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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**

**QUARTERLY EM&A SUMMARY REPORT
NO.4**

(FROM FEBRUARY TO APRIL 2011)

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Issue Date: 09 May 2011

Report No.: ENA10467

ENVIRON

Ref.: WSDWHCMSEI00_0_0160L.11

19th May, 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

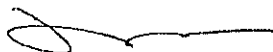
Re: Contact No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun
Quarterly Environmental Monitoring and Audit Report No. 4
(for Feb - May 2011)

Reference is made to Environment Team's submission of the Quarterly Environmental Monitoring and Audit Report No. 4 by Email on 9th May 2011 (entitled "9/WSD/08 - Draft Quarterly Report (Feb to April 11)") and the subsequent revision of the report by Email on 19th May 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

This is the forth Quarterly Environmental Monitoring and Audit (EM&A) Summary Report prepared by ETS-Testconsult Ltd (ET) 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) under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(W) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the EM&A Manual).

This report documents the findings of EM&A Works conducted during the Project from February to April 2011.

Site Activities

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

| | |
|---------------|---|
| February 2011 | Drilling of pipe piles (Portion H1 & H2); Excavation inside the cofferdam (Portion J); Drill cutting of the existing precast concrete seawall blocks within "Seawall" of the cofferdam for later removal (Portion J); and Installation of the strutting system of the cofferdam (Portion J). |
| March 2011 | Grouting works beneath the seawater intake in West Kowloon (Portion H1 & H2); Placing of granular material for restoring over-dredging (Portion I); Excavation inside the cofferdam (Portion J); Installation of the strutting system of the cofferdam (Portion J) Concreting of the foundation of turn roller B and back anchor (Portion J); Installation of turn roller B (Portion J); Placing of precast concrete struts inside the cofferdam (Portion J); and Grouting of the "TACOM MAT" concrete mattress (Portion J). |
| April 2011 | Grouting works beneath the seawater intake in West Kowloon (Portion H1 & H2); Drilling of pipe pile (Portion H1 & H2); Trimming of high spot between CH5 ~ CH10 by derrick lighter (rock fill material) (Portion I); Excavation inside the cofferdam (Portion J); Installation of the strutting system of the cofferdam (Portion J) Concreting of the foundation of turn roller B and back anchor (Portion J); Installation of turn roller B (Portion J); Placing of precast concrete struts inside the cofferdam (Portion J); and Installation of turn rollers A & B and the dry well (Portion J). |

Environmental Monitoring Works

Noise Monitoring

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

In this quarter, totally thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring. However, all of the exceedances were considered to be invalid (not project related) and no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET.

Marine Water Quality Monitoring

Marine water quality monitoring was conducted in accordance with the EM&A Manual.

According to the summary of marine water monitoring results, no exceedances of Action and Limit Level were recorded in this quarter.

Environmental Complaints, Notification of summons and successful prosecutions

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

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 the “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) of the approved EIA report (Registration No. AEIAR-109/2007) in accordance with the Environmental Permit (No.: EP-273/2007) (the EP).

This quarterly report documented the findings of EM&A Works conducted during the impact monitoring from February to April 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 F.

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> |

The proponents' contact and hotline telephone number for the Public to make enquiries by the Contractor is Mr. Peter Yung (Telephone No.: 61137660).

3.0 SUMMARY OF EM&A REQUIREMENTS

3.1 EM&A Programme

The EM&A programme required environmental monitoring for noise, marine water quality and environmental site inspections for air quality, noise, marine water quality and waste management. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Action and Limit levels for all environmental parameters;*
- *Event/Action Plans;*
- *Environmental mitigation measures, as recommended in the Project EIA report; and*
- *Environmental requirements in contract documents.*

The advice on implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 4 of the Report.

3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of noise and marine water quality due to the Project. The description and detailed locations of monitoring stations for noise and marine water quality are shown in Figures 1, 2 and 3 and relevant sections of this Report.

3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in according with the EM&A Manual and the manufacturer's instruction.

3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The AL Levels for each monitoring parameter are given in Appendix D. The event action plan is given in Appendix E.

3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix G.

4.0 MONITORING RESULTS

4.1 Noise

As the requirement in the EM&A Manual, impact noise monitoring was conducted for a weekly basis in four different time periods, day-time, evening-time, night-time and holiday-time, at designated monitoring locations. The noise levels in the past three months are plotted in Appendix B.

In this quarter, the impact noise monitoring was carried out weekly in the absence of fog, rain, storm, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s. As a result, all impact noise monitoring data was considered to be unaffected by the weather condition.

In this quarter, totally thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring. After ET investigation, all of the exceedances were considered to be invalid (not project related) and hence no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET.

Table 4.1 presents the summary of impact noise monitoring results in the reporting quarter.

Table 4.1 Summary of Impact Monitoring results of Impact Noise Monitoring in the Quarter

| <i>Exceedance Level</i> | <i>Daytime</i> | <i>Evening-time</i> | <i>Night-time</i> | <i>Holiday-time</i> |
|-------------------------------|----------------|---------------------|-------------------|---------------------|
| <i>Action (February 2011)</i> | 0 | 0 | 0 | 0 |
| <i>Action (March 2011)</i> | 0 | 0 | 0 | 0 |
| <i>Action (April 2011)</i> | 0 | 0 | 0 | 0 |
| <i>Cumulative</i> | 0 | 0 | 0 | 0 |
| <i>Limit (February 2011)</i> | 0 | 0 | 9 | 0 |
| <i>Limit (March 2011)</i> | 0 | 0 | 21 | 0 |
| <i>Limit (April 2011)</i> | 0 | 0 | 0 | 0 |
| <i>Cumulative</i> | 0 | 0 | 149 | 0 |

In this quarter, the major noise source at KS6 was from local traffic along West Kowloon Highway and human activities from the Element. Besides, local traffic along Connaught Road West and Western Harbour Crossing and human activities was also the major noise source at KY3, RWM and CGa.

4.2 Marine Water Quality

In accordance with the EM&A Manual, the marine water quality monitoring was conducted at four control stations and nine impact monitoring stations in the reporting quarter. Impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-ebb and mid-flood tides at three depths (i.e. 1m below surface, mid depth and 1m above seabed). The AL Levels are included in Appendix D.

Table 4.2 presents the total number of marine water quality exceedances in the reporting quarter. The trend of marine water quality in the past three months is depicted in Appendix C.

Table 4.2 Total Number of Marine Water Quality Exceedances in the Quarter

| <i>Parameter</i> | <i>Exceedance Level</i> | <i>February 2011</i> | <i>March 2011</i> | <i>April 2011</i> |
|---|-------------------------|----------------------|-------------------|-------------------|
| <i>Dissolved Oxygen, DO</i> | <i>Action</i> | 0 | 0 | 0 |
| | <i>Limit</i> | 0 | 0 | 0 |
| | <i>Total</i> | 0 | 0 | 0 |
| <i>Turbidity (Depth-average)</i> | <i>Action</i> | 0 | 0 | 0 |
| | <i>Limit</i> | 0 | 0 | 0 |
| | <i>Total</i> | 0 | 0 | 0 |
| <i>Suspended Solids, SS (Depth-average)</i> | <i>Action</i> | 0 | 0 | 0 |
| | <i>Limit</i> | 0 | 0 | 0 |
| | <i>Total</i> | 0 | 0 | 0 |
| <i>Cumulative Exceedances</i> | <i>Action</i> | 0 | 0 | 0 |
| | <i>Limit</i> | 0 | 0 | 0 |
| | <i>Total</i> | 0 | 0 | 0 |

A comparison between the quarterly mean of impact stations (including WSD Seawater Intakes R15 and other eight Impact Stations R5, R6, R7, R8a, R16, R17, R28 and R29) and the 1.3 times of the ambient mean (e.g. 130% of Baseline Mean) of impact stations was made for Dissolved Oxygen, Turbidity and Suspended Solids.

The statistical analysis results are given in Appendix H and it shows that there is no significant difference ($p > 0.05$) between the quarterly mean and 1.3 times of ambient mean on Dissolved Oxygen and Turbidity but except Suspended Solids. Table 4.3 summarizes the statistical analysis between quarterly mean and ambient mean on Dissolved Oxygen, Turbidity and Suspended Solids.

Table 4.3 Summary of statistical analysis between Quality Mean and 1.3 times of Ambient Mean

| Parameter | Groups involved | P-value | Significant Difference between quarterly mean and 1.3 times of ambient mean (Y or N) |
|---------------------------------|--|---------|--|
| DO (Surface, Middle and Bottom) | Quarterly mean and 1.3 times of ambient mean | 1 | N |
| SS | Quarterly mean and 1.3 times of ambient mean | 1 | N |
| Turbidity | Quarterly mean and 1.3 times of ambient mean | 1 | N |

5.0 INSPECTION RESULTS

5.1 Implementation Status of Environmental Mitigation Measures

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. After each site inspection, the Contractor was notified of ET's observations and recommendations. A site inspection checklist detailing the environmental observations was prepared by ET and the Contractor then completed this plan to propose/report their remedial works. A summary of implementation status of mitigation measures on site inspections is presented in Appendix G

5.2 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.1.

Table 5.1 Summary of Environmental Licensing and Permit Status

| Description | Permit No. | Valid Period | | Remarks |
|--|-------------------|--------------|----------------|---|
| | | From | To | |
| Environmental Permit | EP-273/2007 | 31/07/07 | End of Project | Whole Project |
| Water Discharge Licence (West Kowloon) | WT0000534-7-2009 | 07/01/10 | 31/01/15 | Effluent and all other wastewater arising from the construction site through Screen & Sedimentation Tank |
| Water Discharge Licence (Sai Yung Pun) | WT0000580-0-2010 | 14/01/10 | 31/01/15 | Effluent arising from the construction site through Sedimentation Tank |
| Chemical Waste Producer | 5213-217-W3086-01 | 13/10/09 | End of Project | Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries |
| Construction Noise Permit (Sai Ying Pun) | GW-RS0756-10 | 12/09/10 | 11/03/11 | One dredger, grab (CNP 063) Two Guard boat One Tug boat (CNP 221) Hopper barge |
| Construction Noise Permit (Sai Ying Pun) | GW-RS1143-10 | 23/12/10 | 19/06/11 | One Crane, mobile(diesel) (CNP 048) One Air compressor with Noise Emission Label showing a sound power level of ≤98dB(A) One Generator, silenced, 71dB(A) at 7m |
| Construction Noise Permit (Sai Ying Pun) | GW-RS0053-11 | 14/01/11 | 03/04/11 | One Derrick barge (CNP 061) Two Guard boat One Tug boat (CNP 221) |
| Construction Noise Permit (West Kowloon) | GW-RE0502-10 | 21/10/10 | 20/04/11 | One Dredger, grab (CNP 063) Two Guard boat One Tug boat (CNP 221) One Generator, standard (CNP 101) |
| Construction Noise Permit (West Kowloon) | GW-RE0730-10 | 04/01/11 | 03/04/11 | One Dredger, grab (CNP 063) One Derrick barge (CNP 061) Two Guard boat One Tug boat (CNP 221) One Generator, standard (CNP 101) |



| Description | Permit No. | Valid Period | | Remarks |
|--|--------------|--------------|----------|---|
| | | From | To | |
| Construction Noise Permit (Sai Ying Pun) | GW-RS0078-11 | 14/01/11 | 03/04/11 | <p>Group A One dredger, grab (CNP 063) Three Guard boats Two 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 dredger, grab (CNP 063) Two Guard boats One Tug boat (CNP 221) One Hopper barge 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 Two Tug boat (CNP 221) 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 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 $\leq 98\text{dB(A)}$</p> <p>Group E 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> |
| Construction Noise Permit (West Kowloon) | GW-RE0160-11 | 18/03/11 | 14/09/11 | <p>Group A One Crane, mobile (diesel) (CNP 048) (Zone A) One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A) One Generator, standard (CNP 101) (Zone B)</p> <p>Group B One Crane, mobile (diesel) (CNP 048) (Zone A) One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B) Two Crane, mobile (diesel) (CNP 048) (Zone B) One Derrick barge (CNP 061) (Zone B) Four Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B) Six Grinder, hand-held (electric) (CNP065) (Zone B) Two Guard boats (Zone B) Two Poker, vibratory, external (electric) (Zone B) One Tug boat (CNP 221) (Zone B)</p> <p>Group C One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A) One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B) One Grinder, hand-held (electric) (CNP065) (Zone B)</p> <p>Group D One Derrick barge (CNP 061) (Zone B) One dredger, grab (CNP 063) (Zone B) One Generator, standard (CNP 101) (Zone B) Two Guard boats (Zone B) One Tug boat (CNP 221) (Zone B)</p> |

| Description | Permit No. | Valid Period | | Remarks |
|--|--------------|--------------|----------|--|
| | | From | To | |
| Construction Noise Permit (West Kowloon) | GW-RE0257-11 | 19/04/11 | 04/10/11 | <p>Group A One Air Compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone A) One Crane, mobile (diesel) (CNP 048) (Zone A) One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A) One Generator, standard (CNP 101) (Zone B)</p> <p>Group B One Concrete lorry mixer (CNP 044) (Zone A) One Crane, mobile (diesel) (CNP 048) (Zone A) One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B) Two Crane, mobile (diesel) (CNP 048) (Zone B) One Derrick barge (CNP 061) (Zone B) Four Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B) Six Grinder, hand-held (electric) (CNP065) (Zone B) Two Guard boats (Zone B) Two Poker, vibratory, external (electric) (Zone B) One Tug boat (CNP 221) (Zone B)</p> <p>Group C One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A) One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B) One Grinder, hand-held (electric) (CNP065) (Zone B) One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B)</p> <p>Group D One Derrick barge (CNP 061) (Zone B) One dredger, grab (CNP 063) (Zone B) One Generator, standard (CNP 101) (Zone B) Two Guard boats (Zone B) 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> |

| Description | Permit No. | Valid Period | | Remarks |
|-------------------------|---|--------------|----------|---|
| | | From | To | |
| Dumping Licence | EP/MD/11-069 | 01/10/10 | 31/03/11 | Bulk quantity of material approved for dumping at the South Cheung Chau Spoil Disposal Area denoted "LWCHMALM" within permit validity period: 130,000 cu.m. (for Type 1 – Open Sea Disposal |
| Notification under APCO | Application had been submitted to EPD on 25/09/09 and approved from 29/09/09. | | | |

5.3 Advice on Solids and Liquid Waste Management Status

Summary of waste disposal in this quarter is present in Table 5.2.

Table 5.2 Summary of Waste Disposal in this Quarter

| Type of Waste | | Quantity | Disposal Location | Cumulative Quantity |
|---------------------|---|----------|----------------------------------|---------------------|
| Inert C&D Materials | Total Quantity Generated (in m ³) | 3373.86 | | 12806.76 |
| | 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) | 3373.86 | SENT Landfill | 12806.76 |
| C&D Waste | Metals (in kg) | 0 | --- | 0 |
| | Paper/Cardboard Packaging (in kg) | 13 | Collected by recycling company | 104 |
| | Plastics (in kg) | 0 | --- | 0 |
| | Chemical Waste (in kg) | 0 | --- | 0 |
| | Other, e.g. General Refuse (in m ³) | 13.74 | SENT Landfill | 72.74 |
| 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 |

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 quarter.

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.

6.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

6.1 Summary of Non-compliance

No exceedances of Action and Limit Level of marine water quality monitoring results were recorded in this quarter.

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

Totally thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring in this quarter.

6.2 Review of the Reasons for and the Implications of Non-compliance

Refer to Interim notifications of exceedance (NOEs) by ET, all exceedances of night-time noise monitoring recorded in this quarter were due to the noise from local traffic and human activities near the noise monitoring stations and considered to be invalid (not project related).

6.3 Summary of Actions Taken

Since all exceedances of night-time noise monitoring were considered to be invalid (not project related), no further actions were required.

6.4 Summary of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaints, notifications of summons and successful prosecutions were received. A summary of environmental complaints and prosecutions was given in Table 6.1.

Table 6.1 Summary of Environmental Complaints and Prosecutions

| <i>Period</i> | <i>Complaints logged</i> | <i>Summon served</i> | <i>Successful Prosecution</i> |
|----------------------|--------------------------|----------------------|-------------------------------|
| <i>February 2011</i> | <i>0</i> | <i>0</i> | <i>0</i> |
| <i>March 2011</i> | <i>0</i> | <i>0</i> | <i>0</i> |
| <i>April 2011</i> | <i>0</i> | <i>0</i> | <i>0</i> |
| <i>Cumulative</i> | <i>0</i> | <i>0</i> | <i>0</i> |

7.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

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

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

In this quarter, totally thirty exceedances in Limit Level were recorded according to the results from night-time noise monitoring. However, all of the exceedances were considered to be invalid (not project related) and no further actions were required.

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

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

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

According to the environmental site inspections performed in this quarter, 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

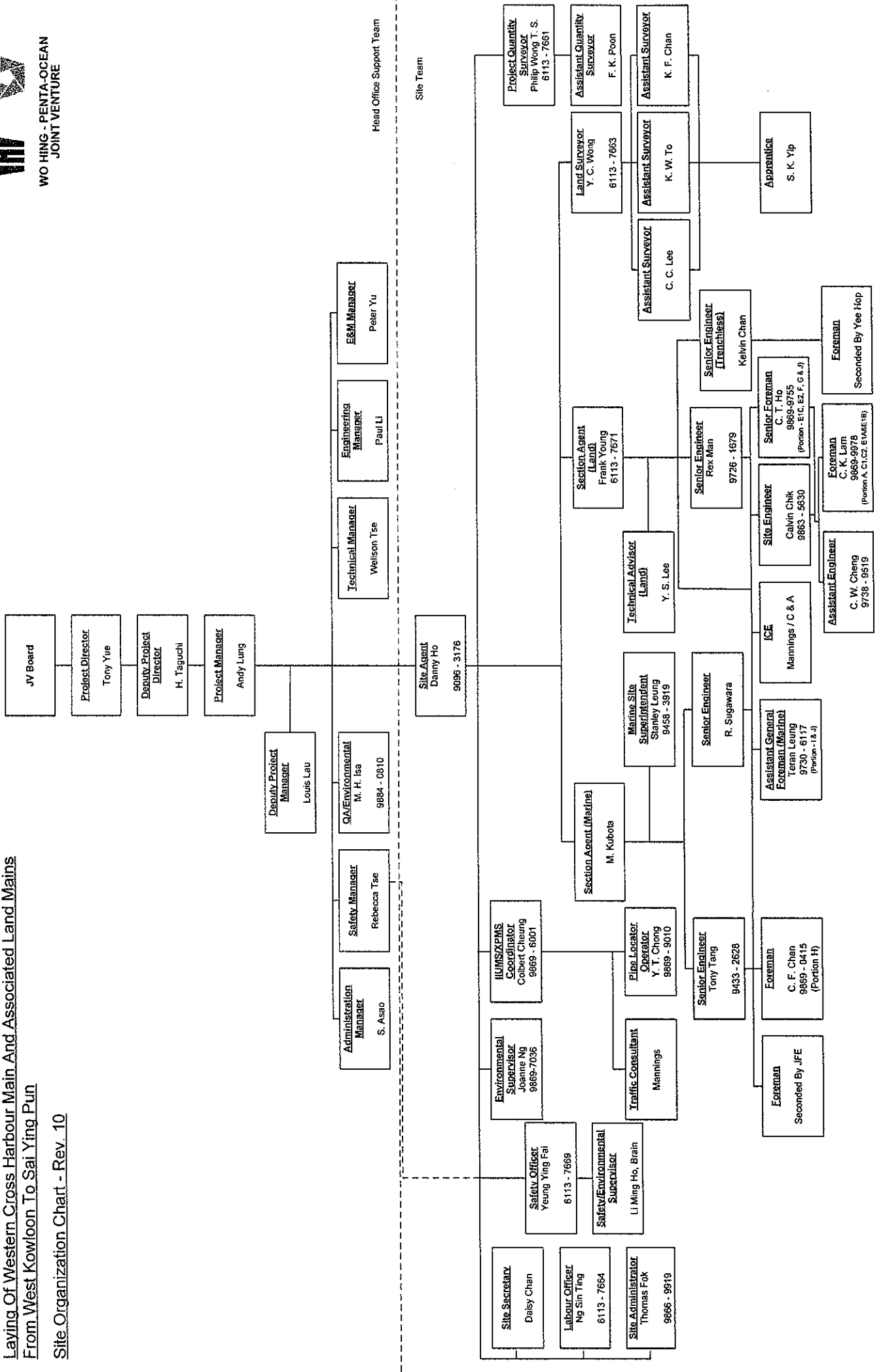
- Maintain the drainage system regularly;
- Operate and maintain the silt curtains and silt screen regularly;
- Operate the cleaning vessel regularly;
- Provide proper treatment for the wastewater discharge;
- Clean up the fill material on the barge frequently; and
- Remove the stagnant water or provide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

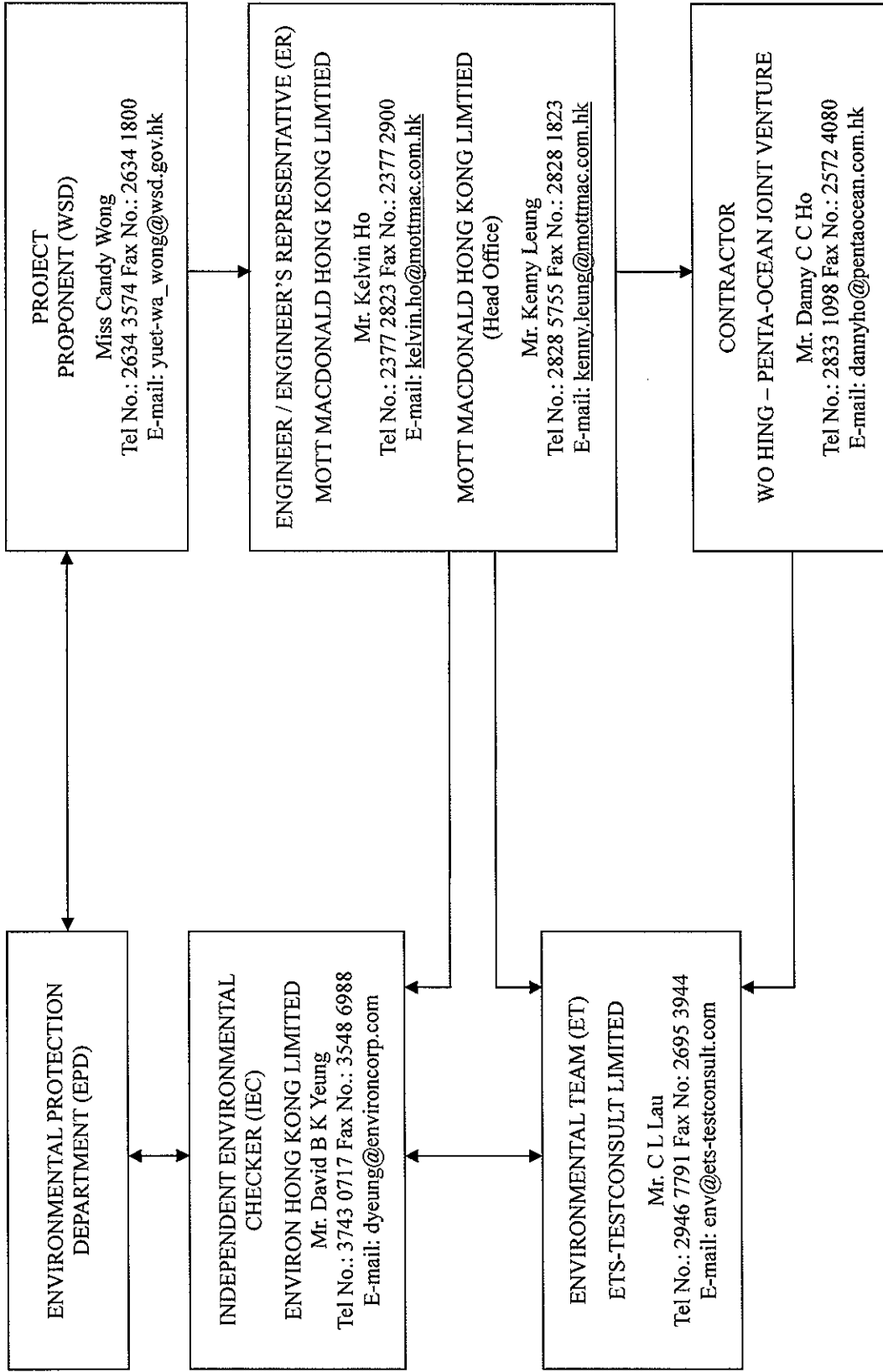
Chemical and Waste Management

- 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.

Appendix A

Organization Chart and Lines of Communication





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

Title Project Organization and Line of Communication

Date Dec 2009

Figure 1.3a

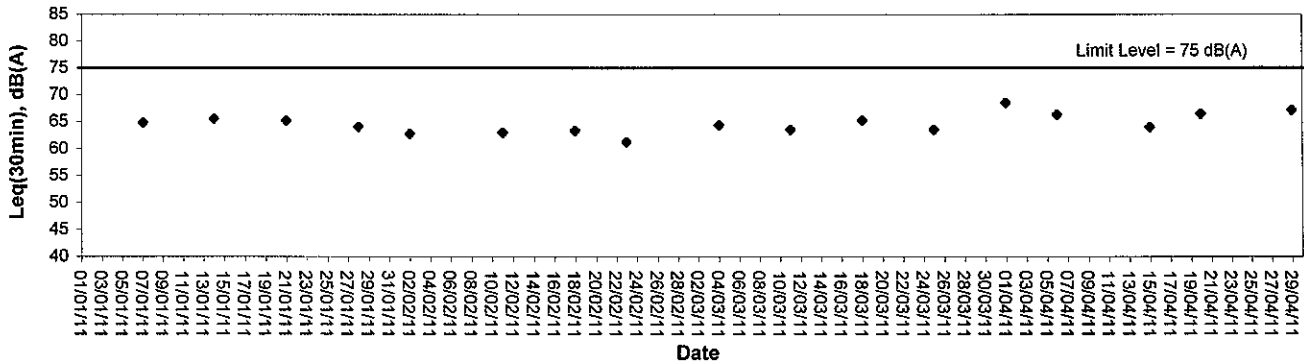
Appendix B

Graphical Plots of Noise Monitoring Data

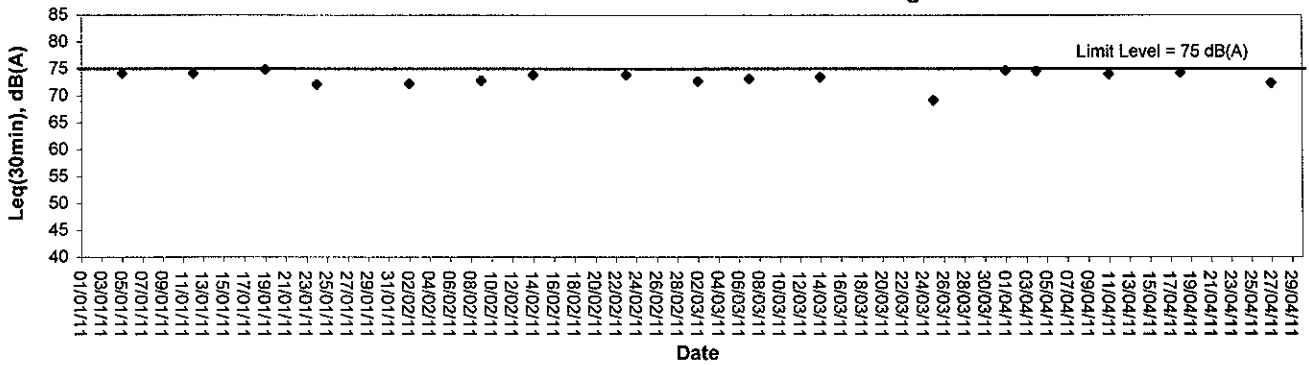


Noise Monitoring (Day-time)

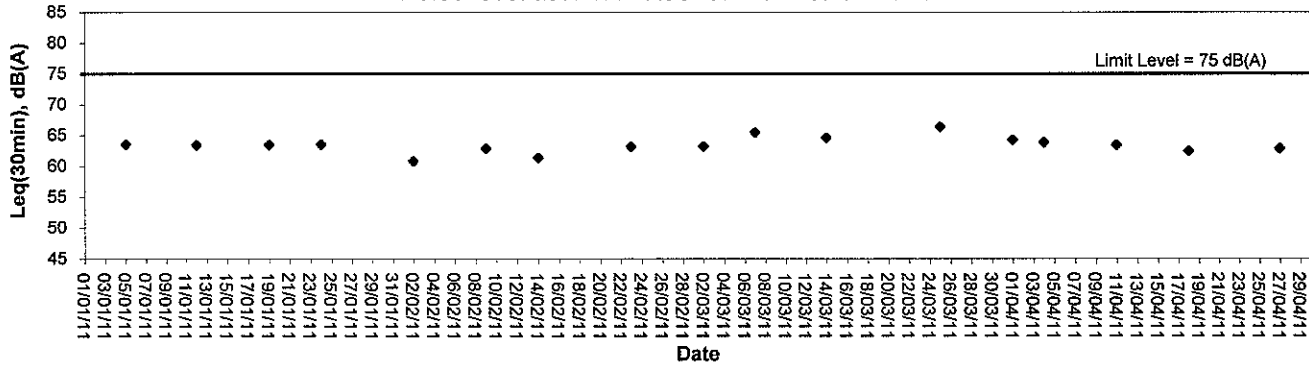
Noise level at KS6 - Podium at the Culliman



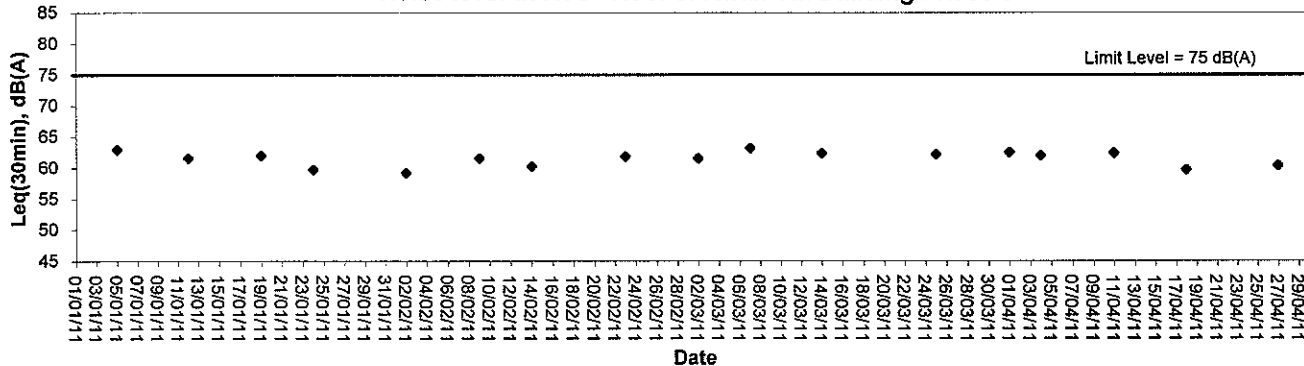
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



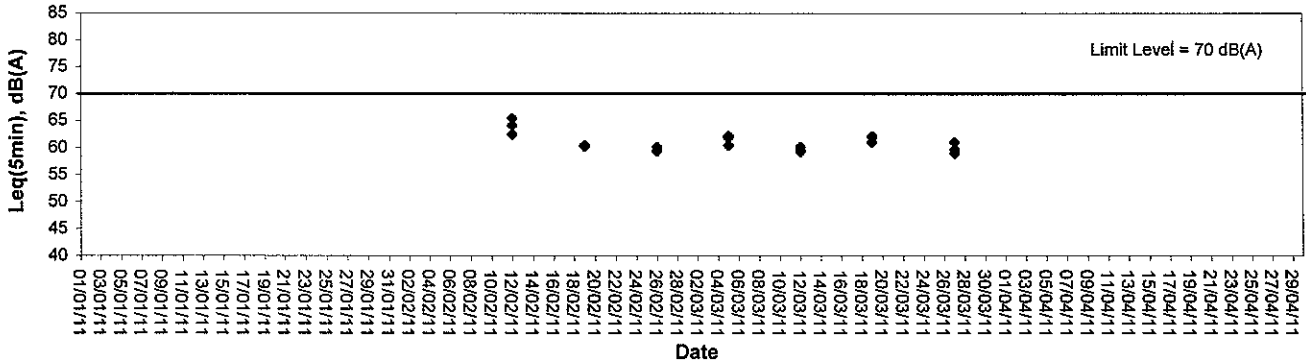
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



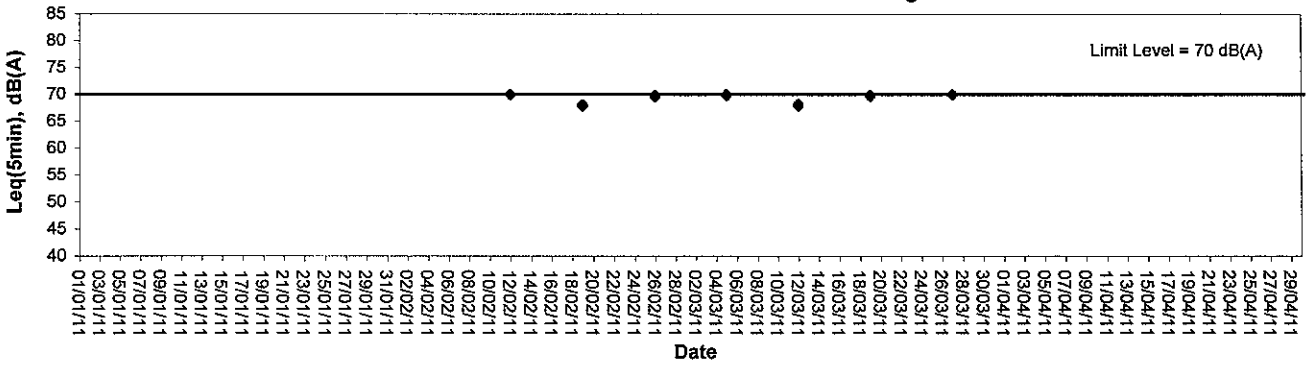


Noise Monitoring (Evening-time)

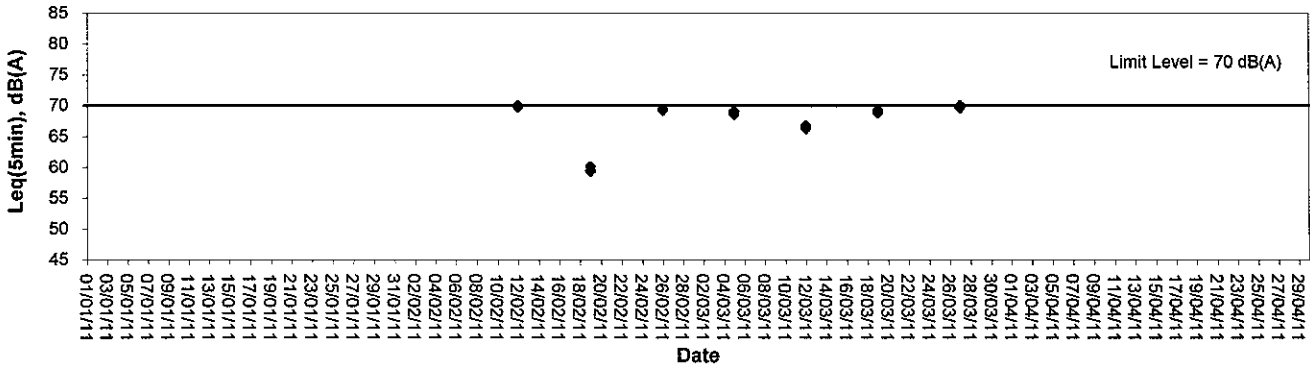
Noise level at KS6 - Podium at the Culliman



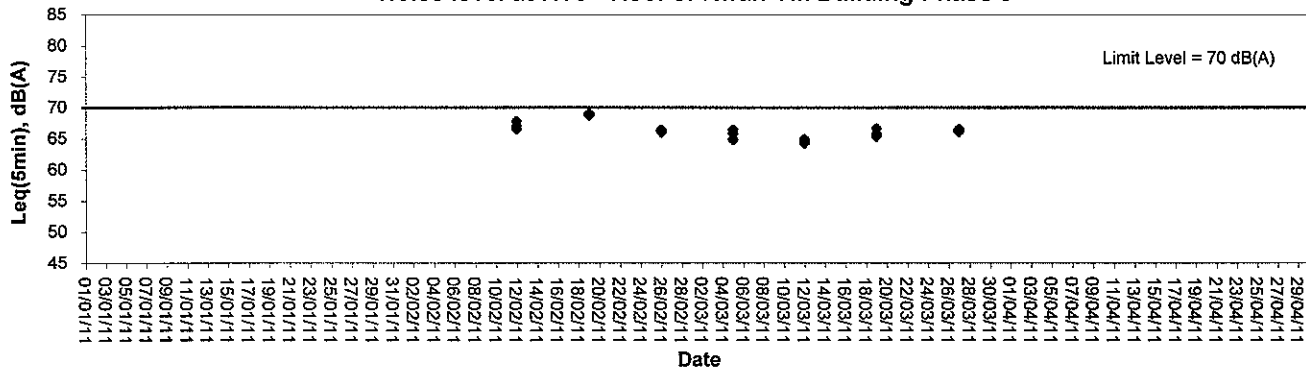
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



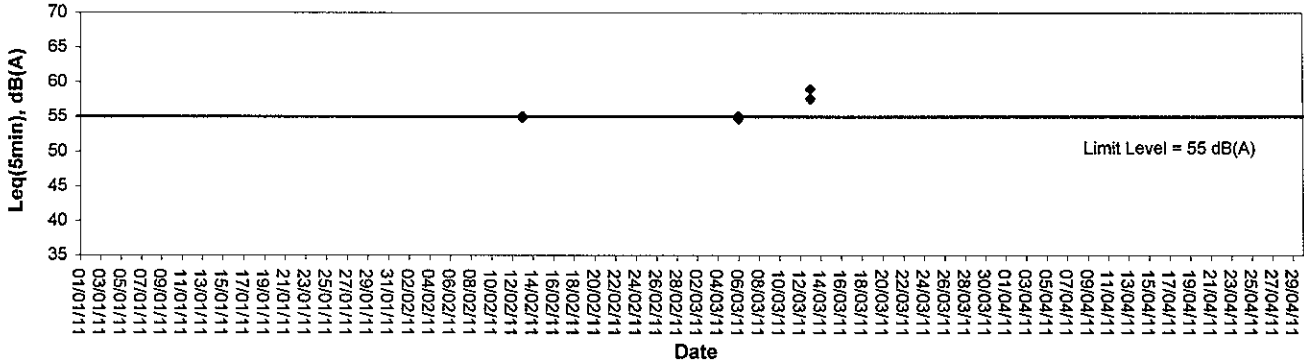
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



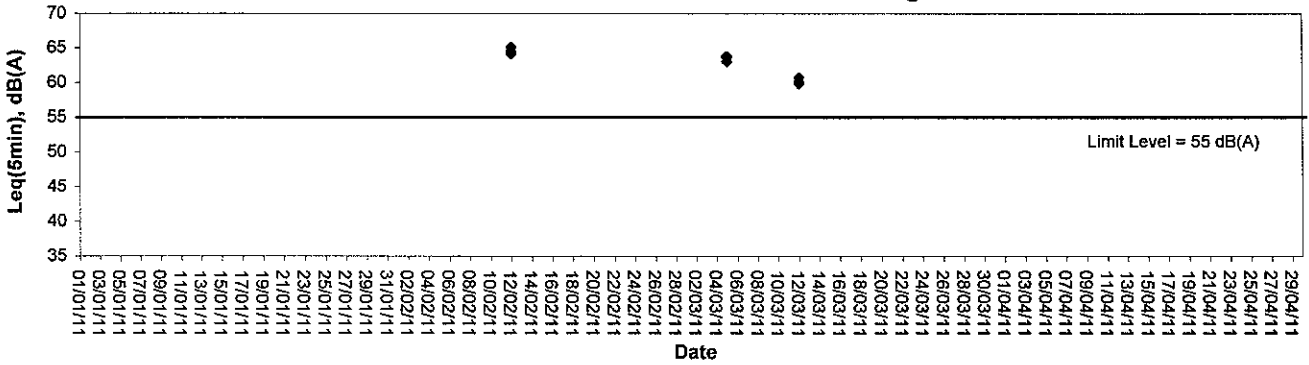


Noise Monitoring (Night-time)

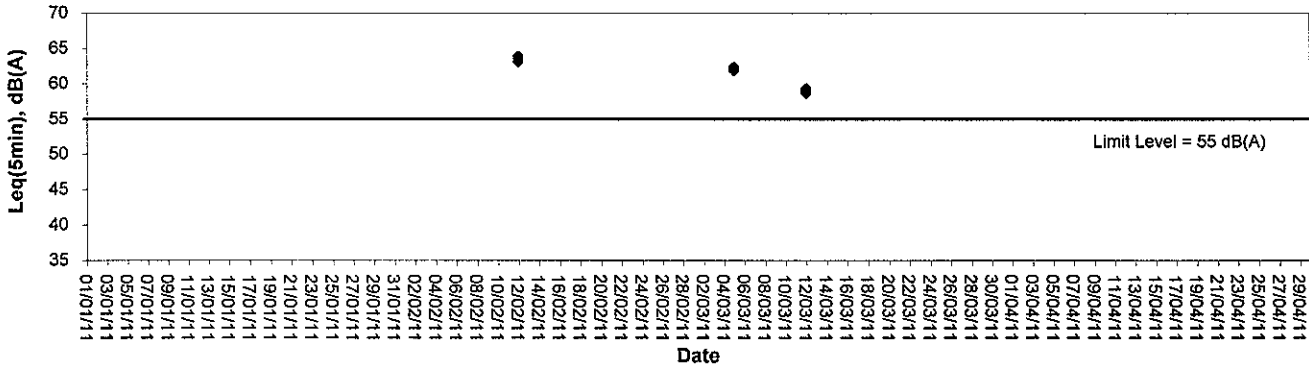
Noise level at KS6 - Podium at the Cullinan



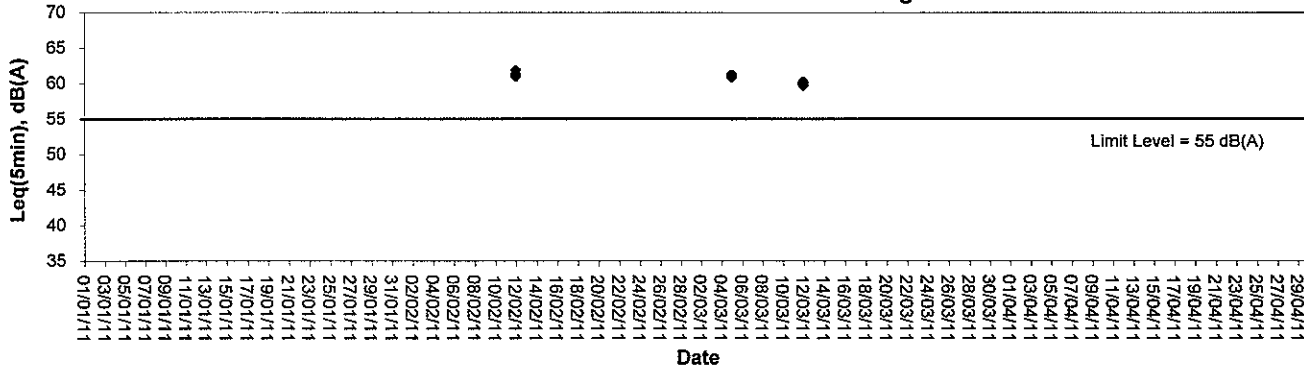
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



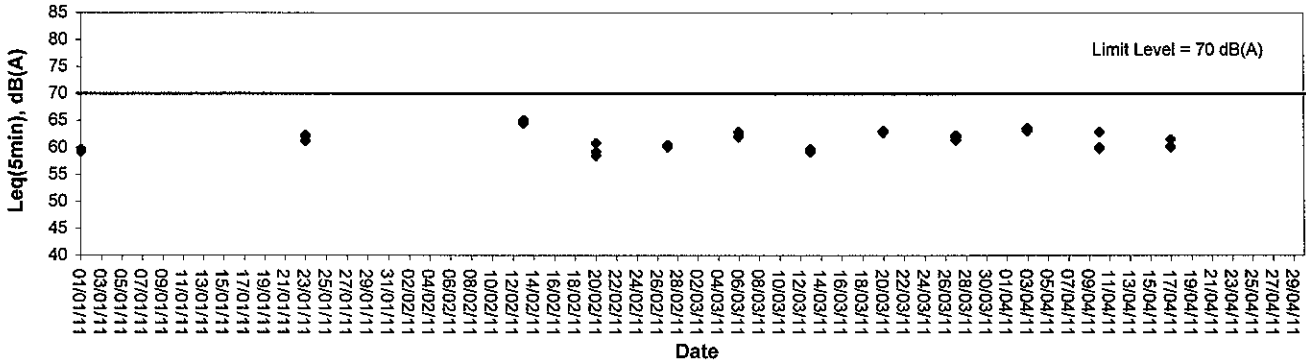
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



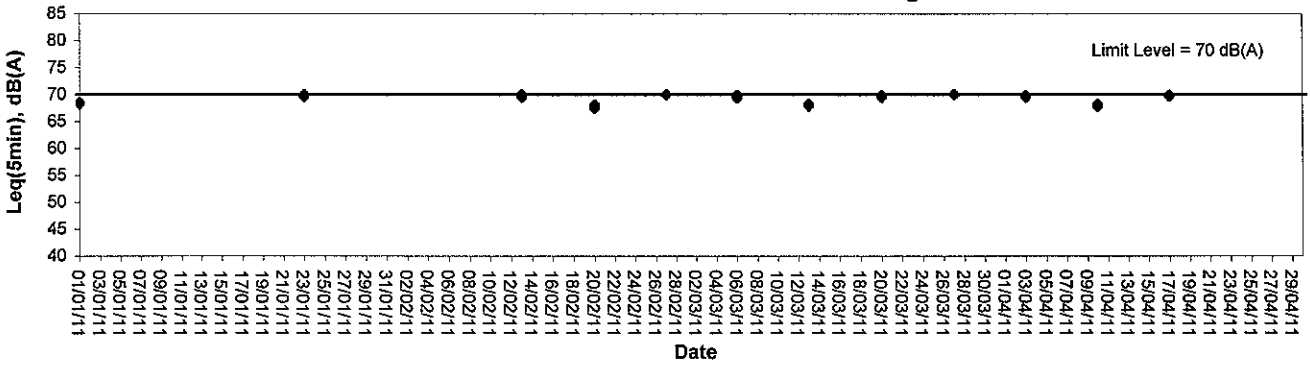


Noise Monitoring (Holiday-time)

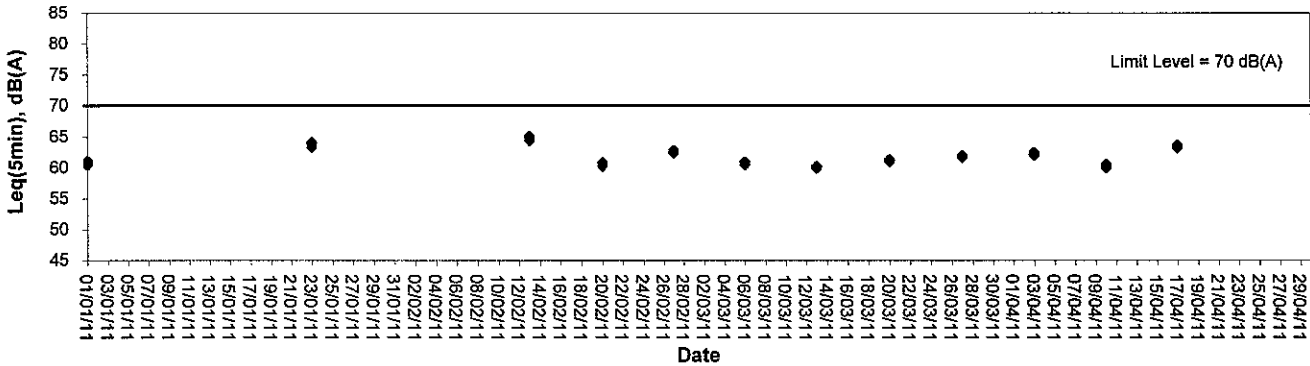
Noise level at KS6 - Podium at the Culliman



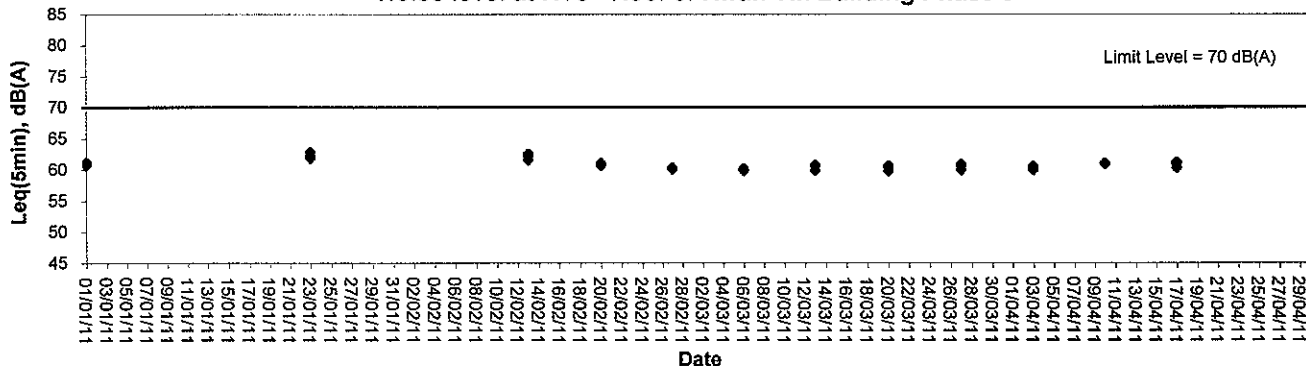
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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

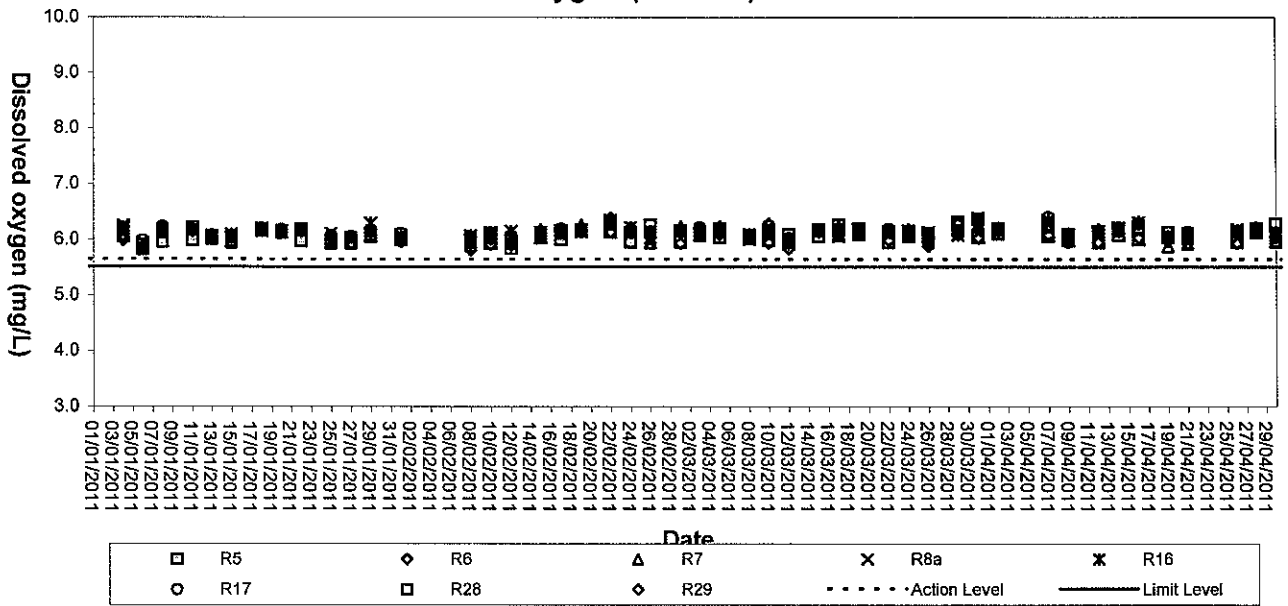


Appendix C

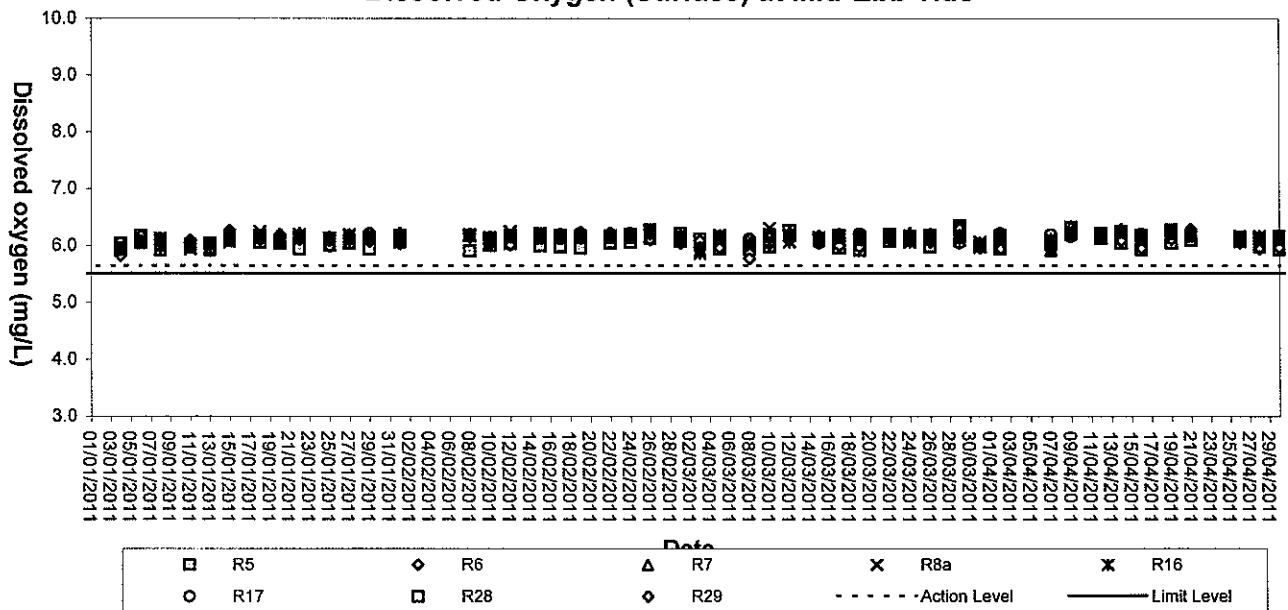
Graphical Plots of Impact Marine Water Quality Monitoring Data



Dissolved Oxygen (Surface) at Mid-Flood Tide

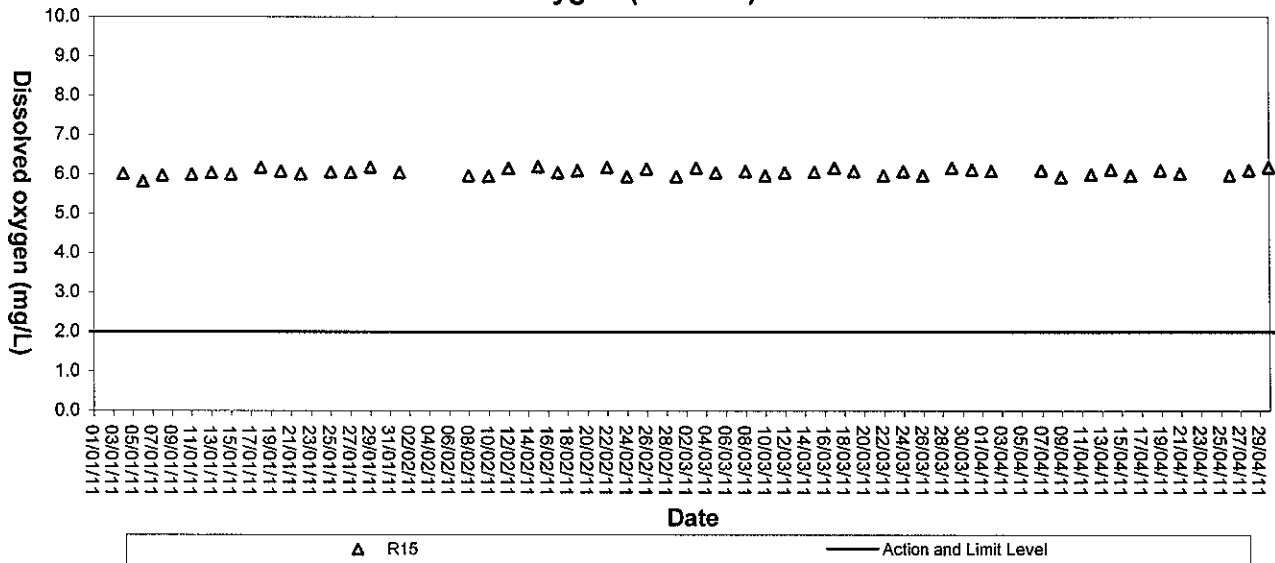


Dissolved Oxygen (Surface) at Mid-Ebb Tide

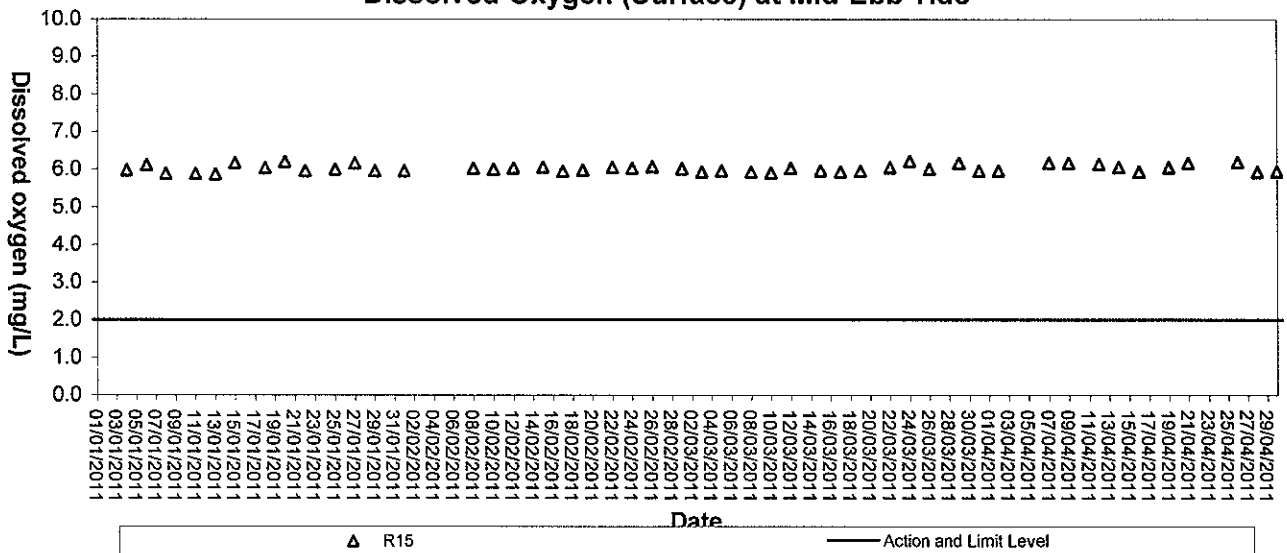




Dissolved Oxygen (Surface) at Mid-Flood Tide

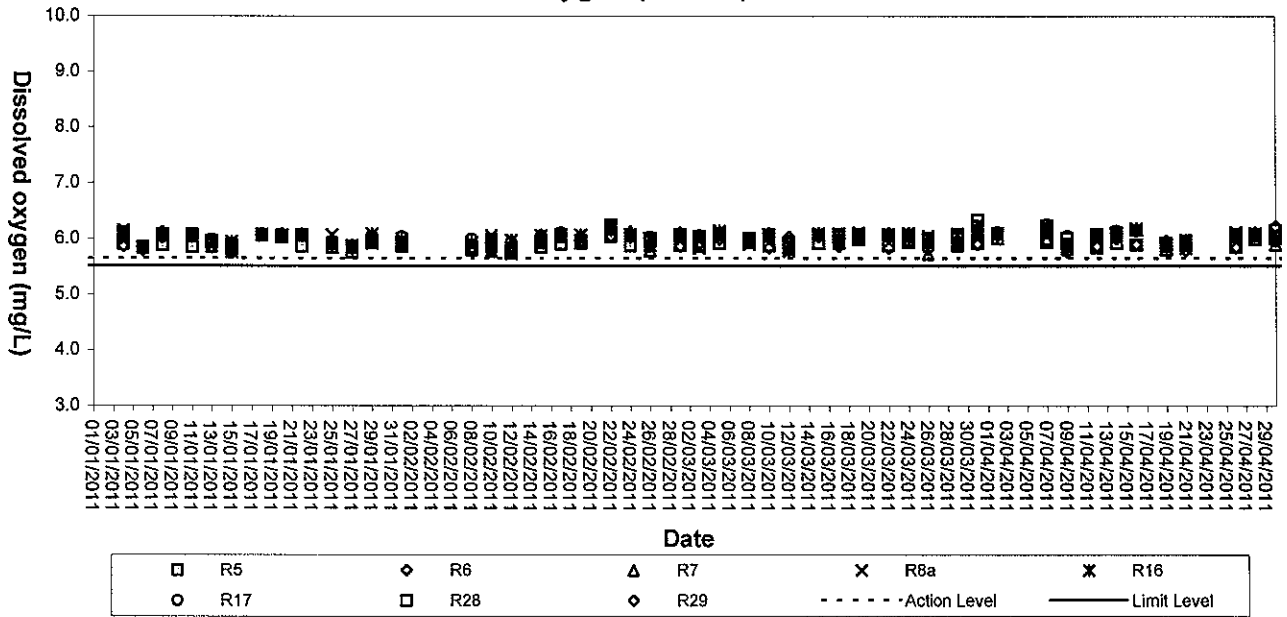


Dissolved Oxygen (Surface) at Mid-Ebb Tide

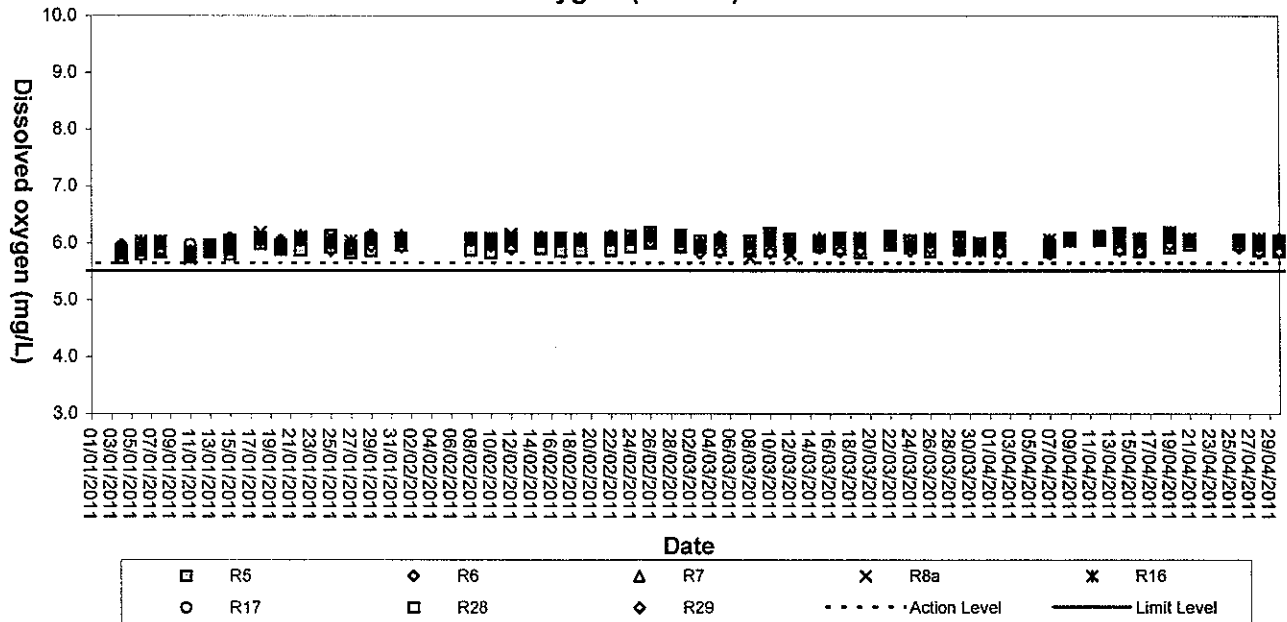




Dissolved Oxygen (Middle) at Mid-Flood Tide

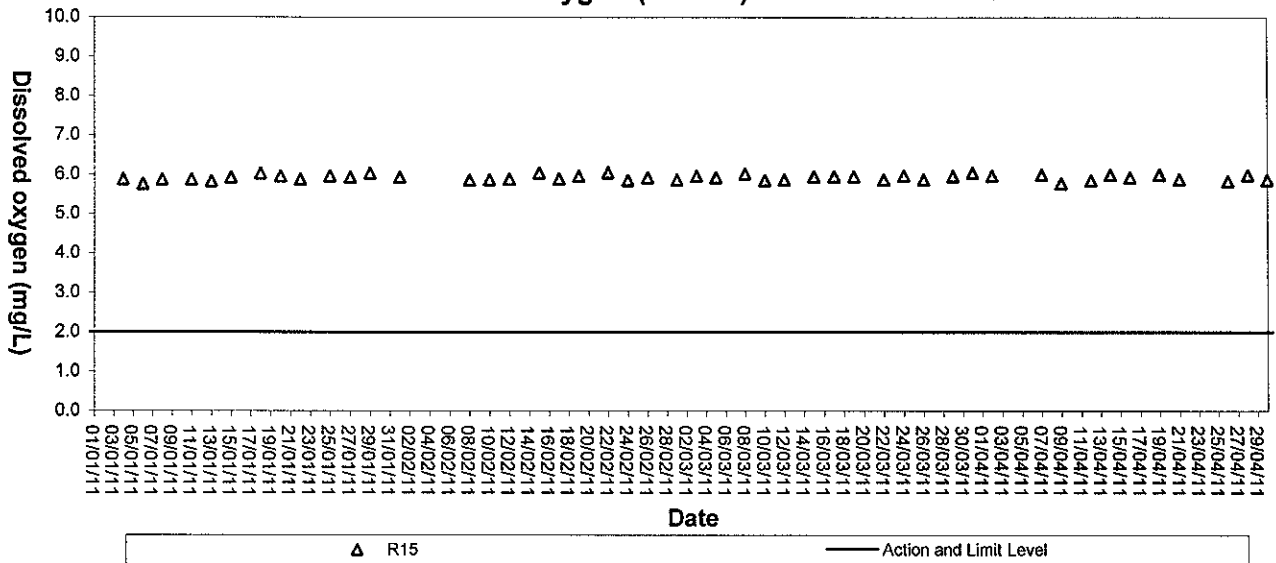


Dissolved Oxygen (Middle) at Mid-Ebb Tide





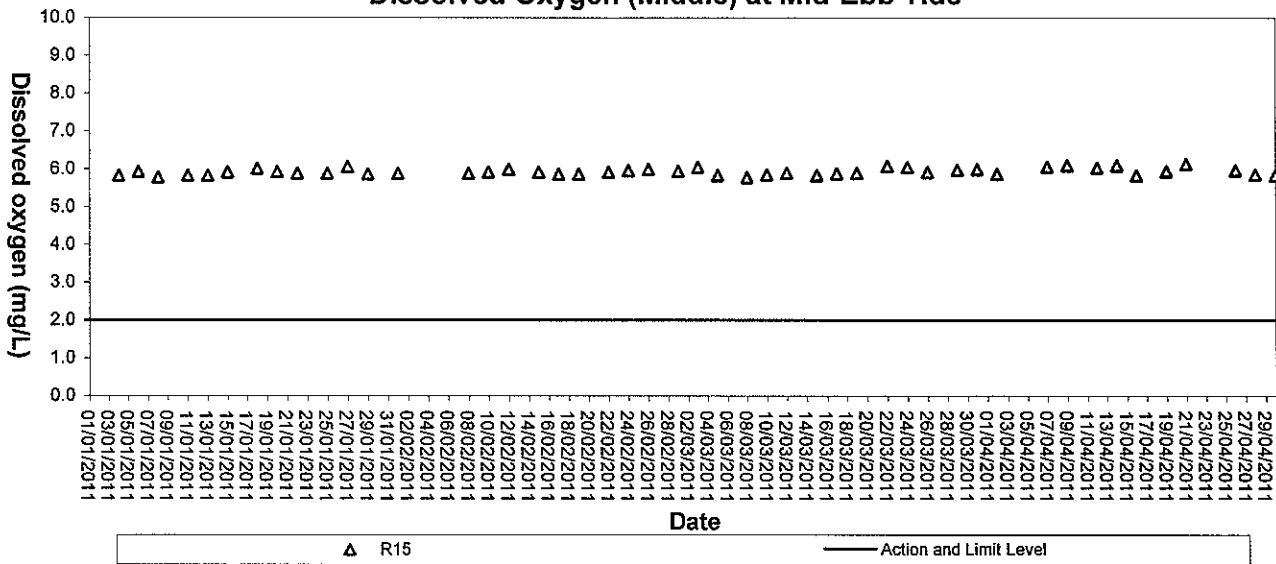
Dissolved Oxygen (Middle) at Mid-Flood Tide



△ R15

— Action and Limit Level

Dissolved Oxygen (Middle) at Mid-Ebb Tide

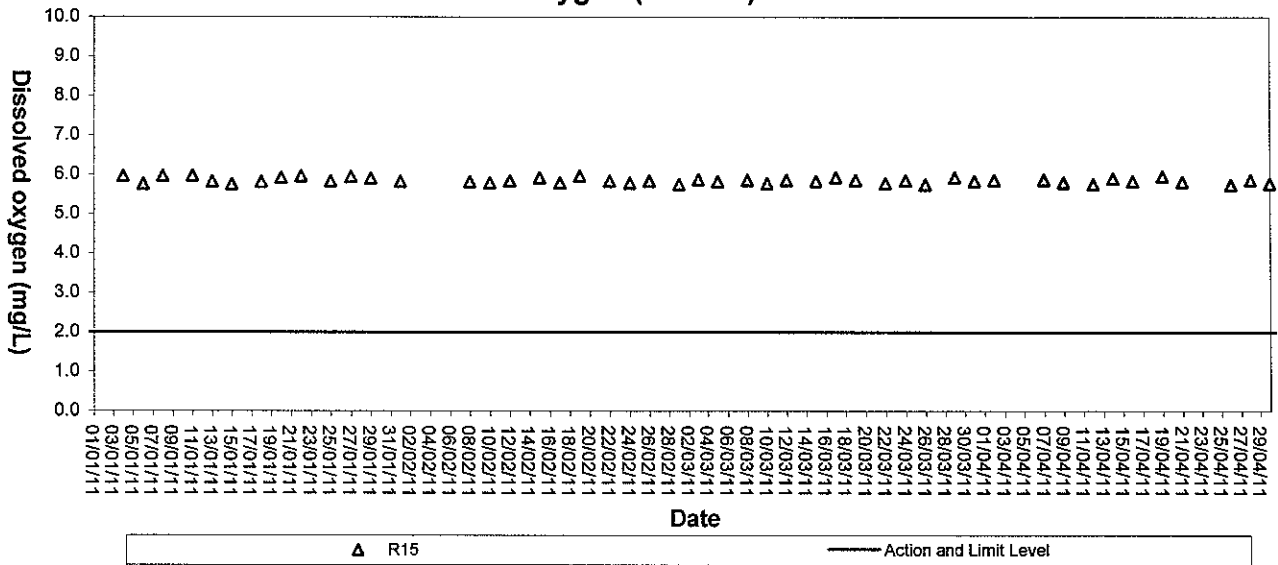


△ R15

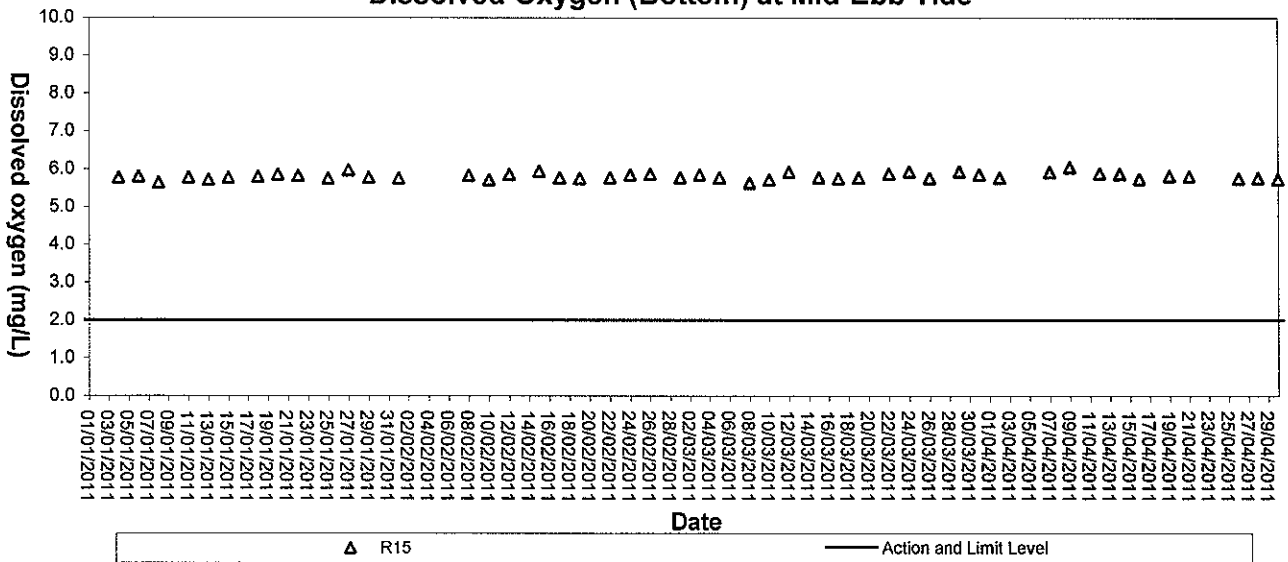
— Action and Limit Level



Dissolved Oxygen (Bottom) at Mid-Flood Tide

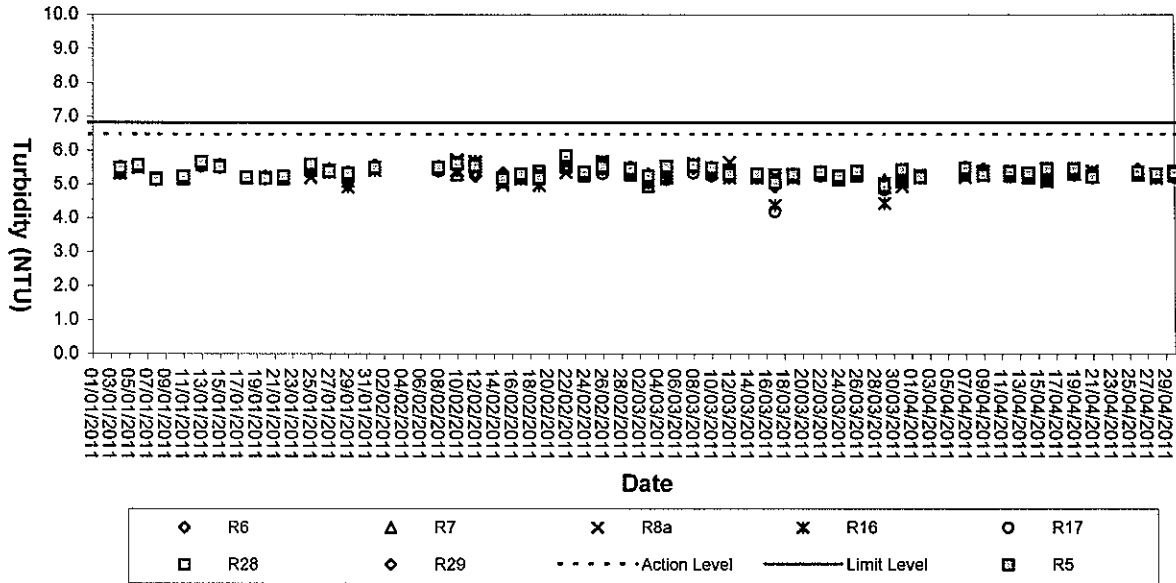


Dissolved Oxygen (Bottom) at Mid-Ebb Tide

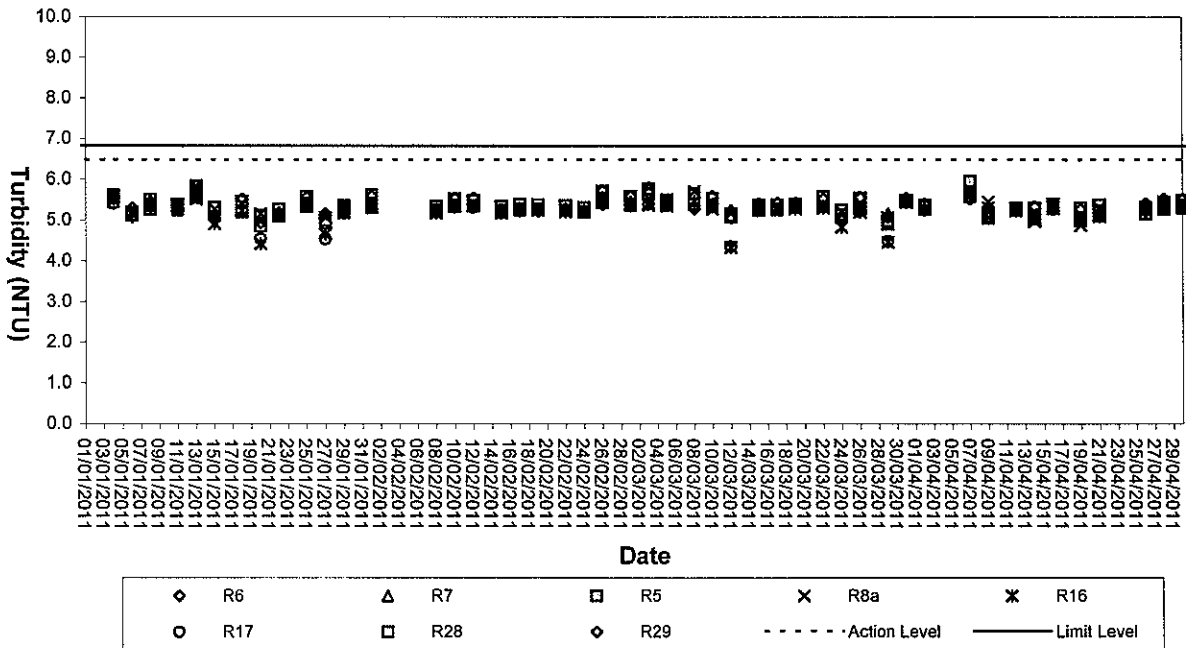




Turbidity (Depth-average) at Mid-Flood Tide

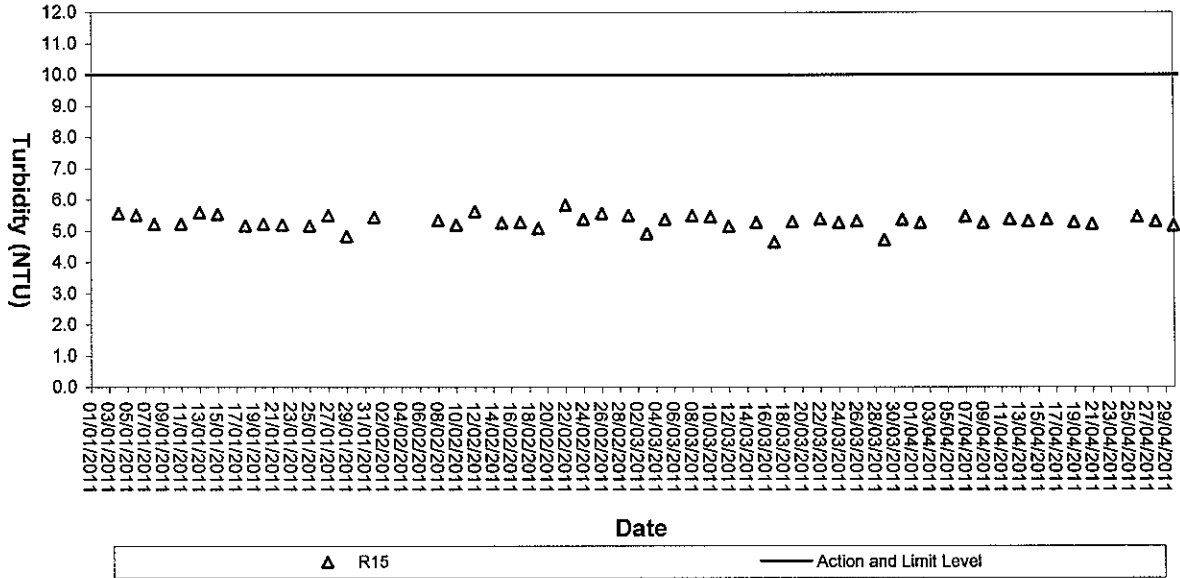


Turbidity (Depth-average) at Mid-Ebb Tide

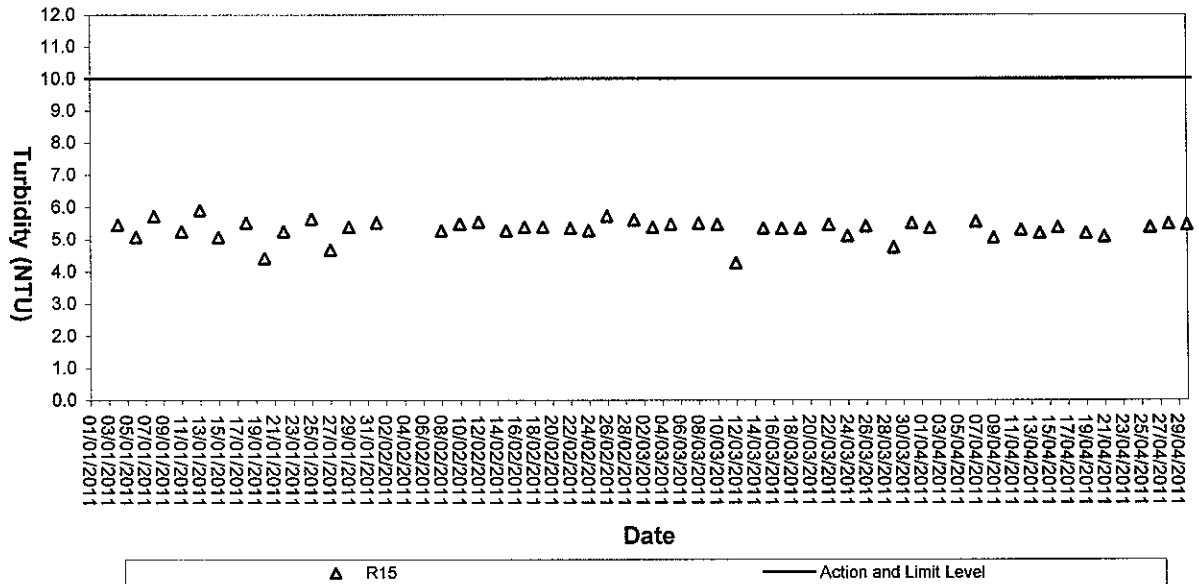




Turbidity (Depth-average) of R15 at Mid-Flood Tide

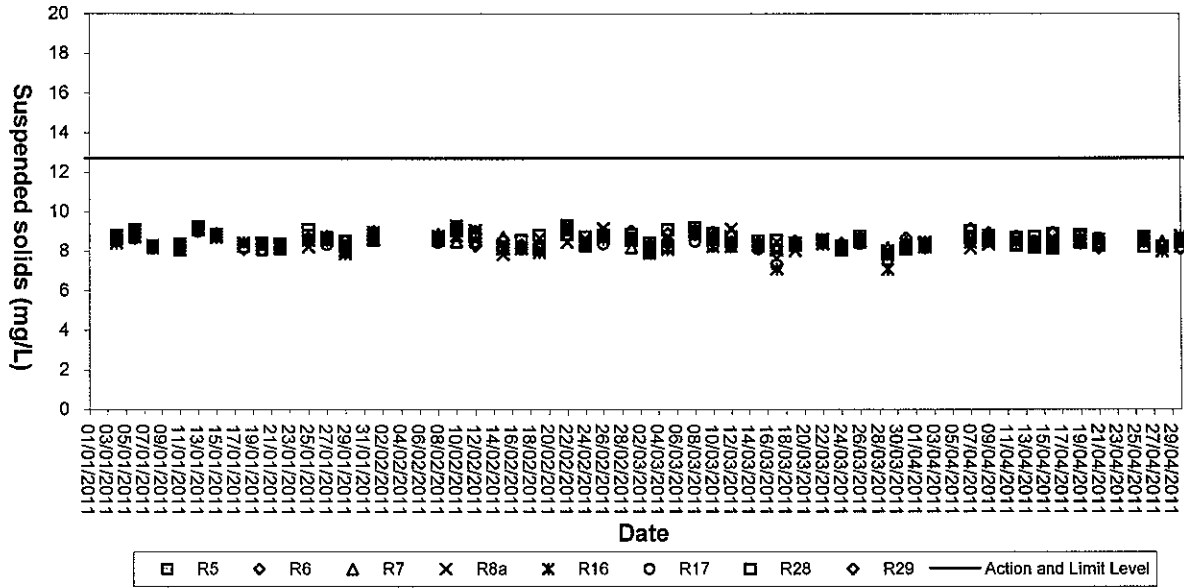


Turbidity (Depth-average) of R15 at Mid-Ebb Tide

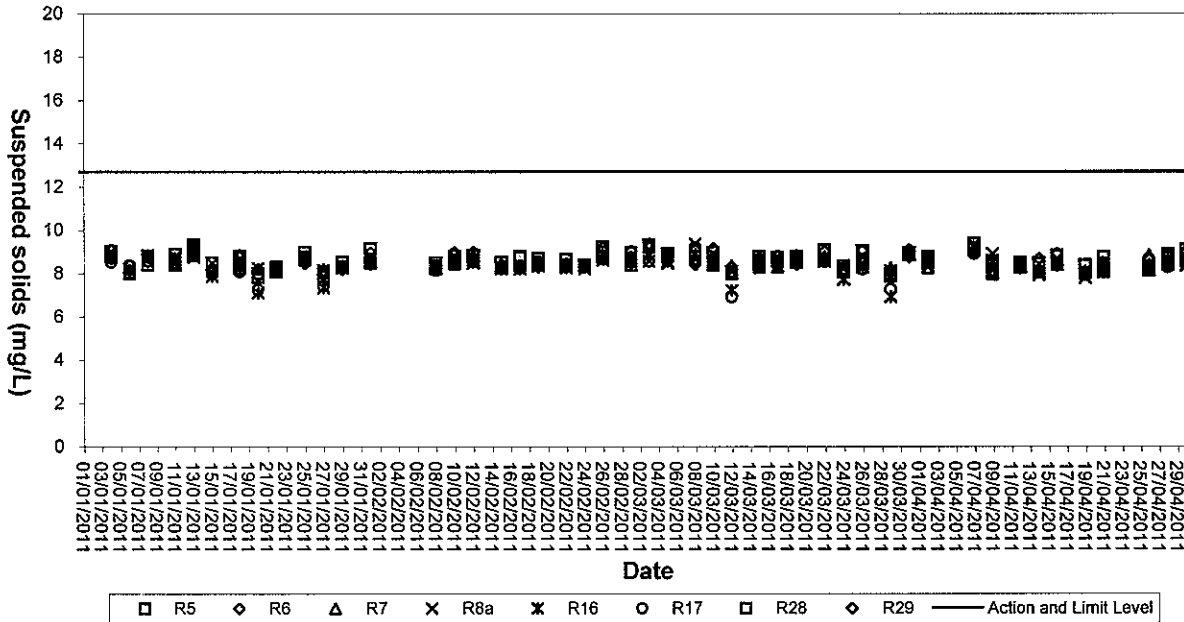




Suspended solids (Depth-average) at Mid-Flood Tide

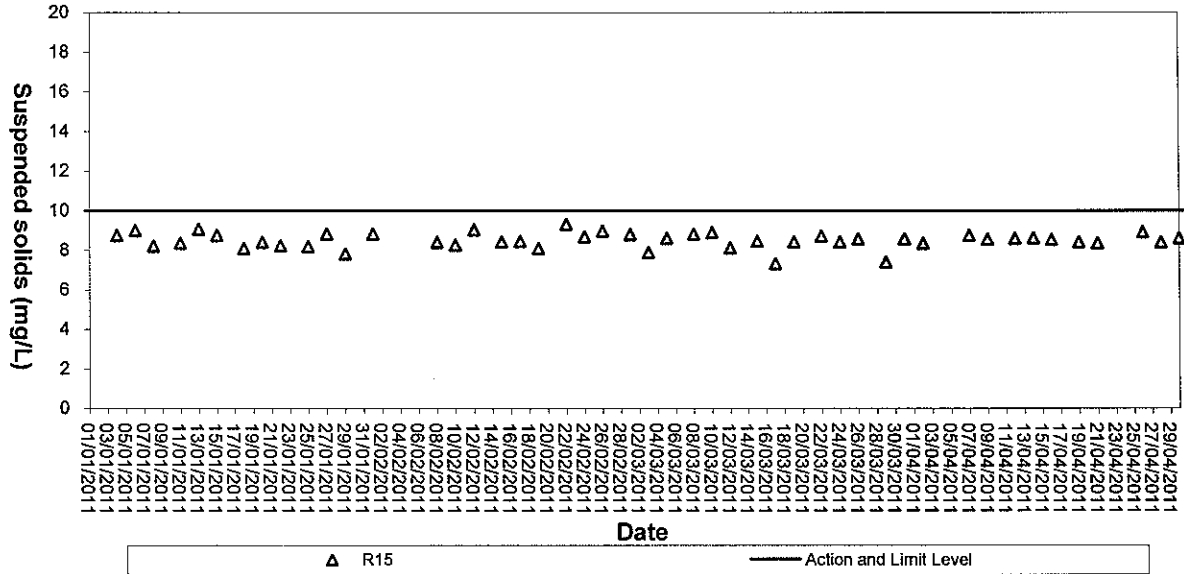


Suspended Solids (Depth-average) at Mid-Ebb Tide

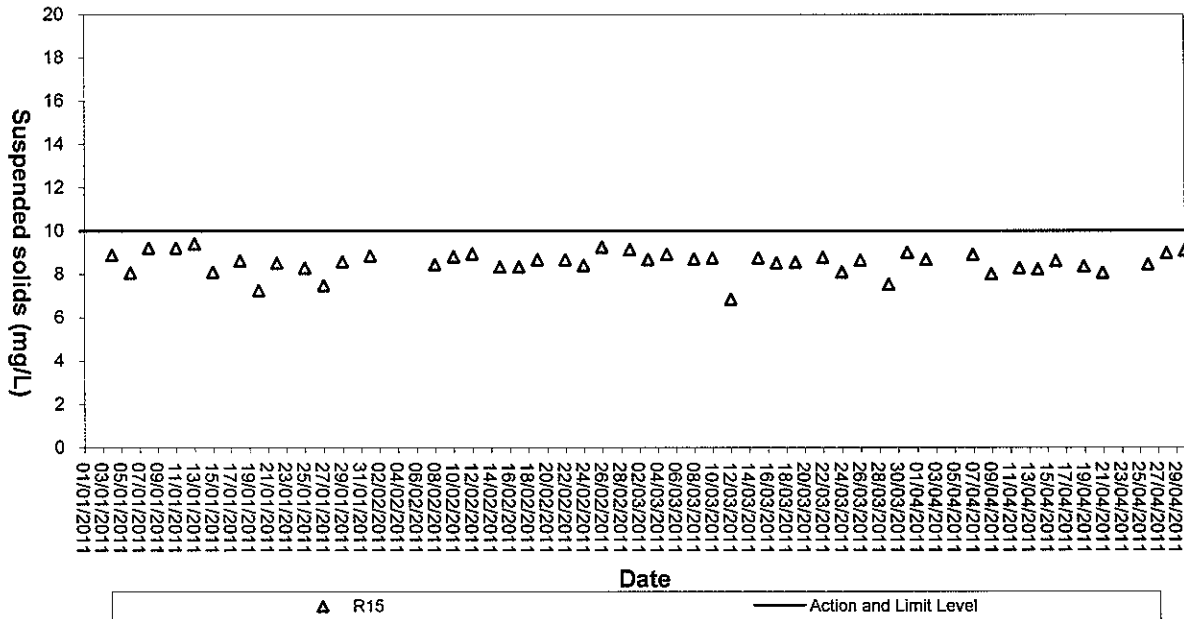




Suspended solids (Depth-average) of R15 at Mid-Flood Tide



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



Appendix D

Environmental Quality Performance (Action / Limit Levels)



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

Action and Limit Levels for Marine Water Quality

| 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 the 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.



Appendix E

Event-Action Plans



Event and Action Plan for Construction Noise

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

Event and Action Plan for Water Quality for Construction Phase

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



Event and Action Plan for Water Quality for Construction Phase

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

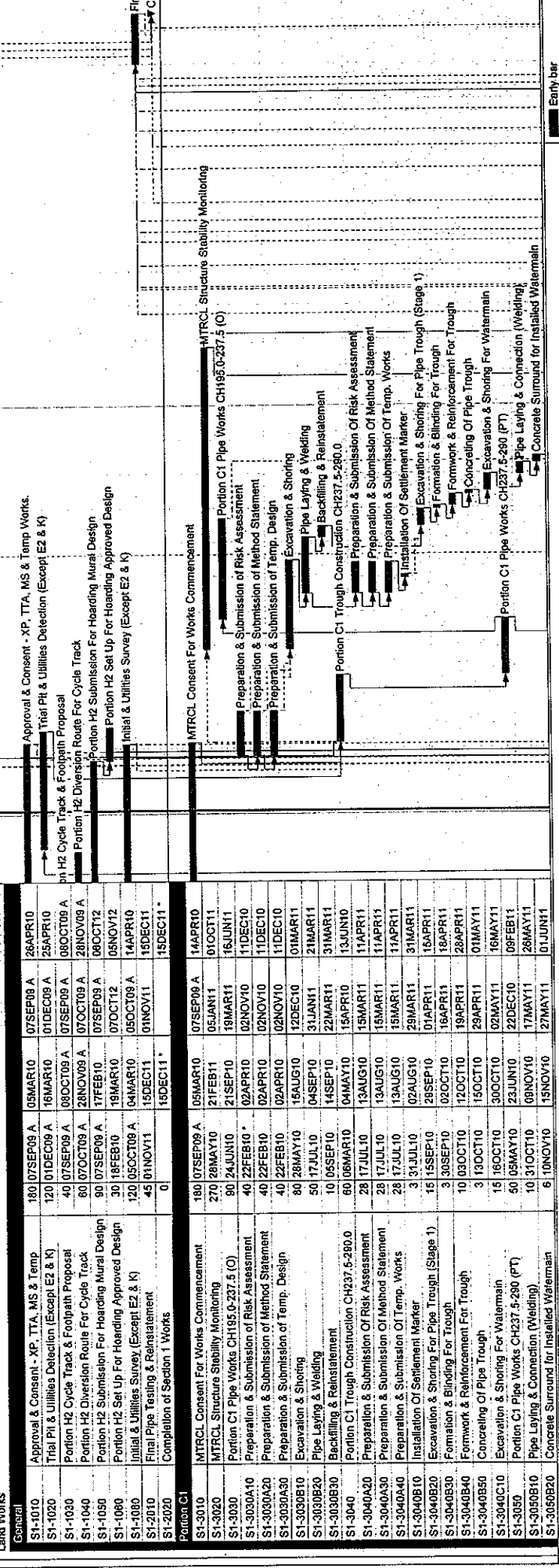
Appendix F

Work Programme

| Contract Completion | 05NOV12 | 07SEP09 A | 05NOV12 | 07SEP09 A | 05NOV12 |
|---------------------|---------|-----------|---------|-----------|---------|
| KD-1010 | 0 | 0 | 0 | 0 | 0 |
| KD-1020 | 830 | 07SEP09 A | 05NOV12 | 07SEP09 A | 05NOV12 |
| KD-1030 | 449 | 07SEP09 A | 15DEC11 | 07SEP09 A | 15DEC11 |
| KD-1040 | 579 | 07SEP09 A | 29NOV10 | 07SEP09 A | 29NOV10 |
| KD-1050 | 1156 | 07SEP09 A | 05APR11 | 07SEP09 A | 05APR11 |
| KD-1060 | 1156 | 07SEP09 A | 05NOV12 | 07SEP09 A | 05NOV12 |

| Contract Completion Date | 07SEP09 A | 05NOV12 | 07SEP09 A | 05NOV12 |
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| B1-1000 | 90 | 07SEP09 A | 06DEC09 A | 07SEP09 A |
| B1-1100 | 60 | 16NOV09 A | 16JAN10 | 16NOV09 A |
| B1-1120 | 939 | 17JAN10 | 09AUG12 | 17JAN10 |
| B1-1130 | 88 | 10AUG12 | 05NOV12 | 10AUG12 |
| B1-1140 | 1026 | 28DEC09 A | 18FEB10 | 28DEC09 A |
| B1-1150 | 100 | 07SEP09 A | 01FEB10 | 07SEP09 A |
| B1-1160 | 60 | 28DEC09 A | 18JUL11 | 28DEC09 A |
| B1-1170 | 400 | 14JUN10 | 15APR10 | 14JUN10 |
| B1-1180 | 610 | 06MAR10 | 05NOV11 | 15APR10 |
| B1-1190 | 610 | 06MAR10 | 15DEC11 | 15APR10 |
| B1-2020 | 830 | 07SEP09 A | 15DEC11 | 06AUG09 A |

| Contract Completion Date | 07SEP09 A | 05NOV12 | 07SEP09 A | 05NOV12 |
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| S1-1010 | 180 | 07SEP09 A | 05MAR10 | 07SEP09 A |
| S1-1020 | 120 | 01DEC09 A | 16MAR10 | 01DEC09 A |
| S1-1030 | 40 | 07SEP09 A | 08OCT09 A | 07SEP09 A |
| S1-1040 | 60 | 07OCT09 A | 28NOV09 A | 07OCT09 A |
| S1-1050 | 30 | 18FEB10 | 17FEB10 | 07SEP09 A |
| S1-1060 | 90 | 18FEB10 | 19MAR10 | 07OCT12 |
| S1-1070 | 120 | 05OCT09 A | 04MAR10 | 05OCT09 A |
| S1-1080 | 45 | 01NOV11 | 15DEC11 | 01NOV11 |
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| S1-2020 | 180 | 07SEP09 A | 05MAR10 | 07SEP09 A |
| S1-2030 | 270 | 26MAY10 | 21FEB11 | 05JAN11 |
| S1-2040 | 90 | 24JUN10 | 21SEP10 | 19MAR11 |
| S1-2050 | 40 | 22FEB10 | 02APR10 | 02NOV10 |
| S1-2060 | 40 | 22FEB10 | 02APR10 | 02NOV10 |
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| S1-2080 | 80 | 28MAY10 | 15AUG10 | 12DEC10 |
| S1-2090 | 50 | 17JUL10 | 04SEP10 | 31JAN11 |
| S1-2100 | 10 | 05SEP10 | 14SEP10 | 22MAR11 |
| S1-3000 | 28 | 17JUL10 | 04MAY10 | 15APR10 |
| S1-3010 | 28 | 17JUL10 | 13AUG10 | 15MAR11 |
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| S1-3030 | 3 | 31JUL10 | 29AUG10 | 29MAR11 |
| S1-3040 | 15 | 15SEP10 | 29SEP10 | 01APR11 |
| S1-3050 | 3 | 30SEP10 | 02OCT10 | 16APR11 |
| S1-3060 | 10 | 02OCT10 | 10OCT10 | 19APR11 |
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| S1-3080 | 15 | 16OCT10 | 30OCT10 | 02MAY11 |
| S1-3090 | 60 | 05MAY10 | 23JUN10 | 22DEC10 |
| S1-3100 | 10 | 31OCT10 | 09NOV10 | 17MAY11 |
| S1-3050B20 | 6 | 10NOV10 | 15NOV10 | 27MAY11 |



| Start date | 07SEP09 | 05NOV12 |
|-------------|-------------------------|---------|
| Finish date | 05NOV12 | |
| Data date | 04JAN10 | |
| Run date | 12APR11 | |
| Page number | 1A | |
| Company | Primavera Systems, Inc. | |

| Act ID | Description | Orig Dur | Early Start | Early Finish | Late Start | Late Finish |
|---------------------------------|--|----------|-------------|--------------|------------|-------------|
| S1-3050830 | Backfilling Of Pipe Trough | 5 | 16NOV10 | 20NOV10 | 02JUN11 | 08JUN11 |
| S1-3050840 | Backfilling & Reinstatement | 10 | 21NOV10 | 30NOV10 | 07JUN11 | 16JUN11 |
| S1-3060 | Portion C1 Pipe Works CH280.0-325.5 (O) | 83 | 01DEC10 | 21FEB11 | 17JUN11 | 07SEP11 |
| S1-3070 | Area C1 Portional Pipe Testing | 30 | 22FEB11 | 23MAR11 | 02OCT11 | 31OCT11 |
| Portion E1A | | | | | | |
| S1-4020 | Portion E1A Pipe Works CH387.5-578.9 (O) | 180 | 17MAR10 | 12SEP10 | 24AUG10 | 19FEB11 |
| S1-4020A20 | Preparation & Submission Of Risk Assessment | 40 | 03MAR10 | 11APR10 | 10AUG10 | 18SEP10 |
| S1-4020A30 | Preparation & Submission Of Method Statement | 40 | 03MAR10 | 11APR10 | 10AUG10 | 18SEP10 |
| S1-4020A40 | Preparation & Submission Of Temp. Works | 40 | 03MAR10 | 11APR10 | 10AUG10 | 18SEP10 |
| S1-4020B10 | Stage 1 U/D & Trial Pit (CH380-420) | 52 | 03MAY10 | 23JUN10 | 10OCT10 | 30NOV10 |
| S1-4020B20 | Fabrication of Access Shaft | 30 | 12SEP10 | 11OCT10 | 19FEB11 | 20MAR11 |
| S1-4020B30 | Excavation & Support for Trenchless Works | 45 | 12OCT10 | 28NOV10 | 21MAR11 | 04MAY11 |
| S1-4020B40 | Pipe Laying & Joint Connection | 20 | 28NOV10 | 15DEC10 | 05MAY11 | 24MAY11 |
| S1-4020B50 | Backfilling & Reinstatement | 7 | 18DEC10 | 22DEC10 | 25MAY11 | 31MAY11 |
| S1-4020C05 | Existing Trees Relocation | 4 | 19AUG10 | 29AUG10 | 03JUN11 | 06JUN11 |
| S1-4020C10 | Stage 2 U/D & Trial Pit (CH420-CH480) | 10 | 23AUG10 | 01SEP10 | 07JUN11 | 16JUN11 |
| S1-4020C20 | Excavation & Shoring | 50 | 02SEP10 | 21OCT10 | 17JUN11 | 05AUG11 |
| S1-4020C30 | Pipe Laying & Connection (Welding) | 29 | 22OCT10 | 19NOV10 | 08AUG11 | 30AUG11 |
| S1-4020C40 | Backfilling & Reinstatement | 7 | 19NOV10 | 22NOV10 | 31AUG11 | 09SEP11 |
| S1-4020D10 | Stage 3 U/D & Trial Pit (CH480-576.9) | 6 | 01JUN11 | 06JUN11 | 01JUN11 | 06JUN11 |
| S1-4020D20 | Excavation & Shoring | 92 | 07JUN11 | 06SEP11 | 07JUN11 | 06SEP11 |
| S1-4020D30 | Pipe Laying & Connection (Welding) | 25 | 07SEP11 | 01OCT11 | 02OCT11 | 01OCT11 |
| S1-4020D40 | Backfilling & Reinstatement | 18 | 02OCT11 | 17OCT11 | 02OCT11 | 17OCT11 |
| S1-4030 | Portion E1A Pipe Works CH576.9-585.9 (TL-B) | 108 | 23FEB11 | 10JUN11 | 02JUL11 | 17OCT11 |
| S1-4030B10 | Fabrication of Access Shaft | 55 | 27SEP10 | 20NOV10 | 12MAR11 | 05MAY11 |
| S1-4030B20 | Excavation & Support for Trenchless Works | 50 | 21NOV10 | 08JAN11 | 06MAY11 | 24JUN11 |
| S1-4030B30 | Pipe Laying & Joint Connection | 15 | 10JAN11 | 24JAN11 | 25JUN11 | 08JUL11 |
| S1-4030B40 | Backfilling & Reinstatement | 8 | 25JAN11 | 01FEB11 | 10OCT11 | 17OCT11 |
| S1-4050 | Area E1A Portional Pipe Testing | 14 | 18OCT11 | 31OCT11 | 18OCT11 | 31OCT11 |
| Portion E1B & E2 SWM | | | | | | |
| S1-4010 | Portion E1B Diversion of Existing Storm Drain | 50 | 13SEP10 | 01NOV10 | 06MAY11 | 24JUN11 |
| S1-4010A10 | Trees Transplanting (LCSD Consent Required) | 5 | 08SEP10 | 13SEP10 | 26JAN11 | 30JAN11 |
| S1-4010A20 | Temporary Relocation of Irrigation Pipe | 60 | 14SEP10 | 12NOV10 | 31JAN11 | 31MAR11 |
| S1-4010A30 | Temporary Relocation of Existing Storm Drain | 60 | 14SEP10 | 12NOV10 | 31JAN11 | 31MAR11 |
| S1-4010A50 | Excavation for Irrigation Pipe Perm. Diversion | 20 | 11MAR11 | 30MAR11 | 24AUG11 | 12SEP11 |
| S1-4010A60 | Irrigation Pipe Installation | 10 | 31MAR11 | 09APR11 | 28SEP11 | 07OCT11 |
| S1-4010A70 | Excavation for Storm Drain Diversion | 20 | 11MAR11 | 30MAR11 | 24AUG11 | 12SEP11 |
| S1-4010A80 | Pipe Laying & MH Construction | 25 | 31MAR11 | 24APR11 | 13SEP11 | 07OCT11 |
| S1-4010A90 | Backfilling & Reinstatement | 10 | 25APR11 | 04MAY11 | 08OCT11 | 17OCT11 |
| S1-4040 | Portion E1B Pipe Works CH666.9-660.5 (O) | 115 | 02NOV10 | 24FEB11 | 25JUN11 | 17OCT11 |
| S1-4040B10 | Excavation & Shoring For Pipe Trough (Stage 1) | 40 | 13NOV10 | 22DEC10 | 01APR11 | 10MAY11 |
| S1-4040B20 | Pwk & Reinforcement for Pipe Trough | 15 | 23DEC10 | 09JAN11 | 25JUN11 | 08JUL11 |
| S1-4040B30 | Pipe Laying & Support Casting | 25 | 25JAN11 | 18FEB11 | 10MAY11 | 03AUG11 |
| S1-4040B40 | Backfilling & Reinstatement | 20 | 18FEB11 | 10MAR11 | 04AUG11 | 23AUG11 |
| S1-4410 | Portion E2 DN600A SWM Works CH71.4-83.7 (UC) | 50 | 05MAR10 | 23APR10 | 03SEP10 | 22OCT10 |
| S1-4410A10 | Preparation & Submission Of Risk Assessment | 28 | 18FEB10 | 18MAR10 | 27FEB11 | 26MAR11 |
| S1-4410A20 | Preparation & Submission Of Method Statement | 28 | 18FEB10 | 18MAR10 | 27FEB11 | 26MAR11 |
| S1-4410A30 | Submission & Approval Of Temp. Work | 28 | 18FEB10 | 18MAR10 | 27FEB11 | 26MAR11 |
| S1-4410B10 | Installation & Connection Of DN600A SWM | 8 | 14FEB11 | 21FEB11 | 27MAR11 | 03APR11 |
| S1-4410B20 | Support & Fixing Of DN600A SWM | 3 | 22FEB11 | 24FEB11 | 04APR11 | 06APR11 |
| S1-4420 | Portion E1B DN600A SWM Works CH0.0-7.1 (O) | 30 | 24APR10 | 23MAY10 | 23OCT10 | 21NOV10 |
| S1-4420B10 | Excavation & Shoring | 6 | 28FEB11 | 02MAR11 | 07APR11 | 12APR11 |
| S1-4420B20 | Main Laying & Connection With Trough Portion | 8 | 03MAR11 | 10MAR11 | 13APR11 | 20APR11 |
| S1-4430 | Portion E2 DN600A SWM Works CH62.7-67.9 (O) | 30 | 24MAY10 | 22JUN10 | 22NOV10 | 21DEC10 |
| S1-4430B10 | Excavation & Shoring | 8 | 11MAY11 | 19MAR11 | 21APR11 | 28APR11 |
| S1-4430B20 | Main Laying & Connection With Trough Portion | 4 | 19MAR11 | 23MAR11 | 29APR11 | 02MAY11 |
| S1-4440 | E1B Existing DN600 SWM Diversion & Demolition | 30 | 23JUN10 | 22JUL10 | 22DEC10 | 20JAN11 |
| S1-4440A10 | Issuance Of Temp. Water Supply Suspension Notice | 14 | 09MAR11 | 22MAR11 | 19APR11 | 02MAY11 |

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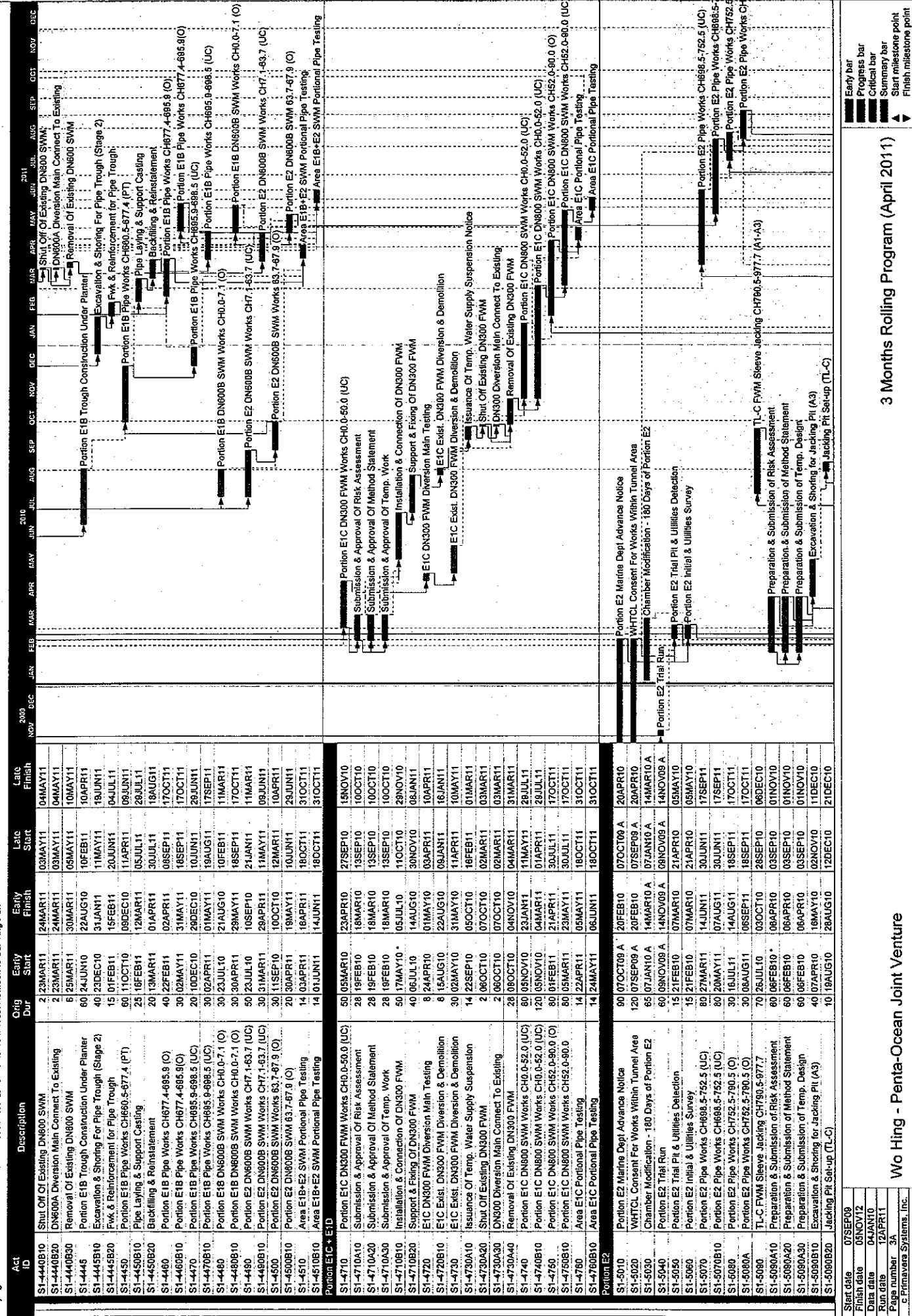
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Legend:
 - Early bar
 - Progress bar
 - Critical bar
 - Summary bar
 - Start milestone point
 - Finish milestone point

3 Months Rolling Program (April 2011)

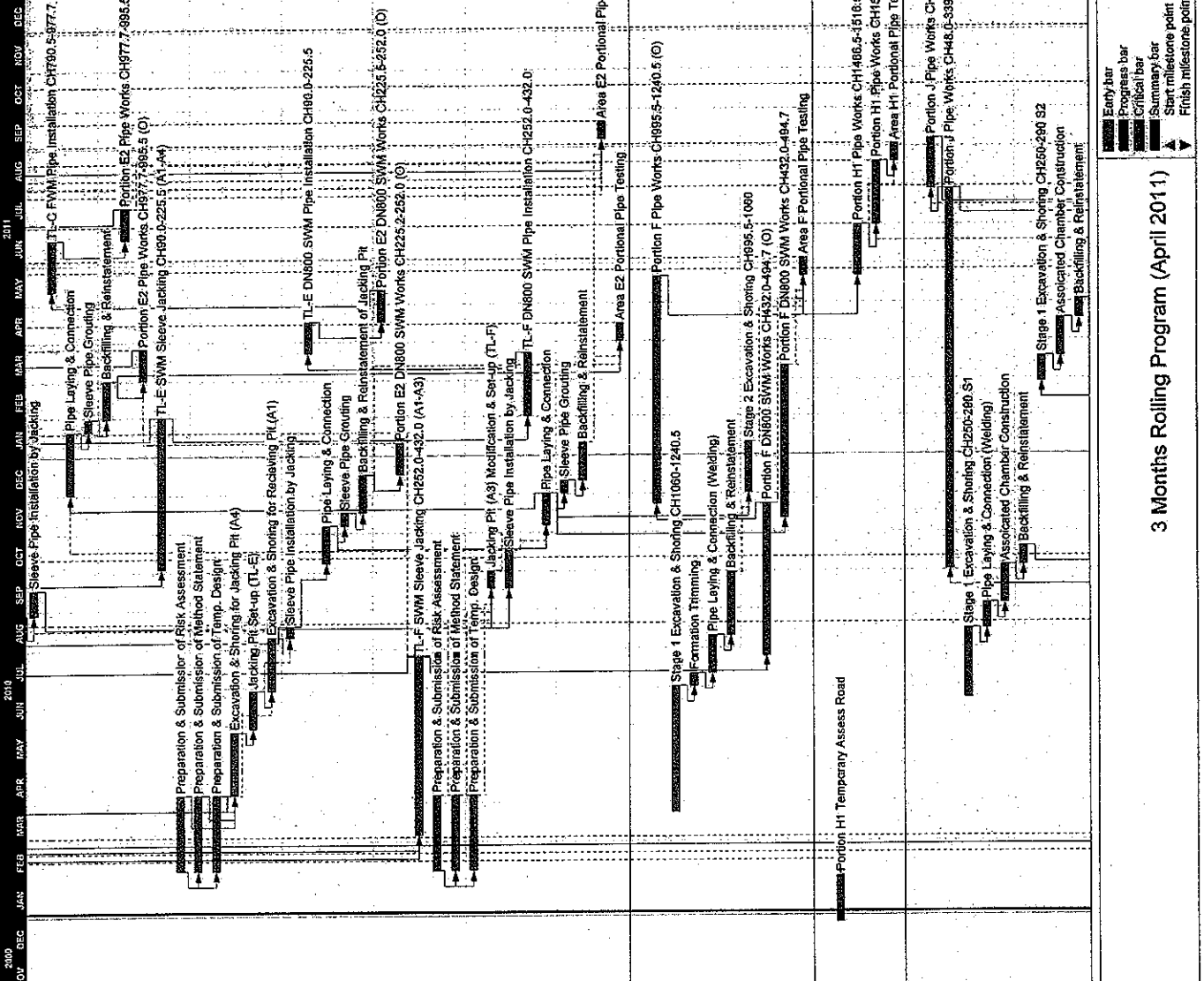
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 c Primavera Systems, Inc.

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 Finish date: 05NOV12
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3 Months Rolling Program (April 2011)

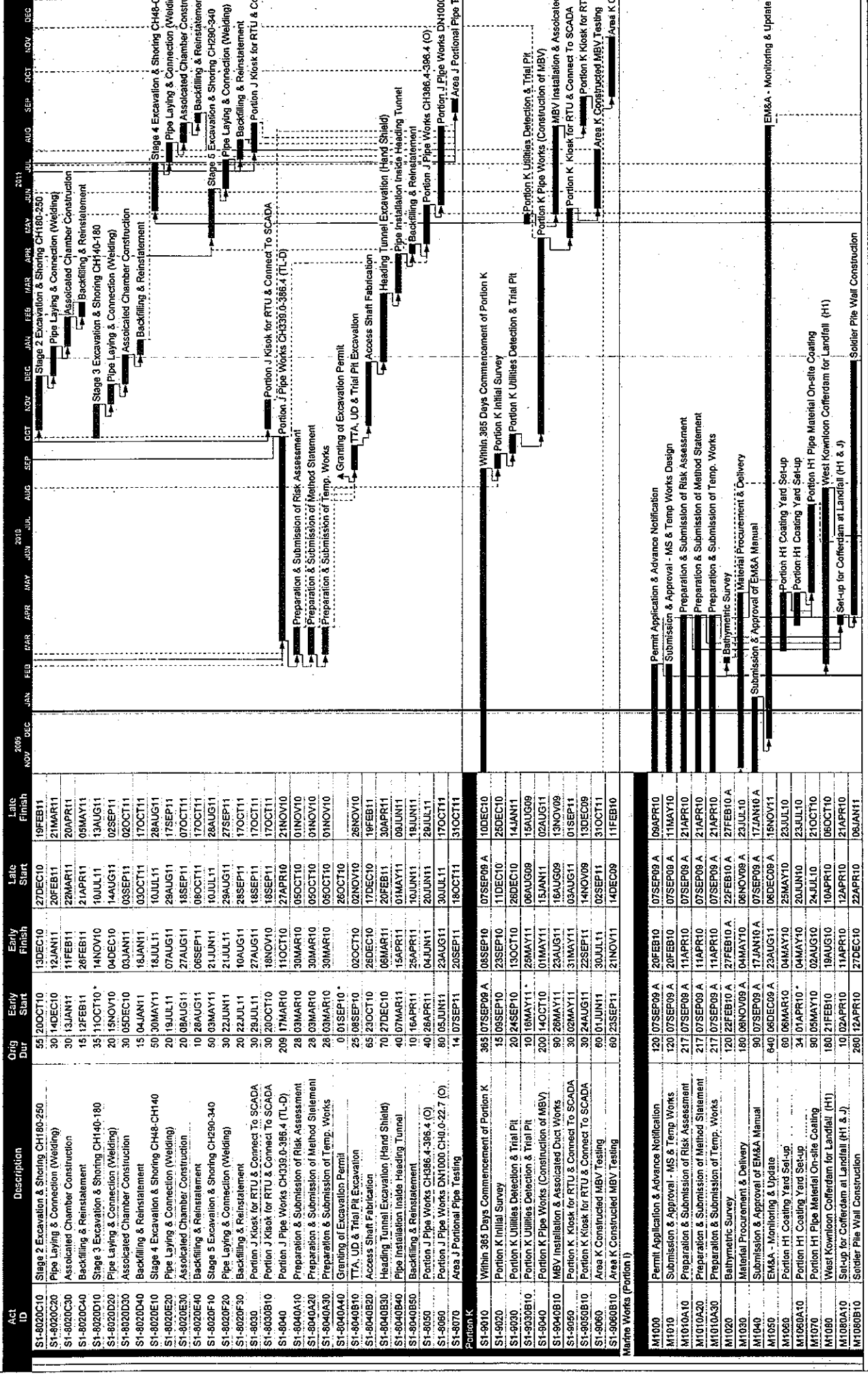
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| Data date | 04JAN10 |
| Run date | 12APR11 |
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| Act ID | Description | Orig Dur | Early Start | Early Finish | Late Start | Late Finish |
|------------------|---|----------|-------------|--------------|------------|-------------|
| S1-5090C10 | Sleeve Pipe Installation by Jacking | 20 | 29AUG10 | 17SEP10 | 22DEC10 | 10JAN11 |
| S1-5095 | TL-C FWM Pipe Installation CH780.5-977.7 | 40 | 12MAY11 | 20JUN11 | 13JUL11 | 23AUG11 |
| S1-5095B10 | Pipe Laying & Connection | 50 | 02DEC10 | 20JAN11 | 07MAR11 | 25APR11 |
| S1-5095B20 | Sleeve Pipe Grouting | 10 | 21JAN11 | 30JAN11 | 28APR11 | 06MAY11 |
| S1-5095B30 | Backfilling & Reinstatement | 30 | 31JAN11 | 01MAR11 | 06MAY11 | 04JUN11 |
| S1-5100 | Portion E2 Pipe Works CH977.7-995.5 (O) | 25 | 21JUN11 | 15JUL11 | 24AUG11 | 17SEP11 |
| S1-5100A | Portion E2 Pipe Works CH977.7-995.5 (O) | 25 | 02MAY11 | 28MAR11 | 05JUN11 | 29JUN11 |
| S1-5110 | TL-E SWM Sleeve Jacking CH920.0-225.5 (A1-A4) | 120 | 04OCT10 | 31JAN11 | 07DEC10 | 06APR11 |
| S1-5110A10 | Preparation & Submission of Risk Assessment | 60 | 06FEB10 | 06APR10 | 12MAY10 | 10JUL10 |
| S1-5110A20 | Preparation & Submission of Method Statement | 60 | 06FEB10 | 06APR10 | 12MAY10 | 10JUL10 |
| S1-5110A30 | Preparation & Submission of Temp. Design | 60 | 06FEB10 | 06APR10 | 12MAY10 | 10JUL10 |
| S1-5110B10 | Excavation & Shoring for Jacking Pit (A4) | 50 | 07APR10 | 28MAY10 | 11JUL10 | 29AUG10 |
| S1-5110B20 | Jacking Pit Set-up (TL-E) | 30 | 30MAY10 | 28JUN10 | 02SEP10 | 01OCT10 |
| S1-5110B30 | Excavation & Shoring for Receiving Pit (A1) | 42 | 29JUN10 | 09AUG10 | 02OCT10 | 01NOV10 |
| S1-5110C10 | Sleeve Pipe Installation by Jacking | 9 | 19AUG10 | 18AUG10 | 13NOV10 | 21NOV10 |
| S1-5115 | TL-E DN800 SWM Pipe Installation CH90.0-225.5 | 25 | 23MAR11 | 16APR11 | 28MAY11 | 18JUN11 |
| S1-5115B10 | Pipe Laying & Connection | 30 | 08OCT10 | 08NOV10 | 01APR11 | 10APR11 |
| S1-5115B20 | Sleeve Pipe Grouting | 10 | 07NOV10 | 16NOV10 | 10APR11 | 10APR11 |
| S1-5115B30 | Backfilling & Reinstatement of Jacking Pit | 30 | 17NOV10 | 16DEC10 | 11APR11 | 10MAY11 |
| S1-5120 | Portion E2 DN800 SWM Works CH225.5-252.0 | 25 | 17APR11 | 11MAY11 | 20JUN11 | 14JUL11 |
| S1-5130 | TL-F SWM Sleeve Jacking CH252.0-432.0 | 142 | 05MAR10 | 25JUL10 | 04MAY10 | 23SEP10 |
| S1-5130A10 | Preparation & Submission of Risk Assessment | 60 | 06FEB10 | 06APR10 | 08DEC10 | 05FEB11 |
| S1-5130A20 | Preparation & Submission of Method Statement | 60 | 06FEB10 | 06APR10 | 08DEC10 | 05FEB11 |
| S1-5130A30 | Preparation & Submission of Temp. Design | 60 | 06FEB10 | 06APR10 | 08DEC10 | 05FEB11 |
| S1-5130B10 | Jacking Pit (A3) Modification & Set-up (TL-F) | 14 | 18SEP10 | 01OCT10 | 08FEB11 | 05FEB11 |
| S1-5130C10 | Sleeve Pipe Installation by Jacking | 30 | 18SEP10 | 17OCT10 | 11JAN11 | 09FEB11 |
| S1-5135 | TL-F DN800 SWM Pipe Installation | 50 | 01FEB11 | 22MAR11 | 06APR11 | 28MAY11 |
| S1-5135B10 | Pipe Laying & Connection | 25 | 07NOV10 | 01DEC10 | 10FEB11 | 08MAR11 |
| S1-5135B20 | Sleeve Pipe Grouting | 10 | 02DEC10 | 10JAN11 | 18AUG11 | 17SEP11 |
| S1-5135B30 | Backfilling & Reinstatement | 30 | 12DEC10 | 10JAN11 | 19AUG11 | 17SEP11 |
| S1-5140 | Area E2 Portion F Pipe Testing | 14 | 07SEP11 | 20SEP11 | 18OCT11 | 31OCT11 |
| S1-5140B10 | Area E2 Portion F Pipe Testing | 14 | 01APR11 | 14APR11 | 18OCT11 | 31OCT11 |
| Portion F | | | | | | |
| S1-6010 | Portion F Pipe Works CH895.5-1240.5 (O) | 180 | 23NOV10 | 21MAY11 | 21JAN11 | 18JUL11 |
| S1-6010B10 | Stage 1 Excavation & Shoring CH1060-1240.5 | 100 | 24MAR10 | 01JUL10 | 02MAY11 | 08JUN11 |
| S1-6010B20 | Formation Trimming | 10 | 02JUL10 | 11JUL10 | 10JUN11 | 18JUN11 |
| S1-6010B30 | Pipe Laying & Connection (Welding) | 30 | 12JUL10 | 10AUG10 | 20JUN11 | 19JUL11 |
| S1-6010B40 | Backfilling & Reinstatement | 50 | 11AUG10 | 29SEP10 | 20JUN11 | 07SEP11 |
| S1-6010C10 | Stage 2 Excavation & Shoring CH895.5-1060 | 40 | 02DEC10 | 10JAN11 | 08SEP11 | 17OCT11 |
| S1-6020 | Portion F DN800 SWM Works CH432.0-494.7 (O) | 120 | 26JUL10 | 22NOV10 | 23SEP10 | 20JAN11 |
| S1-6020A10 | Portion F DN800 SWM Works CH432.0-494.7 | 120 | 12NOV10 | 11MAR11 | 20JUN11 | 17OCT11 |
| S1-6030 | Area F Portion F Pipe Testing | 14 | 22MAY11 | 04JUN11 | 18OCT11 | 31OCT11 |
| Portion H | | | | | | |
| S1-7010 | Portion H1 Temporary Assess Road | 80 | 26DEC09 | 31JAN10 | 26DEC09 | 05MAR10 |
| S1-7020 | Portion H1 Pipe Works CH1466.5-1516.5 (O) | 40 | 22MAY11 | 30JUN11 | 20JUL11 | 28AUG11 |
| S1-7030 | Portion H1 Pipe Works CH1516.5-1544.7 (O-S) | 50 | 01JUL11 | 19AUG11 | 29AUG11 | 17OCT11 |
| S1-7040 | Area H1 Portion F Pipe Testing | 14 | 29AUG11 | 02SEP11 | 18OCT11 | 31OCT11 |
| Portion J | | | | | | |
| S1-8010 | Portion J Pipe Works CH0.0-48.0 (O-S Wall) | 40 | 28JUL11 | 06SEP11 | 08SEP11 | 17OCT11 |
| S1-8020 | Portion J Pipe Works CH48.0-398.0 (O) | 300 | 02OCT10 | 28JUL11 | 12NOV10 | 07SEP11 |
| S1-8020B10 | Stage 1 Excavation & Shoring CH250-290 S1 | 55 | 22JUN10 | 16AUG10 | 28AUG10 | 22OCT10 |
| S1-8020B20 | Pipe Laying & Connection (Welding) | 20 | 16AUG10 | 04SEP10 | 23OCT10 | 11NOV10 |
| S1-8020B30 | Associated Chamber Construction | 30 | 05SEP10 | 04OCT10 | 12NOV10 | 11DEC10 |
| S1-8020B40 | Backfilling & Reinstatement | 15 | 05OCT10 | 19OCT10 | 12DEC10 | 28DEC10 |
| S1-8020B50 | Stage 1 Excavation & Shoring CH250-290 S2 | 20 | 27FEB11 | 18MAR11 | 06MAY11 | 25MAY11 |
| S1-8020B60 | Associated Chamber Construction | 30 | 19MAR11 | 17APR11 | 28MAY11 | 24JUN11 |
| S1-8020B70 | Backfilling & Reinstatement | 15 | 18APR11 | 02MAY11 | 25JUN11 | 08JUL11 |

3 Months Rolling Program (April 2011)

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| Start date | 07SEP09 |
| Finish date | 05NOV12 |
| Data date | 04JAN10 |
| Run date | 12APR11 |
| Page number | 4A |
| c Primavera Systems, Inc. | |

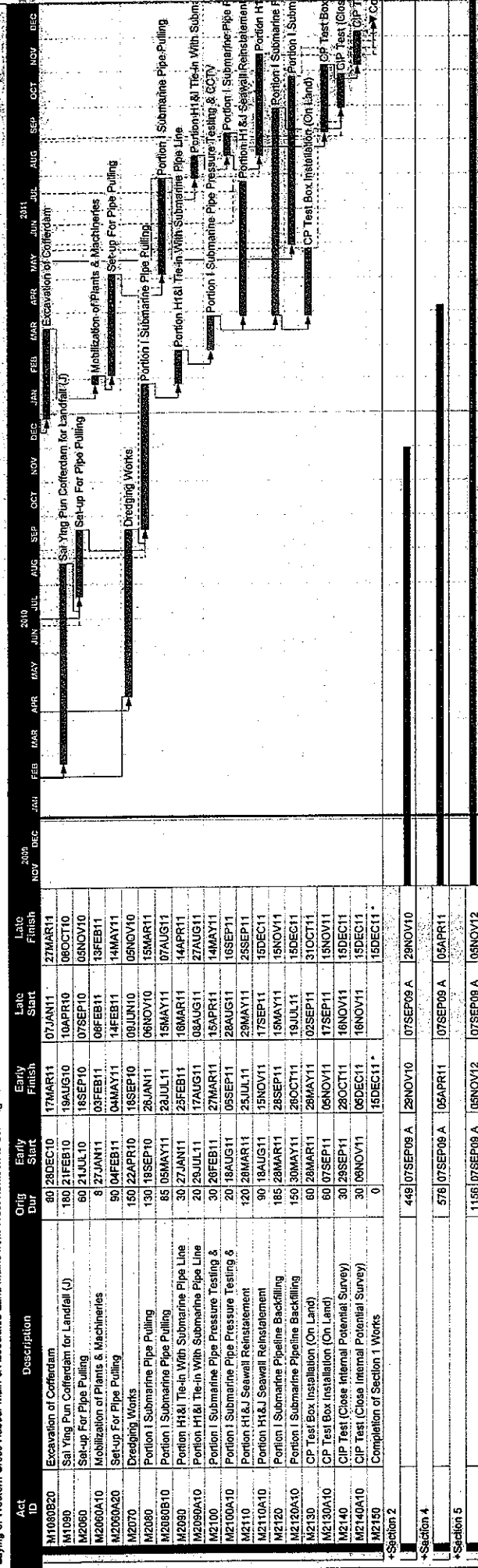


| Act ID | Description | Orig Dur | Early Start | Early Finish | Late Start | Late Finish |
|------------|--|----------|-------------|--------------|------------|-------------|
| S1-8020C10 | Stage 1 Excavation & Shoring CH180-250 | 55 | 20OCT10 | 13DEC10 | 27DEC10 | 19FEB11 |
| S1-8020C20 | Pipe Laying & Connection (Welding) | 30 | 14DEC10 | 20FEB11 | 27DEC10 | 21MAR11 |
| S1-8020C30 | Associated Chamber Construction | 30 | 13JAN11 | 11FEB11 | 22MAR11 | 20APR11 |
| S1-8020C40 | Backfilling & Reinstatement | 15 | 12FEB11 | 28FEB11 | 21APR11 | 09MAY11 |
| S1-8020D10 | Stage 3 Excavation & Shoring CH140-180 | 35 | 11OCT10* | 14NOV10 | 04DEC10 | 02SEP11 |
| S1-8020D20 | Pipe Laying & Connection (Welding) | 20 | 15NOV10 | 04DEC10 | 14AUG11 | 02SEP11 |
| S1-8020D30 | Associated Chamber Construction | 30 | 05DEC10 | 03JAN11 | 03SEP11 | 02OCT11 |
| S1-8020D40 | Backfilling & Reinstatement | 15 | 04JAN11 | 18JUL11 | 03OCT11 | 17OCT11 |
| S1-8020E10 | Stage 4 Excavation & Shoring CH48-CH140 | 50 | 30MAY11 | 18JUL11 | 10JUL11 | 28AUG11 |
| S1-8020E20 | Pipe Laying & Connection (Welding) | 20 | 18JUL11 | 07AUG11 | 29AUG11 | 17SEP11 |
| S1-8020E30 | Associated Chamber Construction | 20 | 08AUG11 | 27AUG11 | 18SEP11 | 07OCT11 |
| S1-8020E40 | Backfilling & Reinstatement | 10 | 28AUG11 | 06SEP11 | 08OCT11 | 17OCT11 |
| S1-8020F10 | Stage 5 Excavation & Shoring CH290-340 | 50 | 03MAY11 | 21JUN11 | 10JUL11 | 28AUG11 |
| S1-8020F20 | Pipe Laying & Connection (Welding) | 30 | 22JUN11 | 10AUG11 | 29AUG11 | 17SEP11 |
| S1-8020F30 | Associated Chamber Construction | 20 | 22JUL11 | 10AUG11 | 28SEP11 | 17OCT11 |
| S1-8030 | Portion J Kiosk for RTU & Connect To SCADA | 30 | 28JUL11 | 27AUG11 | 18SEP11 | 17OCT11 |
| S1-8030B10 | Portion J Kiosk for RTU & Connect To SCADA | 30 | 28OCT10 | 18NOV10 | 18SEP11 | 17OCT11 |
| S1-8040A10 | Portion J Pipe Works CH336.0-386.4 (TL-D) | 209 | 17MAR10 | 11OCT10 | 27APR10 | 21NOV10 |
| S1-8040A20 | Preparation & Submission of Risk Assessment | 28 | 03MAR10 | 30MAR10 | 05OCT10 | 01NOV10 |
| S1-8040A30 | Preparation & Submission of Method Statement | 28 | 03MAR10 | 30MAR10 | 05OCT10 | 01NOV10 |
| S1-8040A40 | Preparation & Submission of Temp. Works | 8 | 01SEP10* | 30MAR10 | 05OCT10 | 01NOV10 |
| S1-8040B10 | Granting of Excavation Permit | 25 | 09SEP10 | 02OCT10 | 26OCT10 | 28NOV10 |
| S1-8040B20 | TTA, UD & Trial Pit Excavation | 65 | 23OCT10 | 17DEC10 | 19FEB11 | 30APR11 |
| S1-8040B30 | Access Shaft Fabrication | 70 | 27DEC10 | 08MAR11 | 20FEB11 | 30APR11 |
| S1-8040B40 | Heading Tunnel Excavation (Hand Shield) | 40 | 07MAR11 | 15APR11 | 01MAY11 | 09JUN11 |
| S1-8040B50 | Pipe Installation Inside Heading Tunnel | 10 | 16APR11 | 25APR11 | 10JUN11 | 18JUN11 |
| S1-8050 | Backfilling & Reinstatement | 40 | 26APR11 | 04JUN11 | 20JUN11 | 28JUL11 |
| S1-8060 | Portion J Pipe Works CH386.4-396.4 (O) | 90 | 05JUN11 | 23AUG11 | 30JUL11 | 17OCT11 |
| S1-8060 | Portion J Pipe Works DN1000 CH0.0-22.7 (O) | 14 | 07SEP11 | 20SEP11 | 18OCT11 | 31OCT11 |
| S1-8070 | Area J Portional Pipe Testing | 383 | 07SEP09 A | 08SEP10 | 07SEP09 A | 10DEC10 |
| S1-9010 | Within 365 Days Commencement of Portion K | 15 | 08SEP10 | 23SEP10 | 11DEC10 | 28DEC10 |
| S1-9020 | Portion K Initial Survey | 20 | 24SEP10 | 13OCT10 | 26DEC10 | 14JAN11 |
| S1-9030 | Portion K Utilities Detection & Trial Pit | 10 | 16MAY11* | 29MAY11 | 06AUG09 | 18AUG09 |
| S1-9030B10 | Portion K Utilities Detection & Trial Pit | 200 | 14OCT10 | 01JAN11 | 15JAN11 | 02AUG11 |
| S1-9040 | MBV Installation (Construction of MBV) | 90 | 28MAY11 | 23AUG11 | 16AUG09 | 13NOV09 |
| S1-9040B10 | MBV Installation (Associated Duct Works) | 30 | 02MAY11 | 31MAY11 | 09AUG11 | 01SEP11 |
| S1-9050 | Portion K Kiosk for RTU & Connect To SCADA | 30 | 24AUG11 | 22SEP11 | 14NOV09 | 13OCT09 |
| S1-9050B10 | Portion K Kiosk for RTU & Connect To SCADA | 60 | 01JUN11 | 30JUL11 | 02SEP11 | 31OCT11 |
| S1-9060 | Area K Constructed MBV Testing | 60 | 23SEP11 | 21NOV11 | 14DEC09 | 11FEB10 |
| S1-9060B10 | Area K Constructed MBV Testing | 120 | 07SEP09 A | 20FEB10 | 07SEP09 A | 09APR10 |
| M1000 | Permit Application & Advance Notification | 120 | 07SEP09 A | 20FEB10 | 07SEP09 A | 09APR10 |
| M1010 | Submission & Approval - MS & Temp Works | 120 | 07SEP09 A | 20FEB10 | 07SEP09 A | 11MAY10 |
| M1010A10 | Preparation & Submission of Risk Assessment | 217 | 07SEP09 A | 11APR10 | 07SEP09 A | 21APR10 |
| M1010A20 | Preparation & Submission of Method Statement | 217 | 07SEP09 A | 11APR10 | 07SEP09 A | 21APR10 |
| M1010A30 | Preparation & Submission of Temp. Works | 217 | 07SEP09 A | 11APR10 | 07SEP09 A | 21APR10 |
| M1020 | Bathymetric Survey | 120 | 22FEB10 A | 27FEB10 A | 27FEB10 A | 27FEB10 A |
| M1030 | Material Procurement & Delivery | 180 | 08NOV09 A | 04MAY10 | 08NOV09 A | 23JUL10 |
| M1040 | Submission & Approval of EM&A Manual | 90 | 07SEP09 A | 17JAN10 A | 07SEP09 A | 17JAN10 A |
| M1050 | EM&A - Monitoring & Update | 640 | 06DEC09 A | 12AUG11 | 06DEC09 A | 16NOV11 |
| M1060 | Portion H1 Coating Yard Set-up | 60 | 06MAR10 | 04MAY10 | 25MAY10 | 23JUL10 |
| M1060A10 | Portion H1 Coating Yard Set-up | 34 | 07APR10 | 04MAY10 | 20JUN10 | 23JUL10 |
| M1070 | Portion H1 Pipe Material On-site Coating | 90 | 05MAY10 | 02AUG10 | 24JUL10 | 21OCT10 |
| M1080 | West Kowloon Cofferdam for Landfall (H1) | 180 | 21FEB10 | 19AUG10 | 10APR10 | 06OCT10 |
| M1080A10 | Set-up for Cofferdam at Landfall (H1 & J) | 10 | 02APR10 | 11APR10 | 22APR10 | 21APR10 |
| M1080B10 | Soldier Pile Wall Construction | 280 | 12APR10 | 27DEC10 | 12APR10 | 06JAN11 |

| | |
|---------------------------|---------|
| Start date | 07SEP09 |
| Finish date | 05NOV12 |
| Data date | 04JAN10 |
| Run date | 12APR11 |
| Page number | 5A |
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3 Months Rolling Program (April 2011)



Appendix G

Implementation Schedule of Environmental Mitigation Measures (EMIS)



Environmental Mitigation Implementation Schedule

| | Location | Implementation Status | | |
|--|----------|-----------------------|-----------------------|-----------------|
| | | Implemented | Partially Implemented | Not Implemented |
| Environmental Protection Measures | | | | |
| Air Quality | | | | |
| <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. | √ | | | √ |
| Noise Impact | | | | |
| <ul style="list-style-type: none"> ▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. ▪ The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process. ▪ Noisy equipment and mobile plant shall always be site away from NSRs. ▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. ▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials. ▪ Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable. ▪ Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME. | √ | | | √ |



| Environmental Protection Measures | | Location | Implementation Status | | | | |
|---|--|--|---|-----------------------|-----------------|----------------------------|--|
| | | | Implemented | Partially implemented | Not implemented | Not Applicable | |
| Noise Impact | | | | | | | |
| <ul style="list-style-type: none"> 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. | | All areas All areas All areas All areas | √ √ √ √ | | | | |
| Water Quality | | | | | | | |
| Mitigation Measures for Dredging | | | | | | | |
| <ul style="list-style-type: none"> Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m³ per day. Deployment of frame type silt curtain should be fully enclose the grab while dredging works are in progress. Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used. All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action. All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport. Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments | | Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine | √ √ √ √ √ √ √ √ √ √ √ √ √ | | √ | √ √ √ | |
| Mitigation Measures for other Construction Activities | | | | | | | |
| <ul style="list-style-type: none"> Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silt water to public roads and drains Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs | | All areas All areas All areas All areas All areas All areas | √ √ √ √ √ √ | | | √ √ √ √ √ √ | |

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



| Environmental Protection Measures | | Location | Implementation Status | | |
|-----------------------------------|---|-----------|-----------------------|-----------------------|-----------------|
| | | | Implemented | Partially implemented | Not implemented |
| Waste Management | | | | | |
| Good Site Practices | | | | | |
| | Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment. | All areas | √ | | |
| | Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers | All areas | √ | | |
| Waste Reduction Measures | | | | | |
| | Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals | All areas | √ | | |
| | Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal | All areas | √ | | |
| | Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force | All areas | √ | | |
| | Proper storage and site practices to minimise the potential for damage or contamination of construction materials | All areas | √ | | |
| | Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste | All areas | √ | | |
| Marine Ecology | | | | | |
| | Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging. | Marine | | | √ |
| | Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress. | Marine | | | √ |
| | Deployment of silt screen at the sea water intake at Kowloon South Silt Water Pumping Station while dredging works are in progress. | Marine | | √ | |
| | Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain. | Marine | √ | | |
| Good Site Practices | | | | | |
| | The Environmental Permit should be displaced conspicuously on site. | All areas | √ | | |
| | Construction noise permits should be posted at site entrance or available for site inspection. | All areas | √ | | |
| | Chemical storage area provided with lock and located on sealed areas. | All areas | √ | | |
| | All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). | All areas | √ | | |
| | Any unused chemicals or those with remaining functional capacity should be recycled. | All areas | √ | | |
| | All generators, fuel and oil storage are within bundle areas. | All areas | √ | | |
| | Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. | All areas | √ | | |
| | A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system. | All areas | √ | | |

Appendix H

Statistical Analysis of the Monitoring Parameters between Quarterly Mean and Ambient Mean

Statistical Analysis of the Trend of Dissolved Oxygen

t-test

| Group Name | N | Mean | Std Dev | SE |
|--|------|--------|---------|--------|
| Quarterly Mean | 1899 | 5.9961 | 0.1355 | 0.0105 |
| 1.3 times of Ambient Mean (130% of Baseline Mean) | 648 | 8.1835 | 0.2680 | 0.0105 |

Result:

Probability that two variances are equal (f-test) = 0

Difference between means = 2.1871 (Std Dev = 0.3034 and SE = 0.011)
(95% CI : 2.1656 < Diff < 2.2086)

t-value of difference = 199.185 (763 degrees of freedom)
P = 1 (>0.05)

Conclusion:

There is no statistically significant difference of Dissolved Oxygen between 1.3 times of ambient mean and quarterly mean.

Statistical Analysis of the Trend of Turbidity

t-test

| Group Name | N | Mean | Std Dev | SE |
|--|-----|--------|---------|--------|
| Quarterly Mean | 280 | 5.3083 | 0.1988 | 0.0119 |
| 1.3 times of Ambient Mean (130% of Baseline Mean) | 216 | 6.7413 | 1.3077 | 0.0892 |

Result:

Probability that two variances are equal (f-test) = 0

Difference between means = 1.433 (Std Dev = 1.3396 and SE = 0.0898)
(95% CI : 1.2571 < Diff < 1.6089)

t-value of difference = 15.963 (222 degrees of freedom)
P = 1 (>0.05)

Conclusion:

There is no statistically significant difference of Turbidity between 1.3 times of ambient mean and quarterly mean.

Statistical Analysis of the Trend of Suspended Solids

t-test

| Group Name | N | Mean | Std Dev | SE |
|--|-----|---------|---------|--------|
| Quarterly Mean | 280 | 8.4927 | 0.3637 | 0.0218 |
| 1.3 times of Ambient Mean (130% of Baseline Mean) | 216 | 12.7839 | 2.4624 | 0.1679 |

Result:

Probability that two variances are equal (f-test) = 0

Difference between means = 4.2912 (Std Dev = 2.5187 and SE = 0.1689)
(95% CI : 3.9601 < Diff < 4.6223)

t-value of difference = 25.339 (222 degrees of freedom)
P = 1 (<0.05)

Conclusion:

There is no statistically significant difference of Suspended Solids between 1.3 times of ambient mean and quarterly mean.

Appendix I

Site General Layout plan

NOTES:

1. THE DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NO. 241239/0/0301 TO 0302.

LEGEND:

PROPOSED FRESH WATER MAIN
 PROPOSED SAU WITHDRAWAL
 PROPOSED WASTE LINE
 SA / ST (SECTION 2)
 SECTION A (SECTION 2)
 SECTION C (SECTION 4)
 SECTION B (SECTION 4)
 SECTION D (SECTION 4)
 SECTION E (SECTION 4)
 SECTION F (SECTION 4)
 SECTION G (SECTION 4)
 SECTION H (SECTION 4)
 SECTION I (SECTION 4)
 SECTION J (SECTION 4)
 SECTION K (SECTION 4)
 SECTION L (SECTION 4)
 SECTION M (SECTION 4)
 SECTION N (SECTION 4)
 SECTION O (SECTION 4)

PROPOSED EXISTING FRESH WATER MAIN
 EXISTING FRESH WATER MAIN
 EXISTING WASTE MAIN
 EXISTING SAU WITHDRAWAL
 EXISTING ROAD
 EXISTING WATER MAIN
 EXISTING WASTE MAIN
 EXISTING PAVEMENT
 EXISTING FOOTPATH
 EXISTING GROUND SURFACE
 EXISTING ROAD SURFACE
 EXISTING ROAD MARKINGS
 EXISTING ROAD LIGHTS
 EXISTING ROAD UTILITIES
 EXISTING ROAD DRAINS
 EXISTING ROAD CURBS
 EXISTING ROAD BARRIERS
 EXISTING ROAD FENCES
 EXISTING ROAD SIGNALS
 EXISTING ROAD TRAFFIC LIGHTS
 EXISTING ROAD STREET LAMPS
 EXISTING ROAD TELEPHONE CABINETS
 EXISTING ROAD ELECTRIC CABINETS
 EXISTING ROAD WATER METER CABS
 EXISTING ROAD WATER VALVES
 EXISTING ROAD WATER TAPES
 EXISTING ROAD WATER SPLITTERS
 EXISTING ROAD WATER STOP VALVES
 EXISTING ROAD WATER STOP COCKS
 EXISTING ROAD WATER STOP PLUGS
 EXISTING ROAD WATER STOP BALLS
 EXISTING ROAD WATER STOP BUSHES
 EXISTING ROAD WATER STOP WRENCHES
 EXISTING ROAD WATER STOP KEYS
 EXISTING ROAD WATER STOP SCREWS
 EXISTING ROAD WATER STOP NUTS
 EXISTING ROAD WATER STOP WASHERS
 EXISTING ROAD WATER STOP O-RINGS
 EXISTING ROAD WATER STOP GASKETS
 EXISTING ROAD WATER STOP BRASS
 EXISTING ROAD WATER STOP STEEL

WORKS AREA WITH RED YIELD TO PUBLIC CARVED WORKING AREA FORMING PART OF POSITION OF THE SITE SHOWN AS PART OF THE CONTRACT DRAWINGS BY THE CONTRACTOR. DETAILS AS SHOWN TO BE TO THE SATISFACTION OF THE CONTRACTOR.

Section 1
Section 2
Section 3
Section 4

| DATE | REVISION | BY |
|--------|------------------------|------|
| MAY 09 | ISSUE FOR TENDER | M.M. |
| MAY 09 | TENDER APPROVAL NO. 1 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 2 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 3 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 4 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 5 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 6 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 7 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 8 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 9 | M.M. |
| MAY 09 | TENDER APPROVAL NO. 10 | M.M. |

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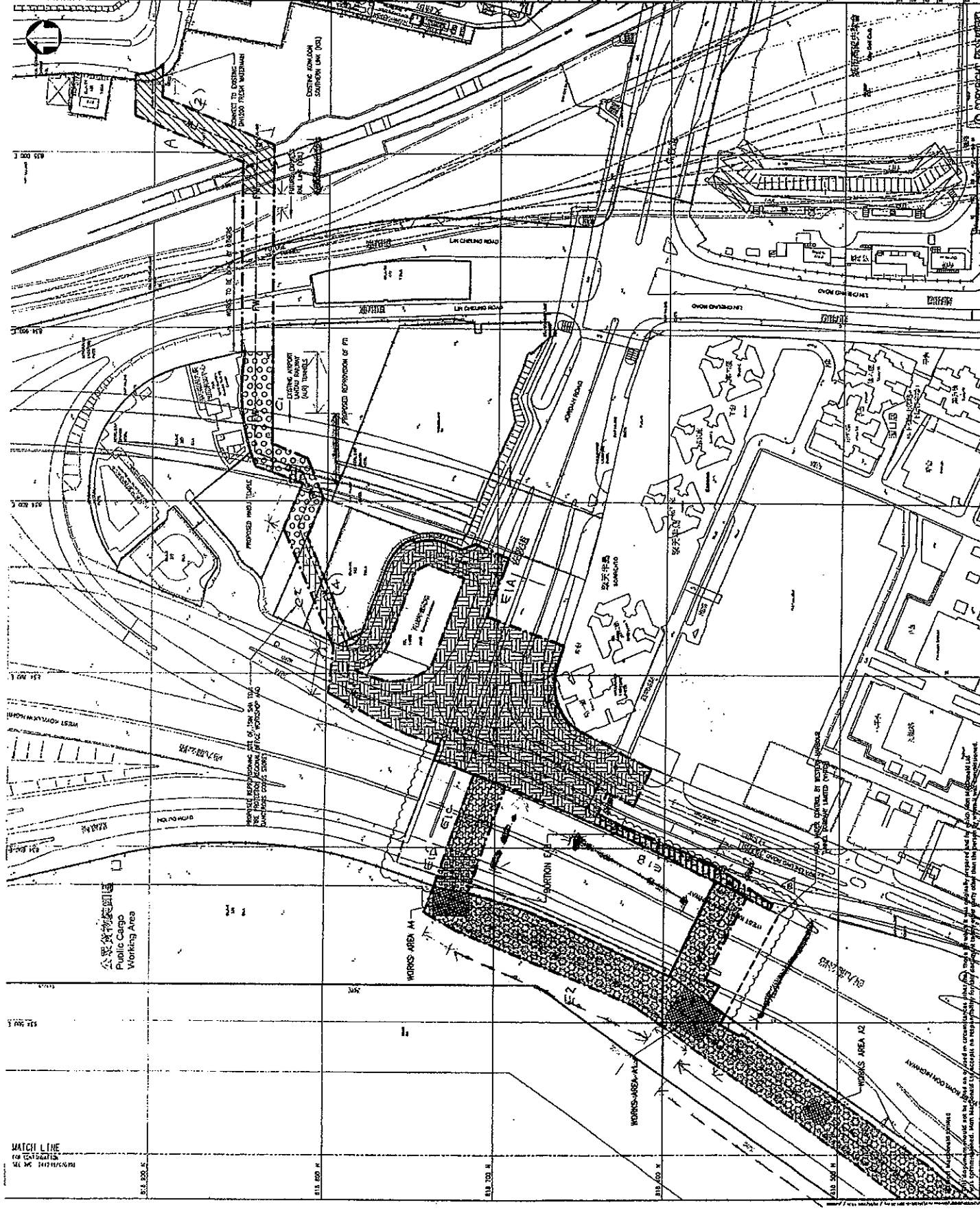
THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

9/F MCD, DB

LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOMLOON TO SAU YING FUN

POSSESSION OF SITE (SHEET 1 OF 5)

| | |
|-------------|---------------|
| SCALE | 1:1000 @A1 |
| DATE | 24/12/08 |
| DRAWN BY | M.M. |
| CHECKED BY | M.M. |
| DATE | 24/12/08 |
| PROJECT NO. | 241239/0/0301 |
| SHEET NO. | 05 |



MATCH LINE
for 241239/0/0301
M.M. 11/11/2008

1. This drawing is to be read in connection with drawing No. 241239/0/0301 to 0302.
2. This drawing is a possession of site drawing and is not to be used for any other purpose.
3. This drawing is not to be used for any other purpose.
4. This drawing is not to be used for any other purpose.

NOTES

1. THE DRAWING SHALL BE USED IN CONNECTION WITH DRAWING NO. 241239/0300 AND DRAWING NO. 241239/0301
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/0301

| | | | | | |
|----|--------|---|-----|-----|-----|
| 01 | APR 03 | 2 | 1/2 | 1/2 | 1/2 |
| 02 | MAY 03 | 2 | 1/2 | 1/2 | 1/2 |
| 03 | JUN 03 | 2 | 1/2 | 1/2 | 1/2 |
| 04 | JUL 03 | 2 | 1/2 | 1/2 | 1/2 |
| 05 | AUG 03 | 2 | 1/2 | 1/2 | 1/2 |
| 06 | SEP 03 | 2 | 1/2 | 1/2 | 1/2 |
| 07 | OCT 03 | 2 | 1/2 | 1/2 | 1/2 |
| 08 | NOV 03 | 2 | 1/2 | 1/2 | 1/2 |
| 09 | DEC 03 | 2 | 1/2 | 1/2 | 1/2 |
| 10 | JAN 04 | 2 | 1/2 | 1/2 | 1/2 |
| 11 | FEB 04 | 2 | 1/2 | 1/2 | 1/2 |
| 12 | MAR 04 | 2 | 1/2 | 1/2 | 1/2 |

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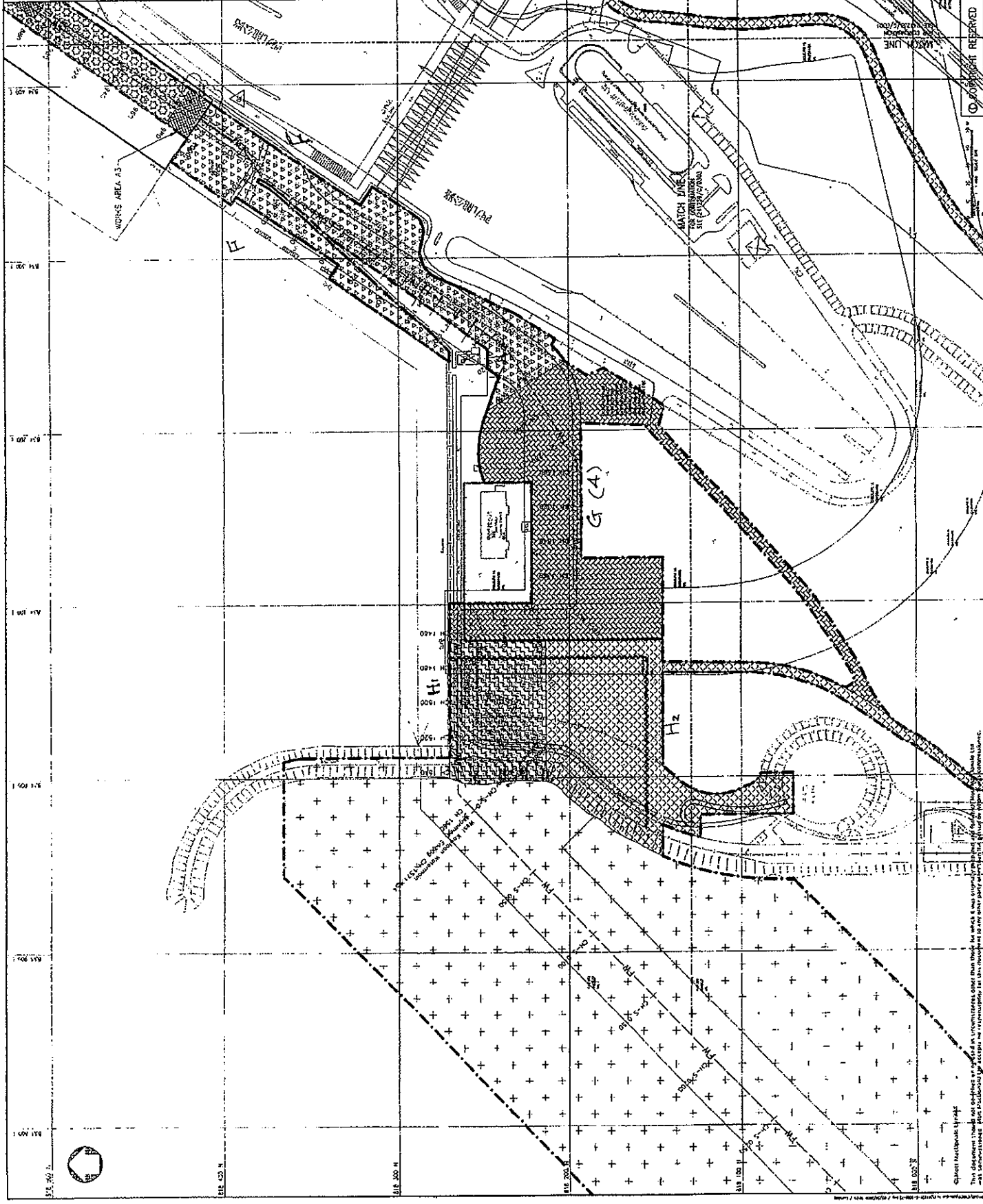
THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

9/NSD/708

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

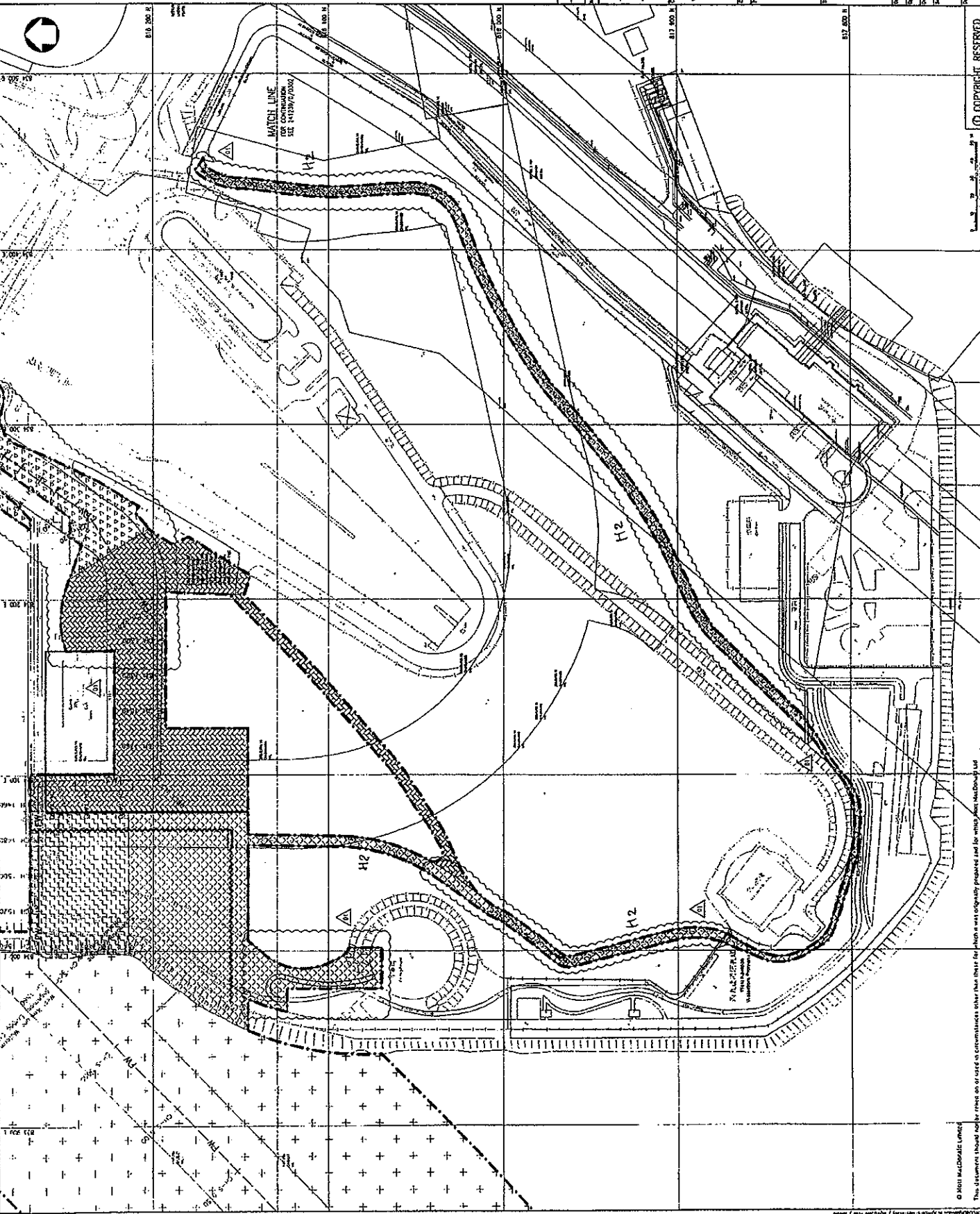
POSSESSION OF SITE
 (SHEET 2 OF 5)

| | | | | |
|-----------|--------------|-----|------|------|
| Project | NSC | KL | KL | KL |
| Phase | PL | PL | PL | PL |
| Design | DES | DES | DES | DES |
| Scale | 1:1000 | 0A1 | 1000 | 1000 |
| Sheet No. | 241239/03002 | | | |
| Sheet | TEN | | | |
| Page | 02 | | | |



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NOTES:
 1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 241239/G/0301 TO 0303 AND 0304 TO 0305.
 2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.



| | | | |
|----------|----|---------|----------|
| DATE | BY | CHECKED | APPROVED |
| 01/04/07 | MM | MM | MM |
| 02/08/08 | MM | MM | MM |
| 10/03/09 | MM | MM | MM |
| 11/03/09 | MM | MM | MM |

PROJECT APPROVAL NO. 3
 ISSUE FOR TENDER
 9/NSD/08
 THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
 9/NSD/08

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
 LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SA TING PUN
 POSSESSION OF SITE (SHEET 3 OF 5)
 1:1000 00A1
 TEN
 241239/G/0305

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| SCALE | DATE | BY | CHECKED | APPROVED |
| 1:1000 00A1 | 01/04/07 | MM | MM | MM |
| | 02/08/08 | MM | MM | MM |
| | 10/03/09 | MM | MM | MM |
| | 11/03/09 | MM | MM | MM |

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 241239/G/0305

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2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/0301.

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|------|--------|-------------|-------------------------------|
| DATE | APR 09 | DESCRIPTION | ISSUED FOR CONSTRUCTION NO. 1 |
| DATE | MAR 08 | DESCRIPTION | FOR TENDER APPROVAL NO. 3 |
| DATE | DEC 06 | DESCRIPTION | FOR REGULAR FOR TENDER |
| DATE | | DESCRIPTION | FOR CONSTRUCTION NO. 4 |

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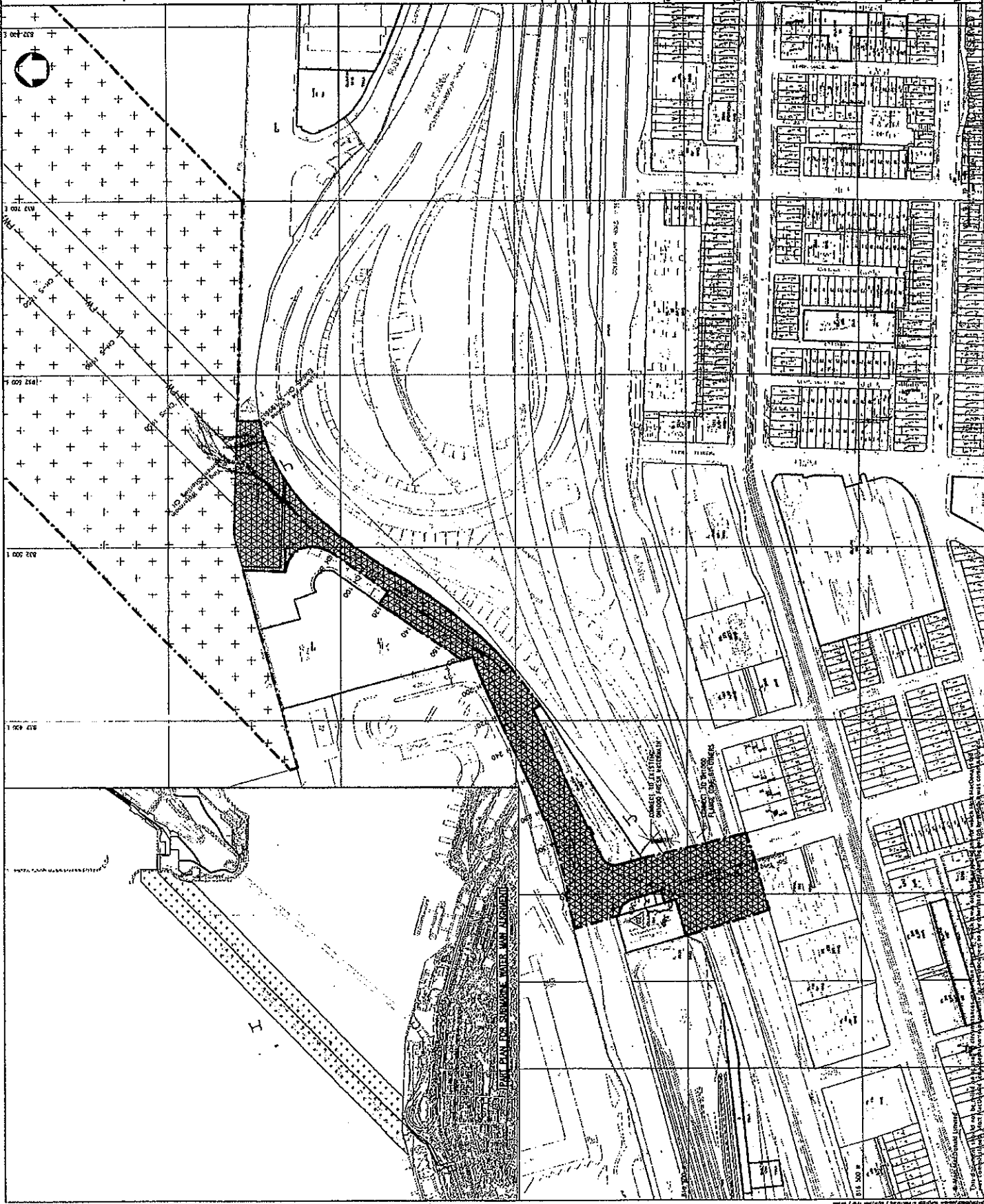
THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

9/MSD/08

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

POSSESSION OF SITE
 (SHEET 4 OF 5)

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| SCALE | 1:1000 | DATE | 24/12/08 |
| PROJECT | 9/MSD/08 | NO. | 02 |
| DESIGNER | Mott MacDonald | CHECKED | [Signature] |
| DRAWN | [Signature] | APPROVED | [Signature] |
| DATE | 24/12/08 | SCALE | 1:1000 |



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 2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/6/0301.

LEGEND

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|-----|--------|----------------------|--------|
| (A) | FEB 09 | ISSUE APPROVAL NO. 2 | 241239 |
| (B) | JUL 08 | ISSUE APPROVAL NO. 1 | 241239 |
| (C) | DEC 08 | ISSUE FOR TENDER | 241239 |

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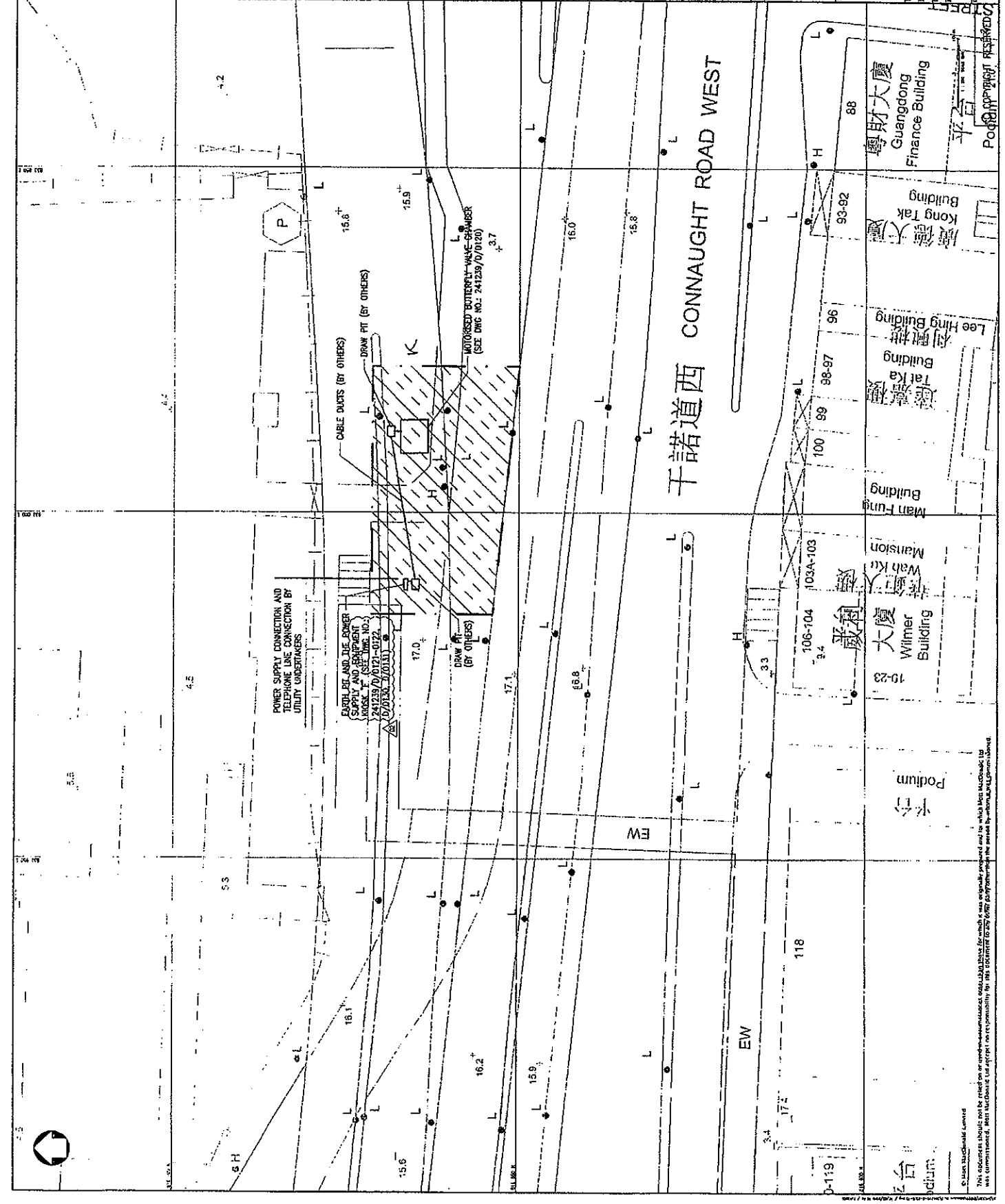
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT

9/W39/08

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

POSSESSION OF SITE
 (SHEET 5 OF 5)

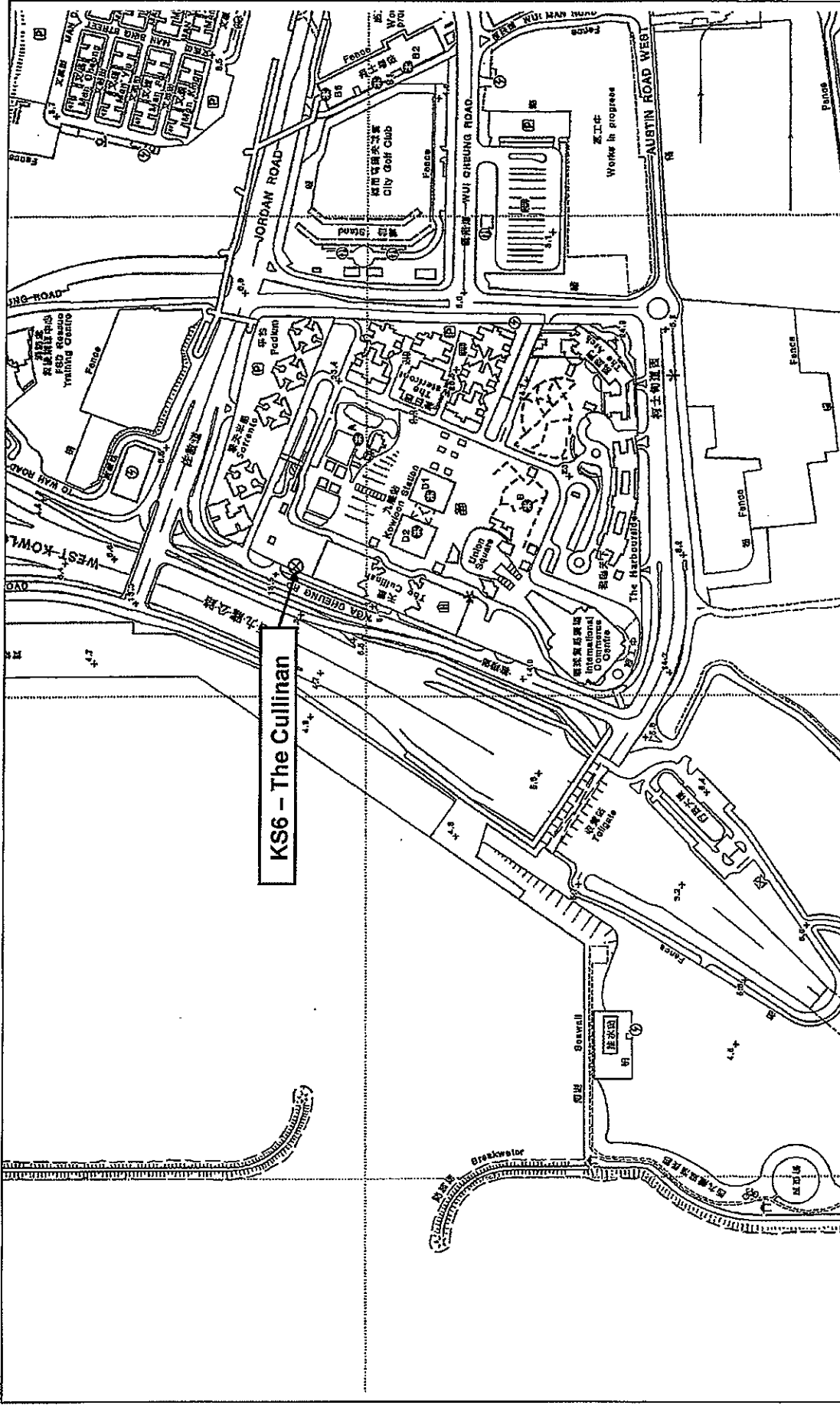
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| Revised | ... | Approved | ... |



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Figures



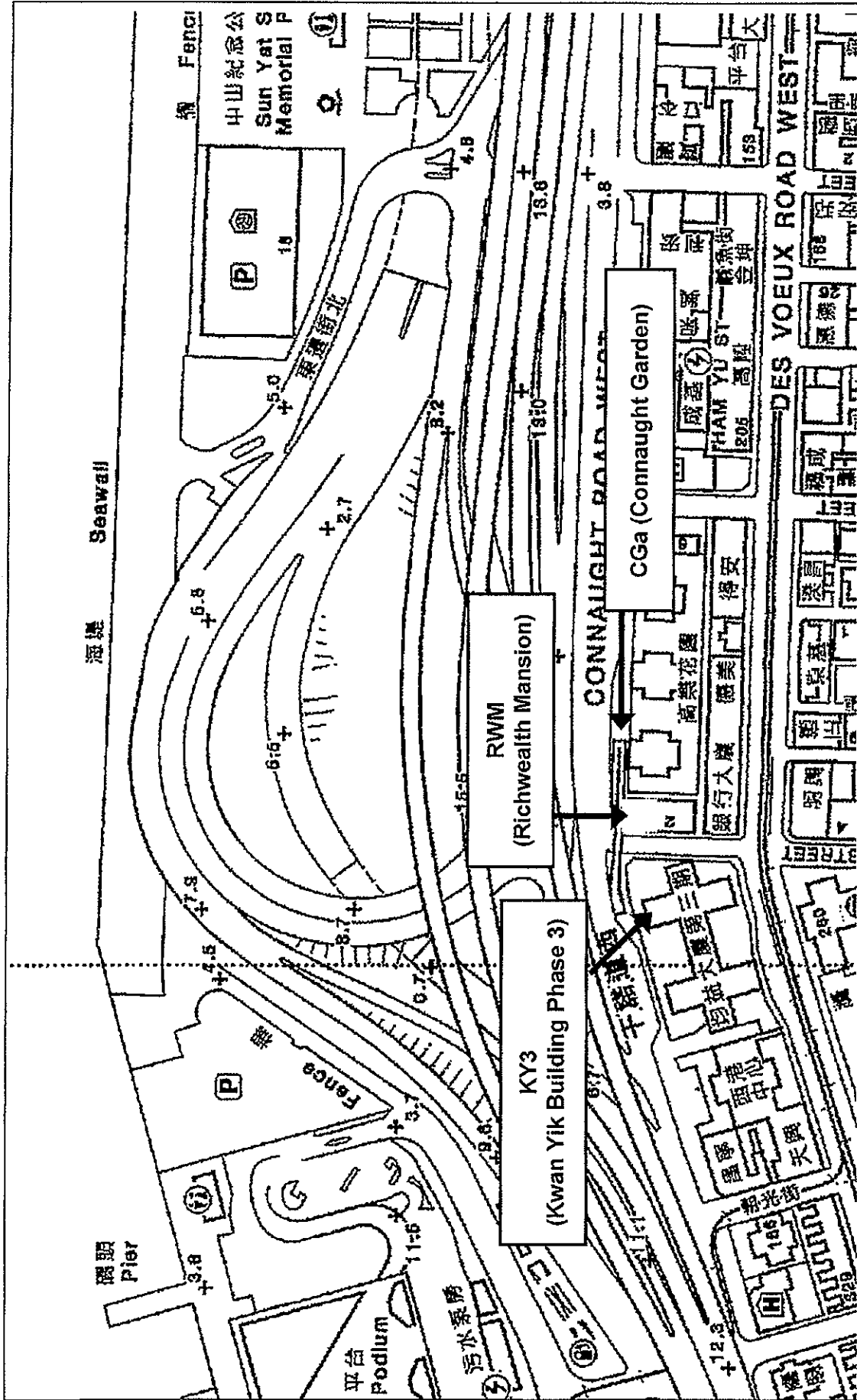
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



東鐵偵測測試顧問有限公司
ETS-TESTCONSULT LIMITED



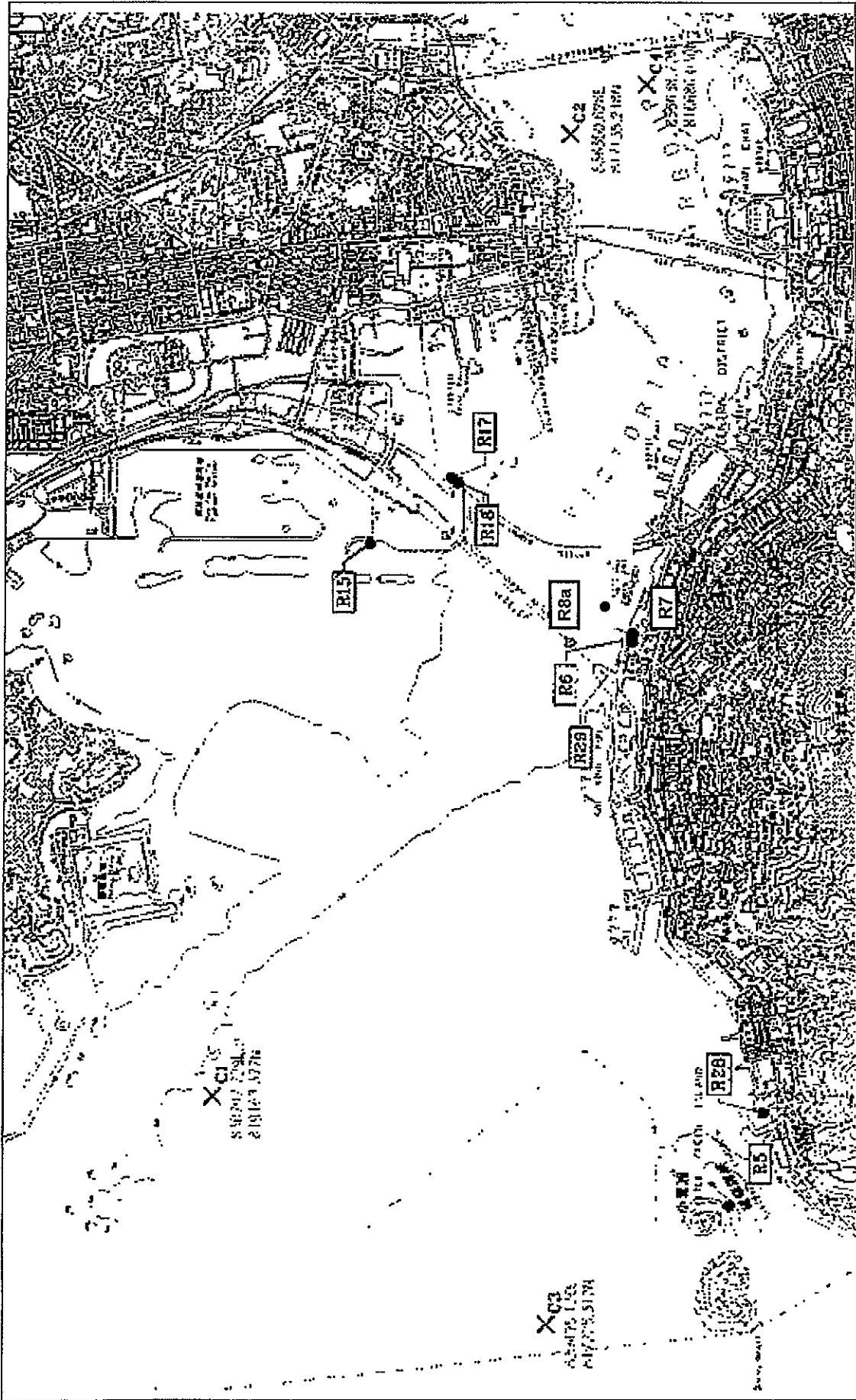
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun



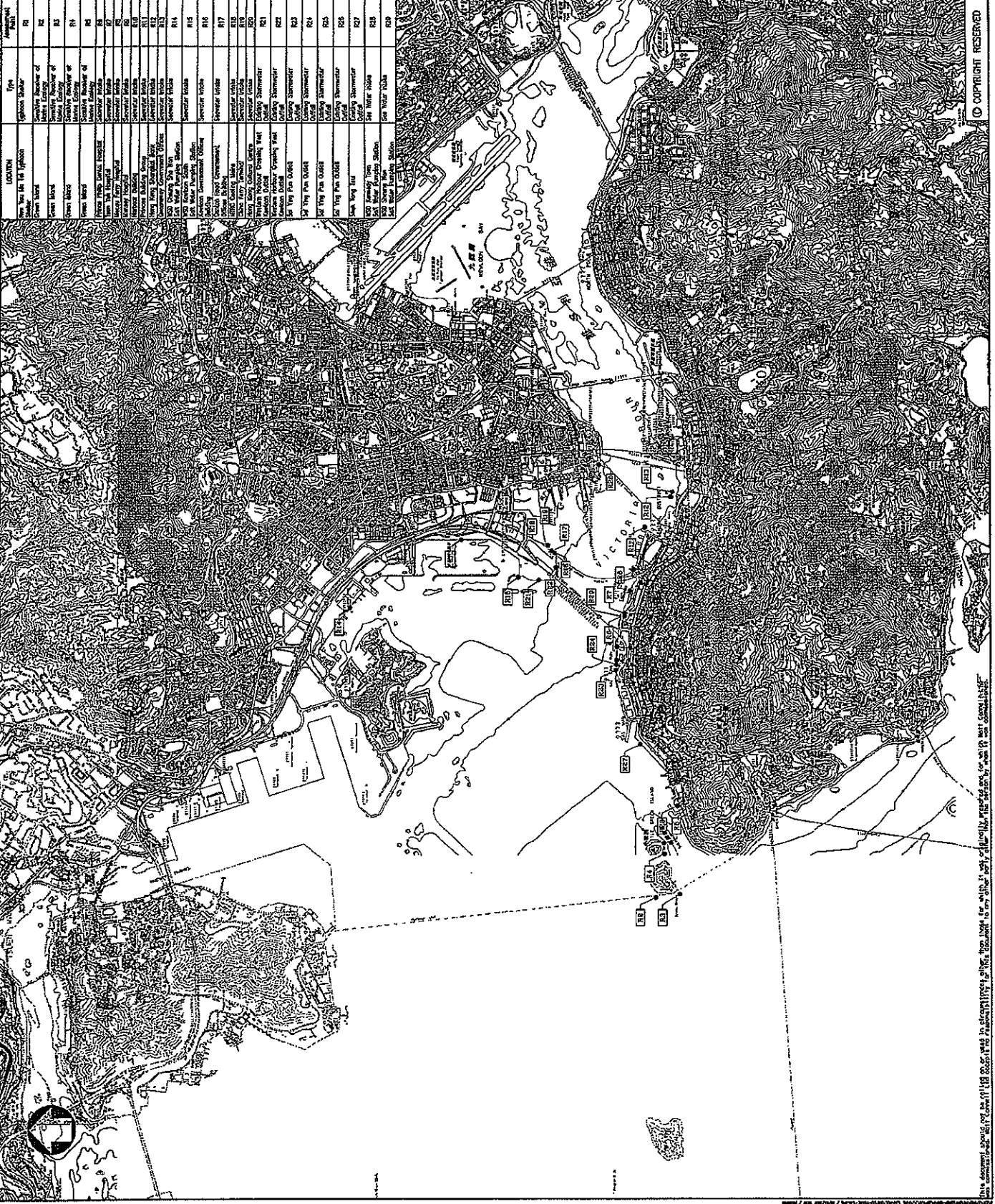
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ETS-TESTCONSULT LIMITED



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

Figure 3

Locations of Water Quality Monitoring Stations



| NO. | LOCATION | TYPE | REMARKS |
|-----|-------------|-------------|---------|
| 81 | WATER TOWER | Water Tower | |
| 82 | WATER TOWER | Water Tower | |
| 83 | WATER TOWER | Water Tower | |
| 84 | WATER TOWER | Water Tower | |
| 85 | WATER TOWER | Water Tower | |
| 86 | WATER TOWER | Water Tower | |
| 87 | WATER TOWER | Water Tower | |
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| 197 | WATER TOWER | Water Tower | |
| 198 | WATER TOWER | Water Tower | |
| 199 | WATER TOWER | Water Tower | |
| 200 | WATER TOWER | Water Tower | |

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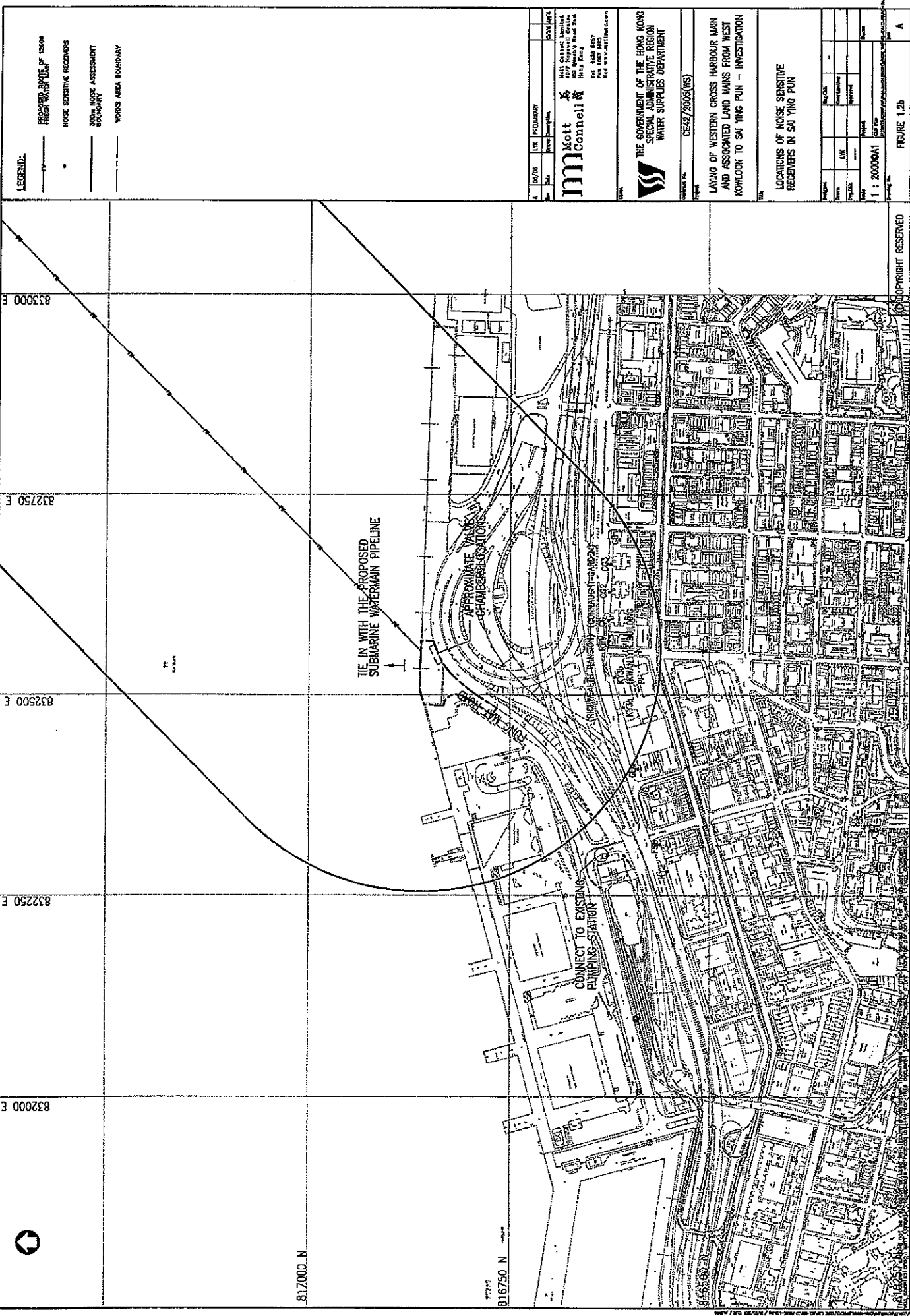
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25/00/0041
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LOCATIONS OF WATER SENSITIVE RECEIVERS
 AND STORMWATER OUTFALLS
 AT WESTERN HARBOUR

FIGURE 1.20

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LEGEND.

- PROPOSED PIPELINE OF 1500mm
- NOISE SENSITIVE RECEIVERS
- NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

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THE GOVERNMENT OF THE HONG KONG
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 WATER SUPPLIES DEPARTMENT

Project No. CS47/2002(VS)

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

LOCATIONS OF NOISE SENSITIVE
 RECEIVERS IN SAU TING PUN

| Project No. | Scale | Date | Author | Check | Appr. |
|---------------|---------|----------|--------|-------|-------|
| CS47/2002(VS) | 1:20000 | 01/03/02 | | | |

FIGURE 4.2b

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LEGEND:

- PROPOSED ROUTE OF 1500P
FRESH WATER MAIN
- HOSE SENSITIVE RECEIVERS
- TEMPORARY PLATFORM
- 300M HOSE ASSESSMENT
BOUNDARY
- WORKS AREA BOUNDARY

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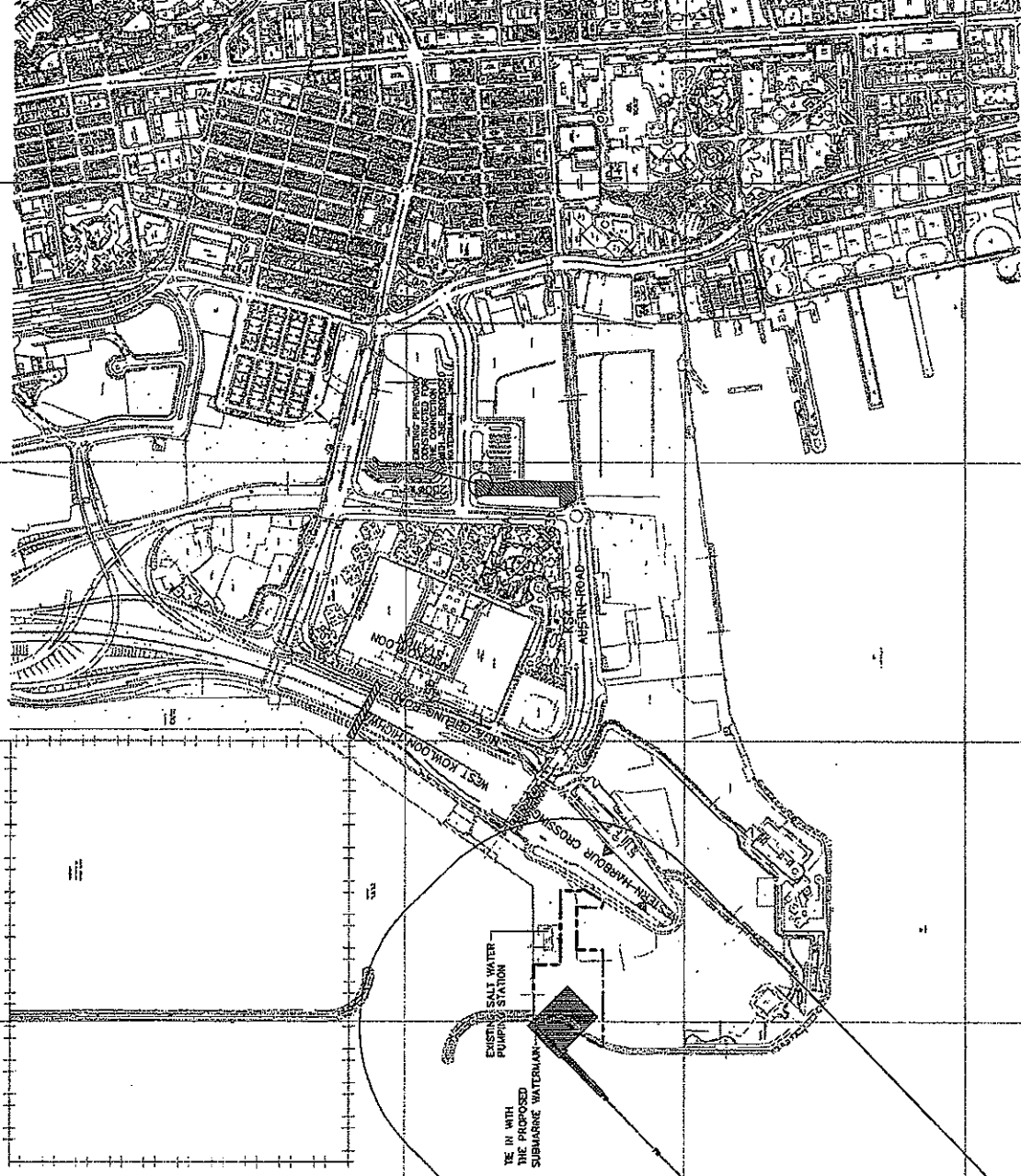
ES42/2005 (WS)

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

LOCATION OF NOISE SENSITIVE
RECEIVERS IN WEST KOWLOON

| | |
|-------------|----------------|
| Project No. | ES42/2005 (WS) |
| Scale | 1 : 400000 |
| Revision | |
| Author | |
| Checked | |
| Approved | |
| Date | |

FIGURE 1.2c



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