

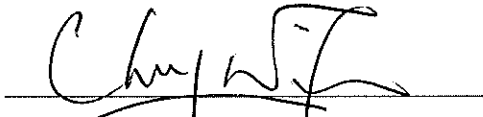
Dragages-Nishimatsu Joint Venture

Contract No. DC/2007/10

Design and Construction of Hong Kong West Drainage Tunnel

Quarterly EM&A Report
(version 1.0)

April to June 2010

Certified By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

Introduction

1. This is the 9th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Drainage Improvement in Northern Hong Kong Island – Hong Kong West Drainage Tunnel” (the Project). This summary report presents EM&A works performed in the period between April and June 2010.
2. The construction activities undertaken in the reporting quarter were:
 - TBM excavation, adit excavation and structural works for River Channel at Eastern Portal;
 - TBM excavation and adit excavation at Western Portal;
 - Excavation of Adit W0 by Drill-and-Blast method;
 - Structure Stage 1 Construction at Intake MB16;
 - Excavation of dropshaft at Intake MB16 by Raise Boring method;
 - Excavation of dropshaft at Intake SM1 by Hand-dug Caisson method;
 - Remedial measures to RCD method at Intake RR1;
 - Excavation of intake structure at Intakes E7, TP4, TP789, HKU1, THR2, MBD2 and PFLR1;
 - Cofferdam construction at Intakes PFLR1, THR2, MBD2, W10, W5, TP5, E5B and MA15;
 - Site preparation works at Intakes E5B, P5, M3, W8, MA15, MA17, W3, W1, DG1, HR1, BR5, MA14, BR6 and GL1;
 - Site investigation and further design review at Intake E5A, following GEO comments on subsidence;
 - Advance grouting at Intake E5A under Variation Order #53;
 - Slopeworks at Intake M3 and MA17;
 - Pipelaying works along Mount Butler Road for Intake MB16;
 - DDA submissions for Adit/Main Tunnel Intersection, Adits, Stilling Chambers and Turning Bays;
 - AIP & DDA submissions for temporary works for Intake Structures;
 - DDA submissions for slope works and permanent works for Intake Structures;
 - AIP & DDA submissions for temporary and permanent works for Dropshafts;
 - Environmental impact monitoring; and
 - Casting of tunnel segments.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the Updated EM&A Manual and the results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
4. Proposal for Temporary Suspension of Water Quality Monitoring Western Portal was submitted on 15th September 2009 and approved by EPD on 30th October 2009. Marine water quality monitoring was temporary suspended starting from 31st October 2009 until

there is marine-based construction activities resumed at the Western Portal (i.e. March of 2011 tentatively.)

5. In order to assess the effectiveness of the implementation of water quality mitigation measures at Western Portal, site inspections/audits were conducted at least twice per week at Western Portal starting from November 2009.
6. Summary of the non-compliance of the reporting month is tabulated in Table I.

Table I Summary Table for Non-compliance Recorded in the Reporting Quarter

Parameter	Number of Exceedances due to the Project		Action Taken	Results of Action Taken
	Action Level	Limit Level		
Eastern Portal				
<i>April 2010</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Western Portal				
<i>April 2010</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Intake E5A				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.
Intake E7				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	1	N.A.	N.A.
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.

Intake PFLR1				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
Noise	1	0	N.A.	N.A.
Intake W0				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.
Intake RR1				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.
Intake W5				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.
Intake P5				
<i>April 2010</i>				
Noise	0	0	N.A.	N.A.
<i>May 2010</i>				
Noise	0	0	N.A.	N.A.
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.
Intake W8				
<i>June 2010</i>				
Noise	0	0	N.A.	N.A.
Intake TP789/TP4				
<i>April 2010</i>				
Noise	1	0	N.A.	N.A.
<i>April 2010</i>				
Ground Borne Noise	0		N.A.	
<i>May 2010</i>				
Ground Borne Noise	0		N.A.	

<i>June 2010</i>		
Ground Borne Noise	0	N.A.

*Air Quality**1-hour TSP Monitoring*

7. 1-hour TSP monitoring at 2 monitoring stations, AQ1 and AQ2, was conducted as scheduled in the reporting period. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting quarter.

24-hour TSP Monitoring

8. 24-hr TSP monitoring at 2 monitoring station, AQ1 and AQ3, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.

Construction Airborne Noise

9. Noise monitoring at 15 monitoring stations, NC1, NC2, NC3, NC7, NC8, NC9, NC11, NC12, NC13, NC14, NC15, NC16, NC17, NC18 and NC19 was conducted as schedule in the reporting period.

Western Portal

10. No Action/Limit Level exceedance was recorded during the reporting period.

Intake PFLR1

11. One Action Level exceedance was recorded for the complaint received on 2nd June 2010.

Intake TP789/TP4

12. One Action Level exceedance was recorded for the complaint received on 22nd April 2010.

Intake E7

13. One Limit Level exceedance was recorded at NC9 on 13th May 2010.

Construction Ground Borne Noise

14. Construction ground borne noise monitoring at GNC6 was conducted as scheduled in the reporting period and completed by end of June 2010. No exceedance was recorded.
15. Ground borne noise monitoring at GNC1 – True Light Middle School, GNC2 – The Legend and GNC4 - Crane Court were completed by end of August 2009 accordingly.
16. Ground borne noise monitoring at GNC5 was completed by end of November 2009.

Water Quality

17. Proposal for Temporary Suspension of Water Quality Monitoring Western Portal was submitted on 15th September 2009 and approved by EPD on 30th October 2009. Marine water quality monitoring was temporary suspended starting from 31st October 2009 until there is marine-based construction activities resumed at the Western Portal (i.e. March of 2011 tentatively.)

Environmental Licensing and Permitting

18. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, An Environmental Permit No. EP-272/2007 was issued on 26 April 2007 and Environmental Permit No. EP-272/2007/A was issue on 26 October 2007. Later, the further Environmental Permit (FEP-01/272/2007/A) and (FEP-01/272/2007/B) was issued on 28 January 2008 and 25 June 2009 to Dragages-Nishimatsu Joint Venture.
19. Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal).
20. Water Discharge License (License No.: EP860/W10/XY0175 for Area of Mount Butler Office, EP860/W10/XY0177 for Eastern Portal, EP820/W9/XT086 and WT00005864-2010 for Western Portal, EP860/W10/XY0183 for Intake W0, WT00003372-2009 for Intake SM1, WT00003737-2009 for Intake MB16, WT00004126-2009 for Intake HKU1, WT00003738-2009 for THR2, WT00004270-2009 for PFLR1, WT00004806-2009 for Intake E7, WT00004808-2009 for MBD2, WT00004885-2009 for Intake RR1, WT00005135-2009 for Intake W10, WT00005357-2009 for Intake W5, WT00005374-2009 for Intake P5, WT00005376-2009 for Intake TP4, WT00005588-2009 for Intake TP5, WT00005643-2009 for Intake E5A, WT00005754-2010 for Intake W8, WT00005954 for Intake TP789, WT00005915 for Intake E5B, WT00006102-2010 for Intake M3, WT00006415-2010 for Intake MA15, WT00006420-2010 for Intake MA17, WT00006428-2010 for Intake BR6, WT00006609-2010 for Intake HR1, WT00006559-2010 for Intake CR1, WT00006929-2010 for Intake W1, WT00006418-2010 for Intake MA14 and WT00006865-2010 for Intake BR5).
21. Construction Noise Permit (License No.: GW-RS0962-09 and GW-RS0512-10 for Eastern Portal, GW-RS0145-10, GW-RS0263-10, GW-RS0348-10 and GW-RS0463-10 for Western Portal, GW-RS0877-09, GW-RS0412-10 and GW-RS0522-10 for Intake W0, GW-RS0075-10 for Intake MB16, GW-RS-0640-09 and GW-RS0155-10 for Intake SM1, GW-RS0128-10 for Intake PFLR1, GW-RS0035-10 for W5, GW-RS0441-10 for Intake W3 and GW-RS0468-10 for Intake MA17).

Key Information in the Reporting Quarter

22. Summary of key information in the reporting quarter is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received (April 10)	3	Dust nuisance at Western Portal (2)	Investigation report was submitted	Investigation Report submitted to DNJV for further submission	Closed
		Construction Groundborne Noise at Intake TP789/TP4 (1)			
Complaint received (May 10)	2	Dust nuisance at Western Portal (2)	Investigation report was submitted	Investigation Report submitted to DNJV for further submission	Closed
Complaint received (June 10)	2	Construction Noise at Intake PFLR1 (1)	Investigation report was submitted	Investigation Report submitted to DNJV for further submission	Closed
		Dust nuisance at Western Portal (1)			
Changes to the assumptions and key construction / operation activities recorded	0	---	N.A.	N.A.	---
Notifications of any summons & prosecutions received	0	---	N.A.	N.A.	---

Complaints and Prosecutions

23. Seven environmental complaints were received and investigated during the reporting quarter.

24. No warning, summon and notification of successful prosecution was received in the reporting period.

Future Key Issues

25. Key environmental issues at Eastern and Western Portals, Intake MA16, MBD2, E5A, E5B, E7, PFLR1, RR1, THR2, SM1, W0, W5, P5, M3, TP4, TP5, TP789, HKU1, W10, W3, W8, MA15, MA17, GL1, HR1, W1, DG1, CR1, BR4, BR5, GL1, MA14 and BR6 in the coming month include:
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
 - Dust generation from stockpiles of dusty materials, excavation works and rock breaking activities;
 - Runoff from exposed slope;
 - Wastewater and runoff discharge from site;
 - Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
 - Review and implementation of temporary drainage system for the surface runoff;
 - Proper storage of construction materials on site;
 - Storage of chemicals/fuel and chemical waste/waste oil on site;
 - Watering for rock breaking activity, soil nailing and on haul road;
 - Accumulation of general and construction waste on site.

1. INTRODUCTION

- 1.1 The Project “Drainage Improvement in Northern Hong Kong Island – Hong Kong West Drainage Tunnel” involves the construction of a drainage tunnel deep into the ground in Mid-levels of the Northern Hong Kong Island from Tai Hang to Pokfulam to intercept and convey the stormwater from the upper catchment directly to the sea near Cyberport. The Drainage tunnel alignment starts from the Eastern Portal near Haw Par Mansion in Tai Hang and ends at the Western Portal located to the north of Cyberport running underneath the Pok Fu Lam, Tai Tam, Aberdeen and Lung Fu Shan Country Parks. The underground main drainage tunnel is 6.25m-7.25m in diameter and about 11km long. Two portals and a series of connecting adits and drop shafts are also been constructed. The layout plan of the Project is shown in **Figure 1**.
- 1.2 The Environmental Impact Assessment (EIA) Report for the Project was approved on 7 April 2006 under the Environmental Impact Assessment Ordinance (EIAO). An Environmental Permit (EP-272/2007) for the works was also granted on 26 April 2007. A varied Environmental Permit (EP) (EP-272/2007/A) was issued in 26 October 2007. Later, the further Environmental Permit (FEP-01/272/2007/A) and (FEP-01/272/2007/B) was issued on 28 January 2008 and 25 June 2009 to Dragages-Nishimatsu Joint Venture. Environmental Monitoring and Audit (EM&A) Manual for the Project was also included as part of the EIA reports in the register. An updated EM&A Manual has been issued on 7 May 2008.
- 1.3 Drainage Services Department awarded the construction of the Project to Dragages-Nishimatsu Joint Venture (hereinafter called “the Contractor”). The construction works commenced on 30 November 2007 and are scheduled to be completed by 2012.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by the Contractor to undertake the Environmental Team (ET) Services for the Project. All environmental and audit works were conducted by Cinotech and the laboratory testing works were conducted by a HOKLAS laboratory, Wellab Limited. This is the 9th quarterly EM&A report summarizing the EM&A works for the Project in the period between April and June 2010.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

- 2.1 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Drainage Services Department (DSD).
 - The Supervising Officer or Supervising Officer's Representative (SO or SOR) – Ove Arup & Partners (ARUP).
 - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
 - Independent Environmental Checker (IEC) – Allied Environmental Consultants Limited (AEC).
 - Contractor - Dragages-Nishimatsu Joint Venture (DNJV).
- 2.2 The responsibilities of respective parties are detailed in Sections 1.14 to 1.28 of the Updated EM&A Manual of the Project. The project organization chart is presented in **Figure 2**.
- 2.3 The key contacts of the Project are shown in Table 2.1.

Table 2.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
DNJV	Permit Holder	Mr. ALTIER Daniel	Project Manager	2671 7333	2671 9300
		Mr. UETAKE H.	Deputy Project Manager		
ARUP	Supervising Officer	Mr. Ted Tang	CRE	6117 6639	2436 1012
		Mr. Jackson Wong	SRE	6117 6636	
		Mr. Alan Ng	RE	9668 8350	
		Mr. Bernard Cheng	RE	98614939	
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
AEC	Independent Environmental Checker	Ms. Grace Kwok	Independent Environmental Checker	2815 7028	2815 5399
DNJV	Contractor	Mr. Sing Chu	Environmental Officer	2671 7333	2671 9300

Construction Programme and Synopsis of Work

2.4 The construction programme is presented in **Appendix A**.

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. When alternative monitoring locations are proposed, the criteria listed in Section 2.4.3 of the updated EM&A Manual shall be followed and the updated monitoring locations shall be approved by ER and agreed with IEC. The Project area and monitoring locations are depicted in **Figures 3a-1, 4a-b and 5. Appendix B** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

- 3.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

- 3.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix C**.

Environmental Mitigation Measures

- 3.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in **Appendix F**.

4. MONITORING RESULTS

Weather Conditions

- 4.1 The weather during monitoring sessions was mainly sunny and cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

Air Quality

1-hour TSP Monitoring

- 4.2 1-hour TSP monitoring at 2 monitoring stations, AQ1 and AQ2, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting quarter.

24-hour TSP Monitoring

- 4.3 24-hr TSP monitoring at 2 monitoring station, AQ1 and AQ3 was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.
- 4.4 The graphical presentations of the air quality monitoring results are shown in **Appendix D**.

Construction Airborne Noise

- 4.5 Noise monitoring at 13 monitoring stations, NC1, NC2, NC3, NC7, NC8, NC9, NC11, NC12, NC13, NC14, NC15, NC16, NC17, NC18 and NC19 was conducted as schedule in the reporting period.

Western Portal

- 4.6 No Action/Limit Level exceedances were recorded during the reporting period.

Intake PFLR1

- 4.7 One Action Level exceedance was recorded for the complaint received on 2nd June 2010.

Intake TP789/TP4

- 4.8 One Action Level exceedance was recorded for the complaint received on 22nd April 2010.

Intake E7

- 4.9 One Limit Level exceedance was recorded at NC9 on 13th May 2010.

- 4.10 The graphical presentations of the noise monitoring results are shown in **Appendix E**.

Construction Ground Borne Noise

- 4.11 Construction ground borne noise monitoring at GNC6 was conducted as scheduled in the reporting period and completed by end of June 2010. No exceedance was recorded.
- 4.12 Ground borne noise monitoring at GNC1 – True Light Middle School, GNC2 – The Legend and GNC4 - Crane Court were completed by end of August 2009 accordingly.
- 4.13 Ground borne noise monitoring at GNC5 was completed by end of November 2009.

Water Quality

- 4.14 Proposal for Temporary Suspension of Water Quality Monitoring Western Portal was submitted on 15th September 2009 and approved by EPD on 30th October 2009. Marine water quality monitoring was temporary suspended starting from 31st October 2009 until there is marine-based construction activities resumed at the Western Portal (i.e. March of 2011 tentatively.)

Underground water level

- 4.15 Ground water levels were measured once per month during the construction phase in order to ensure the water levels at those intakes near to the natural stream courses and thus on the surrounding habitats will not be significantly affected.
- 4.16 Locations of designated ground water level (borehole with piezometer) monitoring station UC1 at Eastern Portal has been changed to ADH48 which was verified by IEC on 5th June 2008. The updated ground water level monitoring stations, TP789_DH2, TP5_DH2, THR2_DH7 and PFLR1_DH2 were also verified by IEC on 19th June 2010. Monitoring data are shown in Table 4.1.

Table 4.1 Ground Water Level Monitoring Data in Reporting Quarter

Date	Water Level (from ground)/m
Location: ADH48 (Eastern Portal)	
20 April 2010	8.93
25 May 2010	8.48
7 June 2010	7.90
Location: TP789_DH2	
18 June 2010	14.9
Location: TP5_DH2	

18 June 2010	Obstructed
Location: THR2_DH7	
29 June 2010	1.60
Location:PFLR1_DH2	
22 June 2010	10.95

5. ENVIRONMENTAL AUDIT

Implementation Status of Environmental Mitigation Measures

- 5.1 The implementation status of environmental mitigation measures (EMIS) is given in **Appendix G**.

Site Audit Summary

- 5.2 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix G**.
- 5.3 The major deficiencies identified by ET in the reporting quarter are summarized as follow:

Water Quality

- Sand and sediment was observed falling to the existing stream at Intake THR2.
- The three compartments of sedimentation tank was observed full of silty/muddy water at Intake TP5.
- The three compartments of sedimentation tank were observed silty at Intake THR2.
- Sedimentation tank was observed full of silty water and cannot function properly at Intake TP5.
- Seepage of silty water was observed at the slope at Intake MA17.

Noise

- Noise was noticed from the breaking works at Intake E7.

Ecology

- Sand and silt has observed to deposit at the existing stream during the soil nailing works at Intake MA14.
- 5.4 The major deficiencies identified by IEC in the reporting quarter are summarized as follow:

29th April 2010

Observations

- Water in sedimentation tank at SM1 was observed slightly muddy. The Contractor was requested to clear the debris or rubbish deposited in sedimentation tank or increase the amount of chemicals for waste water treatment, if necessary.

27th May 2010

Observations

- Water in sedimentation tank at THR2 was observed slightly muddy, and the water quality inside those 3 tanks was almost the same. The Contractor was reminded to review the setup of the tank if necessary.
- Chemical container on bare ground was observed at MBD2. The Contractor was reminded to provide drip tray for all chemical containers.
- Water leakage from a sedimentation tank at MBD2. The Contractor was reminded to repair the pipe connection to prevent water leakage.

30th June 2010

Observations

- Oil drum without drip tray was observed at TP5 near sedimentation tank. The Contractor was requested to provide tarpaulin sheet underneath of drum or drip tray to prevent land contamination.

Reminders

- The Contractor was reminded to clear water deposited in Drip tray especially after rainfall.
- The Contractor was reminded to maintain the site tidiness.

Effectiveness of Mitigation Measures

- 5.5 The mitigation measures recommended in the EIA report and required by the EP are considered effective in minimizing environmental impacts. The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage, it is however considered that the Contractor could put greater efforts into proper implementation of these measures, especially for the construction of noise enclosure and use of quiet PME, to ensure their intended effects are fully achieved.

Status of Environmental Licensing and Permitting

- 5.6 Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, An Environmental Permit No. EP-272/2007 was issued on 26 April 2007 and Environmental Permit No. EP-272/2007/A was issue on 26 October 2007. Later, the further Environmental Permit (FEP-01/272/2007/A) and (FEP-01/272/2007/B) was issued on 28 January 2008 and 25 June 2009 to Dragages-Nishimatsu Joint Venture.
- 5.7 Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal).
- 5.8 Water Discharge License (License No.: EP860/W10/XY0175 for Area of Mount Butler Office, EP860/W10/XY0177 for Eastern Portal, EP820/W9/XT086 and

WT00005864-2010 for Western Portal, EP860/W10/XY0183 for Intake W0, WT00003372-2009 for Intake SM1, WT00003737-2009 for Intake MB16, WT00004126-2009 for Intake HKU1, WT00003738-2009 for THR2, WT00004270-2009 for PFLR1, WT00004806-2009 for Intake E7, WT00004808-2009 for MBD2, WT00004885-2009 for Intake RR1, WT00005135-2009 for Intake W10, WT00005357-2009 for Intake W5, WT00005374-2009 for Intake P5, WT00005376-2009 for Intake TP4, WT00005588-2009 for Intake TP5, WT00005643-2009 for Intake E5A, WT00005754-2010 for Intake W8, WT00005954 for Intake TP789, WT00005915 for Intake E5B, WT00006102-2010 for Intake M3, WT00006415-2010 for Intake MA15, WT00006420-2010 for Intake MA17, WT00006428-2010 for Intake BR6, WT00006609-2010 for Intake HR1, WT00006559-2010 for Intake CR1, WT00006929-2010 for Intake W1, WT00006418-2010 for Intake MA14 and WT00006865-2010 for Intake BR5).

- 5.9 Construction Noise Permit (License No.: GW-RS0962-09 and GW-RS0512-10 for Eastern Portal, GW-RS0145-10, GW-RS0263-10, GW-RS0348-10 and GW-RS0463-10 for Western Portal, GW-RS0877-09, GW-RS0412-10 and GW-RS0522-10 for Intake W0, GW-RS0075-10 for Intake MB16, GW-RS-0640-09 and GW-RS0155-10 for Intake SM1, GW-RS0128-10 for Intake PFLR1, GW-RS0035-10 for W5, GW-RS0441-10 for Intake W3 and GW-RS0468-10 for Intake MA17).
- 5.10 The status of these licenses and permits obtained for the Project is summarized in **Appendix H**.

Status of Waste Management

- 5.11 The waste management of the Project has to follow the requirements and procedures stated in the Waste Management Plan which was prepared by the Contractor.
- 5.12 During this reporting quarter, a total 49 nos. of dump trucks of waste were delivered to SENT, 685 nos. of C&D waste was delivered to Public Fill Reception Facilities. Both the trip ticket system and chit accounting system for disposal of waste were operating smoothly to date. No overloading case was recorded during this reporting period. No disposal of inert C&D material to public sorting facilities and no dump truck without cover were reported from CEDD. In respect of the dump truck cover, DNJV keeps on take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.
- 5.13 The rock materials from the Eastern Portal and Western Portal were received by the alternative disposal sites at ZhongShan. Some of the rock materials at Eastern Portal were also received by Leighton site at Ocean Park.
- 5.14 The monthly summary of waste flow table for April – June 2010 are provided in **Appendix I**.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

- 6.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix J**. The details of each exceedance were attached in the Monthly Reports.

Air Quality

- 6.2 No Action/ Limit Level exceedance was recorded in the reporting quarter.

Construction Airborne Noise

Western Portal

- 6.3 No Action/Limit Level exceedances were recorded during the reporting period.

Intake PFLR1

- 6.4 One Action Level exceedance was recorded for the complaint received on 2nd June 2010.

Intake TP789/TP4

- 6.5 One Action Level exceedance was recorded for the complaint received on 22nd April 2010.

Intake E7

- 6.6 One Limit Level exceedance was recorded at NC9 on 13th May 2010.

Construction Ground Borne Noise

- 6.7 No exceedance was recorded in the reporting quarter.

Construction Impacts on Suspended Solids

- 6.8 Water quality monitoring was temporarily suspended starting from 31st October 2009.

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

- 6.9 There was no non-compliance from the site audits in the reporting quarter. The observations and recommendations made in each individual site audit session were attached in the Monthly Reports.

7. ENVIRONMENTAL COMPLAINTS AND PROSECUTIONS

- 7.1 Seven environmental complaints were received and investigated during the reporting quarter. The updated Complaint Log is attached in **Appendix K**.
- 7.2 No warning, summon and notification of successful prosecution was received in the reporting period.
- 7.3 There were a total of 53 project related environmental complaints, no warnings, summons and successful prosecutions received since the commencement of the Project.

8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

8.1 The major construction activities in the coming month include:

- TBM excavation and adit excavation at Eastern and Western Portals;
- Excavation of Adit W0 by Drill-and-Blast method;
- Stage 1 Structure Construction at Intakes SM1;
- Excavation of dropshaft at Intake MB16 by Raise Boring method;
- Excavation of dropshaft at Intake P5 by RCD method;
- Excavation of intake structure at Intakes, E7, TP4, TP789, HKU1, THR2, MBD2, PFLR1, W10, TP5 and E5B;
- Cofferdam construction at Intakes W5, MA15, W3, DG1, W8 and RR1;
- Site preparation works for Intakes MA17, W1, HR1, BR5, MA14, BR6, GL1, CR1 and BR4;
- Advance grouting at Intake E5A under Variation Order #53;
- Slopeworks at Intakes M3, MA17 and MA14;
- Casting of tunnel segments and dropshaft precast rings; and
- Site Handover of Site Portion CR1 and BR4.

8.2 According to the environmental audit performed in the reporting period, the following recommendations were made:

Air Quality Impact

- To prohibit any open burning on site.
- To regularly maintain the machinery and vehicles on site.
- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To provide hoarding

Noise Impact

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

Water Impact

- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.

- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- To avoid accumulation of stagnant and ponding water on site.

Waste/Chemical Management

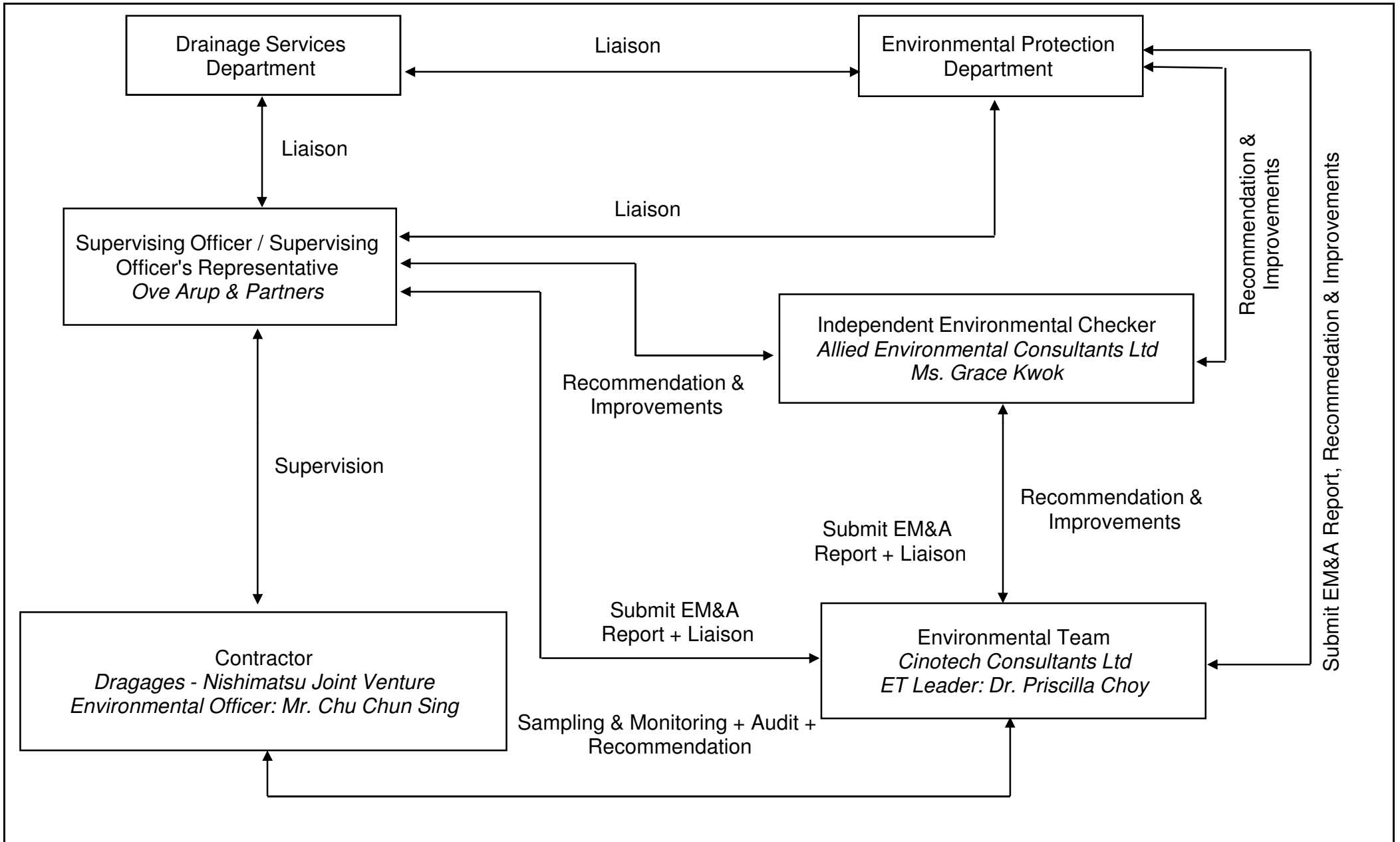
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

FIGURES



Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001
	Site Layout Plan		Date	Figure
			Jun-08	1





Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001
Project Organization Chart		Date	Mar-10	Figure 2





Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Eastern Portal)
 Locations of Air Quality and Noise Monitoring Station

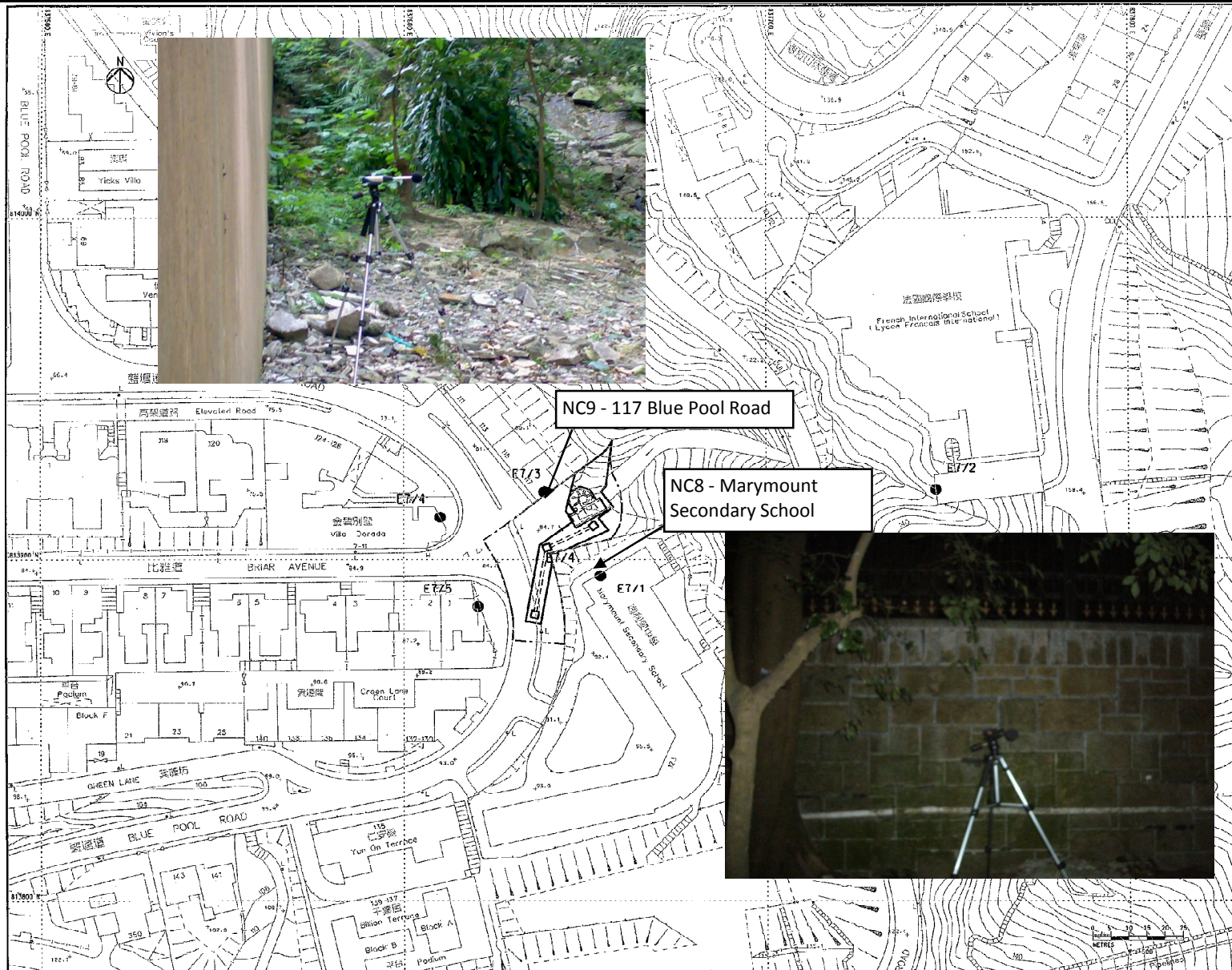
Scale	N.T.S	Project No.	MA 8001
Date	Sep-09	Figure	3.1a





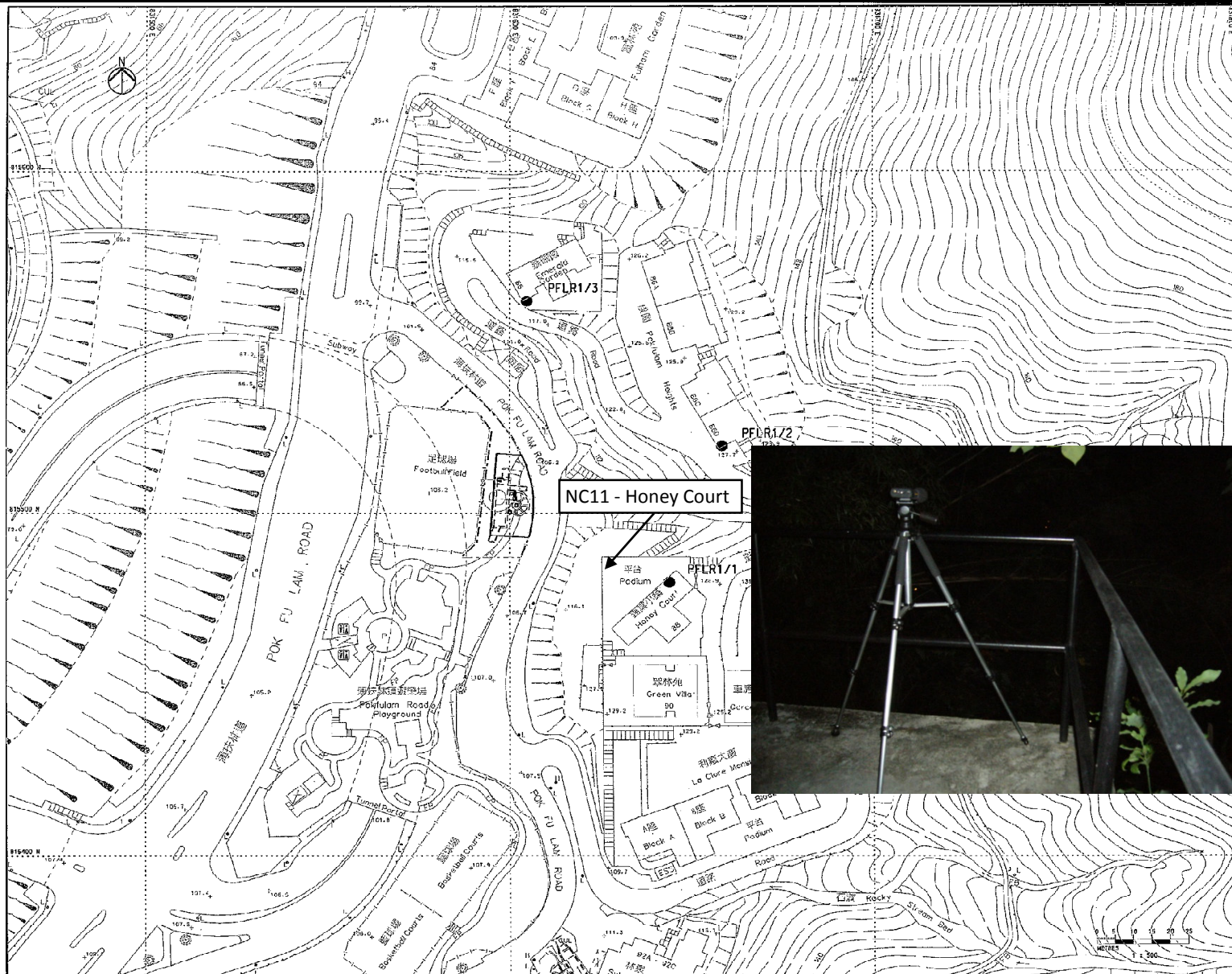
Title	Contract No. DC/2007/10		Scale	Project	
	Design and Construction of Hong Kong West Drainage Tunnel (Western Portal)		N.T.S	No.	MA 8001
	Locations of Air Quality and Noise Monitoring Station		Date	Figure	
			Sep-09	3.1b	





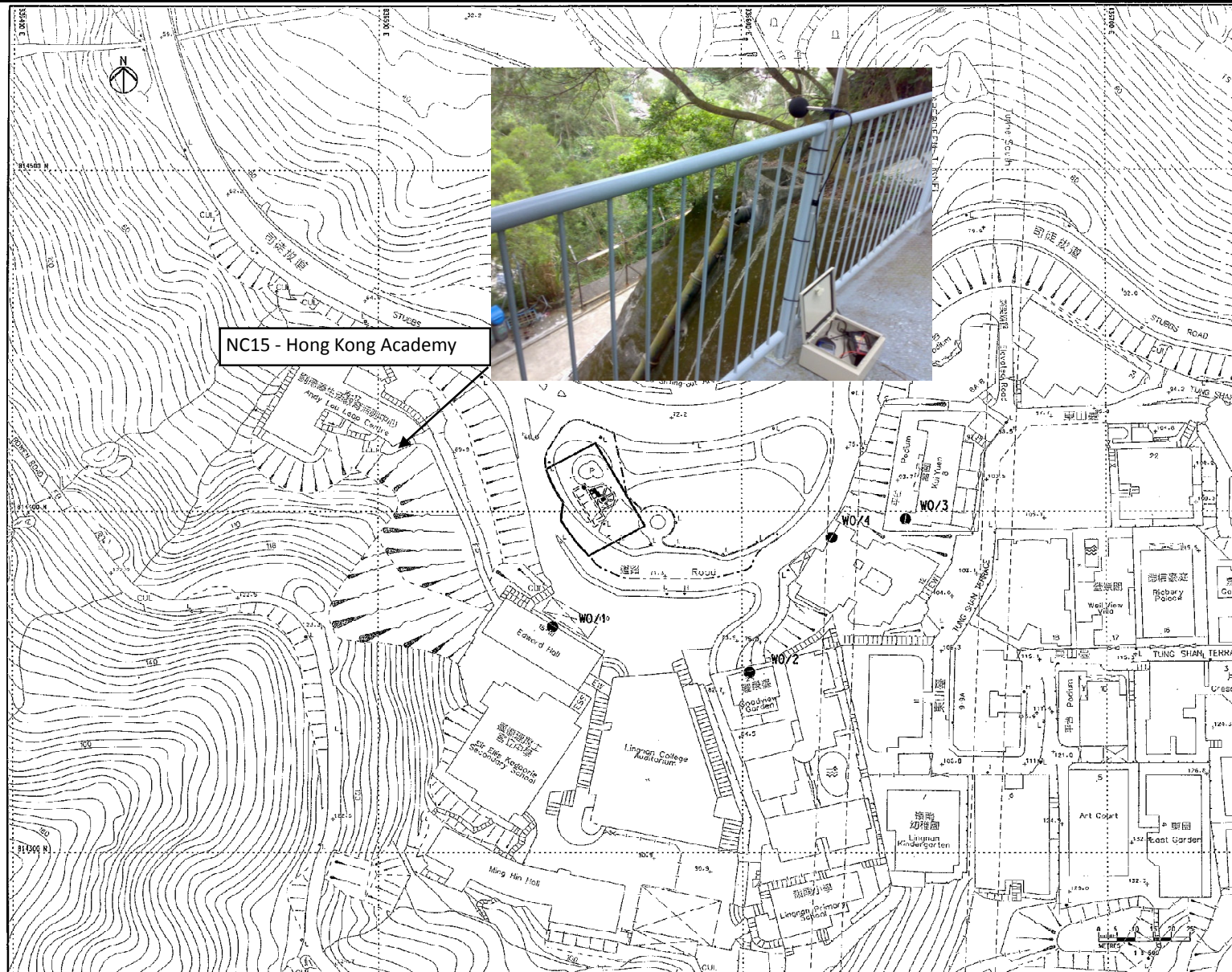
Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake E7)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Mar-10	3c





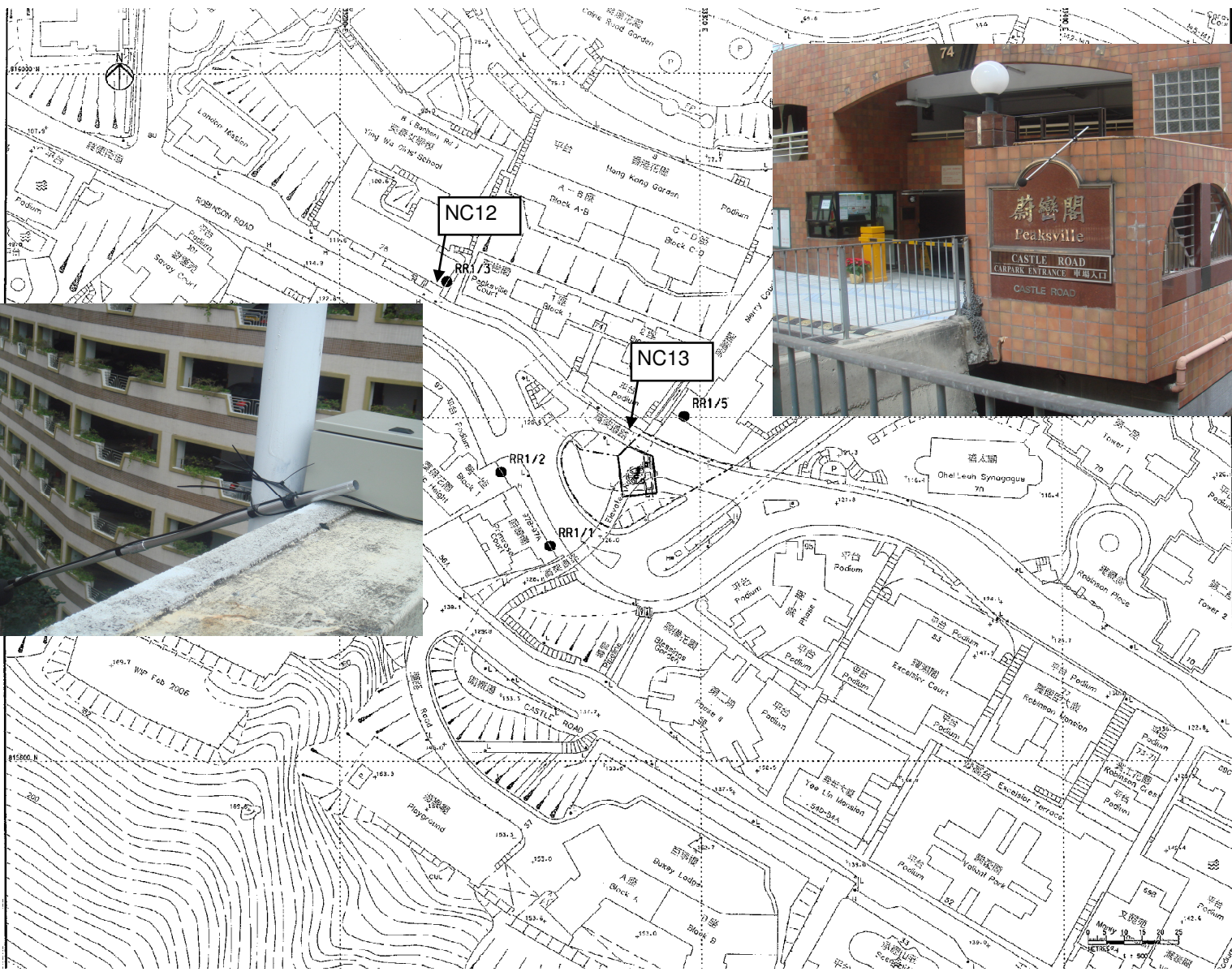
Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake PFLR1)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Mar-10	3d

CINOTECH



Title	Contract No. DC/2007/10		Scale	Project	
	Design and Construction of Hong Kong West Drainage Tunnel (Intake W0)			N.T.S	No.
	Locations of Noise Monitoring Stations		Date	Figure	
			Mar-10	3e	



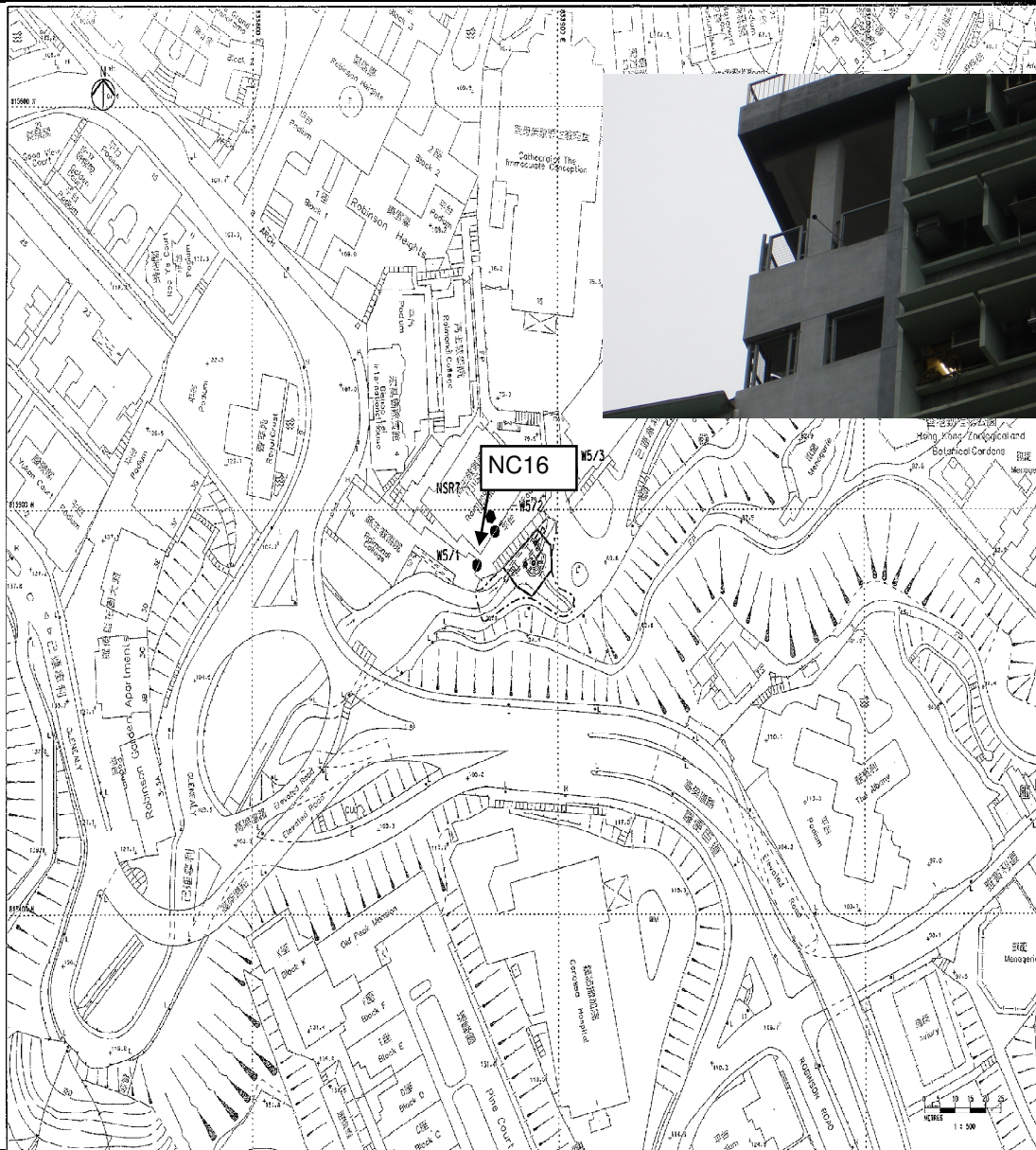


Title

Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes RR1)
 Locations of Noise Monitoring Stations

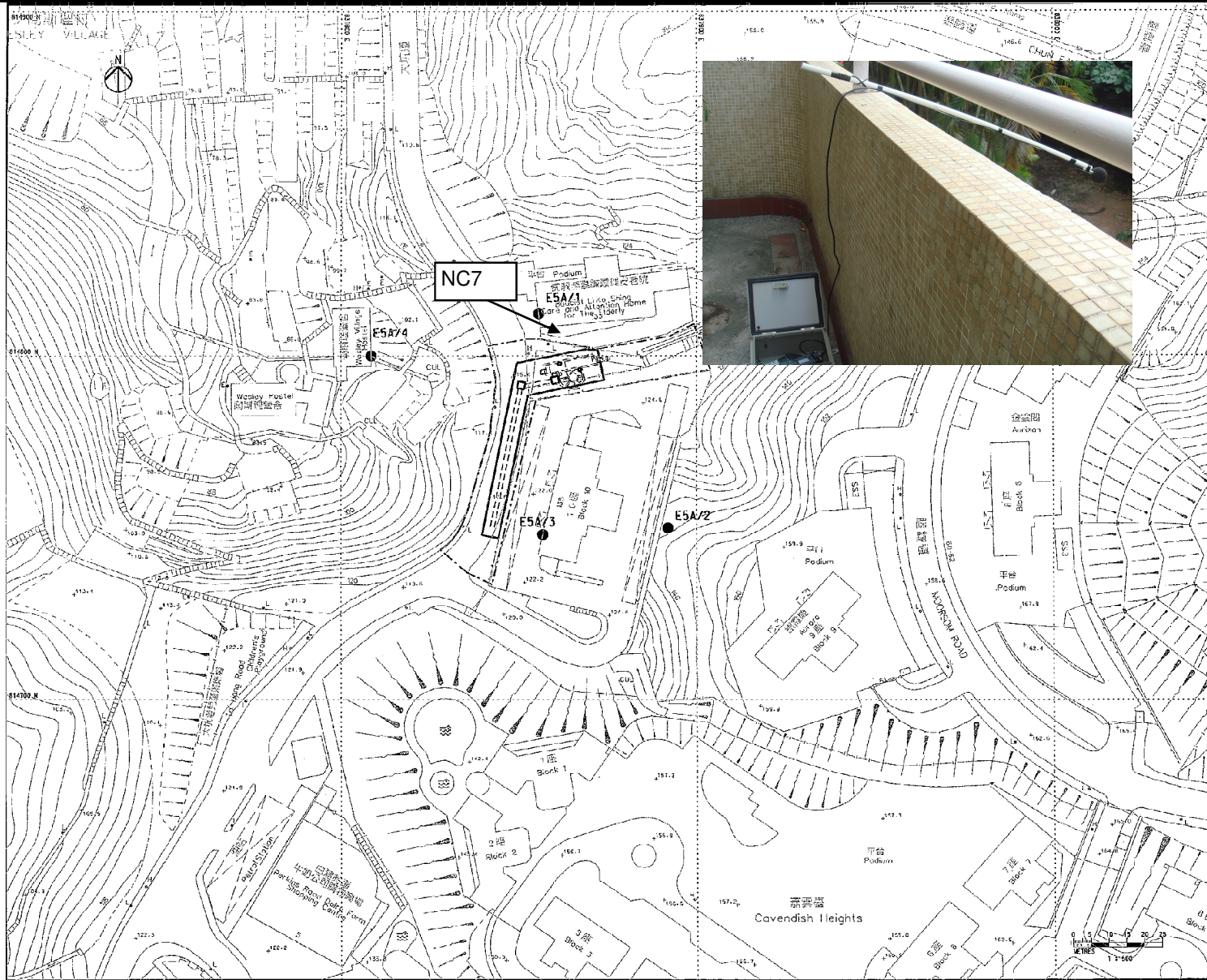
Scale	N.T.S	Project No.	MA 8001
Date	Mar 10	Figure	3f





Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intakes W5)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Mar 10	3g





Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes E5A)
 Locations of Noise Monitoring Stations

Scale
 N.T.S
 Date
 Mar-10

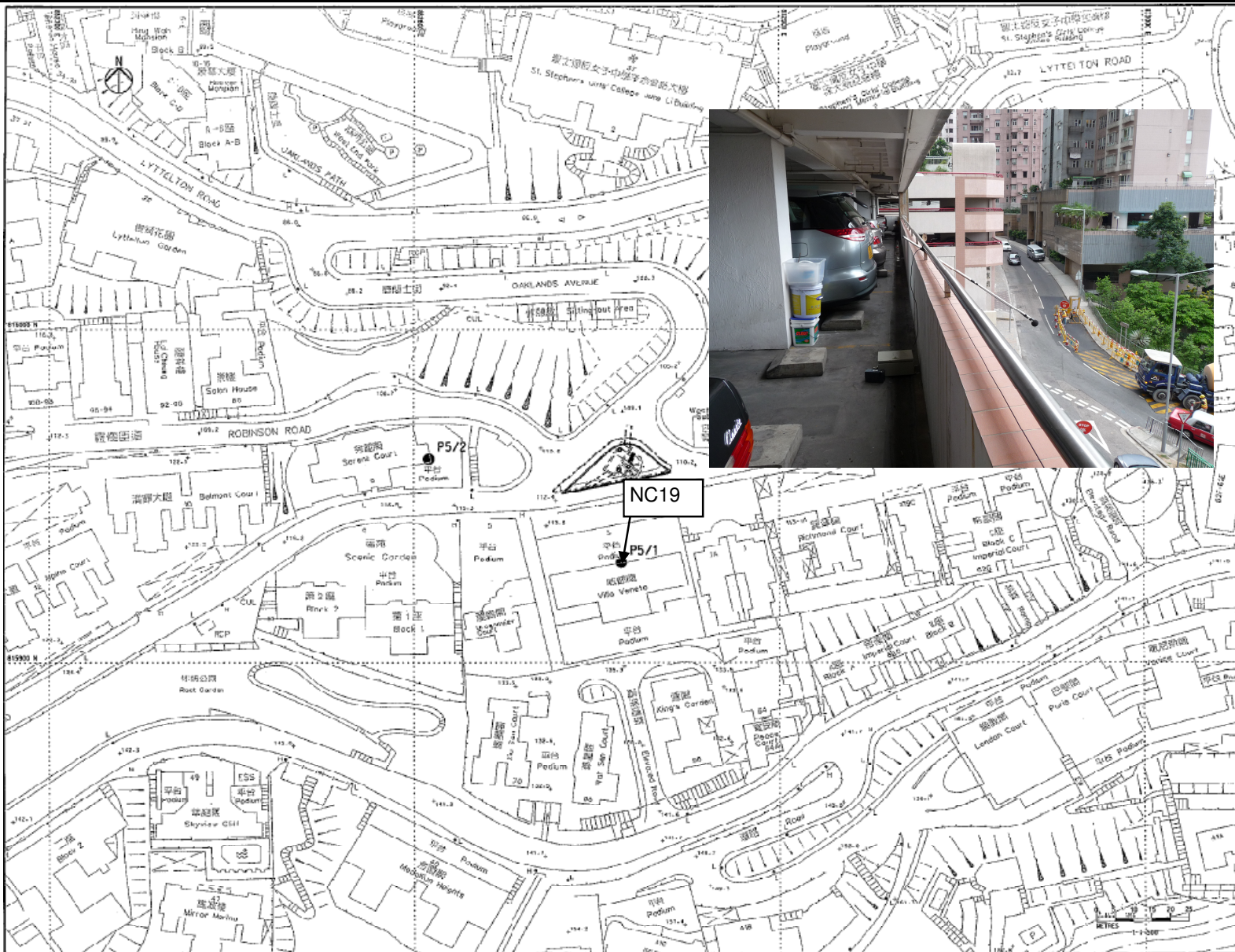
Project
 No. MA 8001
 Figure
 3h

CINOTECH



Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake THR2)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Mar-10	3i





Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intakes P5)		N.T.S	No. MA8001
	Locations of Noise Monitoring Stations		Date	Figure
			Mar-10	3j





Title

Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake W8)
 Locations of Noise Monitoring Stations

Scale

N.T.S

Project

No. MA8001

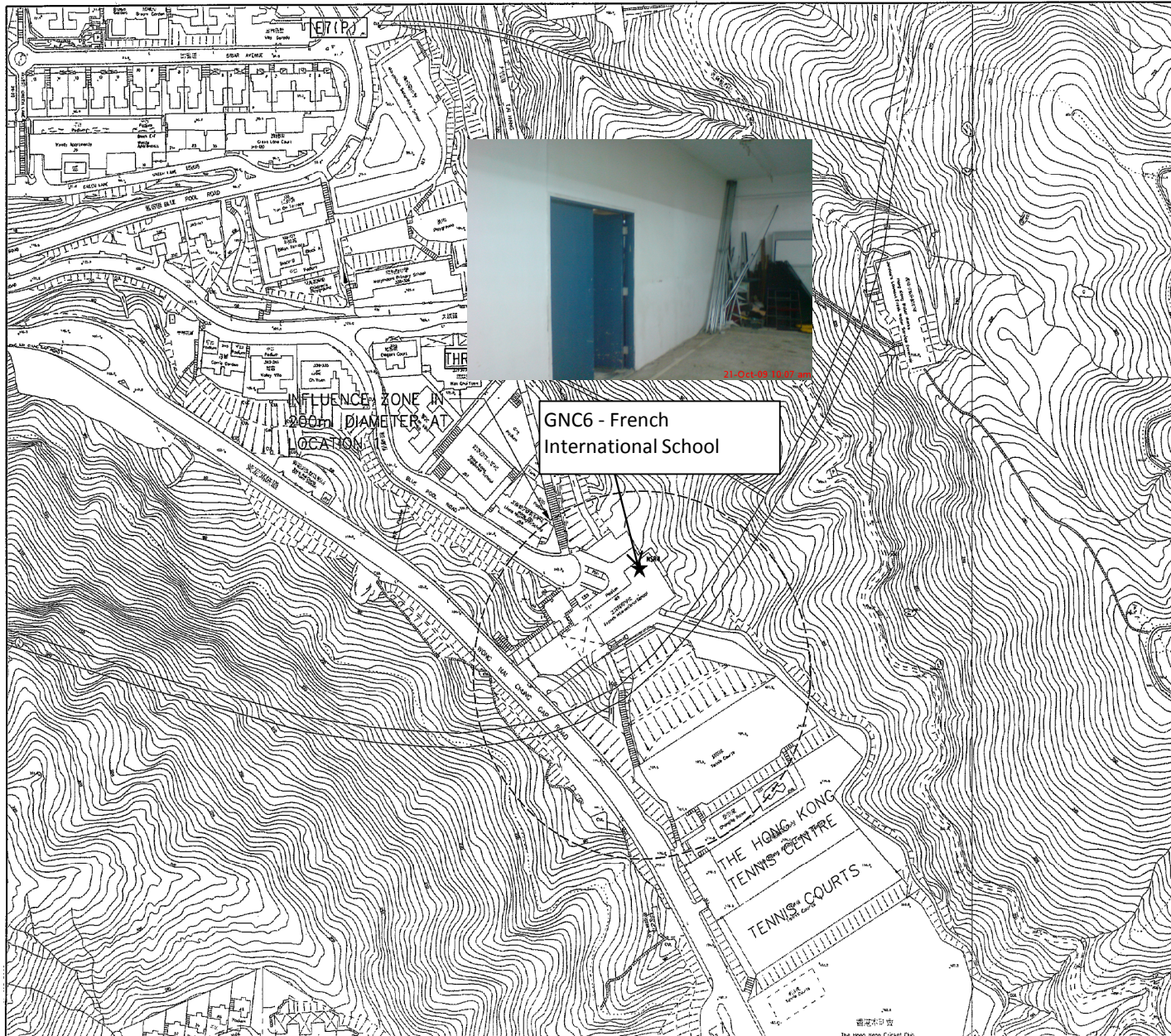
Date

Jun-10

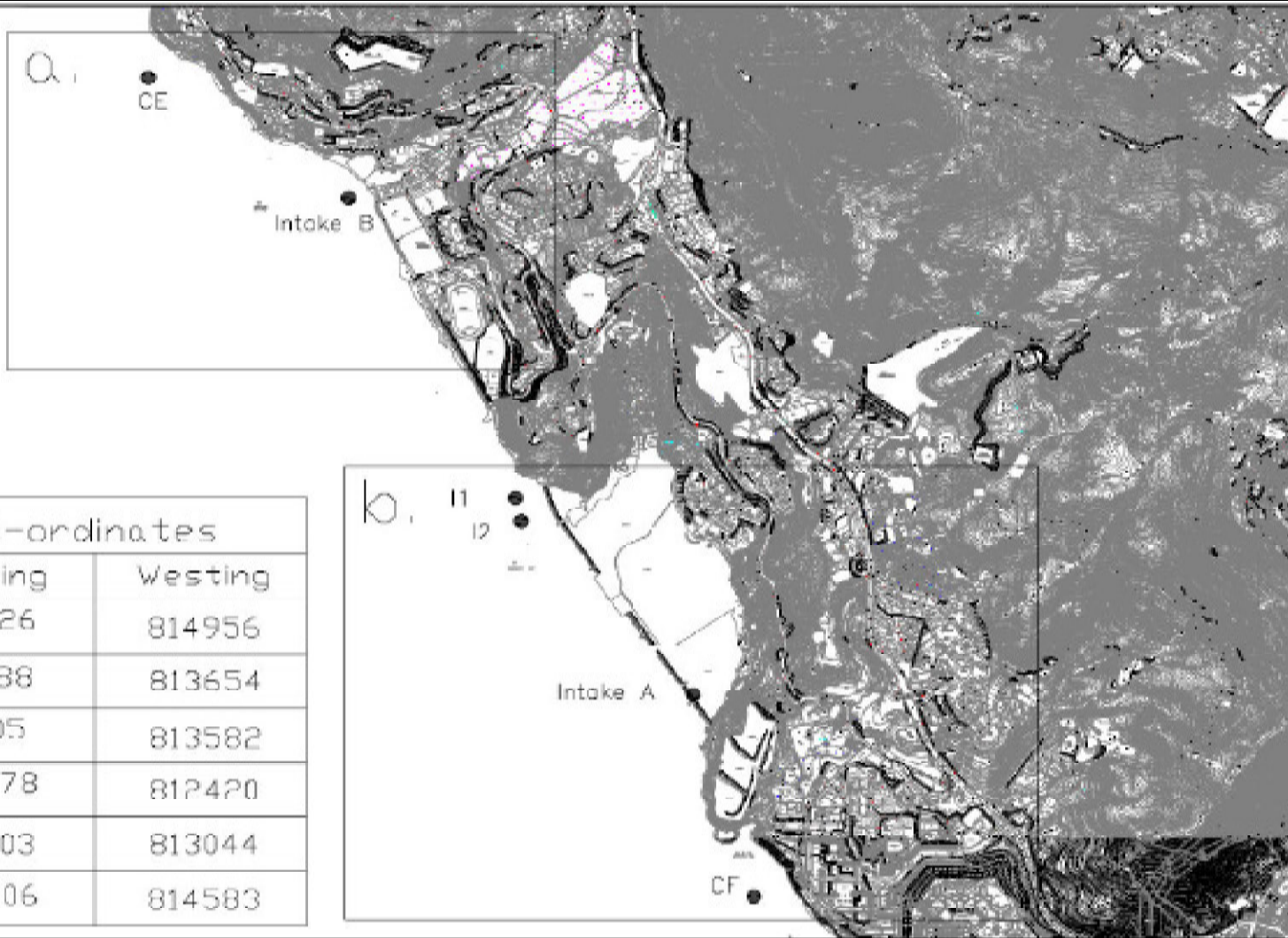
Figure

3k

CINOTECH



Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Locations of Groundborne Noise Monitoring Station GNC6 (French International School)	Scale	N.T.S	Project No.	MA 8001	CINOTECH
		Date	Mar-10	Figure	31	

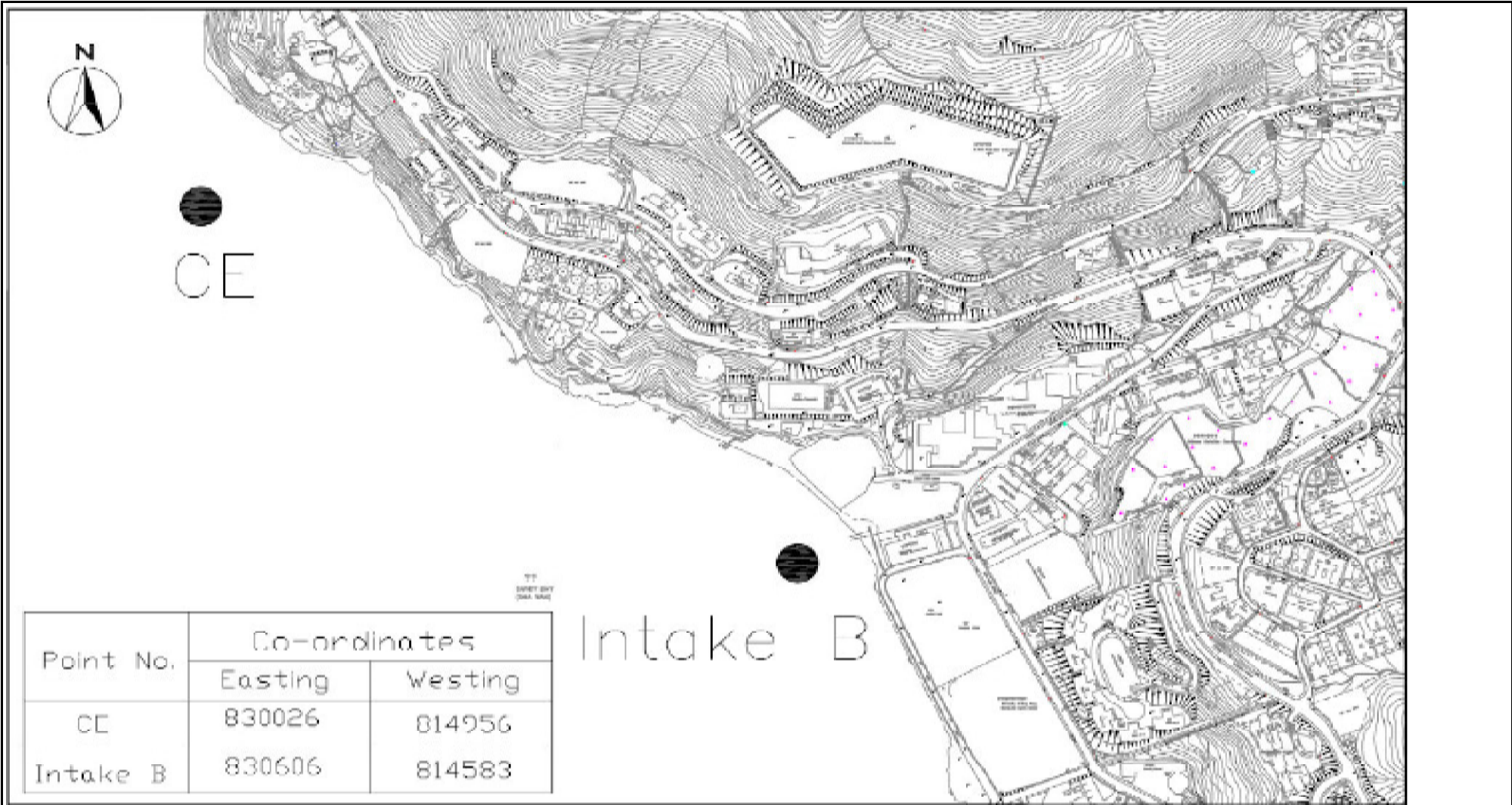


Point No.	Co-ordinates	
	Easting	Westing
CE	830026	814956
I1	831088	813654
I2	831105	813582
CF	831778	812420
Intake A	831603	813044
Intake B	830606	814583

Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Water Quality Monitoring Stations

Scale	N.T.S	project No.	MA8001
Date	Jul-08	Figure	4

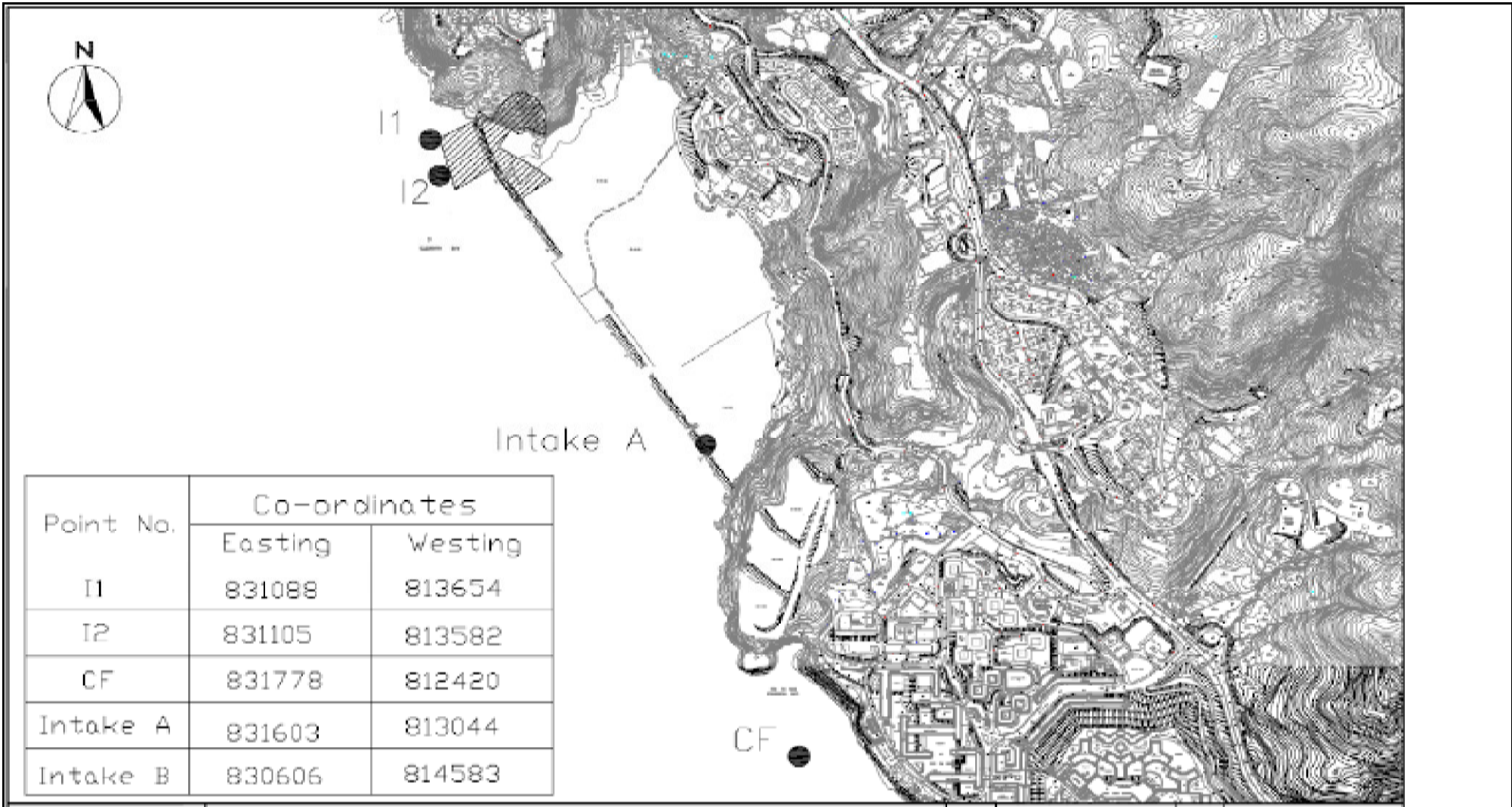




Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Water Quality Monitoring Stations

Scale N.T.S
 project No. MA8001
 Date Jul-08
 Figure 4a





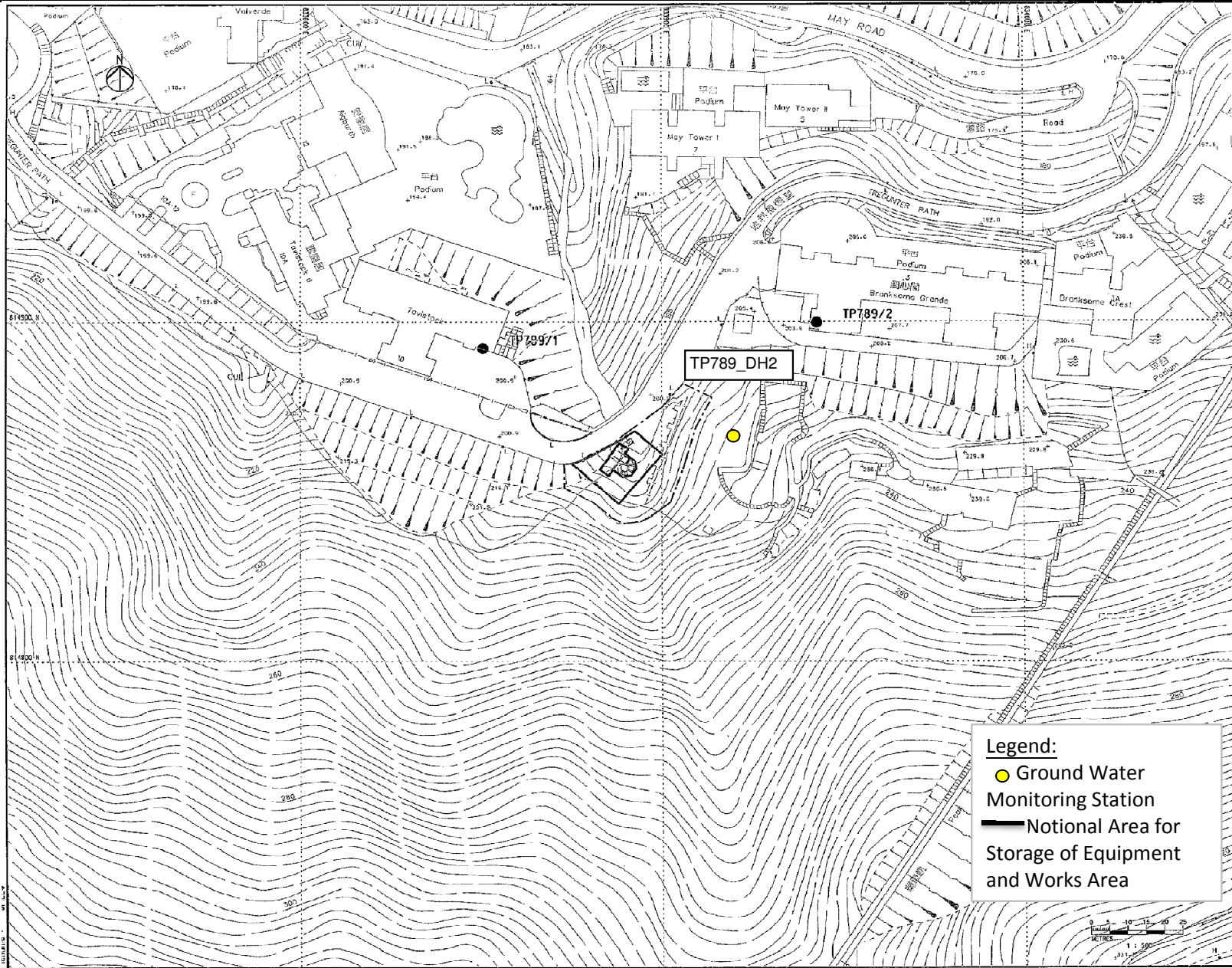
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Locations of Water Quality Monitoring Stations	Scale	project	
		N.T.S	
	Date	Figure	
	Jul-08	4b	



Legend:

- Ground Water Monitoring Station
- ▨ Notional Area for Storage of Equipment and Works Area

Title	Contract No. DC/2007/10		Scale	Project No.	MA8001	
	Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal)					
	Location of ground water level Monitoring Station		Date	Figure	5a	
			Jun-10			



Title	Contract No. DC/2007/10		Scale	Project	
	Design and Construction of Hong Kong West Drainage Tunnel (Intake TP789)		N.T.S	No.	MA8001
	Location of ground water level Monitoring Station		Date	Figure	
			Jun-10	5b	CINOTECH

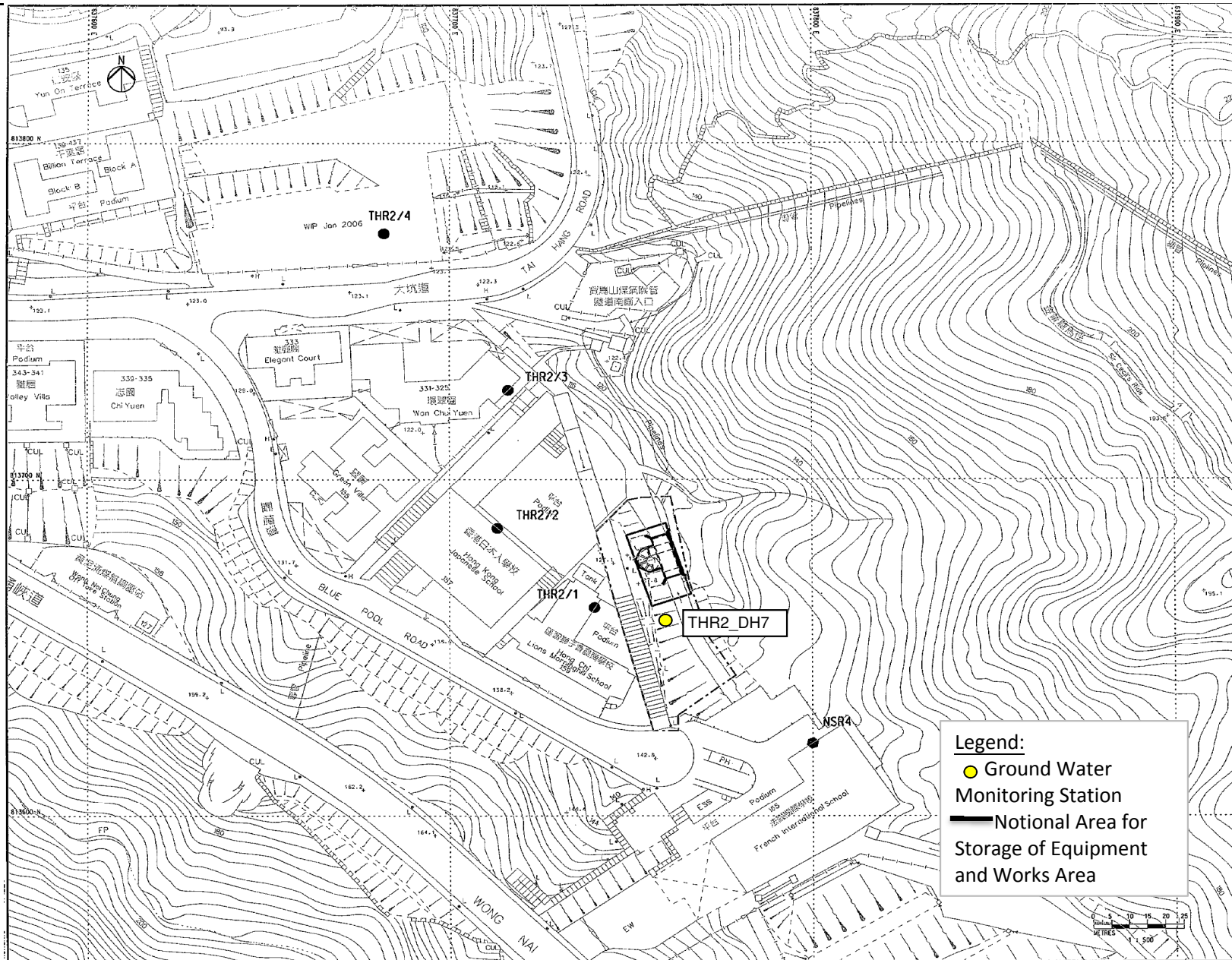


Title

Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake TP5)
 Location of ground water level Monitoring Station

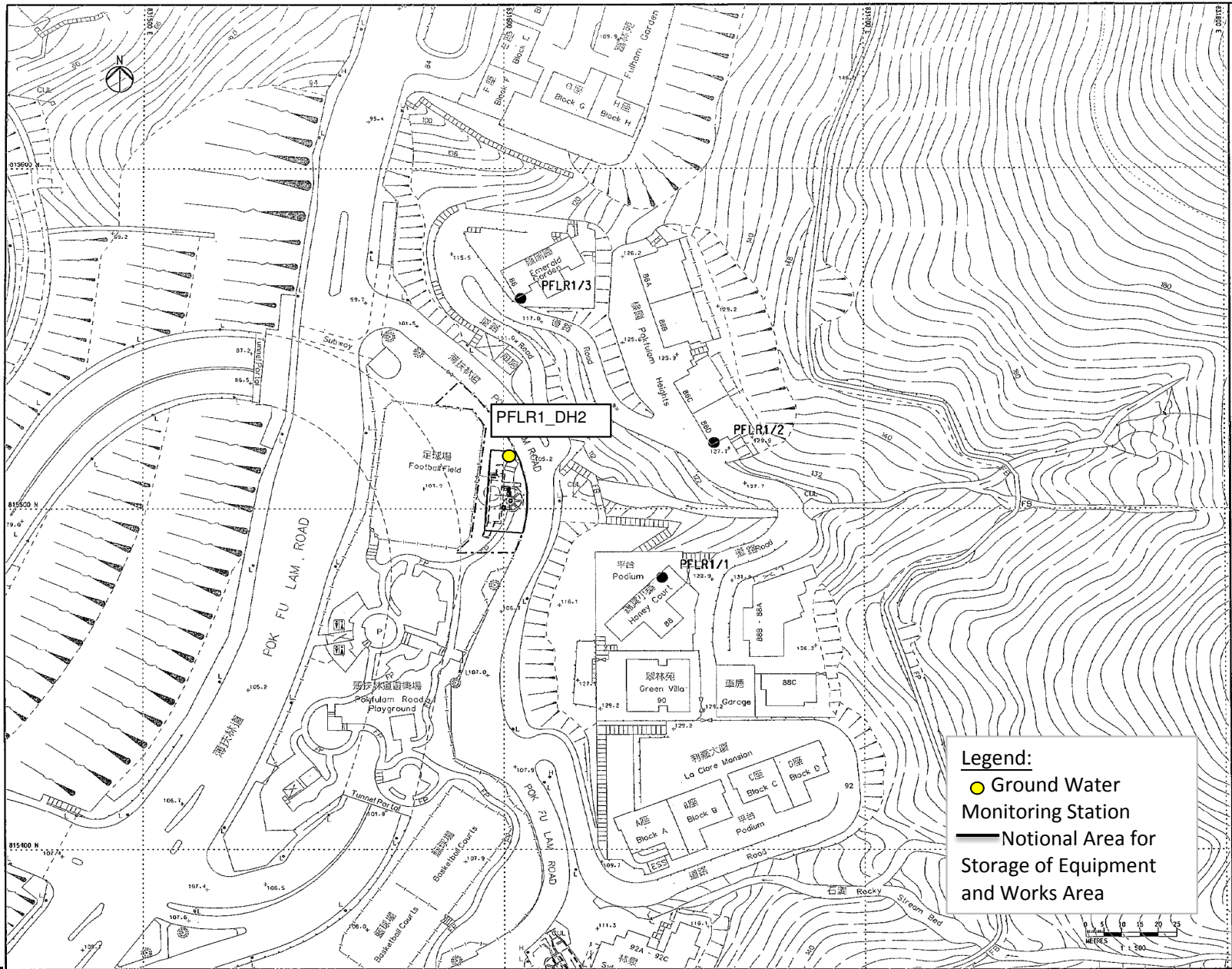
Scale	N.T.S	Project No.	MA8001
Date	Jun-10	Figure	5c





Title	Contract No. DC/2007/10		Scale	Project	
	Design and Construction of Hong Kong West Drainage Tunnel (Intake THR2)		N.T.S	No.	MA8001
	Location of ground water level Monitoring Station		Date	Figure	
			Jun-10	5d	





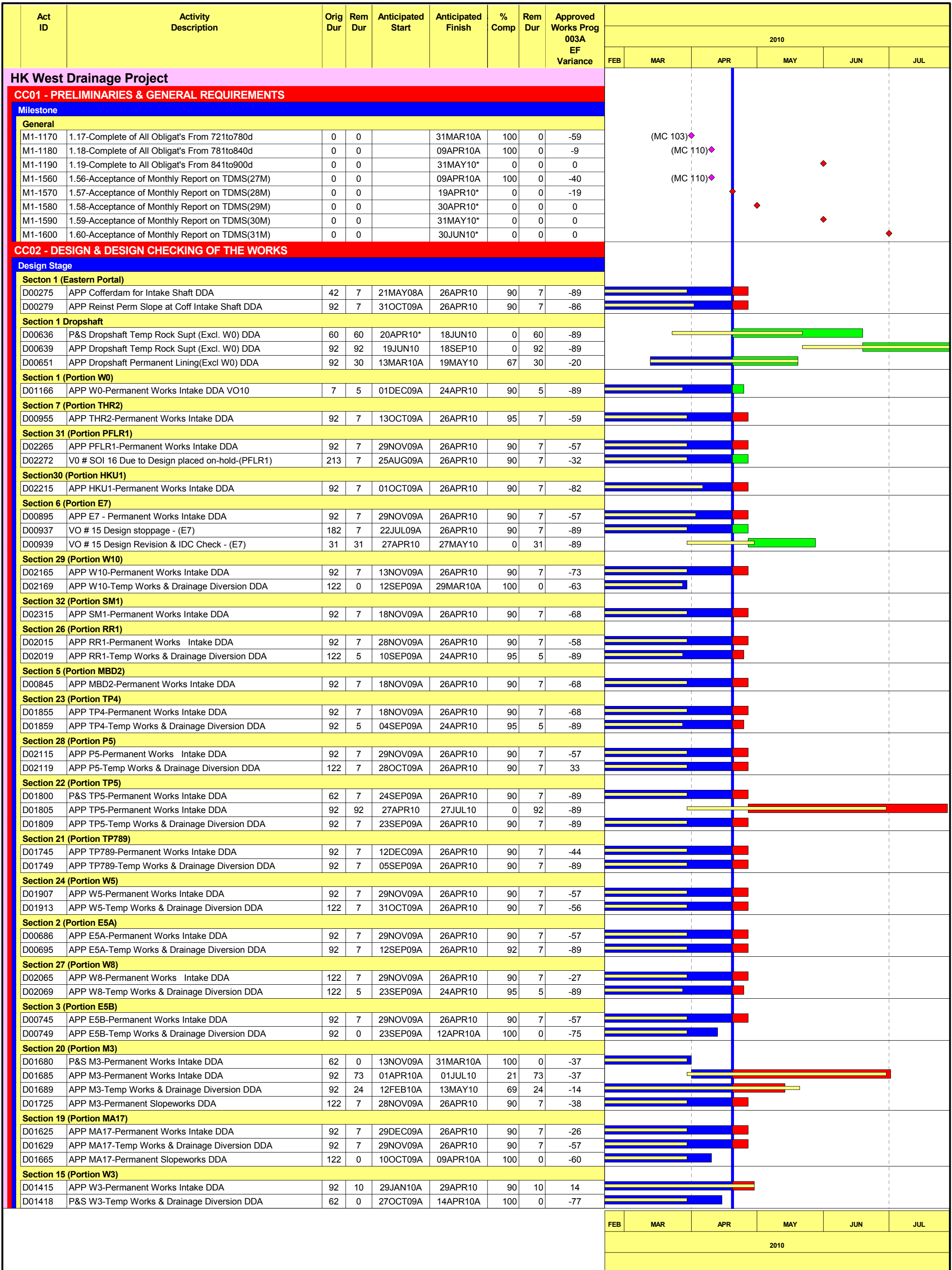
Title

Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake PFLR1)
 Location of ground water level Monitoring Station

Scale	N.T.S	Project No.	MA8001
Date	Jun-10	Figure	5e



**APPENDIX A
CONSTRUCTION PROGRAMME**



Start Date 30NOV07
 Finish Date 12JUN12
 Data Date 20APR10
 Run Date 23APR10 22:20

█ Early Bar
█ Previous Month (003D)
█ Progress Bar
█ Critical Activity

004D Sheet 1 of 10
Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
APRIL/2010 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010					
									FEB	MAR	APR	MAY	JUN	JUL
D01419	APP W3-Temp Works & Drainage Diversion DDA	92	87	15APR10A	15JUL10	5	87	-77						
D01515	APP MA14-Permanent Works Intake DDA	92	7	31DEC09A	26APR10	90	7	-25						
D01519	APP MA14-Temp Works & Drainage Diversion DDA	92	7	28NOV09A	26APR10	90	7	-58						
D01575	APP MA15-Permanent Works Intake DDA	92	7	24DEC09A	26APR10	90	7	-31						
D01595	APP MA15-Temp Works & Drainage Diversion DDA	92	5	13OCT09A	24APR10	95	5	-89						
D01105	APP DG1-Permanent Works Intake DDA	92	7	31DEC09A	26APR10	90	7	-25						
D01109	APP DG1-Temp Works & Drainage Diversion DDA	92	7	12JAN10A	26APR10	90	7	-13						
D01055	APP HR1-Permanent Works Intake DDA	92	12	31JAN10A	01MAY10	87	12	30						
D01057	APP HR1-Temp Works & Drainage Diversion AIP	92	10	01OCT09A	29APR10	90	10	-89						
D01058	P&S HR1-Temp Works & Drainage Diversion DDA	62	0	31DEC09A	16APR10A	100	0	-35						
D01059	APP HR1-Temp Works & Drainage Diversion DDA	92	89	17APR10A	27JUL10	3	89	-45						
D01365	APP BR6-Permanent Works Intake DDA	92	12	31JAN10A	01MAY10	87	12	45						
D01385	APP BR6-Temp Works & Drainage Diversion DDA	92	7	16JAN10A	26APR10	90	7	-2						
D01265	APP W1-Permanent Works Intake DDA	92	12	31JAN10A	01MAY10	87	12	20						
D01005	APP GL1-Permanent Works Intake DDA	92	13	30JAN10A	02MAY10	86	13	38						
D01009	APP GL1--Temp Works & Drainage Diversion DDA	92	60	19MAR10A	18JUN10	35	60	-10						
D01965	APP CR1-Permanent Works Intake DDA	92	41	28FEB10A	30MAY10	55	41	63						
D01968	P&S CR1-Temp Works & Drainage Diversion DDA	62	0	28OCT09A	12APR10A	100	0	-77						
D01969	APP CR1-Temp Works & Drainage Diversion DDA	122	115	20APR10	12AUG10	6	115	-77						
D01315	APP BR5-Permanent Works Intake DDA	92	0	28FEB10A	29MAR10A	100	0	66						
D01319	APP BR5-Temp Works & Drainage Diversion DDA	92	13	30JAN10A	02MAY10	86	13	17						
D01205	APP BR4-Permanent Works Intake DDA	92	0	28FEB10A	30MAR10A	100	0	96						
D01209	APP BR4-Temp Works & Drainage Diversion DDA	92	5	25AUG09A	24APR10	95	5	-89						
D01245	APP BR4-Permanent Slopeworks DDA	122	5	04SEP09A	24APR10	95	5	-89						
D01465	APP B2-Permanent Works Intake DDA	92	41	01MAR10A	30MAY10	55	41	91						
D01468	P&S B2-Temp Works & Drainage Diversion DDA	62	0	11FEB10A	26MAR10A	100	0	-3						
D01469	APP B2-Temp Works & Drainage Diversion DDA	92	68	27MAR10A	26JUN10	26	68	-3						
D00555	APP Adits & SC Permanent Lining DDA	82	0	01DEC09A	19APR10A	100	0	-58						
D02350	P&S E&M AIP	86	86	20APR10*	14JUL10	0	86	-89						
D02355	APP E&M AIP	42	42	15JUL10	25AUG10	0	42	-89						
D02370	P&S Landscaping AIP	85	85	20APR10*	13JUL10	0	85	-89						
D02375	APP Landscaping AIP	42	42	14JUL10	24AUG10	0	42	-89						
D00145	APP Detailed Const Risk Assess(Portals) DDA	42	0	02AUG08A	23MAR10A	100	0	-55						
D00480	P&S Adit/main tun intrct Perm Ling at W0 AIP	63	63	20APR10*	21JUN10	0	63	-89						
D00485	APP Adit/main tun intrct Perm Ling at W0 AIP	92	92	22JUN10	21SEP10	0	92	-89						
D00490	P&S Adit/main tunl intrct Perm Ling at W0 DDA	63	63	20APR10*	21JUN10	0	63	-89						
D00495	APP Adit/main tunl intrct Perm Ling at W0 DDA	92	92	22JUN10	21SEP10	0	92	-89						
D00510	P&S TBM Dismantle Chamber Temp Supt at W0 DDA	63	63	20APR10*	21JUN10	0	63	-89						
D00515	APP TBM Dismantle Chamber Temp Supt at W0 DDA	92	92	22JUN10	21SEP10	0	92	-89						
M2-1100	2.10-DDA-Adits&Stilling Chambers Consent	0	0		19APR10	0	0	-58						
M2-1130	2.13-DDA-Dropshaft Submission	0	0		19APR10	0	0	-82						
M2-1140	2.14-DDA-Dropshaft Consent	0	0		19MAY10	0	0	-20						
M2-1171	2.17-DDA-Intakes Submission(100%)	0	0		09APR10A	100	0	50						
M2-1180	2.18-DDA-Intakes Consent	0	0		31MAR10A	100	0	151						
M2-1220	2.22-DDA Slope Consent (other than E&W Portals)	0	0		31MAR10A	100	0	-12						
B2240	Precast Segment Fabrication (E.Tunnel)	592	118	16DEC08A	15AUG10	80	118	1						
B2280	Precast Segment Fabrication (W.Tunnel)	745	289	17DEC08A	02FEB11	61	289	1						
E1540	TBM Excav (to CH2042-THR2)+200m =284m	24	0	09MAR10A	31MAR10A	100	0	9						
E1550	TBM Excav (to CH2652-GL1,HR1)+200m =610m	59	43	07APR10A	10JUN10	27	43	12						
E1560	TBM Excav (to CH3315-DG1)+200m =663m	47	47	11JUN10	05AUG10	0	47	12						
W1160	TBM Excav'n (to CH7447-W8,RR1)+200m =898m	84	12	09FEB10A	01MAY10	86	12	10						
W1170	TBM Excav'n (to CH7006-CR1,W5)+200m =441m	42	42	02MAY10	12JUN10	0	42	10						
W1180	TBM Excav'n (to CH6705-TP4)+200m =301m	28	28	13JUN10	10JUL10	0	28	10						
W1190	TBM Excav's (to CH6595-TP5)+200m =110m	10	10	11JUL10	20JUL10	0	10	10						

FEB	MAR	APR	MAY	JUN	JUL
2010					

Start Date 30NOV07
Finish Date 12JUN12
Data Date 20APR10
Run Date 23APR10 22:20

█ Early Bar
█ Previous Month (003D)
█ Progress Bar
█ Critical Activity

004D Sheet 2 of 10
Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
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APRIL/2010 MONTHLY REPORT

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01MAR10	Approved Works Programme # 4	SOR	003A

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010						
									FEB	MAR	APR	MAY	JUN	JUL	
Milestone															
Section 1 (Main Tunnel)															
M3-1180	3.18-Excavation, Support & Lining CH1750 to 2000	0	0		09APR10A	100	0	-22	(MC 110) ◆						
M3-1190	3.19-Excavation, Support & Lining CH2000 to 2250	0	0		19APR10	0	0	8							
M3-1200	3.20-Excavation, Support & Lining CH2250 to 2500	0	0		07MAY10	0	0	16							
M3-1210	3.21-Excavation, Support & Lining CH2500 to 2750	0	0		01JUN10	0	0	14							
M3-1220	3.22-Excavation, Support & Lining CH2750 to 3000	0	0		17JUN10	0	0	15							
M3-1230	3.23-Excavation, Support & Lining CH3000 to 3250	0	0		12JUL10	0	0	14							
M3-1370	3.37-Excavation, Support & Lining CH6500 to 6750	0	0		11JUL10	0	0	10							
M3-1380	3.38-Excavation, Support & Lining CH6750 to 7000	0	0		17JUN10	0	0	10							
M3-1390	3.39-Excavation, Support & Lining CH7000 to 7250	0	0		25MAY10	0	0	10							
M3-1400	3.40-Excavation, Support & Lining CH7250 to 7500	0	0		01MAY10	0	0	10							
M3-1410	3.41-Excavation, Support & Lining CH7500 to 7750	0	0		19APR10	0	0	-1							
M3-1420	3.42-Excavation, Support & Lining CH7750 to 8000	0	0		09APR10A	100	0	-14	(MC 110) ◆						
CC04 - PART OF SECTION 1 OF THE WORKS (ADITS)															
Construction															
Audit Tunnel Excavation & Tunnel Lining - W0															
S010280	Audit Excav D&B/Enlarge/Turnbays Ch464-Ch420 (W0)	58	47	01APR10A	22JUN10	64	47	-20							
S010290	Audit Excavation by Drill & Blast Ch420-287 (W0)	59	59	24JUN10	08SEP10	0	59	-20							
Audit Tunnel Excavation & Tunnel Lining - E5A															
S020200	Audit Excavation by Drill & Blast Ch07-193(E5A)	68	60	31MAR10A	09JUL10	12	60	-47							
S020202	Audit Excavation by Drill & Blast Ch193-336(E5A)	54	54	10JUL10	18SEP10	0	54	-47							
Audit Tunnel Excavation & Tunnel Lining - MB16															
S040236	Probe Drilling & Mechanical Excavation - (MB16)	19	0	02MAR10A	27MAR10A	100	0	-11							
S040238	Temp Facilities & Blast Door Installation-(MB16)	29	0	29MAR10A	09APR10A	100	0	-15							
S040250	Audit Excavation by Drill & Blast Ch07-117(MB16)	39	39	20APR10	10JUN10	0	39	-22							
S040320	Stilling Chamber Enlargement (MB16)	10	10	11JUN10	25JUN10	0	10	-22							
Audit Tunnel Excavation & Tunnel Lining - MBD2															
S050085	Removal of Segments - (MBD2)	5	0	16MAR10A	23MAR10A	100	0	-7							
S050090	Probe Drilling & Mechanical Excavation - (MBD2)	19	9	24MAR10A	30APR10	53	9	-16							
S050095	Temp Facilities & Blast Door Installation-(MBD2)	29	29	20APR10	28MAY10	0	29	-32							
S050105	Audit Excavation by Drill & Blast Ch07-128(MBD2)	42	42	29MAY10	23JUL10	0	42	-32							
Audit Tunnel Excavation & Tunnel Lining - E7															
S060252	Audit Grouting & Rock Dowel Installation - (E7)	8	0	15MAR10A	20MAR10A	100	0	2							
S060254	Removal of Segments - (E7)	5	0	22MAR10A	19APR10	0	0	-14							
S060256	Probe Drilling & Mechanical Excavation - (E7)	19	12	29MAR10A	05MAY10	36	12	-7							
S060258	Temp Facilities & Blast Door Installation-(E7)	29	29	20APR10	28MAY10	0	29	-20							
S060270	Audit Excavation by Drill & Blast Ch07-171(E7)	58	58	29MAY10	14AUG10	0	58	-20							
Audit Tunnel Excavation & Tunnel Lining - THR2															
S070092	Audit Grouting & Rock Dowel Installation - (THR2)	8	0	12APR10A	17APR10A	100	0	5							
S070094	Removal of Segments - (THR2)	5	5	20APR10	24APR10	0	5	4							
S070096	Probe Drilling & Mechanical Excavation - (THR2)	19	19	27APR10	22MAY10	0	19	4							
S070098	Temp Facilities & Blast Door Installation-(THR2)	29	29	06MAY10	14JUN10	0	29	-9							
S070130	Audit Excavation by Drill & Blast (THR2)	49	49	15JUN10	18AUG10	0	49	-9							
Audit Tunnel Excavation & Tunnel Lining - GL1															
S080050	Audit Grouting & Rock Dowel Installation - (GL1)	8	8	11JUN10	22JUN10	0	8	9							
S080055	Removal of Segments - (GL1)	5	5	24JUN10	29JUN10	0	5	9							
S080060	Probe Drilling & Mechanical Excavation - (GL1)	19	19	30JUN10	23JUL10	0	19	9							
S080065	Temp Facilities & Blast Door Installation-(GL1)	29	29	22JUN10	28JUL10	0	29	9							
Audit Tunnel Excavation & Tunnel Lining - TP4															
S230401	Audit Grouting & Rock Dowel Installation - (TP4)	8	8	12JUL10	21JUL10	0	8	7							
Audit Tunnel Excavation & Tunnel Lining - W5															
S240341	Audit Grouting & Rock Dowel Installation - (W5)	8	8	14JUN10	24JUN10	0	8	7							
S240343	Removal of Segments - (W5)	5	5	25JUN10	30JUN10	0	5	7							
S240345	Probe Drilling & Mechanical Excavation - (W5)	19	19	02JUL10	24JUL10	0	19	7							
S240347	Temp Facilities & Blast Door Installation-(W5)	29	29	24JUN10	30JUL10	0	29	7							
Audit Tunnel Excavation & Tunnel Lining - RR1															
S260361	Audit Grouting & Rock Dowel Installation - (RR1)	8	8	03MAY10	12MAY10	0	8	7							
S260363	Removal of Segments - (RR1)	5	5	13MAY10	19MAY10	0	5	7							
S260365	Probe Drilling & Mechanical Excavation - (RR1)	19	19	20MAY10	14JUN10	0	19	7							
S260367	Temp Facilities & Blast Door Installation-(RR1)	29	29	12MAY10	19JUN10	0	29	7							
S260380	Audit Excavation by Drill & Blast Ch07 - 115(RR1)	38	38	21JUN10	09AUG10	0	38	7							
Audit Tunnel Excavation & Tunnel Lining - P5															
S280105	Probe Drilling & Mechanical Excavation - (P5)	19	9	01MAR10A	30APR10	54	9	-26							
S280107	Temp Facilities & Blast Door Installation-(P5)	29	21	09APR10A	17MAY10	20	21	-34							
S280122	Audit Excavation by Drill & Blast Ch07 - 210(P5)	72	72	19MAY10	21AUG10	0	72	-34							
Audit Tunnel Excavation & Tunnel Lining - HKU1															
S300810	Audit Excavation by Drill & Blast Ch0 - 120(HKU1)	43	43	17JUL10	10SEP10	0	43	-34							
Audit Tunnel Excavation & Tunnel Lining - SM1															
S321629	Probe Drilling & Mechanical Excavation - (SM1)	19	0	27JAN10A	20MAR10A	100	0	-27							
S321631	Temp Facilities & Blast Door Installation-(SM1)	29	0	22MAR10A	07APR10A	100	0	-10							
S321640	Audit Excavation by Drill & Blast Ch07-185(SM1)	73	73	20APR10	26JUL10	0	73	-19							
Milestone															
Section 1 (Adits)															
M41010	4.001-25% Completion of Excav'n (Adit E5A)	0	0		17JUN10	0	0	-64							
M41011	4.001-1% Completion of Excav'n (Adit E5A)	0	0		31MAR10A	100	0	0	(MC103) ◆						
M41100	4.010-100% Completion of Excavation(Adit MB16)	0	0		10JUN10	0	0	-29							
M41101	4.010-1% Completion of Excavation(Adit MB16)	0	0		31MAR10A	100	0	0	(MC 102) ◆						
M41130	4.013-50% Completion of Excavation (Adit MBD2)	0	0		20JUL10	0	0	-43							
M41180	4.018-50% Completion of Excavation (Adit E7)	0	0		20JUL10	0	0	-26							
M42420	4.142-25% Completion of Excavation(Adit SM1)	0	0		05JUL10	0	0	-27							

FEB	MAR	APR	MAY	JUN	JUL
2010					

Start Date	30NOV07		Early Bar
Finish Date	12JUN12		Previous Month (003D)
Data Date	20APR10		Progress Bar
Run Date	23APR10 22:20		Critical Activity

004D Sheet 3 of 10
Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
APRIL/2010 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010					
									FEB	MAR	APR	MAY	JUN	JUL
Section 1 (Adits)														
M42421	4.142-2% Completion of Excavation(Adit SM1)	0	0		31MAR10A	100	0	0			(MC 102) ◆			
CC5-PART OF SECTION 1 OF THE WORKS (EAST PORTAL)														
Construction														
East Portal River Channel Works														
EPC0330	Lower River Channel Structure Constr	83	11	11JAN10A	04MAY10	87	11	3						
EPC0350	Upper River Channel Structure Constr	84	84	05MAY10	25AUG10	0	84	3						
Milestone														
Secton 1 (Eastern Portal)														
M5-1010	5.01-Excavation(River Channel Structure)	0	0		19APR10	0	0	-89						
M5-1011	5.01- 92% Excavation(River Channel Structure)	0	0		09APR10A	100	0	0			(MC 110) ◆			
M5-1021	5.02- 37% Conc Structure(River Channel Struct)	0	0		31MAR10A	100	0	0			(MC 110) ◆			
CC7 -PART OF SECTION 1 OF THE WORKS (PORTION W0)														
Construction														
Intakes - External Structures (Stage1)														
S010270	Excavation to +40.40mPD	25	0	05FEB10A	01APR10A	100	0	-20						
CC8 - SECTION 2 OF THE WORKS (PORTION E5A)														
Construction														
Preparation Works														
S020180	Ground stabilization Works-(E5A)	49	49	20APR10	25JUN10	0	49	-45						
Intakes - External Structures (Stage1)														
S020210	Cofferdam Wall Driving-(E5A)	69	69	26JUN10	23SEP10	0	69	-45						
S020212	VO # 25 Additional Cofferdam Works	120	120	26JUN10	24NOV10	0	120	-45						
Milestone														
Section 2 (Portion E5A)														
M81010	8.01-Pre-drilling&Grouting Works(Dropshaft)	0	0		25JUN10	0	0	-63						
CC9 - SECTION 3 OF THE WORKS (PORTION E5B)														
Construction														
Preparation Works														
S030170	Temp Diversion Natural Stream(Drain)-(E5B)	7	7	20APR10	28APR10	0	7	-16						
S030180	Pre-drilling & Grouting Works-(E5B)	28	28	20APR10	27MAY10	0	28	-69						
S030190	2nd Temporary Traffic Diversion-(E5B)	3	3	28MAY10	31MAY10	0	3	-37						
S030200	Site Setting up/Mobilization-(E5B)	24	5	31DEC09A	05JUN10	90	5	-18						
S030202	Utility Diversions - (E5B)	43	4	26FEB10A	01JUN10	90	4	-30						
Intakes - External Structures (Stage1)														
S030210	Cofferdam Wall Driving-(E5B)	58	58	29APR10	16JUL10	0	58	-2						
S030220	Cofferdam Excavation-(E5B)	54	54	17JUL10	24SEP10	0	54	-2						
Milestone														
Section 3 (Portion E5B)														
M91040	9.04- Pre-dilling & Grouting Works (Dropshaft)	0	0		27MAY10	0	0	-91						
CC10-SECTION 4 OF THE WORKS (PORTION MB16)														
Construction														
Preliminary Works														
S041142	VO # 21 - Add'l Slopeworks-(MB16)	38	6	24NOV09A	27APR10	90	6	-69						
Intakes - External Structures (Stage1)														
S040230	Cofferdam Excavation-(MB16)	50	0	14DEC09A	01APR10A	100	0	-22						
S040260	Main Structure Construcion-(MB16)	45	16	06APR10A	11MAY10	30	16	-4						
S040290	Backfilling & Compaction-(MB16)	8	8	12MAY10	22MAY10	0	8	-4						
S040300	Reinstatement of Drain-(MB16)	8	8	12MAY10	22MAY10	0	8	-4						
Dropshaft - Excavation/ Shaft Lining														
S040350	Raise Boring Setup/Reaming/Demobilization(MB16)	57	57	22JUN10	04SEP10	0	57	-22						
S040352	Mobilization & Setting Up (Raise Boring)-(MB16)	7	7	22JUN10	30JUN10	0	7	-22						
S040354	Pilot Hole Drilling-(MB16)	13	13	02JUL10	17JUL10	0	13	-22						
S040356	Back Reaming-(MB16)	23	23	19JUL10	17AUG10	0	23	-22						
Pipe Laying														
S040270	Manhole SMH5 to SMH6	30	30	12JUL10	19AUG10	0	30	-53						
S040280	Manhole SMH6 to SMH7	30	30	01JUN10	10JUL10	0	30	7						
S040330	Manhole SMH7 to SMH8	30	25	28APR10	31MAY10	5	25	-45						
S040390	Manhole SMH9 to Intake MB16	30	6	23FEB10A	27APR10	80	6	-20						
Milestone														
Section 4 (Portion MB16)														
M101010	10.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		19APR10	0	0	-89						
M101040	10.04-Excavation (Intake)	0	0		09APR10A	100	0	-34			(MC 110) ◆			
M101045	10.04-75% Excavation (Intake)	0	0		31MAR10A	100	0	0			(MC 101) ◆			
CC11-SECTION 5 OF THE WORKS (PORTION MBD2)														
Construction														
Intakes - External Structures (Stage1)														
S050209	Implement Stage 1 TTA -(MBD2)	216	122	05NOV09A	19AUG10	44	122	-6						
S050210	Cofferdam Wall Driving-(MBD2)	48	0	23FEB10A	17APR10A	100	0	-5						
S050220	Cofferdam Excavation-(MBD2)	34	34	27APR10	10JUN10	0	34	-11						
Milestone														
Section 5 (Portion MBD2)														
M11-1010	11.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		10JUN10	0	0	-14						
M11-1040	11.04-Excavation (Intake)	0	0		10JUN10	0	0	-14						
CC12-SECTION 6 OF THE WORKS (PORTION E7)														
Construction														
Preliminary Works														
S060142	VO # 15 Resubmission XP permit-(E7)	46	6	20OCT09A	27APR10	86	6	-69						
Intakes - External Structures (Stage1)														
S060291	Expose Existing Box Culvert by Excav-(E7)	6	0	19MAR10A	23MAR10A	100	0	9						

FEB	MAR	APR	MAY	JUN	JUL
2010					

Start Date 30NOV07
 Finish Date 12JUN12
 Data Date 20APR10
 Run Date 23APR10 22:20

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Design & Construction of HK. West Drainage Tunnel
 Contract No. DC/2007/10
 3 MONTH ROLLING PROGRAMME
 APRIL/2010 MONTHLY REPORT

█ Early Bar
█ Previous Month (003D)
█ Progress Bar
█ Critical Activity

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010						
									FEB	MAR	APR	MAY	JUN	JUL	
Intakes - External Structures (Stage1)															
S060312	Saw-cut Box-culvert&place Steel Pipes-(E7)	3	0	24MAR10A	26MAR10A	100	0	9							
S060320	Secure Pipes Hang&SealantConnect-(E7)	6	0	27MAR10A	08APR10A	100	0	7							
S060330	Removal Lower Sector Box-culvert-(E7)	6	0	09APR10A	16APR10A	100	0	7							
S060360	Excavation & Lodging-(E7)	6	4	17APR10A	23APR10	33	4	7							
S060380	Excavation (Soft) Soil & Strutting-(E7)	48	40	19MAR10A	18JUN10	45	40	15							
Dropshaft - Excavation/ Shaft Lining															
S060420	Mobilization & Setting Up-(E7)	3	3	20APR10	22APR10	0	3	-69							
S060431	Excavation - Soft Materials	28	28	23APR10	31MAY10	0	28	-69							
S060440	Strutting (Concrete Lining) & Shotcreting	24	24	01JUN10	03JUL10	0	24	-69							
S060550	Mobilization & Setting Up-(E7)	3	3	19JUN10	22JUN10	0	3	15							
S060560	Hard Rock Excavation (From 0 to 9.5m)by Mechanic	24	24	24JUN10	23JUL10	0	24	15							
Pipe Laying															
S060170	Pipeline SMH16 to SMH15	30	30	20APR10	29MAY10	0	30	-69							
S060200	Manhole SMH15 & Pipeline SMH15 to SMH14	72	72	31MAY10	03SEP10	0	72	-69							
Milestone															
Section 6 (Portion E7)															
M121010	12.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		19APR10	0	0	-56							
M121040	12.04-Excavation (Intake)	0	0		18JUN10	0	0	20							
CC13-SECTION 7 OF THE WORKS (PORTION THR2)															
Construction															
Preliminary Works															
S070180	Access Ramp Construction	58	11	13JUN09A	04MAY10	50	11	-49							
Preparation Works															
S070200	Pre-drilling & Grouting Works-(THR2)	26	10	15MAR10A	03MAY10	50	10	-53							
Intakes - External Structures (Stage1)															
S070240	Cofferdam Excavation-(THR2)	62	62	05MAY10	26JUL10	0	62	-21							
Milestone															
Section 7 (Portion THR2)															
M13-1010	13.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		03MAY10	0	0	-69							
CC14-SECTION 8 OF THE WORKS (PORTION GL1)															
Construction															
Preliminary Works															
S080030	Notify,Coord&Obtain Permit-Utility Prov - GL1	364	0	19JAN09A	20APR10A	100	0	0							
S080110	25 wks prior to Portion Possess Date-(GL1)	104	15	07DEC09A	04MAY10	86	15	0							
S080145	Complete All Utility Diversions by Others - GL1	0	0		05MAY10*	0	0	0							
S080150	Site Possession - (GL1)	0	0	06MAY10*		0	0	0							
S080160	Site Setting up/Mobilization-(GL1)	30	30	06MAY10	15JUN10	0	30	0							
Preparation Works															
S080180	Install Geotech Monitoring Instruments-(GL1)	6	6	06MAY10	13MAY10	0	6	0							
S080190	Pre-drilling & Grouting Works-(GL1)	29	29	17JUN10	23JUL10	0	29	0							
Intakes - External Structures (Stage1)															
S080170	Temp Diversion Natural Stream(Drain)-(GL1)	30	30	19JUN10	27JUL10	0	30	-7							
CC15-SECTION9 OF THE WORKS(PORTION HR1)															
Construction															
Preliminary Works															
S090110	25 wks prior to Portion Possess Date-(HR1)	169	0	07DEC09A	06APR10A	100	0	0							
S090145	Complete All Utility Diversion by Others - (HR1)	0	0		06APR10A	100	0	0							
S090150	Site Possession - (HR1)	0	0	20APR10*		0	0	-10							
S090160	Site Setting up/Mobilization-(HR1)	24	24	20APR10	22MAY10	0	24	-10							
S090200	Install Steel Working Platform	48	48	24MAY10	24JUL10	0	48	-10							
Preparation Works															
S090180	Install Geotech Monitoring Instruments-(HR1)	6	6	20APR10	27APR10	0	6	-10							
S090190	Pre-drilling & Grouting Works-(HR1)	25	25	24MAY10	25JUN10	0	25	-10							
Milestone															
Section 9 (Portion HR1)															
M151060	15.06-Pre-drilling & Grouting Works (Dropshaft)	0	0		25JUN10	0	0	-15							
CC16-SECTION 10 OF THE WORKS (PORTION DG1)															
Construction															
Preliminary Works															
S100130	Site Possession - (DG1)	0	0	27APR10*		0	0	40							
S100140	Site Setting up/Mobilization-(DG1)	40	40	27APR10	19JUN10	0	40	40							
Preparation Works															
S100150	Install Geotech Monitoring Instruments-(DG1)	6	6	27APR10	04MAY10	0	6	40							
S100160	Pre-drilling & Grouting Works-(DG1)	25	25	21JUN10	22JUL10	0	25	40							
Intakes - External Structures (Stage1)															
S100170	Temp Diversion Natural Stream(Drain)-(DG1)	24	24	21JUN10	21JUL10	0	24	40							
CC17-SECTION 11 OF THE WORKS (PORTION BR4)															
Construction															
Preliminary Works															
S110020	Notify,Coord&Obtain Permit-Utility Prov - BR4	149	0	20OCT09A	19APR10A	100	0	3							
S110110	25 wks prior to Portion Possess Date-(BR4)	168	71	21JAN10A	29JUN10	58	71	8							
S110170	Site Possession - BR4	0	0	30JUN10*		0	0	6							
S110180	Site Setting up/Mobilization-(BR4)	24	24	30JUN10	30JUL10	0	24	6							
S110190	Install Loading/Unloading Platform + Gantry	60	60	30JUN10	15SEP10	0	60	6							
S110220	Install Geotech Instruments-(BR4)	6	6	30JUN10	07JUL10	0	6	6							
S110230	Erect Hoarding,Site Office,Toilet,Desilting Tank	12	12	16JUL10	30JUL10	0	12	-6							
S110240	Relocate the existing Staircase-(BR4)	12	12	30JUN10	15JUL10	0	12	18							
S110280	Skin Wall to the Existing Retaining Wall	30	30	16JUL10	23AUG10	0	30	18							

FEB	MAR	APR	MAY	JUN	JUL
2010					

Start Date 30NOV07
 Finish Date 12JUN12
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 Run Date 23APR10 22:20

█ Early Bar
█ Previous Month (003D)
█ Progress Bar
█ Critical Activity


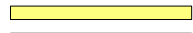


004D Sheet 5 of 10
Design & Construction of HK. West Drainage Tunnel
 Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
APRIL/2010 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010						
									FEB	MAR	APR	MAY	JUN	JUL	
CC18-SECTION 12 OF THE WORKS (PORTION W1)															
Construction															
Preliminary Works															
S120020	Notify,Coord&Obtain Permit-Utility Prov - W1	149	3	20OCT09A	22APR10	95	3	0							
S120110	25 wks prior to Portion Possess Date-(W1)	175	5	22DEC09A	24APR10	95	5	0							
S120130	Site Possession - W1	0	0	26APR10*		0	0	0							
S120140	Site Setting up/Mobilization-(W1)	24	24	27APR10	28MAY10	0	24	0							
S120160	Load/Unload Platf/Overhead Gantry & Access	82	82	27APR10	14AUG10	0	82	0							
Preparation Works															
S120150	Pre-drilling & Grouting Works-(W1)	25	25	27APR10	29MAY10	0	25	0							
S120170	Install Geotech Instruments-(W1)	6	6	27APR10	04MAY10	0	6	0							
Milestone															
Section 12 (Portion W1)															
M181010	18.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		29MAY10	0	0	0							
CC19-SECTION 13 OF WORKS (PORTION BR5)															
Construction															
Preliminary Works															
S130020	Notify,Coord&Obtain Permit-Utility Prov - BR5	149	3	20OCT09A	22APR10	95	3	0							
S130110	25 wks prior to Portion Possess Date-(BR5)	102	13	22JAN10A	02MAY10	87	13	0							
S130125	Complete All Utility Diversion by Others - (BR5)	0	0		30APR10*	0	0	0							
S130130	Site Possession - (BR5)	0	0	03MAY10*		0	0	0							
S130140	Cut Slope to Form Working Platform	48	48	03MAY10	06JUL10	0	48	0							
S130160	Site Setting up/Mobilization-(BR5)	24	24	07JUL10	06AUG10	0	24	0							
S130170	Overhead Gantry	12	12	15JUL10	28JUL10	0	12	0							
Preparation Works															
S130150	Install Geotech Monitoring Instruments-(BR5)	6	6	07JUL10	14JUL10	0	6	0							
CC20-SECTION 14 OF THE WORKS (PORTION BR6)															
Construction															
Preliminary Works															
S140030	Notify,Coord&Obtain Permit-Utility Prov - BR6	386	0	24NOV08A	20APR10A	100	0	0							
S140110	25 wks prior to Portion Possess Date-(BR6)	175	17	08DEC09A	06MAY10	90	17	0							
S140127	Complete All Utility Diversion by Others - (BR6)	0	0		14MAY10*	0	0	0							
S140130	Site Possession - (BR6)	0	0	17MAY10*		0	0	0							
S140140	Site Setting up/Mobilization-(BR6)	24	24	17MAY10	18JUN10	0	24	0							
Preparation Works															
S140150	Install Geotech Instruments-(BR6)	6	6	17MAY10	25MAY10	0	6	0							
S140160	Pre-drilling & Grouting Works-(BR6)	24	24	19JUN10	20JUL10	0	24	0							
Pipe Laying															
S140170	Jacking Pit Construction at SMH17	59	59	19JUN10	04SEP10	0	59	0							
CC21-SECTION 15 OF THE WORKS (PORTION W3)															
Construction															
Preliminary Works															
S150125	Complete All Utility Diversions by Others - (W3)	0	0		15APR10A	100	0	0							
S150130	Site Possession - W3	0	0	02JUL10*		0	0	-56							
S150140	Site Setting up/Mobilization-(W3)	24	24	02JUL10	31JUL10	0	24	-56							
Preparation Works															
S150160	Install Geotech Monitoring Instruments-(W3)	6	6	02JUL10	08JUL10	0	6	-56							
S150161	Existing Bldg & Structure(EBS) Survey - (W3)	6	6	02JUL10	08JUL10	0	6	-56							
CC22-SECTION 16 OF THE WORKS (PORTION B2)															
Construction															
Preliminary Works															
S160020	Notify,Coord&Obtain Permit-Utility Prov - B2	149	15	20OCT09A	08MAY10	95	15	-12							
S160100	Notify SO for Portion Possession - B2	0	0		12APR10A	100	0	0							
S160110	25 wks prior to Portion Possess Date-(B2)	152	145	13APR10A	11SEP10	5	145	0							
CC23-SECTION 17 OF THE WORKS (PORTION MA14)															
Construction															
Preliminary Works															
S170120	Site Possession - MA14	0	0	12MAY10*		0	0	0							
S170140	Hoarding/Fencing-(MA14)	12	12	12MAY10	27MAY10	0	12	0							
S170160	Haul Road & Platform-(MA14)	18	18	12MAY10	03JUN10	0	18	0							
Preparation Works															
S170150	Install Geotech Monitoring Instruments-(MA14)	3	3	12MAY10	14MAY10	0	3	0							
S170151	Existing Bldg & Structure(EBS) Survey - (MA14)	6	6	12MAY10	19MAY10	0	6	0							
S170180	Skin Wall-(MA14)	30	30	04JUN10	15JUL10	0	30	0							
S170190	Soil Nails-(MA14)	25	25	04JUN10	08JUL10	0	25	0							
S170210	Mobilization&Setup(Pre-drill & Grouting)-(MA14)	3	3	04JUN10	08JUN10	0	3	0							
S170220	Pre-drilling-(MA14)	16	16	09JUN10	30JUN10	0	16	0							
S170230	Analysis of the SI-(MA14)	6	6	02JUL10	08JUL10	0	6	0							
S170240	Grouting Works-(MA14)	12	12	09JUL10	23JUL10	0	12	0							
CC24-SECTION 18 OF THE WORKS (PORTION MA15)															
Construction															
Preliminary Works															
S180125	Complete All Utility Diversion Works - MA15	0	0		20MAR10A	100	0	0							
S180130	Site Possession - MA15	0	0	22MAR10A		100	0	0							
S180150	Hoarding/Fencing-(MA15)	12	12	13APR10A	05MAY10	10	12	-21							
S180170	Site Clearance (MA15)	12	0	23MAR10A	08APR10A	100	0	-1							
S180180	Power & Water Points-(MA15)	24	18	09APR10A	13MAY10	0	18	-15							
S180230	Site Office-(MA15)	3	0	16APR10A	19APR10A	100	0	6							
Preparation Works															
S180160	Install Geotech Monitoring Instruments-(MA15)	3	3	20APR10	22APR10	0	3	-21							

FEB	MAR	APR	MAY	JUN	JUL
2010					

Start Date	30NOV07
Finish Date	12JUN12
Data Date	20APR10
Run Date	23APR10 22:20

	Early Bar
	Previous Month (003D)
	Progress Bar
	Critical Activity

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Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
APRIL/2010 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010						
									FEB	MAR	APR	MAY	JUN	JUL	
Preparation Works															
S180190	Haul Road & Platform-(MA15)	18	18	20APR10	13MAY10	0	18	-21							
S180210	Mobilization&Setup(Pre-drill & Grouting)-(MA15)	3	3	14MAY10	17MAY10	0	3	-21							
S180220	Pre-drilling-(MA15)	14	14	19MAY10	04JUN10	0	14	-21							
S180240	Analysis of the SI-(MA15)	6	6	05JUN10	14JUN10	0	6	-21							
S180270	Grouting Works-(MA15)	12	12	15JUN10	30JUN10	0	12	-21							
Intakes - External Structures (Stage1)															
S180260	Mobilization&Setup(Cofferdam Constn)-(MA15)	6	6	02JUL10	08JUL10	0	6	-21							
S180280	Pre-boring,Backfilling with Sand-(MA15)	15	15	09JUL10	27JUL10	0	15	-21							
Milestone															
Section 18 (Portion MA15)															
M241010	24.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		30JUN10	0	0	-29							
CC25-SECTION 19 OF THE WORKS (PORTION MA17)															
Construction															
Preliminary Works															
S190130	Site Possession - MA17	0	0	07APR10A		100	0	0							
S190150	Hoarding/Fencing-(MA17)	9	7	07APR10A	28APR10	5	7	-8							
S190160	Cut/Fill/Place Concrete Block&Platform-(M17)	15	15	20APR10	08MAY10	0	15	-10							
S190170	Power & Water Points-(MA17)	21	21	20APR10	17MAY10	0	21	-10							
S190180	Implement Traffic Divn Scheme-(MA17)	7	7	20APR10	28APR10	0	7	-10							
S190300	Site Office-(MA17)	3	3	19MAY10	22MAY10	0	3	-10							
Preparation Works															
S190200	Skin Wall-(MA17)	48	48	20APR10	24JUN10	0	48	-7							
S190210	Soil Nails-(MA17)	26	26	20APR10	25MAY10	0	26	-7							
S190220	Install Geotech Instruments-(MA17)	3	3	29APR10	03MAY10	0	3	-8							
S190260	Mobilization&Setup(Pre-drill & Grouting)-(MA17)	3	3	11MAY10	13MAY10	0	3	-10							
S190270	Pre-drilling-(MA17)	14	14	14MAY10	01JUN10	0	14	-10							
S190320	Shotcreting	9	9	26MAY10	04JUN10	0	9	-7							
S190340	Analysis of the SI-(MA17)	6	6	02JUN10	09JUN10	0	6	-10							
S190350	Grouting Works-(MA17)	12	12	10JUN10	26JUN10	0	12	-10							
Intakes - External Structures (Stage1)															
S190290	Mobilization&Setup(Cofferdam Constn)-(MA17)	3	3	28JUN10	30JUN10	0	3	-9							
S190310	Pre-boring,Backfilling with Sand-(MA17)	48	48	02JUL10	01SEP10	0	48	-9							
Milestone															
Section 19 (Portion MA17)															
M25-1010	25.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		26JUN10	0	0	-15							
CC26-SECTION 20 OF THE WORKS (PORTION M3)															
Construction															
Preliminary Works															
S200160	Hoarding/Fencing-(M3)	9	0	30MAR10A	17APR10A	100	0	-48							
S200170	Cut/Fill/Divn/Place Concrete Block&Platform-(M3)	28	28	20APR10	27MAY10	0	28	-58							
S200180	Power & Water Points-(M3)	21	21	20APR10	17MAY10	0	21	-58							
Preparation Works															
S200190	Install Geotech Monitoring Instruments-(M3)	3	3	20APR10	22APR10	0	3	-49							
S200220	Mobilization&Setup(Pre-drill & Grouting)-(M3)	3	3	28MAY10	31MAY10	0	3	-58							
S200240	Pre-drilling-(M3)	14	14	01JUN10	19JUN10	0	14	-58							
S200250	Analysis of the SI-(M3)	6	6	21JUN10	28JUN10	0	6	-58							
S200280	Grouting Works-(M3)	12	12	29JUN10	14JUL10	0	12	-58							
Intakes - External Structures (Stage1)															
S200230	Slope Protection Works-(M3)	60	60	02JUL10	17SEP10	0	60	-27							
S200300	Mobilization&Setup(Cofferdam Constn)-(M3)	6	6	15JUL10	21JUL10	0	6	-58							
Milestone															
Section 20 (Portion M3)															
M261010	26.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		14JUL10	0	0	-81							
CC27-SECTION 21 OF THE WORKS (PORTION TP789)															
Construction															
Preparation Works															
S210229	Permanent Slope cutting works-(TP789)	17	0	18FEB10A	17APR10A	100	0	-30							
Intakes - External Structures (Stage1)															
S210270	Open Cut Excavation	58	45	19APR10A	26JUN10	15	45	-23							
S210275	VO # 09 Addl Excav for box culvert Works - TP789	7	7	24APR10	04MAY10	0	7	-28							
S210290	Excavation (Soft) Soil-(TP789)	7	4	19APR10A	23APR10	50	4	-28							
S210300	Excavation (Hard) Rock-(TP789)	44	44	05MAY10	03JUL10	0	44	-28							
S210310	VO#29 - Forming Steeped Channel & Catchpit	12	12	05MAY10	20MAY10	0	12	-28							
S210320	VO#29 Demolish Existing Steeped Channel- (TP789)	6	6	22MAY10	28MAY10	0	6	-28							
S210350	Blinding-(TP789)	3	3	05JUL10	07JUL10	0	3	-28							
S210360	Base Slabs-(TP789)	17	17	08JUL10	28JUL10	0	17	-28							
Milestone															
Section 21 (Portion TP789)															
M27-1010	27.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		03JUL10	0	0	-38							
M27-1040	27.04-Excavation (Intake)	0	0		03JUL10	0	0	-38							
CC28-SECTION 22 OF THE WORKS (PORTION TP5)															
Construction															
Preparation Works															
S220230	Mobilization&Setup(Pre-drill & Grouting)-(TP5)	3	0	23MAR10A	25MAR10A	100	0	-31							
S220260	Pre-drilling-(TP5)	14	0	26MAR10A	15APR10A	100	0	-31							
S220280	Analysis of the SI-(TP5)	6	0	16APR10A	19APR10A	100	0	-28							
S220300	Grouting Works-(TP5)	13	13	20APR10	06MAY10	0	13	-29							
Intakes - External Structures (Stage1)															
S220250	Cast Conc Dam&Excav Trench&Catchpit-(TP5)	24	0	05MAR10A	01APR10A	100	0	-16							
S220310	Installation of Steel Pipe-(TP5)	12	0	06APR10A	17APR10A	100	0	-14							

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010					
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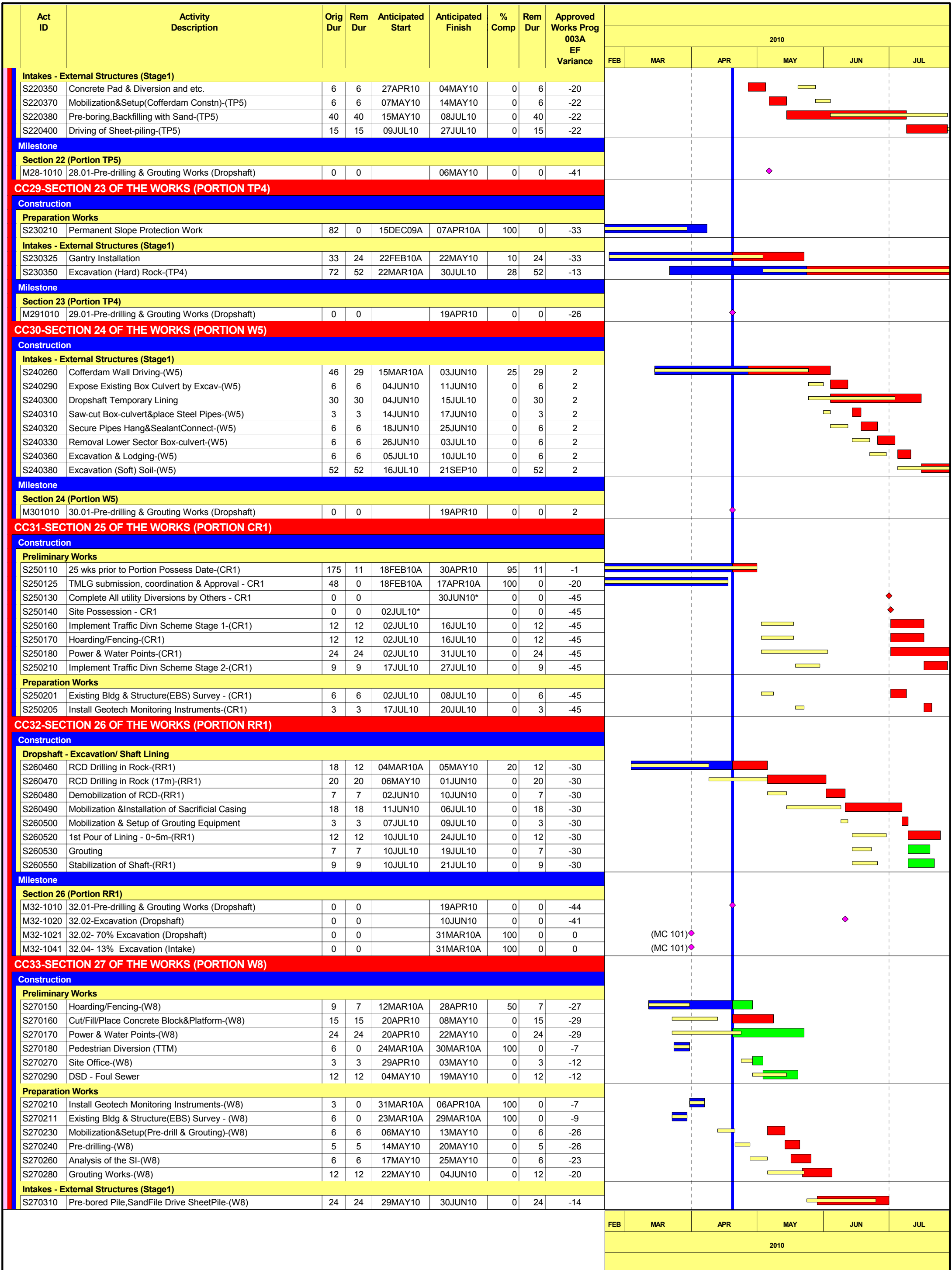
Start Date 30NOV07
 Finish Date 12JUN12
 Data Date 20APR10
 Run Date 23APR10 22:20

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Design & Construction of HK. West Drainage Tunnel
 Contract No. DC/2007/10
 3 MONTH ROLLING PROGRAMME
 APRIL/2010 MONTHLY REPORT

█ Early Bar
█ Previous Month (003D)
█ Progress Bar
█ Critical Activity

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Start Date 30NOV07
 Finish Date 12JUN12
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Design & Construction of HK. West Drainage Tunnel
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█ Early Bar
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Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance	2010						
									FEB	MAR	APR	MAY	JUN	JUL	
Intakes - External Structures (Stage1)															
S270320	Excavation, strutting & Decking	18	18	02JUL10	23JUL10	0	18	-14							
Milestone															
Section 27 (Portion W8)															
M33-1010	33.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		04JUN10	0	0	-27							
CC34-SECTION 28 OF THE WORKS (PORTION P5)															
Construction															
Preliminary Works															
S280170	Cut/Fill/Place Concrete Block&Platform-(P5)	60	7	21JAN10A	28APR10	90	7	-16							
S280180	Power & Water Points-(P5)	36	18	23MAR10A	13MAY10	50	18	-51							
S280190	Stage 1 - Drainage Diversion	63	63	20APR10	14JUL10	0	63	-9							
S280230	Site Office-(P5)	18	18	14MAY10	05JUN10	0	18	-51							
Preparation Works															
S280270	Mobilization&Setup(Pre-drill & Grouting)-(P5)	3	3	20APR10	22APR10	0	3	-69							
S280300	Pre-drilling-(P5)	9	9	23APR10	05MAY10	0	9	-69							
S280310	Analysis of the SI-(P5)	6	6	06MAY10	13MAY10	0	6	-69							
S280330	Grouting Works-(P5)	12	12	14MAY10	29MAY10	0	12	-69							
Milestone															
Section 28 (Portion P5)															
M341010	34.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		29MAY10	0	0	-91							
CC35-SECTION 29 OF THE WORKS (PORTION W10)															
Construction															
Intakes - External Structures (Stage1)															
S290350	Drive Cofferdam Wall-(W10)	66	30	26FEB10A	29MAY10	50	30	-5							
S290372	VO#13 Stg 2 Diversion works (W10)	23	23	25JUN10	23JUL10	0	23	-5							
S290440	Grouting for Rock Socket-(W10)	3	3	31MAY10	02JUN10	0	3	-5							
S290450	Demobilization Piling-(W10)	3	3	03JUN10	05JUN10	0	3	-5							
S290470	Excav(Soft) Soil up to Culvert level +132 -(W10)	12	12	08JUN10	24JUN10	0	12	-5							
Milestone															
Section 29 (Portion W10)															
M351010	35.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		19APR10	0	0	-46							
CC36-SECTION 30 OF THE WORKS (PORTION HKU1)															
Construction															
Intakes - External Structures (Stage1)															
S300320	Grouting for Rock Socket-(HKU1)	16	0	06MAR10A	08APR10A	100	0	-35							
S300330	Demobilization Piling-(HKU1)	3	0	09APR10A	12APR10A	100	0	-35							
S300350	Excavation (Soft) Soil-(HKU1)	66	55	06APR10A	03JUL10	17	55	-29							
S300370	Expose Existing Box Culvert by Excav-(HKU1)	12	7	13APR10A	28APR10	42	7	-35							
S300390	Saw-cut Box-culvert&place Steel Pipes-(HKU1)	6	6	29APR10	06MAY10	0	6	-35							
S300400	Secure Pipes Hang&SealantConnect-(HKU1)	6	6	07MAY10	14MAY10	0	6	-35							
S300410	Removal Lower Sector Box-culvert-(HKU1)	6	6	15MAY10	24MAY10	0	6	-35							
S300420	Excavation & Lodging-(HKU1)	12	12	25MAY10	08JUN10	0	12	-35							
S300450	Blinding-(HKU1)	3	3	05JUL10	07JUL10	0	3	-29							
S300460	Base Slabs-(HKU1)	12	12	08JUL10	22JUL10	0	12	-29							
Milestone															
Section30 (Portion HKU1)															
M361010	36.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		19APR10	0	0	-44							
M361040	36.04-Excavation (Intake)	0	0		03JUL10	0	0	-39							
CC37-SECTION 31 OF THE WORKS (PORTION PFLR1)															
Construction															
Preliminary Works															
S311106	VO # 23 Add'l Drainage Diversion - (PFLR1)	23	10	02OCT09A	03MAY10	20	10	-69							
Intakes - External Structures (Stage1)															
S311190	Pre-boring,Backfilling with Sand-(PFLR1)	32	12	07DEC09A	05MAY10	61	12	-69							
S311200	Driving of Sheet-piling-(PFLR1)	20	17	09APR10A	19MAY10	50	17	-59							
S311210	Grouting for Rock Socket-(PFLR1)	3	3	08JUL10	10JUL10	0	3	-59							
S311230	Excav(Soft) Soil MHS Level(+95.5/+98) -(PFLR1)	12	12	12JUL10	26JUL10	0	12	-59							
S311249	VO # 23 Add'l Cofferdam Wall Driving - (PFLR1)	18	18	20MAY10	11JUN10	0	18	-59							
S311250	Excavation & ELS Works-(PFLR1)	66	66	12JUL10	05OCT10	0	66	-59							
S311252	VO # 23 Construct Temp Steel Deck - (PFLR1)	18	18	14JUN10	07JUL10	0	18	-59							
Milestone															
Section 31 (Portion PFLR1)															
M371010	37.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		03MAY10	0	0	-58							
CC38-SECTION 32 OF THE WORKS (PORTION SM1)															
Construction															
Intakes - External Structures (Stage1)															
S321170	Excavation & Strutting-(SM1)	56	0	21NOV09A	30MAR10A	100	0	-43							
S321210	Laying of Pipes-(SM1)	6	0	22MAR10A	06APR10A	100	0	-22							
S321220	Divn & Backfilling/Temp. Decking & etc.-(SM1)	6	0	07APR10A	13APR10A	100	0	-22							
S321250	Blinding-(SM1)	6	6	20MAY10	27MAY10	0	6	0							
S321260	Base Slabs-(SM1)	12	12	28MAY10	11JUN10	0	12	0							
S321270	External Walls-(SM1)	26	26	14JUN10	17JUL10	0	26	0							
S321290	Top Slab with Opening-(SM1)	12	12	19JUL10	02AUG10	0	12	0							
Dropshaft - Excavation/ Shaft Lining															
S321330	Mobilization & Setting Up-(SM1)	6	0	06APR10A	13APR10A	100	0	2							
S321340	Excavation from 0m~17m	18	16	15APR10A	11MAY10	15	16	0							
S321350	Demobilization-(SM1)	6	6	12MAY10	19MAY10	0	6	0							
Milestone															
Section 32 (Portion SM1)															
M381010	38.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		19APR10	0	0	-82							
M381020	38.02-Excavation (Dropshaft)	0	0		19MAY10	0	0	0							

Start Date 30NOV07
 Finish Date 12JUN12
 Data Date 20APR10
 Run Date 23APR10 22:20

004D

■ Early Bar
■ Previous Month (003D)
■ Progress Bar
■ Critical Activity

004D Sheet 9 of 10

Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
APRIL/2010 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A

**APPENDIX B
MONITORING REQUIREMENTS**

Appendix B - Environmental Impact Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1 hour TSP	Three times / 6 days	<ul style="list-style-type: none"> • AQ1 (True Light Middle School of Hong Kong) • AQ2 (Outside Aegean Terrace) 	AQ1 – Canopy AQ2 – Roadside AQ3 – Roadside
	24 hour TSP	Once / 6 days	<ul style="list-style-type: none"> • AQ1 (True Light Middle School of Hong Kong) • AQ3 (Outside Site Office at Western Portal) 	

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Airborne Noise	L _{eq} , L ₉₀ & L ₁₀ at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul style="list-style-type: none"> • NC1 (True Light Middle School of Hong Kong) • NC1a (Outside True Light Middle School of Hong Kong (the nearest of staff accommodation) – for restricted hours (reference only)) • NC2 (The Legend) • NC3 (Outside Aegean Terrace) • NC7 (Buddist Li Ka Shing Care & Attention Home for the Elderly) • NC8 (Marymount Secondary School) • NC9 (117 Blue Pool Road) • NC11 (Honey Court) • NC12 (Ying Wa Girl's School) • NC13 (Peaksville Court) • NC14 (Hong Kong Japanese School) • NC15 (Hong Kong Academy) • NC16 (Raimondi College) • NC17 (Hong Kong Institute of 	<ul style="list-style-type: none"> • NC1 - Facade measurement • NC1a – Façade measurement • NC2 - Facade measurement • NC3 - Facade measurement • NC7 - Facade measurement • NC8 – Facade measurement • NC9 – Facade measurement • NC11 – Free field measurement • NC12 - Facade measurement • NC13 - Facade measurement • NC14 - Facade
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (1900 to 2300) ⁽¹⁾	Once per week (include 3 consecutive 5-min measurements)		
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (2300 to 0700 of next day) ⁽¹⁾	Once per week (include 3 consecutive 5-min measurements)		
	L _{eq} , L ₉₀ & L ₁₀ at 5 minute intervals during (0700 to 2300 on holidays) ⁽¹⁾	Once per week (include 3 consecutive 5-min measurements)		

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
			Technology) <ul style="list-style-type: none"> • NC18 (Blk A, 80 Robinson Road) • NC19 (Villa Veneto) 	measurement <ul style="list-style-type: none"> • NC15 – Free field measurement • NC16 - Facade measurement • NC17- Facade measurement • NC18- Facade measurement • NC19 - Facade measurement

Remarks:

⁽¹⁾ – Conduct noise monitoring only when construction work is carried out.

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Ground Borne Noise	L_{eq} , L_{90} & L_{10} at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul style="list-style-type: none"> GNC6 (French International School) 	<ul style="list-style-type: none"> Ground floor inside the nearest building during the TBM construction work
	L_{eq} , L_{90} & L_{10} at 30 minute intervals during (1900 to 2300) ⁽¹⁾			
	L_{eq} , L_{90} & L_{10} at 30 minute intervals during (2300 to 0700 of next day) ⁽¹⁾			
	L_{eq} , L_{90} & L_{10} at 30 minute intervals during (0700 to 2300 on holidays) ⁽¹⁾			

Remarks:

⁽¹⁾ – Conduct noise monitoring only when TBM construction work is carried out.

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Water Quality	<ul style="list-style-type: none"> • Temperature (oC) • pH (pH unit) • Turbidity (NTU) • Water depth (m) • Salinity (mg/L) • Dissolved oxygen (DO) (mg/L and % of saturation) • Suspended solids (SS) (mg/L) 	Three times per week	<ul style="list-style-type: none"> • CE (830026E, 814956N) • CF (831778E, 812420N) • I1 (831088E, 813654N) • I2 (831105E, 813582N) • Intake A (831603E, 813044N) • Intake B (830606E, 814583N) 	<ul style="list-style-type: none"> • 3 water depths except CF, omit mid-depth sampling.

**APPENDIX C
ACTION AND LIMIT LEVELS FOR AIR
QUALITY, NOISE AND WAER QUALITY**

Appendix C - Action and Limit Levels

Table C-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AQ1	345	500
AQ2	321	

Table C-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AQ1	201	260
AQ3	156	

Table C-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75* dB(A)
0700-2300 hrs on holidays; and 1900-2300 hrs on all other days		60/65/70** dB(A)
2300-0700 hrs of next day		45/50/55** dB(A)

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

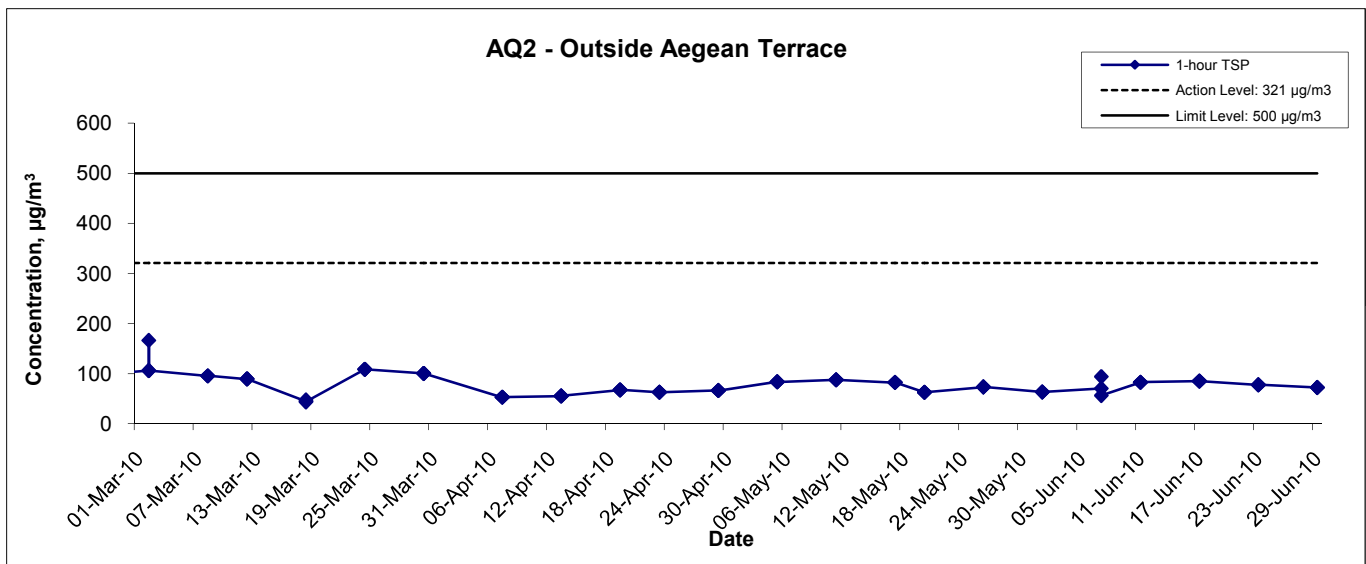
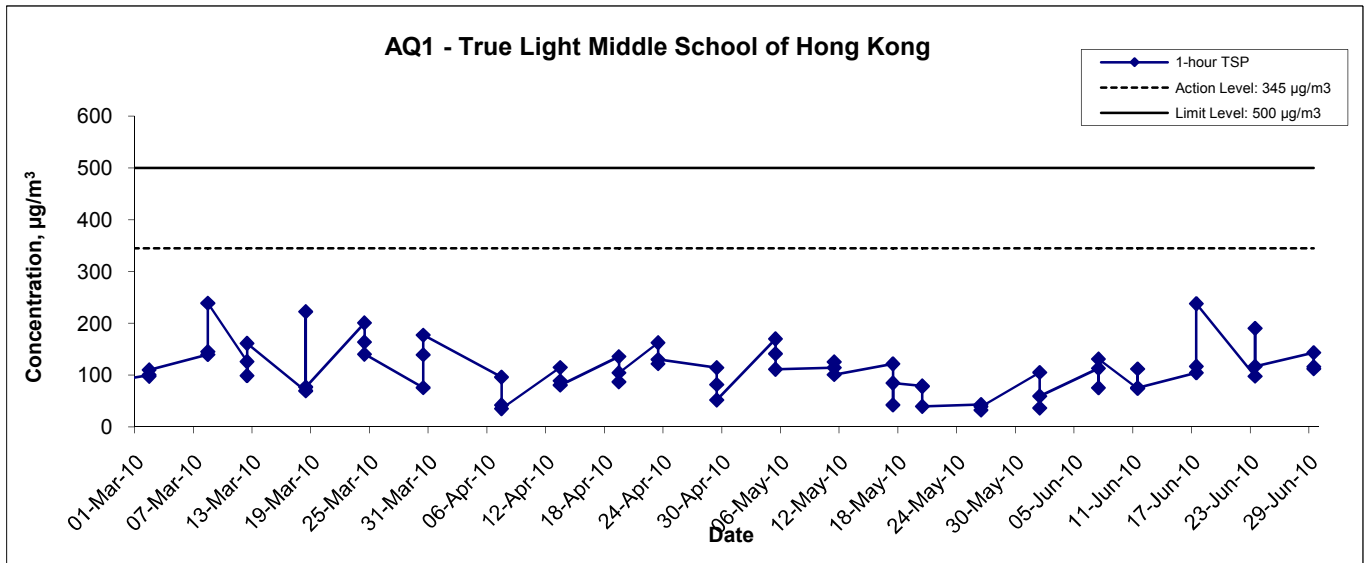
(**) to be selected based on Area Sensitivity Rating.

Table C-4 Action and Limit Levels for Water Quality

Parameter		Action	Limit
DO, mg/L	Surface and Middle	6.3	6.2
	Bottom	6.0	5.8
SS, mg/L		15.7 or 120% of upstream control station's SS at the same tide of the same day	16.4 or 130% of SS readings at the upstream control station at the same tide of same day and specific sensitive receiver water quality requirements
Turbidity, NTU		10.2 or 120% of upstream control station's turbidity at the same tide of the same day	11.1 or 130% of turbidity at the upstream control station at the same tide of same day

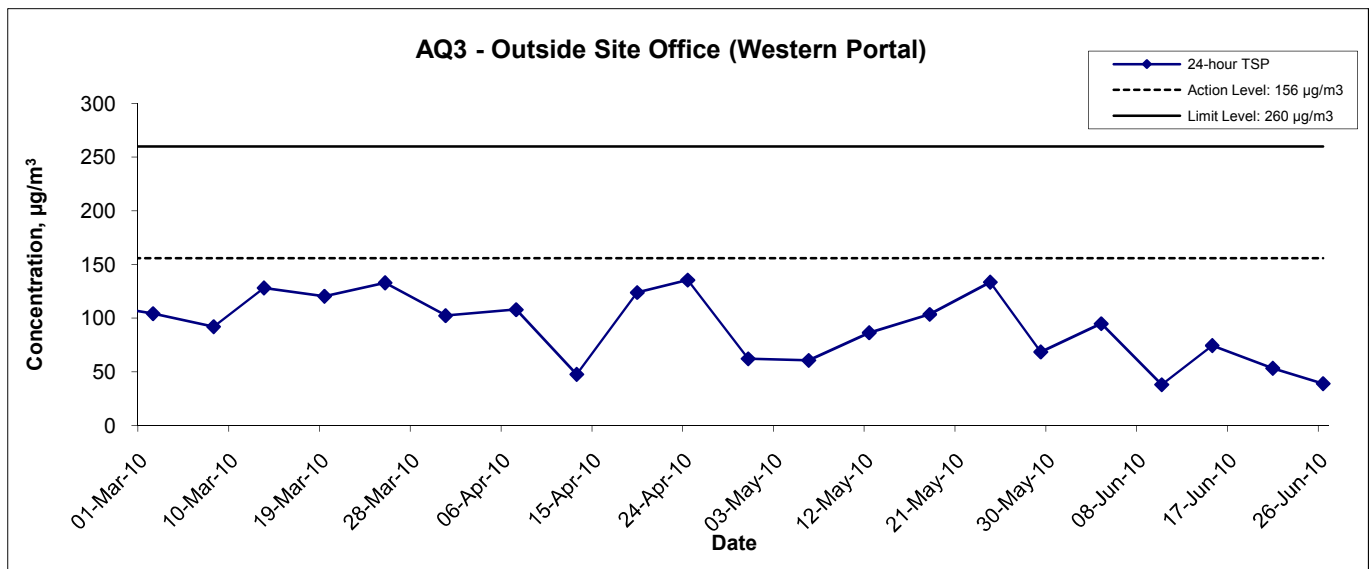
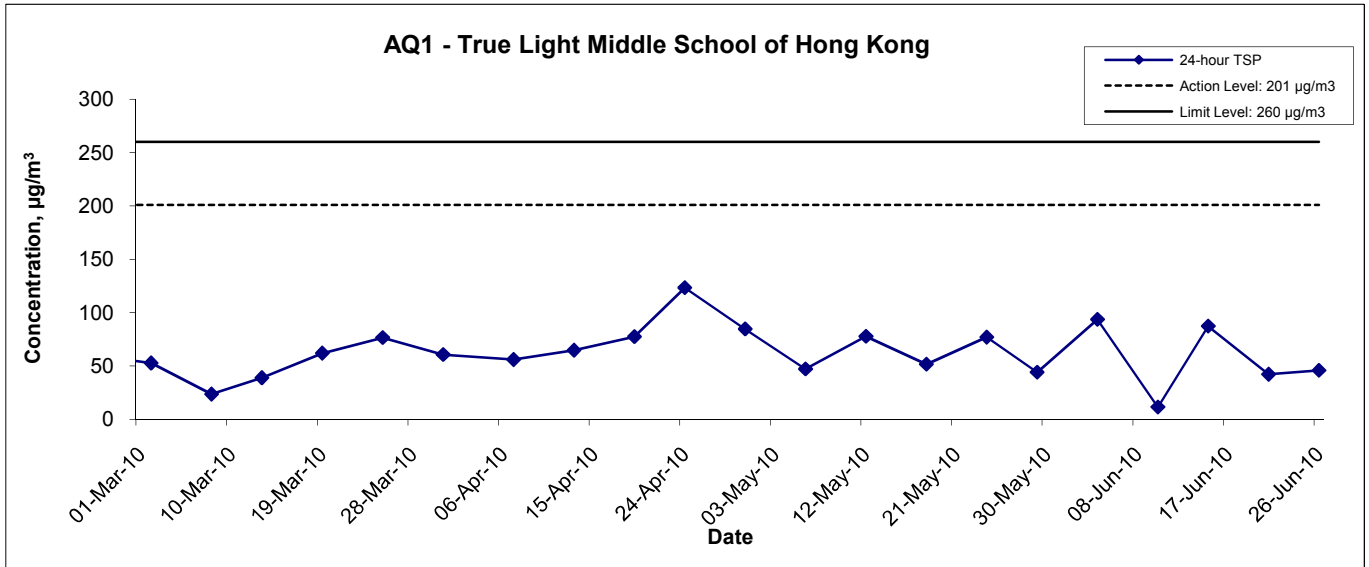
**APPENDIX D
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS**

1-hr TSP Concentration Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Jun 10	Appendix D	

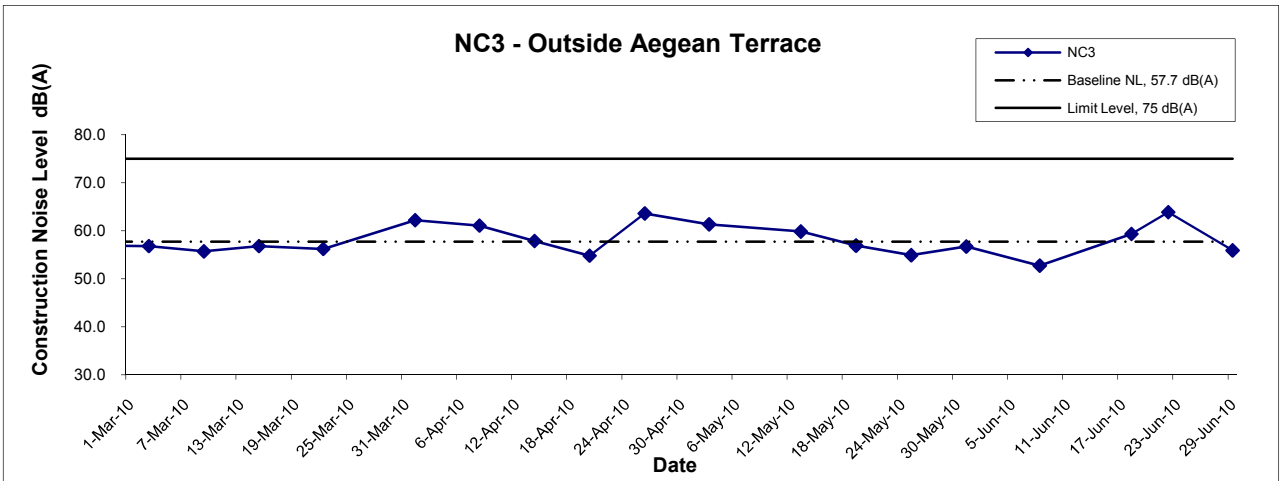
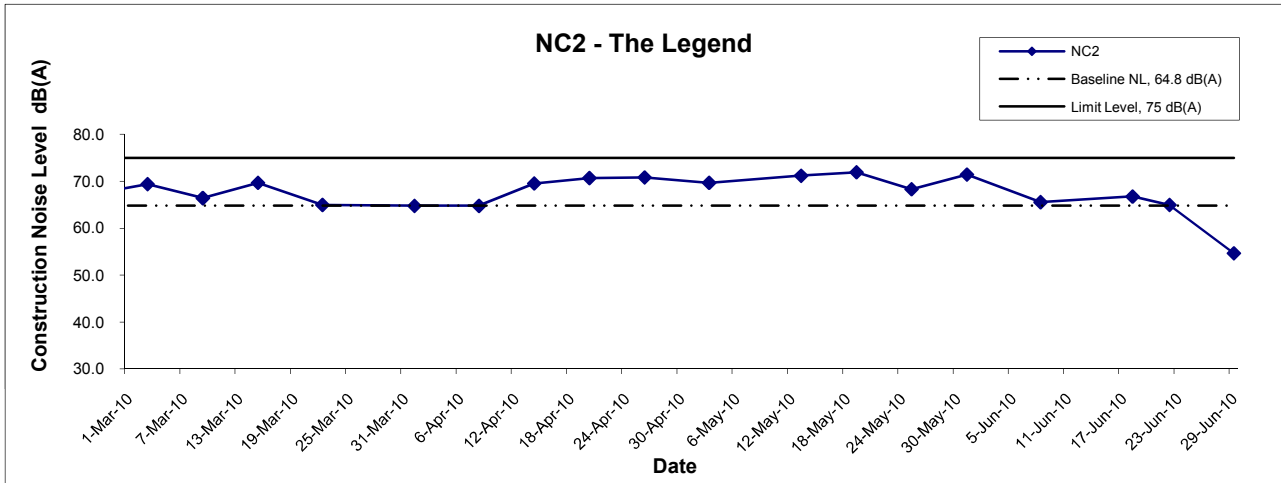
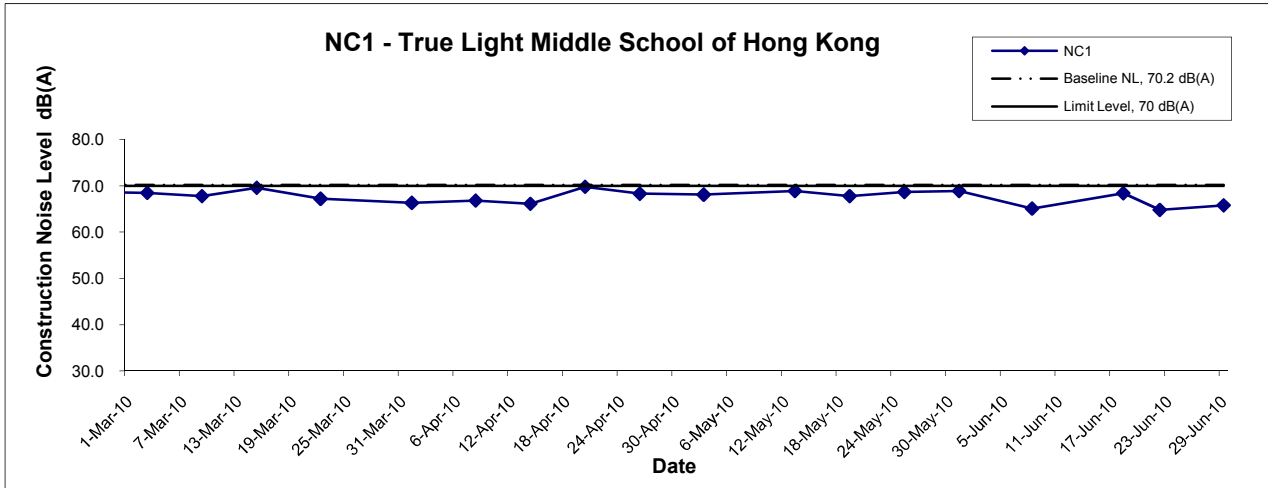
24-hr TSP Concentration Levels



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	Date Jun 10	Appendix D	

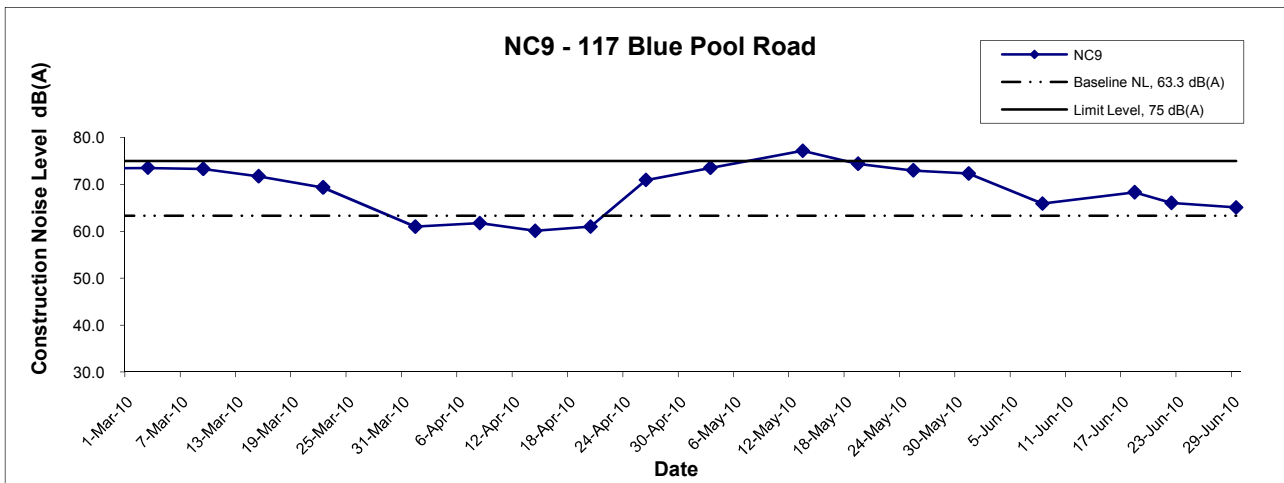
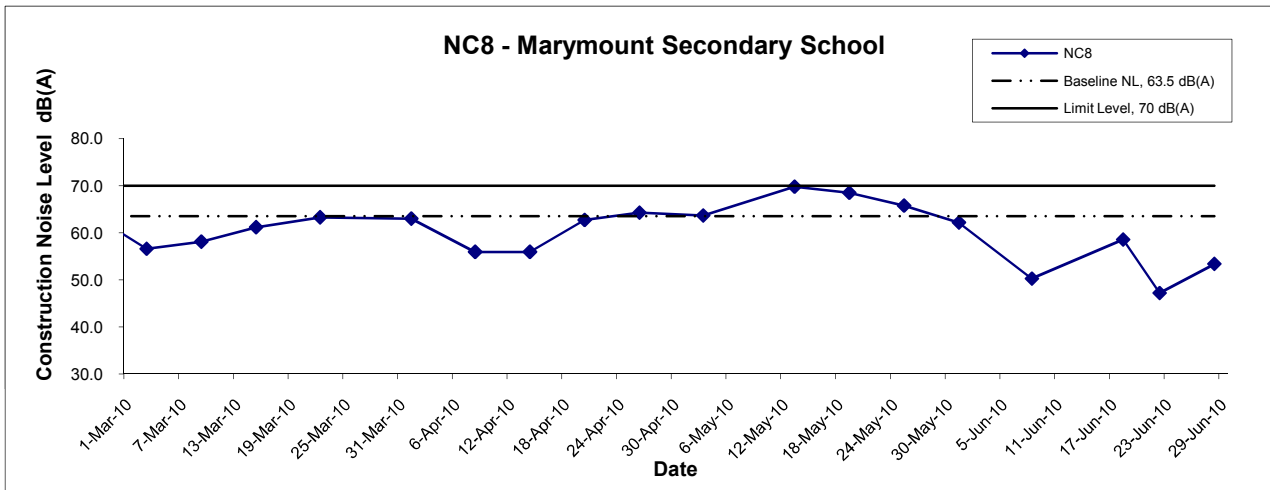
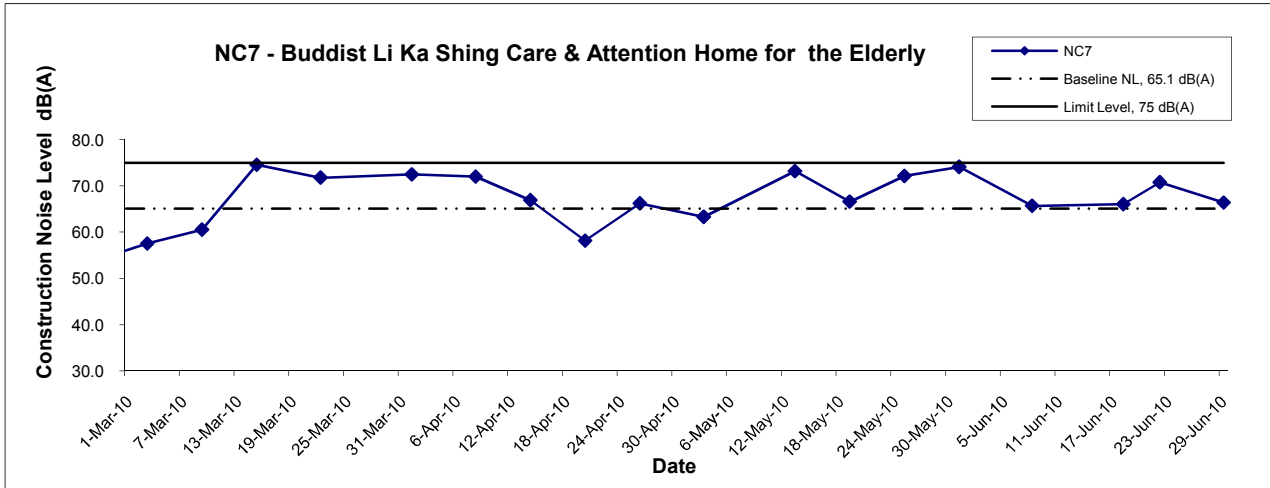
**APPENDIX E
GRAPHICAL PRESENTATION OF
NOISE MONITORING RESULTS**

Noise Levels



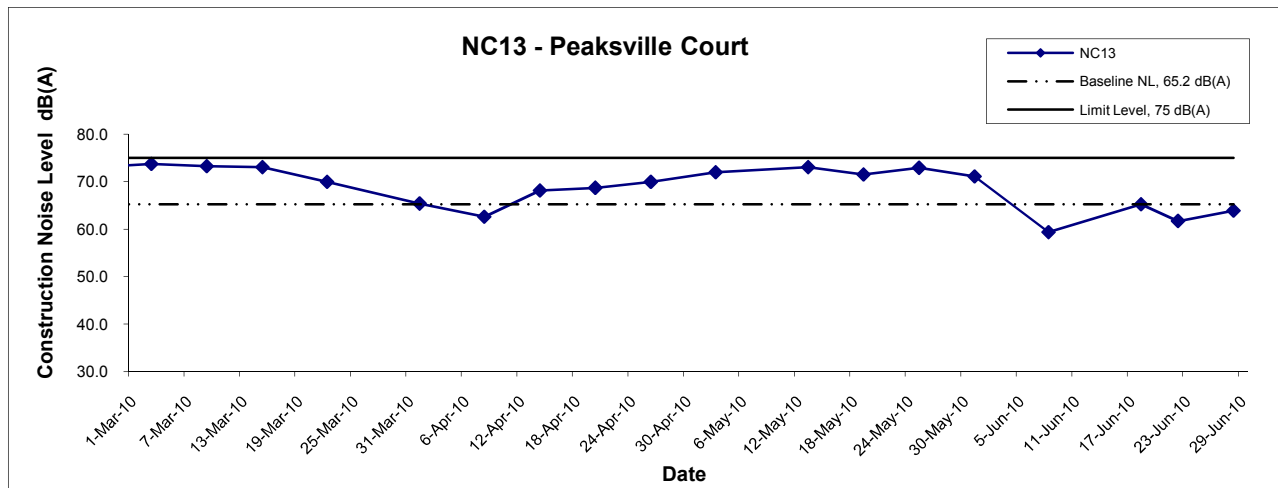
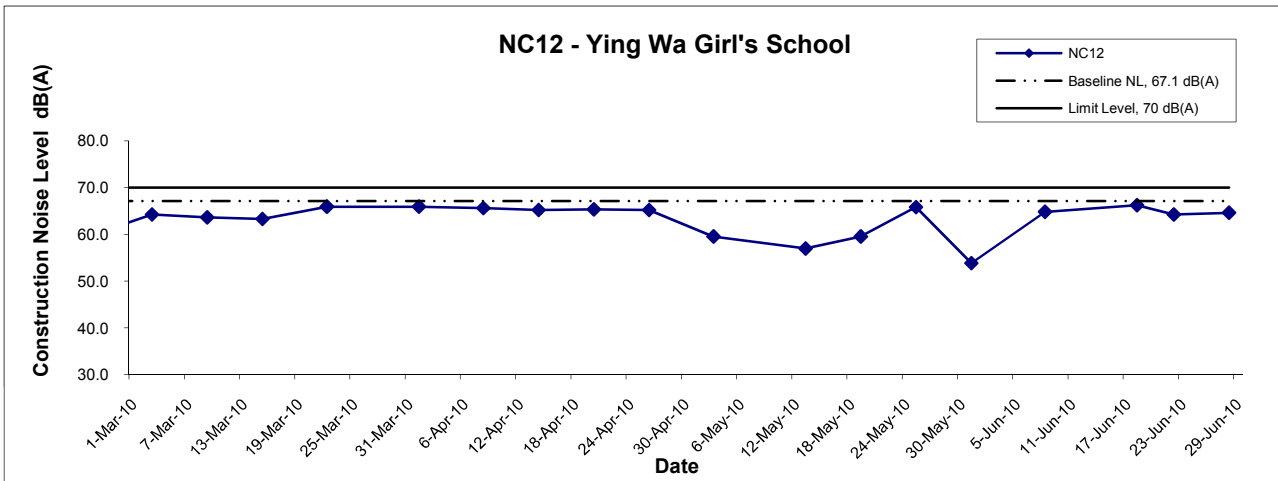
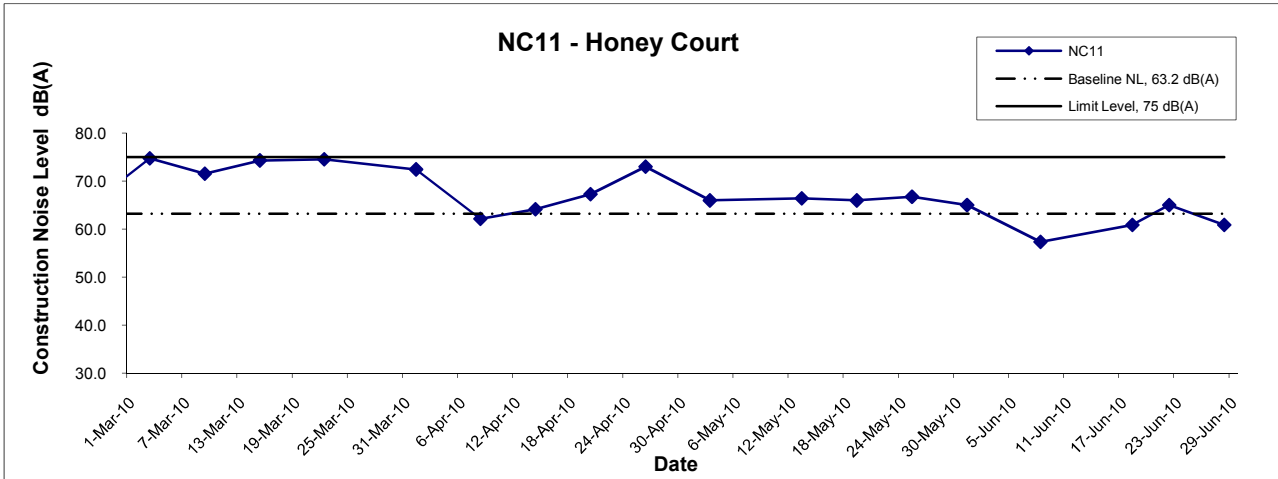
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	Date Jun 10	Appendix E	

Noise Levels



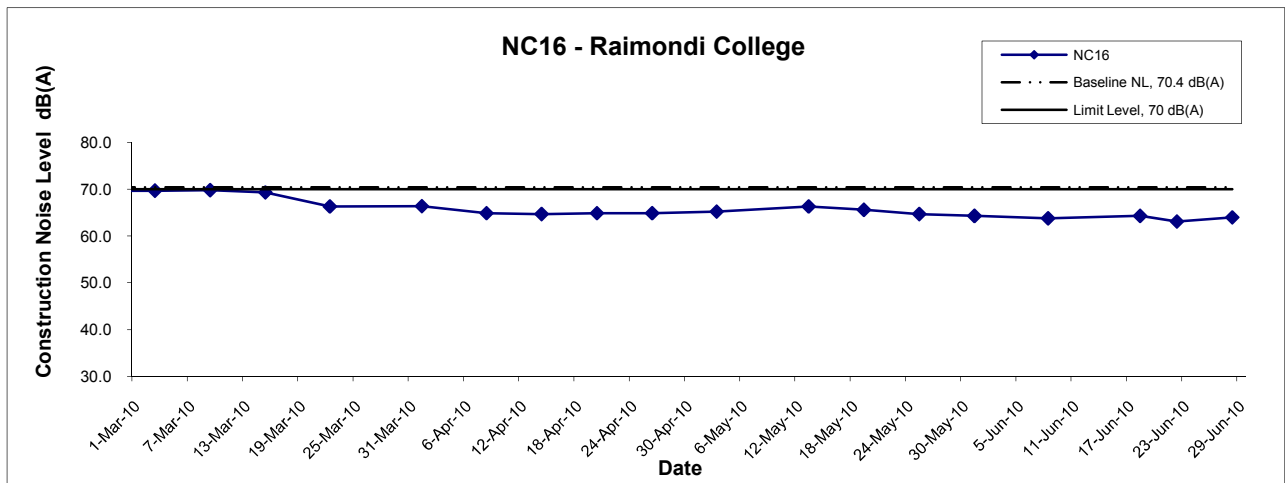
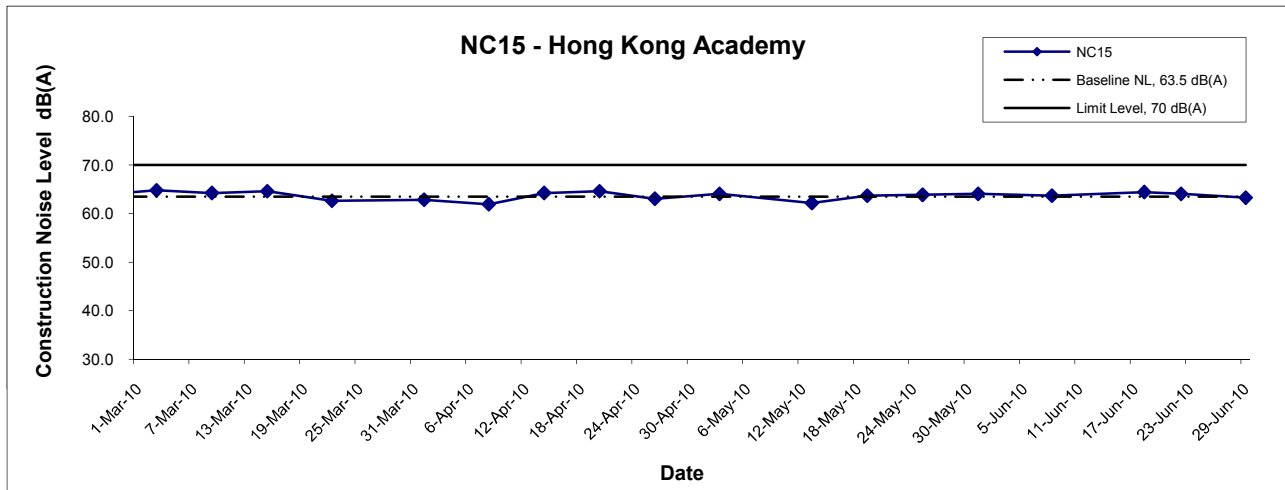
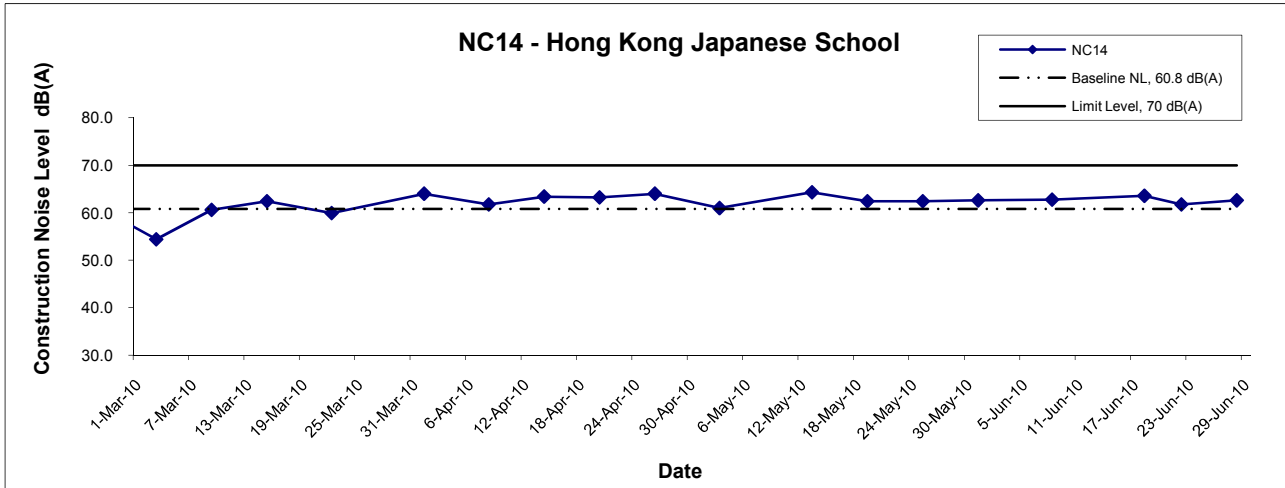
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	Date Jun 10	Appendix E	

Noise Levels



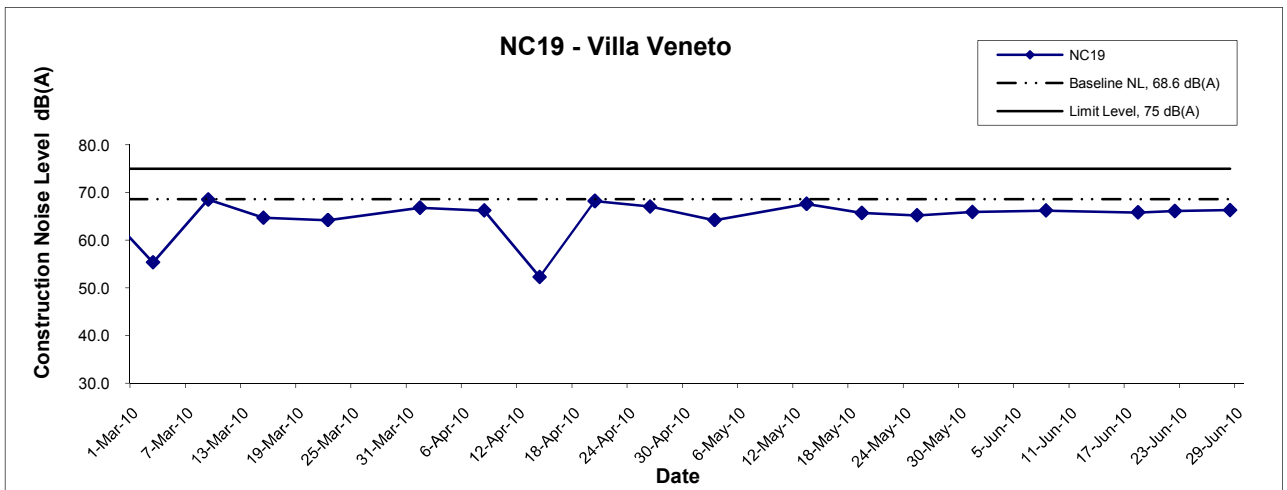
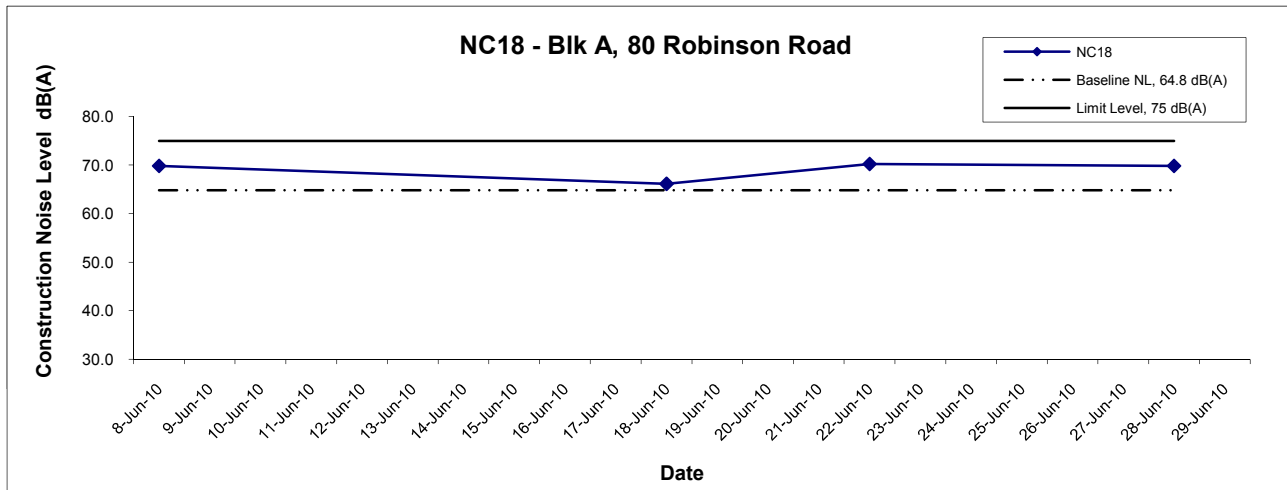
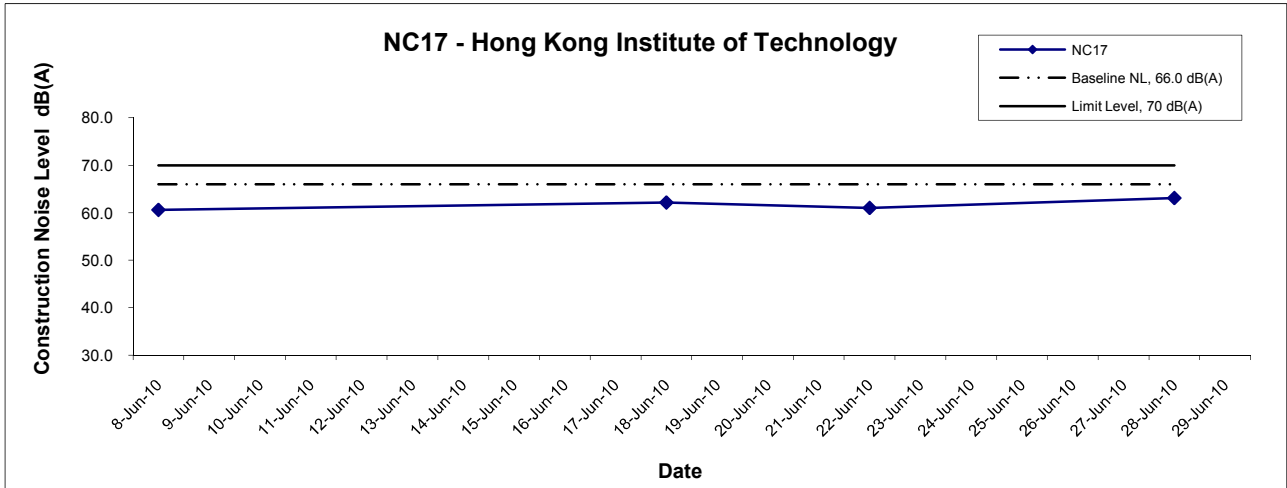
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	Date	Jun 10	Appendix	E	

Noise Levels



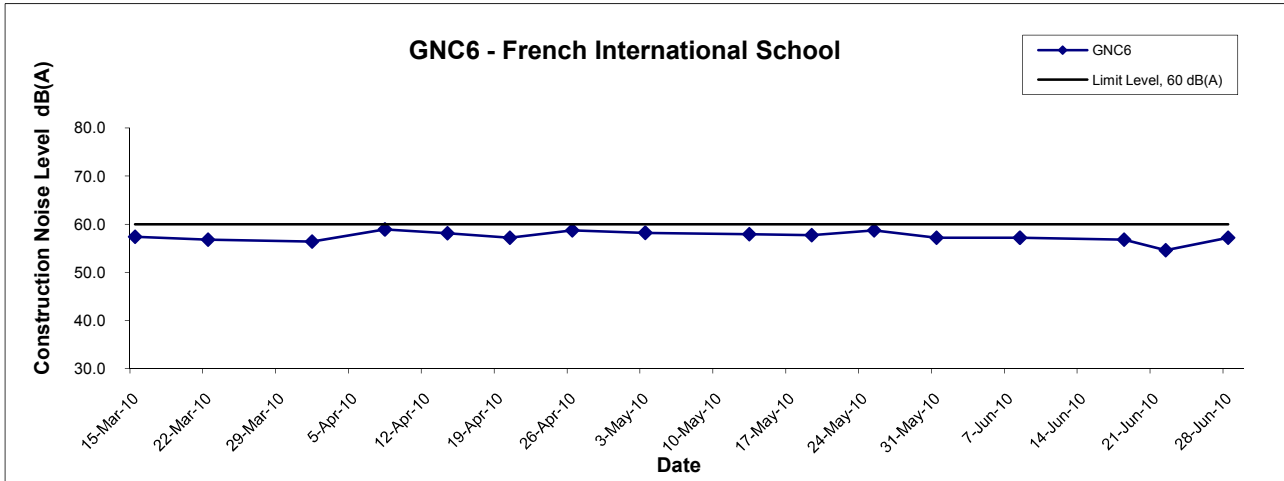
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	Date Jun 10	Appendix E	

Noise Levels



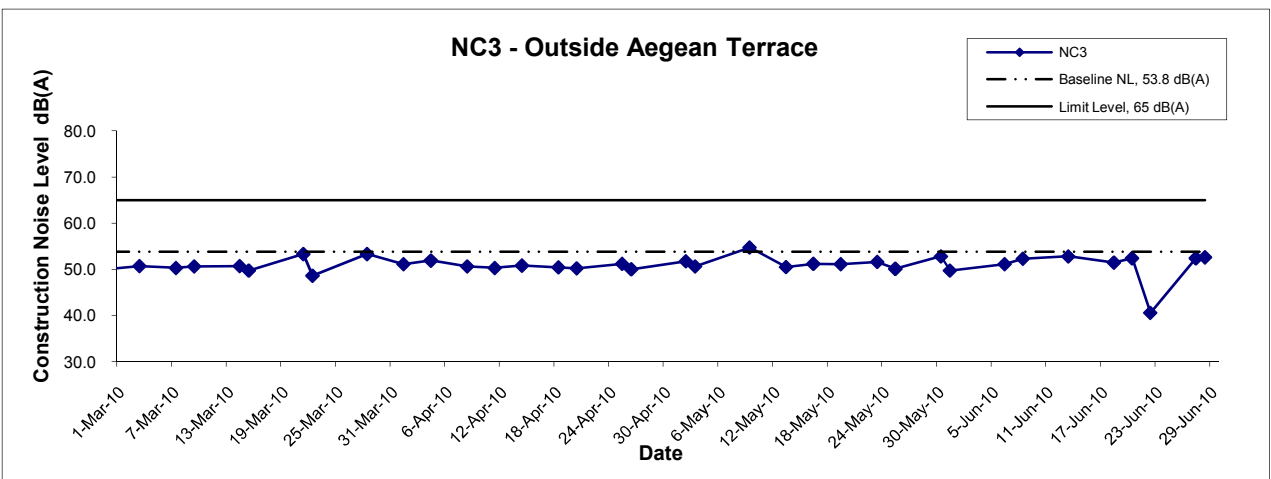
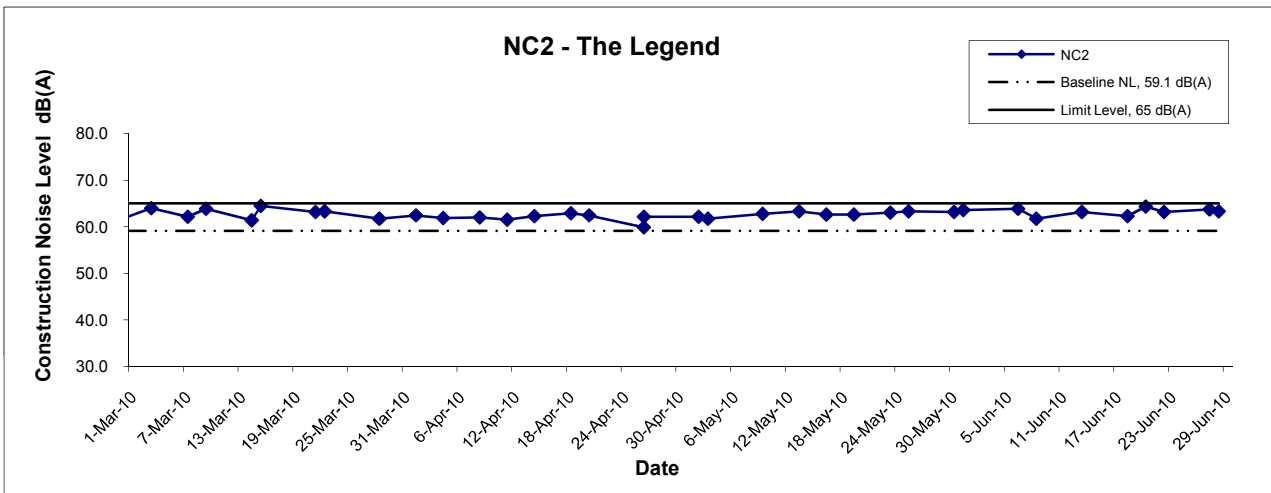
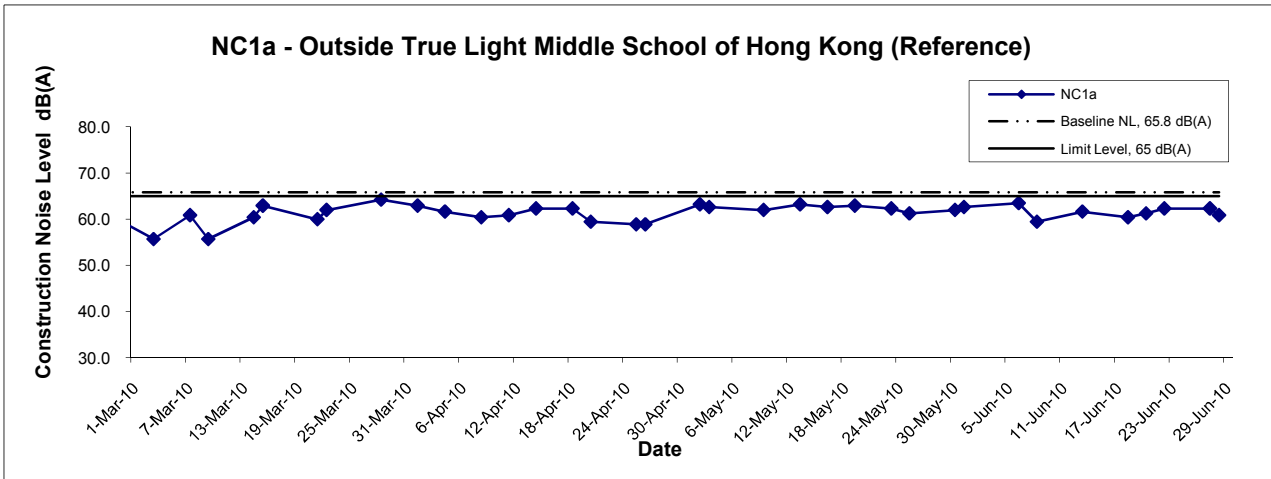
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	Date Jun 10	Appendix E	

Noise Levels



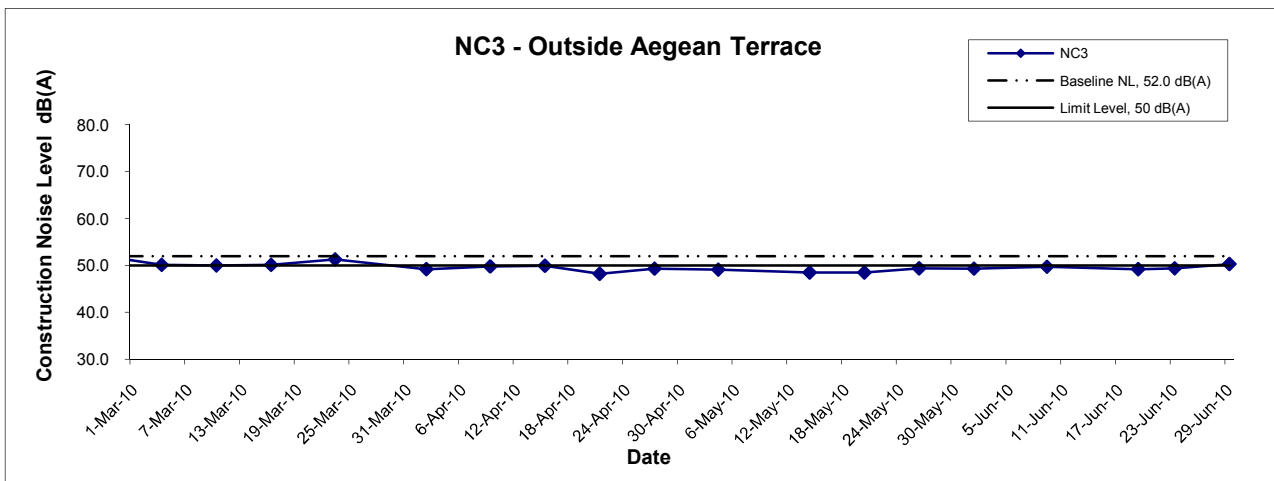
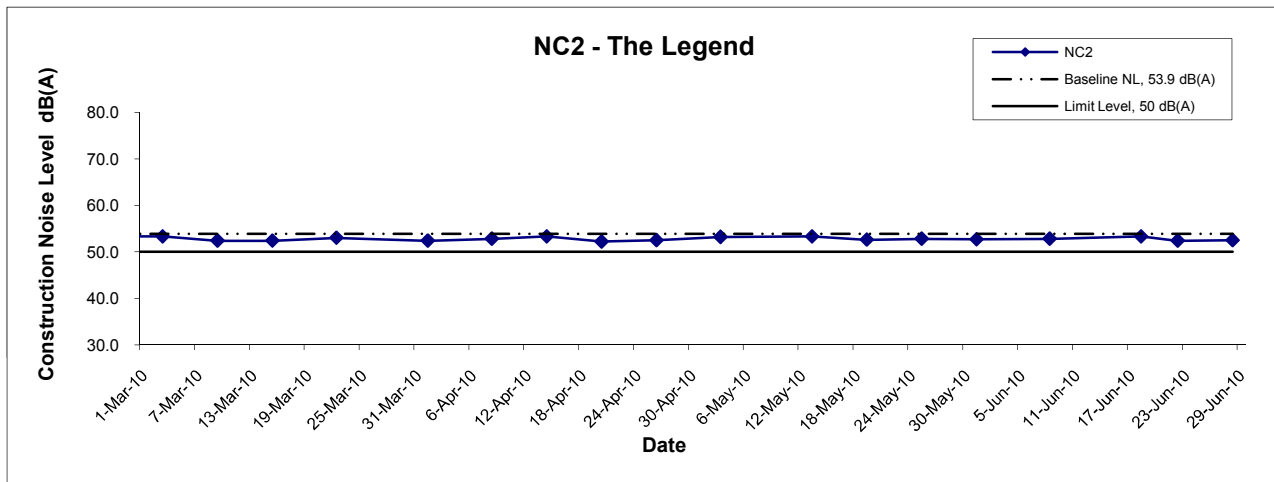
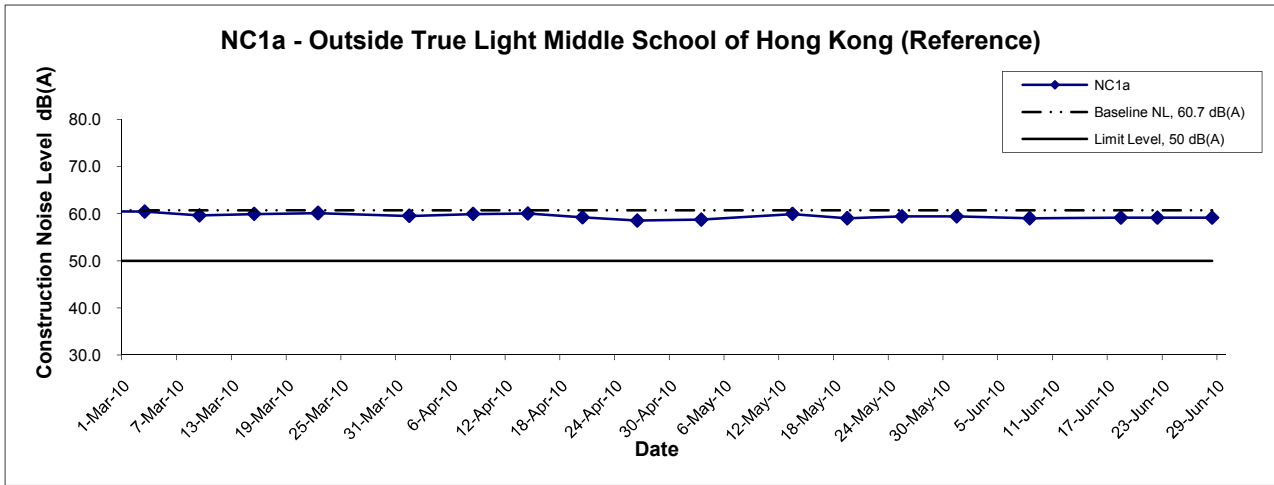
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Jun 10	Appendix E	

Noise Levels (Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days)



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	
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Noise Levels (Restricted Hours - 23:00 to 07:00 on all days)



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Jun 10	Appendix E	

**APPENDIX F
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

Appendix F - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Construction Dust	<i>Dust Mitigation Measures</i>	
	<ul style="list-style-type: none"> The Contractor shall undertake at all times to prevent dust nuisance as a result of his activities. Effective dust suppression measures should be installed to minimize air quality impacts, at the boundary of the site and at any sensitive receivers. 	^
	<ul style="list-style-type: none"> No blasting shall be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted (unless prior permission of the Commissioner of Mines is obtained). 	^
	<ul style="list-style-type: none"> Effective water sprays shall be used during the delivery and handling of all raw sand, aggregate and other similar materials, when dust is likely to be created, to dampen all stored materials during dry and windy weather. Watering of exposed surfaces shall be conducted as often as possible depending on the circumstances. 	^
	<ul style="list-style-type: none"> A watering programme of once every 2 hours in normal weather conditions, and hourly in dry/windy conditions. 	^
	<ul style="list-style-type: none"> Any stockpile of dusty material cannot be immediately transported out of the Site shall be either: a) covered entirely by impervious sheeting; b) placed in an area sheltered on the top and the three sides; or c) sprayed with water or a dust suppression chemical so as to maintain the entire surface wet. 	*
	<ul style="list-style-type: none"> Should a conveyor system be used, the Contractor shall implement the following precautionary measures. Conveyor belts shall be fitted within windboards. Conveyor transfer points and hopper discharge areas shall be enclosed to minimize dust emission. All conveyors under control of the Contractor, and carrying materials which have the potential to create dust, shall be totally enclosed and fitted with belt cleaners. 	^
	<ul style="list-style-type: none"> Any dusty materials being discharged to vehicle from a conveying system at fixed transfer point, three-sided roofed enclosed with a flexible curtain across the entry shall be provided. Exhaust fans shall be provided for this enclosure and vented via a suitable fabric filter system. 	^
	<ul style="list-style-type: none"> The heights from excavated spoils are dropped should be minimise to reduce the fugitive dust arising from unloading/loading. 	^
	<ul style="list-style-type: none"> The Contractor shall confine haulage and delivery vehicles to designated roadways inside the site. If in the opinion of the Engineer, any motorising vehicle is causing dust nuisance, the Engineer may require that the vehicle be restricted to a maximum speed of 15km per hour while within the site area. 	^
	<ul style="list-style-type: none"> Areas within the site where there is a regular movement of vehicles shall have an approved hard surface, be kept clear of loose surface materials and / or be regularly watered. 	^
	<ul style="list-style-type: none"> Wheel cleaning facilities shall be installed for both portals and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. Such wheel cleaning facilities shall be usable prior to any earthwork excavation activity on site. The Contractor shall provide a hard-surfaced road between any cleaning facility and the public road. 	^
	<ul style="list-style-type: none"> Chemical wetting agents shall only be used on completed cuts and fills to reduce wind erosion. 	N/A

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
 N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
 * Recommendation was made during site audit but improved/rectified by the contractor;
 # Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> • No vehicle exhausts shall be directed towards the ground or downwards to minimize dust nuisance. • Ventilation system, equipped with proprietary filters, should be provided to ensure the safe working environment inside the tunnel. Particular attention should be paid to the location and direction of the ventilation exhausts. The exhausts should not be allowed to face any sensitive receivers directly. Consideration should also be given to the location of windows, doors and direction of prevailing winds in relation to the nearby sensitive receivers. • In the event of any spoil or debris from construction works being deposited on adjacent land, or stream, or any silt being washed down to any area, then all such spoil, debris or material and silt shall be immediately removed and the affected land and areas restored to their natural state by the Contractor to the satisfaction of the Engineers. <p>In addition, based on the <i>Air Pollution Control (Construction Dust) Regulation</i>, any works involved regulatory and notifiable works, such as stockpiling, loading and unloading of dusty materials, shall take precautions to suppress dust nuisance.</p> <ul style="list-style-type: none"> • The working area of any excavation or earthmoving operation shall spray with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet; • Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies; and • Any stockpile of dusty materials (greater than 20m³) shall be either covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides; and sprayed with water or a dust suppression chemical so as to maintain the entire surface wet. • Other suitable dust control measures as stipulated in <i>Air Pollution Control (Construction Dust) Regulation</i>, where appropriate, should be adopted. 	<p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

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N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
Construction Noise	<p><u>Air borne noise</u></p> <p>In general, potential construction noise impact can be minimized or avoided by imposing a combination of the following mitigation measures:</p> <ul style="list-style-type: none"> • Noisy equipment and activities should be sited by the Contractor as far from close-proximity sensitive receivers as practical. Prolonged operation of noisy equipment close to dwellings should be avoided. • The Contractor should minimise construction noise exposure to the schools (especially during examination periods). The Contractor should liaise with the school and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the works contract and to avoid noisy activities during these periods. • Noisy plant or processes should be replaced by quieter alternatives. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressor, can be readily obtained. • Noisy activities should be scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise. For example, noisy activities can be scheduled for midday, or at times coinciding with periods of high background noise (such as during peak traffic hours). • Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary. • The power units of non-electric stationary plant and earth-moving plant should be quietened by vibration isolation and partial or full acoustic enclosures for individual noise-generating components. • Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided, thus reducing the cumulative impacts between operations. The numbers of operating items of powered mechanical equipment should be minimised. Noise can be reduced by increasing the distance between the operating equipment and the NSRs or by reducing the number of items of equipment and/or construction activity in the area at any one time. • The use of quiet plant working methods can further reduce noise level. Quiet plant is defined as Powered Mechanical Equipment (PME) whose actual sound power level is less than the value specified in the TMs for the same piece of equipment. To allow the Contractor some flexibility to select equipment to suit his needs, it is considered too restrictive to specify which specific items of silenced equipment to be used for the construction operations. It should be noted that various types of silenced equipment can be found in Hong Kong and are readily available on the market. BS 5228 also provides examples of quiet construction plant and their SWL. • Construction plant should be properly maintained (well-greased, damage and worn parts promptly replaced) and operated. Construction equipment often has silencing measures built in or added on, e.g. bulldozer silencers, compressor panels, and mufflers. Silencing measures should be properly maintained and utilised. Rubber or damping materials should be introduced between metal panels to avoid rattle and reverberation of noise. • Equipment known to emit sound strongly in one direction should be oriented so that the noise is directed away from nearby NSRs. • Materials stockpile and other structures (such as site offices) should be effectively utilised to shield construction noise. Noise 	<p>^</p> <p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
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Types of Impacts	Mitigation Measures	Status
	<p>can also be reduced by construction of temporary noise barriers which screen the lower floors from viewing the sites. Temporary noise barriers should be installed at active parts of construction areas where construction equipment is being operated in close proximity to NSRs.</p> <ul style="list-style-type: none"> • It is noted that under the WBTC No. 19/2001, all construction sites are required to use metallic site hoarding can be slightly modified (with the addition of steel backings) into temporary noise barriers. These barriers should be gap free and have a surface mass density of at least 7kg/m². • All hand-held percussive breakers and air compressors should comply the Noise Control (Hand-held Percussive Breakers) Regulations respectively under the NCO (Ordinance No. 75/88, NCO Amendment 1992 No.6). <p>The Contractor shall devise, arrange methods of working and carry out the works in such manner as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these measures are implemented properly.</p> <p><u>Level 2 Use of Barriers</u></p> <p>Level 2 mitigation measures include providing movable barriers for sites which have sufficient space for installation, full enclosures during the drilling activities at Eastern Portal and at muck pit areas for Eastern portals and cantilever-typed high rise noise barrier for intake W5 (P) and W8.</p> <p>Before construction of the full enclosure at muck pit area, the use of full enclosure noise barrier (Stage A) for the drilling activities at the Eastern Portal area is required. A full enclosure for the muck pit area will then be constructed at this later stage (Stage B). The full enclosure shall be gap free apart from necessary entrance/exits, which shall face towards the entrance of eastern portal to minimize the amount of noise generated from affecting the nearest RNSRs especially school (True Light Middle School of Hong Kong).</p> <p>5m high cantilever-typed hoarding barrier to be built at W5 (P) and W8. These enclosures/barriers should have no gaps and have a superficial surface density of at least 10kg/m². Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period. To schedule the noise barrier erection and dismantling to the non sensitive periods of school to avoid adverse impact to W8/3.</p> <p>Movable barriers of 3 to 5m height with a small cantilevered upper portion and skid footing to be located within about 5 m or more for mobile equipment such that the line of sight is blocked. To provide purposes-built noise barriers or screens constructed of appropriate materials (minimum superficial density of 10kg/m²) located close to the operating PME.</p> <p>Pre-drilling following by chemical splitting instead of using large excavator mounted breaker should be used as mitigation measure for rock breaking and rock drilling.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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	<p>No construction activity is recommended during the examination period.</p> <p><u>Ground borne noise</u></p> <p>The noise level should be measured on the ground floor inside the nearest building during the TBM construction work in the daytime. If the daytime monitored ground borne noise exceeds the relevant evening/night ground borne noise criteria, evening/night construction work would not be carried out for the concerned tunnel section. Evening/night time construction work is subject to CNP application under the control of NCO.</p> <p>Public relationship strategy with 24-hour hotline system.</p>	<p>^</p> <p>^</p>

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Water Quality	<u>Precautionary measures for construction work near natural streams</u>	
	<p>The government provides guidelines (ETWB TCW NO. 5/2005 and DSD TC 2/2004) are providing guidelines to minimize impacts when there is construction work carried out at near natural streams course. Relevant mitigation measures for the intakes are summarised as follows:</p>	
	<ul style="list-style-type: none"> • Temporary site access to the work sites should be carefully planned and located to minimize disturbance caused to the substrates of streams/ivers and riparian vegetation by construction plant. 	^
	<ul style="list-style-type: none"> • Locations well away from the rivers/streams for temporary storage of materials (e.g equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil should be identified before commencement of works. 	^
	<ul style="list-style-type: none"> • Proposed works site areas inside, or in the proximity of, natural rivers and streams should be temporarily isolated to prevent adverse impacts on the stream water qualities. 	^
	<ul style="list-style-type: none"> • Stockpiling of construction materials, if necessary, should be completely properly covered and located away from any natural stream/river. • Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby rivers/streams by rain and local runoff. 	^ *
<u>Construction of temporary berthing point at the Western Portal</u>		
<p>A refuse collection vessel shall be provided to collect refuse or materials lost into the sea.</p>	^	
<p>The respective areas of the marine works will be completely enclosed by the silt curtain. The curtain shall be extended from water surface down to the seabed where it is anchored using sinker blocks. The Contractor shall inspect the silt curtain on regular basis to ensure its integrity and it is serviceable for all times.</p>	N/A	

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	<p>Transfer of armour rock onto the seabed from barge at the temporary pier location should be conducted by careful grabbing and unloading to the seabed (to minimize sediment migration).</p>	^
	<p>The conveyor belt should be completely covered and muddy effluent from the temporary barge should be contained, treated and disposed. Where there is transfer of excavated wastes, the Contractor should provide appropriate measures to ensure that the waste is free from floatables, putrescibles, organic wastes and toxic materials and when required a refuse collection vessel be provided to collect float refuse.</p>	^
	<p><u>Construction of stilling basin at Western Portal outfall</u></p>	
	<p>All construction for the basin should be carried out inside the temporary cofferdam which is a temporary watertight enclosure built in the water and pumped dry to expose the bottom so that construction of stilling basin can be undertaken.</p>	^
	<p>During the dewatering process, appropriate desilting/sedimentation devices should be provided on site for treatment before discharge. The Contractor should ensure discharge water from the sedimentation tank meet the WPCO/TM requirements before discharge.</p>	^
	<p>The cofferdam will remain on site until after the construction of stilling basin has been completed. The coffer dam shall be regularly inspected and maintained to ensure no spillage of waste or wastewater into the sea. Conveyance of dredged materials from the coffer dam shall be carried out cautiously to avoid spillage into the sea.</p>	^
	<p>The filled material for the stilling basin should be contained inside the temporary cofferdam. The top level of the cofferdam shall be constructed higher than the final backfilled level.</p>	^
	<p>The Contractor shall be responsible for the design, installation and maintenance of the silt curtains to minimize the impacts on the water quality and the protection of water quality. The design and specification of the silt curtains shall be submitted by the Contractor to the Engineer for approval.</p>	N/A
	<p>Silt curtains shall be formed from tough, abrasion resistant, permeable membranes, suitable for the purpose, supported on floating booms in such a way as to ensure that the sediment plume shall be restricted to within the limit of the works area. The silt curtain shall be formed and installed in such a way that tidal rise and fall are accommodated, with the silt curtains always extending from the surface to the bottom of the water column and held with anchor blocks. The removal and reinstallation of such curtains during typhoon conditions shall be as agreed with the Director of Marine Department. The contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic. Any damage to the silt curtain shall be repaired by the Contractor promptly and the works shall be stopped until the repair is fixed to the satisfaction of the Engineer.</p>	N/A

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	<p>Transfer of rock fill material (armour rock) from the barge onto the site location should be conducted by grabbing and placement on the seabed to minimize sediment migration. No free dropping of the material will be allowed.</p> <p>Prior to the construction of armor rock based panel, a silt curtain shall also be installed prior to carry out any marine works as a preventive mitigation measure.</p> <p><u>Construction of TBM tunnel at both portals and intakes</u></p> <p>Recycled water will be used at the cutter face for cooling purposes. Used water will be collected and discharged to a settling tank for settlement. Excess water from the settling tank will be transferred to the water treatment plant on site where the addition of flocculants will assist in settlement of solids. The Contractor should ensure discharge water from the sedimentation tank meet the WPCO/TM requirements before discharge.</p> <p>During the drilling process, all flushing water will be recycled for use. Discharge of the treated water to nearby drainage system shall be allowed provided that it has been treated to a level meeting with statutory requirements.</p> <p>Water flow at streams should be maintained by a temporary diversion system during the construction phase of intakes and manhole drop shafts.</p> <p><u>General Construction Activities and Workforce</u></p> <p>A. Surface runoff</p> <p>Effluent produced from construction activities are subjected to WPCO control. Effluent produced from sites should be diverted away from stream courses. Construction works near stream course should be scheduled in the dry season as far as practical to avoid excessive site runoff discharge.</p> <p>Under the <i>Water Pollution Control Ordinance</i> (WPCO), turbid water from construction sites must be treated to minimize the solids content before being discharged into storm drains. The suspended solids load can be reduced by directing the runoff into temporary sand traps or other silt-removal facilities, and other good and appropriate site management practices. Advice on the handling and disposal of construction site discharge is provided in the ProPECC Paper (PN 1/94) on Construction Site Drainage.</p> <p>A drainage system layout should be prepared by the Contractor for each of the works areas (portals and intakes), detailing the facilities and measures to manage pollution arising from surface runoff from those works areas. The drainage layout and an associated drainage management plan to reduce surface runoff sediments and pollutants entering watercourses, should be submitted to the Engineer for approval and to EPD for agreement.</p>	<p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p> <p>*</p> <p>*</p>

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	<p>The system should be capable of handling stormwater from the site and directing it to sediment removal facilities before discharge. If oil and grease is used on the site or brought to the site, the stormwater should pass through oil interceptors before discharge. The interceptors should have a bypass to prevent washout in heavy storms.</p> <p>A temporary channel system or earth bunds or sand barriers should be provided in works areas on site to direct stormwater to silt-removal facilities. Stockpiled materials, if susceptible to erosion of rain or wind, should be covered with tarpaulins (or/similar fabric) or hydroseedings as far as practicable especially during the wet season.</p> <p>Silt removal facilities should be checked and the deposited silt and grit should be removed regularly to ensure these facilities are in good working condition and to prevent blockages.</p> <p>Vehicle washing areas should be drained into a settlement basin to settle out the suspended solid before discharge to storm water drains. The water should be recycled on site whenever possible. It is suggested that the wash water from the wheel wash basin is either reused for road watering or pumped to the on-site settling tanks for treatment. Water used for dust depression purposes should be minimized and an alternative soil holding agent should be considered.</p> <p>B. Spillage, Oil and Solvents Any contractor generating waste oil or other chemicals as a result of his activities should register as a chemical waste producer and provide a safe storage area for chemicals on site. Oil interceptors need to be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass should be provided to avoid overload of the interceptor's capacity.</p> <p>Any spillage should be cleaned up immediately and the resulting contaminated absorbent material should be properly managed according to Waste Disposal Regulations. Spills should be contained to avoid spreading and contaminating the water resources.</p> <p>Oil and fuels should be used and stored properly in designated area. All fuel tanks and storage areas should be provided with locks and be sited on within sealed areas within surrounded by bunds of with a capacity equal to 110% of the storage capacity of the largest tank.</p> <p>Good housekeeping practices are required to minimize careless spillage and keep the work space in a tidy and clean condition. Appropriate training, including safety codes and relevant manuals, should be given to the personnel who regularly handle the chemicals on site.</p>	<p>^</p> <p>*</p> <p>*</p> <p>^</p> <p>^</p> <p>*</p> <p>*</p>

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	<p>C. On-Site Effluent Generation</p> <p>Sewage arising from the additional population of workers on site should be collected in a suitable storage facility (chemical mobile toilets). Most of the work site locations are close to the public sewerage system, and therefore the use of septic tanks isare, therefore, not encouraged. Portable toilets should be used coupled with tickering away services provided by a licensed collector. They should be positioned at appropriate locations across the site to ensure no direct discharge of foul water off-site.</p> <p>D. Protection of Existing Flora and Fauna</p> <p>The Contractor should provide details of the plant and operation plans at each site for approval by the Engineer before commencing construction. The plans should include how the existing flora and fauna will be protected. Locations required for groundwater levels monitoring are Eastern Portal, PFLR1(P), THR2(P), TP5, TP789 and W12.</p> <p>The construction and demolition of the temporary pier may create short term impacts on the local marine water quality. The situation will be restored once the work is finished by proper phasing of the works programme and implementation of the adequate mitigation measures (e.g. silt curtain) the impacts will be minimized.</p> <p><u>Maintaining Baseflow in Downstream Watercourses</u></p> <p>The final design will be developed during the detailed design stage. The exact base flow rates to be maintained at each of the intakes will be subject to detailed site investigation at design stage.</p> <ul style="list-style-type: none"> • Purpose of the by-pass device is to maintain the base-flow of the affected stream course. • The by-pass system comprises an approach link and a trapezoidal channel. • The approach link is section with inclined profiled surface at a gradient of 1 in 100. It is used to direct the base flow to the bypass trapezoidal channel at its down stream end during the normal days. • The trapezoidal channel is sized such that it could handle the base flow in the affected stream course which is estimated to be no more than 20 l/s. • Whenever the flow in the stream course exceeding the base flow rate, the excessive flow will overflow into the intake structure via the bottom rack structure. The bottom rack structure has bar screen on the top and inclined channel at the bottom. The top level of the bar screen is level with the by-pass channel with an aim to receive the overflow from the by-pass channel. • The by-pass channel is designed requiring minimum maintenance. However, it is recommended that the maintenance authority carry out regular maintenance inspection prior to onset of seasons and after significant rainstorm event to prevent blockage of the by-pass and bottom rack structure. 	<p>^</p> <p>^</p> <p>^</p> <p></p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>

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Waste/Chemical	<p><u>General</u></p> <p>A proper waste management plan should be implemented to promote waste minimisation at source. Where waste generation is unavoidable then the potential for recycling or reuse should be explored and opportunities taken. If wastes cannot be recycled then the recommended disposal routes should be followed.</p>	*
	<p>All waste materials shall be segregated into categories covering:</p> <ul style="list-style-type: none"> • Excavated material or construction waste suitable for reuse on-site • Excavated material or construction waste suitable for public filling areas • Remaining C&D waste for landfill • Chemical waste, and • General refuse 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<p>Proper segregation and disposal of construction waste should be implemented. Separate containers for inert and non-inert wastes should be provided. The inert waste should be taken to public filling area and the non-inert waste should be transported to strategic landfills.</p>	*
	<p>A trip-ticket system on the solid waste transfer/disposal operations should be included as one of the contractual requirements (ETWB TCW No. 31/2004). The Independent Environmental Checker (IEC) should be responsible for auditing this system.</p>	^
	<p>IEC should also be responsible for auditing the well-documented record system which includes: (i) quantity of waste generation, (ii) quantity of recycled material, (iii) quantity of disposed material, (iv) disposal methods and (v) sites should be implemented during construction phase.</p>	^
	<p>Regular cleaning and maintenance of the waste storage area should be conducted throughout the construction stage.</p>	^
	<p><u>Excavated spoil</u></p> <p>Control measures for soil temporarily stockpiled on-site should be taken in order to minimize the noise, generation of dust, pollution of water and visual impact. Key impacts include:</p>	^

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	<ul style="list-style-type: none"> • Surface of stockpiled soil should be wetted with water when necessary especially during dry season • Disturbance of stockpiled soil should be minimized • Stockpiled soil should be properly covered with tarpaulins especially heavy rain storms • Stockpiling areas should be enclosed if possible • Stockpiling location should be away from the shoreline • An independent surface water drainage system equipped with silt traps should be installed at the stockpiling area <p><u>Chemical wastes</u></p> <p>For those processes that generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.</p> <p>Construction processes produce chemical waste, the contractor must register with EPD as a Chemical Waste Producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation (CWR). It should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste published by the EPD. A producer of chemical wastes should be registered as chemical waste producer and registered with EPD.</p> <p>The chemical waste generated shall be properly labelled, stored and disposed of according to the CWR. Proper storage area shall be allocated on site for storage of chemical waste. The chemical waste should only be collected by a licensed collector. An updated list of licensed chemical waste collector can be obtained from EPD.</p> <p>In case of spillage, spill absorbent material and emulsifiers should be available on site. This material should be replaced on a regular basis and the contaminated material stored in a designated, secure place.</p> <p><u>General refuse</u></p> <p>A reputable waste collector should be employed by the contractor to remove general refuse from the site, separate from C&DM and chemical wastes, and on regular basis in order to minimize odour, pest and litter impacts. The burning of refuse at site is not permitted under the Air Pollution Control Ordinance (Cap 311).</p> <p>Office waste can be reduced through recycling of paper if volumes are large enough to warrant collection.</p> <p>Good management practices should be implemented to ensure that refuse is properly stored and is transported for disposal of at licensed landfills.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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Terrestrial Ecology	<p>During the detailed design stage, the following issues should also be considered as possible to further minimise the impacts:</p> <ul style="list-style-type: none"> • Adjustment of site boundary to minimise temporary loss of natural stream habitat during construction. • Adjustment of site boundary to minimise use of mixed woodland as temporary works area. In particular, the woodland habitat in temporary works area of the Eastern Portal will be avoided, thereby greatly reducing the area of temporary loss of woodland habitat. • Minimizing felling of large trees. • About 20% of trees within the works area will be transplanted. The individual of <i>Artocarpus hypargyreus</i> recorded within the temporary works area of HKU1, if to be encroached, would also be transplanted. 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
	<p>Standard site practices including the following, should be enforced to minimise the disturbance to the surroundings:</p> <ul style="list-style-type: none"> • Treat any damage that may occur to large individual trees in the adjacent area using materials and methods appropriate for tree surgery. • Reinstate work sites/disturbed areas immediately after completion of the construction works, in particular, through on-site tree/shrub planting along the woodland and shrubland section within the temporary works area. Tree/shrub species used should make reference from those in the surrounding area. • Regularly check the work site boundaries to ensure that they are not exceeded and that no damage occurs to surrounding areas. 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
	<p>A total of 1.02 ha would be replanted with woodland species, reaching almost a 1.5:1 ratio for compensatory planting. Tree/shrub species used should be based on those in the surrounding areas, including those which are commonly recorded during the baseline surveys.</p>	<p style="text-align: center;">^</p>
	<p>A low-flow channel would be provided within the channelised section to maintain a deeper water depth in the expanded channel, in particular during dry season as well as a basin at the end of the channelised section to provide living space for aquatic life. Step chute in the form of a series of descending water pools would be constructed between the low flow channel and the undisturbed stream course. There would also be openings for aquatic fauna between each chute step (pool). These could work like a “ladder” to help avoid isolating the aquatic fauna in the channelised section from natural habitats.</p>	<p style="text-align: center;">^</p>
	<p>Measures are also needed to maintain the flow of all affected streams/nullahs during the construction stages. Temporary bypass should be provided if the stream/nullah flows will be cut off by the construction works. After the construction works are finished, sections of temporary loss should be reinstated. Construction materials, wastes, and equipment should be cleared from the sites.</p>	<p style="text-align: center;">^</p>

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	<p>Surveys of amphibians at E4(P), PFLR1(P), W12(P), MB16, E5(B)(P), TP789(P) and P5(P) prior to commencement of construction is recommended. Frogs, including Hong Kong Cascade Frog and Lesser Spiny Frog, and tadpoles found at work areas of these proposed intake points will be collected and translocated to nearby streams that will not be affected by the project. These procedures should be performed by experienced herpetologists. A detailed translocation proposal will be submitted during the detailed design stage.</p> <p>Measures should also be taken to avoid runoff to streams and marine habitats. Stream/channel which could potentially be affected during construction should be prevented from sedimentation by erection of sediment barriers. Site runoff should be desilted by siltation traps in streams/channels or diverted, to reduce the potential for suspended sediments, organics and other contaminants to enter the local stream environment.</p>	<p>^</p> <p>^</p>
Marine Ecology	<p>Silt curtains will be deployed during the construction and demolition of the temporary berthing point. Deployment of silt curtains around the berthing point area would effectively avoid adverse water quality impacts due to barge filling. No significant ecological impact is anticipated.</p> <p>The invert of the stilling basin would be at -5.4 mPD. A cofferdam in the form of pipe-pile wall is to be constructed outside the stilling basin prior to the construction of basin. The cofferdam will be dewatered to provide a working area for construction of the stilling basin. The boulders from the seawall will then be removed by landbased grabs.</p> <p>Although the speed of the working vessels to be used in the Project (mainly barges) would not be high, a speed limit for marine traffic is proposed as a precautionary measure. A speed limit of 10 knots should be strictly enforced in the works area, in particular in the waters between the outfall location and the navigation channel in East Lamma Channel.</p>	<p>N/A</p> <p>^</p> <p>^</p>

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Landscape and Visual	The proposed landscape and visual mitigation measures during the construction phase include:	
	CM1 - Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	^
	CM2 - Existing trees to be retained on site should be carefully protected during construction. The detailed proposal for any trees felling and transplantation is subject to Lands Department's approval on tree felling application at the detailed design stage.	^
	CM3 - Trees unavoidably affected by the works should be transplanted where practical.	^
	CM4 - Compensatory tree planting should be provided to compensate for felled trees.	^
	CM5 - The extent of disturbance on the existing stream course should be minimized. Any temporary works areas within the stream course shall be reinstated after construction.	^
	CM7 – Control of night-time lighting	^
	CM8 – Erection of decorative screen hoarding	^

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Cultural Heritage	<p>The Cultural Heritage Impact Assessment has identified the following resources which will require mitigation measures during the construction stage;</p>	
	<p><u>Haw Par Mansion (including boundary wall and gate)</u> A condition survey must be undertaken by a qualified professional prior to the commencement of construction works for the tunnel portal in order to assess the structural integrity of the mansion, wall and gate (with special attention paid to any fragile architectural features). A report containing description of the types of construction, identification of fragile elements, an appraisal of the condition and a photographic record must be prepared. The report must also provide an assessment indicating whether further precautionary measures will be necessary during the construction phase, and if so provide details for sufficient protective measures, including monitoring for vibration control to ensure that no damage to the structure and fabric of the house, wall and gate results from the construction works. The report must be submitted to AMO for approval before construction activities commence. Upon approval the appropriate monitoring and precautionary measures shall be put into place.</p>	^
	<p>A buffer zone with a minimum width of 3 metres and an obstruction free access point must be maintained between the boundary wall/gate and the temporary works area (during construction works associated for both the tunnel portal and the permanent vehicle access ramp). This is to enable access for routine maintenance works on the wall and to ensure that the wall is not damaged by machinery operation or related construction activities. The temporary works area will be enclosed by standard DSD site hoarding.</p>	^
	<p><u>Former Explosive Magazine of Victoria Barracks</u> A condition survey must be undertaken by a qualified professional prior to the commencement of construction works in order to assess the structural integrity of the retaining wall and the extent of damage from cracks and vegetation growth. A report containing a description of the wall's construction materials, identification of fragile and/or endangered elements, an appraisal of the condition and a photographic record of the retaining wall must be prepared. The report must also provide an assessment indicating whether further precautionary measures will be necessary during the construction phase, and if so provide details for sufficient protective measures, such as monitoring for vibration control, to ensure that no damage to the retaining wall results from the construction works. The report must be submitted to AMO for approval before construction activities commence. Upon approval the appropriate monitoring and precautionary measures shall be put into place.</p> <p>A buffer zone with a minimum width of 3 metres and an obstruction free access point must be maintained between the retaining wall and the temporary works area (for the duration of the construction phase). The works area will be enclosed by standard DSD site hoarding.</p>	^

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
Fisheries	<p>Silt curtain will be deployed during the construction and demolition of the temporary berthing point. With the deployment of silt curtains around the berthing point area, adverse water quality impact associated with the filling would not be anticipated. No significant fisheries impact is anticipated.</p> <p>The invert of stilling basin will be found at -5.4 mPD. A cofferdam in the form of pipe-pipe wall is to be constructed outside the stilling basin prior to the construction of basin. The cofferdam will be dewatered to provide a working space for the construction of stilling basin. The boulders from the seawall will then be removed by landbased grabs.</p>	<p>N/A</p> <p>^</p>
Hazard to Life	<p>There will be no overnight storage of explosives for this project. Transportation of explosives to site for the construction of adit will be undertaken on a daily basis. The contractor is required to destroy any unused explosives before nightfall. If contractor wishes to set up magazines for overnight storage of explosives, it is necessary to carry out risk assessment and seek the relevant approval following the EIAO process.</p>	<p>^</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

APPENDIX G
SITE AUDIT SUMMARY

Appendix G Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in April 2010

Parameters	Date	Observations and Recommendations	Follow-up
<i>Reminders</i>	08/04/2010	The Contractor was reminded of the followings: - Clear the oil spillage and properly maintain the plant equipment to prevent oil leakage at Intake W0.	Rectification/improvement was observed during the follow-up audit session.
	08/04/2010	The Contractor was reminded of the followings: - To update the record for clearing the sedimentation facilities at Intake W0.	Rectification/improvement was observed during the follow-up audit session.
	08/04/2010	The Contractor was reminded of the followings: - Provide drip tray for the chemical containers which standing on the bare ground at Intake TP789.	Rectification/improvement was observed during the follow-up audit session.
	08/04/2010	The Contractor was reminded of the followings: - Clear the discarded leaves at the water diversion pipe at Intake HKU1.	Rectification/improvement was observed during the follow-up audit session.
	08/04/2010	The Contractor was reminded of the followings: - Clear the sedimentation tank frequently to ensure the facilities are functioning properly at all times at Intake SM1.	Rectification/improvement was observed during the follow-up audit session.
	08/04/2010	The Contractor was reminded of the followings: - Clear the drainage channel at near spoil basin to avoid blockage at Western Portal.	Rectification/improvement was observed during the follow-up audit session.
	15/04/2010	The Contractor was reminded of the followings: - Clear the soil/ mud trail at the entrance of Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	15/04/2010	The Contractor was reminded of the followings: - Remove the litter at the drainage at Intake W0 to avoid blockage.	Rectification/improvement was observed during the follow-up audit session.
	15/04/2010	The Contractor was reminded of the followings: - Cover the cement with tarpaulin at entrance of Intake TP789.	Rectification/improvement was observed during the follow-up audit session.
	22/04/2010	The Contractor was reminded of the followings: - Properly cover the stockpile of sediment at Intake THR2.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - To remove the containers with chemical oil at near the drain at Intake W0.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the drip tray at Intake W0.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - Provide sedimentation facilities to treat the	Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
		silty water from site at Intake M3 and TP4.	
	22/04/2010	The Contractor was reminded of the followings: - Ensure the capacity of the sedimentation tank is enough for setting the muddy water at Intake TP5.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - Provide sand bag bund at the entrance of Intake TP4 for flood protection.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - To reinforce the sand bag bund at the entrance of Intake W10.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - Clear the standing water with chemical oil at the drip tray as chemical waste at Intake W5.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - Properly maintain the curtain for dropping the spoil to the spoil basin at Western Portal.	Follow-up action was needed for the item.
	22/04/2010	The Contractor was reminded of the followings: - Regular clear the sedimentation tank at Western Portal and Intake SM1.	Follow-up action was needed for the item.
	29/04/2010	The Contractor was reminded of the followings: - Properly cover the cement bags at Eastern Portal.	Rectification/improvement was observed during the follow-up audit session.
	29/04/2010	The Contractor was reminded of the followings: - Regular clear the deposited silt/grit at the sedimentation tank at Intake SM1.	Rectification/improvement was observed during the follow-up audit session.
	29/04/2010	The Contractor was reminded of the followings: - Clear the discarded leaves at near the water barriers at Intake SM1.	Rectification/improvement was observed during the follow-up audit session.

Summary of Observation and Recommendation Made during Site Inspection in May 2010

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	06/05/2010	Sand and sediment was observed falling to the existing stream at Intake THR2. The contractor was reminded to provide mitigation measures to avoid the disturbance to the stream.	Rectification/improvement was observed during the follow-up audit session.
	13/05/2010	The three compartments of sedimentation tank was observed full of silty/muddy water at Intake TP5. The contractor was reminded to provide sufficient silt removal facilities so that the site discharge are comply with WPCO.	Follow-up action was needed for the item.
	27/05/2010	The three compartments of sedimentation tank were observed silty at Intake THR2. The contractor was reminded the site discharge to the public is complying with WPCO.	Rectification/improvement was observed during the follow-up audit session.
Noise	27/05/2010	Noise was noticed from the breaking works at Intake E7. The contractor was reminded to provide sufficient noise mitigation measures to minimize the noise impact.	Follow-up action was needed for the item.
Reminders	06/05/2010	The Contractor was reminded of the followings: - Clear the standing water at the drip tray and pit area at Area B and Western Portal.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - To replace the worn sand bags at the entrance of Intake E5B.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - To provide sand bag bund to direct the silty water for treatment at Intake MA 15.	Follow-up action was needed for the item.
	06/05/2010	The Contractor was reminded of the followings: - Clear the used cement bags at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - To provide sedimentation facilities at Intake M3 and Intake TP4 to prevent silty water from discharging out.	Follow-up action was needed for the item.
	06/05/2010	The Contractor was reminded of the followings: - Clear the deposited silt and grit at the catchpit at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - Ensure the capacity of the wastewater treatment facilities are enough for treating the silty water at Intake TP5.	Follow-up action was needed for the item.
	06/05/2010	The Contractor was reminded of the followings: - Clear the standing water with chemical oil and construction materials at the drip tray at Intake TP5.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings:	Rectification/improvement was observed during the

Parameters	Date	Observations and Recommendations	Follow-up
		- To improve the noise mitigation measures at Intake TP4.	follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - Properly maintain the breaker at Intake TP4 to avoid the grey smoke.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - Cover the cement bags at Intake HKU1.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - Plug the hole at the concrete block at Intake P5 to prevent the water from site discharging to the public drain directly.	Follow-up action was needed for the item.
	06/05/2010	The Contractor was reminded of the followings: - Provide drip tray for the generator at Intake W3.	Rectification/improvement was observed during the follow-up audit session.
	06/05/2010	The Contractor was reminded of the followings: - Properly maintain the curtain for directing the spoil to the spoil basin.	Rectification/improvement was observed during the follow-up audit session.
	13/05/2010	The Contractor was reminded of the followings: - Clear the chemical waste containers at Area B and Intake THR2.	Rectification/improvement was observed during the follow-up audit session.
	13/05/2010	The Contractor was reminded of the followings: - Clear the stagnant water with chemical oil as chemical waste at intake MB16, W0, M3, TP5.	Follow-up action was needed for the item.
	13/05/2010	The Contractor was reminded of the followings: - Properly maintain the piling machine to prevent oil leakage at Intake E5B.	Rectification/improvement was observed during the follow-up audit session.
	13/05/2010	The Contractor was reminded of the followings: - Regular clear the drainage channel at Intake E5B.	Rectification/improvement was observed during the follow-up audit session.
	13/05/2010	The Contractor was reminded of the followings: - To provide sedimentation facilities at Intake MA15.	Follow-up action was needed for the item.
	13/05/2010	The Contractor was reminded of the followings: - Ensure the capacity of the sedimentation tank is enough to treat the silty water at Intake M3.	Follow-up action was needed for the item.
	13/05/2010	The Contractor was reminded of the followings: - To replace the worn sand bags at the entrance of Intake W10.	Rectification/improvement was observed during the follow-up audit session.
	13/05/2010	The Contractor was reminded of the followings: - Ensure the dropping of materials to the barge comply with APCO regulations.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings:	Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
		- To clear the stagnant water at the material skip at Intake MBD2.	
	20/05/2010	The Contractor was reminded of the followings: - Properly clear the standing water with chemical oil as chemical waste at Intake W0, TP5, and SM1.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings: - To provide sedimentation facilities at Intake MA15 and TP4.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings: - Clear the mud trail at the entrance of Intake MA15.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings: - Ensure the site discharge was treated before discharging out at Intake M3.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings: - Provide sand bags at the base of water barriers at Intake M3.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings: - Keep clear the sedimentation tank at Intake TP5 to ensure the site discharge and comply with WPCO.	Follow-up action was needed for the item.
	20/05/2010	The Contractor was reminded of the followings: - Ensure the dropping of materials from the conveyer outlet to the barge is complying with APCO regulations.	Follow-up action was needed for the item.
	27/05/2010	The Contractor was reminded of the followings: - To replace the worn sand bags to direct the surface runoff at Intake MBD2.	Rectification/improvement was observed during the follow-up audit session.
	27/05/2010	The Contractor was reminded of the followings: - Clear the silt and debris at the drainage channel at Intake MBD2.	Rectification/improvement was observed during the follow-up audit session.

Summary of Observation and Recommendation Made during Site Inspection in June 2010

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	03/06/2010	Sedimentation tank was observed full of silty water and cannot function properly at Intake TP5. The contractor was reminded to review the current desilting facilities are sufficient for the works.	Follow-up action was needed for the item.
	30/06/2010	Seepage of silty water was observed at the slope at Intake MA17. The Contractor was reminded to provide mitigation measures to avoid any water discharging out without treatment.	Rectification/improvement was observed during the follow-up audit session.
Ecology	23/06/2010	Sand and silt has observed to deposit at the existing stream during the soil nailing works at Intake MA14. The Contractor was reminded to provide mitigation measures to minimize the disturbance to the stream.	Follow-up action was needed for the item.
Reminders	03/06/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the material skip and drip tray at Intake THR2.	Rectification/improvement was observed during the follow-up audit session.
	03/06/2010	The Contractor was reminded of the followings: - Provide sufficient noise mitigation measures to minimize the noise impact at Intake E7.	Rectification/improvement was observed during the follow-up audit session.
	03/06/2010	The Contractor was reminded of the followings: - Provide sand bags bund to direct the silty surface runoff for treatment at Intake E5A, MA15 and TP4.	Follow-up action was needed for the item.
	03/06/2010	The Contractor was reminded of the followings: - To connect the site drain and the sedimentation tank at Intake DG1 so that the silty water can be treated before discharging out.	Follow-up action was needed for the item.
	03/06/2010	The Contractor was reminded of the followings: - To check the location of the water discharging point as stipulated in the license at Intake MA15.	Follow-up action was needed for the item.
	03/06/2010	The Contractor was reminded of the followings: - To provide sand bags at the base of water barrier at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	10/06/2010	The Contractor was reminded of the followings: - Clear the oil spillage at Intake MB16.	Rectification/improvement was observed during the follow-up audit session.
	10/06/2010	The Contractor was reminded of the followings: - Clear the chemical waste containers standing on the bare ground at Intake E5A.	Follow-up action was needed for the item.
	10/06/2010	The Contractor was reminded of the followings: - Properly maintain the backhoe to prevent smoke emission at Intake HKU1.	Follow-up action was needed for the item.
	10/06/2010	The Contractor was reminded of the followings:	Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
		- Provide sand bags at the base of water barrier at Intake M3.	
	17/06/2010	The Contractor was reminded of the followings: - Clear the mud and sand at the public road after the works at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	17/06/2010	The Contractor was reminded of the followings: - Provide sand bags at the base of water barrier at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	17/06/2010	The Contractor was reminded of the followings: - Provide sand bags to direct silty surface runoff for treatment at Intake TP789.	Rectification/improvement was observed during the follow-up audit session.
	17/06/2010	The Contractor was reminded of the followings: - Re-arrange silt removal system at Intake TP4 so that all the site discharge was treated before discharging out.	Rectification/improvement was observed during the follow-up audit session.
	17/06/2010	The Contractor was reminded of the followings: - Provide mitigation measures to minimize the water quality impact to stream during soil nailing works at Intake MA14.	Follow-up action was needed for the item.
	17/06/2010	The Contractor was reminded of the followings: - Provide three-sides enclosure with top shelter for the grouting works at Intake MA14.	Follow-up action was needed for the item.
	17/06/2010	The Contractor was reminded of the followings: - Clear the discarded leaves at the internal drain at Intake DG1.	Rectification/improvement was observed during the follow-up audit session.
	17/06/2010	The Contractor was reminded of the followings: - Provide mitigation measures (e.g. cover the exposed area) to prevent silty water from discharging to the public road at Intake MB16.	Rectification/improvement was observed during the follow-up audit session.
	23/06/2010	The Contractor was reminded of the followings: - Clear the oil spillage at Intake MB16.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - To avoid overflow of silty water at the recycling tank at Intake MB16.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - To replace the worn sand bags at Intake MBD2 and TP5.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Regular clear the C&D waste at the waste skip at Intake THR2.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Ensure the capacity of the sedimentation tanks are enough for treating silty water at	Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
		Intake THR2 and DG1.	
	23/06/2010	The Contractor was reminded of the followings: - To avoid the disturbance (e.g. placing construction materials) to the stream at Intake GL1 and BR5.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Clear the diesel oil at the drip tray at Intake E7.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Provide sedimentation facilities at Intake W3.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Clear the general refuse at Intake W3 and TP5.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Provide sand bags at the base of water barriers at Intake P5.	Follow-up action was needed for the item.
	23/06/2010	The Contractor was reminded of the followings: - Provide three-sides enclosure with top shelter for the grouting works at Intake W5 and TP5.	Follow-up action was needed for the item.
	30/06/2010	The Contractor was reminded of the followings: - Properly provide enclosure during the soil nailing works to prevent dust generation at Intake MA17.	Follow-up action was needed for the item.
	30/06/2010	The Contractor was reminded of the followings: - Clear the chemical waste container at Intake TP789.	Rectification/improvement was observed during the follow-up audit session.
	30/06/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the drip tray at Intake TP5.	Rectification/improvement was observed during the follow-up audit session.

**APPENDIX H
SUMMARY STATUS OF
ENVIRONMENTAL LICENCES AND
PERMITS**

Appendix H - Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
FEP-01/272/2007/B	25/6/09	N/A	Construction of a 6.25m-7.25m in diameter and about 11 km long underground main drainage tunnel, 2 portals and a series of connecting adits and drop shafts.	Valid
Effluent Discharge License				
EP860/W10/XY0175	23/06/08	30/06/13	Industrial discharge (Area of Mount Butler Office)	Valid
EP860/W10/XY0177	23/06/08	30/06/13	Industrial discharge (Eastern Portal Site)	Valid
EP820/W9/XT086	22/07/08	31/07/13	Industrial discharge (Western Portal Site)	Valid
WT00005864-2010	20/01/10	31/01/15	Industrial discharge (Western Portal Site)	Valid
EP860/W10/XY0183	19/11/08	30/11/13	Industrial discharge (Intake W0, Stubbs Road, Wan Chai, HK)	Valid
WT00003372-2009	-	30/4/14	Industrial discharge (Intake SM1)	Valid
WT00003737-2009	-	31/5/14	Industrial discharge (Intake MB16)	Valid
WT00004126-2009	-	31/5/14	Industrial discharge (Intake HKU1)	Valid
WT00003738-2009	-	31/5/14	Industrial discharge (Intake THR2)	Valid
WT00004270-2009	-	31/7/14	Industrial discharge (Intake PFLR1)	Valid
WT00004806-2009	-	30/09/14	Industrial discharge (Intake E7)	Valid
WT00004808-2009	-	30/09/14	Industrial discharge (Intake MBD2)	Valid
WT00004885-2009	-	30/09/14	Industrial discharge (Intake RR1)	Valid
WT00005135-2009	-	31/10/14	Industrial discharge (Intake W10)	Valid
WT00005374-2009	-	30/11/14	Industrial discharge (Intake P5)	Valid
WT00005376-2009	-	30/11/14	Industrial discharge (Intake TP4)	Valid
WT00005357-2009	-	30/11/14	Industrial discharge (Intake W5)	Valid
WT00005588-2009	-	31/12/14	Industrial discharge (Intake TP5)	Valid
WT00005643-2009	-	31/12/14	Industrial discharge (Intake E5A)	Valid
WT00005754-2010	-	31/01/15	Industrial discharge (Intake W8)	Valid
WT00005954-2010	-	28/02/15	Industrial discharge (Intake TP789)	Valid
WT00005915-2010	-	31/01/15	Industrial discharge (Intake E5B)	Valid
WT00006102-2010	-	28/02/15	Industrial discharge (Intake M3)	Valid
WT00006415-2010	-	30/04/15	Industrial discharge (Intake MA15)	Valid
WT00006420-2010	-	30/04/15	Industrial discharge (Intake MA17)	Valid
WT00006428-2010	-	30/04/15	Industrial discharge (Intake BR6)	Valid
WT00006609-2010	-	31/05/15	Industrial discharge (Intake HR1)	Valid
WT00006559-2010	-	30/04/15	Industrial discharge (Intake CR1)	Valid
Registration of Chemical Waste Producer				

Permit No.	Valid Period		Details	Status
	From	To		
5213-148-D2393-02	---	N/A	Chemical waste types: Spent oil	Valid
5213-172-D2393-01	---	N/A	Chemical waste types: Spent oil	Valid
Construction Noise Permit (CNP)				
GW-RS0962-09	23/12/09	22/06/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Hong Kong West Drainage Tunnel (Eastern Portal) (DSD Contract No. DC/2007/10), Tai Hang Road, Causeway Bay, Hong Kong.	Valid
GW-RS0512-10	22/06/10	21/12/10		
GW-RS0145-10	01/03/10	21/08/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10).	Valid
GW-RS0263-10	14/04/10	13/05/10		
GW-RS0348-10	14/05/10	13/06/10		
GW-RS0463-10	14/06/10	13/07/10		
GW-RS0877-09	24/11/09	23/05/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at a construction site of "Hong Kong West Drainage Tunnel" near Stubbs Road Garden, Wan Chai, Hong Kong	Valid
GW-RS0412-10	24/05/10	23/11/10		
GW-RS0522-10	24/06/10	23/12/10		
GW-RS0075-10	29/01/10	28/07/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at a site near the junction of Mount Butler Road and Henderson Road, Hong Kong.	Valid
GW-RS0155-10	23/02/10	21/08/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Smithfield Road outside Mei Wah Mansion, Kennedy Town, Hong Kong.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RS0128-10	20/02/10	19/08/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Section of Pokfulam Road (near Football Field, Pokfulam Road Playground), Hong Kong	Valid
GW-RS0441-10	01/06/10	30/11/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at outside Hongkong Electric Centre, Kennedy Road, Hong Kong	Valid
GW-RS0468-10	10/06/10	09/12/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Junction of Magazine Gap Road and May Road, Mid-levels, Hong Kong.	Valid

**APPENDIX I
WASTE GENERATED QUANTITY**

Monthly Waste Flow Table

Quarter ending	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see notes 2)	Chemical Waste	Others, e.g. general refuse
	(in m ³)	(in m ³)	(in m ³)	(in m ³)	(in m ³)	(in m ³)	(in Kg)	(in Kg)	(in Kg)	(in Kg)	(in m ³)
Jan 2010	39537		15	38356	1166		6550	220		650	118
Feb 2010	30693		62	29570	1061		10730	180		3222	78
Mar 2010	40031		53	39263	715		13940	300		3726	112
Apr 2010	42997		62	42129	806		12810	200		1700	84
May 2010	42039		38	40859	1142		12290	315		2287	78
Jun 2010	42972		10	42437	525		14700	350		2531	95
Sub-Total	238269		239	232615	5415		71020	1565		14116	565
July 2010											
Aug 2010											
Sep 2010											
Oct 2010											
Nov 2010											
Dec 2010											
Total	238269		239	232615	5414.8		71020	1565		14116	565.2

- Notes:
- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (2) Plastics refer to plastic bottles/containers, plastic/foam from packaging material.
 - (3) Quantities in June 2010 are upto 30 June 2010.
 - (4) Assuming the conversion factor from m³ to ton for rock is 2.5.
 - (5) The materials reused in other Project shall not be treated as waste under the Waste Disposal Ordinance (Cap 354).
 - (6) The figures are included for the sake of completeness of record.

APPENDIX J
SUMMARY OF EXCEEDANCES

Contract No. DC/2007/10 – Design and Construction of Hong Kong West Drainage Tunnel

Exceedance Report

Eastern Portal

- (A) Exceedance Report for Air Quality (1 hour TSP)
(NIL in the reporting quarter)**
- (B) Exceedance Report for Air Quality (24 hours TSP)
(NIL in the reporting quarter)**
- (C) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Western Portal

- (D) Exceedance Report for Air Quality (1 hour TSP)
(NIL in the reporting quarter)**
- (E) Exceedance Report for Air Quality (24 hours TSP)
(NIL in the reporting quarter)**
- (F) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intakes

Intake E5A

- (G) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake E7

- (H) Exceedance Report for Construction Noise
(One Limit Level exceedance was recorded at NC9 on 13th May 2010.)**

Intake PFLR1

- (I) Exceedance Report for Construction Noise
(One Action Level exceedance was recorded on 2nd June 2010.)**

Intake RR1

- (J) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake THR2

- (K) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake W0

- (L) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake W5

- (M) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake W8

- (N) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake P5

- (O) Exceedance Report for Construction Noise
(NIL in the reporting month)**

Intake TP789/TP4

- (P) Exceedance Report for Construction Noise
(One Action Level exceedance was recorded for the complaint received on 22nd April 2010.)**

**APPENDIX K
COMPLAINT LOGS**

APPENDIX K – COMPLAINT LOG

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
Com-2008-05-003	Construction site at Eastern Portal	22 May 2008	The complaint was lodged by Ms. Ng on 22 May 2008 regarding noise nuisance generated from the construction activities at the construction site of Eastern Portal	<p>According to the Contractor, only one excavator and one generator were operated for the excavation works around 8 am on 22 May 2008 at the Eastern portal. No other construction activities were conducted.</p> <p>In response to the complaint, The Contractor agreed to reschedule their current works activities, with immediate effect from 23 May 2008, that only site preparation works without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at the Eastern Portal area.</p> <p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in May and (2) no non-compliance or observation on noise was recorded.</p>	Closed
Com-2008-05-004	Construction site at Western Portal (Marine Works)	31 May 2008	The complaint was lodged by one of the local resident on 31 May 2008 regarding the noise nuisance generated from the marine works at Western Portal.	According to the Contractor, only two derrick barges and one tug boat were operated for the seabed formation works around 18:00 hrs on 31 May 2008 at the Western Portal. No other construction activities were conducted.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in May and (2) no non-compliance or observation on noise was recorded.</p>	
Com-2008-07-007	Construction site at Eastern Portal	2 July 2008	<p>The complaint was lodged by a resident of The Legend on 2 July 2008 regarding noise nuisance generated from the construction activities at the construction site of Eastern Portal</p>	<p>According to the Contractor, only one generator and one drilling rig (Jumbo) were operated for the preparation works around 7:30a.m on 2 July 2008 at the Eastern portal. Construction noise was found from other construction site (Gammon Construction Limited) adjacent to Eastern Portal area.</p> <p>In response to the complaint, The Contractor review his forthcoming operations within the Eastern Portal site as previous they agreed, reschedule their current works activities, with immediate effect from 23 May 2008, that only site preparation works without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at the Eastern Portal area.</p> <p>Additional noise monitoring was conducted on 16 and 17 July 2008 during the drilling rig (Jumbo), excavator and wheel loader were operated for drilling works.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in June and July 2008 and additional noise monitoring (2) no non-compliance or observation on noise was recorded.</p>	
COM-2008-10-011	Construction site at Western Portal	11 October 2008	<p>The complaint was lodged by one of the resident of Victoria Road, Ms Cheung on 11 October regarding about the noise nuisance generated from the construction works at Western Portal</p>	<p>According to the Contractor, excavation works and marine works including sheet piling works were also conducted at the time of complaint at Western Portal</p> <p>Additional noise monitoring was conducted on 15 October 2008, drilling works, excavation works and marine works including sheet piling works were also conducted. The construction noise levels measured during the construction works were well below the construction noise limit of 75 dB(A)</p> <p>The Contractor agreed to reschedule the starting time of the construction works to 8:15am on every Saturday that without noise nuisance from the construction works to the nearby residents will be carried out from 7:00 am to 8:15 am at the Western Portal area.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A). Also, the Contractor has implemented the remedial measure that reschedule the starting time of the construction works to 8:15am on every Saturday immediately after receiving the complaint to minimize the noise nuisance to the nearby residents.</p>	
COM-2008-10-012	Construction site at Intake TP5	15 October 2008	<p>The complaint was lodged by Mr Choi on 15 October 2008 regarding about the noise generated from the GI works, which starts from 8:30 hrs to 17:30 hrs next to Aigburth at May Road.</p>	<p>According to the information provided by the Contractor, only rotary type drill rigs and water pumps were operated for the GI works at the time of complaint at Intake TP5.</p>	Closed
COM-2008-10-013	Construction site at Intake TP5	31 October 2008	<p>The complaint was lodged by Mr Lai on 31 October 2008 regarding the black smoke is emitted and noise is generated from the machine at the site (Intake TP5), he needed to close the windows to prevent the black smoke from entering his flat and to attenuate the noise.</p>	<p>Additional site inspection and noise monitoring at the podium of the Valverde at May Road were conducted on 3 Nov 2008 and 24 Oct, 5 Nov, 7 Nov 2008 respectively.</p> <p>The Contractor agreed to reschedule the starting time of the construction works to 9:30am on every Saturday and 8:00 on normal weekdays that without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at Intake TP5. Acoustic insulating materials</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-11-015	Construction site at Intake TP5	4 November 2008	The complaint was lodged by Ms Lee on 4 November regarding the noise nuisance generated from the construction works at Intake TP5.	<p>have been applied for enclosing water pump and rotary type drill rigs to minimize the noise nuisance to the nearest residents.</p> <p>Base on the information collected, the noise level measured at the podium of the Valverde at May Road were well below the construction noise limit of 75 dB(A) after the Contractor has implemented the remedial measure.</p>	
COM-2008-11-016	Construction site at Western Portal	17 November 2008	The complaint was lodged by Mr Cheng on 17 November 2008 regarding dust nuisance arising from the soil nailing works at the roadside slope of Cyberport Road.	<p>According to the information provided by the Contractor, soil nailing works were conducted and some plant equipments i.e air compressor and generator were operated at the time of complaint at Western Portal.</p> <p>Base on the regular air quality monitoring in November 2008 at Outside Aegean Terrace (AQ2) and Outside The Site Office at Western Portal (AQ3), the dust levels measured at AQ2 for 1 hour TSP and at AQ3 for 24 hour TSP were well below the Action Level (321µg/m³ for 1 hour TSP and 156µg/m³ for 24 hour TSP). Also, the Contractor has implemented the dust suppression measures to prevent dust nuisance from the construction activities including soil nailing works.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-11-019	Construction site at Western Portal	29 November 2008	The complaint was lodged by Ms Cheung on 1 December 2008 regarding noise nuisance at Western Portal at 08:30 hrs approx on 29 November 2008 and 00:30 on 1 December 2008.	<p>According to the information provided by The Contractor, no construction works was carried out at the temporary jetty at the time of complaint (00:30 on 1 December 2008) at Western Portal.</p> <p>However, base on the regular noise monitoring at Outside Aegean Terrace (NC3), the noise level measured during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A).</p>	Closed
COM-2008-12-020	Construction site at Western Portal	28 December 2008	The complaint was lodged by Ms Cheung on 28 December 2008 regarding the excavator was found working within Western Portal works area on Sunday.	<p>The complaint was considered not justifiable as Construction Noise Permit (CNP) – CNP No. GW-RS0827-08 has been granted from EPD for carrying out the construction works at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10) between 1 December 2008 at 1900 hours and 28 February 2009 at 2400 hours. The powered mechanical equipment can be operated during the hours as below:</p> <ul style="list-style-type: none"> a) Any day not being a general holiday between 1900 – 2300 hours b) General holiday (including Sundays) between 0700 – 1900 hours 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-01-021	Muddy Water Discharged into Sea at Western Portal	21 January 2009	Muddy water was observed from discharging into the sea at Western Portal Site	<p>Base on the information collected, the muddy water discharged into the sea is considered due to the operations of excavation of stilling basin and poor condition of the silt curtain.</p> <p>The Contractor agreed to review their current provisions to prevent any muddy water from discharging into the sea again and close check the condition of the silt curtain.</p>	Closed
COM-2009-01-022(A)	Construction site at Western Portal	12 January 2009	The complaint was lodged by Mr Chan, the assistant of Mr CHAN Ngok pang (Southern District Councillor) about the resident in Baguio Villa near Victoria Road, Mr Ronald Chan concerns on the noisy activities carried out at Western Portal site.	<p>Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A). Aegean Terrace is at location close to the major site activities compared with Baguio Vila. Also, The Contractor agreed to reschedule their current works activities, no noisy work will be carried out at Western Portal Site before 8:00a.m.</p>	Closed
COM-2009-01-022(B)		21 January 2009	The complaint was lodged by resident of Aegean Terrace at Sassoon Road about the noise nuisance generated from Western Portal Site.		
COM-2009-01-022(C)		21 January 2009	The complaint was lodged by the resident in Baguio Villa near Victoria Road about noisy works at Western Portal Site.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-02-023	Construction site at Eastern Portal	7 February 2009	Complaint of Construction Noise at Early Morning (07:45hrs) at Eastern Portal Site	<p>Based on the information collected, the construction noise at about 07:45hrs on 7 February 2009 was due to the checking of the backhole by the sub-contractor.</p> <p>The Contractor was reminded to strengthen their site supervision and provide sufficient site-specific environmental training for sub-contractor to ensure that such situation would not be recurred.</p>	Closed
COM-2009-03-025	Construction site at Western Portal	2 March 2009 4 March 2009	Complaint of noise generated by midnight works and night-time lighting at Western Portal Site	<p>Base on the information collected, the regular noise monitoring was conducted during the construction works at the restricted hours. The noise measurement results were well below the construction noise limit of 65dB(A) for the period of 0700-2300 hrs on holiday; and 1900-2300 hrs on all other days and baseline level during the night time.</p> <p>The Contractor was reminded to strengthen their site supervision and implement necessary noise mitigation measures to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours.</p> <p>Regarding the complaint of spotlight hanging on the plant at the site portion WP, The Contractor was reminded to implement the mitigation measures for Visual during the construction by controlling the night-</p>	Closed
COM-2009-03-026		7 March 2009	Complaint of pipe hitting noise at midnight at Western Portal Site.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				time lighting so that the residual visual impacts can be accepted.	
COM-2009-04-028	Construction site at Western Portal	7 April 2009	Complaint of noise generated from the construction works conducted till 11:00pm at Western Portal of the Hong Kong West Drainage Tunnel.	According to the information provided by The Contractor, TBM, conveyor belt, ventilation fan, tower crane and cherry picker were operated for the construction works on 7 April 2009 before 11:00pm and only TBM works with conveyor belt and ventilation fan were operated on 10 April 09 (Sunday). No operation of derrick barge on 10 April 09.	Closed
COM-2009-04-029		10 April 2009	Complaint of noise generated by TBM works at Western Portal.	<p>According to the photos taken on 8 April 2009, misplacement of plant was observed at Western Portal Site. Upon advice, The Contractor immediately moved the fan properly.</p> <p>Based on the information collected, the construction noise levels measured were well below the construction noise limit of 75 dB(A) for the period of 0700-1900 hrs on normal weekdays, 65 dB(A) for the period of 0700-2300 hrs on holiday; and 1900-2300 hrs on all other days and baseline level for the period of 2300-0700 hrs of next day. The ground borne noise levels measured were also well below the construction ground borne noise standards (i.e. 65</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>dB(A) – Daytime (except General Holiday and Sundays) and 55 dB(A) – Daytime during general holidays and Sunday and all days during Evening (1900 to 2300 hrs). No exceedances of noise level have been recorded in March and April 2009.</p> <p>The Contractor was advised to strictly follow the conditions of the permit to avoid any misplacement of plants in the future. Also, The Contractor should take sufficient noise mitigation measures to minimize the environmental impact on the nearby community as recommended in the approved EIA report.</p> <p>In addition, DNJV already arranged tailors made training for the Production Team including the senior management and foreman to explain the conditions and requirements listed on the CNP and delegated one Engineer to ensure all construction activities and PMEs to be used are fully complying with CNP and legislation requirements before the commencement of the construction activities during the restricted hour.</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected, regular noise Monitoring was conducted during the night time to check the noise levels are complying with the construction noise criteria. The noise levels measured at NC3 during the construction works at night time were well below the construction noise limit.</p> <p>The Contractor was reminded to strengthen their site supervision by delegated Engineer to ensure all construction activities and PMEs to be used are fully complying with CNP and legislation requirements and implement necessary noise mitigation measures as recommended in the Approved EIA report to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours.</p>	
COM-2009-04-030	Construction site at Western Portal	30 April 2009	Complaint of Construction Noise Generated at Night at Western Portal.	According to the site activities diaries, TBM chainage, TBM excavation, installation of segment ring, pea gravel & mortar injection and installation cables & pipes at gantries were the activities conducted in the night of 30 April 2009.	Closed
COM-2009-05-031		4 May 2009	Complaint of low frequency noise emitted from the construction site at Western Portal.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
		11 May 2009	Complaint of Construction Noise nuisance generated from the Western Portal Site from day to night.	<p>sound of locomotive and tower crane operations.</p> <p>No exceedance of noise level was recorded since the commencement of the project works at Western Portal Site. The noise levels measured at NC3 during the construction works were well below the construction noise limit.</p> <p>The Contractor will continue implementing their mitigation measures (e.g. Instruct workers not to shout during work in the evening; no horn signal of locomotive after 6:55 pm).</p>	
COM-2009-05-032	Construction site at Eastern Portal	13 May 2009	The complaint was lodged by a resident regarding the Construction Noise Nuisance from the construction works that were carried out from early morning till night time at Eastern Portal Site Area.	<p>Based on the information collected, the noise levels measured at NC1/NC1a and NC2 during the construction works were well below the construction noise limit or baseline level.</p> <p>The Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents especially during the restricted hours.</p>	Closed
COM-2009-06-035	Hong Kong West Drainage Tunnel Construction Site at Cyberport	3 June 2009	EPD received a public complaint raised by Mr. Lee regarding the transportation and disposal of construction wastes from Hong Kong West	Base on the information collected, alternative disposal ground is proposed by The Contractor and they have been submitted the relevant information and sought the approval from Supervising	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			Drainage Tunnel Construction Site at Cyberport on 3 June 2009.	Officer. The Contractor also maintains the daily record with details of each disposal trip from the Site and the disposal ground.	
COM-2009-06-037	Construction site at Eastern Portal	23 June 2009	The few noise complaints were lodged by a resident of The Legend and Ronsdale Garden regarding the Construction Noise Nuisance from the construction works at Eastern Portal Site Area since 7:00a.m and in the afternoon.	Based on the information collected, the noise levels measured at NC1 and NC2 during the construction works were well below the construction noise limit or baseline level. In response to the complaints, the head of hydraulic breaker has been wrapped with sound proof materials and movable noise barriers were provided for rock excavation to reduce noise. The Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents.	Closed
COM-2009-06-038			The complaint was raised by Ms Wong of Goodwell Property Management, she wrote on behalf of the Estate Owner Committee of Legend at Tai Hang about noise nuisance arising from the excavation works at Eastern Portal site portion. The Committee requested the Contractor to provide mitigation measures to minimise the impact.		
COM-2009-08-040	Construction site at Intake PFLR1	26 August 2009	The complaint was relating to the noise generated from the construction activities of breaking of the existing boundary wall of Pokfulam Road Playground by use of the	Noise monitoring results conducted on 1 September 2009 at NC11 - Honey Court for the Intake PFLR1 was submitted and no exceedance was recorded. In addition, based on the regular site inspection conducted at Intake PFLR1, no observation/non-	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			hand-held electric breaker.	<p>compliance on air quality was identified. The environmental conditions of the site will be continuously reviewed and monitored.</p> <p>DNJV had installed tarpaulin shielding and cover to mitigate not only the potential emission of exhausted smoke, but also the visual impact to the residents nearby.</p>	
COM-2009-09-042	Construction site at Eastern Portal	21 September 2009	The complaint was raised by a resident of The Legend regarding poor housekeeping and construction noise nuisance from the Eastern Portal Site Area.	<p>Based on the information gathered in the Investigation, the Contractor had taken action immediately to rectify the complaint of poor housekeeping. The white site office was painted green in harmony with the surrounding environment and the site was maintained in a clean and tidy condition. All materials required for temporary works were stored in an orderly manner.</p> <p>Regarding the complaint of construction noise impact, the noise levels measured at The Legend (NC2) during the construction works in the normal working hours were well below the construction noise limit level.</p> <p>Nevertheless, the Contractor is also committed to implementing sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents and</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				provide training for the workers to increase awareness of their environmental responsibilities.	
COM-2009-10-044	Construction site at Eastern Portal	6 and 7 October 2009	The complaint was raised by a resident of The Legend and Ronsdale Garden regarding the construction noise nuisance from the Eastern Portal Site Area.	Based on the information gathered in the Investigation, the noise levels measured (additional noise monitoring) at The Legend (NC2) and Ronsdale Garden during the construction works including rock breaking works and soil nailing works were ranged from 68.4dB(A) to 75.3 dB(A) in the normal working hours. The Contractor is committed to implementing sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents and provide training for the workers to increase awareness of their environmental responsibilities. It is recommended to increase the construction noise monitoring frequency for Eastern Portal Site to check the mitigation effectiveness.	Closed
COM-2009-10-045					
COM-2009-11-054	Construction site at Western Portal	23 and 29 November 2009	The complaint was raised by a resident of Aegean Terrace regarding the construction noise nuisance from the Western Portal Site Area.	Base on the information collected, the noise levels measured at NC3 during the construction works were well below the construction noise limit.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Nevertheless, the Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report, Clause 5.4.15 to minimize/avoid the nuisance caused to the nearby residents.</p>	
COM-2009-12-059	Construction site at Intake MB16	27 November 2009	<p>The complaint was received on 2 November 2009 regarding the dust nuisance caused by the works at the Construction Site at Mount Butler Road near Clementi Road (Intake MB16). EPD subsequently issued a notice of complaint.</p>	<p>Based on the information collected, the Contractor has implemented the dust suppression measures to prevent dust nuisance from the construction activities.</p> <p>During the site inspection in November 2009, slope improvement works including soil nailing works were observed from other construction site adjacent to DNJV's construction works at Mount Butler Road.</p>	Closed
COM-2009-12-061	Construction site at Intake PFLR1	23 and 28 December 2009	<p>Two public complaints were received from the resident of Pok Fu Lam Road on 23rd and 28th December 2009 respectively about the construction noise nuisance from the construction site at Intake PFLR 1.</p>	<p>Based on the information gathered in the Investigation, the noise levels measured at Honey Court (NC11) during the construction works were well below the construction noise limit.</p> <p>The location of the designated noise monitoring station (NC11 – Honey Court) is at location close to the construction site compared with Pok Fu Lam Height.</p> <p>In addition, a large scale innovation works being undertaken at a resident building adjacent to the Pok Fu Lam Height was observed during the routine site inspection.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				The innovation works included hammering and drilling on the outer walls of the building and contributed significantly to the noisy environment.	
COM-2010-01-062	Construction site at Western Portal	3 January 2010	The public complaint was received from the resident of Bel-Air through the project hotline on 3rd January 2010 about “wooning” sound heard after midnight, and he suspected that the sound was coming the construction sites at Cyberport.	Base on the information collected, the noise levels measured at NC3 during the construction works were well below the baseline level. The location of the designated noise monitoring station (NC3 – Outside Aegean Terrace) is at location close to the construction site compared with Bel-Air. The Contractor will continue implementing the existing noise mitigation measures at the Western Portal to minimize the environmental impact to the nearby residents.	Closed
COM-2010-01-063 COM-2010-01-066(1), (2) and (3)	Intake MB16	20 January 2010 23, 25, 27 January and 2 February 2010	The first complaint was raised by the resident at No. 58 Mount Butler Road about the noise and vibration generated from the works on 20 January 2010. Three complaints were raised by the resident of Amber Lodge through the Project Hotline regarding the low frequent vibration from underground on 23, 25, 27 January and 2 February 2010.	Based on the EIA assessment results, No. 58 Mount Butler Road and Amber Lodge are not the potential ground borne noise sensitive receivers as they are not within the influence zone near the Main Tunnel alignments from Cyberport to Tai Hang and the alignments of the adits. The additional ground borne noise levels measured at inside Amber Lodge during the TBM works were well within the construction ground borne noise standards.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>The Contractor volunteered to stop the operation of the East TBM between midnight and 07:00 hours in Week 6 and 7 after which the machine has moved far away from these premises</p>	
COM-2010-02-073	Western Portal	3 February 2010	<p>Complaint of noise generated by the operation of plants, rock falling and flash lighting within Western Portal site area.</p>	<p>Base on the regular noise monitoring, the noise levels measured at NC3 during the construction works were well below the baseline level.</p> <p>The Contractor will continue implementing the existing noise mitigation measures at the Western Portal to minimize the environmental impact to the nearby residents.</p>	Closed
COM-2010-03-080	Intake PFLR1	1 March 2010	<p>The public complaint was received from the resident of Honey Court referred by a DC member (Mr. Stephen Chan) on 1st March 2010 about the construction noise nuisance from the construction site at Intake PFLR 1</p>	<p>Based on the information gathered in the Investigation, the noise levels measured at Honey Court (NC11) in February and March 2010 were ranged from 62.3 dB(A) to 74.7 dB(A). The noise levels were marginally below the 75dB (A) limit level.</p> <p>The contractor was reminded to implement necessary mitigation measures to curb inducing contribution to the surrounding noise environment.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-03-081	Intake TP789	5 March 2010	The complaint was received from Kerry Management Ltd. on 5th March 2010 about the construction noise complaints raised by some tenants of Tavistock. They complained about the noisy activities being carried out at Intake TP789 on Saturday.	Based on the information gathered in the investigation, the noise levels measured at Tregunter Path near Tavistock were below the construction noise limit and the Contractor has already implemented the noise mitigation measures to reduce noise impact to the residents arising from the construction works. Nevertheless, we reminded the Contractor to closely monitor the effective implementation of the existing noise mitigation measures at Intake TP789. Review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.	Closed
COM-2010-03-082 and COM-2010-03-087	Western Portal	6 March 2010 15 March 2010	Two public complaints were received from the residents of Bel-Air at Western Portal on 6th and 15th March 2010 about the Construction Noise and Dust Nuisance from Hong Kong West Drainage Tunnel Construction Site at Cyberport (i.e. Western Portal Site) respectively.	Based on the information collected, the noise and air quality levels measured at NC3 and AQ2/AQ3 during the construction works were below the noise and air quality criteria respectively. Also, the Contractor has implemented appropriate environmental mitigation measures on site to reduce noise and dust impact to the residents arising from the construction works. Nevertheless, the Contractor was reminded to review the effectiveness of the implemented noise and air quality mitigation measures from time to time	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				during different construction phases.	
COM-2010-04-094	Western Portal	9 April 2010	The public complaint was received by EPD hotline on 9 th April 2010 regarding construction dust nuisance from the Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site)	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria. Also, the Contractor has implemented appropriate dust mitigation measures on site to reduce dust impact to the residents arising from the construction works. Although the air quality levels measured at AQ2 and AQ3 were below the air quality criteria, we advised the Contractor to maintain the existing air quality mitigation measures, to reduce the environmental impact on the nearby residents. Nevertheless, the Contractor was reminded to review the existing measures if such measures are enough and appropriate to suit the site condition from time to time during different construction phases to minimize the dust nuisance.	Closed
COM-2010-04-097	Intake TP789/TP4	22 April 2010	The complaint was received from resident of Tregunter Tower on 22 nd April 2010 about the noisy activities being carried out at Intake	Based on the information gathered in the investigation, the noise levels measured at Tregunter Path near Tavistock were below the construction noise limit and the Contractor has further improved the noise	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			TP789/TP4 in the morning.	<p>mitigation measures to reduce noise impact to the residents arising from the noise generation works.</p> <p>The Contractor agreed to reschedule the starting time of the noisy works to 9:00am on in the morning that no noisy works such as rock breaking will be conducted before 9:00am. In addition, enclosures consist of noise absorption blankets have been applied for enclosing Intakes construction areas to minimize the noise nuisance to the nearest residents.</p>	
COM-2010-04-100	Western Portal	30 April 2010	<p>The public complaint was received from the resident of Bel-Air on 30th April 2010 regarding the dust nuisance generated during loading / unloading operation from two barges at pier of Cyberport. Dark smoke was also emitted from the two barges.</p>	<p>Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria.</p> <p>The Contractor has taken initiative to minimize dust nuisance to the nearby residents by implementation of additional mitigation measures as below:</p> <ul style="list-style-type: none"> - To plan the installation of 3-sided curtain-like enclosure at the conveyor discharge point to the barge. - Mechanical cover closed even for empty trucks leaving the Site. - Written advice to subcontractor on the subject of dust suppression and speeding of vehicles. - Toolbox training to drivers on the new measures. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-05-105	Western Portal	7 May 2010	The second complaint was received via EPD Hotline on 7 May 2010. The anonymous complainant concerned about the dark smoke emitted from the barges on 4 May 2010 and many dump trucks parking outside the Western Portal Site on 5, 6 and 7 May 2010.	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria.	Closed
COM-2010-05-105 (2)		17 May 2010	The complaint was received via EPD Hotline on 17 May 2010. The anonymous complainant complaint about the open stockpile of dusty materials without covered entirely.	Although the air quality levels measured at AQ2 and AQ3 were below the air quality criteria, we advised the Contractor to maintain the existing air quality mitigation measures and review the existing measures if such measures are enough and appropriate to suit the site condition from time to time during different construction phases to minimize the dust nuisance. Other suitable dust control measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, where appropriate, should be adopted. Nevertheless, the Contractor is also committed to take sufficient dust mitigation measures as recommended in the approved EIA report including installation of 3-sided curtain-like enclosure at the conveyor discharge point to the barge to minimize the dust nuisance on the nearby residents.	
COM-2010-06-113	Intake PFLR1	2 June 2010	The complaint was received by DSD on 2 June 2010 regarding siren sound was generated from the site throughout the day which caused nuisance.	The noise source was generated from the alert system of the backhoe during operation. The backhoe was removed off site on 3 June 2010.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
	Western Portal	15 June 2010	A public complaint was received by EPD hotline on 15th June 2010 complained about the construction works from Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site) affect their health of respiratory system	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the Action Level (321µg/m3 for 1 hour TSP and 156µg/m3 for 24 hour TSP). Also, the Contractor has implemented appropriate dust mitigation measures, such as providing water sprays on exposed surface, covering dusty materials and placing dust generation works in an area sheltered on the top and three sides etc on site to reduce dust impact to the residents arising from the construction works.	Closed