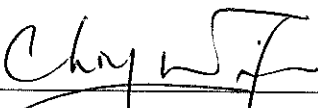


Dragages-Nishimatsu Joint Venture

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

Quarterly EM&A Report

July to September 2011
(version 3.0)

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.

CINOTECH accepts no responsibility for changes made to this report by third parties

CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

Introduction

1. This is the 14th 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 July and September 2011.
2. The construction activities undertaken in the reporting quarter were:
 - Adit excavation and outfall excavation at Western Portal, Adit excavation and River Channel construction at Eastern Portal;
 - Dropshaft pilot hole and reaming on-going at intake MA14, PFLR1, W10, W1, BR5 and BR4;
 - Dropshaft reaming at Intakes M3, B2, BR5, W10, PFLR1 and W1;
 - Cofferdam construction at Intakes CR1 and P5;
 - P5 dropshaft remedial measure works on-going;
 - Dropshaft Mechanical excavation at BR6, W5 and E7 on-going;
 - HDC works on-going at Intake W5;
 - Excavation of intake structure at Intakes W3, B2, RR1, MA17, W8, E5A, W1 and M3;
 - Permanent Intake structure works at MBD2, THR2, TP5, BR5, PFLR1, GL1, MB16, BR4, MA14, DG1, MA15, E5B, HR1, BR6, B2, TP789, TP4 and HKU1;
 - Dropshaft Lining Works at HKU1, TP789, E5B, MA15, TP5 and TP4.
 - Permanent Adit Lining works at W0, MB16, MBD2, E5B, MA15, HKU1, E7, SM1, TP5, TP4 and THR2 on-going;
 - Still Chamber lining works at HKU1, TP789, E5A, E5B, SM1, W8, W5, M3, B2, W1, W3, E7, W0, GL1 and MA15;
 - DDA submissions for Adit/Main Tunnel Intersection, Adits, Stilling Chambers and Turning Bays;
 - DDA submissions for temporary works, slope works and permanent works for Intake Structures;
 - DDA submissions for temporary and permanent works for Dropshafts;
 - Casting of dropshaft precast rings;
 - Intake SM1, MB16, THR2 and MBD2 metal works on-going;
 - Temporary Leaky cable to start installation.

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. There is no marine-based construction activity to be conducted in reporting quarter. However, baseline review for marine water quality monitoring was conducted in August 2011.

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>July 2011</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>August 2011</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	1	0	N.A.	N.A.
<i>September 2011</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>July 2011</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	1	0	N.A.	N.A.
<i>August 2011</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>September 2011</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>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake E7				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake MA14				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	1	0	N.A.	N.A.

Intake PFLR1				
<i>July 2011</i>				
Noise	1	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake THR2				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake W0				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	1	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake RR1				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake W5				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake P5				
<i>July 2011</i>				
Noise	1	0	N.A.	N.A.
<i>August 2011</i>				
Noise	1	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.

Intake W8				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake BR6				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake TP5&TP789				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake GL1				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake B2				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake CR1				
<i>July 2011</i>				
Noise	1	0	N.A.	N.A.
<i>August 2011</i>				
Noise	0	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.

Intake W10				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	1	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	N.A.
Intake BR5				
<i>July 2011</i>				
Noise	0	0	N.A.	N.A.
<i>August 2011</i>				
Noise	1	0	N.A.	N.A.
<i>September 2011</i>				
Noise	0	0	N.A.	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 19 monitoring stations, at NC1, NC2, NC3, NC4, NC5, NC6, NC7, NC8, NC9, NC10, NC11, NC12, NC13, NC14, NC15, NC16, NC17, NC18 and NC19 were conducted as schedule in the reporting period.

Eastern Portal

10. One Action Level exceedance was recorded due to the complaints received on 11th August 2011 during the reporting period.

Western Portal

11. One Action Level exceedance was recorded due to the complaints received on 2nd July 2011 during the reporting period.

Intake DGI

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

Intake E5A

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

Intake E7

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

Intake MA14

15. One Action Level exceedance was recorded due to the complaints received on 28th September 2011 during the reporting period.

Intake PFLR1

16. One Action Level exceedance was recorded due to the complaints received on 27th July 2011 during the reporting period.

Intake THR2

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

Intake RR1

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

Intake W0

19. One Action Level exceedance was recorded due to the complaints received on 9th August 2011 during the reporting period.

Intake W5

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

Intake P5

21. Two Action Level exceedances were recorded due to the complaints received on 8th July and 25th August 2011 respectively during the reporting period.

Intake W8

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

Intake BR6

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

Intake TP5&TP789

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

Intake GL1

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

Intake B2

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

Intake CR1

27. One Action Level exceedance was recorded due to the complaints received on 30th July 2011 during the reporting period.

Intake W10

28. One Action Level exceedance was recorded due to the complaints received on 24th August 2011 during the reporting period.

Intake BR5

29. One Action Level exceedance was recorded due to the complaints received on 26th August 2011 during the reporting period.

Construction Ground Borne Noise

30. Construction Ground Borne Noise Monitoring at GNC3 was temporary suspended since 7th May 2009 as the ISS EastPoint Property Management Ltd. received an instruction from the Incorporated Owners of Aegean Terrace that we are not permitted to conduct any noise monitoring inside Aegean Terrace for the Project.
31. According to the approved EIA report, noise monitoring should be performed at NSR1a (i.e. Crane Court) when TBM is operating through the tunnel section between points A and B). Therefore, Ground borne noise monitoring has been conducted at Crane Court (GNC4) since 3rd June 2009 during the TBM operated.
32. 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.
33. Ground borne noise monitoring at GNC5 was completed by end of November 2009.
34. Ground borne noise monitoring was conducted at GNC6 – French International School in the reporting month during the TBM operation and completed by end of June 2010.
35. Ground borne noise monitoring was conducted at GNC7 – Hong Villa was conducted as scheduled in the reporting period. No exceedance was recorded.

Water Quality

36. 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. However, baseline review for marine water quality monitoring was conducted in August 2011.

Environmental Licensing and Permitting

37. 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.

38. Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal).
39. 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, WT00006865-2010 for Intake BR5, WT00007039-2010 for Intake DG1, WT00007042-2010 for Intake W3, WT00007043-2010 for Intake GL1, WT00007130-2010 for Intake BR4, WT00007139-2010 for Intake BR6 – SNH17 and WT00007319-2010 for Intake B2).
40. Construction Noise Permit (License No.: GW-RS0125-11 and GW-RS0692-11 for Eastern Portal, GW-RS0483-11, GW-RS0584-11 and GW-RS0813-11 for Western Portal, GW-RS0244-11 and GW-RS0830-11 for Eastern Adits, GW-RS0149-11 and GW-RS0540-11 for Intake W0, GW-RS0167-11 and GW-RS0756-11 for Intake PFLR1, GW-RS0456-11 for Intake W3, GW-RS0514-11 for Intake MA17, GW-RS0341-11 for Intake SMH17, GW-RS0441-11 for Intake BR4, GW-RS0443-11 for Intake W1, GW-RS0566-11 and GW-RS0732-11 for adits and tunnel section in Central-Western District.)

Key Information in the Reporting Quarter

41. 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 (July 2011)	1	Construction noise at Western Portal	Investigation completed	Closed	---
	1	Construction noise at Intake P5			
	1	Construction noise at Intake PFLR1			

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received (July 2011)	1	Construction noise at Intake CR1	Investigation completed	Closed	---
	1	Dust Nuisance at Eastern Portal on 29 th July 2011			
Complaint received (August 2011)	1	Construction noise at Eastern Portal	Investigation completed	Closed	---
	1	Construction noise at Intake W0			
	1	Construction noise at Intake W10			
	1	Construction noise at Intake P5			
	1	Construction noise at Intake BR5			
Complaint received (September 2011)	1	Construction noise at Intake MA14	Investigation Report submitted	Closed	---
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

42. 11 environmental complaints were received and investigated during the reporting quarter.
43. No warning, summon and notification of successful prosecution was received in the reporting period.

Future Key Issues**Key Issues for the Coming Month**

44. 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 14th quarterly EM&A report summarizing the EM&A works for the Project in the period between July and September 2011.

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. Jackson Wong	CRE	6117 6639	2436 1012
		Ms. Angela Yan	RE	3961 5206	
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. Chu Chung Sing	Environmental Officer	3476 0753	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-o and 4a-e**. **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 19 monitoring stations, NC1, NC2, NC3, NC4, NC5, NC6, NC7, NC8, NC9, NC10, NC11, NC12, NC13, NC14, NC15, NC16, NC17, NC18 and NC19 were conducted as schedule in the reporting period.

Eastern Portal

- 4.6 One Action Level exceedance was recorded due to the complaints received on 11th August 2011 during the reporting period.

Western Portal

- 4.7 One Action Level exceedance was recorded due to the complaints received on 2nd July 2011 during the reporting period.

Intake DG1

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

Intake E5A

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

Intake E7

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

Intake MA14

- 4.11 One Action Level exceedance was recorded due to the complaints received on 28th September 2011 during the reporting period.

Intake PFLR1

- 4.12 One Action Level exceedance was recorded due to the complaints received on 27th July 2011 during the reporting period.

Intake THR2

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

Intake RRI

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

Intake W0

- 4.15 One Action Level exceedance was recorded due to the complaints received on 9th August 2011 during the reporting period.

Intake W5

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

Intake P5

- 4.17 Two Action Level exceedances were recorded due to the complaints received on 8th July and 25th August 2011 respectively during the reporting period.

Intake W8

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

Intake BR6

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

Intake TP5&TP789

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

Intake GL1

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

Intake B2

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

Intake CR1

- 4.23 One Action Level exceedance was recorded due to the complaints received on 30th July 2011 during the reporting period.

Intake W10

- 4.24 One Action Level exceedance was recorded due to the complaints received on 24th August 2011 during the reporting period.

Intake BR5

- 4.25 One Action Level exceedance was recorded due to the complaints received on 26th August 2011 during the reporting period.

Construction Ground Borne Noise

- 4.26 Construction Ground Borne Noise Monitoring at GNC3 was temporary suspended since 7th May 2009 as the ISS EastPoint Property Management Ltd. received an instruction from the Incorporated Owners of Aegean Terrace that we are not permitted to conduct any noise monitoring inside Aegean Terrace for the Project.
- 4.27 According to the approved EIA report, noise monitoring should be performed at NSR1a (i.e. Crane Court) when TBM is operating through the tunnel section between points A and B). Therefore, Ground borne noise monitoring has been conducted at Crane Court (GNC4) since 3rd June 2009 during the TBM operated.
- 4.28 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.
- 4.29 Ground borne noise monitoring at GNC5 was completed by end of November 2009.
- 4.30 Ground borne noise monitoring was conducted at GNC6 – French International School in the reporting month during the TBM operation and completed by end of June 2010.
- 4.31 Ground borne noise monitoring was conducted at GNC7 – Hong Villa was conducted as scheduled in the reporting period. No exceedance was recorded.

Water Quality

- 4.32 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. There is no marine-based construction activity to be conducted in reporting quarter.
- 4.33 Baseline review for marine water quality monitoring was conducted in August 2011 and the graphical presentations of the monitoring results are shown in **Appendix L**.

Underground water level

- 4.34 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.
- 4.35 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)	
22 July 2011	2.31
11 August 2011	13.00
16 September 2011	8.10
Location: TP789_DH2	
15 July 2011	14.10
11 August 2011	32.90
15 September 2011	14.33
Location: TP5_DH2	
15 July 2011	1.70
12 August 2011	1.63
15 September 2011	1.33
Location: THR2_DH7	
8 July 2011	2.23
11 August 2011	2.40
16 September 2011	2.40
Location:PFLR1_DH2	
16 July 2011	11.73
11 August 2011	9.84
14 September 2011	11.70

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

- Wastewater was observed directing to public drain at Intake W10.
- The discharge from sedimentation tank was observed milky.
- Stockpile was observed to be exposed at Intake W10.
- One compartment of sedimentation tank was observed full of deposited concrete and mud.
- The stagnant silty water was observed within H-pile of Intake W5.
- The three compartments of sedimentation tank were observed almost silty at Intake MA17 and THR2.
- Stagnant water should be avoided at Eastern Portal and H-pile of E7.
- Site drain at Western Portal, sedimentation tank of Intake HR1 and E5A were observed almost silty.
- Sedimentation tank was observed full of silty water and cannot function properly at Intake E5A.
- One compartment of sedimentation tank was observed full of silty water due to directly surface runoff at Intake THR2.
- No sand bag was placed to surround the drain at Intake M3 while there is surface runoff during works.

Air Quality

- The stockpile was observed to be disposed at Intake DG1.
- Dark smoke emission was observed from the hydraulic breaker at Western Portal.

Waste/Chemical Management

- Oil drum was observed to be stored without drip tray at Western Portal.
- Oil stain was observed near the site boundary at Western Portal.
- Oil stain was observed to be disposed at Intake BR6, MA17 and TP789.

5.4 The major deficiencies identified by IEC in the reporting quarter are summarized as follow:

*28th July 2011*Follow Up Observations:

- Oil stain observed near BR6 entrance was cleaned regarding the Contractor's photo record.
- No milky effluent was observed at sedimentation tank at BR6. Sedimentation tank was desilted.

Observations:

- Stagnant water was observed at H-pile at W10 and W5. The Contractor was requested to clear water.
- The Contractor was requested to dewater unused sedimentation tank at P5.

Reminder:

- The Contractor was reminded to provide measures to prevent water accumulated in drip tray after raining.

*31st August 2011*Follow Up Observations:

- The stagnant water on the H-pile at W10 and W5 has been cleared by the Contractor.

Observations:

- Chemical containers were found scattering at Eastern Portal without proper drip tray. The Contractor was requested to relocate the containers to designated area for proper storage. Proper drip tray shall also be provided for the containers.
- Stagnant water was observed inside the drip pan at E5A. The Contractor was requested to remove the stagnant water.
- Oil leakage was observed on the construction equipment at E5B. The Contractor was requested to provide regular maintenance to equipments.
- Stagnant water was observed on the H-pile beam at E7. The Contractor was requested to remove the stagnant water.

In September 2011, due to the typhoon signal no.8 on 29th September 2011, the monthly IEC audit was arranged and re-scheduled on 6th October 2011.

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, WT00006865-2010 for Intake BR5, WT00007039-2010 for Intake DG1 WT00007042-2010 for Intake W3, WT00007043-2010 for Intake GL1, WT00007130-2010 for Intake BR4, WT00007139-2010 for Intake BR6 – SNH17 and WT00007319-2010 for Intake B2).
- 5.9 Construction Noise Permit (License No.: GW-RS0125-11 and GW-RS0692-11 for Eastern Portal, GW-RS0483-11, GW-RS0584-11 and GW-RS0813-11 for Western Portal, GW-RS0244-11 and GW-RS0830-11 for Eastern Adits, GW-RS0149-11 and GW-RS0540-11 for Intake W0, GW-RS0167-11 and GW-RS0756-11 for Intake PFLR1, GW-RS0456-11 for Intake W3, GW-RS0514-11 for Intake MA17, GW-RS0341-11 for Intake SMH17, GW-RS0441-11 for Intake BR4, GW-RS0443-11 for Intake W1, GW-RS0566-11 and GW-RS0732-11 for adits and tunnel section in Central-Western District.)

- 5.10 The status of these licenses and permits obtained for the Project is summarized in **Appendix H**.

Status of Waste Management

- 5.11 During this reporting quarter, a total 51 nos. of dump trucks of waste were delivered to SENT, 23 trips of C&D waste were delivered to Tuen Mun Fill Bank. 458 and 13 trips of C&D waste were delivered to Chai Wan Public Barging Point and TKO Fill Bank respectively. Both the trip ticket system and chit accounting system for disposal of waste were operating smoothly to date. 7 trucks overloading case was recorded during this reporting period (6 cases were within the 105% allowable buffer weight and 1 case was over the 5% allowable buffer weight). 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.
- 5.12 The rock materials from the Eastern Portal and Western Portal were received by the alternative disposal sites at ZhongShan. Some of the tunnel spoils from adits were also received by Nishimatsu Construction Co. Ltd. Construction Site of MTR SIL(E) Contract 902 which was started from 30th June 2011.
- 5.13 The monthly summary of waste flow table for July – September 2011 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

Eastern Portal

- 6.3 One Action Level exceedance was recorded due to the complaints received on 11th August 2011 during the reporting period.

Western Portal

- 6.4 One Action Level exceedance was recorded due to the complaints received on 2nd July 2011 during the reporting period.

Intake MA14

- 6.5 One Action Level exceedance was recorded due to the complaints received on 28th September 2011 during the reporting period.

Intake PFLR1

- 6.6 One Action Level exceedance was recorded due to the complaints received on 27th July 2011 during the reporting period.

Intake W0

- 6.7 One Action Level exceedance was recorded due to the complaints received on 9th August 2011 during the reporting period.

Intake P5

- 6.8 Two Action Level exceedances were recorded due to the complaints received on 8th July and 25th August 2011 respectively during the reporting period.

Intake CRI

- 6.9 One Action Level exceedance was recorded due to the complaints received on 30th July 2011 during the reporting period.

Intake W10

- 6.10 One Action Level exceedance was recorded due to the complaints received on 24th August 2011 during the reporting period.

Intake BR5

- 6.11 One Action Level exceedance was recorded due to the complaints received on 26th August 2011 during the reporting period.

Construction Ground Borne Noise

- 6.12 No ground borne noise monitoring was conducted in the reporting period.

Construction Impacts on Suspended Solids

- 6.13 Water quality monitoring was temporary suspended starting from 31st October 2009.

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

- 6.14 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 11 environmental complaints, including 5 for July 2011, 5 for August 2011 and 1 for September 2011 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 100 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:

- Adit excavation, arch tunnel structures at West and East Portal;
- Permanent Adit lining works at W0, TP5, TP789, E7, HKU1, MA15, E5B, E5A, M3, W5 and SM1;
- Stilling chamber lining works at GL1, E5A, M3, W10, W1, PFLR1, B2, BR5, DG1, HR1, E7, W8, W3, W5 and E5B;
- Permanent Intake Structure Construction at Intake DG1, PFLR1, BR5, GL1, HKU1, MB16, MBD2, THR2, HR1, BR4, TP4, TP5, MA15, E5A, E5B, BR6, W3, B2, TP789 and W10;
- Excavation of dropshaft at Intakes MA14 and BR4 by Raise Boring method;
- Excavation of intake structure at Intakes E7, W1, MA17, W8, P5 and CR1;
- Excavation of Dropshaft at Intake CR1 by HDC to start;
- Cofferdam construction at Intakes P5;
- Casting of dropshaft precast rings;
- Permanent dropshaft lining works at E5A, GL1 and SM1;
- Penstock and metal works at Intakes TP4, MBD2, THR2, TP5, HKU1, TP789, E5B and MA15; and
- Adit Excavation : BR6 and W3.

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.

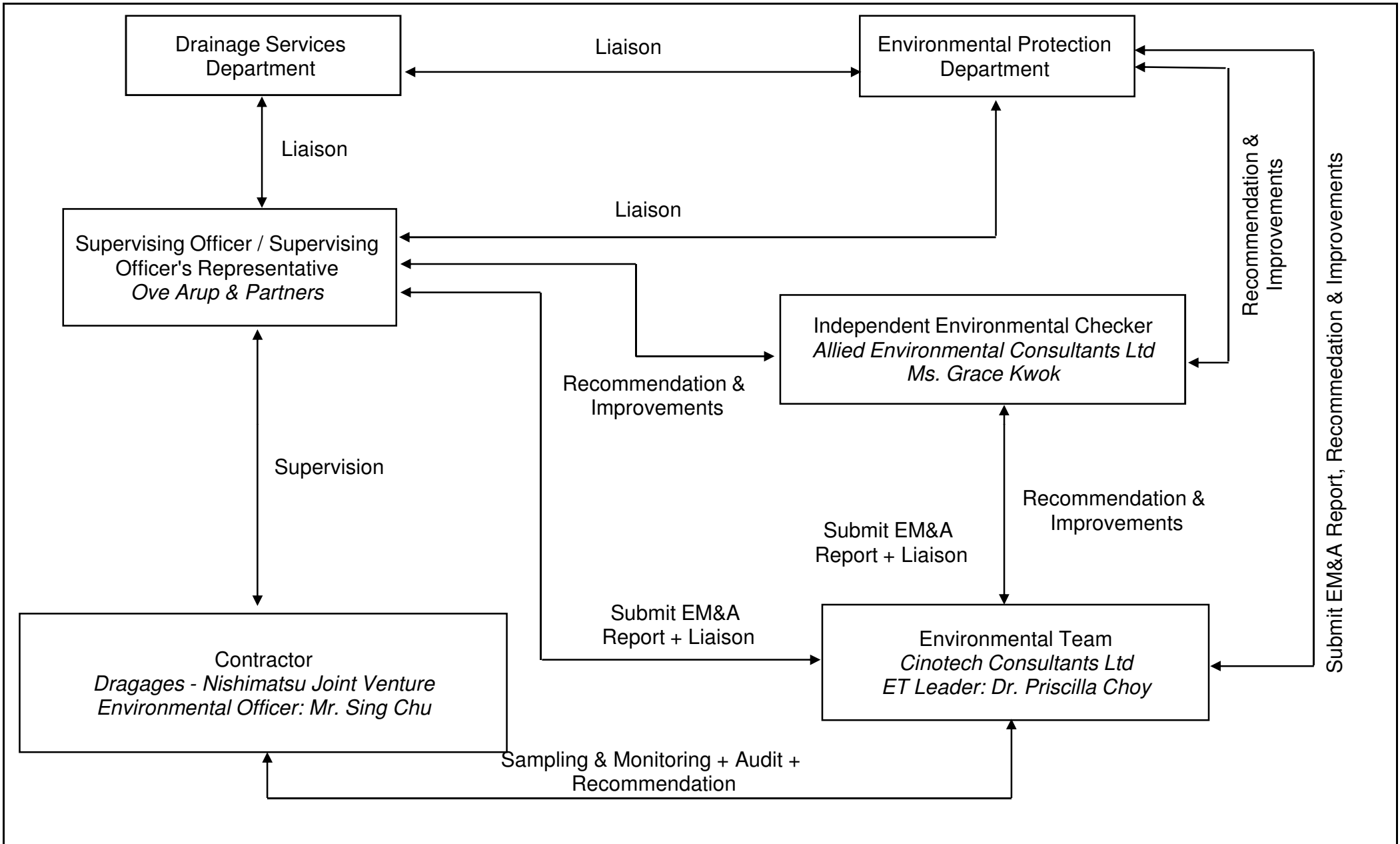
Waste/Chemical Management

- 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.

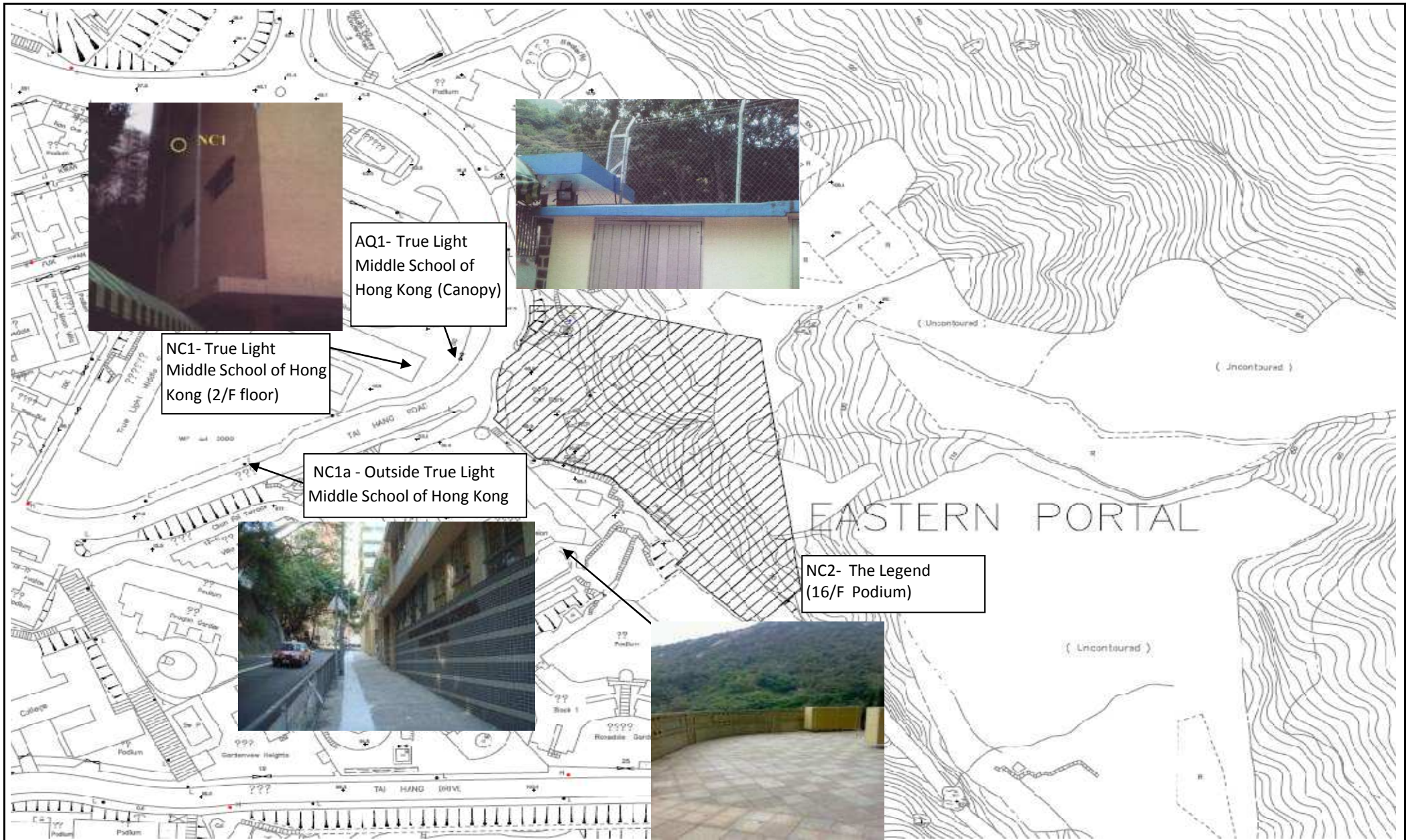
FIGURES



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
			Apr-08	1.1
				CINOTECH



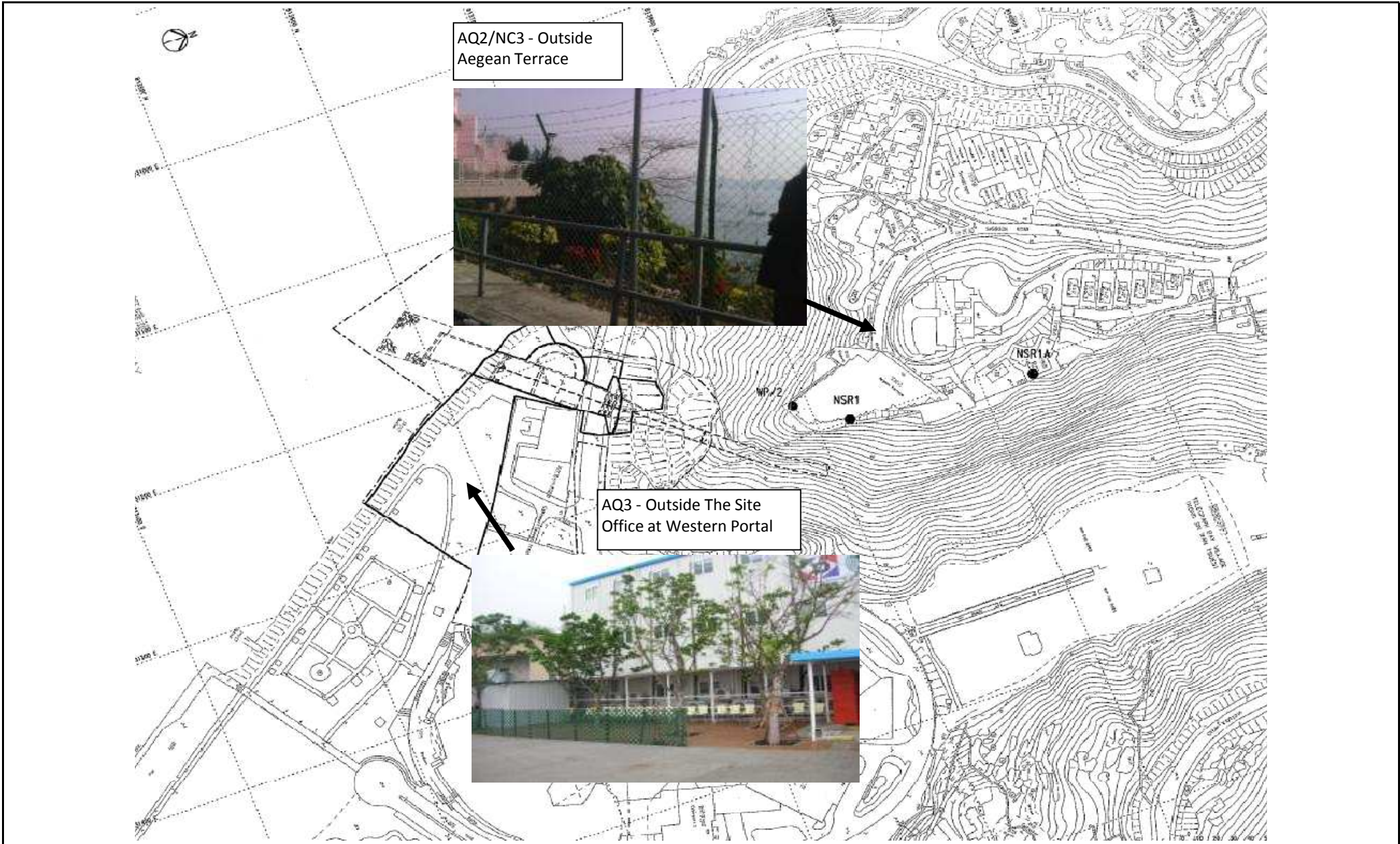
Title	Contract No. DC/2007/10		Scale	N.T.S	Project No.	MA8001
	Design and Construction of Hong Kong West Drainage Tunnel		Date	Nov-09	Figure	2.1
Organization Chart			CINOTECH			



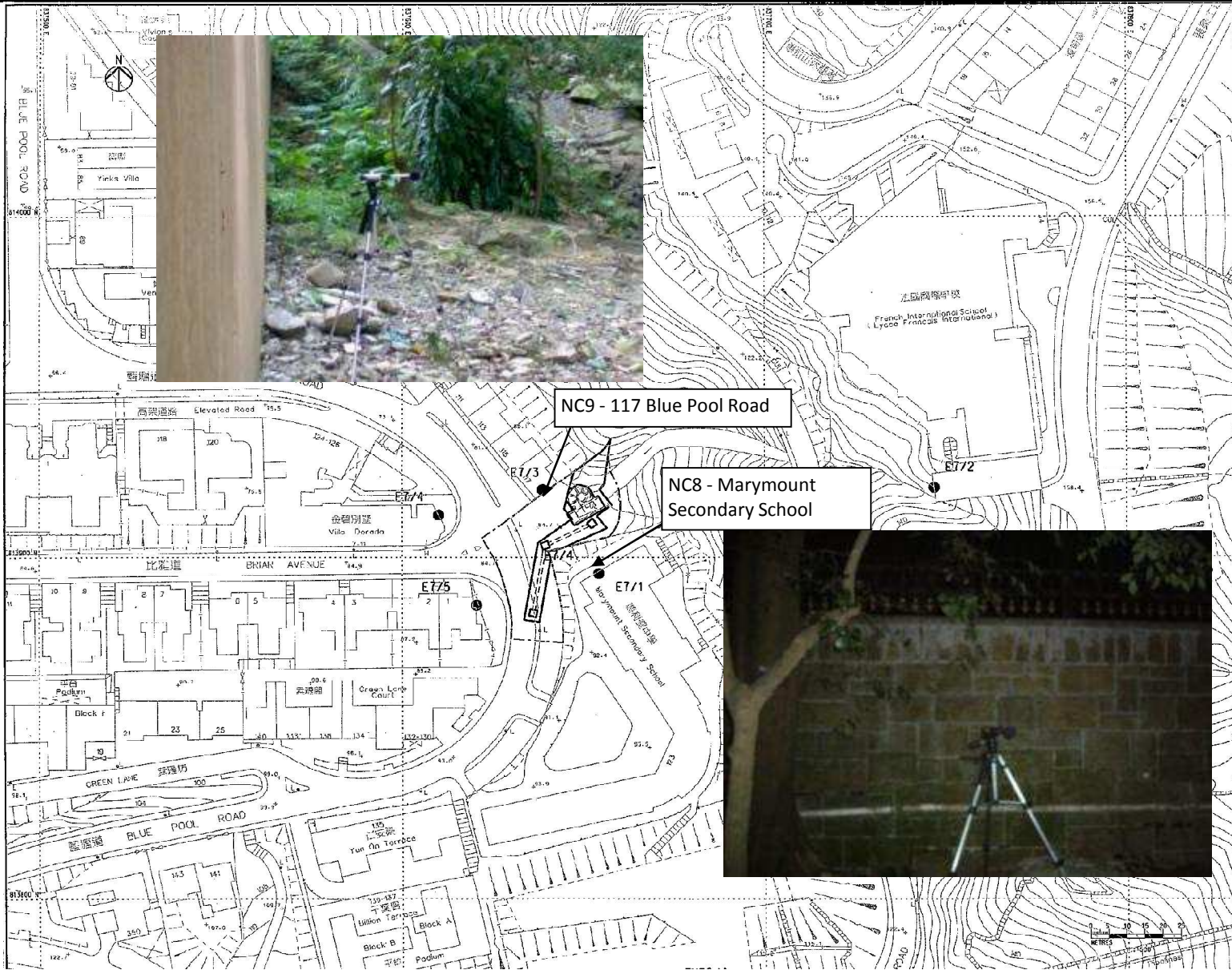
Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Eastern Portal)
 Locations of Air Quality and Noise Monitoring Station

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



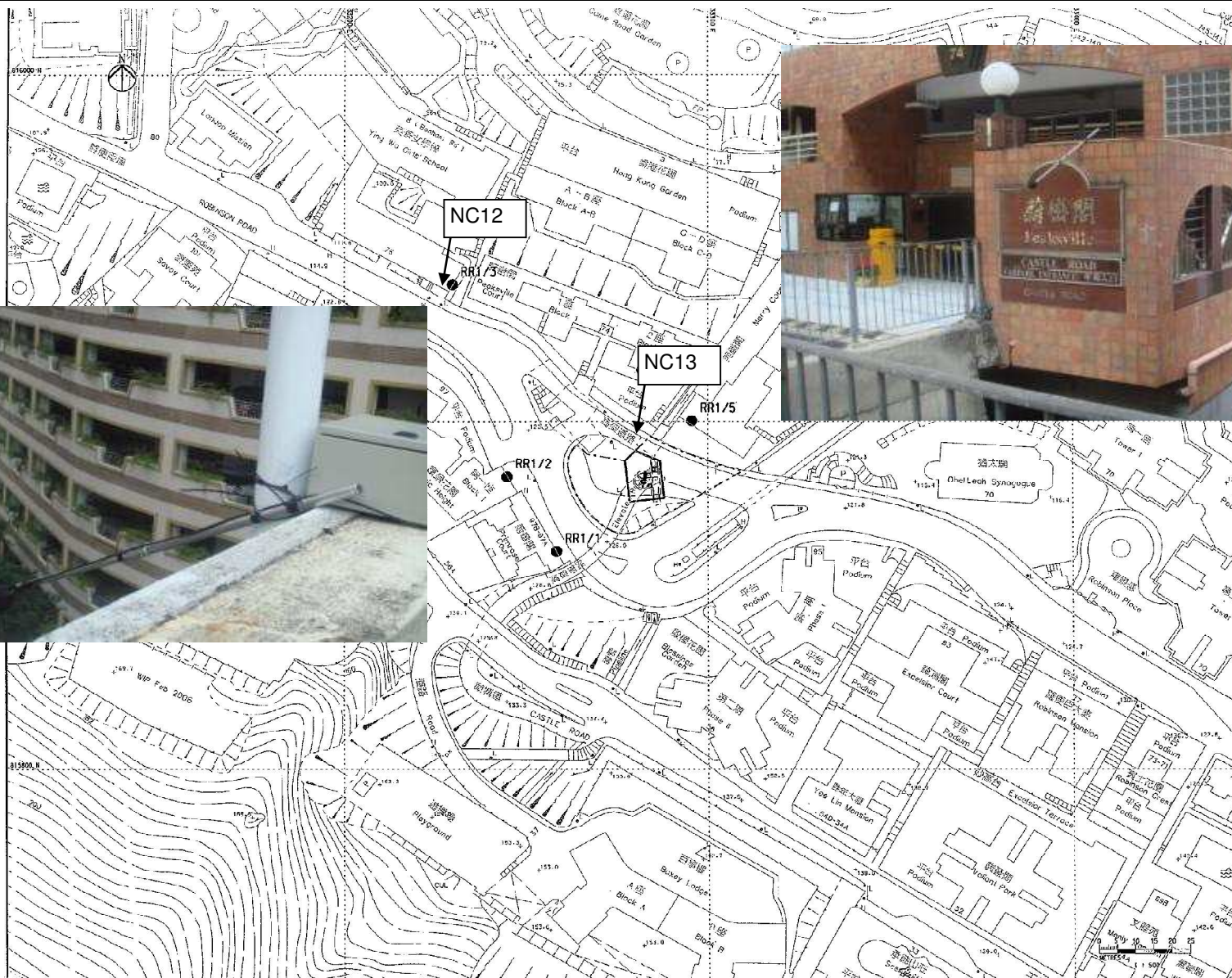


Title	Contract No. DC/2007/10		Scale	Project		CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel (Western Portal)		N.T.S	No.	MA 8001	
	Locations of Air Quality and Noise Monitoring Station		Date	Sep-09	Figure	3.1b



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
			Sep-09	3.1c

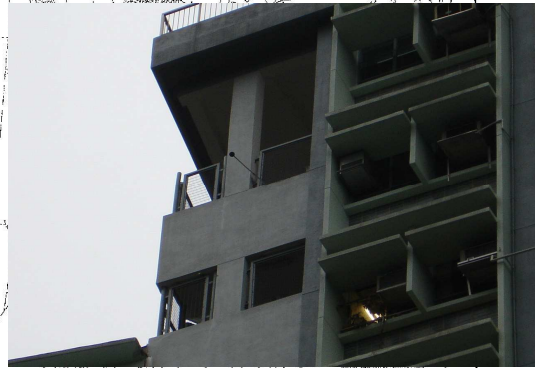
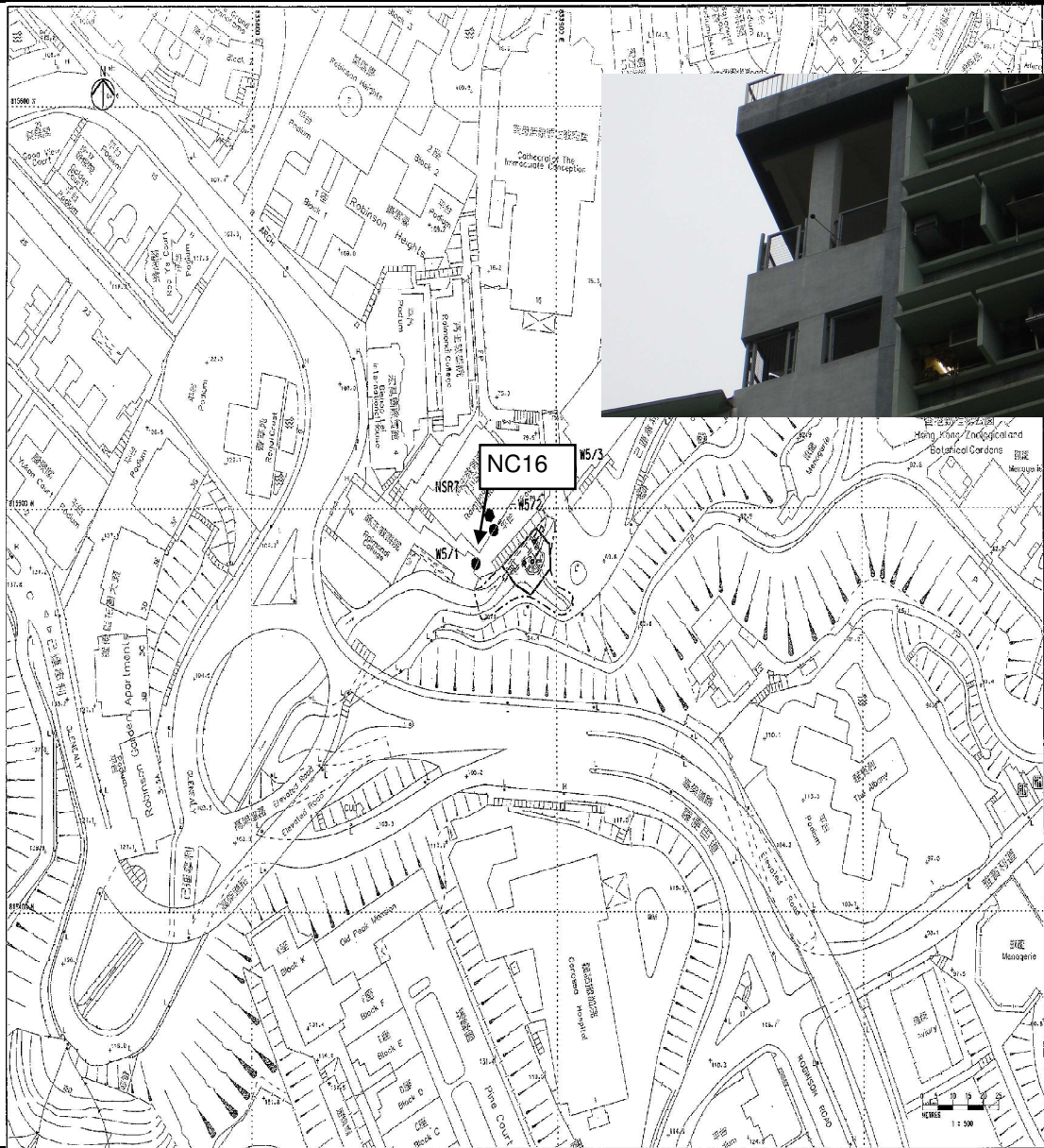




Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes RR1)
 Locations of Noise Monitoring Stations

Scale	N.T.S	Project No.	MA 8001
Date	Jan 10	Figure	3.1f

CINOTECH



Title	Contract No. DC/2007/10		Scale	Project	
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No.	MA8001
	(Intakes W5)		Date	Figure	
	Locations of Noise Monitoring Stations		Jan-10	3.1g	



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
 Feb-10

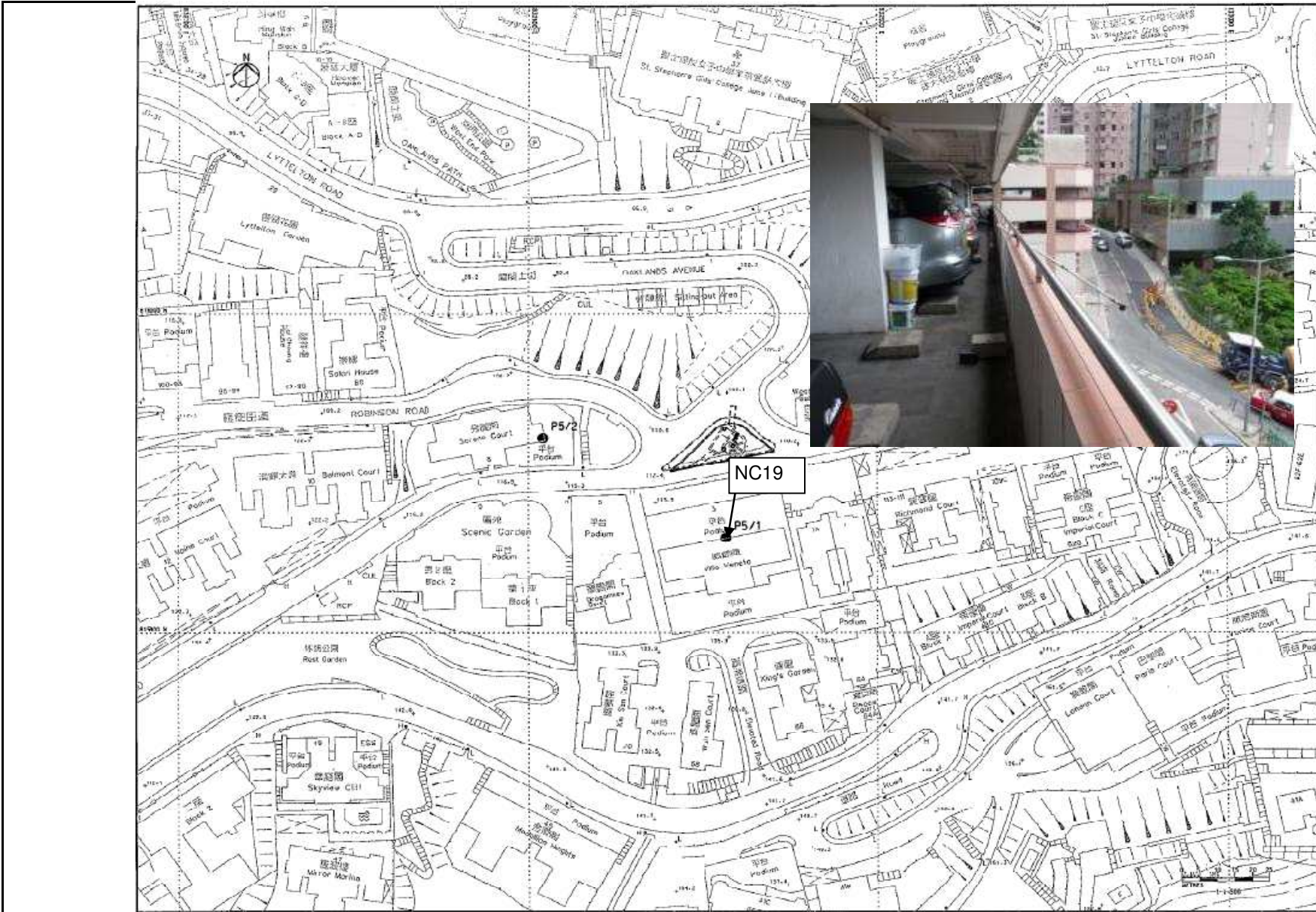
Project
 No. MA 8001
 Figure
 3.1h



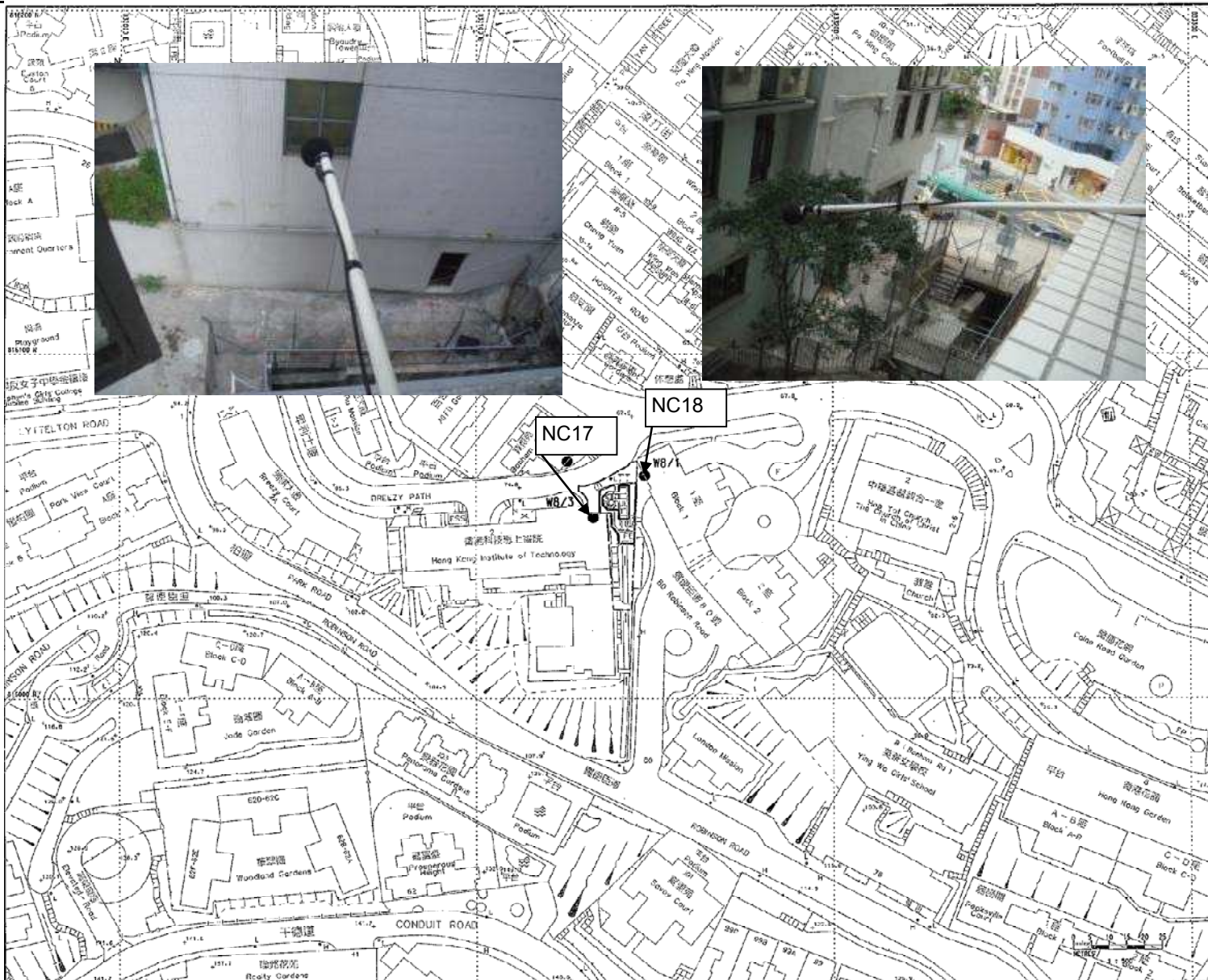


Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake THR2)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Feb-10	3.1i





Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001	
	(Intakes P5)		Date	Figure	
	Locations of Noise Monitoring Stations		Feb-10	3.1j	



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	3.1k





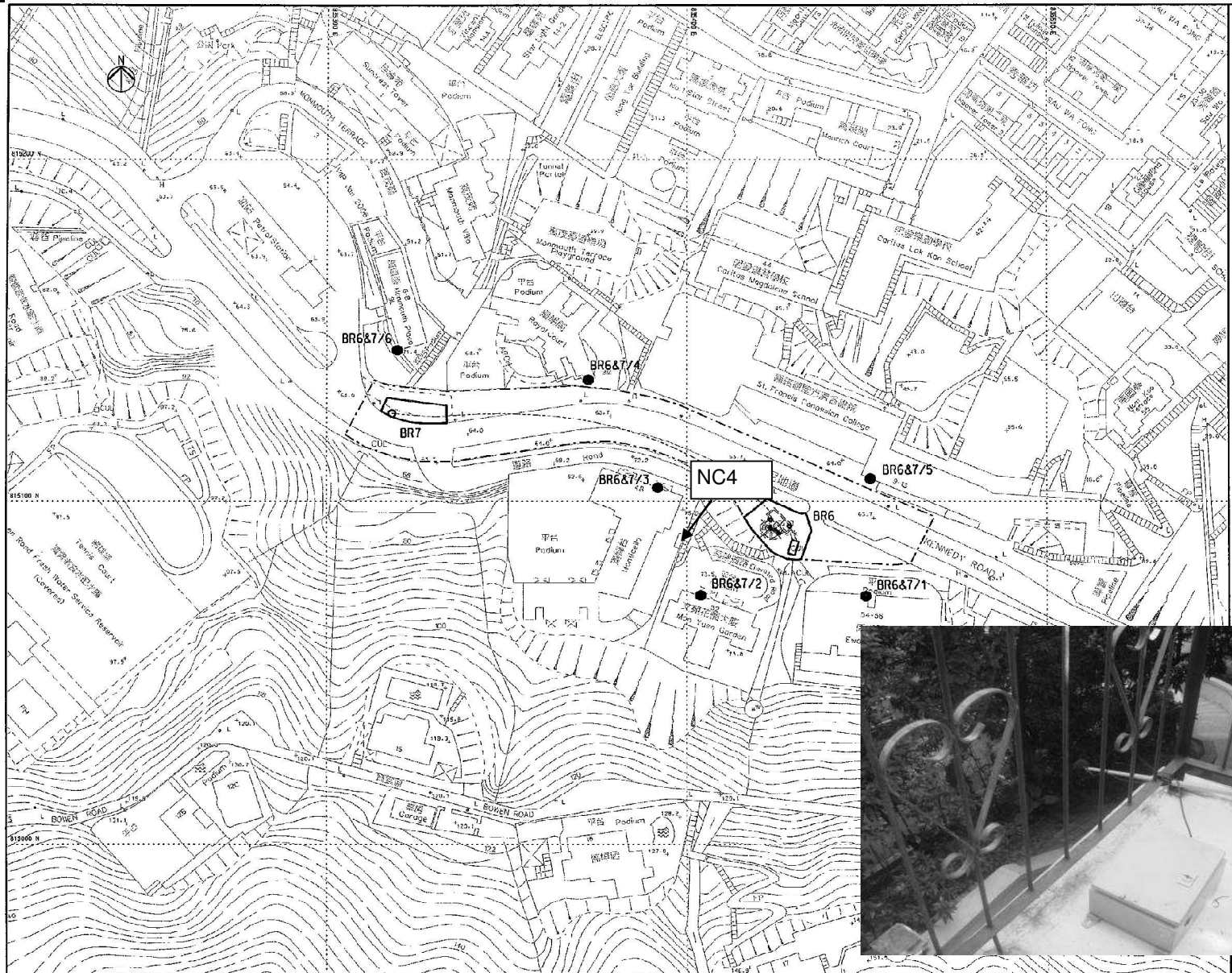
Title	Contract No. DC/2007/10		Scale	Project	
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No.	MA8001
	(Intake DG1)		Date	Figure	
	Locations of Noise Monitoring Stations		Aug-10	3.11	





Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake MA14)		N.T.S	No. MA8001
Locations of Noise Monitoring Stations		Date	Figure	
		Aug-10	3.1m	





Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes BR6)
 Locations of Noise Monitoring Stations

Scale	N.T.S	Project No.	MA8001
Date	Sep-10	Figure	3.1n





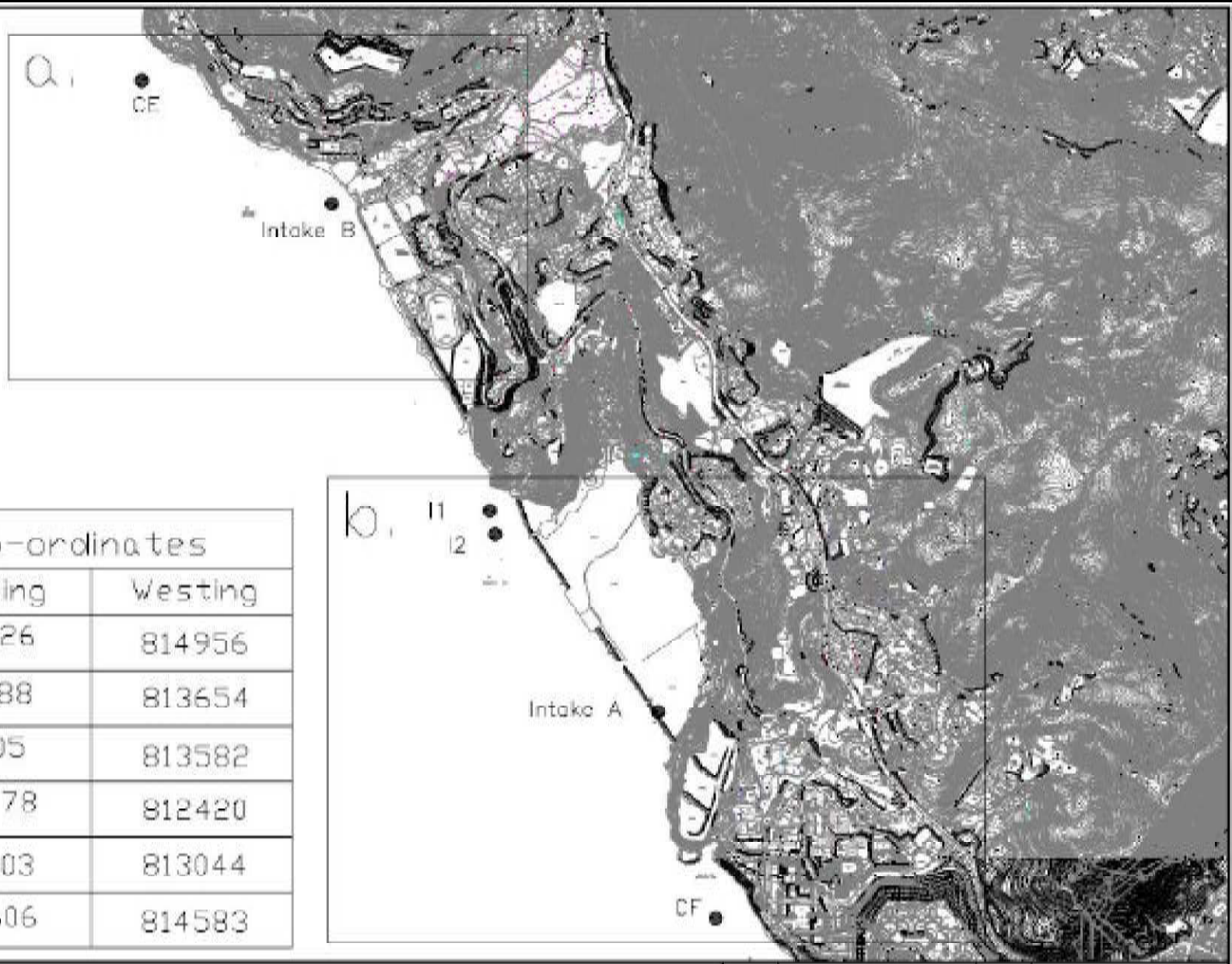
GNC7 - Hong Villa

Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Groundborne Noise Monitoring Station
 GNC7 (Hong Villa)

Scale N.T.S
 Date Nov-10

Project No. MA 8001
 Figure 3.10



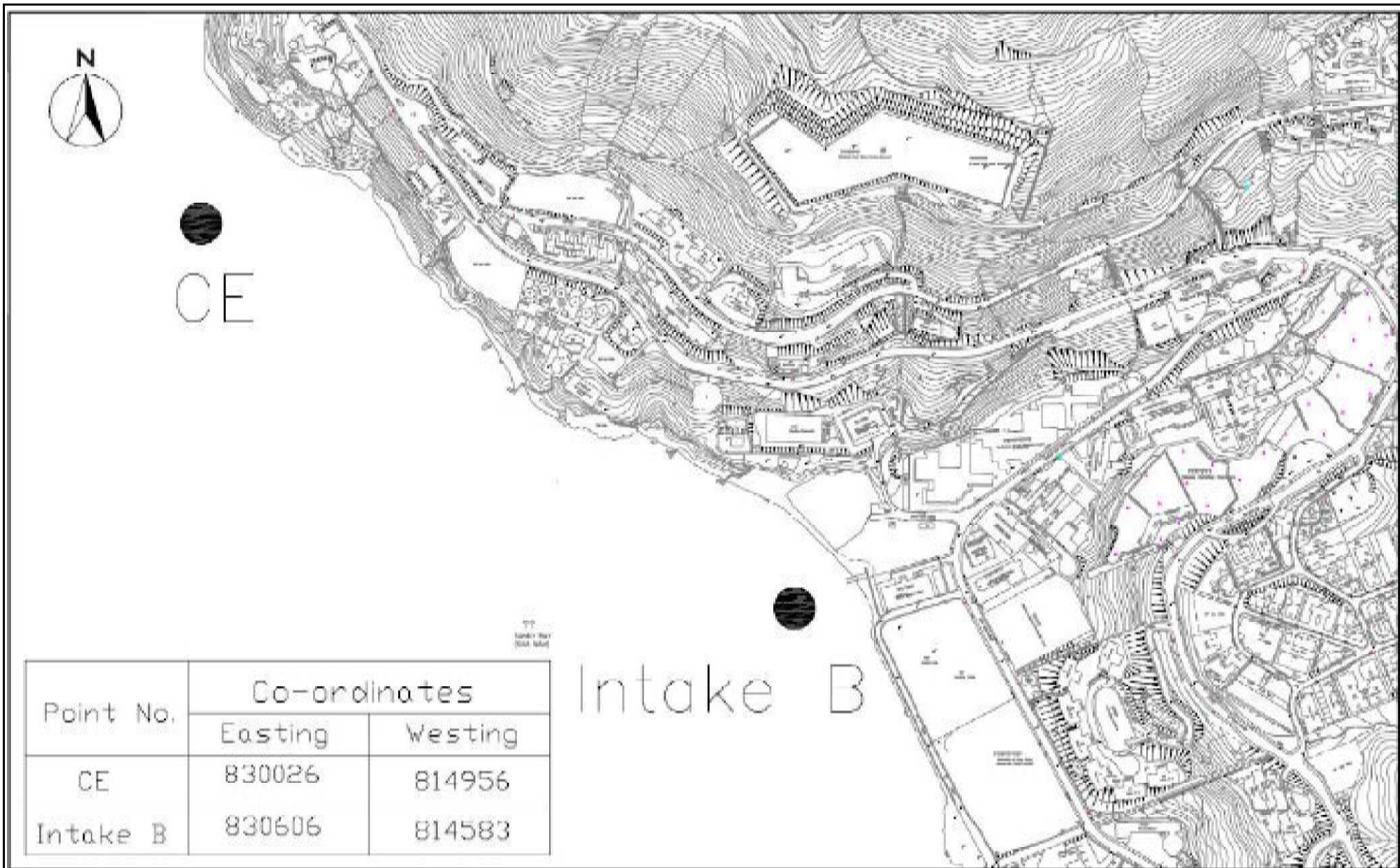


Point No.	Co-ordinates	
	Easting	Westing
CE	830026	814956
I1	831088	813654
I2	831105	813582
CF	831778	812420
Intake A	831603	813044
Intake B	830606	814583

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	Jun-08	Figure	4.1

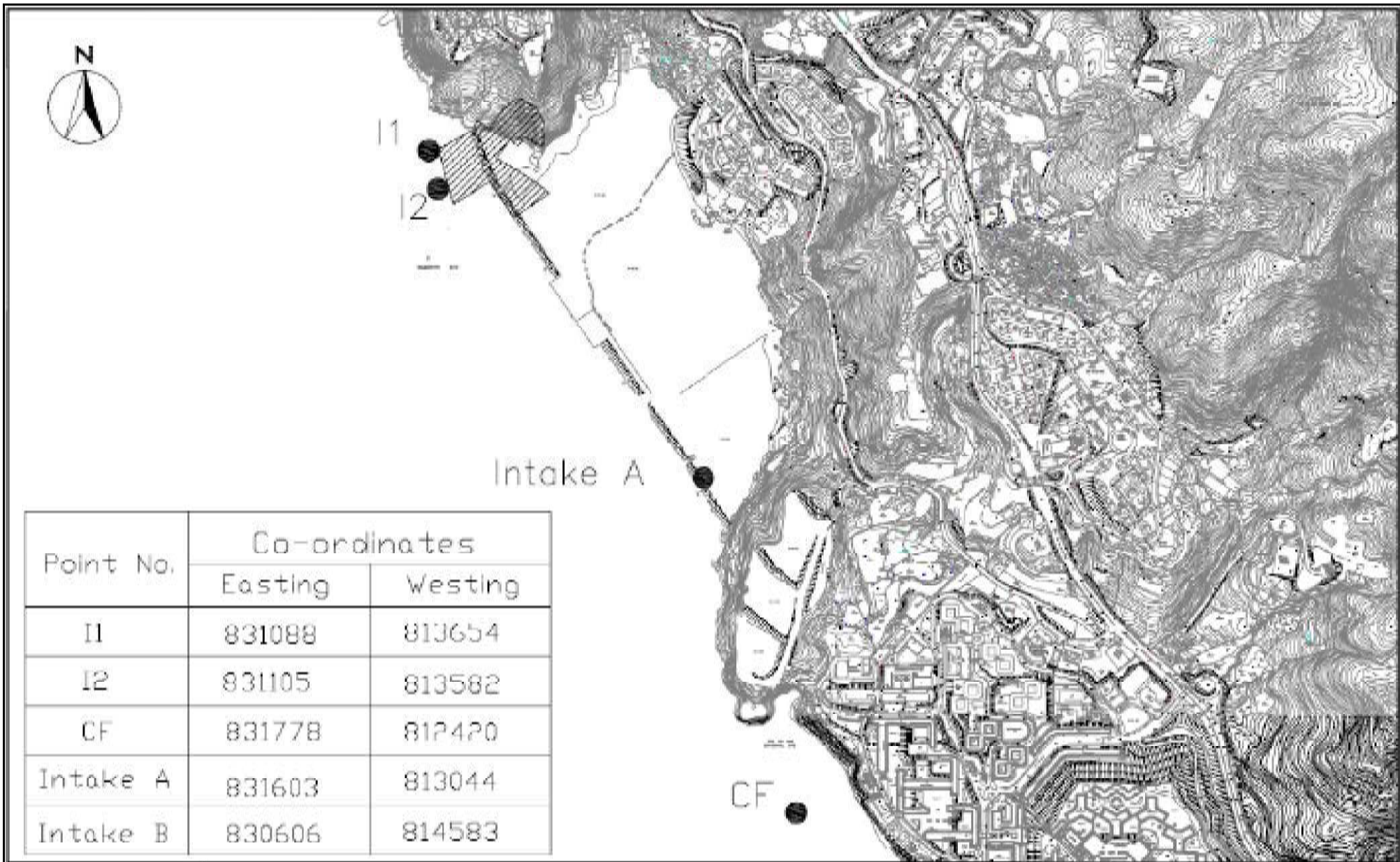




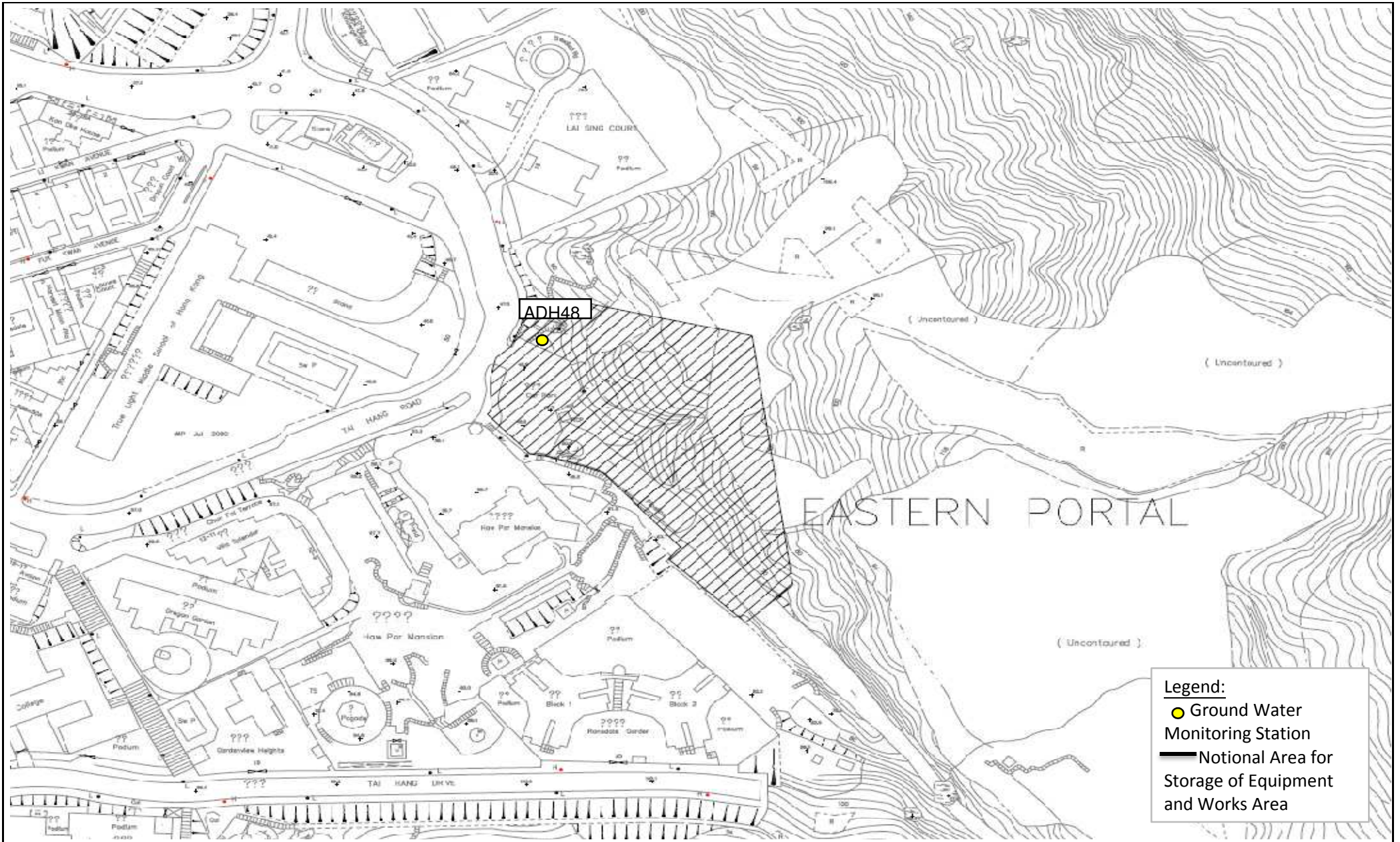
Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Water Quality Monitoring Stations

Scale	N.T.S	Project No.	MA8001
Date	Jun-08	Figure	4.1a





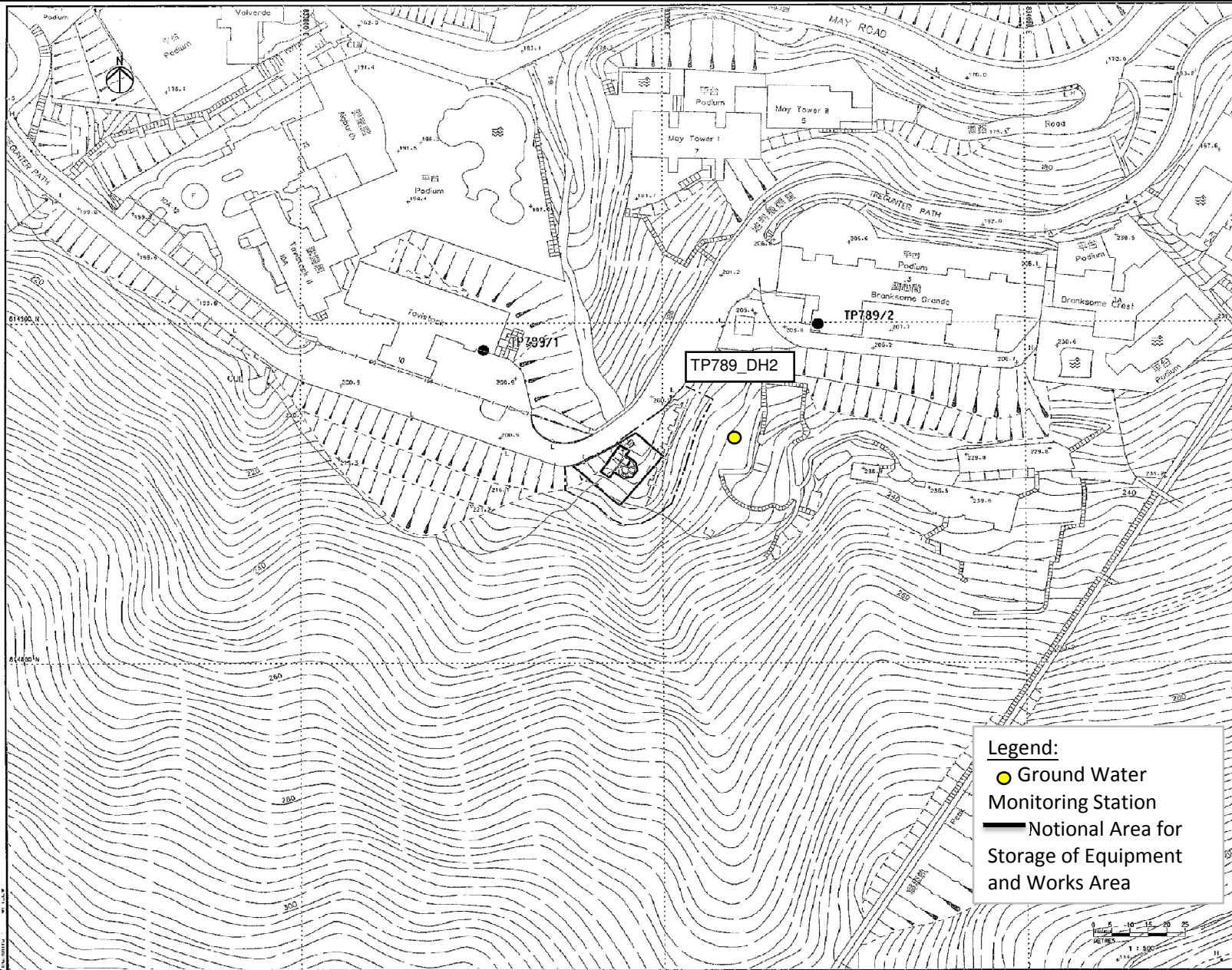
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Locations of Water Quality Monitoring Stations	Scale	Project No.	
	Date	Figure	
	N.T.S	MA8001	
	Jun-08	4.1b	



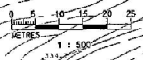
Legend:

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

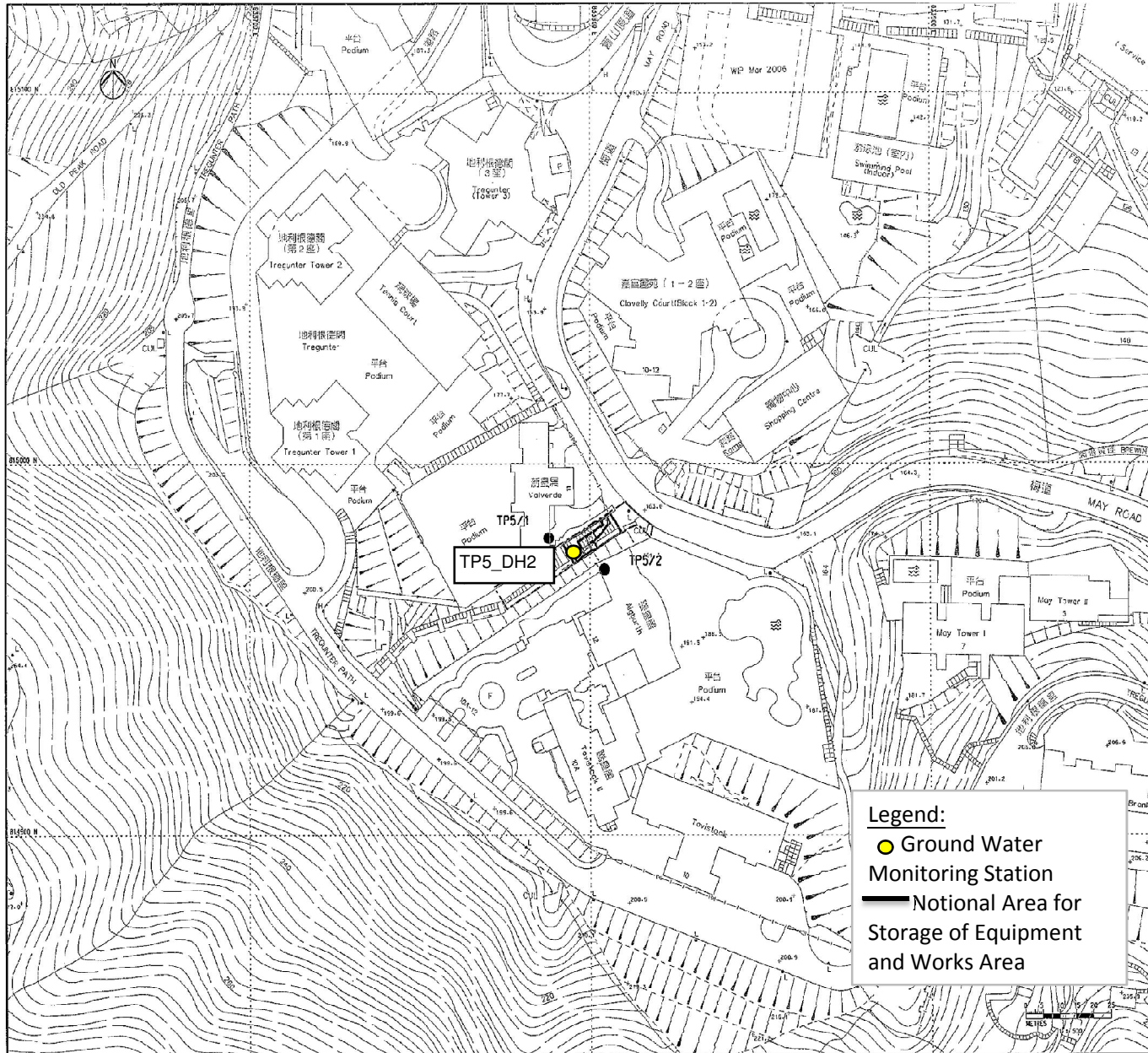
<p>Title</p> <p style="text-align: center;">Contract No. DC/2007/10</p> <p style="text-align: center;">Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal)</p> <p style="text-align: center;">Location of ground water level Monitoring Station</p>	<p>Scale</p> <p style="text-align: center;">N.T.S</p>	<p>Project No.</p> <p style="text-align: center;">MA8001</p>	
	<p>Date</p> <p style="text-align: center;">Mar-10</p>	<p>Figure</p> <p style="text-align: center;">4.2a</p>	



Legend:
 ● Ground Water Monitoring Station
 ▭ Notional Area for Storage of Equipment and Works Area



Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	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	
			Mar-10	4.2b	

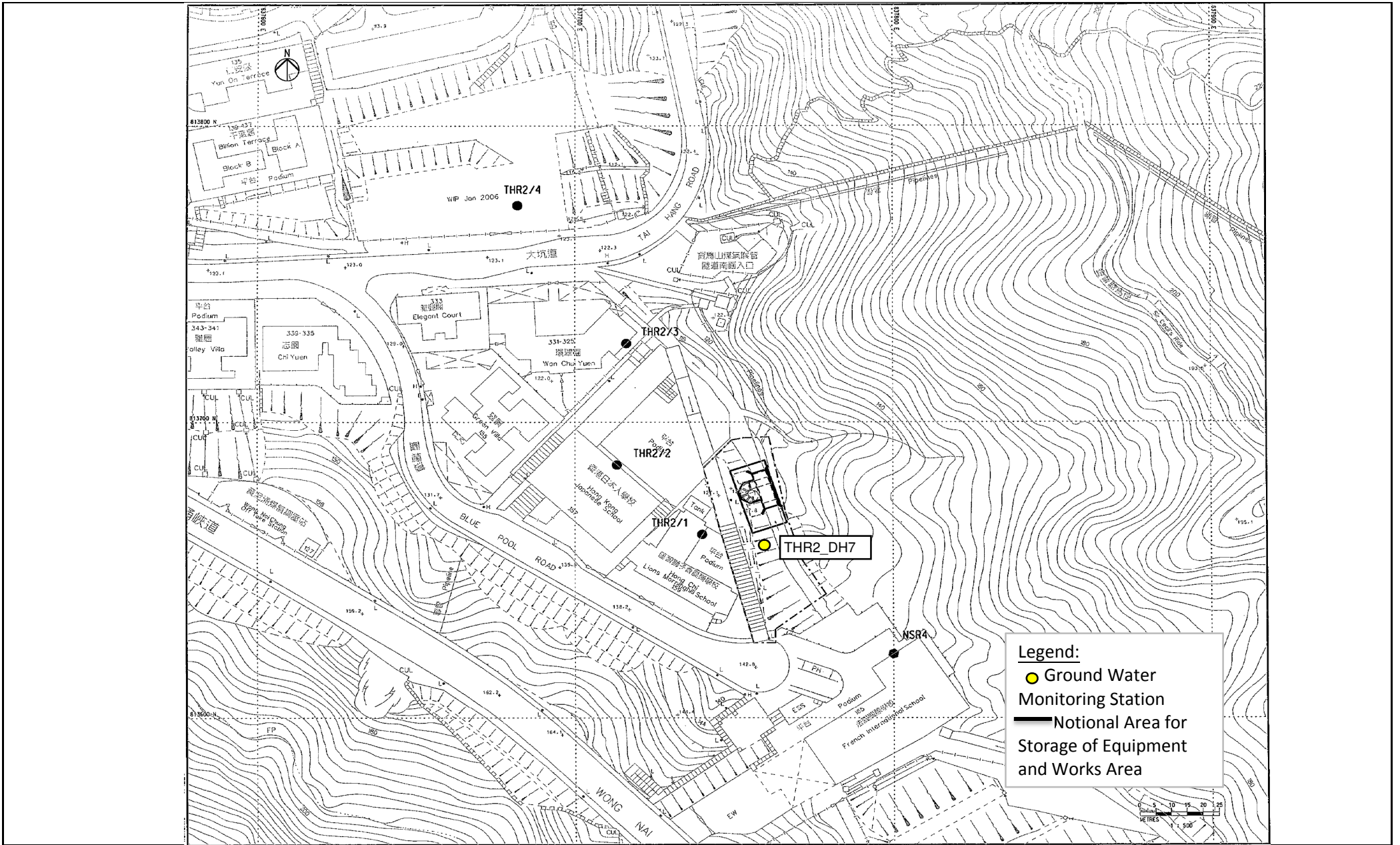


Title

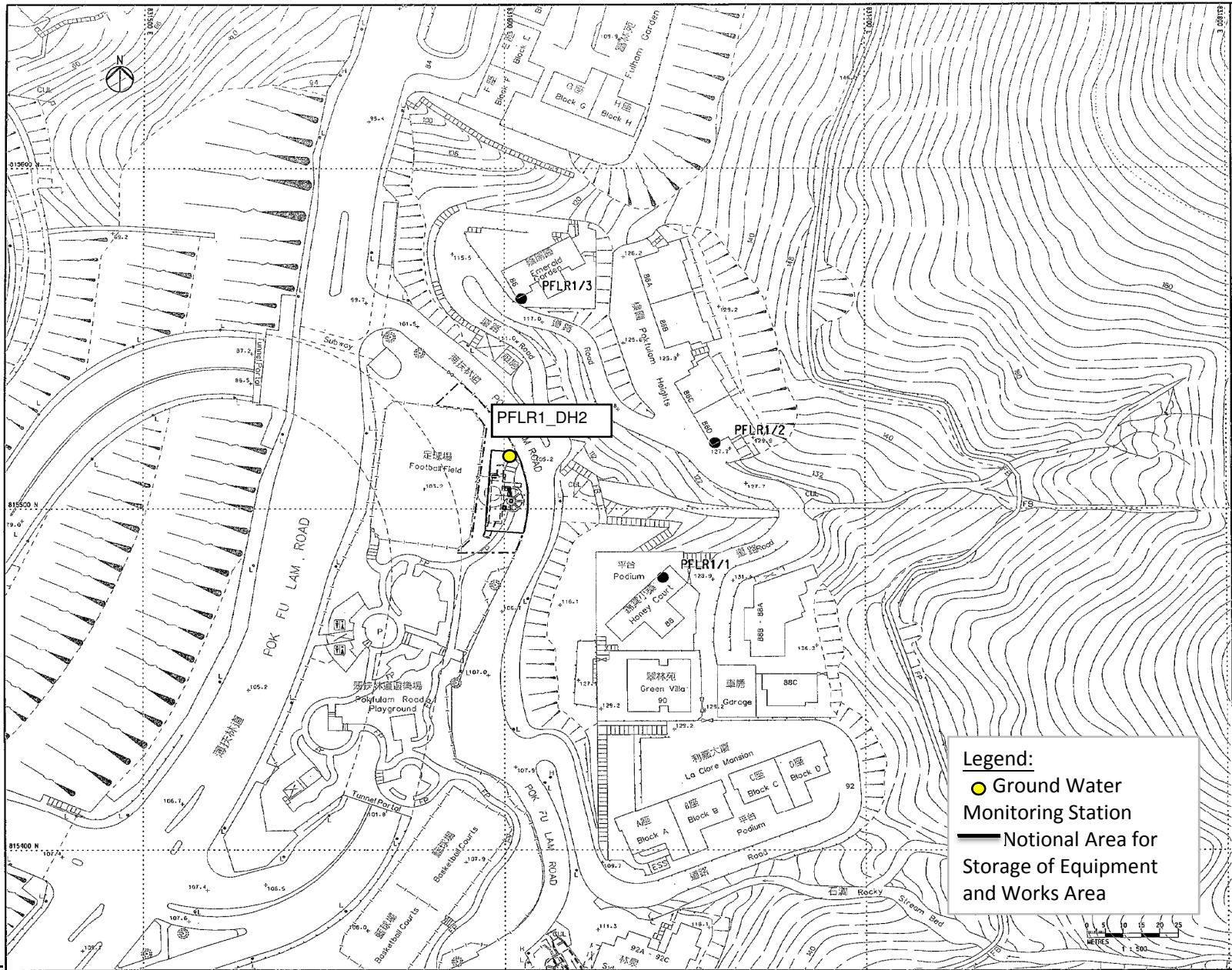
Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake TP5)
 Location of ground water level Monitoring Station

Scale	N.T.S	Project No.	MA8001
Date	Mar-10	Figure	4.2c





Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	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	
			Mar-10	4.2d	



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	Mar-10	Figure	4.2e



**APPENDIX A
CONSTRUCTION PROGRAMME**

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011						
									JUL	AUG	SEP	OCT	NOV	DEC	
East & West Adit + Intake															
CC01 - PRELIMINARIES & GENERAL REQUIREMENTS															
Milestone															
General															
M1-1260	1.26-Complete to All Obligat's From1261to1320d	0	0		08AUG11A	100	0	-8	MC 126						
M1-1700	1.70-Acceptance of Monthly Report on TDMS(41M)	0	0		08AUG11A	100	0	-77	MC 126						
M1-1710	1.71-Acceptance of Monthly Report on TDMS(42M)	0	0		08AUG11A	100	0	-69	MC 126						
M1-1270	1.27-Complete to All Obligat's From1321to1380d	0	0		07SEP11A	100	0	23							
M1-1720	1.72-Acceptance of Monthly Report on TDMS(43M)	0	0		07SEP11A	100	0	-69							
M1-1820	1.82-Subm. of Draft Operation&Maintenance Manual	0	0		19SEP11*	0	0	-81							
M1-1730	1.73-Acceptance of Monthly Report on TDMS(44M)	0	0		19SEP11*	0	0	-50							
M1-1740	1.74-Acceptance of Monthly Report on TDMS(45M)	0	0		19SEP11*	0	0	-19							
M1-1750	1.75-Acceptance of Monthly Report on TDMS(46M)	0	0		30SEP11*	0	0	0							
M1-1760	1.76-Acceptance of Monthly Report on TDMS(47M)	0	0		31OCT11*	0	0	0							
M1-1800	1.80-Acceptance of Slope Maintenance Manuals	0	0		31OCT11*	0	0	0							
M1-1810	1.81-GEOCheckingCert.forAll Slopes&RelatingWall	0	0		31OCT11*	0	0	0							
M1-1280	1.28-Complete to All Obligat's From1381to1440d	0	0		30NOV11*	0	0	0							
M1-1770	1.77-Acceptance of Monthly Report on TDMS(48M)	0	0		30NOV11*	0	0	0							
CC02 - DESIGN & DESIGN CHECKING OF THE WORKS															
Design Stage															
Section 1 (Eastern Portal)															
D00275	APP Cofferdam for Intake Shaft DDA	42	7	21MAY08A	26SEP11	90	1,217	-119							
D00279	APP Reinst Perm Slope at Coff Intake Shaft DDA	92	0	31OCT09A	02AUG11A	100	641	-64							
Section 1(W0,Adits,East & West Portal,Main Tunl)															
D00480	P&S Adit/main tun intrct Perm Ling at W0 AIP	63	7	12MAY10A	26SEP11	90	496	-119							
Section 2 (Portion E5A)															
D00686	APP E5A-Permanent Works Intake DDA	92	0	29NOV09A	16AUG11A	100	626	-78							
Section 12 (Portion W1)															
D01265	APP W1-Permanent Works Intake DDA	92	7	31JAN10A	26SEP11	90	597	-119							
Section 14 (Portion BR6)															
D01365	APP BR6-Permanent Works Intake DDA	92	0	31JAN10A	23AUG11A	100	570	-85							
Section 16 (Portion B2)															
D01465	APP B2-Permanent Works Intake DDA	92	7	01MAR10A	26SEP11	90	568	-119							
Section 17 (Portion MA14)															
D01515	APP MA14-Permanent Works Intake DDA	92	0	31DEC09A	09SEP11A	100	618	-102							
Section 20 (Portion M3)															
D01689	APP M3-Temp Works & Drainage Diversion DDA	92	0	12FEB10A	02SEP11A	100	568	-95							
Section 25 (Portion CR1)															
D01965	APP CR1-Permanent Works Intake DDA	92	0	28FEB10A	07SEP11A	100	557	-100							
Section 28 (Portion P5)															
D02115	APP P5-Permanent Works Intake DDA	92	0	29NOV09A	24AUG11A	100	634	-86							
E&M															
D02360	Statutory Submissions	91	15	25APR11A	19OCT11	50	148	-88							
D02355	Method Statement Submissions (EP)	30	30	20SEP11	19OCT11	0	0	-119							
Leaky Cable Communication Sys															
D04024	P&S Re-design Leaky Cable Communication Sys-AIP	62	15	12MAR11A	04OCT11	15	192	-109							
D04028	P&S Leaky Cable Communication Sys-DDA	62	32	03MAY11A	21OCT11	10	140	-110							
P04035	Leaky Cable System Material Procurement	92	92	19SEP11*	19DEC11	0	0	-49							
D04026	APP Re-design Leaky Cable Communication Sys-AIP	28	28	05OCT11	01NOV11	0	0	-109							
D04030	APP Leaky Cable Communication Sys-DDA	28	28	22OCT11	18NOV11	0	0	-110							
Penstock															
D03034	APP Penstock(E5A,BR4,W1,BR5,BR6,W0,CR1,EP) - P5	30	0	21JUN11A	30JUL11A	100	40	-8							
Milestone															
Design Submission															
M2-1130	2.13-DDA-Dropshaft Submission	0	0		19SEP11	0	0	-119							
M2-1250	2.25-Approval of As-built Records of Dropshafts	0	0		19SEP11	0	0	-119							
CC04 - PART OF SECTION 1 OF THE WORKS (ADITS)															
Construction															
Section 32 (Portion SM1)															
S321610	Still Chamber Const(SM1)	36	6	23AUG11A	26SEP11	75	23	-40							
Adit Tunnel Excavation & Tunnel Lining - sec1															
QH222	Adit Lining from Ch+150 going to Ch+450(189m) W0	83	0	05MAR11A	06AUG11A	100	125	-48							
QH444	Install Blast Door at Main Tunnel Side(Ch12)- W0	21	0	18JUL11A	12AUG11A	100	26	-38							
QH555	Adit D&B + Removal Blast Door(Ch12 t Ch140) - W0	49	7	13AUG11A	27SEP11	60	31	-19							
QL1015	Adit Lining from Ch150 to Main Tunnel (251m) -W0	44	44	28SEP11	19NOV11	0	0	-19							
QL1016	Junction with Main Tunnel - W0	25	25	21NOV11	19DEC11	0	0	-19							
QL1017	Main Tunnel Insitu Lining - W0	75	75	20DEC11	22MAR12	0	0	-19							
Adit Tunnel Excavation & Tunnel Lining - E5A															
QL105	Stilling chamber Lining Part 1- E5A	30	0	12AUG11A	19SEP11	50	39	-42							
QL106	Lining E5A (274m)	66	66	20SEP11	24NOV11	0	0	-42							
QL110	Lining E5A (278m)	67	67	25NOV11	30JAN12	0	0	-42							
Adit Tunnel Excavation & Tunnel Lining - E5B															
QL108	Stilling chamber Lining Ach 1&2- E5B	36	24	20MAY11A	19OCT11	50	102	-94							
QL109	Lining E5B (66m)	43	46	17AUG11A	04NOV11	7	34	-87							
QL1091	Intersection E5B/E5A	30	30	20SEP11*	19OCT11	0	0	-19							
Adit Tunnel Excavation & Tunnel Lining - MB16															
QL114	Lining MB16 (97m)	58	0	21FEB11A	07SEP11A	100	163	-72							
QL1141	Turning bay MB16	30	0	17JUL11A	15AUG11A	100	30	-32							
QL115	Junction main tunnel MB16	44	44	20SEP11	11NOV11	0	0	-70							

JUL	AUG	SEP	OCT	NOV	DEC
2011					

Start Date 30NOV07
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- Early Bar
- Last Month Progress 108A
- Progress Bar
- Critical Activity

109A Sheet 1 of 10

Design & Construction of HK, West Drainage Tunnel
 Contract No. DC/2007/10
 3 MONTH ROLLING PROGRAMME
 SEP /2011 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
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011						
									JUL	AUG	SEP	OCT	NOV	DEC	
Adit Tunnel Excavation & Tunnel Lining - MBD2															
QL121	Lining MBD2 (106m)	49	15	12JUL11A	04OCT11	76	70	-64							
QL1191	Turning Bay	30	30	23SEP11	22OCT11	0	0	-64							
Adit Tunnel Excavation & Tunnel Lining - E7															
QL122	Stilling chamber Lining(Invert Only) - E7	12	0	03SEP11A	14SEP11A	100	12	-67							
QL123	Lining E7 Part 1 (149m)	49	41	12SEP11A	30OCT11	1	8	-57							
QL1221	Turning bay E7	30	30	20SEP11*	19OCT11	0	0	-116							
QL130	Stilling chamber Lining(Arch & Roof) - E7	24	24	20OCT11	12NOV11	0	0	-57							
QL125	Lining E7 Part 2 (149m)	56	56	31OCT11	25DEC11	0	0	-57							
Adit Tunnel Excavation & Tunnel Lining - THR2															
QL128	Lining THR2 (138m)	62	0	16JUN11A	15SEP11A	100	92	-53							
QL129	Turning bay THR2	30	26	19SEP11A	15OCT11	5	1	-53							
Adit Tunnel Excavation & Tunnel Lining - GL1															
QL133	Stilling chamber Lining Arch 1 - GL1	36	8	10AUG11A	27SEP11	0	41	-91							
Adit Tunnel Excavation & Tunnel Lining - HR1															
QL134	Stilling chamber Lining - HR1	36	36	20SEP11	25OCT11	0	0	-42							
QL139	Turning bay HR1	30	30	20OCT11*	18NOV11	0	0	0							
Adit Tunnel Excavation & Tunnel Lining - DG1															
QL141	Stilling chamber Lining Arch 1- DG1	36	33	29AUG11A	29OCT11	0	18	-78							
QL144	Turning bay DG1	30	30	20SEP11*	19OCT11	0	0	-31							
QL142	Lining DG1 Part 1 (106m)	50	50	30OCT11	18DEC11	0	0	-94							
QL145	Lining DG1 Part 2 (106m)	51	51	19DEC11	07FEB12	0	0	-94							
Adit Tunnel Excavation & Tunnel Lining - BR4															
QHS110606	Adit Excavation Ch190 - Ch380 - BR4	47	0	08JUN11A	24AUG11A	100	66	-7							
QHS110607	Stilling Chamber Excavation - BR4	12	0	25AUG11A	08SEP11A	100	13	-2							
QL094	Stilling chamber Lining - BR4	36	36	03NOV11	14DEC11	0	0	13							
Adit Tunnel Excavation & Tunnel Lining - W1															
QL089	Stilling chamber Lining - W1	36	24	17SEP11A	19OCT11	5	2	7							
QL090	Lining W1 (155m)	43	43	20OCT11	08DEC11	0	0	7							
Adit Tunnel Excavation & Tunnel Lining - BR5															
QHS130275	Adit and Stilling Chamber Excavation - BR5	37	0	12JUL11A	05AUG11A	100	22	3							
QL082	Stilling chamber Lining - BR5	36	36	27SEP11	09NOV11	0	0	68							
Adit Tunnel Excavation & Tunnel Lining - BR6															
QHS14044	Adit Excavation CH247 - CH407 (160m) -(BR6)	52	0	08JUN11A	03SEP11A	100	75	-31							
QHS14046	Adit Excavation CH407 - CH495 (88m) -(BR6)	28	21	05SEP11A	15OCT11	25	12	-35							
QHS14048	Adit Excavation CH495 - CH552 (57m) -(BR6)	15	15	17OCT11	02NOV11	0	0	-35							
QHS14049	Stilling Chamber Excavation Excavation (BR6)	18	18	03NOV11	23NOV11	0	0	-35							
QL081	Stilling chamber Lining - BR6	30	30	24NOV11	30DEC11	0	0	-35							
QL087	Turning bay BR6	30	30	30NOV11	06JAN12	0	0	-35							
Adit Tunnel Excavation & Tunnel Lining - W3															
QHS150355	Adit Excavation CH147 - CH324 (177m) - (W3)	53	11	20MAY11A	03OCT11	89	102	-59							
QHS150357	Still Chamber Excavation - (W3)	18	18	04OCT11	25OCT11	0	0	-59							
QL079	Turning bay W3	30	30	30NOV11	06JAN12	0	0	-34							
Adit Tunnel Excavation & Tunnel Lining - B2															
QHS160285	Adit and Stilling Chamber Excavation - B2	92	0	21JAN11A	28JUL11A	100	151	-17							
QL072	Stilling chamber Lining - B2	36	36	10OCT11	19NOV11	0	0	-15							
QL073	Lining B2 (250m)	54	54	21NOV11	28JAN12	0	0	-15							
Adit Tunnel Excavation & Tunnel Lining - MA14															
QL068	Stilling chamber Lining - MA14	36	36	16NOV11	29DEC11	0	0	-7							
Adit Tunnel Excavation & Tunnel Lining - MA15															
QL064	Stilling chamber Lining - MA15	36	0	10JUN11A	08AUG11A	100	50	2							
QL065	Lining MA15 (67m)	29	7	15AUG11A	27SEP11	76	30	36							
QL066	Junction main tunnel MA15	36	36	12NOV11	23DEC11	0	0	1							
Adit Tunnel Excavation & Tunnel Lining - M3															
QL056	Stilling chamber Lining - M3	36	15	17AUG11A	08OCT11	10	28	-33							
QL057	Lining M3 (73m)	31	31	10OCT11	14NOV11	0	0	28							
QL058	Junction main tunnel M3	36	36	16DEC11	02FEB12	0	0	1							
Adit Tunnel Excavation & Tunnel Lining - TP789															
QL053	Lining TP789 (12m)	18	15	16SEP11A	08OCT11	17	3	-67							
QL054	Junction main tunnel TP789	36	36	10OCT11	19NOV11	0	0	1							
Adit Tunnel Excavation & Tunnel Lining - TP5															
QL048	Lining TP5 (101m)	45	9	30MAY11A	29SEP11	85	94	-51							
QL049	Junction main tunnel TP5	36	36	30SEP11	12NOV11	0	0	-51							
QL050	Turning bay TP5	30	30	30SEP11	05NOV11	0	0	-51							
Adit Tunnel Excavation & Tunnel Lining - TP4															
QL044	Lining TP4 (35m)	26	0	24MAY11A	30JUL11A	100	57	-31							
QL045	Junction main tunnel TP4	36	14	01AUG11A	07OCT11	30	42	9							
Adit Tunnel Excavation & Tunnel Lining - W5															
S240580	Stilling Chamber Enlargement-(W5)	26	0	15JUL11A	18AUG11A	100	30	-37							
QL034	Stilling chamber Lining - W5	36	36	31OCT11	10DEC11	0	0	-74							
QL041	Turning bay W5	30	30	07NOV11	10DEC11	0	0	-51							
QL038	Lining W5-frm CR1 Junction to Still Chambr(126m)	44	44	21NOV11	13JAN12	0	0	-74							
Adit Tunnel Excavation & Tunnel Lining - CR1															
QHS250531	Still Chamber Excavation - CR1	18	0	19JUL11A	20AUG11A	100	29	-17							
QL0351	Lining CR1-frm CR1 SC to W5 Jctn (143m) straight	32	32	26OCT11	01DEC11	0	0	-40							
QL0352	Lining CR1-from CR1 SC to W5 Jctn (100m) (Curve)	18	18	12DEC11	04JAN12	0	0	-25							
Adit Tunnel Excavation & Tunnel Lining - RR1															
S260385	Still Chamber Excavation & Enlargement	18	19	18JUL11A	13OCT11	50	54	-98							
QL025	Stilling chamber Lining - RR1	36	36	14OCT11	24NOV11	0	0	-98							
QL0251	Adit stub Lining	7	7	13DEC11	20DEC11	0	0	-3							

JUL	AUG	SEP	OCT	NOV	DEC
2011					

Start Date 30NOV07
Finish Date 31OCT12
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- Early Bar
- Last Month Progress 108A
- Progress Bar
- Critical Activity

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Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
SEP /2011 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
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01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011					
									JUL	AUG	SEP	OCT	NOV	DEC
Adit Tunnel Excavation & Tunnel Lining - W8														
QHS270607	Stilling Chamber Excavation (W8)	18	0	29JUN11A	17AUG11A	100	42	-22						
QL026	Stilling chamber Lining - W8	35	25	07SEP11A	20OCT11	20	10	15						
QL0261	Lining W8 (238m)	57	57	21OCT11	28DEC11	0	0	-3						
QL031	Turning bay W8	30	30	13DEC11	19JAN12	0	0	-3						
Adit Tunnel Excavation & Tunnel Lining - P5														
S280128	Adit Excavation by Drill & Blast Ch600 - 800(P5)	72	0	13APR11A	20AUG11A	100	105	-42						
S280580	Stilling Chamber Enlargement-(P5)	18	16	22AUG11A	10OCT11	5	24	-64						
QL0121	Lining P5 normal 332m up to W10 Junction	55	55	11OCT11	13DEC11	0	0	-64						
QL022	Turning bay P5	30	30	11OCT11	14NOV11	0	0	-64						
QL016	Intersection HKU1 / P5	36	36	27OCT11	07DEC11	0	0	-40						
QL019	Lining P5 big section 139 m	36	36	08DEC11	21JAN12	0	0	-40						
QL0122	Lining P5 normal 275m W10 - to enlarged Junction	39	39	20DEC11	09FEB12	0	0	-64						
Adit Tunnel Excavation & Tunnel Lining - W10														
QL013	Stilling chamber Lining - W10	36	36	26SEP11	08NOV11	0	0	-36						
QL0131	Lining W10 (0m)	5	5	14DEC11	19DEC11	0	0	-64						
Adit Tunnel Excavation & Tunnel Lining - HKU1														
QL014	Stilling chamber Lining - HKU1	36	0	21MAY11A	23JUL11A	100	53	-17						
QL0141	Lining HKU1 (229m)	54	29	01AUG11A	25OCT11	35	42	-40						
QL023	Turning bay HKU1	30	30	26OCT11	29NOV11	0	0	-40						
Adit Tunnel Excavation & Tunnel Lining - PFLR1														
QL003	Stilling chamber Lining - PLFR 1	36	36	20SEP11	02NOV11	0	0	-25						
QL004	Lining PLFR 1 (8m)	10	10	22OCT11	02NOV11	0	0	-25						
Adit Tunnel Excavation & Tunnel Lining - SM1														
QL001	Stilling chamber Lining - SM 1	48	6	19AUG11A	26SEP11	90	26	-38						
QL0011	Lining SM1-Still Chamber to PFLR1 Junction(162m)	42	41	15SEP11A	19NOV11	2	4	-37						
QS321410	Insitu Lining - 7.16m ID2.3 (SM1)	6	6	24SEP11	30SEP11	0	0	-38						
QL0051	Lining SM1 -SM1-PFLR1 Junction-Main Tunnel(354m)	33	33	03NOV11	10DEC11	0	0	-25						
QL006	Junction main tunnel SM1	36	36	12DEC11	28JAN12	0	0	-25						
QL002	Intersection PLFR 1 / SM 1	36	36	12DEC11	28JAN12	0	0	-25						
QL007	Turning bay SM1	30	30	14DEC11	20JAN12	0	0	-51						
Milestone														
Section 1 (Adits)														
M41150	4.015-50% Completion of Lining (Adit MBD2)	0	0		08AUG11A	100	0	-37	MC 126 ◆					
M41730	4.073-100% Completion of Excavation(Adit B2)	0	0		08AUG11A	100	0	-31	MC 126 ◆					
M41960	4.096-100% Lining&Stilling Chamber (Adit TP4)	0	0		08AUG11A	100	0	-46	MC 126 ◆					
M42060	4.106-100% Completion of Excavation(Adit CR1)	0	0		08AUG11A	100	0	-7	MC 126 ◆					
M42160	4.116-100% Completion of Excavation(Adit W8)	0	0		08AUG11A	100	0	-17	MC 126 ◆					
M41430	4.043-35% Completion of Excavation(Adit BR4)	0	0		07SEP11A	100	0	-87	MC 127 ◆					
M41440	4.044-70% Completion of Excavation(Adit BR4)	0	0		07SEP11A	100	0	-41	MC 127 ◆					
M41450	4.045-100% Completion of Excavation(Adit BR4)	0	0		07SEP11A	100	0	-1	MC 127 ◆					
M41550	4.055-100% Completion of Excavation(Adit BR5)	0	0		07SEP11A	100	0	-29	MC 127 ◆					
M41580	4.058-25% Completion of Excavation (Adit BR6)	0	0		07SEP11A	100	0	-107	MC 127 ◆					
M41600	4.060-75% Completion of Excavation (Adit BR6)	0	0		07SEP11A	100	0	-55	MC 127 ◆					
M42220	4.122-60% Completion of Excavation(Adit P5)	0	0		07SEP11A	100	0	-107	MC 127 ◆					
M42240	4.124-100% Completion of Excavation(Adit P5)	0	0		07SEP11A	100	0	-46	MC 127 ◆					
M41050	4.005-25% Completion of Lining (Adit E5A)	0	0		19SEP11	0	0	-42	◆					
M42100	4.110-50% Completion of Excavation(Adit RR1)	0	0		19SEP11	0	0	-117	◆					
M42250	4.125-20% Completion of Lining (Adit P5)	0	0		19SEP11	0	0	-97	◆					
M42360	4.136-50% Completion of Lining(Adit HKU1)	0	0		21SEP11	0	0	-48	◆					
M41380	4.038-100% Completion of Excavation(Adit W0)	0	0		27SEP11	0	0	-24	◆					
M41810	4.081-100% Lining&Stilling Chamber(Adit MA15)	0	0		27SEP11	0	0	44	◆					
M41930	4.093-100% Lining&Stilling Chamber (Adit TP5)	0	0		29SEP11	0	0	-61	◆					
M41970	4.097-Junction Between M.Tunnel&Adit(Adit TP4)	0	0		07OCT11	0	0	11	◆					
M41900	4.090-100% Lining&Stilling Chamber(Adit TP789)	0	0		08OCT11	0	0	-81	◆					
M42260	4.126-40% Completion of Lining (Adit P5)	0	0		10OCT11	0	0	-78	◆					
M41240	4.024-100% Lining&Stilling Chamber(Adit THR2)	0	0		15OCT11	0	0	-53	◆					
M41160	4.016-100% Lining & Stilling Chamber(Adit MBD2)	0	0		22OCT11	0	0	-64	◆					
M41390	4.039-35% Completion of Lining(Adit W0)	0	0		25OCT11	0	0	-23	◆					
M41680	4.068-100% Completion of Excavation(Adit W3)	0	0		25OCT11	0	0	-73	◆					
M42370	4.137-100% Lining&Stilling Chamber(Adit HKU1)	0	0		25OCT11	0	0	-50	◆					
M42460	4.146-25% Completion of Lining(Adit SM1)	0	0		26OCT11	0	0	-47	◆					
M41200	4.020-50% Completion of Lining (Adit E7)	0	0		01NOV11	0	0	-57	◆					
M42400	4.140-100% Lining&Stilling Chamber(Adit PFLR1)	0	0		02NOV11	0	0	-30	◆					
M42410	4.141-Junction Between Adit&Adit(Adit PFLR1)	0	0		02NOV11	0	0	-30	◆					
M41610	4.061-100% Completion of Excavation (Adit BR6)	0	0		02NOV11	0	0	-43	◆					
M42320	4.132-100% Lining&Stilling Chamber (Adit W10)	0	0		08NOV11	0	0	-45	◆					
M41120	4.012-Junction Between M.Tunnel &Adit(Adit MB16)	0	0		11NOV11	0	0	-85	◆					
M41940	4.094-Junction Between M.Tunnel&Adit(Adit TP5)	0	0		12NOV11	0	0	-63	◆					
M42070	4.107-50% Completion of Lining(Adit CR1)	0	0		13NOV11	0	0	-49	◆					
M41870	4.087-100% Lining&Stilling Chamber(Adit M3)	0	0		14NOV11	0	0	32	◆					
M41520	4.052-50% Completion of Lining(Adit W1)	0	0		17NOV11	0	0	8	◆					
M42270	4.127-60% Completion of Lining (Adit P5)	0	0		17NOV11	0	0	-78	◆					
M41400	4.040-70% Completion of Lining(Adit W0)	0	0		19NOV11	0	0	-22	◆					
M41910	4.091-Junction Between M.Tunnel&Adit(Adit TP789)	0	0		19NOV11	0	0	2	◆					
M42470	4.147-50% Completion of Lining(Adit SM1)	0	0		19NOV11	0	0	-43	◆					
M42480	4.148-75% Completion of Lining(Adit SM1)	0	0		20NOV11	0	0	-30	◆					
M42170	4.117-50% Completion of Lining(Adit W8)	0	0		23NOV11	0	0	-3	◆					
M41060	4.006-50% Completion of Lining (Adit E5A)	0	0		25NOV11	0	0	-42	◆					
M42380	4.138-Junction Between Adit&Adit(Adit HKU1)	0	0		29NOV11	0	0	-47	◆					
M42080	4.108-100% Lining&Stilling Chamber(Adit CR1)	0	0		01DEC11	0	0	-47	◆					

JUL	AUG	SEP	OCT	NOV	DEC
2011					

Start Date	30NOV07		Early Bar
Finish Date	31OCT12		Last Month Progress 108A
Data Date	20SEP11		Progress Bar
Run Date	27SEP11 14:42		Critical Activity

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Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
SEP /2011 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
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011						
									JUL	AUG	SEP	OCT	NOV	DEC	
Section 1 (Adits)															
M41530	4.053-100% Lining & Stilling Chamber(Adit W1)	0	0		08DEC11	0	0	8							
M42490	4.149-100% Lining&Stilling Chamber(Adit SM1)	0	0		10DEC11	0	0	-29							
M41410	4.041-100% Lining & Stilling Chamber(Adit W0)	0	0		19DEC11	0	0	-23							
M42330	4.133-Junction Between Adit&Adit(Adit W10)	0	0		19DEC11	0	0	-76							
M41330	4.033-50% Completion of Lining (Adit DG1)	0	0		19DEC11	0	0	-94							
Section 3 (Portion E5B)															
M91020	9.02-Lining & Stilling Chamber (Adit)	0	0		07SEP11A	100	0	-29							
CC5-PART OF SECTION 1 OF THE WORKS (EAST PORTAL)															
Construction															
East Portal Assembly Chamber Lining Works															
E-1872	Assembly of Arch Formwork(CH133 to CH163)	12	0	15AUG11A	27AUG11A	100	12	-69							
E-1874	Lining (CH133-163)	67	56	29AUG11A	25NOV11	27	18	-73							
E-1876	Lining (CH43-133)	44	44	26NOV11	19JAN12	0	0	-73							
East Portal Intake Chamber/Tunnel Finishing Work															
E-1950	Intake Chamber (CH27.5 to CH43)	40	40	28NOV11	16JAN12	0	0	-86							
East Portal Maintenance Chamber Finishing Works															
E-1888	Dismantle Portal Enclosure & Hoist crane & vent	27	0	19JUL11A	13AUG11A	100	23	-50							
E-1900	Cast Side wall & arch	57	57	20SEP11	26NOV11	0	0	-86							
E-1902	Cast Center/end/retaining walls	18	18	28NOV11	17DEC11	0	0	-86							
E-1904	Backfill slope	12	12	19DEC11	04JAN12	0	0	-86							
East Portal River Channel Finishing Works															
E-2060	Removal of concrete deck	24	24	28OCT11	24NOV11	0	0	-23							
E-2062	Excavation Intake entrance	43	43	25NOV11	17JAN12	0	0	-23							
East Portal Finishing Works															
E-12729	Stoplog submission	0	0		19SEP11*	0	0	-55							
E-1721	HEC submission & application for permanent power	0	0		19SEP11*	0	0	-80							
E-1726	WSD Submission & Application for permanent Water	0	0		19SEP11*	0	0	-80							
E-1728	DSD Target application last manhole connection	0	0		19SEP11*	0	0	-80							
E-1830	Access Ramp on Top of RW1 to RW3 Part 1	48	48	20SEP11	16NOV11	0	0	-93							
E-1941	Major E&M Equipment Deliveries	77	77	20OCT11	20JAN12	0	0	-72							
E-1832	Access Ramp on Top of RW1 to RW3 Part 1	48	48	17NOV11	14JAN12	0	0	-93							
E-1730	Permanent Slope Works	60	60	25NOV11	09FEB12	0	0	-23							
E-1722	HEC Tentative Energization date	0	0		15DEC11*	0	0	0							
CC6-PART OF SECTION 1 OF THE WORKS (WEST PORTAL)															
Construction															
Western Portal Finishing Works															
WPR164	Excavate & ELS Still Basin(Ch10,704-Ch10,688) S1	52	10	28APR11A	30SEP11	50	119	-77							
WPR182	Excavate & ELS Still Basin(Ch10,668-Ch10,638)S3a	76	10	16MAY11A	30SEP11	40	106	-40							
WPR244	Arch Tunl Struct-wall&roof(Ch10,561-Ch10,554) A3	28	28	25JUN11A	24OCT11	0	72	-64							
WPR241	Arch Tunl Struct-wall&roof(Ch10,569-Ch10,561) A2	28	52	02JUL11A	21NOV11	0	67	-64							
WPR250	Arch Tunl Struct-wall&roof(Ch10,554-Ch10,533) A5	54	26	02JUL11A	21OCT11	0	67	-6							
WPR247	Arch Tunl Struct-wall&roof(Ch10,554-Ch10,544) A4	32	22	02JUL11A	17OCT11	0	67	-26							
WPR237	Arch Tunl Struct-wall&roof(Ch10,578-Ch10,569) A1	36	51	01AUG11A	29NOV11	0	42	-99							
WPR173	Excavate & ELS Still Basin(Ch10,688-Ch10,668) S2	33	5	17AUG11A	24SEP11	85	28	-55							
WPR190	Excavate & ELS Still Basin(Ch10,638-Ch10,622)S3b	33	5	17AUG11A	24SEP11	85	28	-31							
WPR197	Still Basin Structure (Ch10,704-Ch10,688) S1	46	40	02SEP11A	18NOV11	5	14	-71							
WPR079	Erect over head crane at shaft	8	8	20SEP11	28SEP11	0	0	-99							
WPR064	Removal 25t overhead gantry(120t crane mobilized)	8	8	20SEP11	28SEP11	0	0	-99							
WPR095	Erect concrete secatot sys from surface to shaft	11	11	20SEP11	03OCT11	0	0	-99							
WPR203	Still Basin Structure (Ch10,688-Ch10,668) S2	61	61	26SEP11	07DEC11	0	0	-55							
WPR066	Modification of ventilation system	15	15	29SEP11	18OCT11	0	0	-99							
WPR144	Handover Rect Trans Tunnel Adit Muck(Stg1) works	0	0	30SEP11		0	0	30							
WPR147	Site demolition	30	30	30SEP11	05NOV11	0	0	30							
WPR142	Reprovisioning works (After ADIT excavation)	30	30	30SEP11	05NOV11	0	0	30							
WPR208	Still Basin Struc Ch10,668-Ch10,638base/Wall S3a	89	89	12OCT11	30JAN12	0	0	-47							
WPR215	Still Basin Struc(Ch10,638-Ch10,622base/wall S3b	67	67	26OCT11	14JAN12	0	0	-47							
WPR228	Rect Trans Structure (Ch10,596-Ch10,578) R3	66	66	07NOV11	28JAN12	0	0	30							
Milestone															
Section 1 (Western Portal)															
M6-1021	6.01-Excavation(Stilling Basin) 100%	0	0		24SEP11	0	0	-37							
CC8 - SECTION 2 OF THE WORKS (PORTION E5A)															
Construction															
Intakes - External Structures (Stage1)															
QHS020288	Intake Permanent Structure (6pours) Stage 1 -E5A	66	66	04NOV11	26JAN12	0	0	-39							
Dropshaft - Excavation/ Shaft Lining															
QS020350	Dropshaft-Position,Fix&Grout - 42.8m ID2.3 (E5A)	31	31	27SEP11	03NOV11	0	0	-39							
Intakes - Internal Structures (Stage 2)															
QHS020297	Rock Excav stage 2 (122cu, 4cu/day) -(E5A)	69	6	11APR11A	26SEP11	60	131	-39							
Milestone															
Section 2 (Portion E5A)															
M81030	8.03-Lining (Dropshaft)	0	0		03NOV11	0	0	-48							
CC9 - SECTION 3 OF THE WORKS (PORTION E5B)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QS030370	Dropshaft-Position,Fix & Grout-47.53m ID1.5(E5B)	23	0	02AUG11A	13AUG11A	100	11	-17							
Intakes - Internal Structures (Stage 2)															
QPSH03501	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(E5B)	33	14	23AUG11A	07OCT11	0	23	-28							
QPSH03499	Penstock Delivery - (E5B)	0	0	20SEP11*		0	0	-24							
QHS030100	Local Intake Test & Commissioning - (E5B)	12	12	22SEP11	07OCT11	0	0	-28							
QPSH03502	Finishing works / PS BW / Reinstatement (E5B)	68	68	08OCT11	28DEC11	0	0	-28							

Start Date	30NOV07	Early Bar	109A	Sheet 4 of 10	WORKS PROGRAMME APPROVAL HISTORY			
Finish Date	31OCT12	Last Month Progress 108A			Date	Revision	Checked	Approved
Data Date	20SEP11	Progress Bar			13JAN09	Approved Works Programme # 1	SOR	804B
Run Date	27SEP11 14:42	Critical Activity			27MAR09	Approved Works Programme # 2	SOR	9032
					10DEC10	Approved Works Programme # 3	SOR	9116
					01MAR10	Approved Works Programme # 4	SOR	003A
					25FEB11	Approved Works Programme # 5	SOR	301F
					29JUN11	Approved Works Programme # 6	SOR	WP6C

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Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
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Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011						
									JUL	AUG	SEP	OCT	NOV	DEC	
Milestone															
Section 3 (Portion E5B)															
M91060	9.06-Lining (Dropshaft)	0	0		07SEP11A	100	0	-44							
M91080	9.08-Concrete Structure (Intake)	0	0		07OCT11	0	0	-36							
M91030	9.03-Junction Between Adit & Tunnel (Adit E5B)	0	0		19OCT11	0	0	-19							
CC10-SECTION 4 OF THE WORKS (PORTION MB16)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS040244	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(MB16)	36	0	19MAR11A	17AUG11A	100	122	-20							
QHS040245	Cut Slope to facilitate pipe laying (MB16)	24	0	21JUN11A	27JUL11A	100	31	-14							
QHS040246	Drain from SMH9 to Intake MB16(MB16)	36	12	23AUG11A	04OCT11	20	23	-47							
QHS040100	Local Intake Test & Commissioning - (MB16)	12	6	16SEP11A	26SEP11	50	3	-53							
QHS040247	Finishing works / PS BW / Reinstatement (MB16)	12	12	06OCT11	19OCT11	0	0	-59							
Pipe Laying															
QHS040250	Excav/pipelay/Manhole Constr SMH5 to SMH3 (MB16)	46	18	30MAY11A	12OCT11	75	94	-65							
QHS040251	Permanent reinstatement along Mt Butler Rd(MB16)	3	3	13OCT11	15OCT11	0	0	-65							
Milestone															
General															
M101090	10.09-Section4 MB16 Handover to SO	0	0		19OCT11	0	0	-72							
Section 4 (Portion MB16)															
M101070	10.07-100% of PipeLength of Drain.Works&Reins't	0	0		08AUG11A	100	0	-11							
M101080	10.08-Slopeworks, Backfilling & Reinstatment	0	0		15OCT11	0	0	-79							
CC11-SECTION 5 OF THE WORKS (PORTION MBD2)															
Construction															
Intakes - Internal Structures (Stage 2)															
QH050099	VO26 works Trench/Pipelaying&MH29 -MBD2	36	0	18JUL11A	29AUG11A	100	37	0							
QH0501031	BS/Penstock/Drain Dvn/TS - Stage 2-MBD2	33	33	22OCT11	29NOV11	0	0	-56							
QH050100	Local Intake Test & Commissioning - MBD2	12	12	16NOV11	29NOV11	0	0	-56							
Pipe Laying															
QH050103	Remaining Drainage works SMH10-SMH11 - Part 1	36	26	31AUG11A	21OCT11	10	16	-56							
QH050104	Remain Drain works MBD2-SMH24/SMH11-MBD2 -Part 2	36	36	14OCT11	24NOV11	0	0	-52							
QH050105	Remain Drain works MBD2-SMH13 - Part 3	37	37	25NOV11	10JAN12	0	0	-52							
Milestone															
Section 5 (Portion MBD2)															
M11-1050	11.05-Concrete Structure(Intake)	0	0		07SEP11A	100	0	15							
CC12-SECTION 6 OF THE WORKS (PORTION E7)															
Construction															
Intakes - External Structures (Stage1)															
QHS060264	Mech Dropshaft Excav (E7)	48	24	19JUL11A	19OCT11	55	53	-46							
Intakes - Internal Structures (Stage 2)															
QHS060265	Intake Permanent Structure(6 pours) (E7)	64	64	20OCT11	05JAN12	0	0	-46							
QHS060263	Penstock Delivery - (E7)	0	0	15NOV11*		0	0	0							
Pipe Laying															
QHS060272	VO15-Stage2 Trenchless betwn SMH14&E7 (E7)	78	20	07JUN11A	14OCT11	40	88	-41							
QHS060277	VO15-Stag 3aUtil Diversion&TTMS(Downstream) (E7)	68	21	20JUN11A	15OCT11	50	77	-42							
QHS060273	VO15-Stage2bTrenchless betwn SMH14&E7MH Cons(E7)	72	72	15OCT11	10JAN12	0	0	-41							
QHS060278	VO15-Stag 3b Piling & Flow Divr(Downstream) (E7)	60	60	17OCT11	27DEC11	0	0	-42							
Milestone															
Section 6 (Portion E7)															
M121040	12.04-Excavation (Intake)	0	0		19SEP11	0	0	-84							
M121010	12.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		19OCT11	0	0	-57							
M121020	12.02-Excavation (Dropshaft)	0	0		19OCT11	0	0	-57							
CC13-SECTION 7 OF THE WORKS (PORTION THR2)															
Construction															
Intakes - Internal Structures (Stage 2)															
QH070602	BS/Vortex/Drain Dvn/TS - Stage 2(THR2)	36	0	03JUN11A	22AUG11A	100	67	-36							
QH070603	Permanent Channel Diversion(THR2)	21	5	06AUG11A	24SEP11	80	37	-43							
QH070600	Penstock Delivery - (THR2)	0	0	07AUG11A		100	0	0							
QHS070100	Local Intake Test & Commissioning - (THR2)	6	6	20SEP11	26SEP11	0	0	-65							
QH070604	Penstock / Finishing/PS BW/Reinstatement (THR2)	37	37	26SEP11	09NOV11	0	0	-39							
Milestone															
General															
M13-1070	13.07-Section7 - THR2 Handover to SO	0	0		09NOV11	0	0	-48							
Section 7 (Portion THR2)															
M13-1060	13.06-Slopwork, Backfilling & Reinstatement	0	0		09NOV11	0	0	-48							
CC14-SECTION 8 OF THE WORKS (PORTION GL1)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QS080310	Dropshaft-Position,Fix & Grout-43.5m ID1.5 (GL1)	26	26	28SEP11	29OCT11	0	0	-76							
Intakes - Internal Structures (Stage 2)															
QHS080375	Intake Permanent Remaining(4 pours)Stage 1b(GL1)	38	38	31OCT11	13DEC11	0	0	-76							
QHS080374	Penstock Delivery - (GL1)	0	0	31OCT11*		0	0	-57							
QHS080376	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(GL1)	32	32	14DEC11	26JAN12	0	0	-76							
Milestone															
Section 8 (Portion GL1)															
M141030	14.03-Lining (Dropshaft)	0	0		29OCT11	0	0	-92							
CC15-SECTION9 OF THE WORKS(PORTION HR1)															
Construction															
Intakes - External Structures (Stage1)															
S090260	Main Structure Construciton-(HR1)	60	22	14JUN11A	17OCT11	75	82	-39							

JUL	AUG	SEP	OCT	NOV	DEC
2011					

Start Date 30NOV07
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Early Bar
 Last Month Progress 108A
 Progress Bar
 Critical Activity

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Design & Construction of HK, West Drainage Tunnel
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25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011					
									JUL	AUG	SEP	OCT	NOV	DEC
Intakes - External Structures (Stage1)														
S090280	Backfilling & Compaction-(HR1)	8	8	18OCT11	26OCT11	0	0	-39						
Dropshaft - Excavation/ Shaft Lining														
QS090350	Dropshaft-Position,Fix&Grout - 44.8m ID2.3 (HR1)	31	31	27OCT11	01DEC11	0	0	-35						
Intakes - Internal Structures (Stage 2)														
QPS090269	Penstock Delivery - (HR1)	0	0	31OCT11*		0	0	-57						
QPS090271	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(HR1)	36	36	02DEC11	16JAN12	0	0	-35						
Milestone														
Section 9 (Portion HR1)														
M151080	15.08-Lining (Dropshaft)	0	0		01DEC11	0	0	-41						
CC16-SECTION 10 OF THE WORKS (PORTION DG1)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QS100350	Dropshaft-Position,Fix&Grout - 112m ID1.5 (DG1)	41	41	31OCT11	16DEC11	0	0	-78						
Intakes - Internal Structures (Stage 2)														
QHS100380	Intake Permanent Structure(5 pours) Stage 1(DG1)	54	0	16MAY11A	08AUG11A	100	71	-22						
QHS100280	Penstock Delivery - (DG1)	0	0	31OCT11*		0	0	-57						
QHS100381	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(DG1)	33	33	17DEC11	31JAN12	0	0	-78						
Milestone														
Section 10 (Portion DG1)														
M16-1030	16.03-Lining (Dropshaft)	0	0		16DEC11	0	0	-93						
CC7 -PART OF SECTION 1 OF THE WORKS (PORTION W0)														
Construction														
Intakes - External Structures (Stage1)														
QHS14	Construct Stilling Chamber Base Slab (W0)	19	0	26JUL11A	16AUG11A	100	19	-36						
Adit Tunnel Excavation & Tunnel Lining - sec1														
QH333	Construct Stilling Chamber Walls/Roof (W0)	18	7	17AUG11A	27SEP11	10	28	-52						
QH3331	Complete Stilling Chamber lining by Adit Team	0	0		27SEP11	0	0	-52						
Intakes - Internal Structures (Stage 2)														
QH3332	Access Shaft & Dropshaft Lining - W0	52	52	28SEP11	29NOV11	0	0	-52						
QH3333	Intake Struct stage 1 & Access Shaft(6 pours)-W0	60	60	30NOV11	14FEB12	0	0	-52						
QH3330	Penstock Delivery - (W0)	0	0	15DEC11*		0	0	-26						
Milestone														
Section 1(W0,Adits,East & West Portal,Main Tunl)														
M7-1030	7.03-Lining(Dropshaft)	0	0		29NOV11	0	0	-63						
M7-1050	7.05-Lining(Access Shaft)	0	0		29NOV11	0	0	-63						
CC17-SECTION 11 OF THE WORKS (PORTION BR4)														
Construction														
Intakes - External Structures (Stage1)														
S110200	Construct Intake Stage 1 (4 pours)+ RBM Platform	61	0	01JUN11A	08AUG11A	100	57	4						
Dropshaft - Excavation/ Shaft Lining														
QS110610	RB Setup/Reaming/Demobilization(BR4) (58m)	55	19	09AUG11A	13OCT11	0	35	30						
QS11613	RBM Mobilization & Pilot Hole drilling - (BR4)	27	0	09AUG11A	24AUG11A	100	14	42						
QS11615	Back Reaming & Demobilization - (BR4)	28	19	09SEP11A	13OCT11	0	8	30						
QHS110435	Install Dropshaft lining Temp Support (BR4)	6	6	14OCT11	20OCT11	0	0	30						
QS110741	Dropshaft-Position,Fix & Grout-58.5m ID1.5(BR4)	26	26	21OCT11	19NOV11	0	0	30						
Intakes - Internal Structures (Stage 2)														
QHS110434	Penstock Delivery - (BR4)	0	0	20SEP11*		0	0	-24						
QHS110436	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(BR4)	33	33	21NOV11	30DEC11	0	0	30						
QHS170100	Local Intake Test & Commissioning - (BR4)	12	12	15DEC11	30DEC11	0	0	30						
Milestone														
Section 11 (Portion BR4)														
M171020	17.02-Excavation (Dropshaft)	0	0		13OCT11	0	0	35						
M171030	17.03-Lining (Dropshaft)	0	0		19NOV11	0	0	38						
CC18-SECTION 12 OF THE WORKS (PORTION W1)														
Construction														
Intakes - External Structures (Stage1)														
QPS120250	Part 2 Rock Excavation after RBM works - (W1)	42	8	30JUL11A	28SEP11	90	43	0						
QPS120251	Intake structure - Stage 1(8 pours) - (W1)	61	61	29SEP11	10DEC11	0	0	-11						
Dropshaft - Excavation/ Shaft Lining														
QS120290	RB Setup/Reaming/Demobilization(W1) (50m)	59	0	13JUN11A	29JUL11A	100	40	16						
QS120295	Back Reaming & Demobilization - (W1)	29	0	12JUL11A	29JUL11A	100	16	16						
QS120380	Dropshaft-Position,Fix&Grout - 50.5m ID2.3 (W1)	34	34	12DEC11	26JAN12	0	0	-11						
Intakes - Internal Structures (Stage 2)														
QHS120222	Penstock Delivery - (W1)	0	0	15NOV11*		0	0	0						
Milestone														
Section 12 (Portion W1)														
M181020	18.02-Excavation (Dropshaft)	0	0		08AUG11A	100	0	9						
M181040	18.04-Excavation (Intake)	0	0		19SEP11	0	0	-103						
M181030	18.03-Lining (Dropshaft)	0	0		10DEC11	0	0	-12						
CC19-SECTION 13 OF WORKS (PORTION BR5)														
Construction														
Intakes - External Structures (Stage1)														
S130215	Construct RBM Platform - (BR5)	12	0	13JUN11A	29JUL11A	100	40	-40						
Dropshaft - Excavation/ Shaft Lining														
QS130280	RB Setup/Reaming/Demobilization(BR5) (71m)	59	0	30JUL11A	17SEP11A	100	42	33						
QS130283	RBM Mobilization & Pilot Hole drilling - (BR5)	29	0	30JUL11A	19AUG11A	100	18	27						
QS130285	Back Reaming & Demobilization - (BR5)	30	0	20AUG11A	17SEP11A	100	24	33						
QL080	Stabilisation shaft BR5	6	6	20SEP11	26SEP11	0	0	32						
QS130340	Dropshaft-Position,Fix&Grout - 71m ID1.5 (BR5)	40	40	10NOV11	28DEC11	0	0	-4						

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10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011					
									JUL	AUG	SEP	OCT	NOV	DEC
Intakes - Internal Structures (Stage 2)														
QSH130299	Penstock delivery - (BR5)	0	0	15DEC11*		0	0	-26						
Milestone														
Section 13 (Portion BR5)														
M19-1020	19.02-Excavation (Dropshaft)	0	0		19SEP11	0	0	39						
CC20-SECTION 14 OF THE WORKS (PORTION BR6)														
Construction														
Intakes - External Structures (Stage1)														
S140191	Dropshaft Excavation -(BR6)	38	0	11MAY11A	11AUG11A	100	78	-44						
QHS140298	Flow Diversion & Backdrop manhole (BR6)	69	14	04JUN11A	07OCT11	50	89	-44						
S140192	Install Protection cover inside dropshaft (BR6)	10	0	12AUG11A	16AUG11A	100	4	-38						
S140193	Intake structure Stage 1, (5 pours) (BR6)	60	31	17AUG11A	27OCT11	5	28	-37						
Intakes - Internal Structures (Stage 2)														
QHS140296	Penstock Delivery - (BR6)	0	0	31OCT11*		0	0	-57						
QHS140297	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(BR6)	33	33	31OCT11	07DEC11	0	0	-39						
QHS140100	Local Intake Test & Commissioning - (BR6)	12	12	24NOV11	07DEC11	0	0	-39						
QHS140299	Finishing works / PS BW / Reinstatement (BR6)	36	36	08DEC11	21JAN12	0	0	-39						
Pipe Laying														
S140320	Finalize design details for drains & MH	36	0	14MAY11A	22AUG11A	100	84	-48						
S140206	Pipejacking SMH17 to Intake CH69-CH94 (BR6)	61	0	14JUL11A	19SEP11	10	57	17						
S140330	Cofferdam const, Excav & ELS at BR7	64	64	20SEP11	05DEC11	0	0	-63						
S140207	Remedial works for misaligned segments	30	30	20SEP11	26OCT11	0	0	17						
S140208	Precast pipe, grouting, connection to BR6	30	30	27OCT11	30NOV11	0	0	17						
S140209	Construct Manhole SMH17	29	29	01DEC11	06JAN12	0	0	17						
S140340	Pipeline & MH construction SMH17 to BR7	64	64	06DEC11	24FEB12	0	0	-57						
Milestone														
Section 14 (Portion BR6)														
M201020	20.02-Excavation (Dropshaft)	0	0		07SEP11A	100	0	-25						
M201070	20.07-100% P.Length of TrenchlessDrainageWorks	0	0		19SEP11	0	0	22						
M201040	20.04-Excavation (Intake)	0	0		07OCT11	0	0	-55						
M201050	20.05-Concrete Structure (Intake)	0	0		07DEC11	0	0	-46						
CC21-SECTION 15 OF THE WORKS (PORTION W3)														
Construction														
Intakes - External Structures (Stage1)														
S150199	Still Chamber Excavation +33mPD - W3	53	0	18MAY11A	27JUL11A	100	59	40						
Intakes - Internal Structures (Stage 2)														
QL0761	Stilling chamber Lining underneath Intake - (W3)	30	4	28JUL11A	23SEP11	30	45	0						
QHS150203	Penstock Delivery - (W3)	0	0	07AUG11A		100	0	0						
QHS150204	Intake Permanent Structure(3 pours) Stage 1a(W3)	36	36	24SEP11	07NOV11	0	0	21						
QL076	Stilling chamber Lining - (W3)	30	30	26OCT11	29NOV11	0	0	-34						
QHS150205	HEC Cable diversion (W3)	36	36	08NOV11	19DEC11	0	0	21						
QHS150206	Intake Permanent Structure(1 pour) Stage 1b(W3)	12	12	20DEC11	05JAN12	0	0	21						
QHS150207	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(W3)	36	36	20DEC11	06FEB12	0	0	21						
CC22-SECTION 16 OF THE WORKS (PORTION B2)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QS160290	RB Setup/Reaming/Demobilization(B2) (65m)	41	0	18JUL11A	24AUG11A	100	33	15						
QS160293	RBM Mobilization & Pilot Hole drilling - (B2)	15	0	18JUL11A	03AUG11A	100	15	7						
QS160295	Back Reaming & Demobilization - (B2)	26	0	04AUG11A	24AUG11A	100	18	15						
QPS160310	Dropshaft-Position,Fix & Grout-64.6m ID1.5 (B2)	40	40	21NOV11	09JAN12	0	0	-15						
Intakes - Internal Structures (Stage 2)														
QHS160123	Penstock Delivery - (B2)	0	0	07AUG11A		100	0	0						
QL071	Stabilisation shaft B2	6	0	25AUG11A	31AUG11A	100	6	15						
QHS160124	Intake Structure(2 pours) remaining Stage 1 (B2)	36	26	12SEP11A	21OCT11	0	6	10						
Milestone														
Section 16 (Portion B2)														
M22-1010	22.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		07SEP11A	100	0	-27						
M22-1020	22.02-Excavation (Dropshaft)	0	0		07SEP11A	100	0	3						
CC23-SECTION 17 OF THE WORKS (PORTION MA14)														
Construction														
Intakes - External Structures (Stage1)														
S170296	Intake Stage 1/RBM platform & OHC Install-(MA14)	59	0	31MAY11A	30JUL11A	100	51	7						
Dropshaft - Excavation/ Shaft Lining														
QS170560	RB Setup/Reaming/Demobilization(MA14) (154m)	70	42	25AUG11A	09NOV11	30	21	-7						
QS170595	RBM Mobilization & Pilot Hole drilling - (MA14)	23	2	25AUG11A	21SEP11	90	21	-14						
QS170597	Back Reaming & Demobilization - (MA14)	47	40	22SEP11	09NOV11	0	0	-7						
QPS170360	Dropshaft-Position,Fix & Grout-153.6m ID1.5(MA14)	35	35	06DEC11	18JAN12	0	0	-7						
Intakes - Internal Structures (Stage 2)														
QL067	Stabilisation shaft MA14	5	5	10NOV11	15NOV11	0	0	-7						
QL0671	Install Temp support for Dropshaft Lining- MA14	17	17	16NOV11	05DEC11	0	0	-7						
Milestone														
Section 17 (Portion MA14)														
M23-1010	23.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		21SEP11	0	0	-18						
M23-1020	23.02-Excavation (Dropshaft)	0	0		09NOV11	0	0	-8						
CC24-SECTION 18 OF THE WORKS (PORTION MA15)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QPS180340	Dropshaft-Position,Fix&Grout - 51.1m ID1.5(MA15)	37	0	09AUG11A	10SEP11A	100	29	10						
Intakes - Internal Structures (Stage 2)														
QHS180557	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(MA15)	33	27	12SEP11A	22OCT11	18	6	10						

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- █ Early Bar
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Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011					
									JUL	AUG	SEP	OCT	NOV	DEC
Intakes - Internal Structures (Stage 2)														
QHS180100	Local Intake Test & Commissioning - (MA15)	12	12	10OCT11	22OCT11	0	0	10						
QHS180558	Finishing works / PS BW / Reinstatement (MA15)	36	36	24OCT11	03DEC11	0	0	10						
QHS180555	Penstock Delivery - (MA15)	0	0	31OCT11*		0	0	-57						
QHS180559	Overhead Gantry Crane Dismantling (MA15)	7	7	05DEC11	12DEC11	0	0	10						
Milestone														
General														
M241070	24.07-Section18 - MA15 Handover to SO	0	0		12DEC11	0	0	11						
Section 18 (Portion MA15)														
M241030	24.03-Lining (Dropshaft)	0	0		19SEP11	0	0	4						
M241050	24.05-Concrete Structure (Intake)	0	0		03DEC11	0	0	12						
M241060	24.06-Slopedworks, Backfilling & Reinstatement	0	0		12DEC11	0	0	11						
CC25-SECTION 19 OF THE WORKS (PORTION MA17)														
Construction														
Intakes - External Structures (Stage1)														
S190339	Hard Excav to +162.5mPD	35	0	09JUL11A	27JUL11A	100	16	4						
S190342	Hard Excavation up to +160mPD	20	0	28JUL11A	07SEP11A	100	36	67						
S190344	Hard Excav to +157.1mPD + Stab + Soil Nail Rem	28	15	08SEP11A	08OCT11	90	9	67						
S190345	Install RBM Steel Platform	10	10	10OCT11	20OCT11	0	0	-56						
Dropshaft - Excavation/ Shaft Lining														
QS190620	RB Setup/Reaming/Demobilization(MA17) (117m)	69	69	21OCT11	12JAN12	0	0	-56						
QS190655	RBM Mobilization & Pilot Hole drilling - (MA17)	23	23	21OCT11	16NOV11	0	0	-56						
QS190657	Back Reaming & Demobilization - (MA17)	46	46	17NOV11	12JAN12	0	0	-56						
Milestone														
Section 19 (Portion MA17)														
M25-1040	25.04-Excavation (Intake)	0	0		08OCT11	0	0	81						
CC26-SECTION 20 OF THE WORKS (PORTION M3)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QPS200370	Dropshaft-Position,Fix&Grout- 133.4m ID1.5 (M3)	37	37	24NOV11	09JAN12	0	0	10						
Intakes - Internal Structures (Stage 2)														
QHS200409	Part 2 Rock Excav+Rock Stab&Drain Divn works -M3	71	10	01AUG11A	30SEP11	90	42	10						
QHS200411	Intake Permanent Structure(4 pours) Stage 1 -M3	36	36	03OCT11	14NOV11	0	0	10						
QHS200412	Overhead Gantry Erection -M3	14	14	08NOV11	23NOV11	0	0	10						
QHS200410	Penstock Delivery - (M3)	0	0	15DEC11*		0	0	-26						
Milestone														
Section 20 (Portion M3)														
M261011	26.02-Excavation (Dropshaft)	0	0		08AUG11A	100	0	-28	MC 126					
CC27-SECTION 21 OF THE WORKS (PORTION TP789)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QPS210280	Dropshaft-Position,Fix&Grout-162.1m ID2.3(TP789)	44	0	09JUL11A	08AUG11A	100	26	9						
Intakes - Internal Structures (Stage 2)														
QHS210407	Penstock Delivery - (TP789)	0	0	07AUG11A		100	0	0						
QHS210409	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(TP789)	36	19	09AUG11A	13OCT11	15	35	-9						
QHS210101	Local Intake Test & Commissioning - (TP789)	12	12	28SEP11	13OCT11	0	0	-9						
QHS210410	Finishing works / PS BW / Reinstatement (TP789)	18	18	14OCT11	03NOV11	0	0	-9						
QHS210411	OHC Hydraulic arm dismantling (TP789)	7	7	04NOV11	11NOV11	0	0	-9						
Milestone														
General														
M27-1070	27.07-Section21 - TP789 Handover to SO	0	0		11NOV11	0	0	-10						
Section 21 (Portion TP789)														
M27-1030	27.03-Lining (Dropshaft)	0	0		07SEP11A	100	0	-20	MC 127					
M27-1050	27.05-Concrete Structure (Intake)	0	0		13OCT11	0	0	-13						
M27-1060	27.06-Slopedworks, Backfilling & Reinstatement	0	0		11NOV11	0	0	-10						
CC28-SECTION 22 OF THE WORKS (PORTION TP5)														
Construction														
Intakes - Internal Structures (Stage 2)														
QHS220339	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(TP5)	36	20	25JUL11A	14OCT11	80	48	-35						
QHS220337	Penstock Delivery - (TP5)	0	0	07AUG11A		100	0	0						
QHS220100	Local Intake Test & Commissioning - (TP5)	6	6	29SEP11	07OCT11	0	0	-29						
QHS220340	Finishing works / PS BW / Reinstatement (TP5)	18	18	15OCT11	04NOV11	0	0	-35						
QHS220341	Dismantling Overhead Gantry Crane (TP5)	7	7	05NOV11	12NOV11	0	0	-35						
Milestone														
General														
M28-1070	28.07-Section22 - TP5 Handover to SO	0	0		12NOV11	0	0	-43						
Section 22 (Portion TP5)														
M28-1030	28.03-Lining (Dropshaft)	0	0		08AUG11A	100	0	-19	MC 126					
M28-1050	28.05-Concrete Structure (Intake)	0	0		04NOV11	0	0	-43						
M28-1060	28.06-Slopedworks, Backfilling & Reinstatement	0	0		12NOV11	0	0	-43						
CC29-SECTION 23 OF THE WORKS (PORTION TP4)														
Construction														
Intakes - Internal Structures (Stage 2)														
QHS230414	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(TP4)	36	45	11JUL11A	12NOV11	80	60	-65						
QHS230100	Local Intake Test & Commissioning - (TP4)	12	12	31OCT11	12NOV11	0	0	-65						
QH230502	Change OGC winch from 200 to 100m - TP4	7	7	14NOV11	21NOV11	0	0	-65						
QH230503	Finishing works / PS BW / Reinstatement -TP4	18	18	22NOV11	12DEC11	0	0	-65						
QH230504	Dismantle Overhead Gantry Crane(OHC) -TP4	7	7	13DEC11	20DEC11	0	0	-65						

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									JUL	AUG	SEP	OCT	NOV	DEC
Milestone														
General														
M291070	29.07-Section23 - TP4 Handover to SO	0	0		20DEC11	0	0	-77						
Section 23 (Portion TP4)														
M291050	29.05-Concrete Structure (Intake)	0	0		12DEC11	0	0	-79				◆		
M291060	29.06-Slopeworks, Backfilling & Reinstatement	0	0		20DEC11	0	0	-77						
CC30-SECTION 24 OF THE WORKS (PORTION W5)														
Construction														
Intakes - External Structures (Stage1)														
QHS240343	Construct Temporary Dropshaft Linng - (W5)	52	20	13JUN11A	14OCT11	65	83	-54	[Bar]			[Bar]		
QHS240345	Intake Structure (8 pours) Stage 1 (W5)	89	89	15OCT11	02FEB12	0	0	-54				[Bar]		
Intakes - Internal Structures (Stage 2)														
QHS240344	Penstock Delivery - (W5)	0	0	07AUG11A		100	0	0	◆					
Milestone														
Section 24 (Portion W5)														
M301020	30.02-Excavation (Dropshaft)	0	0		14OCT11	0	0	-66				◆		
CC31-SECTION 25 OF THE WORKS (PORTION CR1)														
Construction														
Intakes - External Structures (Stage1)														
S250280	Cofferdam Wall Curtain Grout (CR1)	24	0	24JUN11A	04AUG11A	100	35	-21	[Bar]			[Bar]		
S250290	OHC Installation -(CR1)	33	5	05AUG11A	24SEP11	0	38	-52	[Bar]			[Bar]		
S250291	Curtain Grout for HDC Portion -(CR1)	12	12	26SEP11	11OCT11	0	0	0				[Bar]		
S250310	HDC Excavation & Temp Lining -(CR1)	68	68	12OCT11	31DEC11	0	0	-63				[Bar]		
CC32-SECTION 26 OF THE WORKS (PORTION RR1)														
Construction														
Intakes - External Structures (Stage1)														
S260368	Cofferdam Excavation,ELS & Drain Divn - (RR1)	49	0	30MAR11A	27JUL11A	100	95	-32	[Bar]			[Bar]		
S260369	3rd Casing Installation(Remedial works) - RR1	39	16	28JUL11A	10OCT11	50	45	0	[Bar]			[Bar]		
QHS260374	Stage 1 structure (5 pours) - (RR1)	62	62	11OCT11	21DEC11	0	0	-71				[Bar]		
Intakes - Internal Structures (Stage 2)														
QHS260373	Penstock Delivery - (RR1)	0	0	07AUG11A		100	0	0	◆					
Milestone														
Section 26 (Portion RR1)														
M32-1040	32.04-Excavation (Intake)	0	0		08AUG11A	100	0	-51	MC 126◆					
CC33-SECTION 27 OF THE WORKS (PORTION W8)														
Construction														
Intakes - External Structures (Stage1)														
S270320	Cofferdam Excav, ELS & Dain Dvn to +63.6mPD-(W8)	70	4	27APR11A	23SEP11	95	120	-60	[Bar]			[Bar]		
S270321	Excavation + ELS to +58.5mPD - (W8)	60	60	24SEP11	05DEC11	0	0	-60				[Bar]		
S270330	HDC Excavation & Temp Lining - (W8)	31	31	06DEC11	13JAN12	0	0	-60				[Bar]		
Milestone														
Section 27 (Portion W8)														
M33-1040	33.04-Excavation (Intake)	0	0		05DEC11	0	0	-73				◆		
CC34-SECTION 28 OF THE WORKS (PORTION P5)														
Construction														
Intakes - External Structures (Stage1)														
QHS280114	Cofferdam Wall Pipe Piling & Grouting (P5)	64	34	14MAY11A	31OCT11	50	107	-64	[Bar]			[Bar]		
QHS280119	Shaft Remedial works(fill sand&anusus grout)(P5)	16	0	02JUL11A	20JUL11A	100	16	-16	[Bar]			[Bar]		
QHS280121	Shaft Remedial works(peripheral grout)(P5)	25	25	20SEP11	20OCT11	0	0	-67				[Bar]		
QHS280122	Shaft Remedial works(rock dowel&Grabbing)(P5)	99	99	21OCT11	20FEB12	0	0	-67				[Bar]		
QHS280118	Cofferdam Excav+ELS+Temp Divern to+95.6mPD -(P5)	98	98	01NOV11	29FEB12	0	0	-64				[Bar]		
Milestone														
Section 28 (Portion P5)														
M341010	34.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		31OCT11	0	0	-79				◆		
CC35-SECTION 29 OF THE WORKS (PORTION W10)														
Construction														
Intakes - External Structures (Stage1)														
QHS290584	Intake Struc Part 2(4 pours)+Drain D-Stag1b(W10)	40	40	26SEP11	12NOV11	0	0	-36				[Bar]		
Dropshaft - Excavation/ Shaft Lining														
QS290580	RB Setup/Reaming/Demobilization(W10) (95m)	59	0	27MAY11A	17SEP11A	100	95	-36	[Bar]			[Bar]		
QS290606	Back Reaming & Demobilization - (W10)	40	0	25JUN11A	17SEP11A	100	71	-36	[Bar]			[Bar]		
QPS290370	Dropshaft-Position,Fix&Grout- 94.7m ID2.3 (W10)	38	38	14NOV11	29DEC11	0	0	-36				[Bar]		
Intakes - Internal Structures (Stage 2)														
QL010	Stabilisation shaft W10	6	5	19SEP11A	24SEP11	10	1	-36	[Bar]			[Bar]		
Milestone														
Section 29 (Portion W10)														
M351020	35.02-Excavation (Dropshaft)	0	0		19SEP11	0	0	-45				◆		
CC36-SECTION 30 OF THE WORKS (PORTION HKU1)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QPS300300	Dropshaft-Position,Fix Grout- 52.0m ID2.3(HKU1)	26	0	25JUL11A	06AUG11A	100	12	-3	[Bar]			[Bar]		
Intakes - Internal Structures (Stage 2)														
QHS300804	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(HKU1)	36	12	08AUG11A	04OCT11	15	36	-15	[Bar]			[Bar]		
QHS300100	Local Intake Test & Commissioning - (HKU1)	12	12	20SEP11	04OCT11	0	0	-15				[Bar]		
QHS300805	Finishing works / PS BW / Reinstatement (HKU1)	18	18	06OCT11	26OCT11	0	0	-15				[Bar]		
QHS300806	Steel Deck Dismantling (HKU1)	18	18	27OCT11	16NOV11	0	0	-15				[Bar]		
Milestone														
General														
M361070	36.07-Section30 - HKU1 Handover to SO	0	0		16NOV11	0	0	-18				◆		

JUL	AUG	SEP	OCT	NOV	DEC
2011					

Start Date 30NOV07
Finish Date 31OCT12
Data Date 20SEP11
Run Date 27SEP11 14:42

- █ Early Bar
- █ Last Month Progress 108A
- █ Progress Bar
- █ Critical Activity

109A
Sheet 9 of 10
Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
SEP /2011 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
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2011					
									JUL	AUG	SEP	OCT	NOV	DEC
									Section30 (Portion HKU1)					
M361030	36.03-Lining (Dropshaft)	0	0		07SEP11A	100	0	-35						
M361050	36.05-Concrete Structure (Intake)	0	0		04OCT11	0	0	-19						
M361060	36.06-Slopeworks, Backfilling & Reinstatement	0	0		16NOV11	0	0	-18						
CC37-SECTION 31 OF THE WORKS (PORTION PFLR1)														
Construction														
Dropshaft - Excavation/ Shaft Lining														
QS311400	RB Setup/Reaming/Demobilization(PFLR1) (56m)	51	0	04JUL11A	06AUG11A	100	30	5						
QS311430	Back Reaming & Demobilization - (PFLR1)	33	0	18JUL11A	06AUG11A	100	18	5						
QPS310330	Dropshaft-Position,Fix&Grout-56.4m ID2.3 (PFLR1)	24	24	03NOV11	30NOV11	0	0	-25						
Intakes - Internal Structures (Stage 2)														
QHS311007	Penstock Delivery - (PFLR1)	0	0	07AUG11A		100	0	0						
QL0021	Stabilisation shaft PFLR1	6	0	15AUG11A	22AUG11A	100	7	-2						
QHS311008	Complete remaining Stage 1 Concrete pours(PFLR1)	34	22	23AUG11A	17OCT11	0	23	-11						
QHS311009	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(PFLR1)	33	33	01DEC11	11JAN12	0	0	-25						
Milestone														
Section 31 (Portion PFLR1)														
M371020	37.02-Excavation (Dropshaft)	0	0		08AUG11A	100	0	4						
M371030	37.03-Lining (Dropshaft)	0	0		30NOV11	0	0	-29						
CC38-SECTION 32 OF THE WORKS (PORTION SM1)														
Construction														
Intakes - External Structures (Stage1)														
S321360	Waiting for Penstock delivery - SM1	65	0	05JAN11A	25JUL11A	100	162	-1						
Intakes - Internal Structures (Stage 2)														
QHS321633	Penstock Delivery (SM1)	0	0	25JUL11A		100	0	-8						
QHS321634	Penstock/Finish/PSBW/RI - Intake Stage 2 (SM1)	22	0	26JUL11A	22AUG11A	100	24	-6						
Milestone														
General														
M381070	38.07-Section32 - SM1 Handover to SO	0	0		19SEP11	0	0	-35						
Section 32 (Portion SM1)														
M381030	38.03-Lining (Dropshaft)	0	0		30SEP11	0	0	-45						

JUL	AUG	SEP	OCT	NOV	DEC
2011					

Start Date 30NOV07
 Finish Date 31OCT12
 Data Date 20SEP11
 Run Date 27SEP11 14:42

- Early Bar
- Last Month Progress 108A
- Progress Bar
- Critical Activity

109A Sheet 10 of 10

Design & Construction of HK. West Drainage Tunnel
 Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
SEP /2011 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
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01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

**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) • NC2 (The Legend) • NC3 (Outside Aegean Terrace) • NC4 (Man Yuen Garden) • NC5 (Blk D Villa Monte Rosa) • NC6 (Rosaryhill School) • NC7 (Buddist Li Ka Shing Care & Attention Home for the Elderly) • NC8 (Marymount Secondary School) • NC9 (117 Blue Pool Road) • NC10 (The Harbour View) • 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 • NC2 - Facade measurement • NC3 - Facade measurement • NC4 - Facade measurement • NC5 - Free field measurement • NC6 - Facade measurement • NC7 - Facade measurement • NC8 – Facade measurement • NC9 – Facade measurement • NC10 – Facade measurement

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
			Technology) • NC18 (Blk A, 80 Robinson Road) • NC19 (Villa Veneto)	<ul style="list-style-type: none"> • NC11 – Free field measurement • NC12 - Facade measurement • NC13 - Facade measurement • NC14 - Facade measurement • 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"> • GNC7 (Hong Villa) 	<ul style="list-style-type: none"> • Ground floor inside the nearest building during the TBM construction work

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.

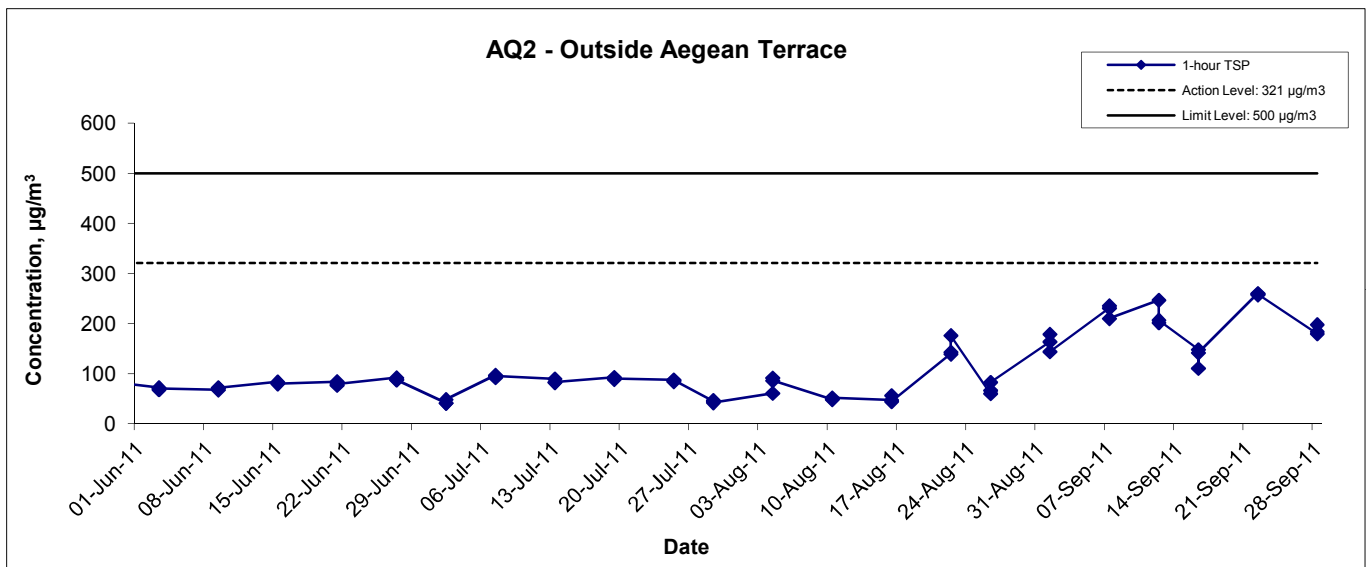
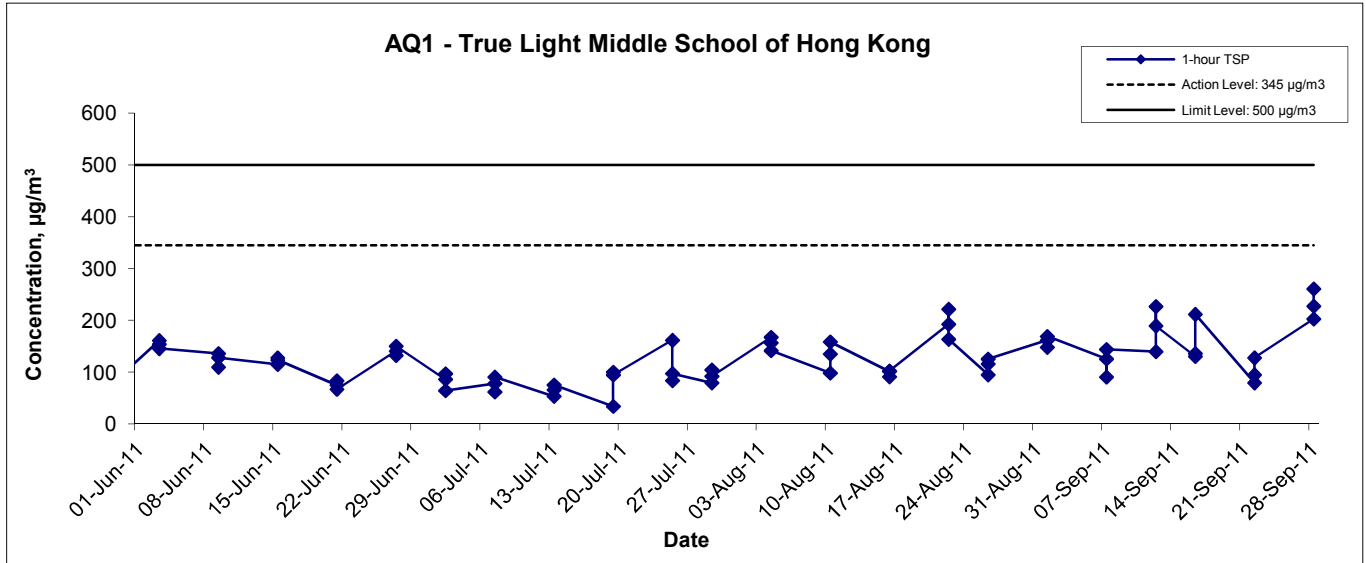
(**) to be selected based on Area Sensitivity Rating.

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

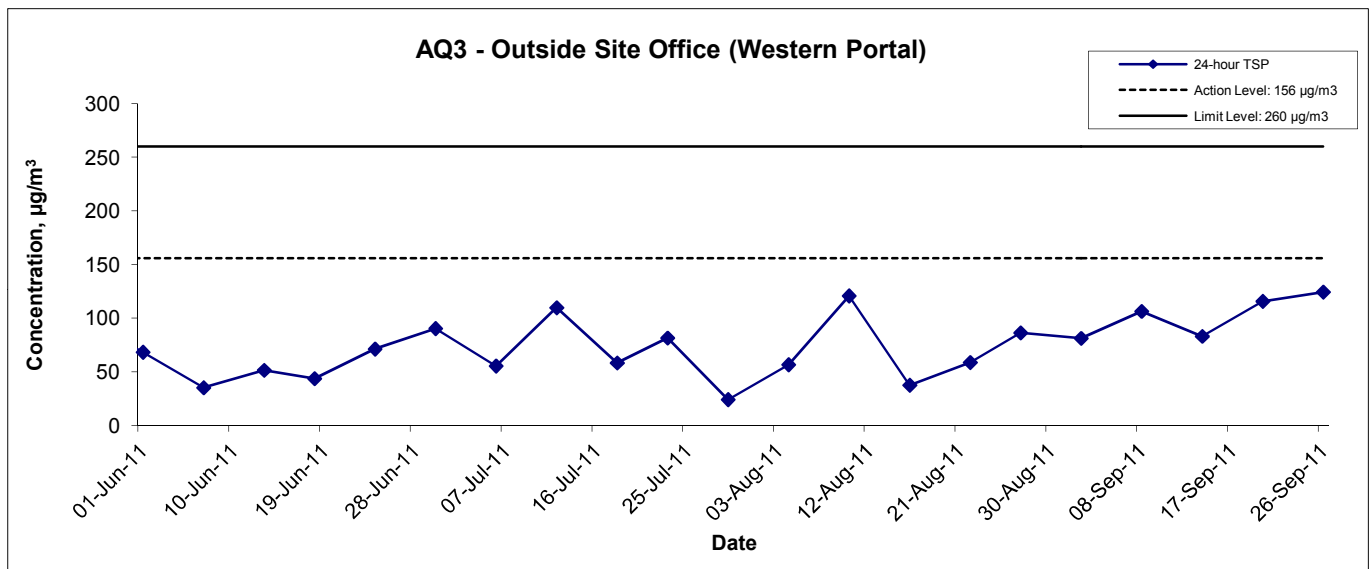
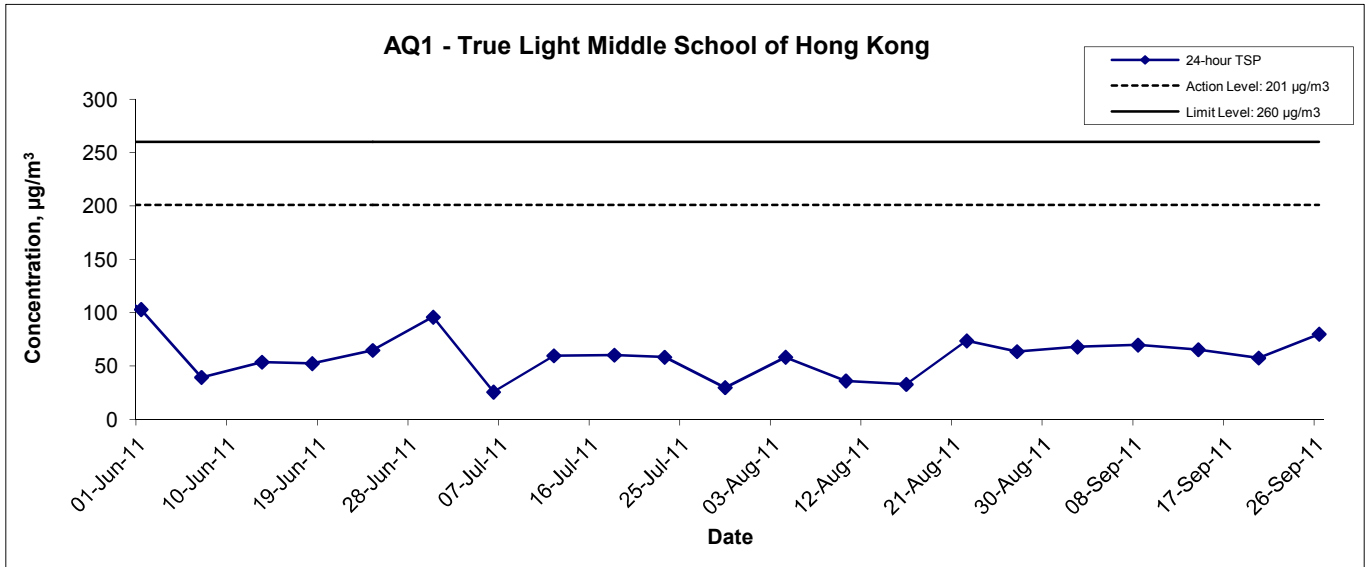
**APPENDIX D
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS**

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 Sep 11	Appendix D	

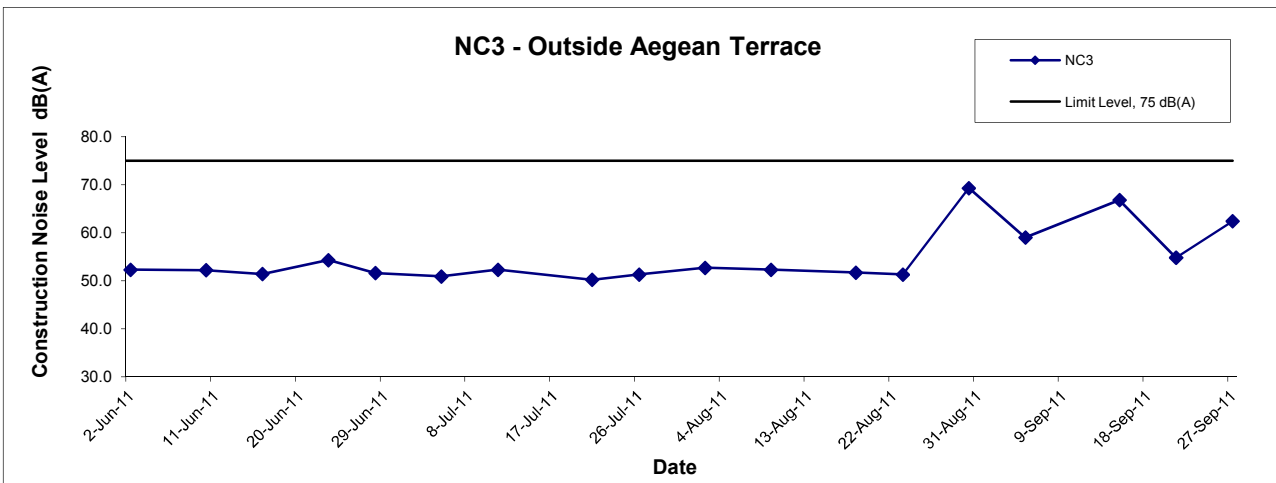
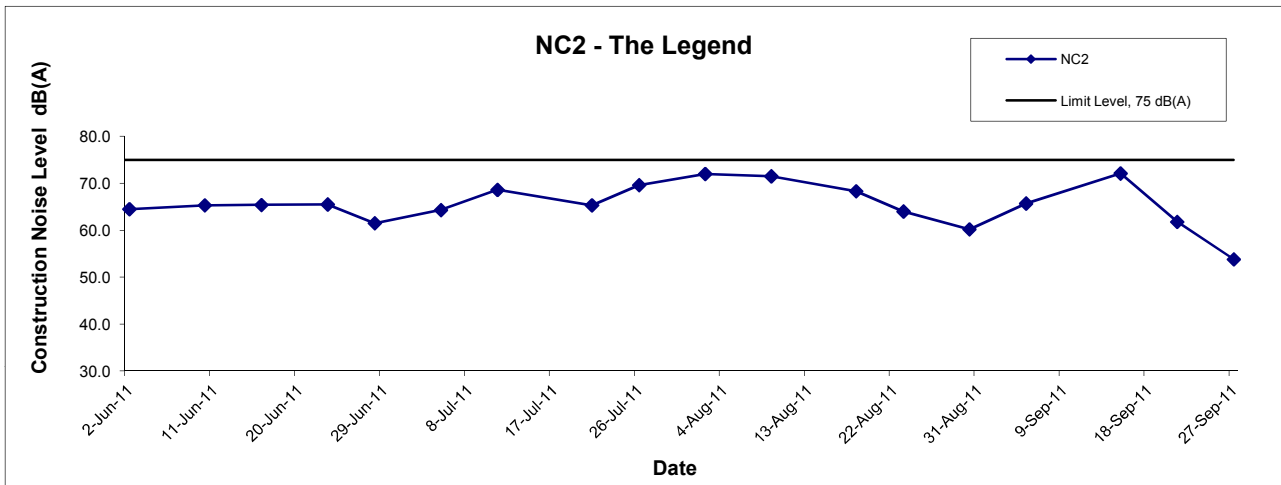
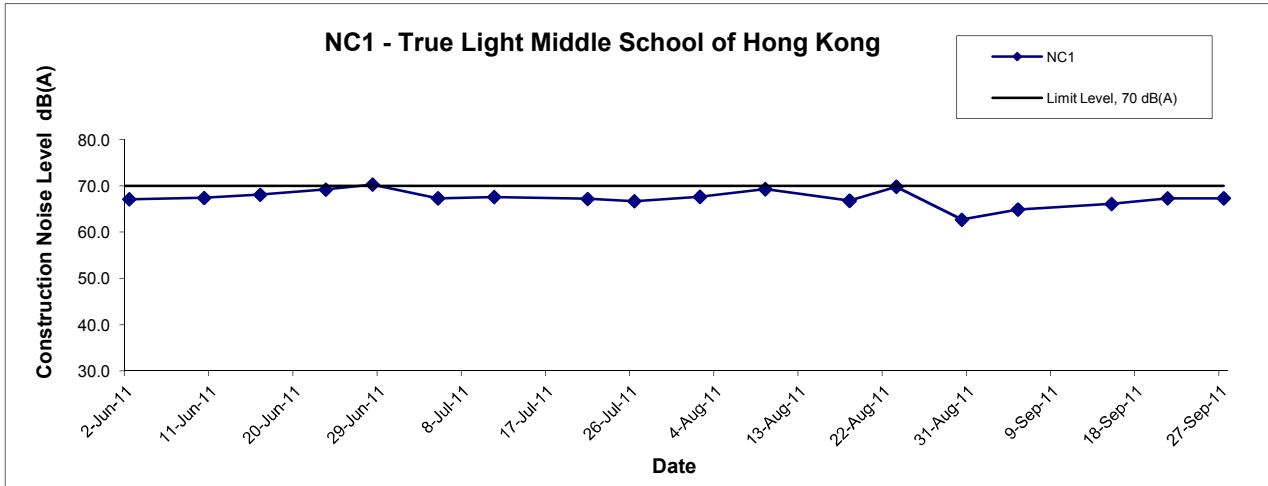
24-hr TSP Concentration Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Sep 11	Appendix D	

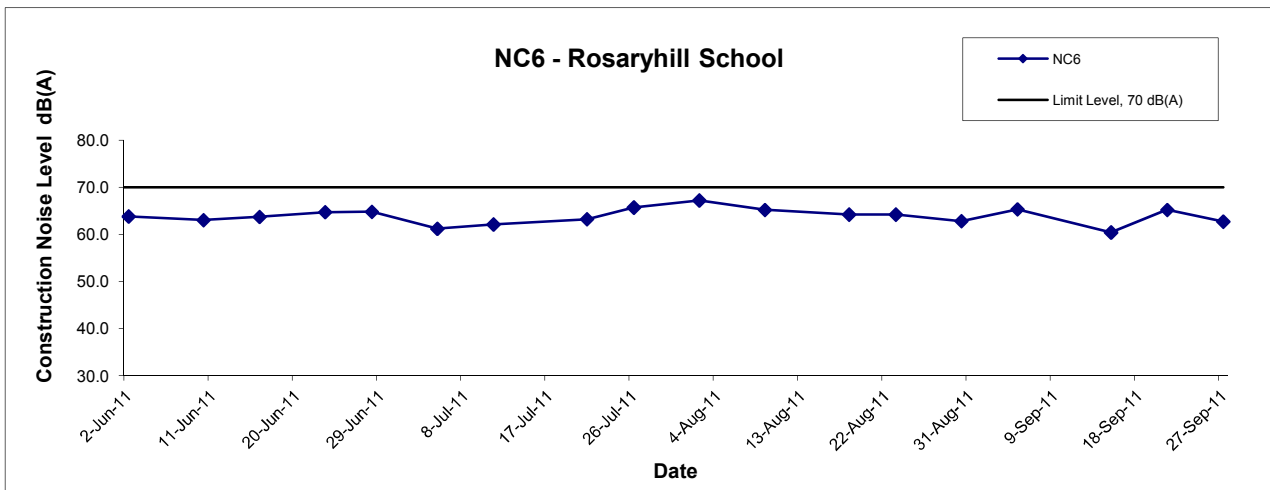
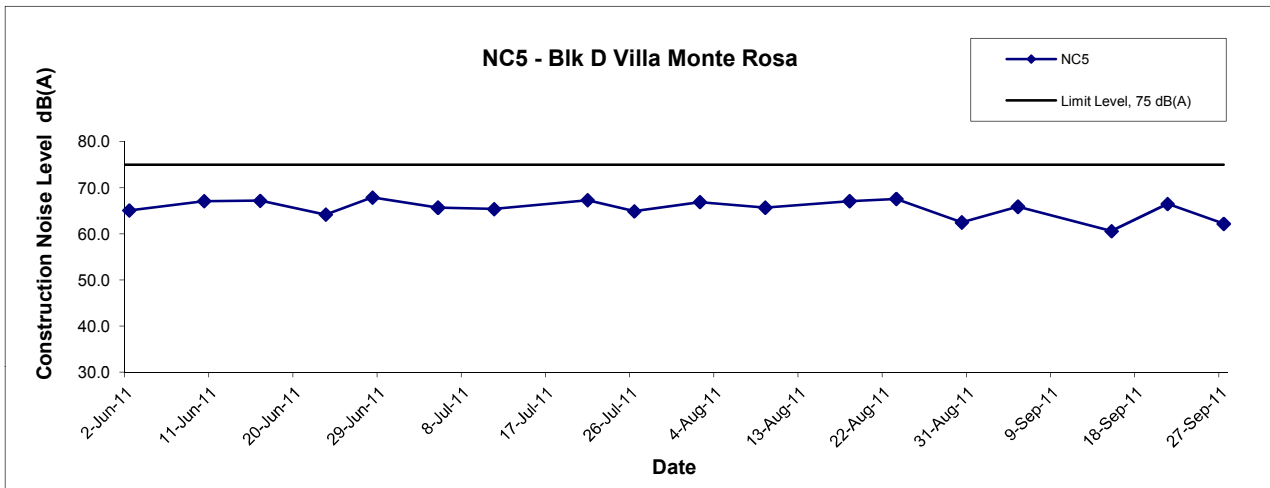
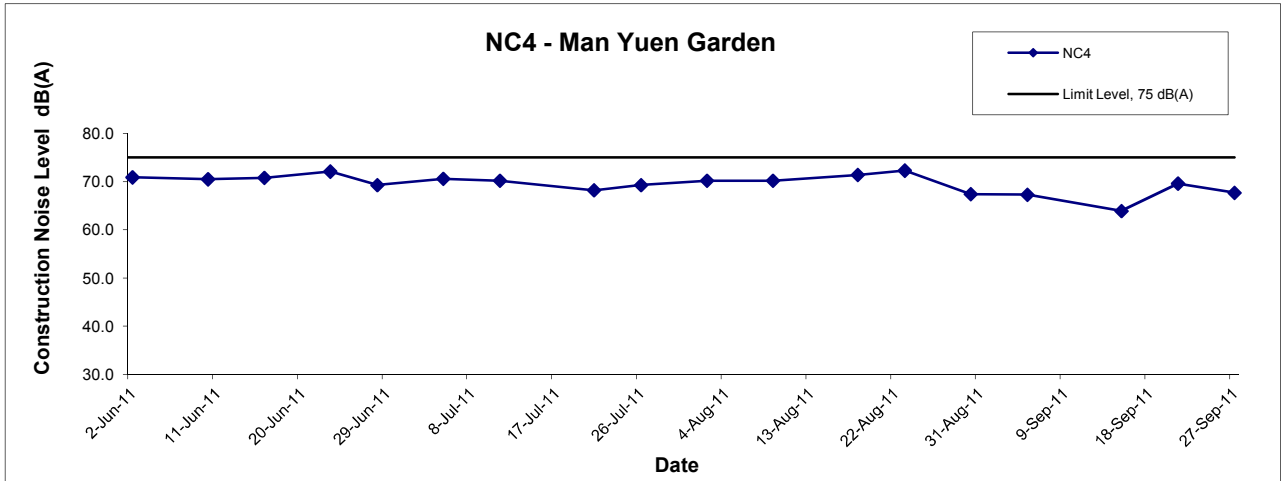
**APPENDIX E
GRAPHICAL PRESENTATION OF
NOISE MONITORING RESULTS**

Noise Levels



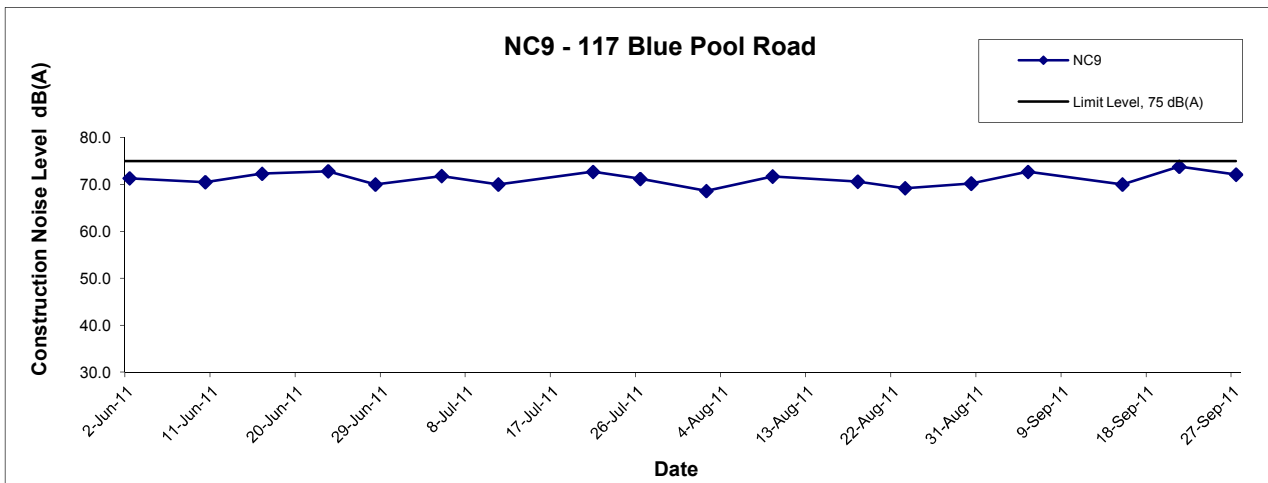
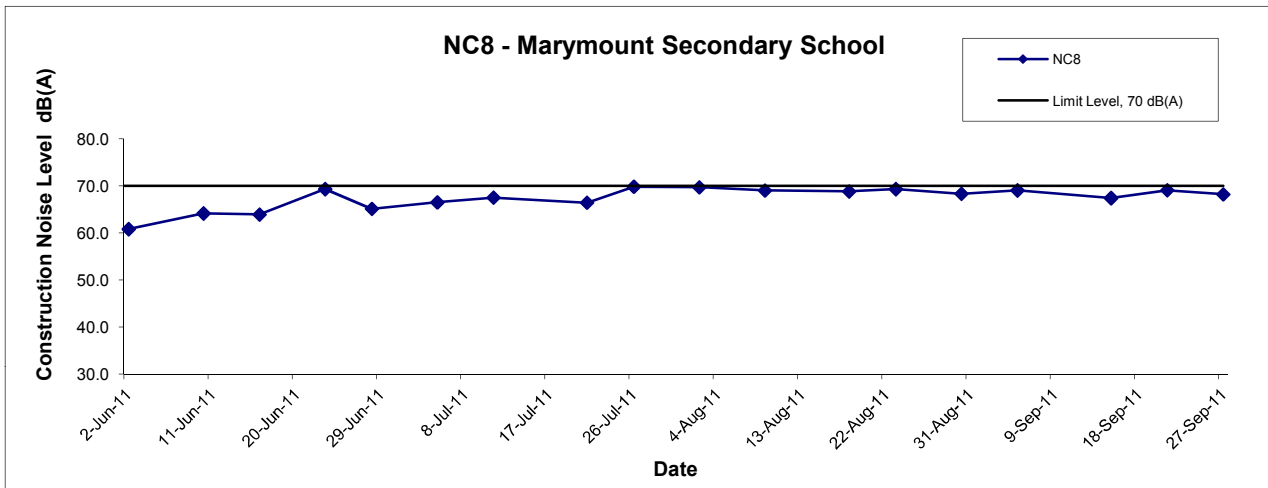
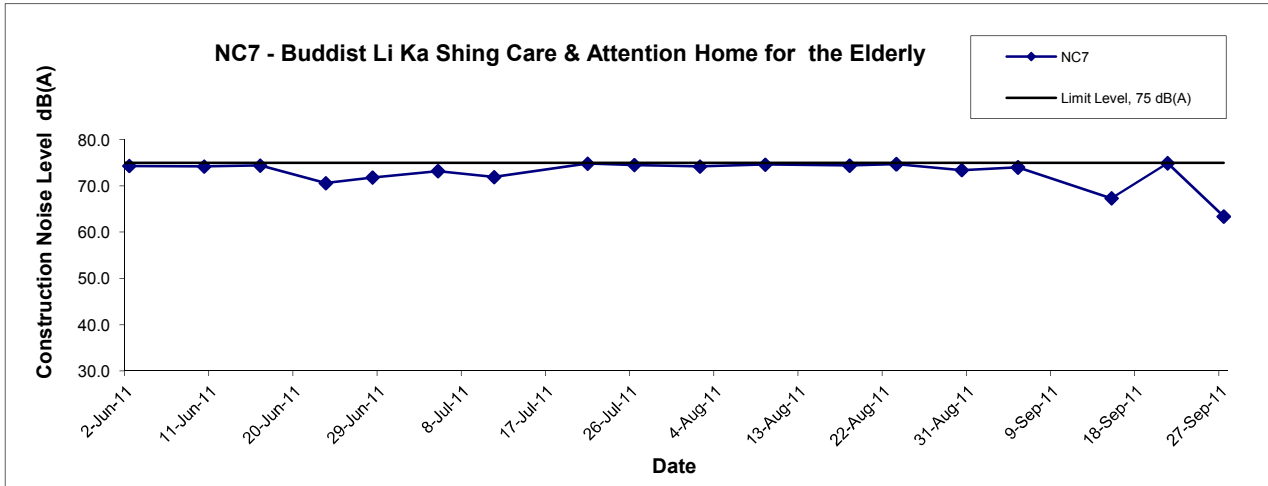
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Date	Sep 11	Appendix	E	

Noise Levels



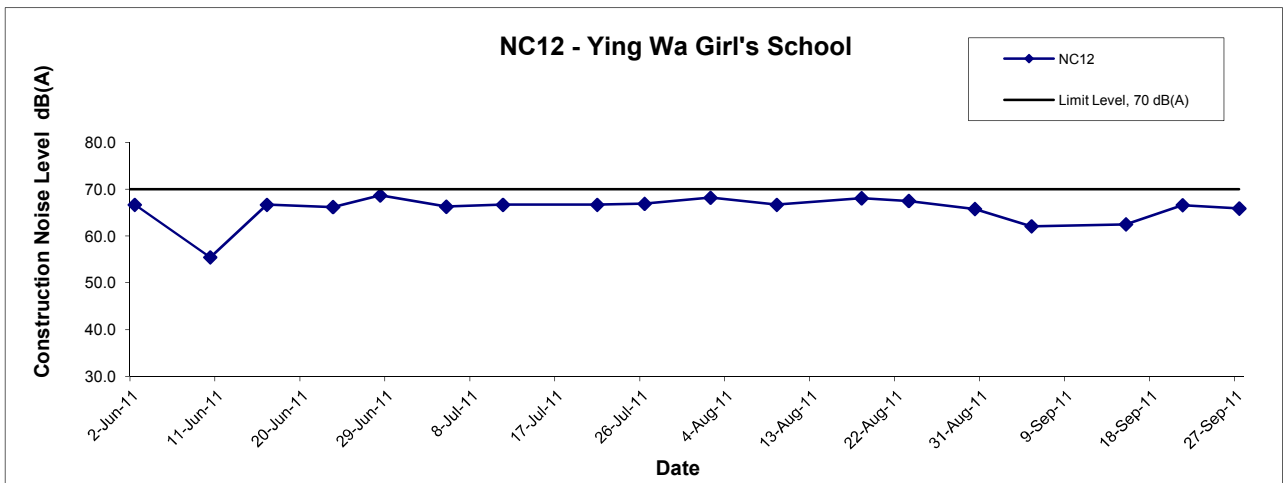
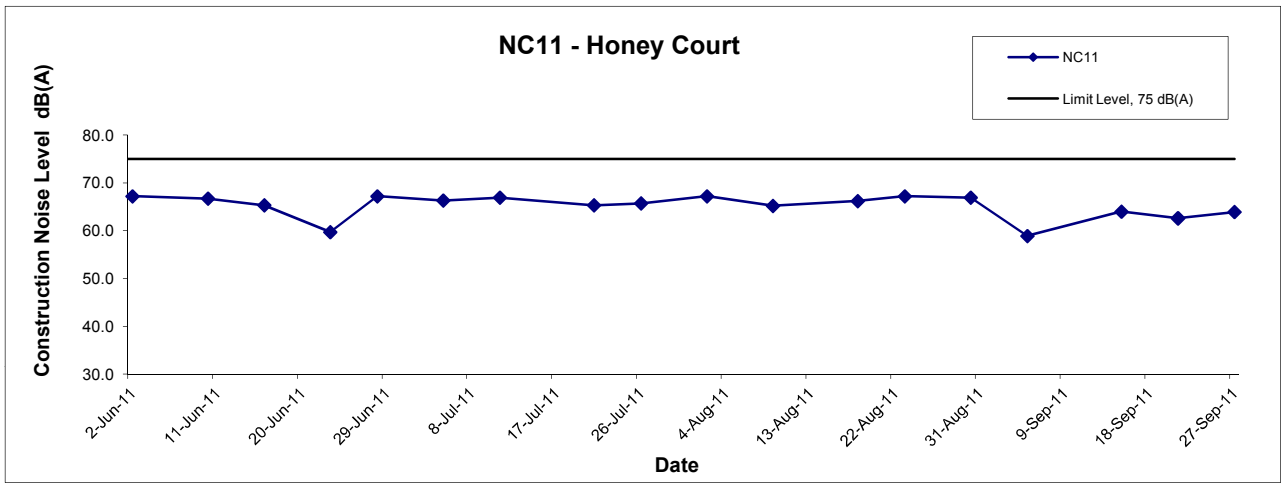
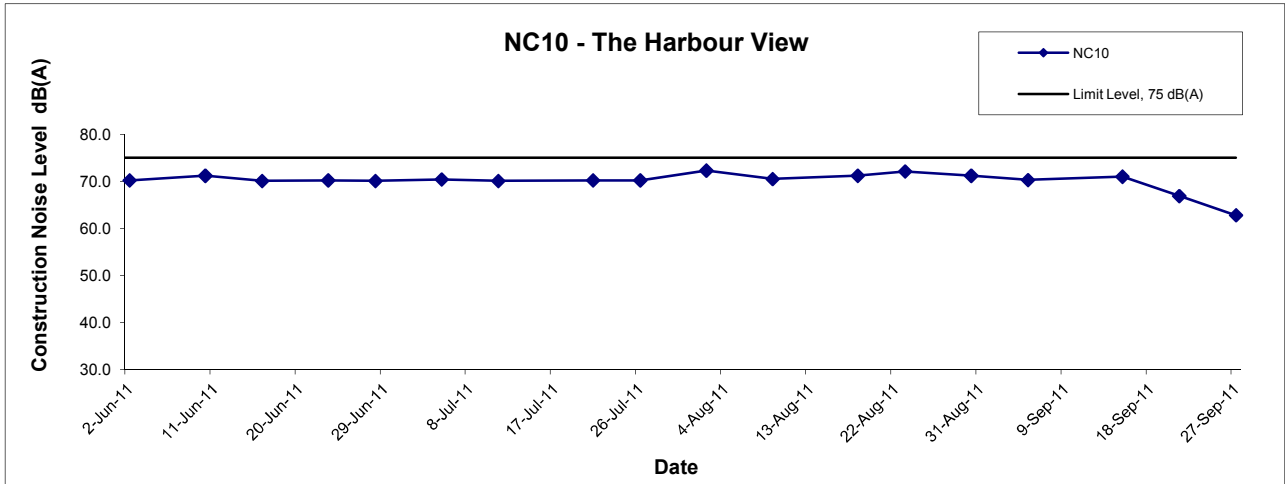
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	Date	Sep 11	Appendix	E	

Noise Levels



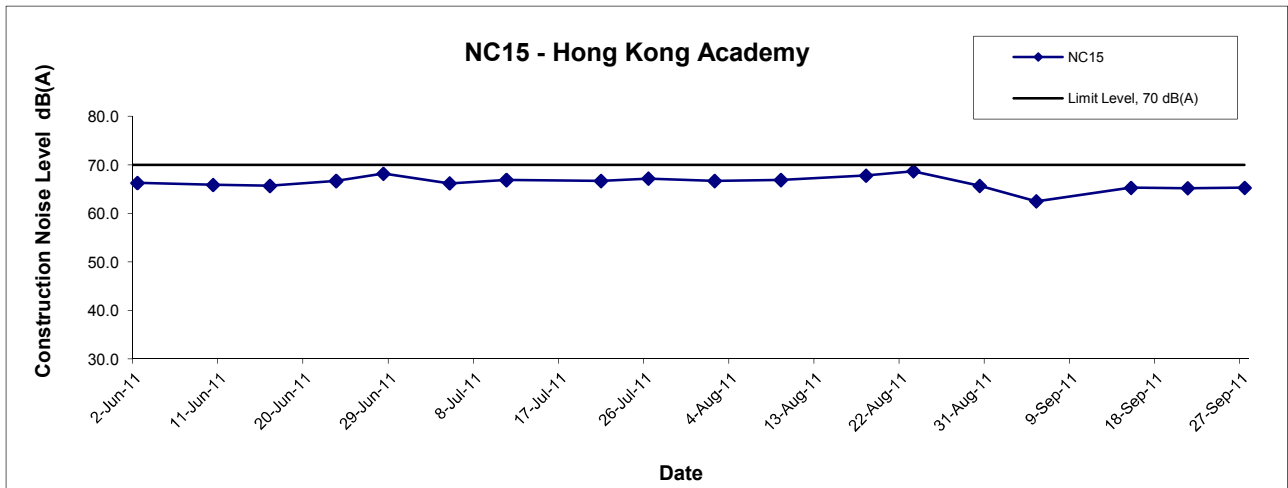
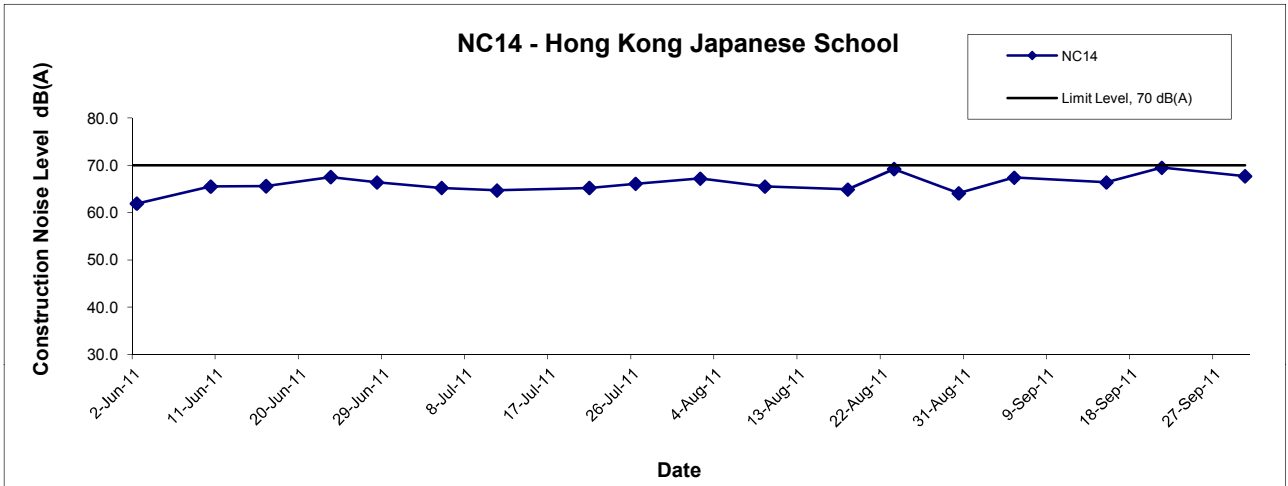
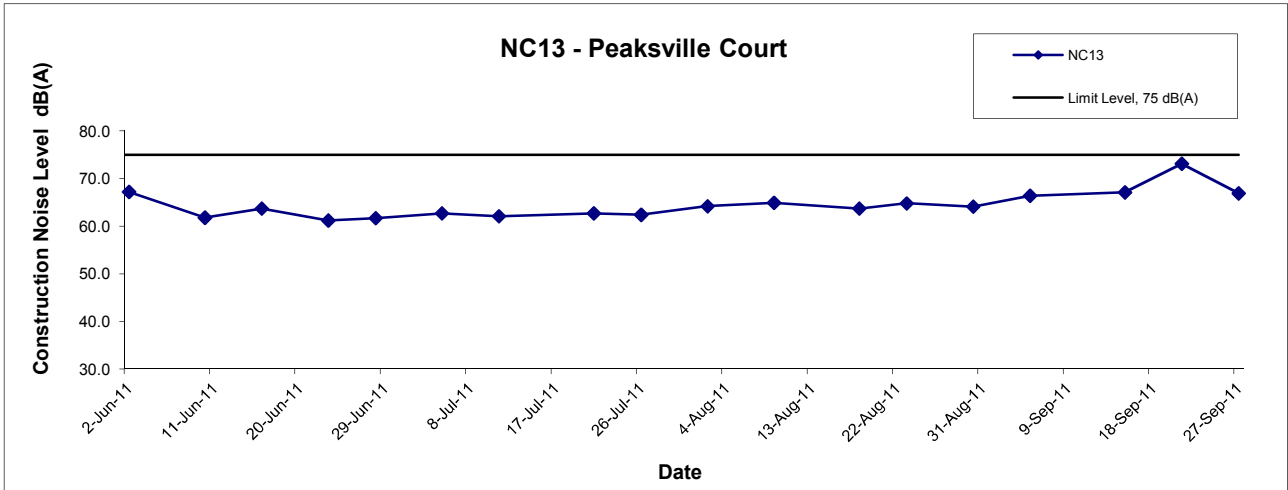
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	Date	Sep 11	Appendix	E	

Noise Levels



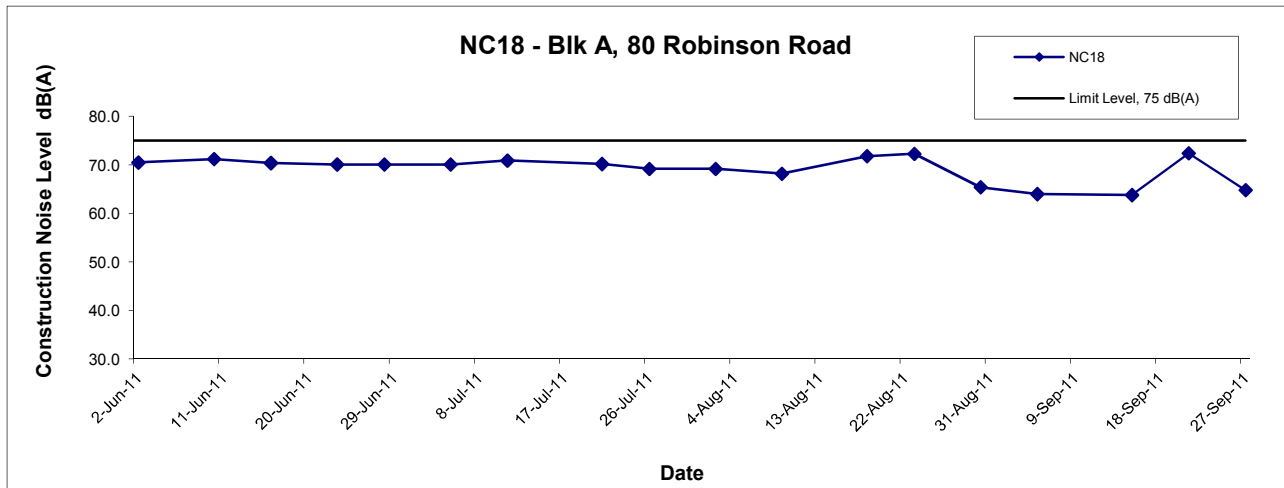
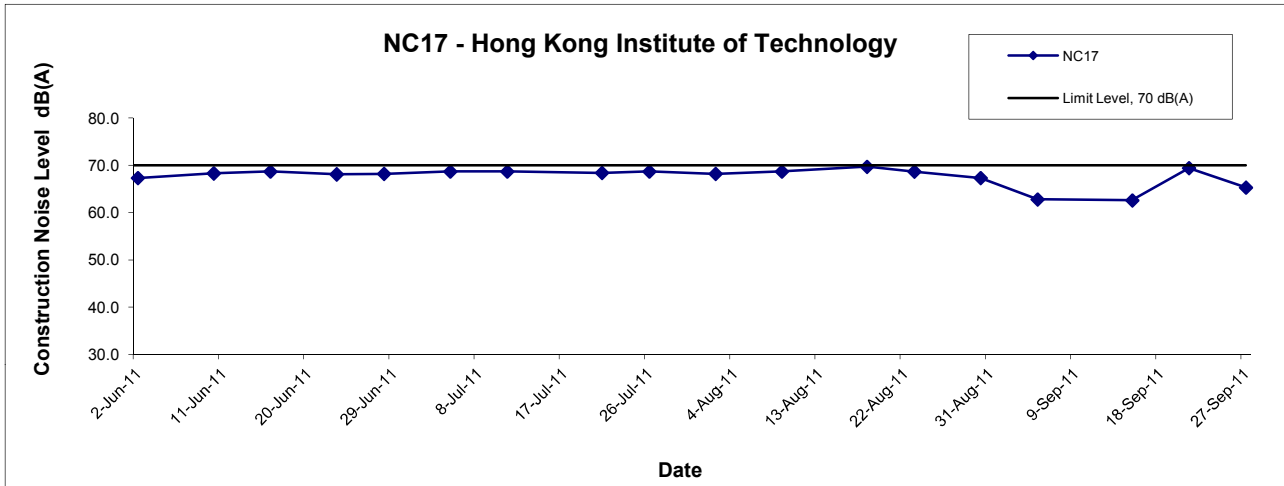
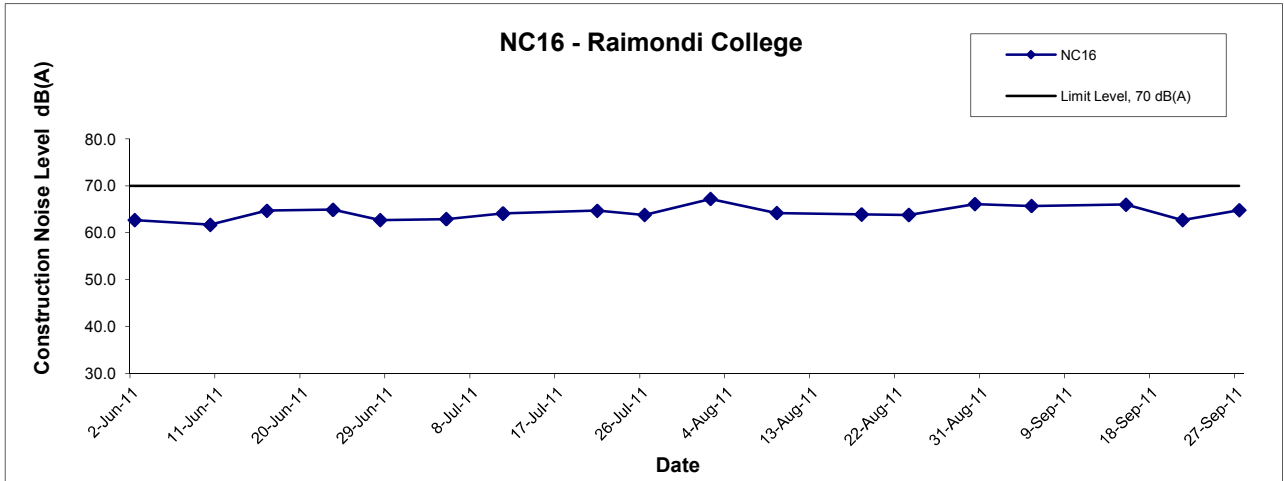
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Date	Sep 11	Appendix	E	

Noise Levels



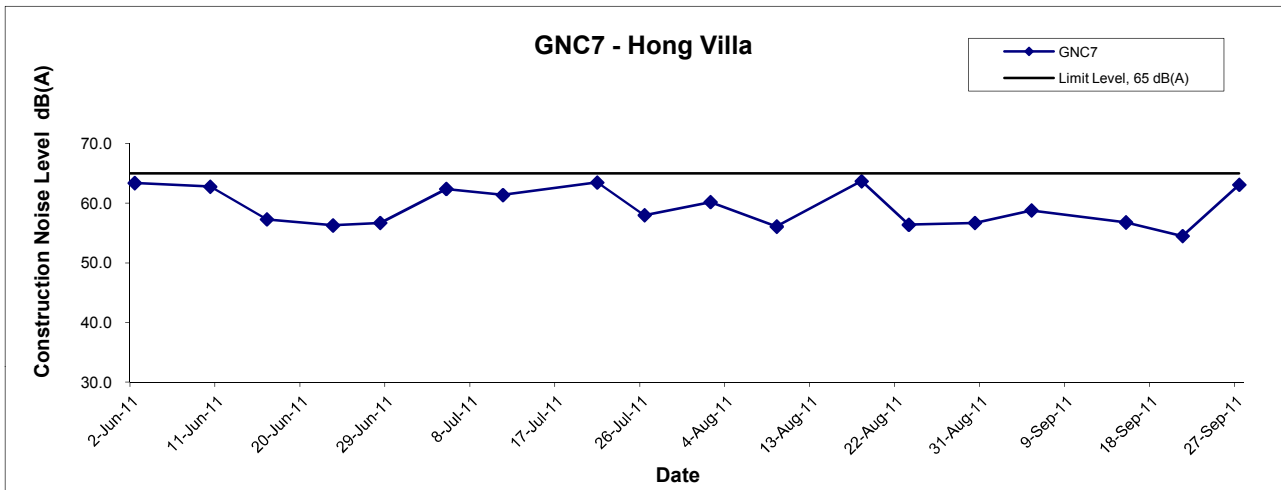
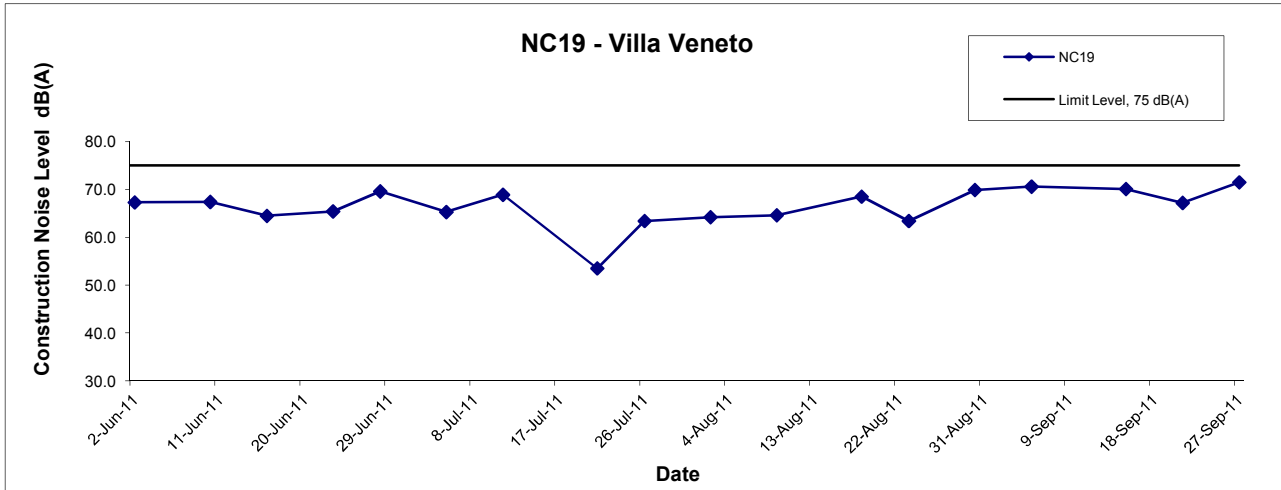
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	Date	Sep 11	Appendix	E	

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	Sep 11	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 Sep 11	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

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	<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>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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<p>Construction Noise</p>	<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>

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	<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> <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>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>N/A</p> <p>N/A</p>

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	<p>Transfer of rock fill material (armor 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>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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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>^</p> <p>^</p> <p>^</p> <p>^</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>^</p> <p>^</p> <p>^</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>^</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>^</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>^</p>

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Types of Impacts	Mitigation Measures	Status
	<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>

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
Landscape and Visual	<p>The proposed landscape and visual mitigation measures during the construction phase include:</p> <p>CM1 - Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.</p> <p>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.</p> <p>CM3 - Trees unavoidably affected by the works should be transplanted where practical.</p> <p>CM4 - Compensatory tree planting should be provided to compensate for felled trees.</p> <p>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.</p> <p>CM7 – Control of night-time lighting</p> <p>CM8 – Erection of decorative screen hoarding</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;
 # Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
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 July 2011

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	07/07/2011	Wastewater was observed directing to public drain at Intake W10. The Contractor was reminded to connect the site drain and sedimentation tank, so that the wastewater can be treated before discharging out.	Rectification/improvement was observed during the follow-up audit session.
	14/07/2011	The discharge from sedimentation tank was observed milky. The Contractor was reminded to review the effectiveness of the desilting facility at Intake BR6.	Rectification/improvement was observed during the follow-up audit session.
	28/07/2011	Stockpile was observed to be exposed at Intake W10. The Contractor was reminded to provide the bunding area around it and clear it as soon as possible, to prevent from directing to the public during rain.	Rectification/improvement was observed during the follow-up audit session.
<i>Air Quality</i>	07/07/2011	The stockpile was observed to be disposed at Intake DG1. The Contractor was reminded to cover the stockpile properly after work, to avoid dust generation.	Rectification/improvement was observed during the follow-up audit session.
<i>Waste/Chemical Management</i>	14/07/2011	Oil drum was observed to be stored without drip tray at Western Portal. The Contractor was reminded to provide a drip tray in accordance with relevant WCO requirement.	Rectification/improvement was observed during the follow-up audit session.
<i>Reminders</i>	07/07/2011	The Contractor was reminded of the followings: - The deposited mud along the site drain at Intake P5 should be cleared.	Rectification/improvement was observed during the follow-up audit session.
	07/07/2011	The Contractor was reminded of the followings: - To provide drip tray at underneath the oil drum at Intake P5.	Rectification/improvement was observed during the follow-up audit session.
	07/07/2011	The Contractor was reminded of the followings: - To replace the worn sand bag at Intake P5.	Rectification/improvement was observed during the follow-up audit session.
	07/07/2011	The Contractor was reminded of the followings: - To clear the stagnant water within the wheel washing facility at Intake GL1.	Rectification/improvement was observed during the follow-up audit session.
	14/07/2011	The Contractor was reminded of the followings: - The deposited mud along the site drain at Western Portal should be cleared, to avoid blockage of drainage channel.	Rectification/improvement was observed during the follow-up audit session.
	14/07/2011	The Contractor was reminded of the followings: - The silty water should be cleared within H-pile at Intake W5.	Rectification/improvement was observed during the follow-up audit session.
	14/07/2011	The Contractor was reminded of the followings: - To clear the worn sand bag at Intake E5A.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
	14/07/2011	The Contractor was reminded of the followings: - To clear the stagnant water within the drip tray at Intake MB16, to avoid overflow of grease water.	Rectification/improvement was observed during the follow-up audit session.
	21/07/2011	The Contractor was reminded of the followings: - Clear deposited mud along the site drain at WP.	Rectification/improvement was observed during the follow-up audit session.
	21/07/2011	The Contractor was reminded of the followings: - Provide the plug for the drip tray at Intake W10.	Rectification/improvement was observed during the follow-up audit session.
	21/07/2011	The Contractor was reminded of the followings: - Ensure the compressor's door close when operation and properly maintenance of the equipment should be provided to avoid dark smoke at Intake W10 and E7.	Rectification/improvement was observed during the follow-up audit session.
	21/07/2011	The Contractor was reminded of the followings: - Clear the standing water with oil as chemical waste at the drip tray at Intake RR1 and within the wheel washing bay at E5A respectively.	Rectification/improvement was observed during the follow-up audit session.
	21/07/2011	The Contractor was reminded of the followings: - To remove the construction materials at the public road at Intake W8.	Rectification/improvement was observed during the follow-up audit session.
	28/07/2011	The Contractor was reminded of the followings: - Clear the stagnant water within the H-pile at Intake W10 and W5.	Rectification/improvement was observed during the follow-up audit session.

Summary of Observation and Recommendation Made during Site Inspection in August 2011

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	11/08/2011	One compartment of sedimentation tank was observed full of deposited concrete and mud. The Contractor was reminded to clear it as soon as possible.	Rectification/improvement was observed during the follow-up audit session.
	18/08/2011	The stagnant silty water was observed within H-pile of Intake W5. The Contractor was reminded to clear it as soon as possible, to avoid mosquito breeding.	Rectification/improvement was observed during the follow-up audit session.
	25/08/2011	The three compartments of sedimentation tank were observed almost silty at Intake MA17 and THR2. The Contractor was reminded to remove the deposited silt regularly, so that the tanks can be functioned properly.	Rectification/improvement was observed during the follow-up audit session.
	31/08/2011	Stagnant water should be avoided at Eastern Portal and H-pile of E7. The Contractor was reminded to clear the stagnant water or spray larvicide regularly.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	04/08/2011	Dark smoke emission was observed from the hydraulic breaker at Western Portal. The Contractor was reminded to provide the mitigation measure, to avoid dark smoke emission.	Rectification/improvement was observed during the follow-up audit session.
Waste/Chemical Management	04/08/2011	Oil stain was observed near the site boundary at Western Portal. The Contractor was reminded to clear the oil stain, to avoid directing to the sea.	Rectification/improvement was observed during the follow-up audit session.
	11/08/2011	Oil stain was observed to be disposed at Intake BR6, MA17 and TP789. The Contractor was reminded to properly clear it, to avoid directing to the public by surface runoff during rain.	Rectification/improvement was observed during the follow-up audit session.
Reminders	04/08/2011	The Contractor was reminded of the followings: - The ponding water should be cleared at Intake PFLR1.	Rectification/improvement was observed during the follow-up audit session.
	04/08/2011	The Contractor was reminded of the followings: - To clear the oil stain at Intake PFLR1 and BR6.	Rectification/improvement was observed during the follow-up audit session.
	04/08/2011	The Contractor was reminded of the followings: - Clear the deposited silt along the u-channel at Intake MBD2.	Rectification/improvement was observed during the follow-up audit session.
	11/08/2011	The Contractor was reminded of the followings: - Grease water should be cleared as chemical waste properly within gully at Intake M3 and along the u-channel at Intake W3 respectively.	Rectification/improvement was observed during the follow-up audit session.
	11/08/2011	The Contractor was reminded of the followings: - The air compressor at Intake M3 should be pasted with valid noise label.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
	11/08/2011	The Contractor was reminded of the followings: - Clear the deposited mud along the u-channel at the entrance of Intake TP5.	Rectification/improvement was observed during the follow-up audit session.
	11/08/2011	The Contractor was reminded of the followings: - Clear the stagnant water within the sludge holding tank at Intake W0 and the drip tray at Intake HR1 respectively.	Rectification/improvement was observed during the follow-up audit session.
	18/08/2011	The Contractor was reminded of the followings: - Provide drip tray at underneath the oil drum at Intake MA15 and MBD2.	Rectification/improvement was observed during the follow-up audit session.
	18/08/2011	The Contractor was reminded of the followings: - To paste the valid noise label on the air compressor at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	18/08/2011	The Contractor was reminded of the followings: - Clear the general refuse along the u-channel at Intake B2.	Rectification/improvement was observed during the follow-up audit session.
	18/08/2011	The Contractor was reminded of the followings: - Clear the discarded oil drum as chemical waste at Intake B2.	Rectification/improvement was observed during the follow-up audit session.
	18/08/2011	The Contractor was reminded of the followings: - The u-channel at Intake MBD2 should be maintained functioning properly at all the time.	Rectification/improvement was observed during the follow-up audit session.
	25/08/2011	The Contractor was reminded of the followings: - To clear the stagnant water within the H-pile of Intake PFLR1 and wheel washing bay of Intake E5B respectively.	Rectification/improvement was observed during the follow-up audit session.
	25/08/2011	The Contractor was reminded of the followings: - Provide valid noise label on the air compressor at Intake HKU1.	Rectification/improvement was observed during the follow-up audit session.
	25/08/2011	The Contractor was reminded of the followings: - To clear the discarded leaves along the u-channel at Intake PFLR1.	Rectification/improvement was observed during the follow-up audit session.
	25/08/2011	The Contractor was reminded of the followings: - Ensure sprinkler to be provided at jetty of Western Portal.	Rectification/improvement was observed during the follow-up audit session.
	31/08/2011	The Contractor was reminded of the followings: - Clear the general refuse at Eastern Portal regularly.	Rectification/improvement was observed during the follow-up audit session.
	31/08/2011	The Contractor was reminded of the followings: - Clear the grease water as chemical waste within the drip tray at underneath the oil drum of Intake E5A.	Rectification/improvement was observed during the follow-up audit session.

Summary of Observation and Recommendation Made during Site Inspection in September 2011

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	08/09/2011	Site drain at Western Portal, sedimentation tank of Intake HR1 and E5A were observed almost silty. The Contractor was reminded to clear the deposited silt and maintain the facilities so that they can be functioned properly.	Rectification/improvement was observed during the follow-up audit session.
	15/09/2011	Sedimentation tank was observed full of silty water and cannot function properly at Intake E5A. The Contractor was reminded to review the current desilting facilities, so that it is sufficient for works.	Rectification/improvement was observed during the follow-up audit session.
	15/09/2011	One compartment of sedimentation tank was observed full of silty water due to directly surface runoff at Intake THR2. The Contractor was reminded to clear the deposited silt regularly.	Rectification/improvement was observed during the follow-up audit session.
	22/09/2011	Sand bags should be placed to surround the drain at Intake M3 while there is surface runoff during works.	Rectification/improvement was observed during the follow-up audit session.
Reminders	08/09/2011	The Contractor was reminded of the followings: - Clear the C&D waste outside the working area of Intake MA14.	Rectification/improvement was observed during the follow-up audit session.
	08/09/2011	The Contractor was reminded of the followings: - Keep clearing the grease water within the drip tray at Intake MA14.	Rectification/improvement was observed during the follow-up audit session.
	08/09/2011	The Contractor was reminded of the followings: - Clear the discarded cement bag at Intake TP5.	Rectification/improvement was observed during the follow-up audit session.
	08/09/2011	The Contractor was reminded of the followings: - Clear the general refuse along the site drain at Intake B2 and TP4.	Rectification/improvement was observed during the follow-up audit session.
	15/09/2011	The Contractor was reminded of the followings: - Provide sand bag bunding round discharging side of the sedimentation tank at Intake THR2 while there is surface runoff during works.	Rectification/improvement was observed during the follow-up audit session.
	15/09/2011	The Contractor was reminded of the followings: - To clear the stagnant water generally in Western Portal and along the H-pile at Intake RR1 respectively.	Rectification/improvement was observed during the follow-up audit session.
	15/09/2011	The Contractor was reminded of the followings: - To clear the grease water along the site drain at Intake W10 and in the drip tray at Intake W1.	Rectification/improvement was observed during the follow-up audit session.
	22/09/2011	The Contractor was reminded of the followings: - The stagnant water in the sedimentation tank should be sprayed with larvicidal oil to avoid mosquito breeding regularly at Intake PFLR1.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
	22/09/2011	The Contractor was reminded of the followings: - The grease water in the drip tray at Intake M3 should be cleared.	Rectification/improvement was observed during the follow-up audit session.
	22/09/2011	The Contractor was reminded of the followings: - The air compressor at Intake THR2 should be labeled with a noise emission label.	Rectification/improvement was observed during the follow-up audit session.
	22/09/2011	The Contractor was reminded of the followings: - The Environmental Permit outside the site entrance of Intake E5A should be replaced with a new one available for inspection.	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
WT00006418-2010	-	30/06/15	Industrial discharge (Intake MA14)	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

Permit No.	Valid Period		Details	Status
	From	To		
WT00006559-2010	-	30/04/15	Industrial discharge (Intake CR1)	Valid
WT00006865-2010	-	30/06/15	Industrial discharge (Intake BR5)	Valid
WT00006929-2010	-	30/06/15	Industrial discharge (Intake W1)	Valid
WT00007039-2010	-	31/07/15	Industrial discharge (Intake DG1)	Valid
WT00007042-2010	-	31/07/15	Industrial discharge (Intake W3)	Valid
WT00007043-2010	-	31/07/15	Industrial discharge (Intake GL1)	Valid
WT00007130-2010	-	31/07/15	Industrial discharge (Intake BR4)	Valid
WT00007139-2010	-	31/07/15	Industrial discharge (Intake BR6) – SNH17	Valid
WT00007319-2010	-	31/08/15	Industrial discharge (Intake B2)	Valid
Registration of Chemical Waste Producer				
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-RS0125-11	24/02/11	23/08/11	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-RS0692-11	23/08/11	22/02/12		
GW-RS0483-11	03/06/11	02/07/11	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-RS0584-11	03/07/11	02/09/11		
GW-RS0813-11	03/09/11	02/01/12		
GW-RS0149-11	19/02/11	18/08/11	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-RS0540-11	12/06/11	09/12/11		

Permit No.	Valid Period		Details	Status
	From	To		
GW-RS0167-11	19/02/11	18/08/11	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-RS0756-11	19/08/11	18/02/12		
GW-RS0456-11	01/06/11	30/11/11	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-RS0514-11	09/06/11	08/12/11	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
GW-RS0244-11	22/03/11	20/09/11	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at main tunnel and adits of Hong Kong West Drainage Tunnel under Wan Chai, Hong Kong.	Valid
GW-RS0830-11	21/09/11	20/03/12		
GW-RS0341-11	20/04/11	19/10/11	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Kennedy Road near Royal Court for the construction of Hong Kong West Drainage Tunnel.	Valid
GW-RS0441-11	23/05/11	22/11/11	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at an area near Lover's Stone Garden at Bowen Road, Wan Chai, Hong Kong.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RS0443-11	23/05/11	22/11/11	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at an area near the junction of Bowen Road and Wan Chai Gap Road, Wan Chai, Hong Kong.	Valid
GW-RS0566-11	20/06/11	20/08/11	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Main tunnel and adits of Hong Kong West Drainage Tunnel under construction in Central & Western District, Hong Kong.	Valid
GW-RS0732-11	20/08/11	18/02/12		

**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 2011	24478	0	24	22424	1992	38	25905	385	0	0	84
Feb 2011	11114	0	0	10034	1080	0	128470	385	0	4924	73
Mar 2011	14052	0	4	12042	2006	0	273060	700	0	3072	101
Apr 2011	11795	0	0	10441	1354	0	496610	315	0	0	84
May 2011	12099	19	0	11134	946	0	54330	315	0	0	140
Jun 2011	14976	14	0	6929	8033	0	25120	420	0	0	101
Sub-Total	88514	33	28	73004	15411	38	1003495	2520	0	7996	583
July 2011	13696	38	0	0	13658	0	129850	420	0	600	123
Aug 2011	12732	43	0	989	11700	0	151670	315	0	1101	112
Sep 2011	8422	29	0	0	8393	0	47650	350	0	0	101
Oct 2011											
Nov 2011											
Dec 2011											
Total											

- 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 September 2011 are upto 30 September 2011.
 - (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**
(One Action Level exceedance was recorded for the complaint received on 11 August 2011)

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**
(One Action Level exceedance was recorded for the complaint received on 2 July 2011)

Intakes

Intake DG1

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

Intake E5A

- (H) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake E7

- (I) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake MA14

- (J) Exceedance Report for Construction Noise**
(One Action Level exceedance was recorded for the complaint received on 28 September 2011)

Intake PFLR1

- (K) Exceedance Report for Construction Noise**
(One Action Level exceedance was recorded for the complaint received on 27 July 2011)

Intake RR1

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

Intake THR2

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

Intake W0

- (N) Exceedance Report for Construction Noise**
(One Action Level exceedance was recorded for the complaint received on 9 August 2011)

Intake W5

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

Intake W8

- (P) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake P5

- (Q) Exceedance Report for Construction Noise
(Two Action Level exceedances were recorded for the complaint received on 8 July 2011 and 25 August 2011 respectively)**

Intake BR6

- (R) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake GL1

- (S) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake TP5&TP789

- (T) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake B2

- (U) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake CR1

- (V) Exceedance Report for Construction Noise
(One Action Level exceedance was recorded for the complaint received on 30 July 2011)**

Intake W10

- (W) Exceedance Report for Construction Noise
(One Action Level exceedance was recorded for the complaint received on 24 August 2011)**

Intake BR5

- (X) Exceedance Report for Construction Noise
(One Action Level exceedance was recorded for the complaint received on 26 August 2011)**

**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 a complainant 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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
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. 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.	Closed
Com-2008-07-007	Construction site at Eastern Portal	2 July 2008	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	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.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<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> <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>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-10-011	Construction site at Western Portal	11 October 2008	The complaint was lodged by one of the resident of Victoria Road on 11 October regarding about the noise nuisance generated from the construction works at Western Portal	<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> <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</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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.	
COM-2008-10-012	Construction site at Intake TP5	15 October 2008	The complaint was lodged by a complainant 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.	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.	Closed
COM-2008-10-013	Construction site at Intake TP5	31 October 2008	The complaint was lodged by a complainant 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.	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. 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	

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 a complainant on 4 November regarding the noise nuisance generated from the construction works at Intake TP5.	<p>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 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 a complainant 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</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>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>	
COM-2008-11-019	Construction site at Western Portal	29 November 2008	<p>The complaint was lodged by a complainant 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>	<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	<p>The complaint was lodged by a complainant on 28 December 2008 regarding the excavator was found working</p>	<p>The complaint was considered not justifiable as Construction Noise Permit (CNP) – CNP No. GW-RS0827-08 has been granted from</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			within Western Portal works area on Sunday.	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: a) Any day not being a general holiday between 1900 – 2300 hours b) General holiday (including Sundays) between 0700 – 1900 hours	
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	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. The Contractor agreed to review their current provisions to prevent any muddy water from discharging into the sea again and close check the	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				condition of the silt curtain.	
COM-2009-01-022(A)	Construction site at Western Portal	12 January 2009	The complaint was lodged by a complainant, the assistant of Southern District Councillor about the resident in Baguio Villa near Victoria Road, the complainant concerns on the noisy activities carried out at Western Portal site.	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.	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.		
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	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.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<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>	
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>	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
				mitigation measures for Visual during the construction by controlling the night-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</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>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 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</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>senior management and foreman to explain the conditions and requirements listed on the CNP and delegated one Engineer to ensure all construction activities and PME's to be used are fully complying with CNP and legislation requirements before the commencement of the construction activities during the restricted hour.</p>	
				<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 PME's to be used are fully complying with CNP and legislation requirements and implement necessary noise mitigation measures as</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				recommended in the Approved EIA report to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours.	
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. In accordance with the night time visit on 15 May 2009, the noise levels at Aegean Terrace was not high but with occasionally sound of locomotive and tower crane operations. 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. The Contractor will continue	Closed
COM-2009-05-031		4 May 2009	Complaint of low frequency noise emitted from the construction site at Western Portal.		
		11 May 2009	Complaint of Construction Noise nuisance generated from the Western Portal Site from day to night.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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).	
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.	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. 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.	Closed
COM-2009-06-035	Hong Kong West Drainage Tunnel Construction Site at Cyberport	3 June 2009	EPD received a public complaint raised by local resident regarding the transportation and disposal of construction wastes from Hong Kong West Drainage Tunnel Construction Site at Cyberport on 3 June 2009.	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 Officer. The Contractor also maintains the daily record with details of each disposal trip from the Site and the disposal ground.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
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 a representative of Goodwell Property Management, she wrote on behalf of the Estate Owner Committe of Legend at Tai Hang about noise nuisance arising from the excacvation works at Eastern Portal site portion. The Committe requested the Contractor to provide mitigation measures to mininise 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	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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			the hand-held electric breaker.	<p>at Intake PFLR1, no observation/non-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</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>(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 provide training for the workers to increase awareness of their environmental responsibilities.</p>	
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.	Closed
COM-2009-10-045					

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>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.</p> <p>It is recommended to increase the construction noise monitoring frequency for Eastern Portal Site to check the mitigation effectiveness.</p>	
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.	<p>Base on the information collected, the noise levels measured at NC3 during the construction works were well below the construction noise limit.</p>	Closed
				<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>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-12-059	Construction site at Intake MB16	27 November 2009	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>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	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>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</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>routine site inspection. The innovation works included hammering and drilling on the outer walls of the building and contributed significantly to the noisy environment.</p>	
COM-2010-01-062	Construction site at Western Portal	3 January 2010	<p>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.</p>	<p>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.</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-2010-01-063 COM-2010-01-066(1), (2) and (3)	Intake MB16	20 January 2010 23, 25, 27 January and 2 February 2010	<p>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.</p> <p>Three complaints were raised</p>	<p>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.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			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.	The additional ground borne noise levels measured at inside Amber Lodge during the TBM works were well within the construction ground borne noise standards. 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	
COM-2010-02-073	Western Portal	3 February 2010	Complaint of noise generated by the operation of plants, rock falling and flash lighting within Western Portal site area.	Base on the regular noise monitoring, the noise levels measured at NC3 during the construction works were well below the baseline level. 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-2010-03-080	Intake PFLR1	1 March 2010	The public complaint was received from the resident of Honey Court referred by a DC member on 1st March 2010 about the construction	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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			noise nuisance from the construction site at Intake PFLR 1	<p>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>	
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.	<p>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.</p> <p>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.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
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 during different construction phases.	Closed
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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>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.</p> <p>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.</p>	
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 TP789/TP4 in the morning.	<p>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 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</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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.	
COM-2010-04-100	Western Portal	30 April 2010	The public complaint was received from the resident of Bel-Air on 30 th 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.	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria. The Contractor has taken initiative to minimize dust nuisance to the nearby residents by implementation of additional mitigation measures as below: <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.	<p>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.</p> <p>Other suitable dust control measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, where appropriate, should be adopted.</p> <p>Nevertheless, the Contractor is also committed to take sufficient dust mitigation measures as recommended in the approved EIA report including</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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
	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/m ³ for 1 hour TSP and 156µg/m ³ 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
COM-2010-07-121	Western Portal	15 July 2010	Cyberport Management Office lodged a complaint in	DNJV has delivered the reply letter to Cyberport Management Office on	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			writing regarding the sands and mud left by the dump trucks on Cyberport road	<p>26 July 2010 stating the following:- The stain is not mud or debris. It is liquid of granite powder. Stain on the road was caused by heavy rainstorm which brings moisture to granite powder in trucks.</p> <p>The trucks have been equipped with tailor-made tanks to receive the liquid of granite powder. To prevent reoccurrence, DNJV will reinforce checking of these tanks and other truck conditions at work site to ensure no dripping before departure.</p> <p>In this regard, the Contractor was reminded that all vehicles and plant should be cleaned before leaving the construction site to ensure no earth, mud and debris or other wastes is deposited on roads. Proper maintenance of the tailor-made tanks equipped at the trucks is also needed to avoid any leakage.</p>	
COM-2010-07-123 (1)	Eastern Portal	2 August 2010	The complaint was received through the Project Hotline regarding the noise generated from construction vehicles.	Based on the information collected, the noise levels measured at NC1/NC1a and NC2 during the construction works were well below	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-07-123 (2)		2 August 2010	The complaint was received by DSD concerning the noise generated from construction site at 19:00.	the construction noise limit or baseline level. 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.	
COM-2010-08-125		3 August 2010	The complaint was received by DSD concerning the noise generated from construction site until 8:00 pm every night.		
COM-2010-08-124	Intake TP789/TP4	2 August 2010	The complaint was received by DSD regarding the construction works at Tregunter Path is extremely noisy and diminishes the ability of residents of the neighborhood to enjoy outdoor facilities	Based on the information gathered in the investigation, the noise levels at Tregunter Tower was within the construction noise limit of 75dB(A). The Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures continuously as below: <ul style="list-style-type: none"> - Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced) - To install noise absorption blankets at the appropriate area to mitigate noise generated by the works. 	Closed
COM-2010-08-124 (con'd)		5 August 2010	The complaint was received by DSD regarding the construction works at Tregunter Path is extremely noisy and diminishes the ability of residents of the neighborhood to enjoy outdoor facilities		
COM-2010-08-129		12 August 2010	The complaint was raised by the resident of Tregunter Path for the noisy works which		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			was carried out after 18:00hrs at Intake TP4	- To arrange the construction working period at Tregunter Path starting from 13th August 2010 as below: Monday – Friday: 08:00hrs to 18:00hrs Saturday: 08:30hrs to 18:00hrs Sunday and Public Holiday: No Works	
COM-2010-08-129		12 August 2010	The complaint was received from Protech Property Management Limited (the building manager of Tregunter Tower, 14 Tregunter Path, Mid-Levels, Hong Kong) regarding the noisy construction works at Tregunter Path		
COM-2010-08-129 (2)		13 August 2010	The complaint was received by RSS concerning the noisy work from the construction site on Saturday		
COM-2010-10-151	Eastern Portal	15 October 2010	A complaint was received from the resident of The Legend through the supervising officer on 15th October 2010 about the construction dust nuisance from Eastern Portal Site Area.	Based on the information gathered in the investigation, no exceedance of air quality level was recorded at AQ1 since the commencement of the project works for Eastern Portal Site. The potential source of air quality impact arising from the removal of tunneling spoils from the tunnel portals as well as the vehicular emissions is minimized as all TBM excavation works have been completed since 5 October 2010.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-10-154	Eastern Portal	18 October 2010	<p>A complaint was received from the resident of Ronsdale Garden through the DSD on 18th October 2010 about the construction noise nuisance from Eastern Portal Site Area.</p> <p>According to the complainant, the noise seems to be generated by a pump.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at The Legend (NC2) and outside True Light Middle School of Hong Kong (NC1) were well below the limit level.</p> <p>The Contractor agreed to terminate the operation of pump during the evening (1900 – 2300) and night (2300 – 0700) time since end of October 2010 and committed to implementing sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents.</p>	Closed
COM-2010-10-155	Intake RR1	11 October 2010	<p>A letter from the Property Management of Peakville Court - Hong Yip Service Company Ltd was received by DNJV on 11th October 2010 about the construction noise nuisance and wastewater generated from Intake RR1 Site Area.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at Peakville Court (NC13) and Ying Wa Girl's School (NC12) were below the baseline/limit level.</p> <p>In addition, water runoff was observed leaked out to the public road from the site area according to the regular site inspection.</p> <p>The Contractor will seal the bottom of barriers with concrete or provided</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				with sandbag as early as possible.	
COM-2010-11-160	Intake TP789	5 November 2010	The complaint was received from Kerry Property Management and advised that some complaints from the residents of Tavistock about low frequency noise generated by the power pack within Site Portion TP789.	Based on the information gathered in the investigation, the noise levels measured at near Intake TP789 were below the limit level after the Contractor implement noise mitigation measures for the noise generation activities.	Closed
COM-2010-11-160(2)	Intake TP789	9 November 2010	Some residents complained the low frequency noise after the addition of sound proof sheets on the power pack at Intake TP789.		
COM-2010-11-163	Western Portal	6 November 2010	A complaint was received from a complainant regarding noise nuisance caused by spoils dropping directly from conveyor belt into barge (rock hitting sound) at Western Portal.	Based on the information gathered in the investigation, the noise levels measured at NC3 were below the limit level.	Closed
COM-2010-11-163(2)	Western Portal	7 November 2010	A complaint was received from a complainant regarding noise nuisance caused by spoils dropping from conveyor belt into storage basin (rock hitting sound). The complainant also		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			complained the noise of ventilation fans at the Western Portal area.		
COM-2010-11-164	Intake TP5	10 November 2010	Kerry Property Management Services received several complaints from the residents of Valverde on 10 November 2010 morning regarding working noise emitted from the Intake TP5 work site in early morning (before 7:30am).	<p>Base on the information collected, the ad-hoc noise monitoring results measured at near Valverde was met the acceptable noise levels. Drill and blast is not considered with respect to noise annoyance, as the duration of blasting is very short and infrequent.</p> <p>The Contractor volunteered to cancel late blasts and scheduling all blasts before 7pm as far as possible until the nearby adit blasting works completed by mid of December 2010 tentatively.</p>	Closed
COM-2010-11-165	Intake TP5	15 and 17 November 2010	Kerry Property Management Ltd phoned DSD at about 17:08 hrs on 15 November 2010 relaying some complaints from the residents of Valverde about the noise/vibration due to the blasting works in past weeks. Jennifer also requested DNJV not to carry out blasting works at nights.		
COM-2010-12-170	Intake DG1	7 December 2010	The complaint was received regarding the noise arising from the excavation works, starting from 9:00 hrs, in the construction site near Evergreen Villa of Stubbs	Based on the information gathered in the Investigation, the noise levels measured at NC4 and NC6 in November and December 2010 were below the construction noise limit level or baseline levels.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			Road.	<p>The Contractor has taken initiative to erect noise absorption blankets at the site boundary to minimize noise nuisance to the nearby residents.</p> <p>The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	
COM-2010-12-171	Intake MB16	8 December 2010	The complainant complained the works near Mount Butler Road generated dust, thus affecting the air quality in the vicinity.	DNJV would arrange water spraying at the entrance of Area B. In addition, Environmental Team and RSS would closely monitor to ensure relevant measures are effectively implemented.	Closed
COM-2010-12-173	Intake W5	14 December 2010	A complaint was received from a complainant regarding noisy construction activities at Site Portion W5 had affected her niece's study to prepare for examination.	DSD are now constructing an intake at the subject site under Hong Kong West Drainage Tunnel project. The construction work at Site Portion is expected for completion in end 2011. At the moment, the pipe piling works have been completed and the Contractor will carry out grouting work in this week and then excavation work afterwards. The noise generated by excavation works should be less than that of pipe piling	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				works. Nevertheless, DSD would closely monitor the works in order to mitigate the noise impact to the nearby residents.	
COM-2010-12-178	Intake TP5	22 December 2010	Kerry Property Management Ltd notified that some complaints from the residents regarding the early commencement of the noise works at Intake Ste TP5 (earlier than 08:00hrs) in the past few days.	As advised by DNJV on 23 December 2010, they would carry out the work at site portion TP5 from 08:00 hrs to 19:00 hrs. Eddie Yau, DNJV Public Relation Manager had already explained to Kerry about the progress and arrangement at Site Portion TP5.	Closed
COM-2010-12-179	Eastern Portal	24 December 2010	The Property Management Office of The Legend referred the complaint from the resident to DSD regarding the intermediate noise from Eastern Portal site portion in the morning and at night.	Based on the information gathered in the investigation, the noise levels measured at NC1 and NC2 were below the limit level.	Closed
COM-2011-01-181	Eastern Portal	21 January 2011	The Property Management Office of Legend called DNJV to reflect a resident's concern on early construction noise at 8:30am on Saturday.	Based on the information gathered in the investigation, the noise levels measured at NC1 and NC2 were below the limit level. The breaking work to be completed by that day.	Closed
COM-2011-02-186	Intake GL1	18 February 2011	A complaint was received from the resident of Green Lane through the ICC on 18th February 2011 about the	Based on the information gathered in the investigation, the noise levels measured at near Green Lane was marginal below the construction	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			construction noise generated from the plant equipments being operated at Intake GL1 from early in the morning and ends at around 19:00 at night.	noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact. The major noise source due to the raise boring works has been finished since 26th February 2011	
COM-2011-02-188	Western Portal	25 February 2011	The complaint was received from the resident of Bel Air who called hotline at 3am and 4pm on 25 Feb 2011 to complaint about noise. The complainant refuses to give details on the noise. He claims that he will report this to the Police and requested DNJV to provide him with copy of CNP.	Based on the information gathered in the investigation, the noise levels measured at NC3 was below the limit level.	Closed
COM-2011-03-189	Western Portal	7 March 2011	Property management office of Aigburth and Valverde transferred noise complaints of residents about the vibration and early working noise emitting from the TP5 and TP789. DNJV replied to explain to the PMO.	DNJV had already explained to Property management office of Aigburth and Valverde about the progress and arrangement at Site Portion TP5. The raise boring work to be completed by that day.	Closed
COM-2011-03-190	Western Portal	7 March 2011	The complaint was received from the resident of Aegean	Based on the information gathered in the investigation, the noise levels	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-03-193 (1)	Western Portal	14 March 2011	Terrace who complained about the night-time noise of Western Portal. DNJV would review the works during the restricted hours and further improve the enclosure where necessary.	measured at Western Portal was below the construction noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact.	
COM-2011-03-193 (2)	Western Portal	16 March 2011			
COM-2011-03-192	Intake B2	14 March 2011	The PMO of Grand House at Macdonnell Road complained about the construction noise at the intake B2. In the site portion, rock excavation works was being carried out. The works was anticipated to complete in end April 2011.	Based on the information gathered in the investigation, the noise levels measured at near B2 was marginal below the construction noise limit. The Contractor has taken initiative to enclose the hydraulic breaker with noise absorption blankets to minimize noise nuisance to the nearby residents. The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.	Closed
COM-2011-03-195	Intake CR1	28 March 2011	The complaint was received from the resident of Conduit Tower, who complained about the construction noise at the intake CR1.	Based on the information gathered in the investigation, the noise levels measured at near CR1 was well below the construction noise limit. The Contractor has taken initiative to erect noise absorption blankets at the whole site boundary to minimize noise nuisance to the nearby residents.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	
COM-2011-05-210	Intake GL1	30 May 2011	<p>The complaint was raised from the resident of Green Lane, who complained about the construction noise at the intake GL1.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at near Green Lane was well below the construction noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact.</p>	Closed
COM-2011-05-211	Intake CR1	30 May 2011	<p>The complaint was received from the resident of Conduit Tower, who complained about the construction noise at the intake CR1. The complainant mainly concerned that the noisy works at Intake CR1 started at 8:00 hrs everyday is too early. He requested to defer the working hours later.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at near CR1 was well below the construction noise limit. The Contractor has taken initiative to erect noise absorption blankets at the whole site boundary to minimize noise nuisance to the nearby residents. The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-06-214	Intake P5	2 June 2011	The public complaint was raised on 2 nd June 2011 via Environmental Protection Department (EPD) regarding the construction noise nuisance from the Hong Kong West Drainage Tunnel construction site at Intake P5.	Based on the information gathered in the investigation, the noise levels measured at near P5 was well below the construction noise limit. In addition, the pipe-piling work has been stopped until the end of July 2011. However, the Contractor has prepared the remedial action that should be taken while starting the pipe-piling work. The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.	Closed
COM-2011-07-218	Western Portal	2 July 2011	A public complaint was received from the resident of Aegean Terrace on 2nd July 2011 regarding the construction noise nuisance from the Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site) near Aegean Terrace.	Based on the information gathered in the investigation, the noise levels measured at Western Portal was below the construction noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-07-219	Intake P5	8 July 2011	A public complaint was received from the resident of Belmont Court on 8th July 2011 and suspected in relation to the construction noise nuisance from the Hong Kong West Drainage Tunnel construction site at Intake P5.	Based on the information gathered in the investigation, the noise levels measured at near P5 was well below the construction noise limit. In addition, the pipe-piling work has been stopped until the end of July 2011. However, the Contractor has prepared the remedial action that should be taken while starting the pipe-piling work.	Closed
COM-2011-07-225	Intake PFLR1	27 July 2011	A resident, lives near Intake PFLR1, called DSD complaining the noise generated from the RBM. The noise probably generated from the RBM drilling rig.	Based on the information gathered in the investigation, the noise levels measured at near PFLR1 was below the construction noise limit. In addition, the Contractor has taken initiative to enclose or wrap the noise source with sound insulating materials to minimize noise nuisance to the nearby residents.	Closed
COM-2011-07-227	Intake CR1	30 July 2011	A resident complained about the noise from the Site Portion CR1. She said it was not supposed to work on Saturdays.	DNJV responded that the working hours are from Mondays to Saturdays. Currently, pipe piling works were in progress. They would improve the mitigation measure. According to the noise level measured at podium of Conduit Tower starting at 10:09 hrs on 1 August 2011, it was 73.5 dB(A). The works was completed at 9:10 hrs on 2 August 2011.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-07-228	Eastern Portal	29 July 2011	<p>The complaint was lodged by a complainant who referred some residents' complaints about the dust and smoke generated from Eastern Portal tunneling works recently. He urged to implement an effective and protective mitigation measures as soon as possible.</p>	<p>Both the 1-hour and 24-hour TSP monitoring results in July 2011 showed dust levels at True Light Secondary School were under Action and Limit Levels.</p> <p>The potential sources of smoke or dust may be occasionally generated at the Eastern Portal as a result of the difference in atmospheric condition such as temperature and humidity inside and outside the tunnel. This is a normal atmospheric phenomenon and did not constitute to environmental impacts.</p> <p>There are sufficient measures to minimize the smoke or dust emission, such as sprinkle system inside adits under blasting works. There was no deficiency recorded in the Eastern Portal.</p> <p>Ventilation system inside the tunnel was designed to extract the blasting fume from adits towards the adit dust scrubber in the Western Portal and then discharged locally. There should not be blasting fume accumulated in the Eastern Portal with a normal ventilation system.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-08-229	W0	9 August 2011	A resident complained about noise generated from DSD works area in the park on 24 Stubbs Road. The works caused obstruction to pedestrians and affected the environment. The complainant requested to obtain the contact of responsible person of the works.	Based on the information gathered in the investigation, the noise levels measured at the Hong Kong Academy was below the construction noise limit. According to the regular weekly site inspections in July and August 2011, there was no major noisy activity to be conducted at Intake W0. However, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures before the time of complaint.	Closed
COM-2011-08-230	EP	11 August 2011	A resident complained about the noise generated from rock breaking works at Eastern Portal during past few weeks. The complainant said that the noise was deafening and the breaking works was continuously carried out from 08:00 hrs to 18:00 hrs without consider the feeling of residents living nearby. It caused great nuisance to them.	Based on the information gathered in the investigation, the noise levels measured at the Legend was below the construction noise limit. However, the work was temporarily ceased after the complaint case emerged. To alleviate the breaking noise, the contractor plans to implement mitigation measures as far as practical. They may include wrapping the breaking head, erecting noise barriers or blankets, and controlling breaking duration.	Closed

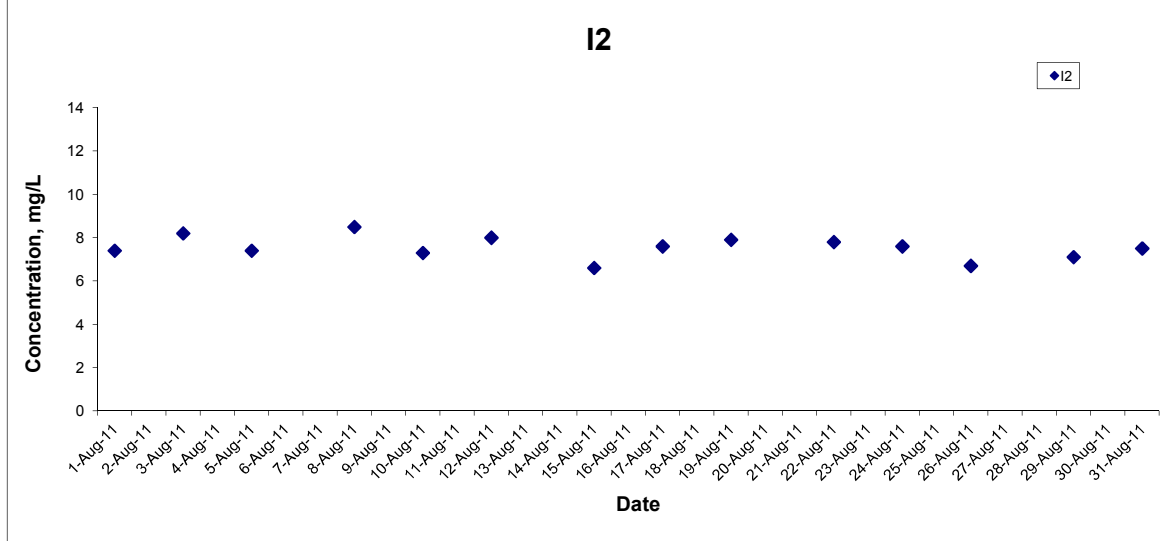
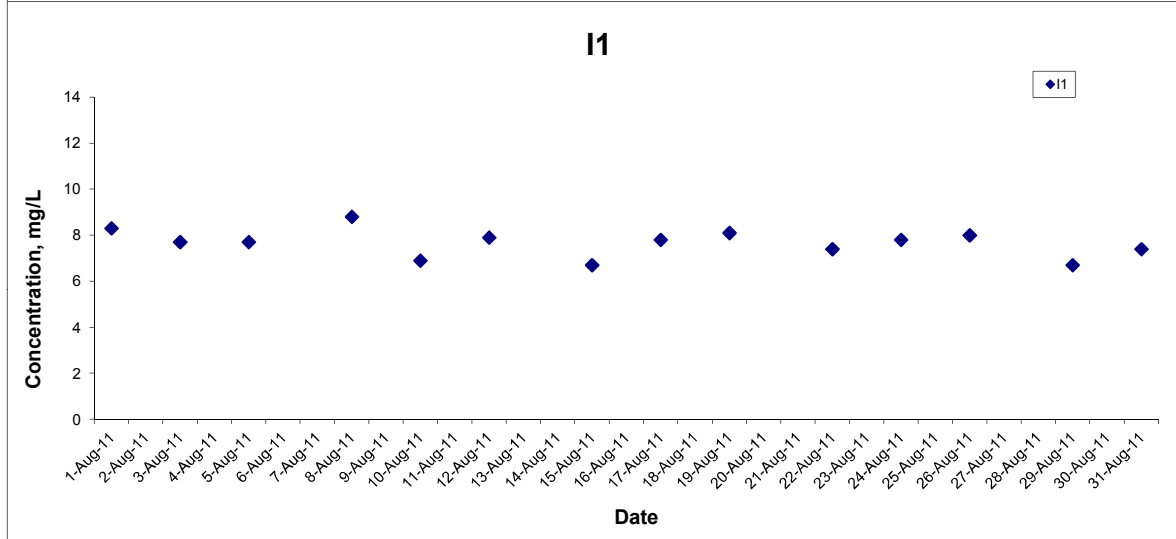
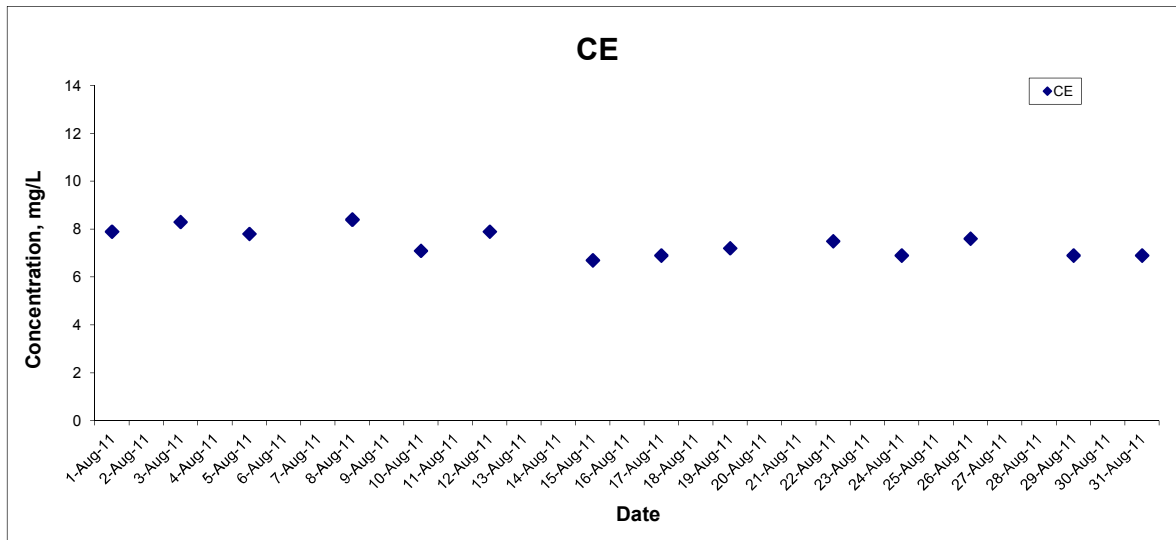
Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-08-232	W10	24 August 2011	A complainant said that noise came out from our Site Portion W10 near junction between Kotewall Road and University Drive, i.e. Intake W10 around 7:00 am on 19 August 2011 and requested us to keep the noise down in the early morning.	The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect: 1. All noisy activities, the start of machine including Raise Boring Machine or other supporting plants/equipments would only be started after 08:00hrs; 2. Only non-noisy activities i.e. site safety briefing, body stretching exercise etc. could be carried out within the Site Portion before 08:00hrs.	Closed
COM-2011-08-233	P5	25 August 2011	A resident complained that the noise generated from the Site Portion at the junction of Kotewall Road and Robinson Road caused immense nuisance.	Based on the information gathered in the investigation, the noise levels measured at the Legend was below the construction noise limit. The Contractor undertook some measures to alleviate the noise emission, as observed during site inspections. After receiving the complaint, the Contractor further reinforced the noise reduction measures that include extending noise barriers into a direction facing toward Villa Veneto, installing noise blankets at the piling rig curtain.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>In addition, the Contractor controlled the piling duration in order to minimize a continuous and persistent emission of piling noise.</p> <p>In early September, it was observed in site inspections that a large scale of building innovation work started in Villa Veneto. Continuous breaking noise from the innovation work imposed difficulties to justify noise sources and it may induce complaints from the general public.</p>	
COM-2011-08-234	BR5	26 August 2011	<p>The complainant is from the PMO of Camelot Height (金巒閣) on Kennedy Road (near Site Portion BR5). He said that construction noise, generated from the work site on the slope at the back of their building, was heard at about 07:30 hrs recently. It caused great nuisance to residents.</p>	<p>The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect:</p> <ol style="list-style-type: none"> 1. All noisy activities, the start of machine including Raise Boring Machine or other supporting plants/equipments would only be started after 08:00hrs; 2. Only non-noisy activities i.e. site safety briefing, body stretching exercise etc. could be carried out within the Site Portion before 08:00hrs. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-09-239	MA14	28 September 2011	A resident from PMO of Harbour View complained about the construction works of Site Portion MA14 near Magazine Gap Road started before 7:00hrs on 28 September 2011. The noise generated by the construction plants i.e. RBM was annoying. He requested to keep the noise down in the early morning.	The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect: 1. All noisy activities, the start of machine including Raise Boring Machine or other supporting plants/equipments would only be started after 08:00hrs; 2. Only non-noisy activities i.e. site safety briefing, body stretching exercise etc. could be carried out within the Site Portion before 08:00hrs.	Closed

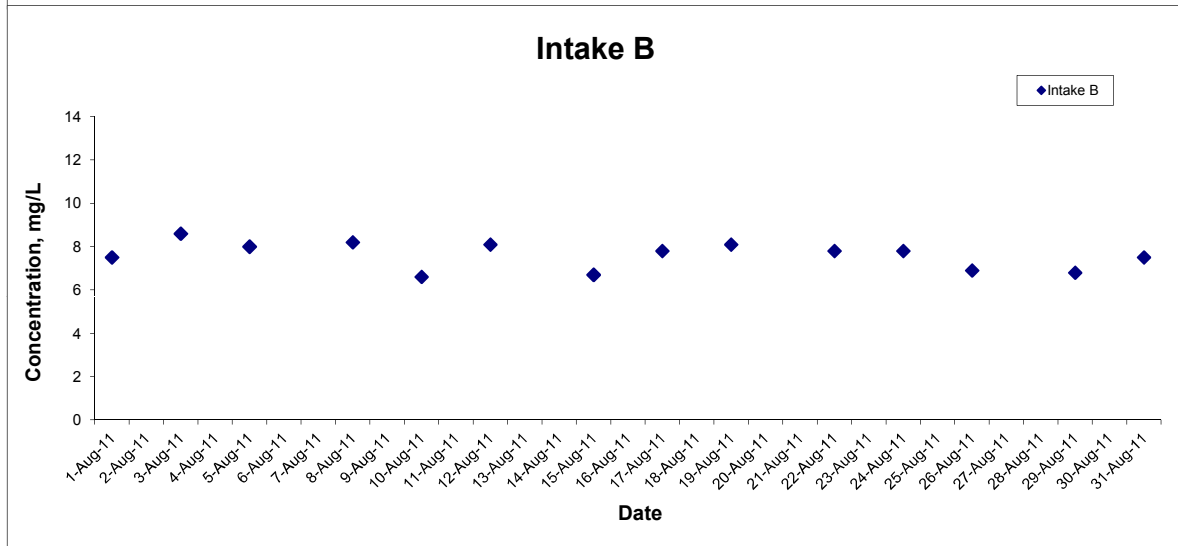
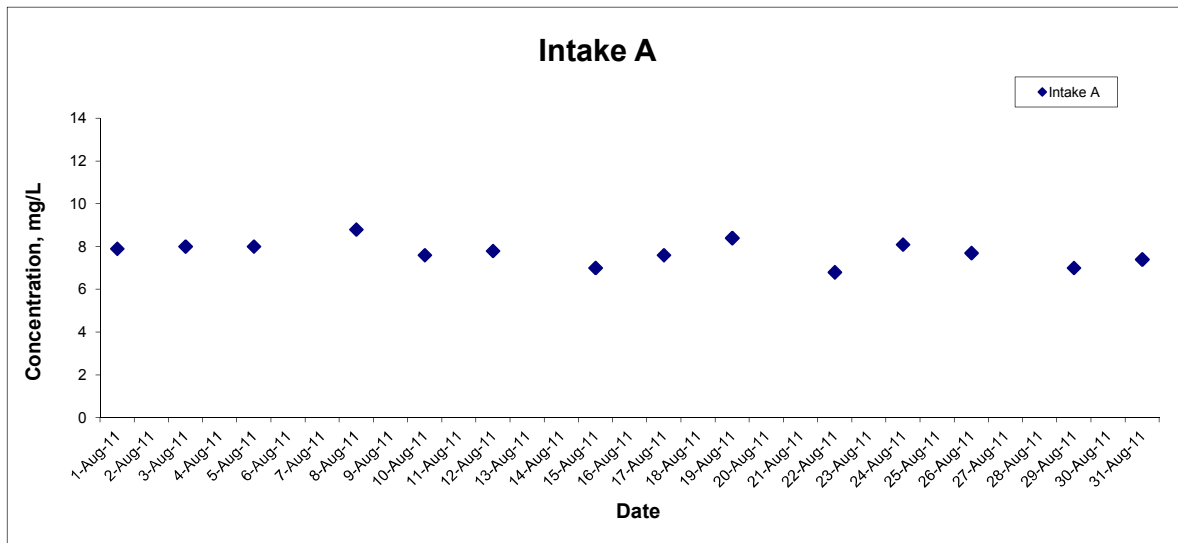
**APPENDIX L
GRAPHICAL PRESENTATION OF
BASELINE REVIEW FOR WATER
QUALITY MONITORING**

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



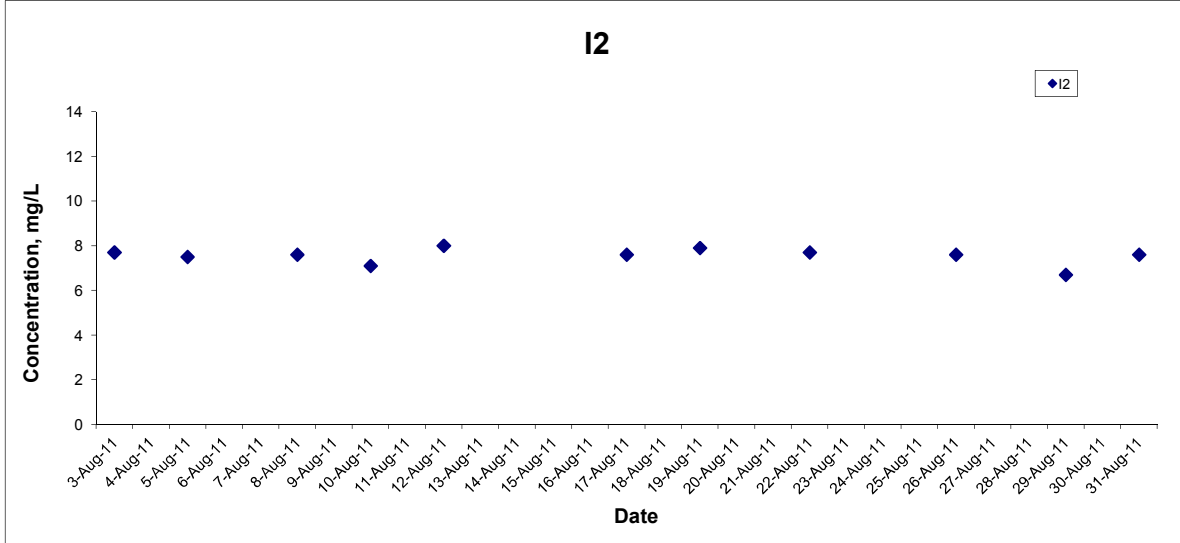
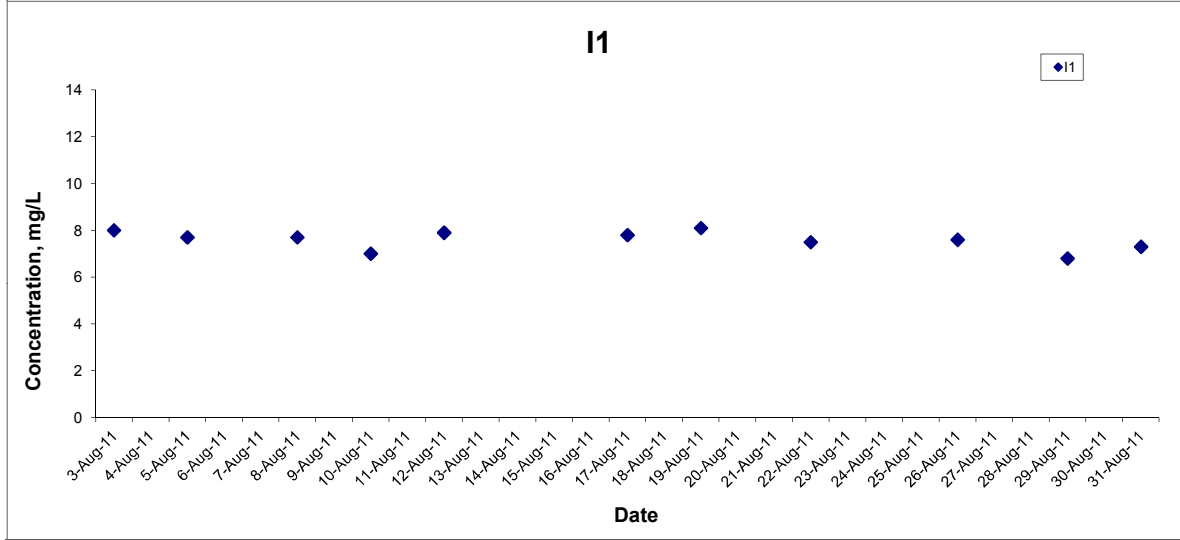
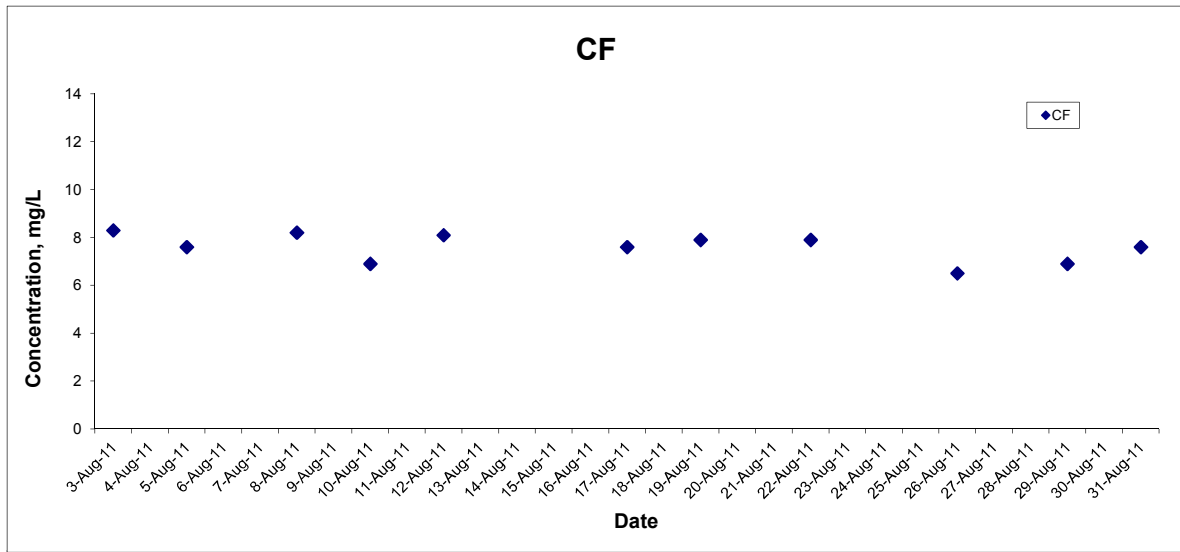
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



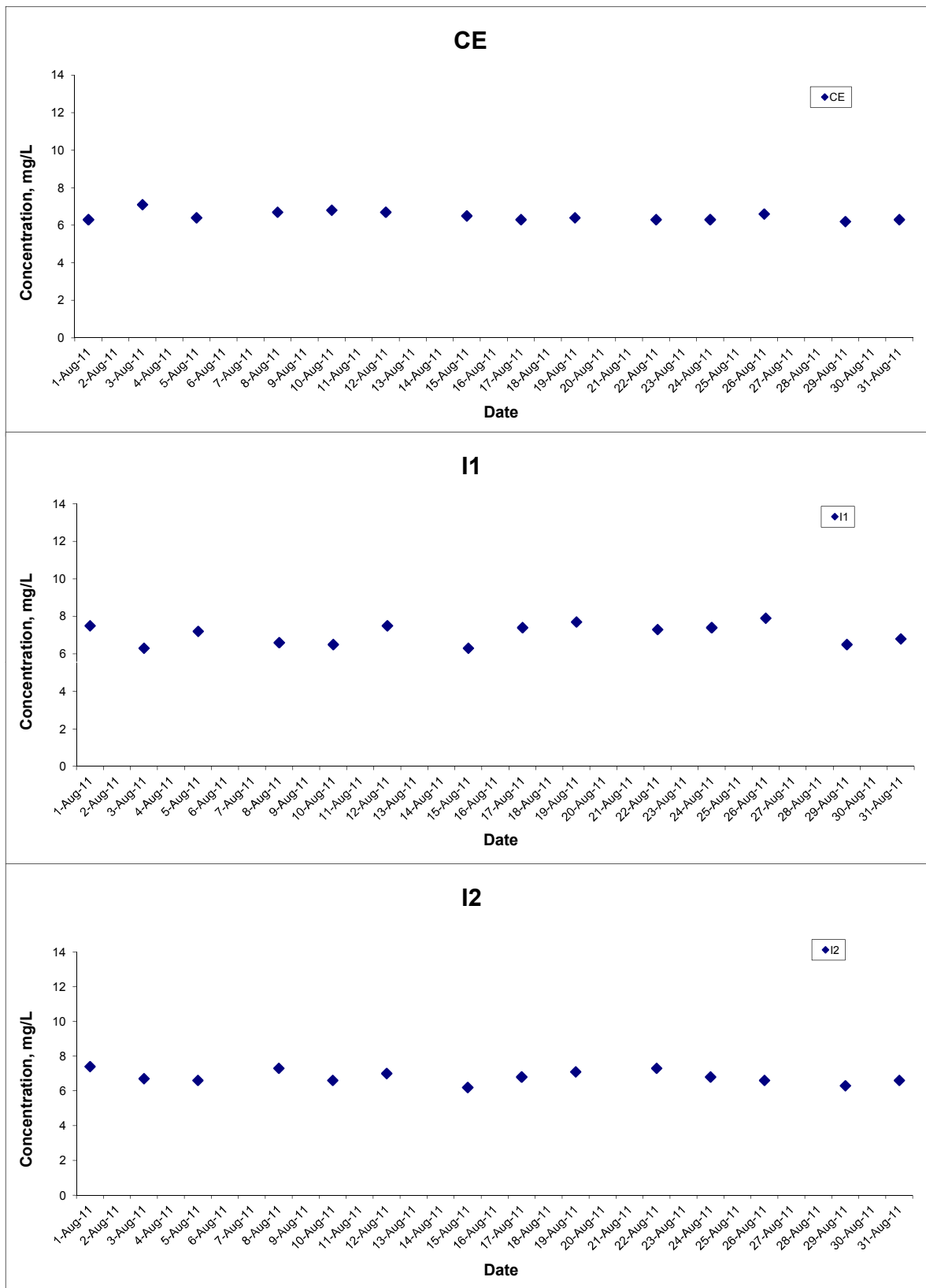
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



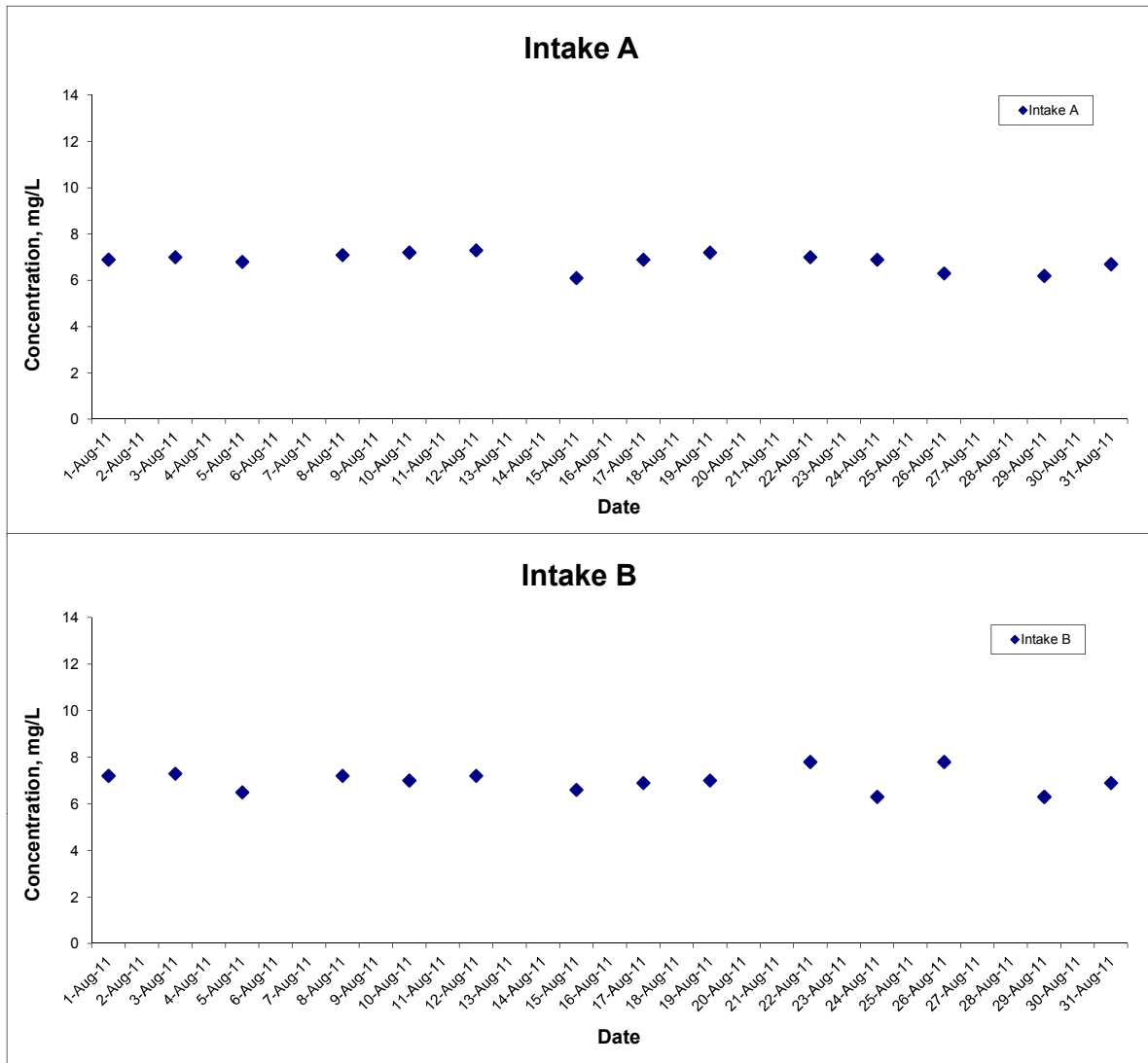
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



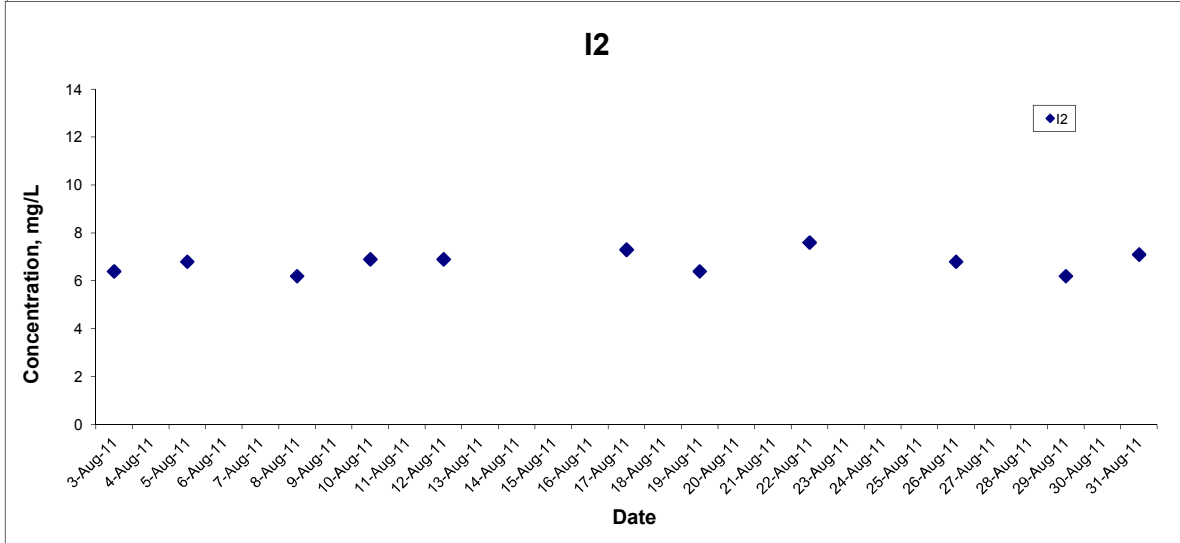
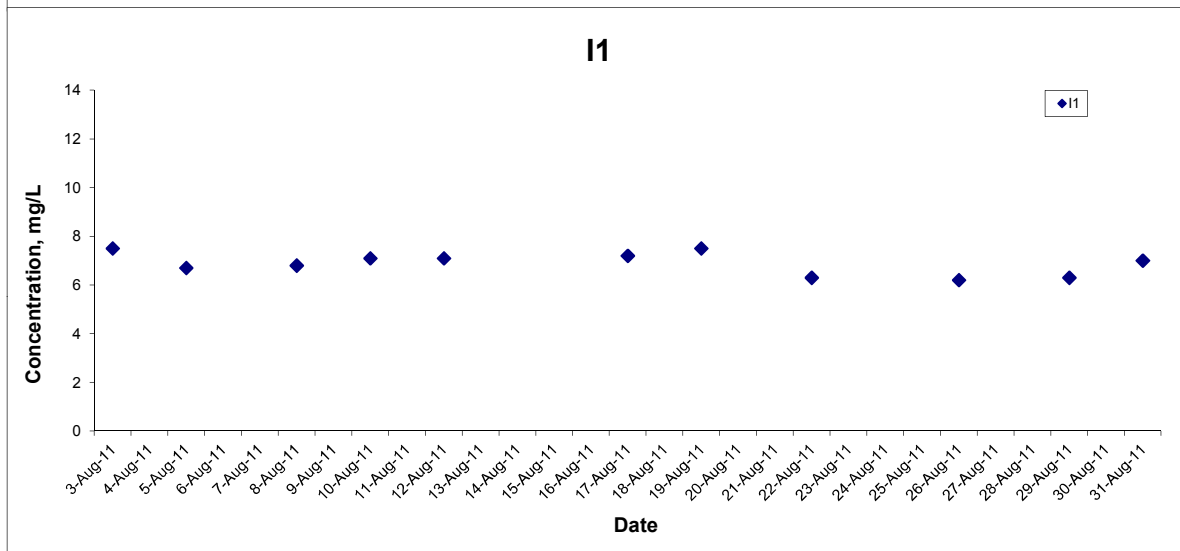
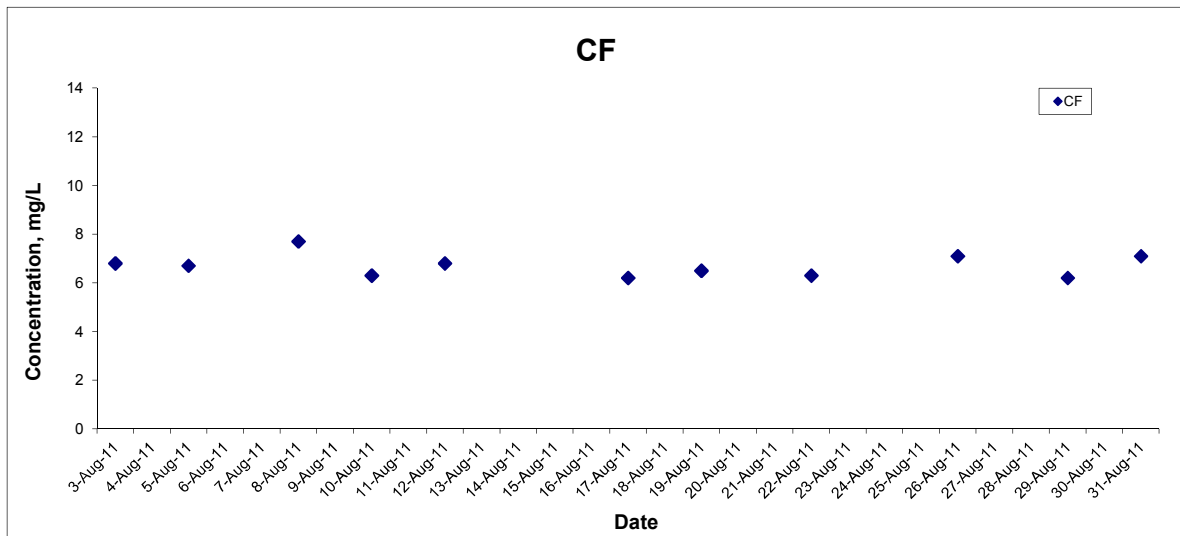
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



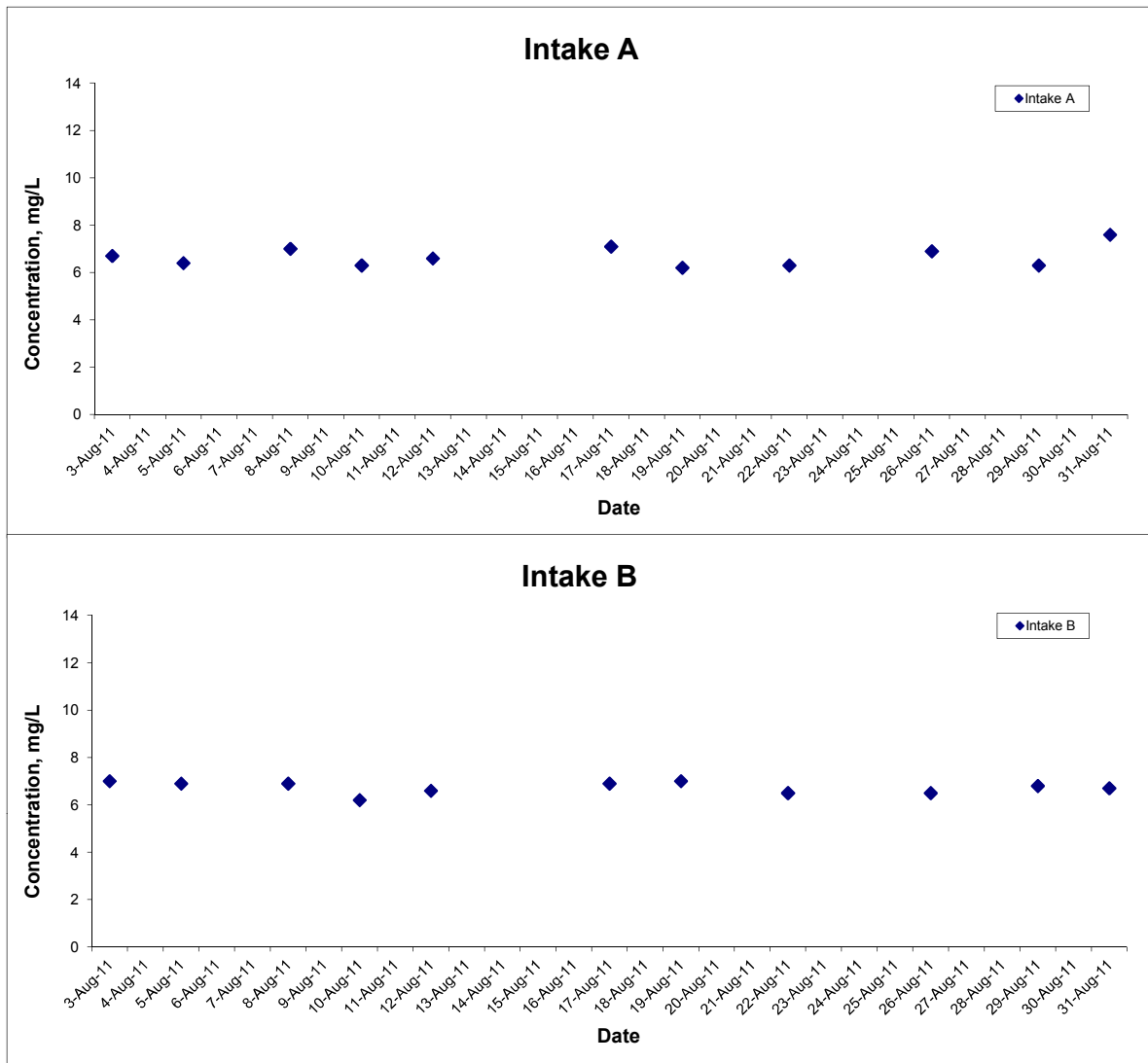
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



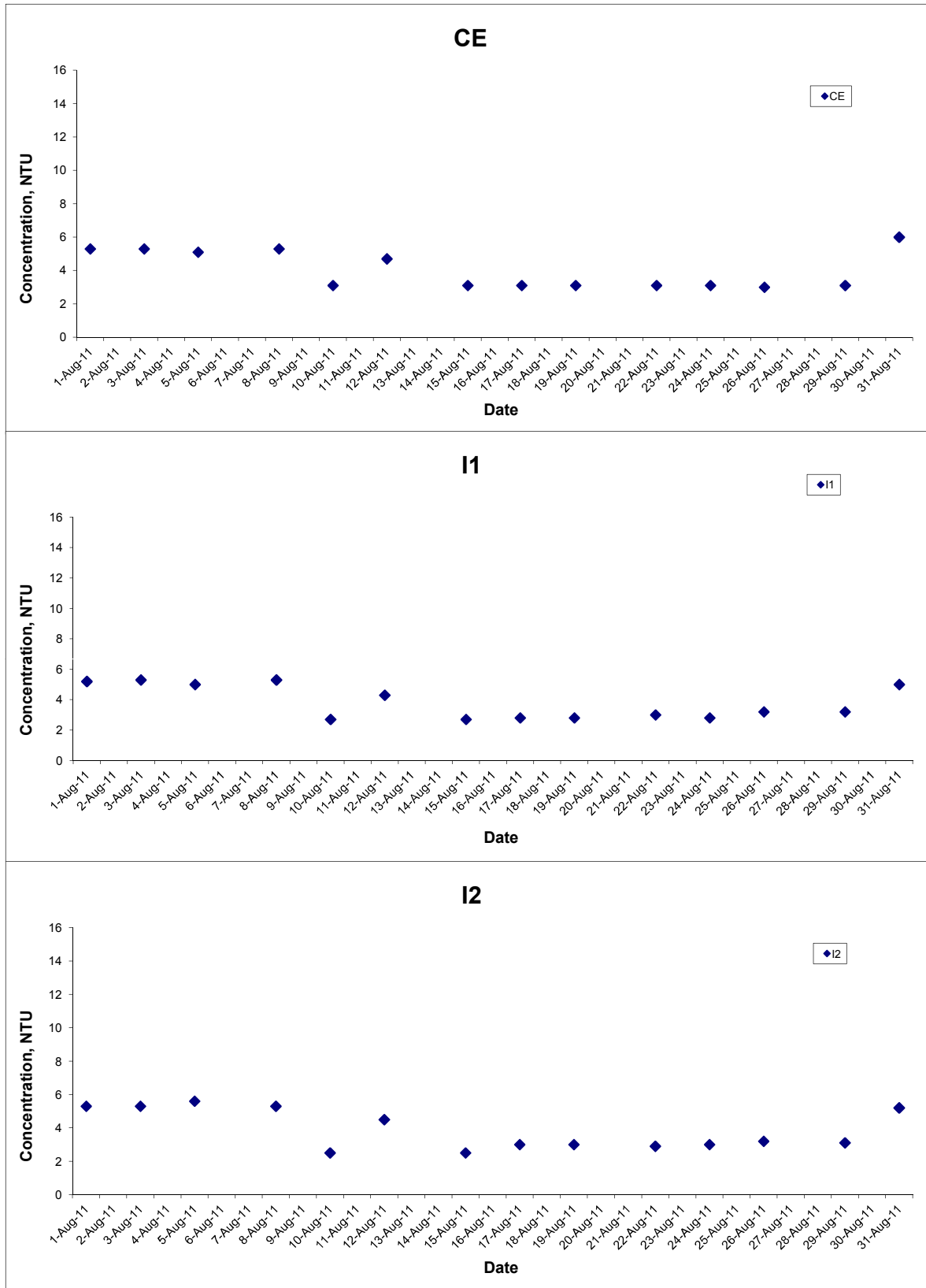
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



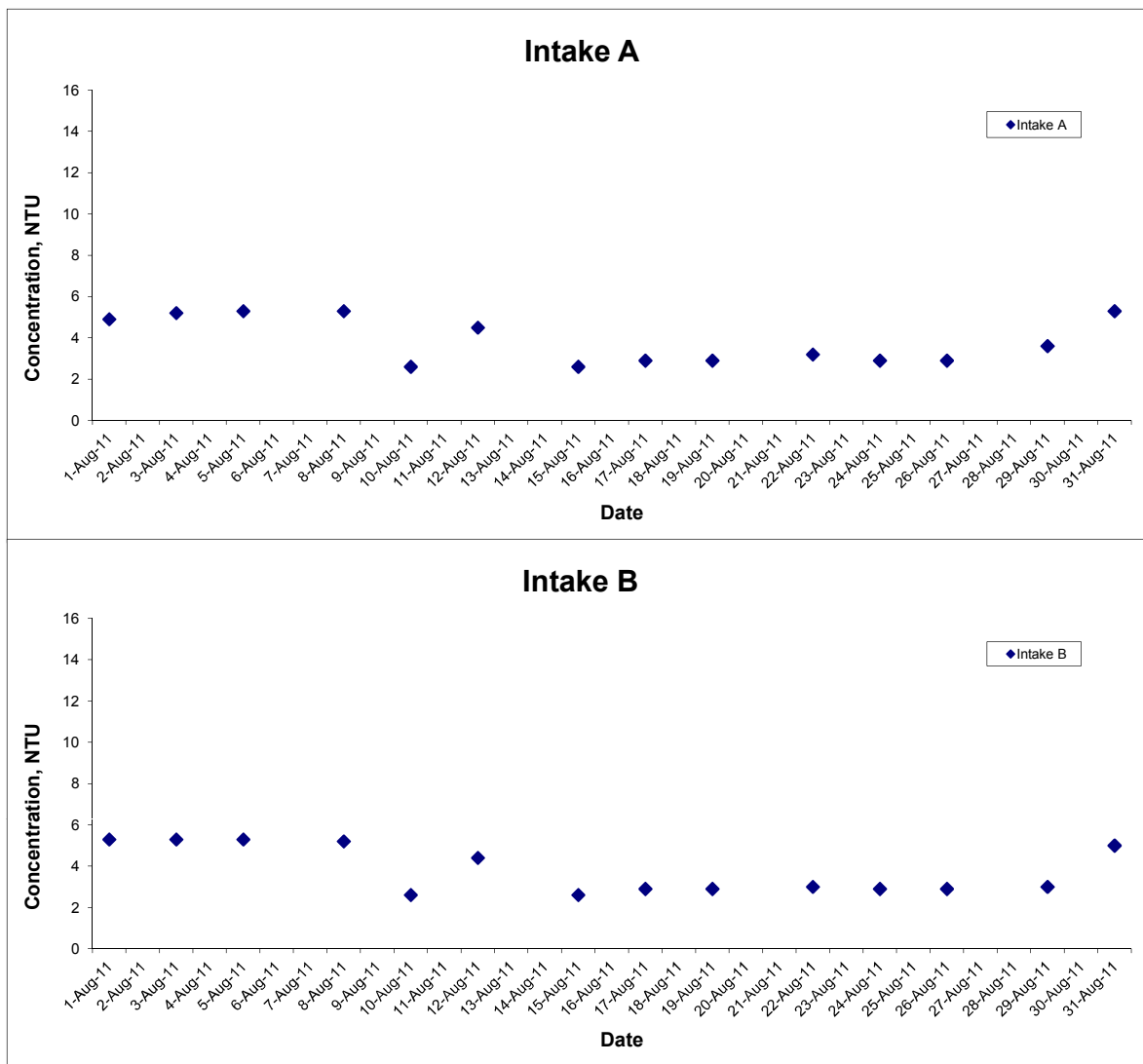
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Aug 11	Appendix L	

Turbidity (Depth-averaged) at Mid-Ebb Tide



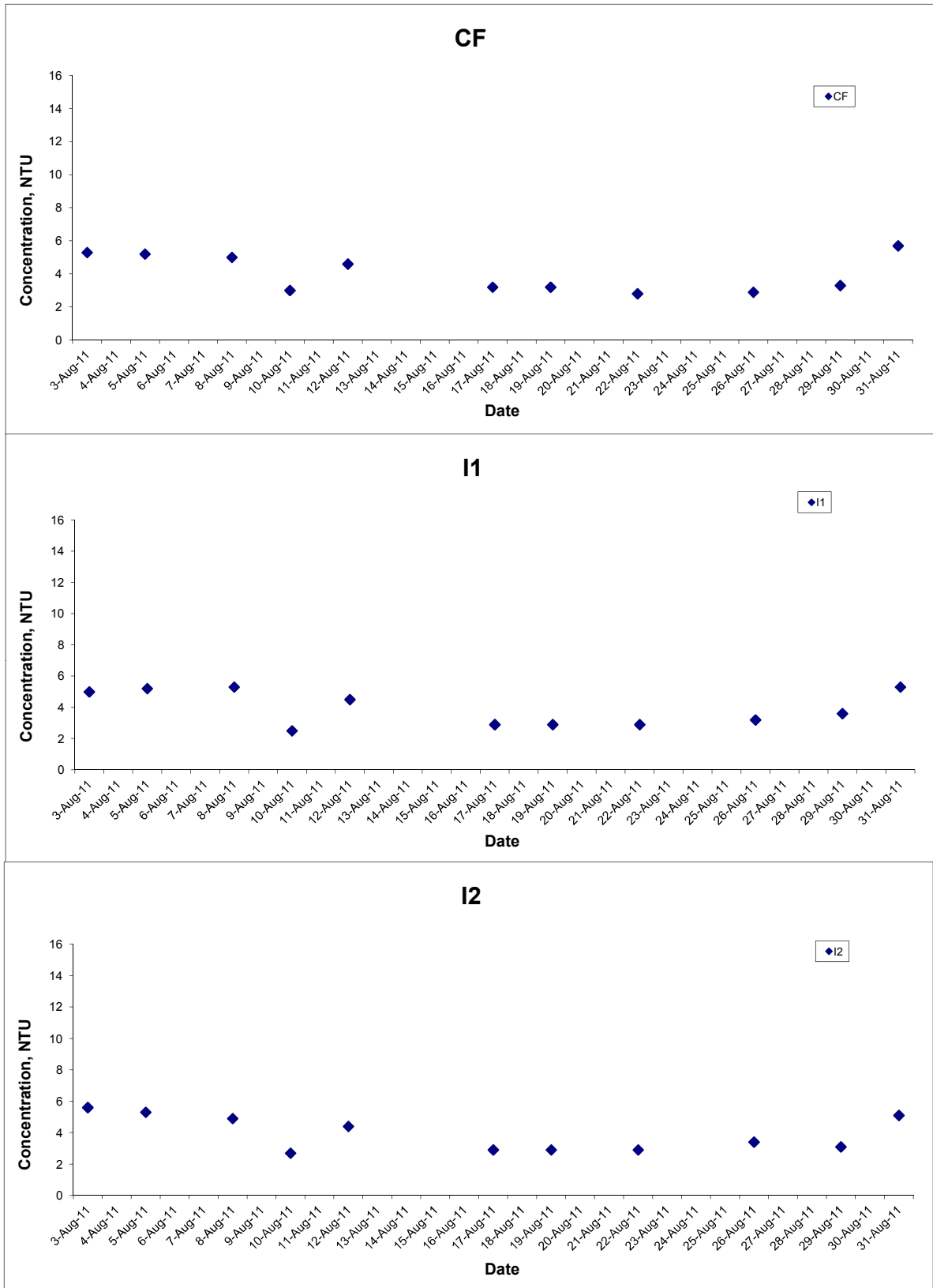
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Turbidity (Depth-averaged) at Mid-Ebb Tide



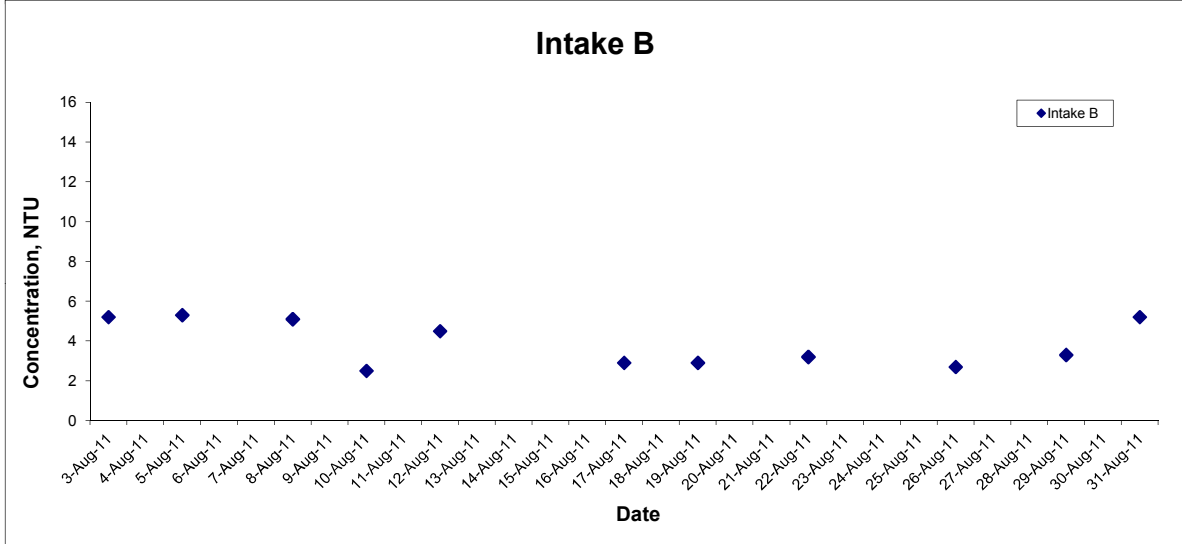
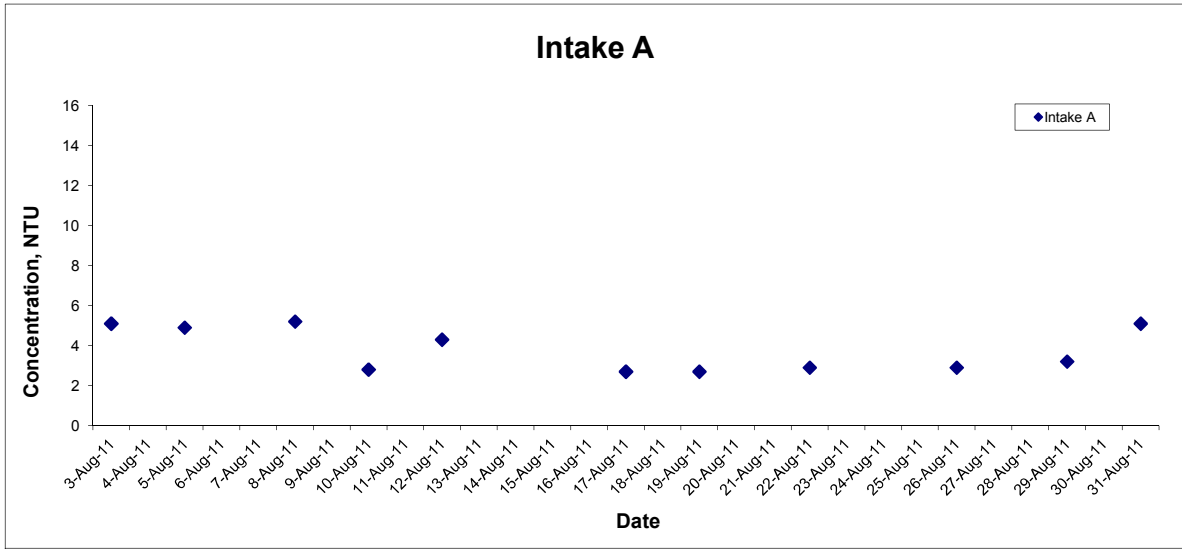
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Turbidity (Depth-averaged) at Mid-Flood Tide



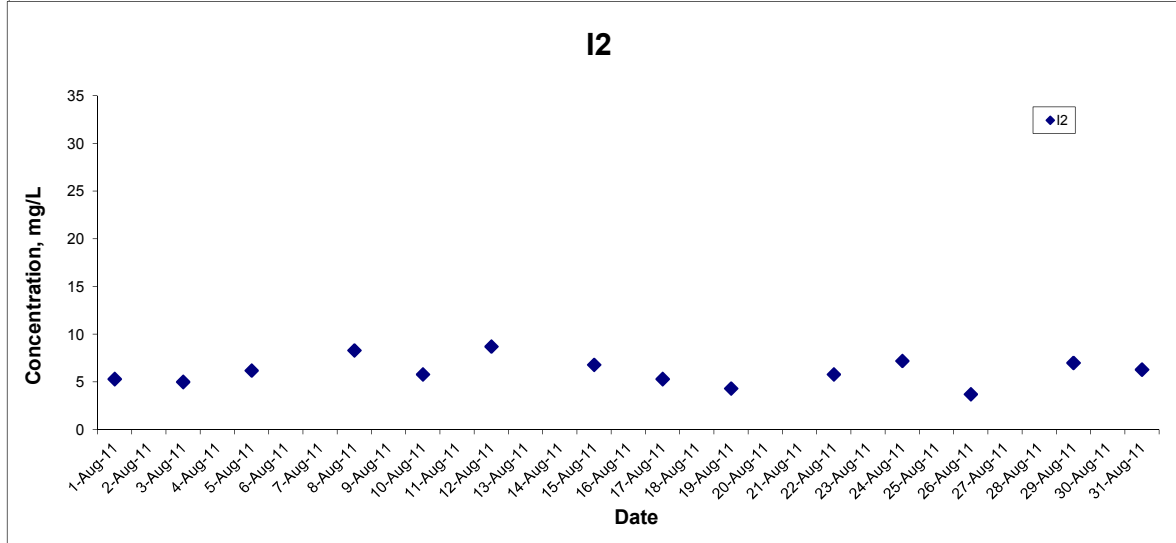
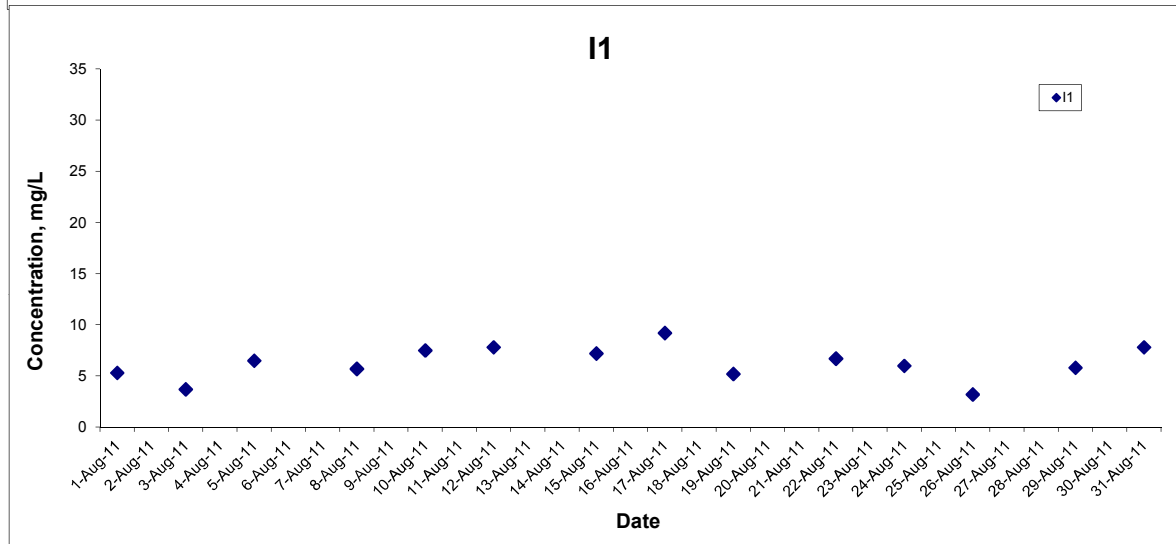
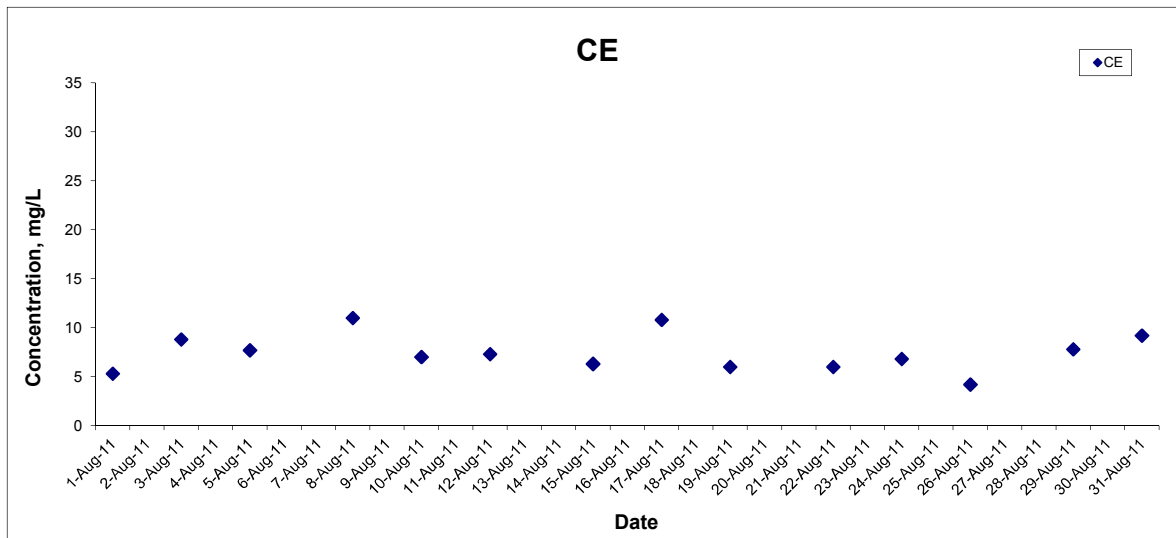
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Aug 11	Appendix L	

Turbidity (Depth-averaged) at Mid-Flood Tide



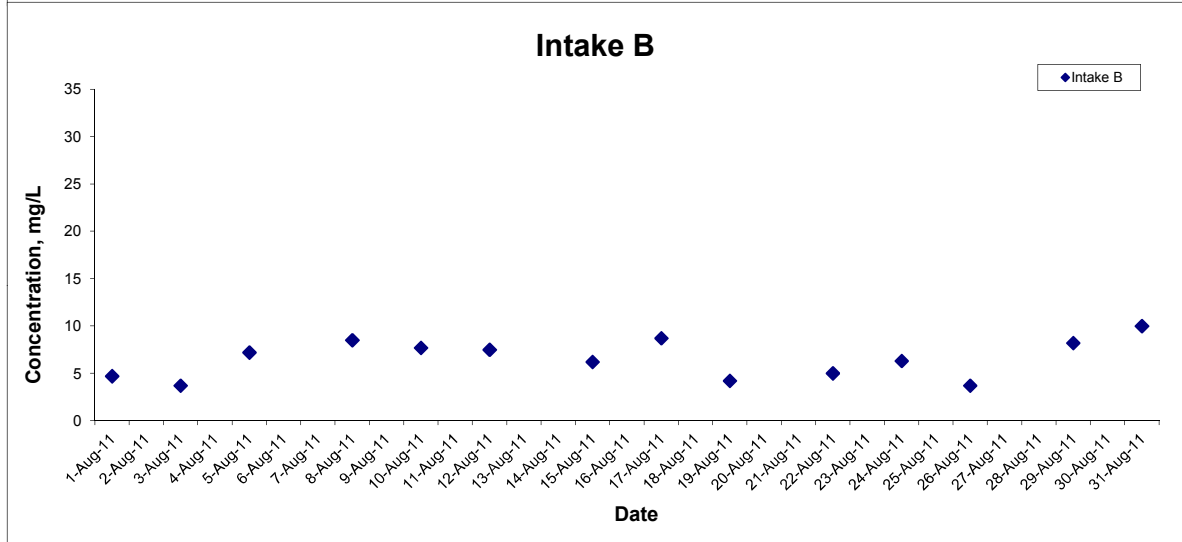
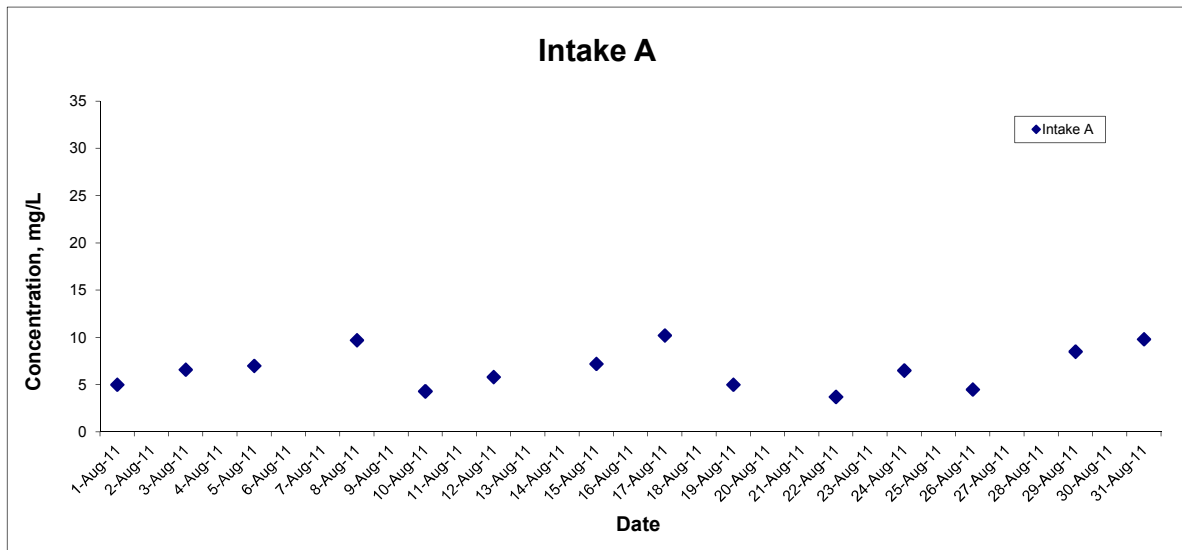
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



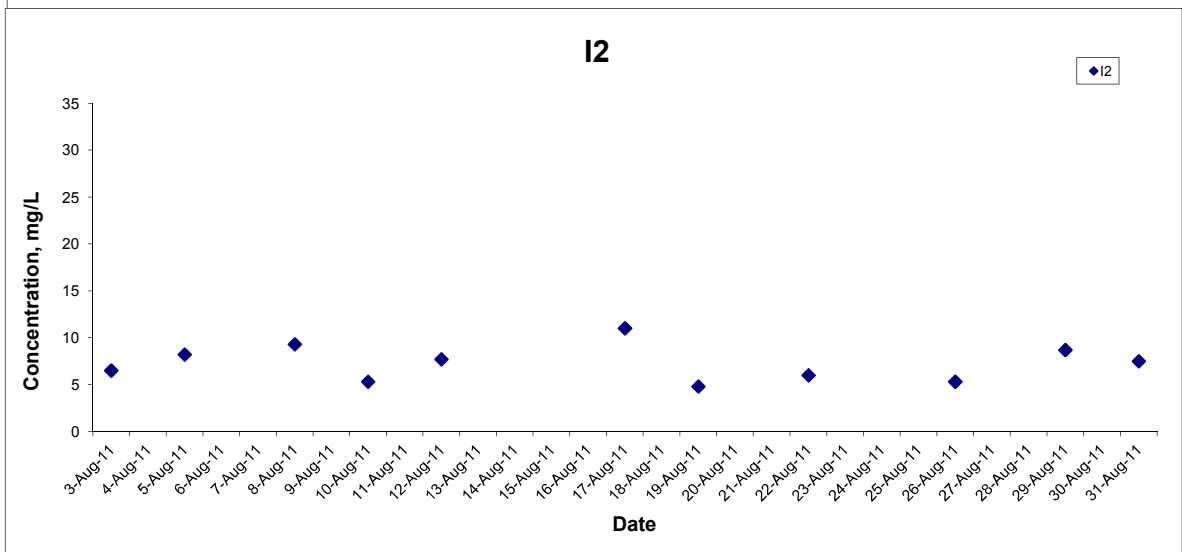
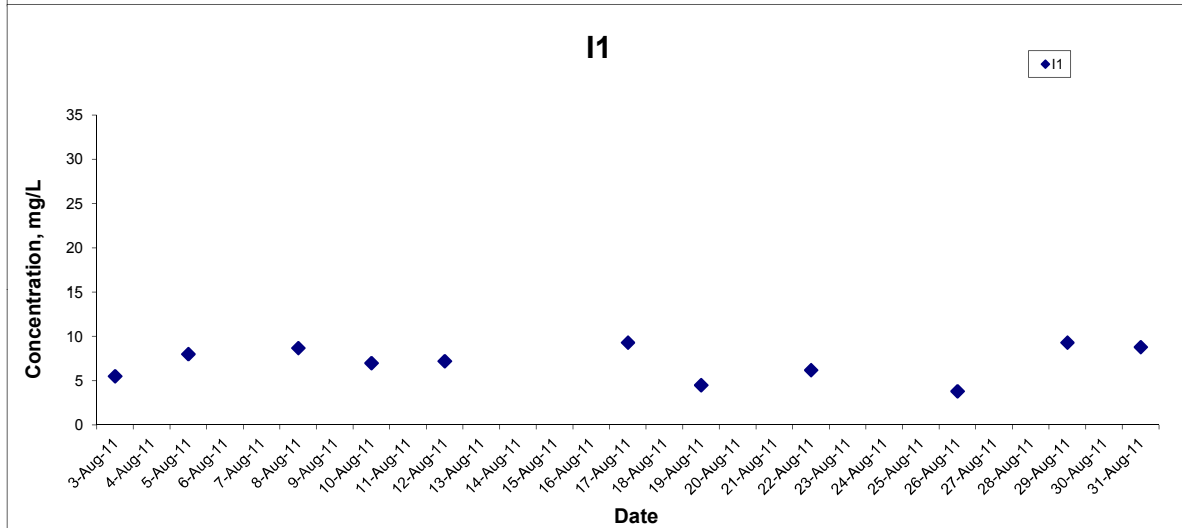
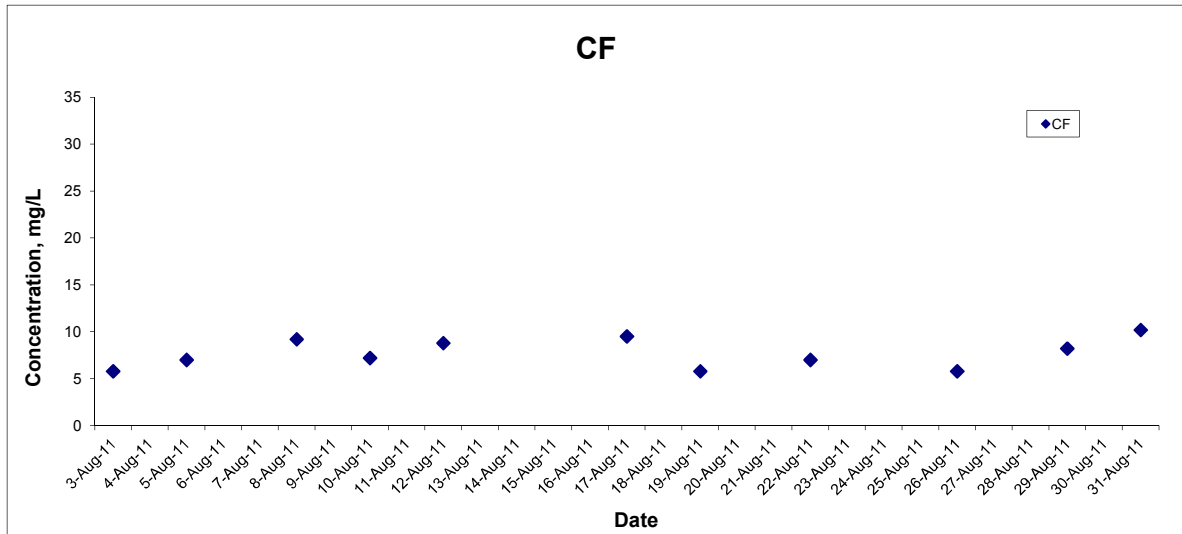
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



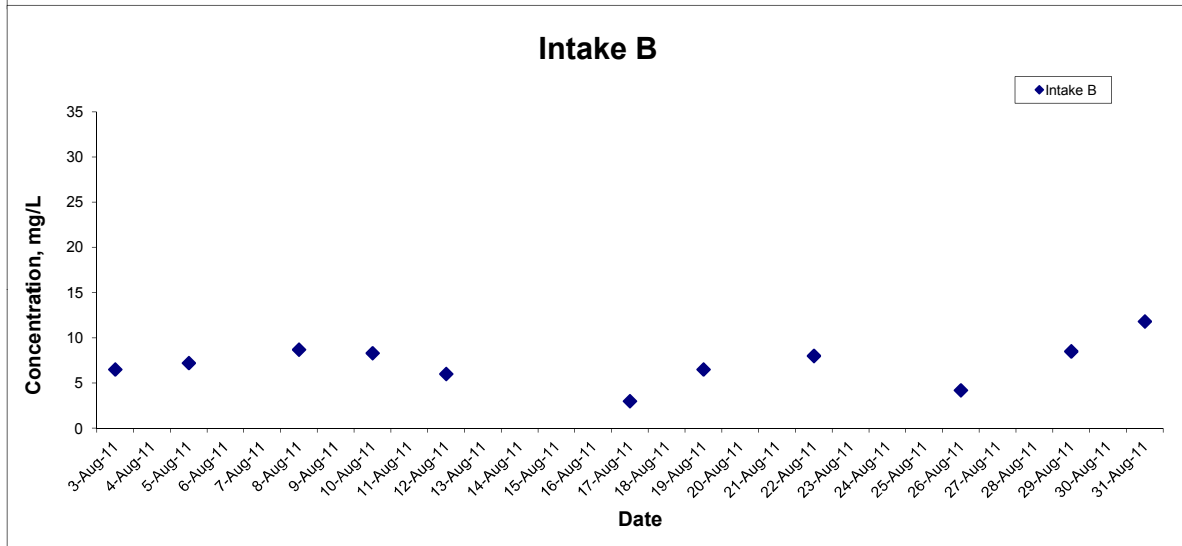
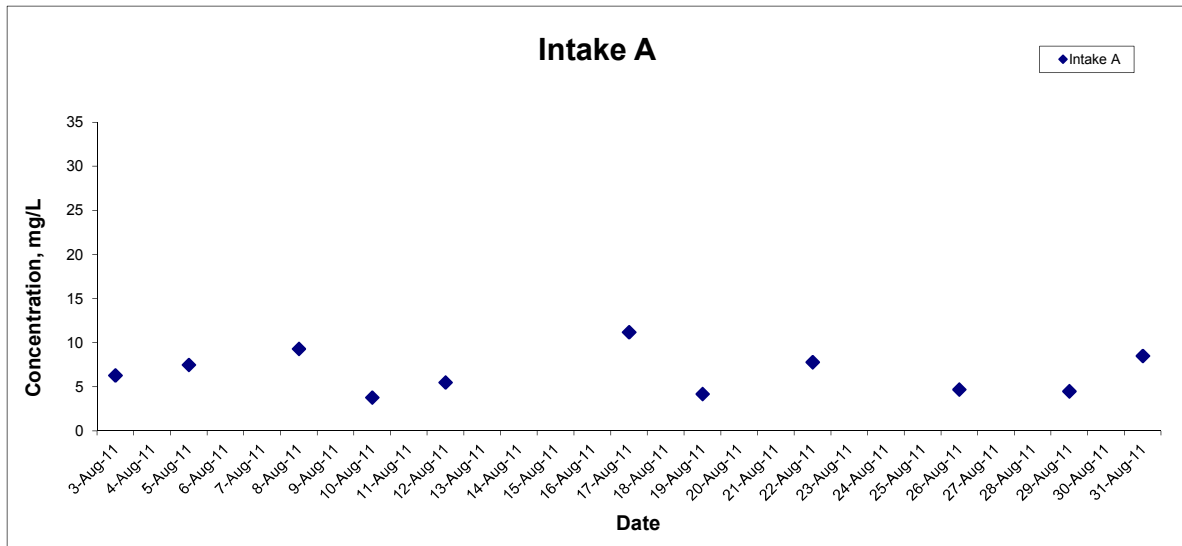
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



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Suspended Solids (Depth-averaged) at Mid-Flood Tide



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