand bags surround the engine to avoid leakage of fuel/oil on the barge.	110531_004	08/06/11
4	Lubricant was noted before the access to the Launching Barge.	Follow-up	To place sand bags surround the area of lubricant to prevent oil pollution of the sea.	110531_005	08/06/11

Remark

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Inspected by	
Name C. L. Lau	Signature 
	Date 31 May 2011

Photos

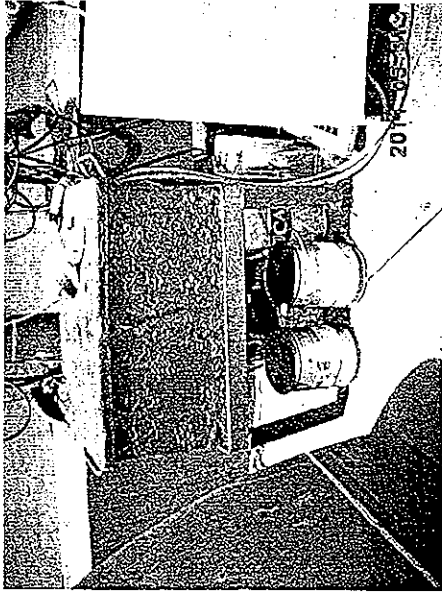


Photo 110531_001 (Oil/paint can on the Launching Barge)

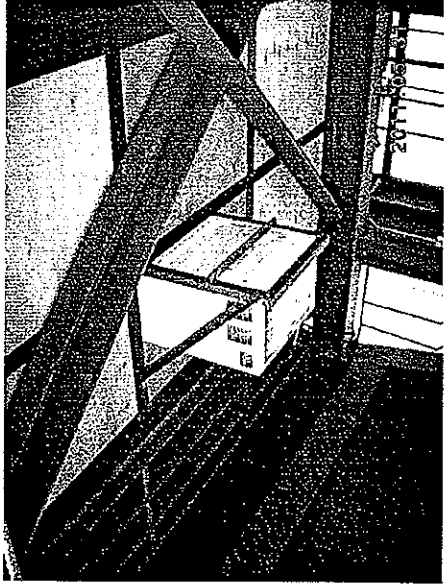


Photo 110531_002 (Water leakage on Launching Barge)



Photo 110531_003 (Water leakage on Launching Barge)

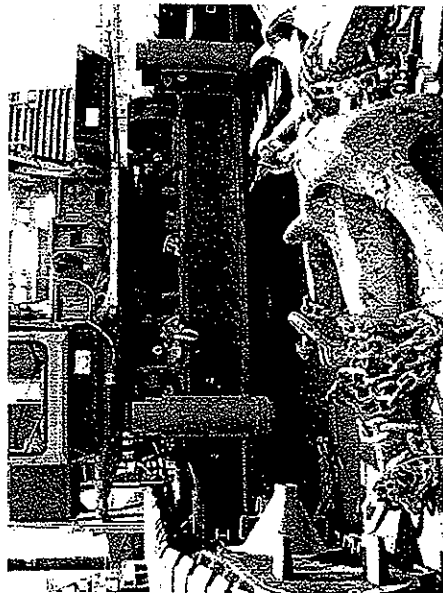


Photo 110531_004 (Engine on Launching Barge)



Photo 110531_005 (Lubricant noted before the access to the Launching Barge)



Appendix G

Implementation Schedule of Mitigation Measures



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



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



Environmental Protection Measures		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
Waste Management						
Good Site Practices						
<ul style="list-style-type: none"> ▪ 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 		All areas	√			
<ul style="list-style-type: none"> ▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers 		All areas	√			
Waste Reduction Measures						
<ul style="list-style-type: none"> ▪ 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 		All areas	√			
<ul style="list-style-type: none"> ▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal 		All areas	√			
<ul style="list-style-type: none"> ▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force 		All areas	√			
<ul style="list-style-type: none"> ▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials 		All areas	√			
<ul style="list-style-type: none"> ▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste 		All areas	√			
Marine Ecology						
<ul style="list-style-type: none"> ▪ Use of one grab dredger only with a maximum production rate of 4,000m³ per day for dredging. ▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress. ▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress. ▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain. 		Marine				√
<ul style="list-style-type: none"> ▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress. 		Marine				√
<ul style="list-style-type: none"> ▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress. 		Marine		√		
<ul style="list-style-type: none"> ▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain. 		Marine	√			
Good Site Practices						
<ul style="list-style-type: none"> ▪ The Environmental Permit should be displaced conspicuously on site. ▪ Construction noise permits should be posted at site entrance or available for site inspection. ▪ Chemical storage area provided with lock and located on sealed areas ▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). ▪ Any unused chemicals or those with remaining functional capacity should be recycled. ▪ All generators, fuel and oil storage are within bundle areas. ▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. ▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system. 		All areas	√			
<ul style="list-style-type: none"> ▪ Construction noise permits should be posted at site entrance or available for site inspection. 		All areas	√			
<ul style="list-style-type: none"> ▪ Chemical storage area provided with lock and located on sealed areas 		All areas	√			
<ul style="list-style-type: none"> ▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). 		All areas	√			
<ul style="list-style-type: none"> ▪ Any unused chemicals or those with remaining functional capacity should be recycled. 		All areas	√			
<ul style="list-style-type: none"> ▪ All generators, fuel and oil storage are within bundle areas. 		All areas	√			
<ul style="list-style-type: none"> ▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. 		All areas	√			
<ul style="list-style-type: none"> ▪ 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. 		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. THE DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NO. 241239/05-1 TO 05.

LEGEND:
 PROPOSED FRESH WATER MAIN
 PROPOSED SANITARY MAIN
 PROPOSED SEWER MAIN
 R/W, E/T
 SECTION A (SECTION 1)
 SECTION B
 SECTION C (SECTION 2)
 SECTION D
 SECTION E (SECTION 3)
 SECTION F
 SECTION G
 SECTION H
 SECTION I
 SECTION J
 SECTION K
 SECTION L
 SECTION M
 SECTION N
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 SECTION P
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 SECTION R
 SECTION S
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 SECTION V
 SECTION W
 SECTION X
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 SECTION 3
 SECTION 4

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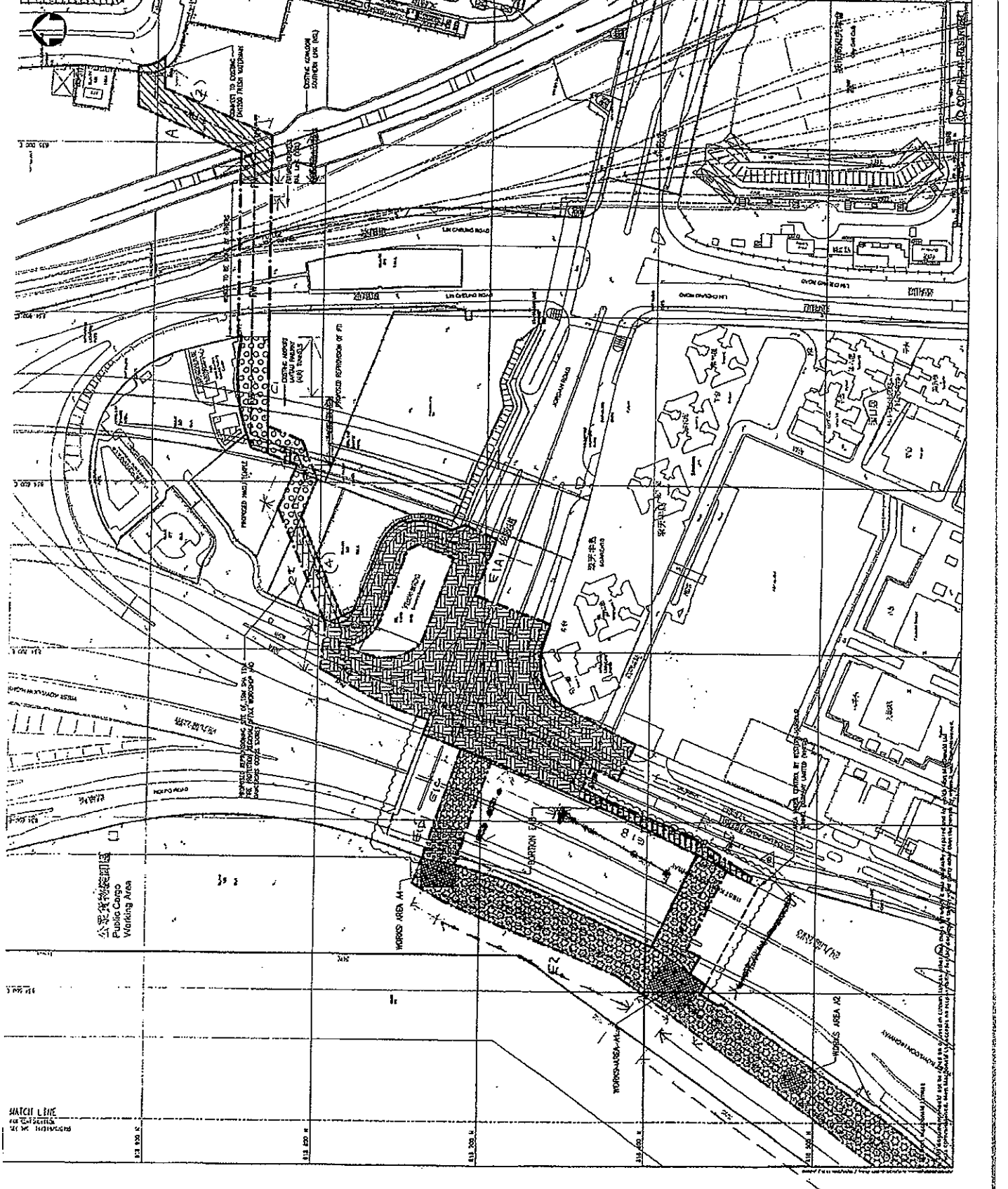
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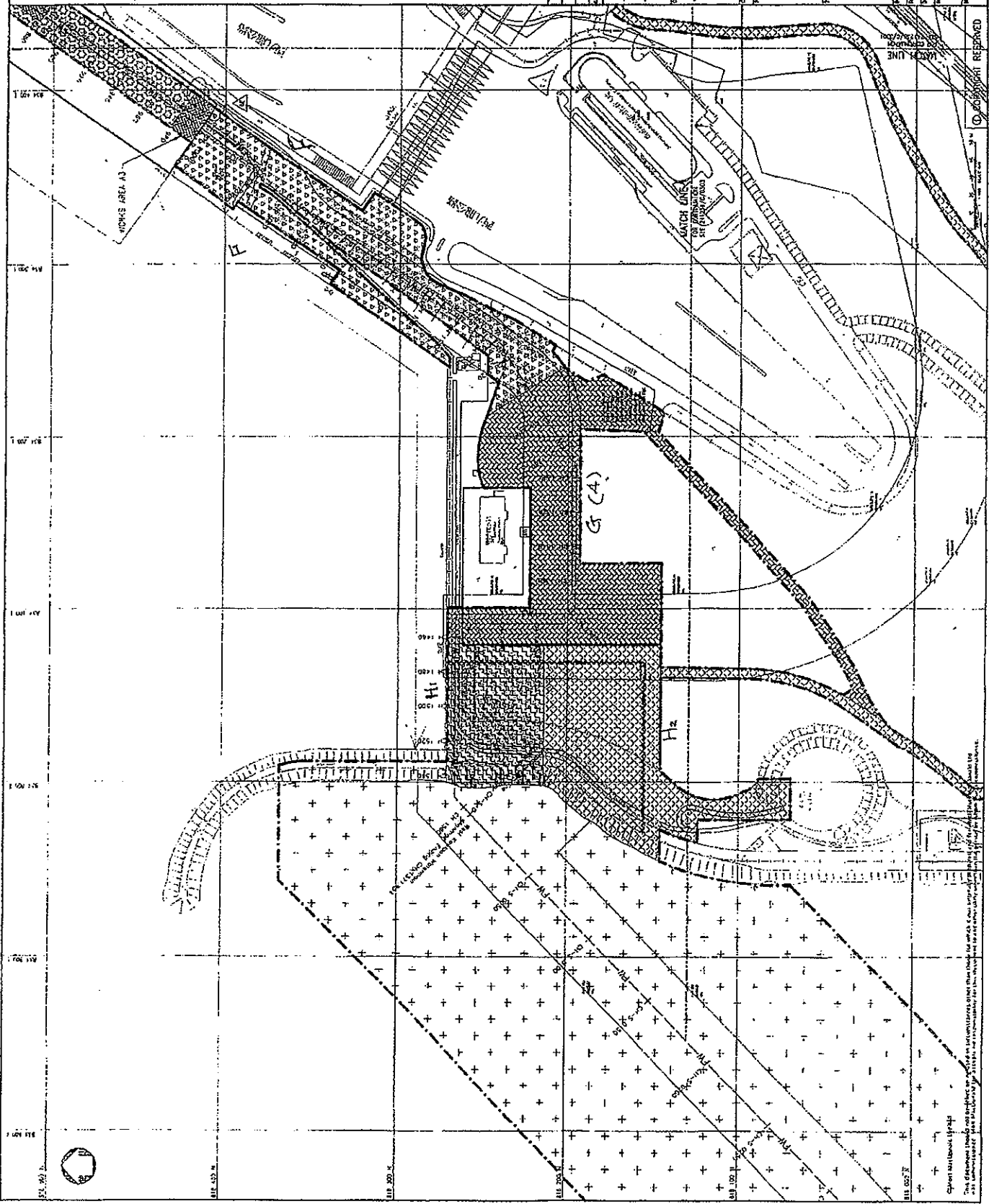
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SECTION 1
 SECTION 2
 SECTION 3
 SECTION 4



NOTES

1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. 14/1315/6/2000 AND DATA 12.000.
2. THE 1:10000 SCALE MAP IS BASED ON DATUM 1950.



DATE	BY	REVISION
14/1315/6/2000	MM	1. INITIAL DESIGN
14/1315/6/2000	MM	2. REVISED DESIGN
14/1315/6/2000	MM	3. FINAL DESIGN

mm Mott MacDonald
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 Fax: 2522 1112

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

Project No. 9/WS/7/08

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

POSSESSION OF SITE
 (SHEET 2 OF 5)

Scale	1:1000 (ON)	Date	24/12/09
Author	MM	Checked	MM
Drawn	MM	Approved	MM
Project No.	9/WS/7/08	Sheet No.	2
Project Name	Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sa Ying Pun	Scale	1:1000 (ON)

24/12/09/9/0302

RESERVED

- NOTES :
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/G/0301 TO 0302 AND 0304 TO 0305.
 2. THE LIGOR SHALL REFER TO DRAWING NO. 241239/G/0301.

01	DATE	12/10/98
02	DESCRIPTION	ISSUE FOR TENDER
03	SCALE	AS SHOWN
04	PROJECT	WATER SUPPLIES DEPARTMENT
05	DRAWN BY	MOTT MACDONALD
06	CHECKED BY	MOTT MACDONALD
07	APPROVED BY	MOTT MACDONALD

Mott MacDonald

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

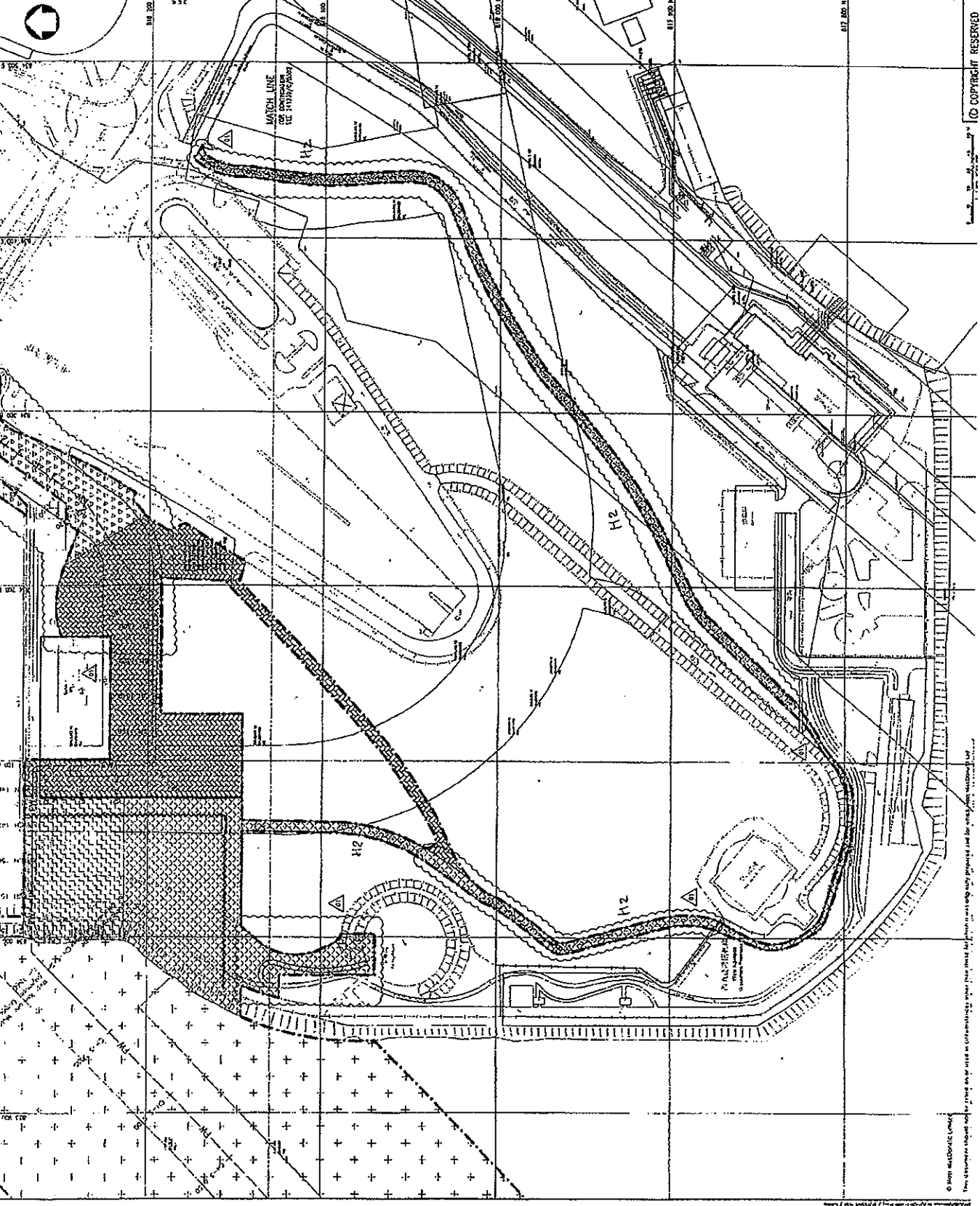
PROJECT NO. 9/1957/08

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

POSSESSION OF SITE
 (SHEET 3 OF 5)

DATE	SCALE	PROJECT	DRAWN BY	CHECKED BY	APPROVED BY
12/10/98	AS SHOWN	9/1957/08	MOTT MACDONALD	MOTT MACDONALD	MOTT MACDONALD
TOTAL		1:1000	04/1	02/7/98	241239
DATE		SCALE		PROJECT	
10/11/98		AS SHOWN		9/1957/08	
DATE		SCALE		PROJECT	
10/11/98		AS SHOWN		9/1957/08	
DATE		SCALE		PROJECT	
10/11/98		AS SHOWN		9/1957/08	

Drawing No. 241239/G/0303



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1:1000

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NOTES :

1. THIS DRAWING SHALL BE MADE IN CONJUNCTION WITH DRAWING NO. S/11239/03/01 TO S/11239/03/02.
2. THE LOT/DOCK SHALL REFER TO DRAWING NO. 241239/0/0304.

DATE	12/11/03	BY	W. H. CHAN
DATE	12/11/03	BY	W. H. CHAN
DATE	12/11/03	BY	W. H. CHAN
DATE	12/11/03	BY	W. H. CHAN
DATE	12/11/03	BY	W. H. CHAN

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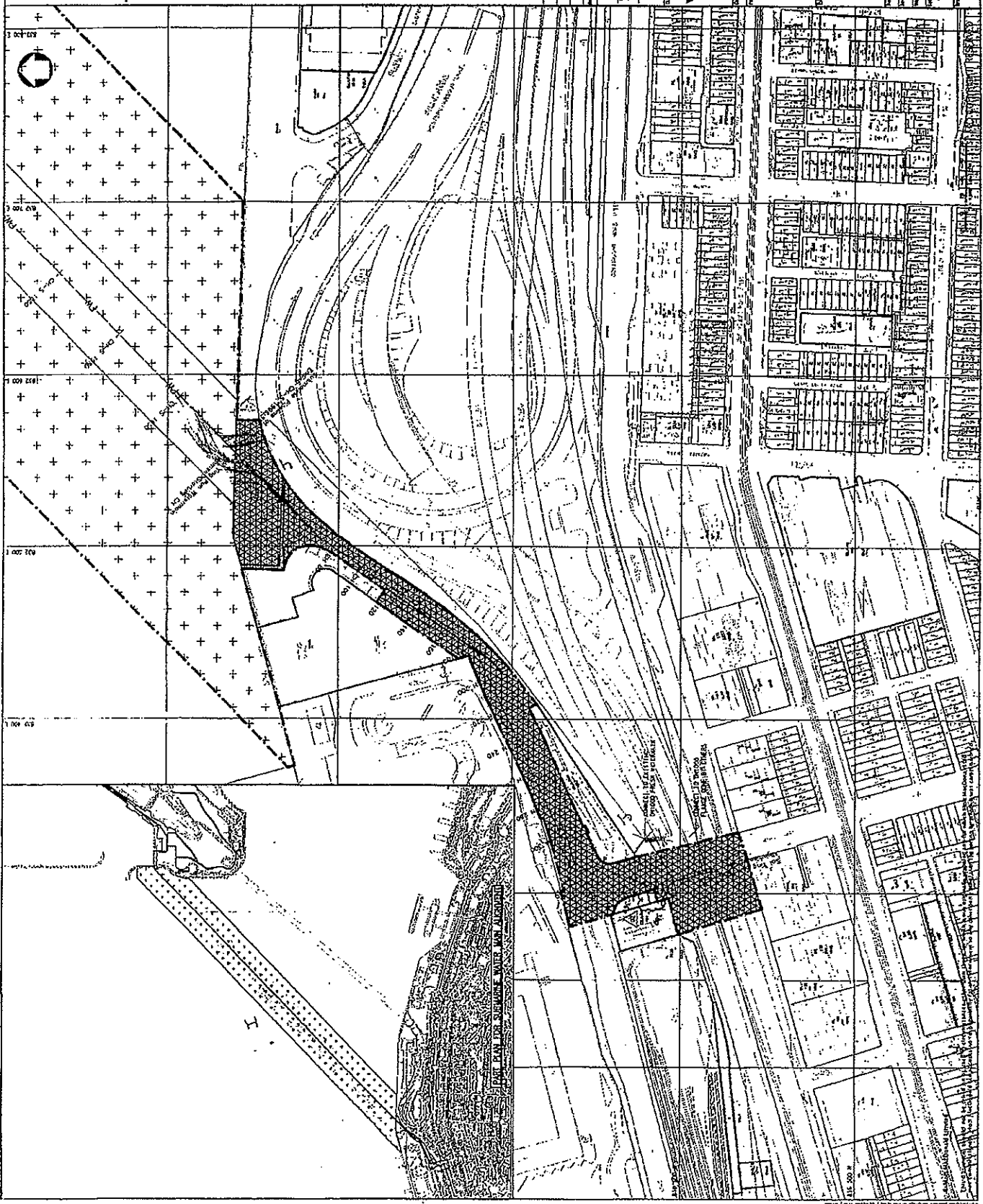
THE GOVERNMENT OF THE HONG KONG
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 WATER SUPPLIES DEPARTMENT

9/NSD/03

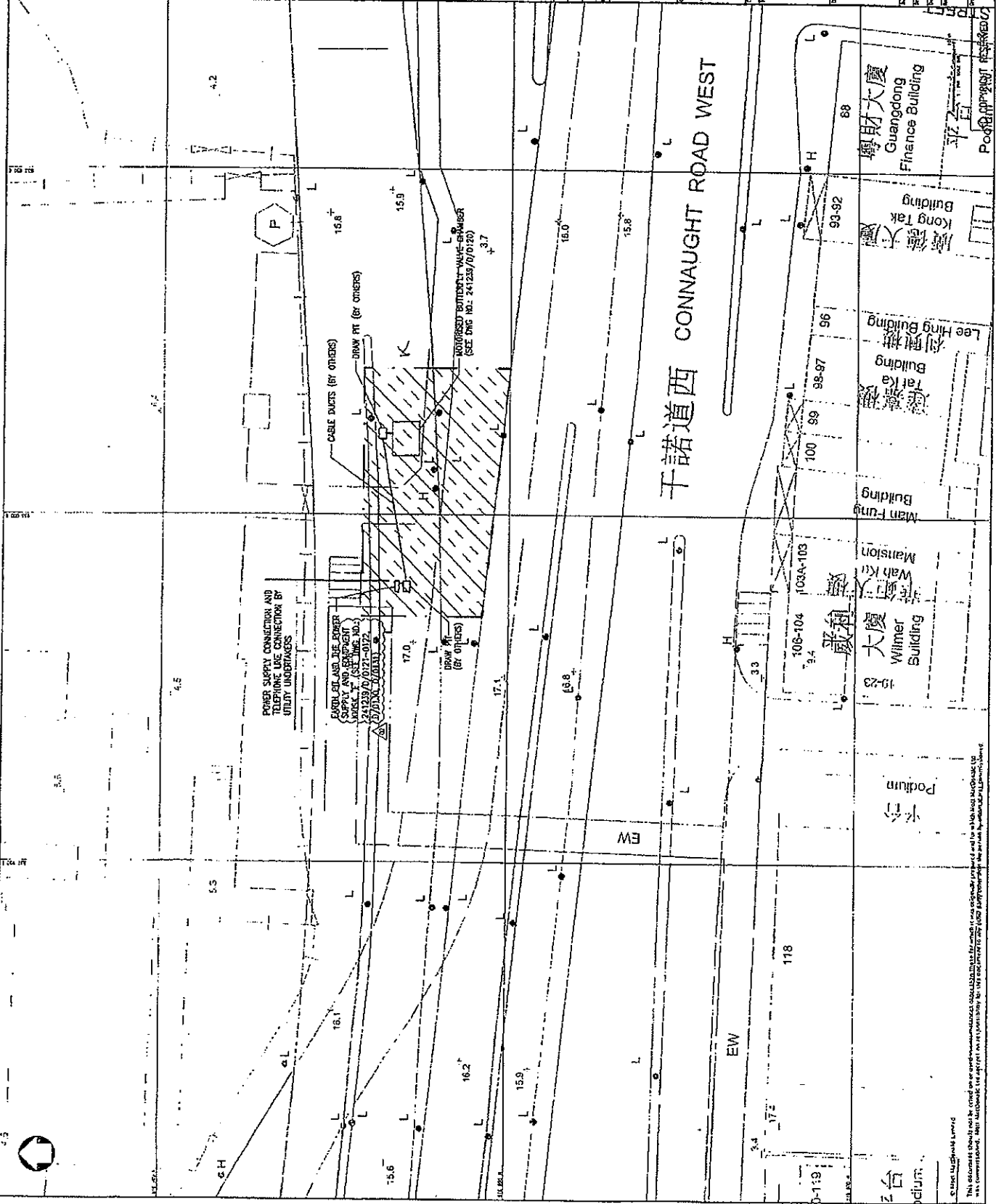
LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND BANKS FROM WEST
 KOWLOON TO SAI YING PUI

POSSESSION OF SITE
 (SHEET 4 OF 5)

Scale	1:1000 (QA)
Project No.	241239
Sheet No.	TEN
Drawing No.	241239/0/0304
Date	02



NOTES
 1. THE CHANGE SHALL BE MADE AT CONSTRUCTION WITH WARNING
 2. THE LOCAL SINK OFFER TO DETERMINE THE 241233/76/0305



NO	DATE	DESCRIPTION	BY	CHECKED
01	10/01/08	ISSUE FOR TENDER	M	J
02	10/01/08	ISSUE FOR TENDER	M	J
03	10/01/08	ISSUE FOR TENDER	M	J
04	10/01/08	ISSUE FOR TENDER	M	J
05	10/01/08	ISSUE FOR TENDER	M	J

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 11th Floor, 110 Queen's Road Central
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THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

PROJECT NO. 9/WS/08
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAN YING PAU

POSSESSION OF SITE
 (SHEET 5 OF 5)

NO	DATE	DESCRIPTION	BY	CHECKED
01	10/01/08	ISSUE FOR TENDER	M	J
02	10/01/08	ISSUE FOR TENDER	M	J
03	10/01/08	ISSUE FOR TENDER	M	J
04	10/01/08	ISSUE FOR TENDER	M	J
05	10/01/08	ISSUE FOR TENDER	M	J

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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)
May 2011

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

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Time Schedule for Noise Monitoring (Evening-time, Night-time and Holiday) (Proposed *)
May 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-May NM Holiday (West Kowloon) (Sai Ying Pun)	02-May	03-May	04-May	05-May	06-May	07-May NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
08-May NM Holiday (West Kowloon) (Sai Ying Pun)	09-May	10-May	11-May	12-May	13-May	14-May NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
15-May NM Holiday (West Kowloon) (Sai Ying Pun)	16-May	17-May	18-May	19-May	20-May	21-May NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
22-May NM Holiday (West Kowloon) (Sai Ying Pun)	23-May	24-May	25-May	26-May	27-May	28-May NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
29-May NM Holiday (West Kowloon) (Sai Ying Pun)	30-May	31-May				

Remark (*): The proposed schedule will be revised depends on the schedule of marine works.

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)
June 2011

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

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Time Schedule for Noise Monitoring (Evening-time, Night-time and Holiday) (Proposed *)
June 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jun	02-Jun	03-Jun	04-Jun
05-Jun	06-Jun	07-Jun	08-Jun	09-Jun	10-Jun	11-Jun
NM Holiday (West Kowloon) (Sai Ying Pun)						NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun
NM Holiday (West Kowloon) (Sai Ying Pun)						NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
NM Holiday (West Kowloon) (Sai Ying Pun)						NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon) (Sai Ying Pun)
26-Jun	27-Jun	28-Jun	29-Jun	30-Jun		
NM Holiday (West Kowloon) (Sai Ying Pun)						

Remark (*): The proposed schedule will be revised depends on the schedule of marine works.



Appendix J

Daily Dredging Summary

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
30-Apr-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
04-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
31-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
04-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-Jun-2010	1,400	2	1,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-Jun-2010	1,400	2	2,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-Jun-2010	2,100	3	4,900	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-Jun-2010	2,800	4	7,700	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-Jun-2010	2,100	3	9,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-Jun-2010	2,700	4	12,500	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-Jun-2010	2,800	4	15,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-Jun-2010	2,100	3	17,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-Jun-2010	2,800	4	20,200	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-Jun-2010	2,100	3	22,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-Jun-2010	2,100	3	24,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-Jun-2010	2,100	3	26,500	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-Jun-2010	2,100	3	28,600	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-Jun-2010	700	1	29,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-Jun-2010	2,100	3	31,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-Jun-2010	1,400	2	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-Jun-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground

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Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
04-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-Jul-2010	0	0	32,800	EP/MD/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

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

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West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
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	1,000	2	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

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

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

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
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
TOTAL =	160,500	274			

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

Wo Hing - Penta-Ocean Joint Venture

Contract no. 9/WSD/08

Laying of Western Cross Harbour Main & Associated Land Mains from
West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 2 Marine Sediment

Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	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
20-07-2010 (18 July 2010)	2,100	3	81,340	EP/MD/11-024
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	--

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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun

Summary of Dumping Qty. of Type 2 Marine Sediment

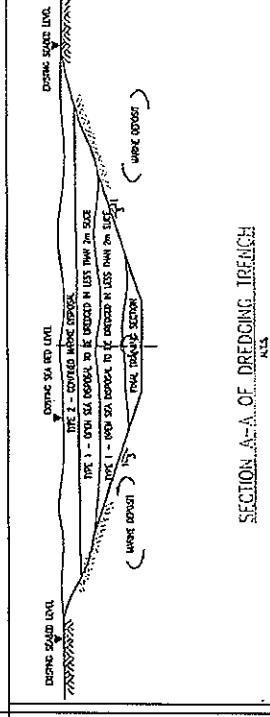
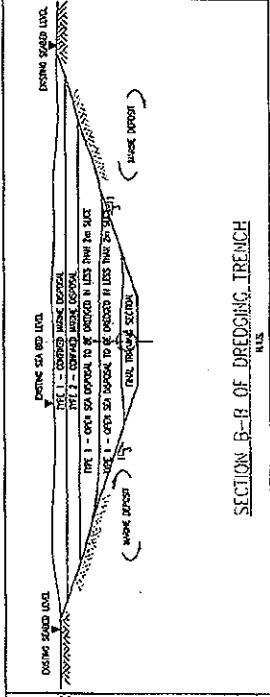
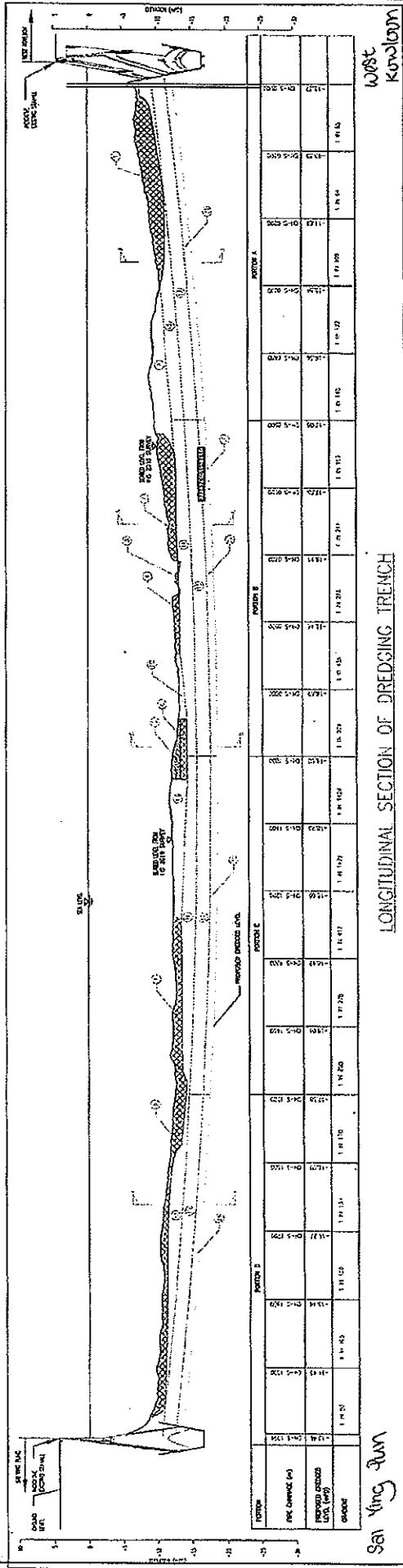
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.
	(bulk volume)		(bulk volume)	
03-Aug-2010	0	0	93,440	
04-Aug-2010	0	0	93,440	
05-Aug-2010	700	1	94,140	
(dump on 06-Aug-10)				
06-Aug-2010	1,500	2	95,640	EP/MD/11-053
07-Aug-2010	700	1	96,340	EP/MD/11-053
08-Aug-2010	2,100	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
TOTAL =	104,990	155		

NOTE:

LOGISTIC OF DREDGINGS

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

IF SIMILAR DISPOSAL SITE IS DEDICATED FOR TYPE 1D AND TYPE 1, MARINE SEDIMENT DREDGING LOGISTIC AT ㉛ WILL BE DELETED AND INCLUDED IN ⑮ AND ㉚



LEGEND:

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

THE NUMBER INDICATE THE SEQUENCE OF DREDGING

CONTRACTOR	WO HING-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	DRAWING TITLE	DREDGING LOGISTIC
DESIGNED BY	STANLEY LEUNG	CHECKED BY	08 Apr 2010	DATE	
DRAWN BY	TONY TANG	SCALE	NTS		
DWG No.	SK-D-002	REVISION	D		



Appendix K

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



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Nil



Appendix L

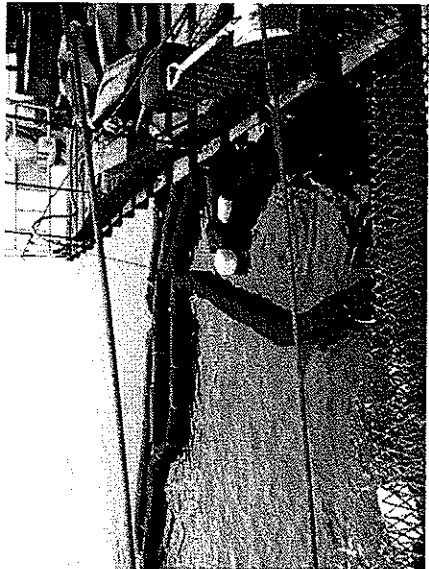
Contractor's Follow up Actions to ET Weekly Site Inspections

Photo of Follow-up Action



Photo ref. 1

Photo of Follow-up Action

 <p>Photo ref. 1</p>		

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

Inspection Date : 31 May 2011

Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
1	No provision of drip tray for the oil/ paint cans on the Launching barge.	The oil/ paint cans were removed from the Launching barge.	8/6/11	1
2	No provision of drip tray for the engine of crawler crane to prevent chemical leakage.	Drip tray was provided for the engine of crawler crane to prevent chemical leakage.	8/6/11	2
3	The water outlet of the air-conditioner should be connected to an appropriate container.	The water outlet of the air-conditioner was connected to an appropriate container.	8/6/11	3, 4
4	Lubricant was noted on the access of the launching barge.	Lubricant was removed from the access of the launching barge.	8/6/11	5

Photo of Follow-up Action

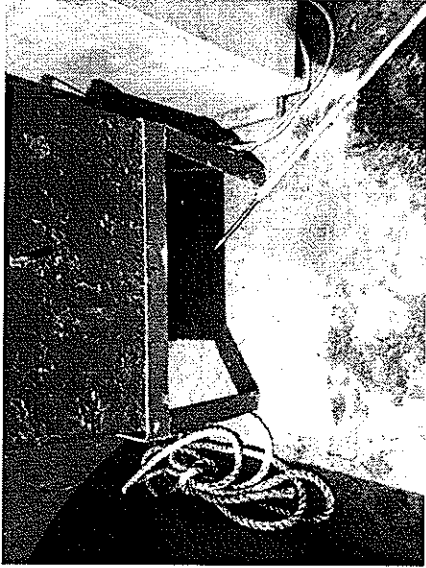


Photo ref. 1

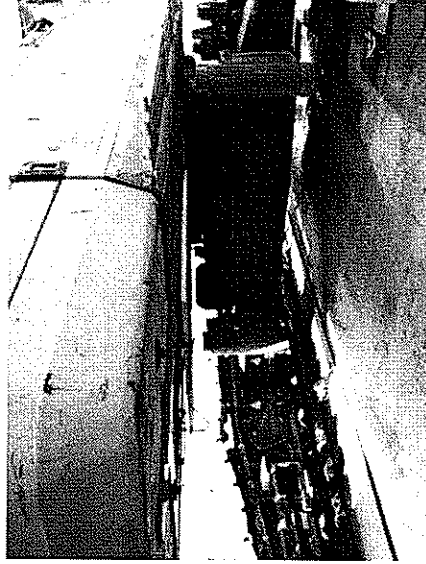


Photo ref. 2

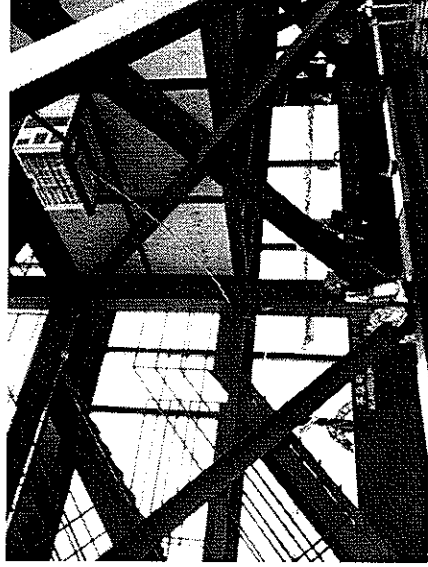


Photo ref. 3

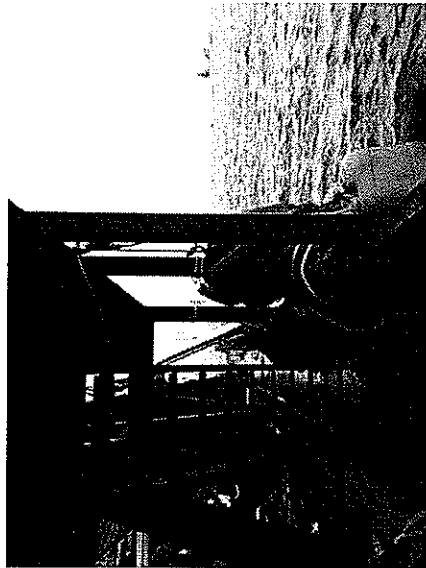


Photo ref. 4

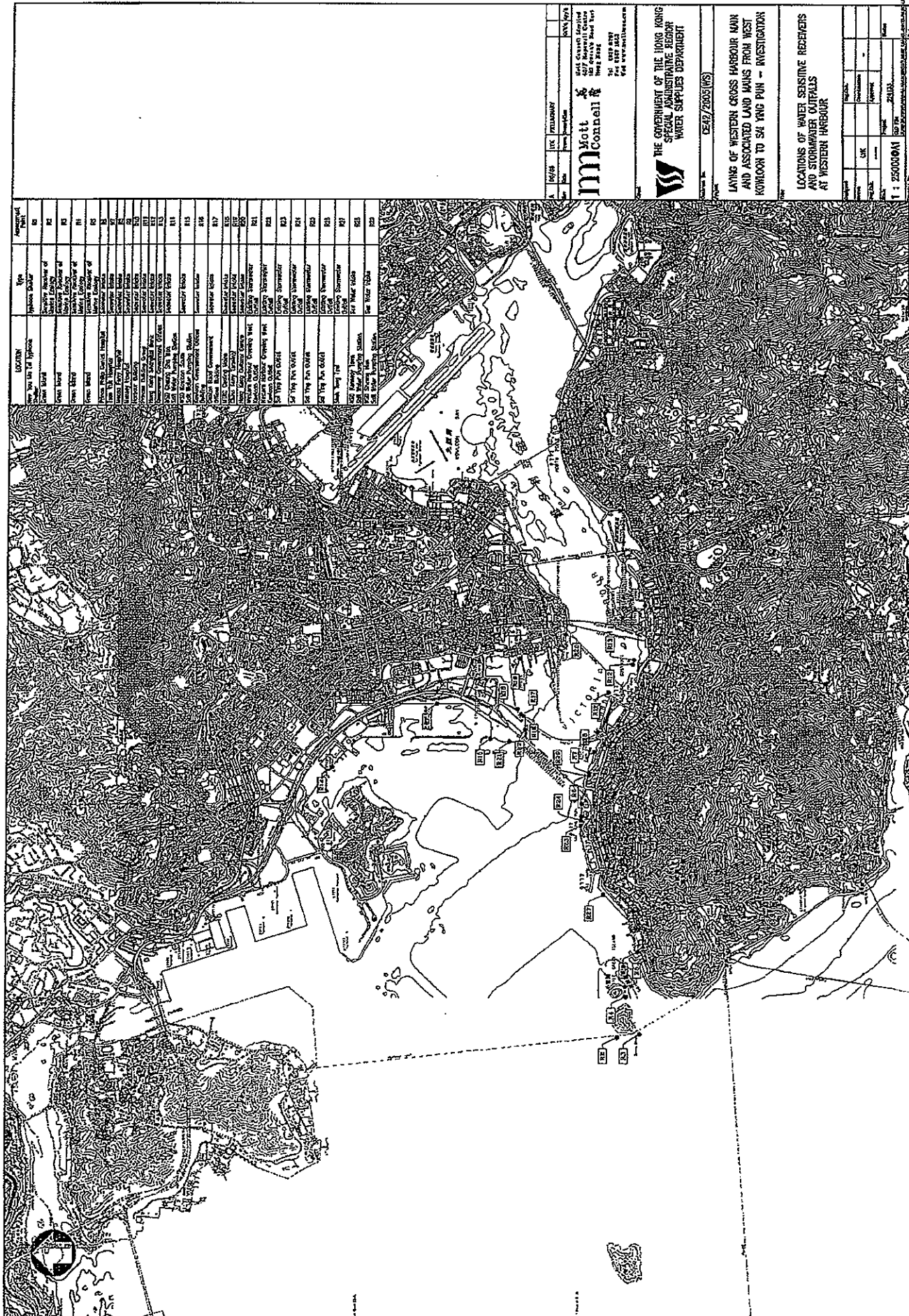


Photo ref. 5



東 榮 德 勤 測 試 顧 問 有 限 公 司
ETS-TESTCONSULT LIMITED

Figures



Number	Type	Description
01	Water Main	Water Main
02	Water Main	Water Main
03	Water Main	Water Main
04	Water Main	Water Main
05	Water Main	Water Main
06	Water Main	Water Main
07	Water Main	Water Main
08	Water Main	Water Main
09	Water Main	Water Main
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13	Water Main	Water Main
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61	Water Main	Water Main
62	Water Main	Water Main
63	Water Main	Water Main
64	Water Main	Water Main

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 FAX: 852 2222 8888

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

DEAR/2005/163

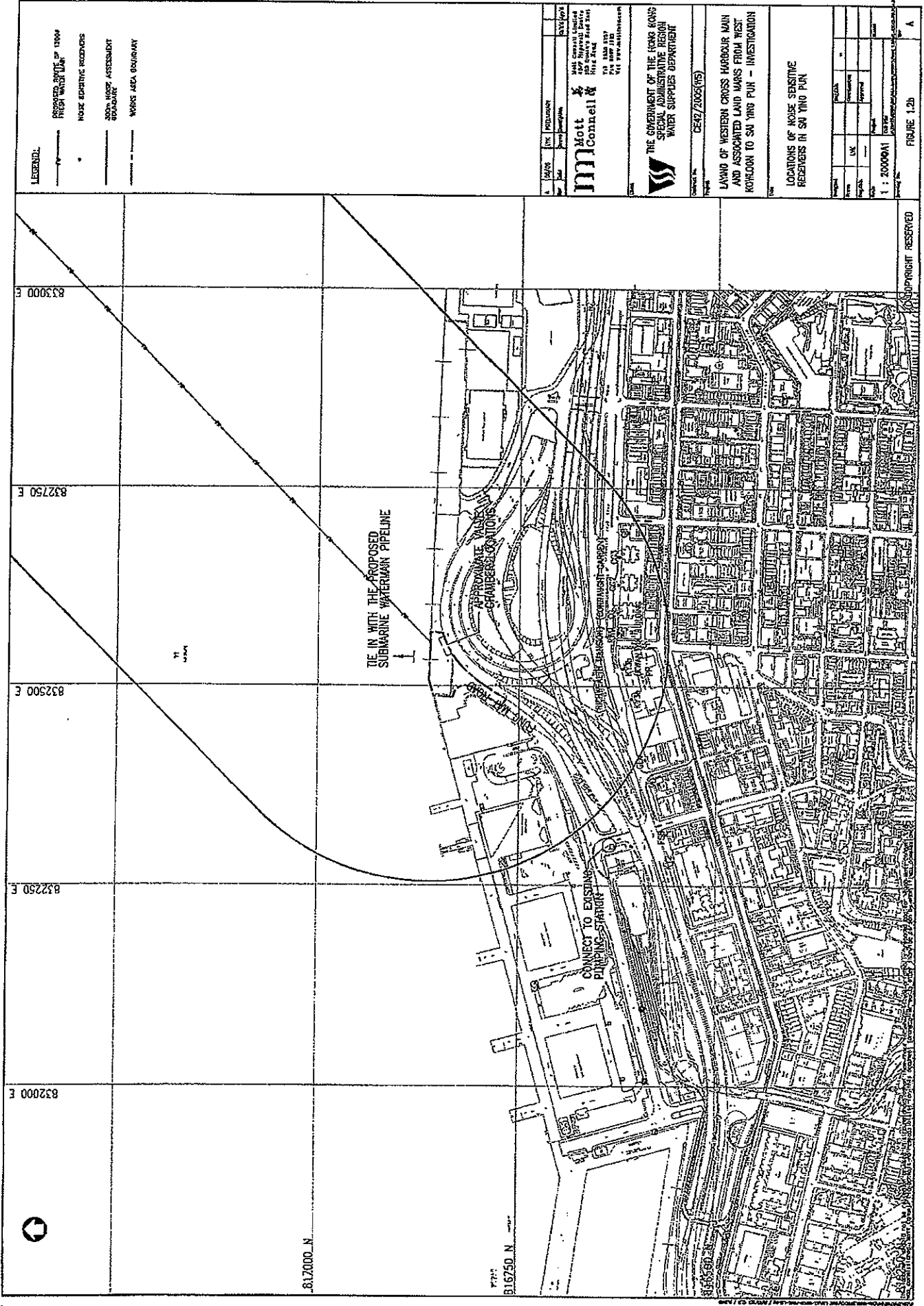
**MAP OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUI - INVESTIGATION**

**LOCATIONS OF WATER SENSITIVE RECEIVERS
 AND STORMWATER OUTFALLS
 AT WESTERN HARBOUR**

Scale: 1 : 2500000

Figure No. **FIGURE 1.2a**

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LEGEND.

- PROPOSED ROUTE OF 1500P FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- 200m NOISE ASSESSMENT BOUNDARY
- WATER MAIN BOUNDARY

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

PROJECT NO. CS2/2002(05)
 DRAWING NO. CS2/2002(05) 100
 DATE: 2002/05/15

LAND OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MARKS FROM WEST TO EAST
 NOTED TO SU YING PUI - INVESTIGATION

LOCATIONS OF NOISE SENSITIVE RECEIVERS IN SU YING PUI

NO.	NAME	TYPE	STATUS
1
2
3
4
5
6
7
8
9
10

Scale: 1 : 2000/41
 Drawing No. CS2/2002(05)
 Date: 2002/05/15

FIGURE 1.2b

A

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LEGEND.

- PROPERTY BOUNDARY OF 1954
- NOISE SENSITIVE RESIDENCE
- TEMPORARY PLATFORM
- 200m NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

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 504 824 8787
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DEW/2006(V6)

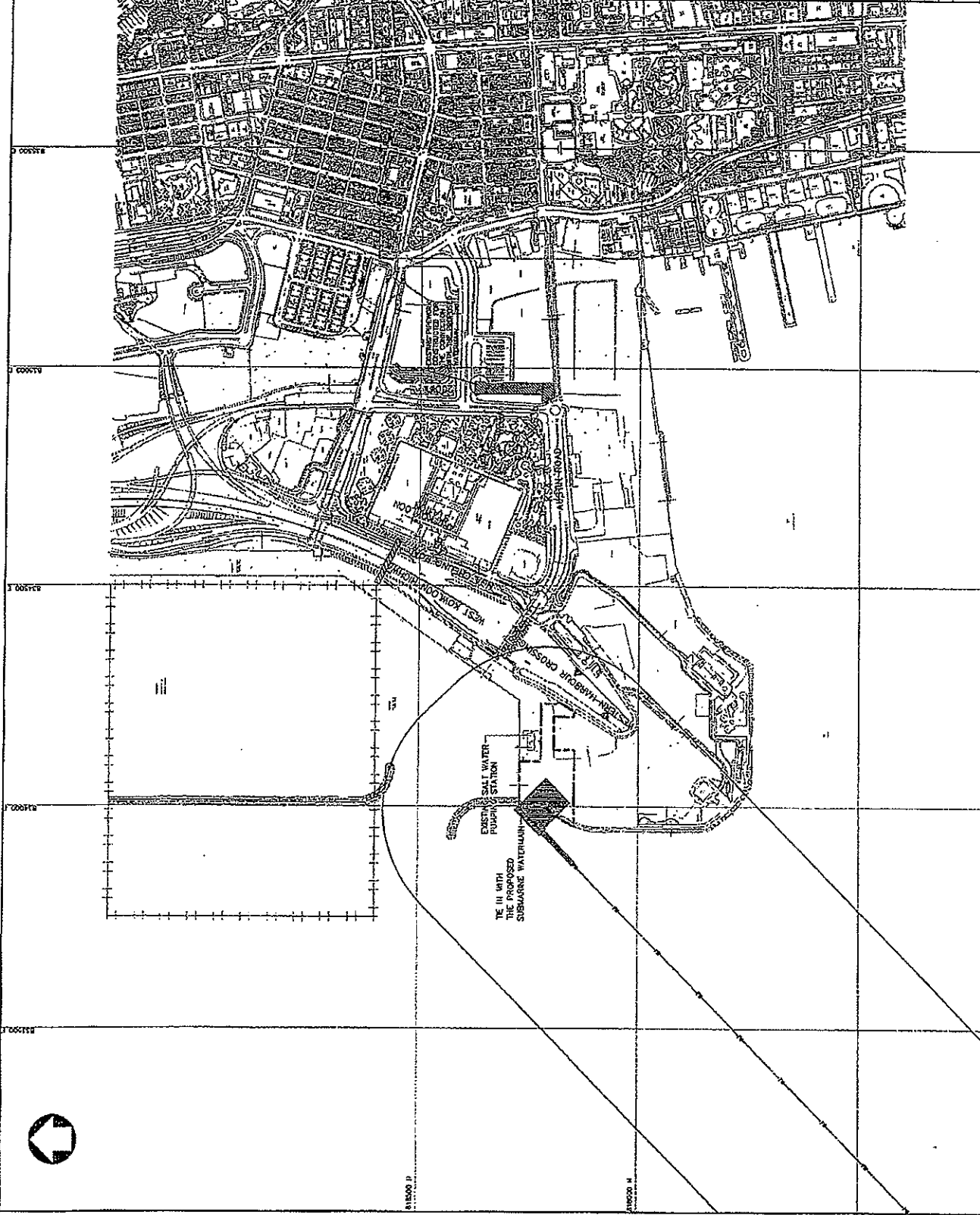
LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAN TING FUJI - INVESTIGATION

LOCATION OF NOISE SENSITIVE
 RESIDENCES IN WEST KOWLOON

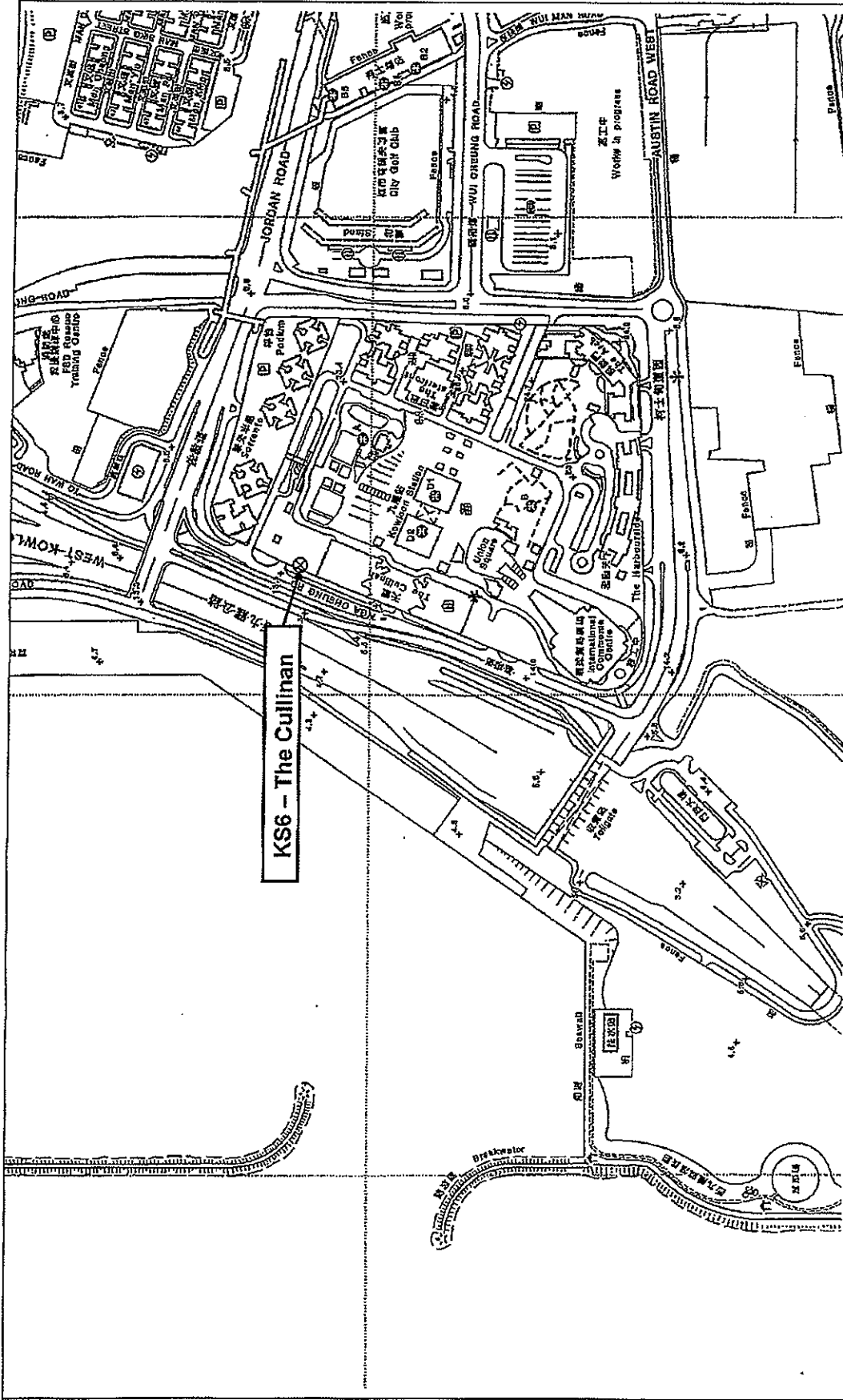
Project No.	40006A1
Scale	1:40000A1
Drawn by	
Checked by	
Approved by	
Date	

FIGURE 1.2b

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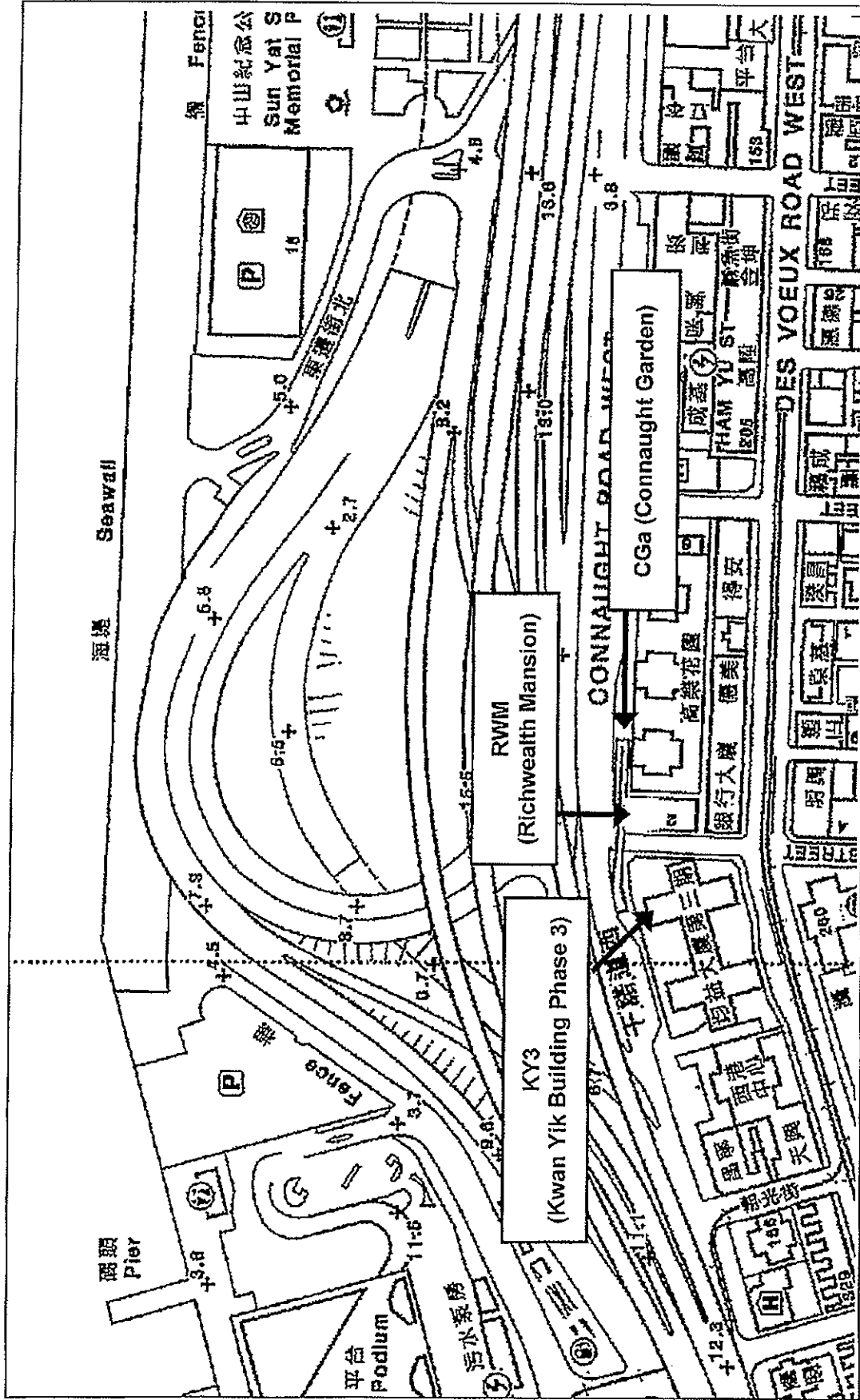
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



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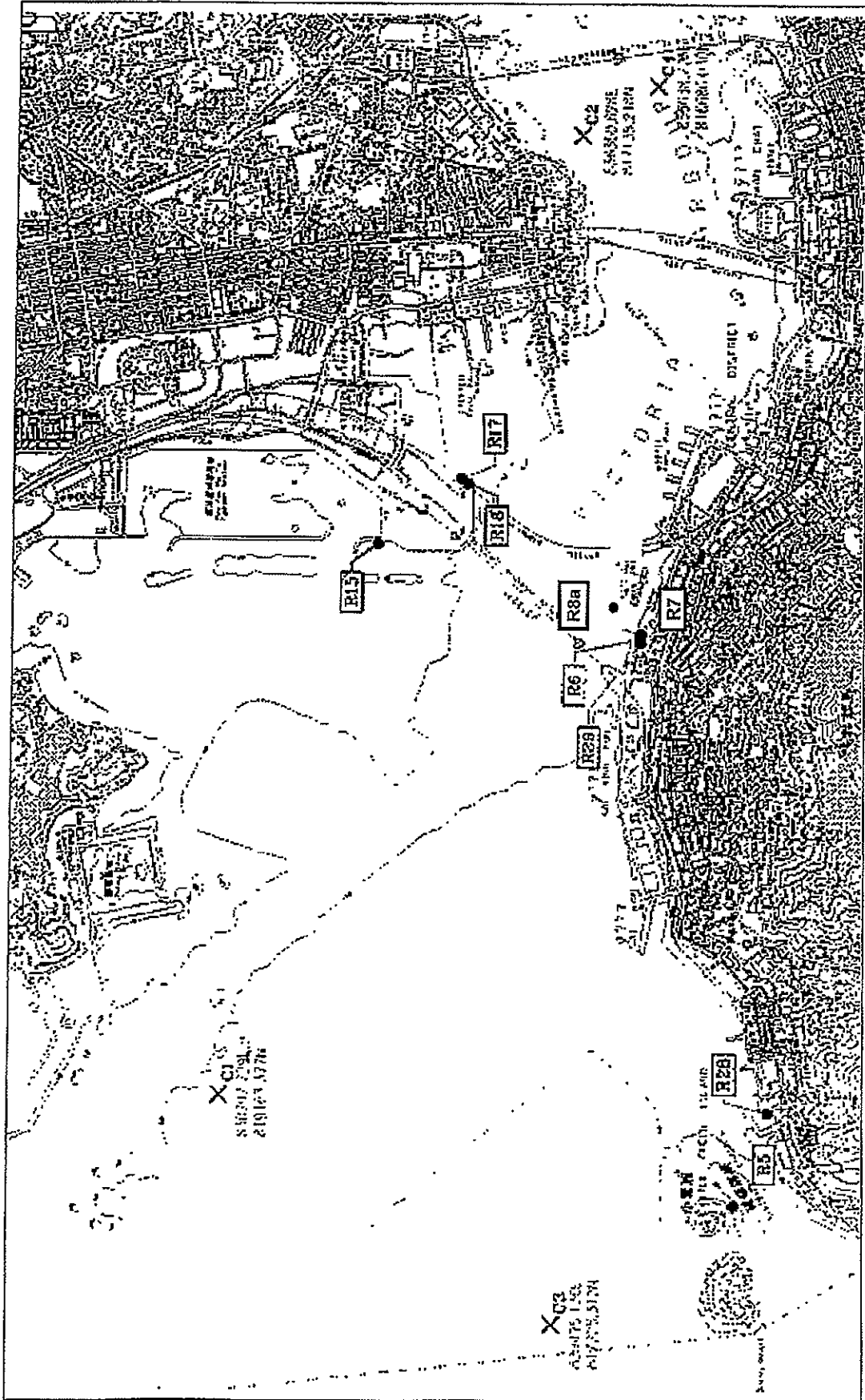
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun



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

Figure 3

Locations of Water Quality Monitoring Stations