Dragages-Nishimatsu Joint Venture

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

Quarterly EM&A Report

(version 1.0)

July to September 2010

Certified By

(Environmental Team Leader)

REMARKS:

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

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

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EXECUTIVE SUMMARY

Introduction

1. This is the 10th 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 2010.

2. The construction activities undertaken in the reporting quarter were:

- TBM excavation and adit excavation at Eastern and Western Portals;
- Excavation of Adit W0 by Drill-and-Blast method;
- Excavation of dropshaft at Intake MB16 by Raise Boring method;
- Dropshaft pilot hole drilling at Intake MBD2;
- Dropshaft stabilization works at Intake MB16;
- Dropshaft pilot hole drilling & back reaming at Intake MBD2;
- Utility Diversion Works at Intakes CR1;
- Excavation of dropshaft at Intake P5 by RCD method;
- Site preparation works at Intakes W8, W1, BR4, HR1, BR5, BR6, MA14, MA17, RR1, CR1, W10, W5, TP5, MA15, W3, DG1, B2 and GL1;
- Cofferdam construction at Intakes E5A, DG1, HR1, GL1, BR6, RR1, W5, MA15 and W3;
- Excavation of intake structure at Intakes E7, TP4, TP789, HKU1, THR2, MBD2, PFLR1, W10, TP5, E5B, MA15 and W3;
- Permanent Intake structure works at THR2, SM1, HKU1;
- Advance grouting at Intake E5A under Variation Order #53;
- Slopeworks at Intakes M3, MA14 and MA17;
- 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;
- Environmental impact monitoring; and
- Casting of tunnel segments and dropshaft precast rings.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the Updated EM&A Manual and the results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

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

5. In order to assess the effectiveness of the implementation of water quality mitigation measures at Western Portal, site inspections/audits were conducted at least twice per week at Western Portal starting from November 2009.

6. Summary of the non-compliance of the reporting month is tabulated in Table I.

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

Parameter	Number of Exceedances due to the Project		Action Taken	Results of Action Taken
	Action Level	Limit Level		
Eastern Portal				
July 2010				
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.
August 2010				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	3	0	N.A.	N.A.
September 2010				
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				
July 2010				
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.
August 2010				
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.
September 2010				
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				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake E7				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake MA14				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.

Intake PFLR1				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake THR2				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake W0				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake RR1				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake W5				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake P5				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.

Intake W8				
July 2010				
Noise	0	0	N.A.	N.A.
August 2010				
Noise	0	0	N.A.	N.A.
September 2010				
Noise	0	0	N.A.	N.A.
Intake BR6				
September 2010				
Noise	0	0	N.A.	N.A.
Intake TP789/TP4				
August 2010				
Noise	5	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. Three Action Level exceedances were recorded due to the complaint received on 2nd and 3rd August 2010 during the reporting period.

Western Portal

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

Intake DG1

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

Intake PFLR1

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

Intake W5

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

Intake P5

21. No Action/Limit Level exceedance was recorded 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 TP789/TP4

24. Five Action Level exceedances were recorded due to the complaints received on 2nd, 5th, 12th and 13th August 2010 respectively during the reporting period.

Construction Ground Borne Noise

25. 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.

26. 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.

27. 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.

28. Ground borne noise monitoring at GNC5 was completed by end of November 2009.

29. 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.

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

Water Quality

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

Environmental Licensing and Permitting

32. 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.

33. Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal).

34. 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).

35. Construction Noise Permit (License No.: GW-RS0512-10 and GW-RS0734-10 for Eastern Portal, GW-RS0463-10, GW-RS0566-10, GW-RS0674-10 and GW-RS0774-10 for Western Portal, GW-RS0412-10, GW-RS0522-10 and GW-RS0733-10 for Intake W0, GW-RS0075-10 for Intake MB16, GW-RS0155-10 for Intake SM1, GW-RS0128-

10 and GW-RS0710-10 for Intake PFLR1, GW-RS0441-10 for Intake W3 and GW-RS0468-10 for Intake MA17).

Key Information in the Reporting Quarter

36. 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 2010)	1	White stains trucks drips on Cyberport Road	Investigation Report submitted	Closed	---
Complaint received (August 10)	5	Construction Noise at Intake TP789/TP4	Investigation Report submitted	Closed	---
	3	Construction Noise at Eastern Portal	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

37. Nine environmental complaints were received and investigated during the reporting quarter.

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

Future Key Issues

Key Issues for the Coming Month

39. 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 10th quarterly EM&A report summarizing the EM&A works for the Project in the period between July and September 2010.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

2.1 Different parties with different levels of involvement in the project organization include:

- Project Proponent – Drainage Services Department (DSD).
- The Supervising Officer or Supervising Officer's Representative (SO or SOR) – Ove Arup & Partners (ARUP).
- Environmental Team (ET) – Cinotech Consultants Limited (CCL).
- Independent Environmental Checker (IEC) – Allied Environmental Consultants Limited (AEC).
- Contractor - Dragages-Nishimatsu Joint Venture (DNJV).

2.2 The responsibilities of respective parties are detailed in Sections 1.14 to 1.28 of the Updated EM&A Manual of the Project. The project organization chart is presented in **Figure 2**.

2.3 The key contacts of the Project are shown in Table 2.1.

Table 2.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
DNJV	Permit Holder	Mr. ALTIER Daniel	Project Manager	2671 7333	2671 9300
		Mr. UETAKE H.	Deputy Project Manager		
ARUP	Supervising Officer	Mr. Ted Tang	CRE	6117 6639	2436 1012
		Mr. Jackson Wong	SRE	6117 6636	
		Mr. Alan Ng	RE	9668 8350	
		Mr. Bernard Cheng	RE	98614939	
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
AEC	Independent Environmental Checker	Ms. Grace Kwok	Independent Environmental Checker	2815 7028	2815 5399
DNJV	Contractor	Mr. Sing Chu	Environmental Officer	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-n, 4a-b and 5**. **Appendix B** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

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

Environmental Quality Performance Limits (Action and Limit Levels)

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

Environmental Mitigation Measures

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

4. MONITORING RESULTS

Weather Conditions

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

Air Quality

1-hour TSP Monitoring

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

24-hour TSP Monitoring

4.3 24-hr TSP monitoring at 2 monitoring station, AQ1 and AQ3 was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.

4.4 The graphical presentations of the air quality monitoring results are shown in **Appendix D**.

Construction Airborne Noise

4.5 Noise monitoring at 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 Three Action Level exceedances were recorded due to the complaint received on 2nd and 3rd August 2010 during the reporting period.

Western Portal

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

Intake PFLR1

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

Intake THR2

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

Intake RR1

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

Intake W0

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

Intake W5

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

Intake P5

4.17 No Action/Limit Level exceedance was recorded 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 TP789/TP4

4.20 Five Action Level exceedances were recorded due to the complaints received on 2nd, 5th, 12th and 13th August 2010 respectively during the reporting period.

Construction Ground Borne Noise

4.21 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.

4.22 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.

4.23 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.

4.24 Ground borne noise monitoring at GNC5 was completed by end of November 2009.

4.25 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.

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

Water Quality

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

Underground water level

4.28 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.

4.29 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)	
15 July 2010	7.83
1 August 2010	7.90
9 September 2010	7.85
Location: TP789_DH2	
28 July 2010	14.90
20 August 2010	14.90
25 September 2010	14.30
Location: TP5_DH2	
28 July 2010	Obstructed
28 August 2010	Obstructed

25 September 2010	Obstructed
Location: THR2_DH7	
28 July 2010	1.71
28 August 2010	1.78
25 September 2010	1.60
Location:PFLR1_DH2	
28 July 2010	10.92
7 August 2010	10.98
24 September 2010	11.42

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

- Silty water from sedimentation tank was observed discharging out at Intake HKU1.
- Wastewater was observed discharging to the public drain at Intake W10 during heavy rain.
- Silty water at the last compartment of sedimentation tank was observed directly pumping out at Intake P5 and MA15.
- The three compartments of sedimentation tank were observed almost silty at Western Portal.
- Muddy water was observed directly pumping out to the public drain at Intake PFLR1, W10 and TP789.
- Sedimentation tank at Intake HKU1, TP4 and TP5 was observed not functioning properly.
- Silty water at the last compartment of sedimentation tank was observed directly pumping out at Intake P5.
- Settling runoff form excavations was observed directly pumping out to public drain at Intake SM1.
- Water from water recycling tank was observed overflow and discharging to the public road at Intake BR6.
- Much of muddy water accumulated at near the existing drain at Intake GL1 after heavy rainstorm.
- Discharge from site at Intake THR2 and BR6 were observed not discharge at designated discharging point.
- Muddy water and stockpile of sediment were observed accumulate at near the existing stream at Intake GL1.

Ecology

- Silty water was observed discharging to the stream at Intake TP789.

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

29th July 2010

Reminders

- Black smoke emitted from backhoe was observed at Western Portal. The Contractor was reminded to clean filter at regular basis.
- Oil stain was observed near wheel washing facilities at E7. Although surface runoff over oil stain is directly flushed into wheel washing facilities and treated before discharge, the Contractor was reminded to clear oil stain as general house keeping practice.

27th August 2010

Observations:

- Some soil marks were observed on public road near exit/entrance near BR6. The Contractor was requested to clear deposited soil/debris mud and public road more frequently.
- Poor housekeeping was observed at SMH17 and W3. The Contractor was requested to maintain site tidiness and place unused chemical containers in drip tray.

30th September 2010

Reminders:

- The Contractor was reminded to provide drip trays for chemical containers at P5 as practical as possible.

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-RS0512-10 and GW-RS0734-10 for Eastern Portal, GW-RS0463-10, GW-RS0566-10, GW-RS0674-10 and GW-RS0774-10 for Western Portal, GW-RS0412-10, GW-RS0522-10 and GW-RS0733-10 for Intake W0, GW-RS0075-10 for Intake MB16, GW-RS0155-10 for Intake SM1, GW-RS0128-10 and GW-RS0710-10 for Intake PFLR1, GW-RS0441-10 for Intake W3 and GW-RS0468-10 for Intake MA17).

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

Status of Waste Management

5.11 During this reporting quarter, a total 45 nos. of dump trucks of waste were delivered to SENT, 2252 nos. of C&D waste was delivered to Public Fill Reception Facilities. Both the trip ticket system and chit accounting system for disposal of waste were operating smoothly to date. 39 trucks overloading case was recorded during this reporting period (all within the 105% 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 Eastern Tunnel and adits were also received by Leighton site at Ocean Park and in a residential development site at No. 1 Gough Hill Road, the Peak which was started from 24th September 2010.

5.13 The monthly summary of waste flow table for July – September 2010 are provided in **Appendix I**.

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

Summary of Exceedances

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

Air Quality

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

Construction Airborne Noise

Eastern Portal

6.3 Three Action Level exceedances were recorded due to the complaint received on 2nd and 3rd August 2010 during the reporting period.

Intake TP789/TP4

6.4 Five Action Level exceedances were recorded due to the complaints received on 2nd, 5th, 12th and 13th August 2010 respectively during the reporting period.

Construction Ground Borne Noise

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

Construction Impacts on Suspended Solids

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

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

6.7 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 Nine environmental complaints were received and investigated during the reporting quarter. The updated Complaint Log is attached in **Appendix K**.

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

7.3 There were a total of 62 project related environmental complaints, no warnings, summons and successful prosecutions received since the commencement of the Project.

8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

8.1 The major construction activities in the coming month include:

- TBM excavation and adit excavation at Eastern and Western Portals;
- Excavation of Adit W0 by Drill-and-Blast method;
- Stage 1&2 Structure Construction at Intake SM1;
- Stage 1 Structure Construction at Intake TP4, HKU1, SM1 and THR2;
- Excavation of dropshaft at Intake MBD2 by Raise Boring method;
- Excavation of dropshaft at Intake P5 by RCD method;
- Excavation of intake structure at Intakes E7, E5B, DG1, BR6, PFLR1, W10, TP789, TP5, MA15, and W3;
- Cofferdam construction at Intakes E5A, HR1, GL1, RR1, M3, W8 and MA14;
- Site preparation works for Intakes BR5, W1, BR4, CR1, MA17 and B2;
- Slopeworks at Intake M3;
- Review of Additional and revised Works and redesign necessary to Intake BR4 due to underground structure;
- Casting of tunnel segments and dropshaft precast rings; and
- Demobilization of East TBM.

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

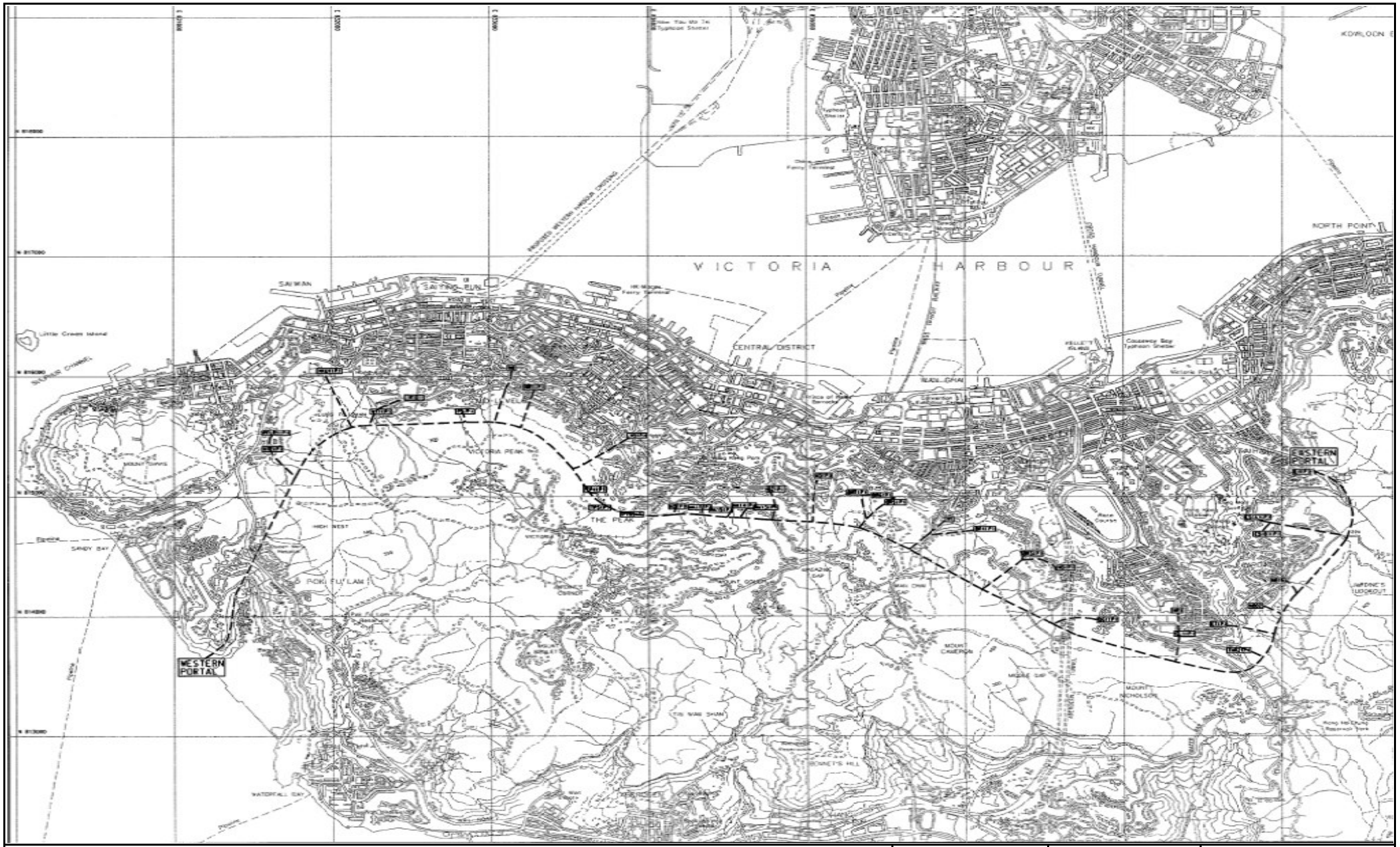
- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.

- 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.

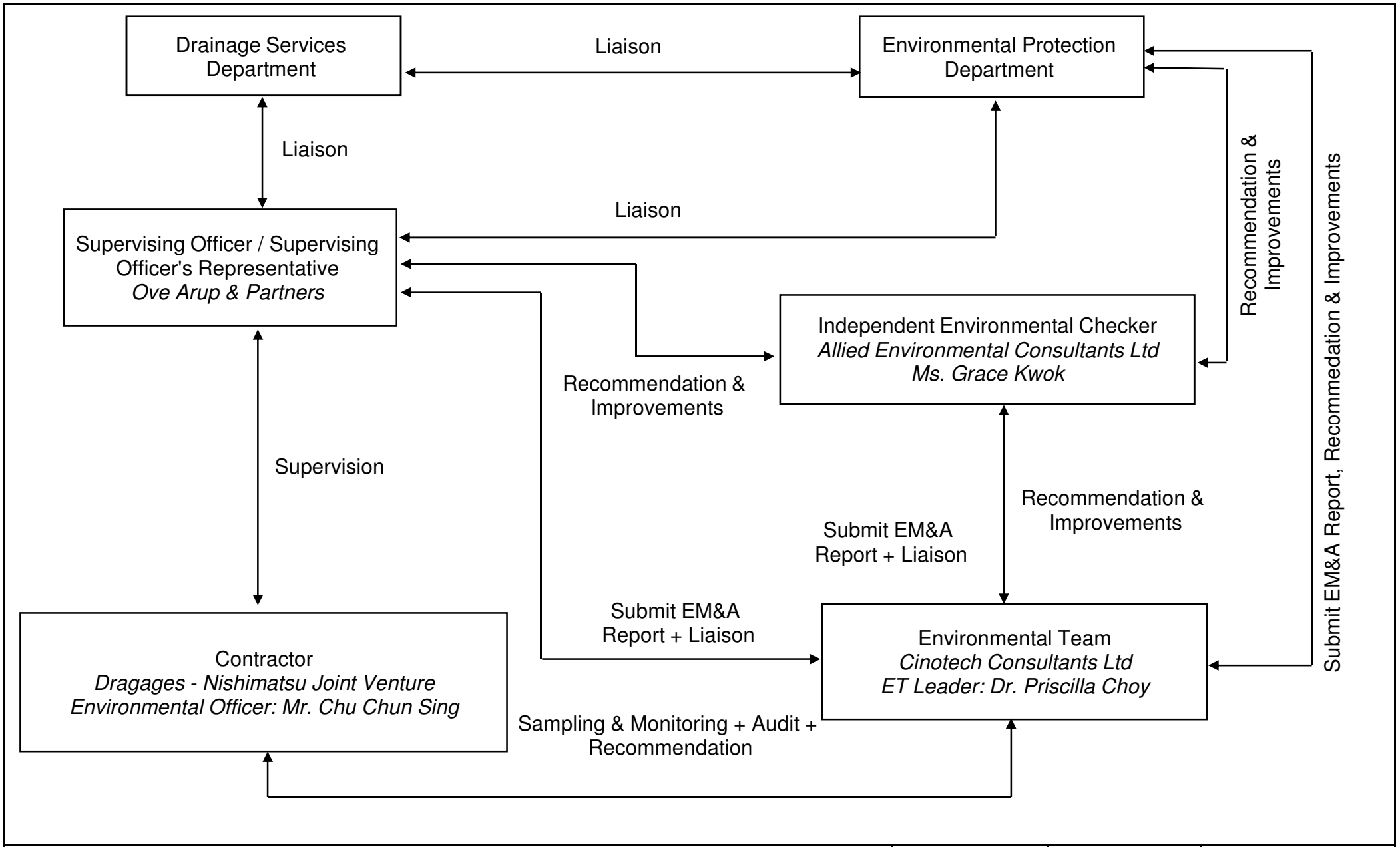
Waste/Chemical Management

- 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.

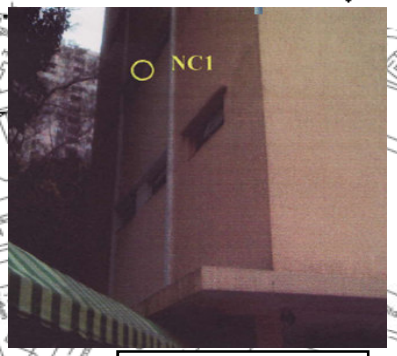
FIGURES



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



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



AQ1- True Light Middle School of Hong Kong (Canopy)

NC1- True Light Middle School of Hong Kong (2/F floor)

NC1a - Outside True Light Middle School of Hong Kong

NC2- The Legend (16/F Podium)

EASTERN PORTAL

(Uncontoured)

(Uncontoured)

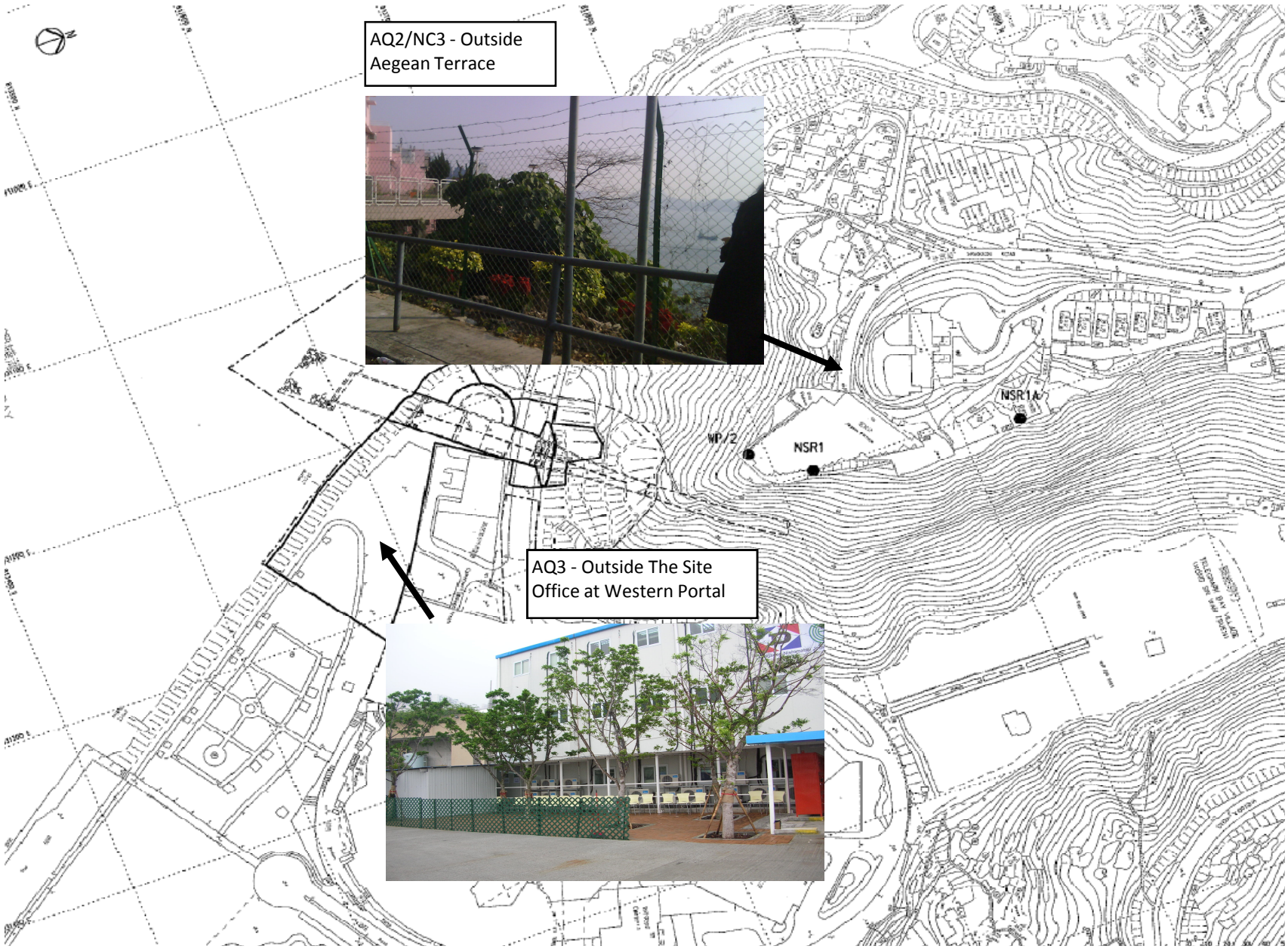
(Uncontoured)

TAI HANG ROAD

TAI HANG DRIVE

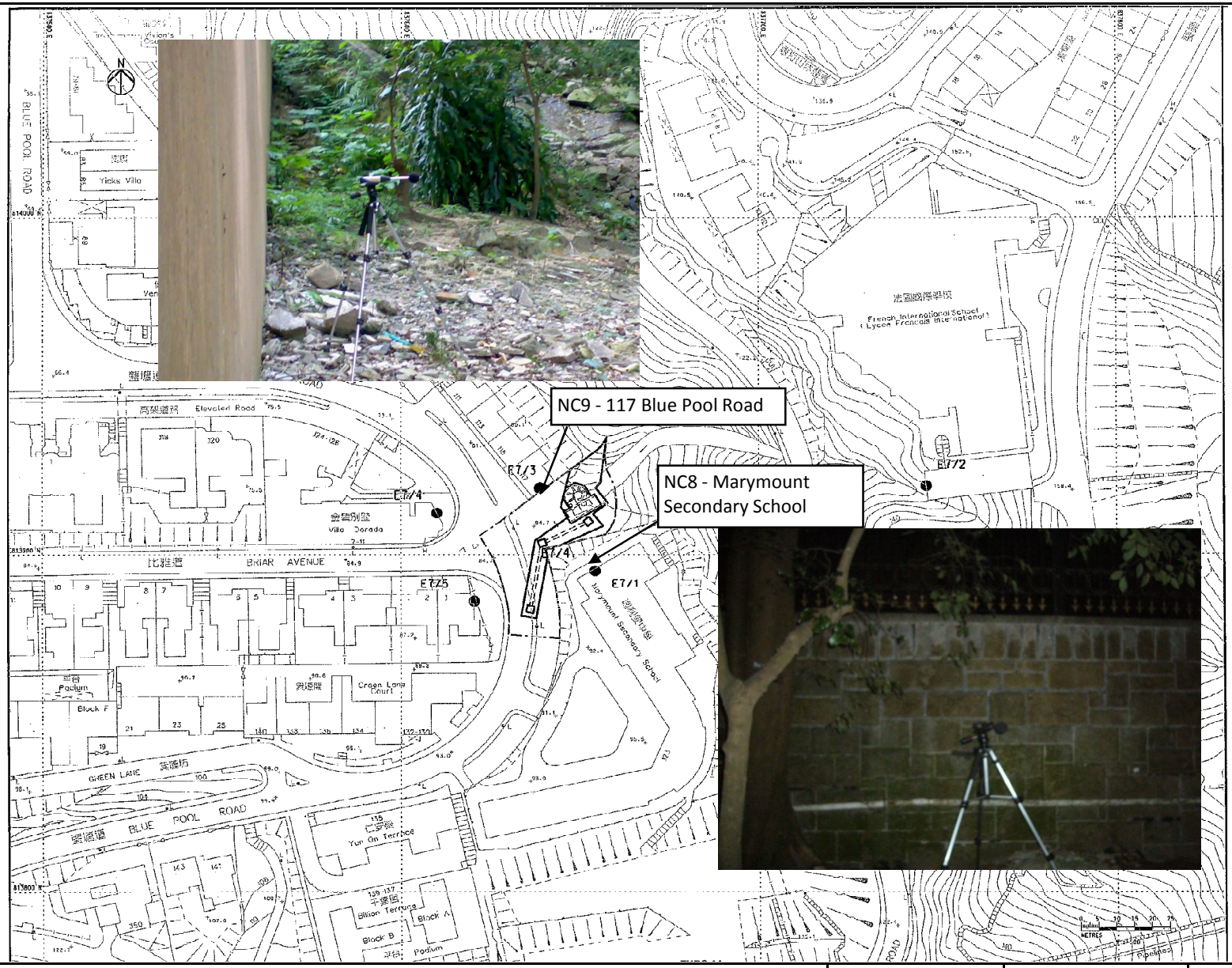
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal) Locations of Air Quality and Noise Monitoring Station	Scale: N.T.S Date: Sep-09	Project No.: MA 8001 Figure: 3a

CINOTECH



Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Western Portal) Locations of Air Quality and Noise Monitoring Station	Scale: N.T.S Date: Sep-09	Project No.: MA 8001 Figure: 3b

CINOTECH

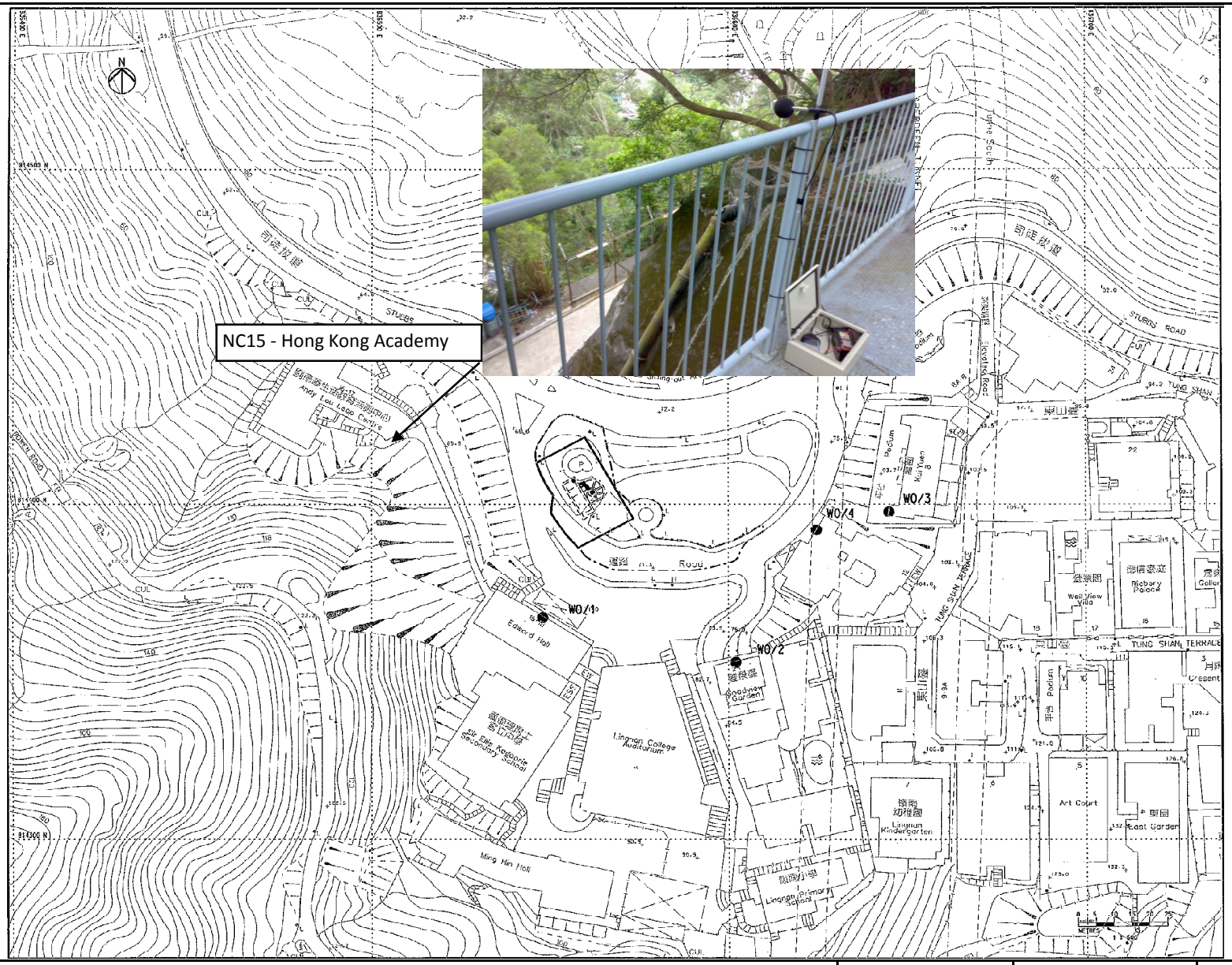


Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intake E7) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Mar-10	Project No.: MA 8001 Figure: 3c

CINOTECH

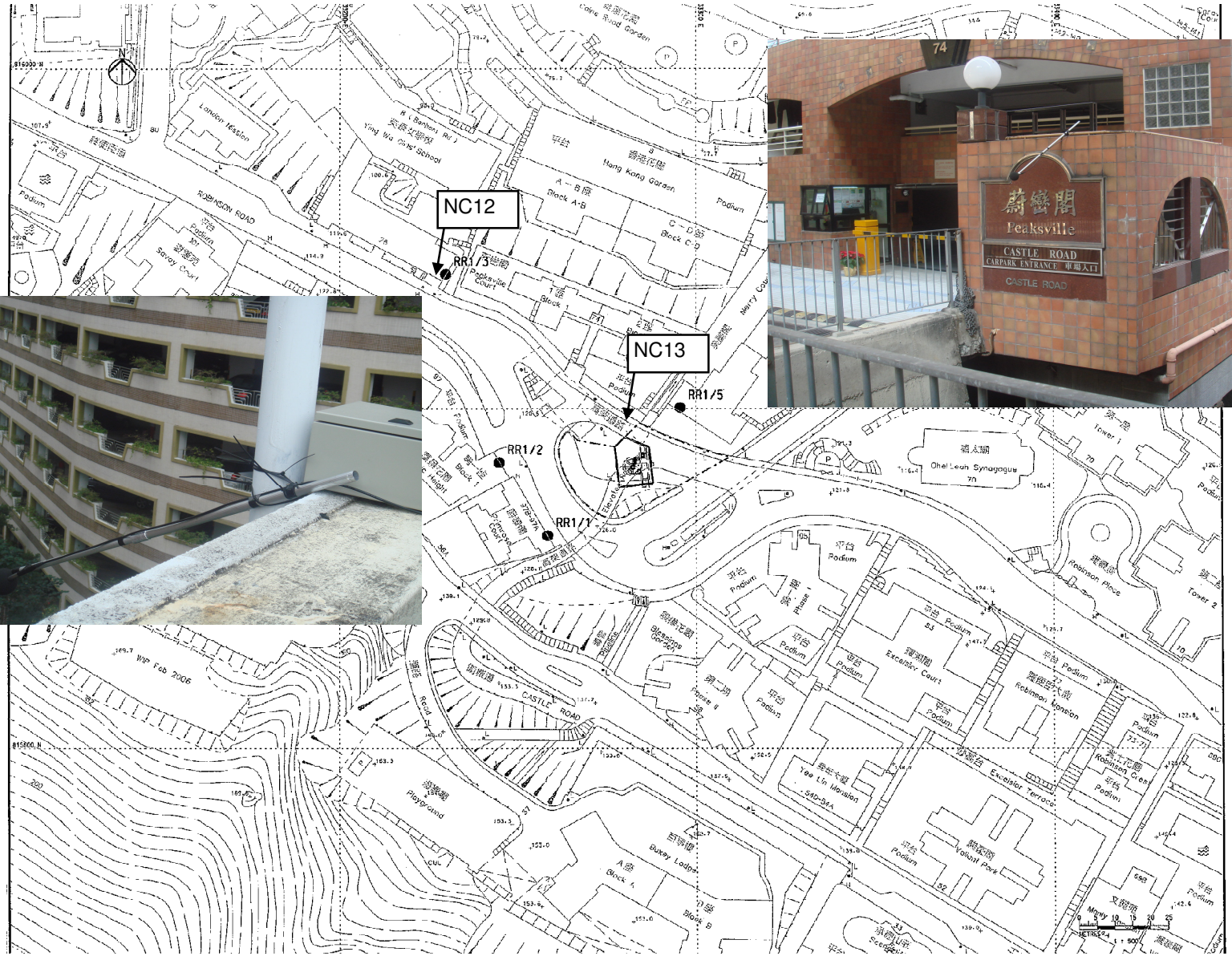
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intake PFLR1) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Mar-10	Project No.: MA 8001 Figure: 3d

CINOTECH



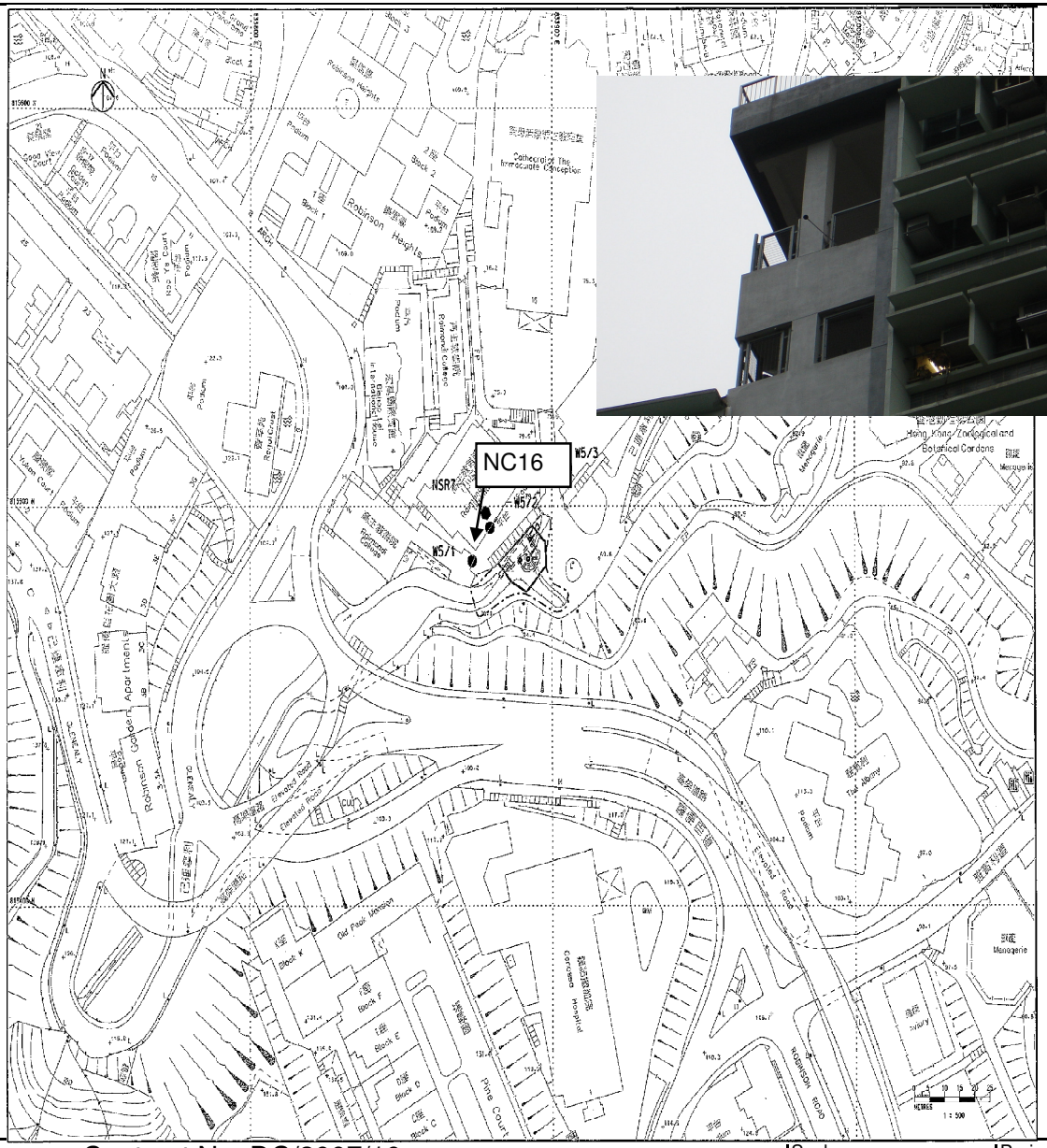
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intake W0) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Mar-10	Project No.: MA 8001 Figure: 3e

CINOTECH



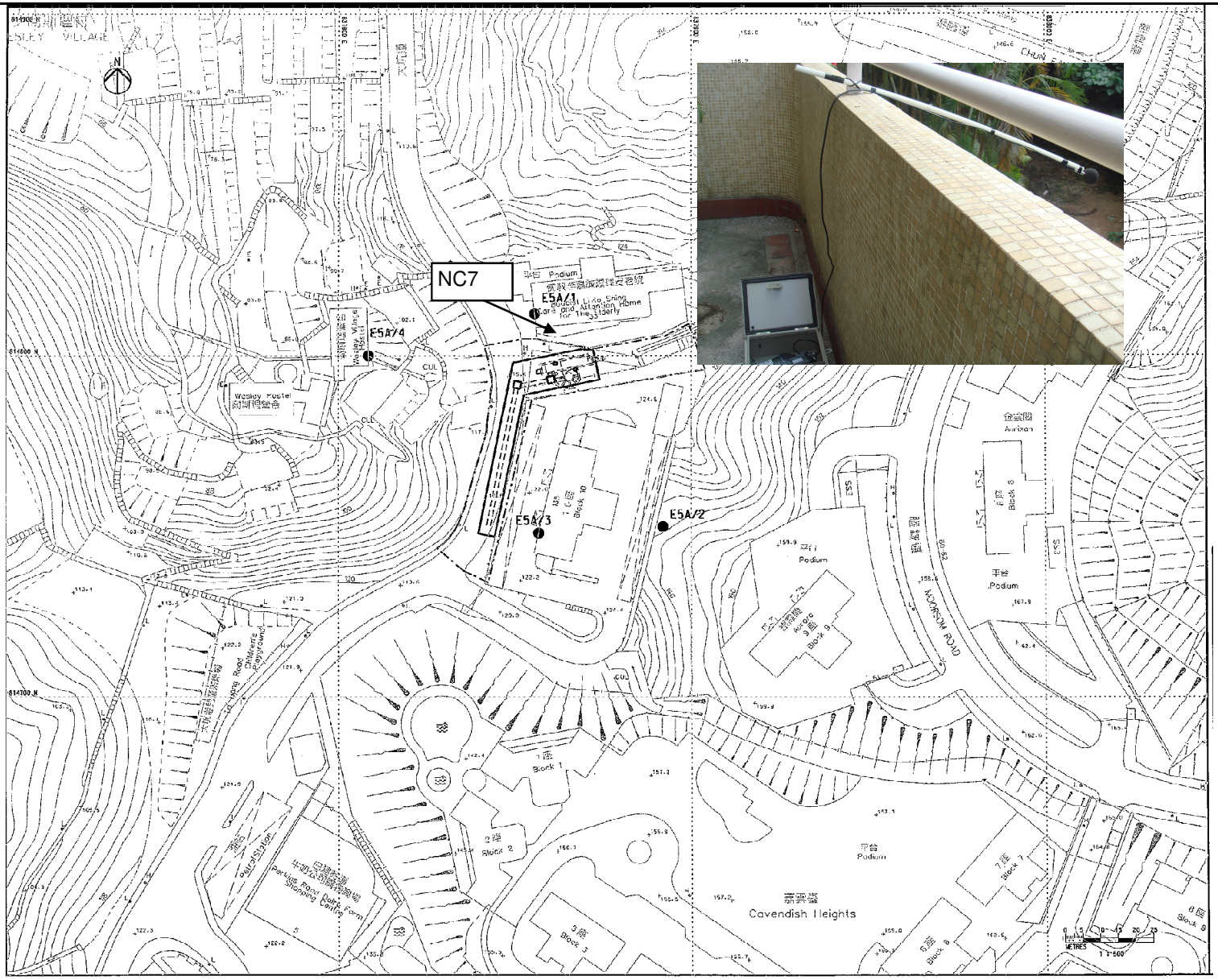
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intakes RR1) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Mar 10	Project No.: MA 8001 Figure: 3f

CINOTECH



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

CINOTECH

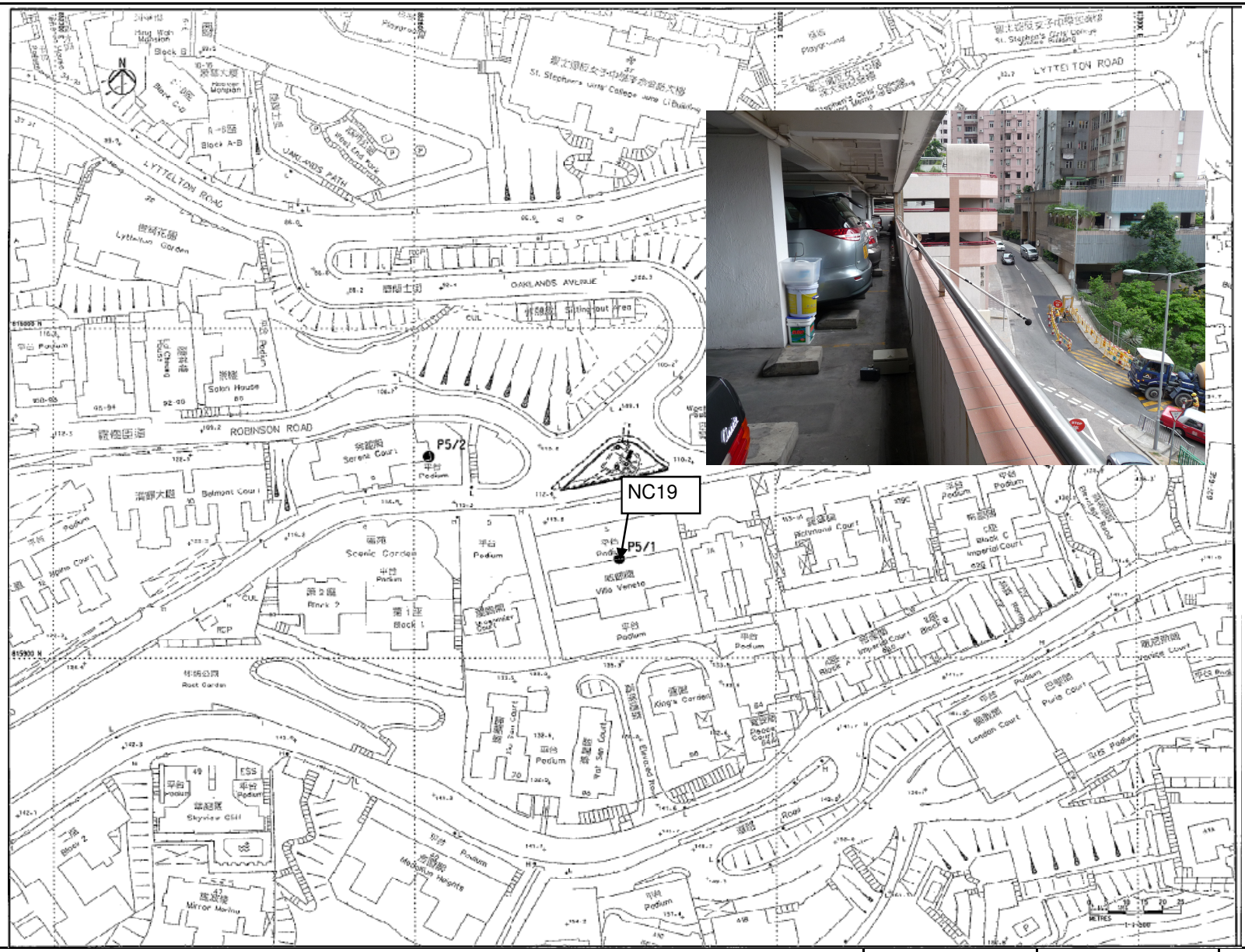


Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intakes E5A) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Mar-10	Project No.: MA 8001 Figure: 3h

CINOTECH

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

CINOTECH

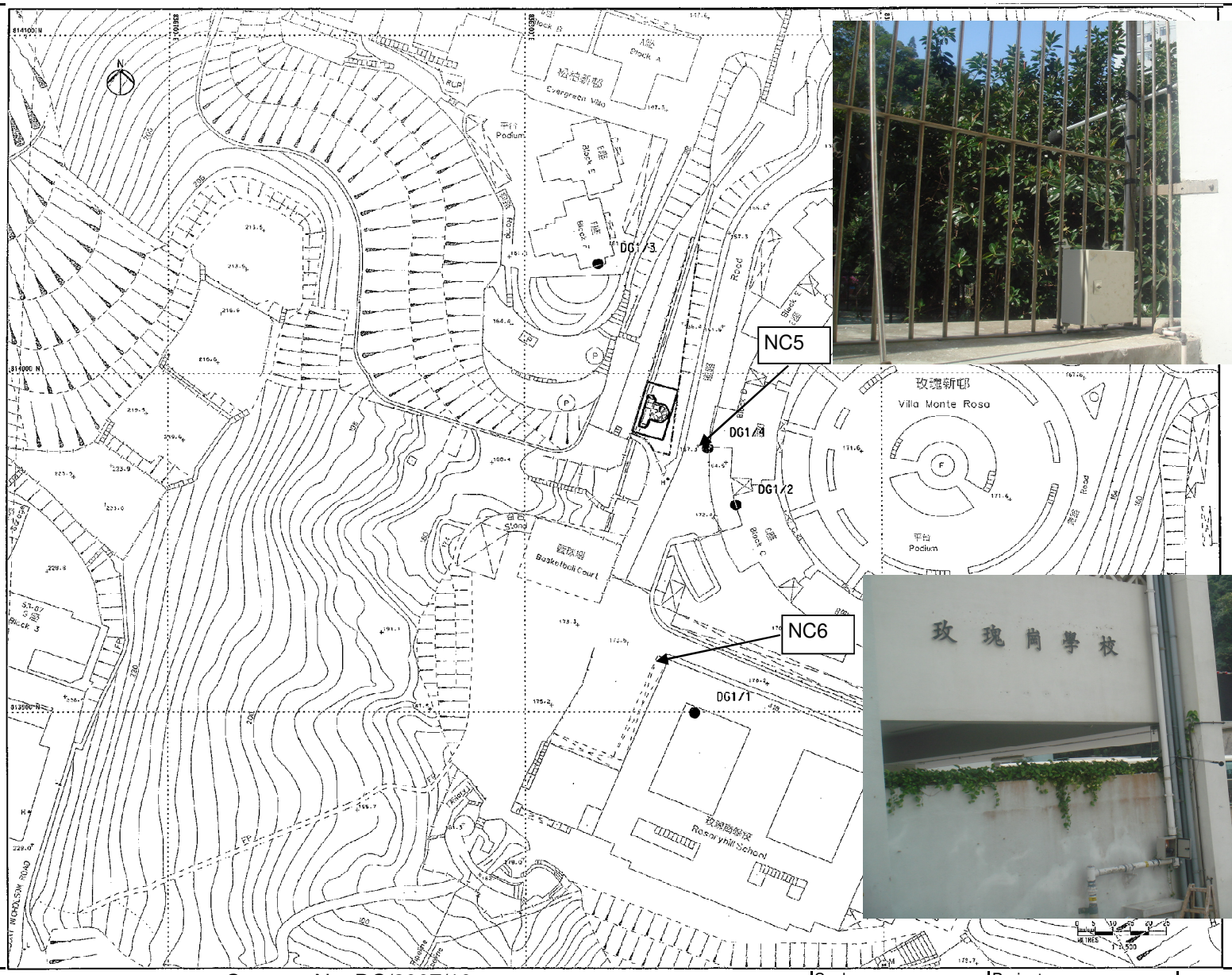


Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intakes P5) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Mar-10	Project No.: MA8001 Figure: 3j

CINOTECH

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 Date: Jun-10	Project No.: MA8001 Figure: 3k

CINOTECH



Title

Contract No. DC/2007/10

Design and Construction of Hong Kong West Drainage Tunnel

(Intake DG1)

Locations of Noise Monitoring Stations

Scale	N.T.S
Project No.	MA8001
Date	Sep-10
Figure	3I

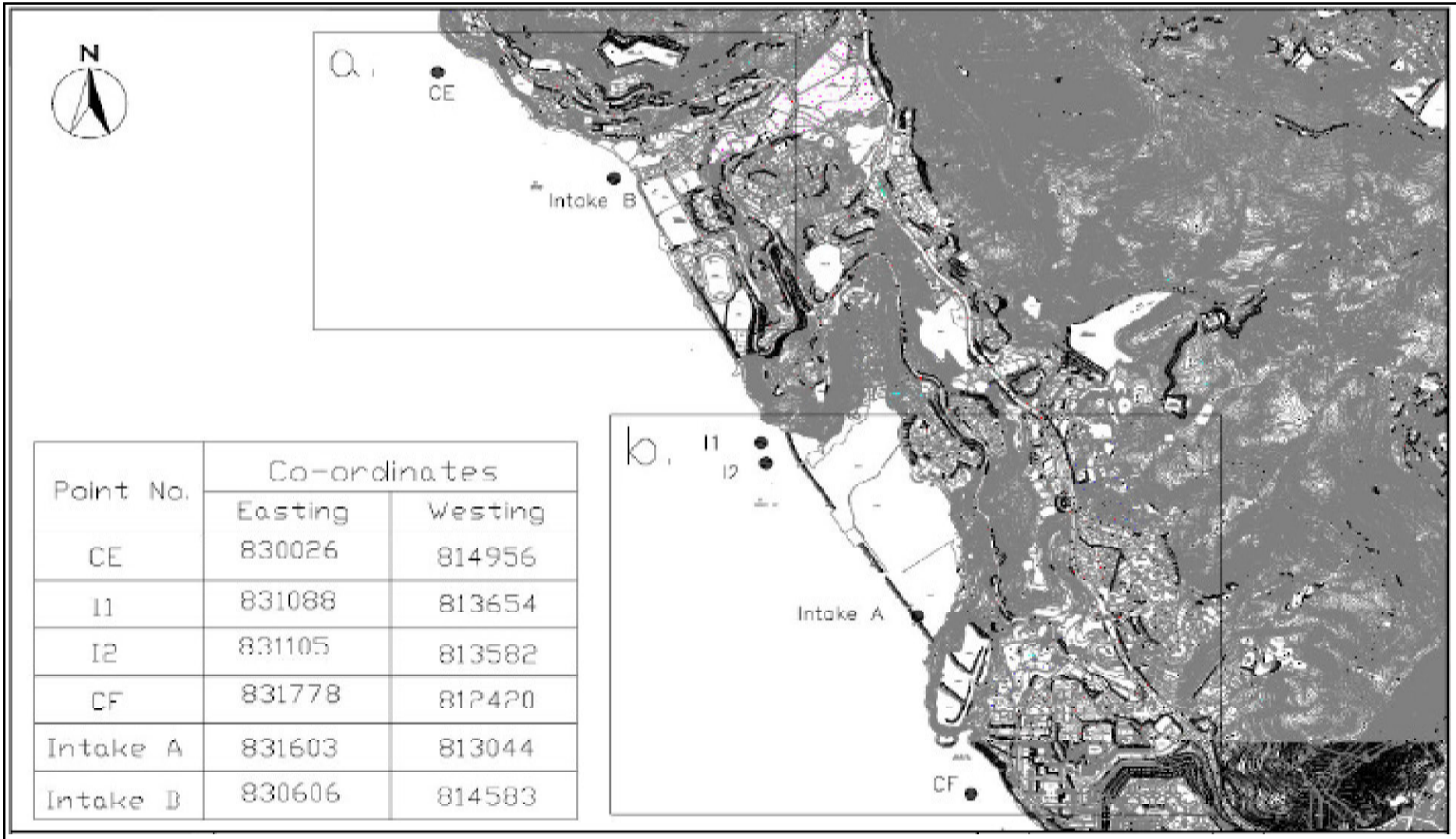
CINOTECH

Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intake MA14) Locations of Noise Monitoring Stations	Scale: N.T.S Date: Sep-10	Project No.: MA8001 Figure: 3m

CINOTECH

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 Date: Sep-10	Project No.: MA8001 Figure: 3n

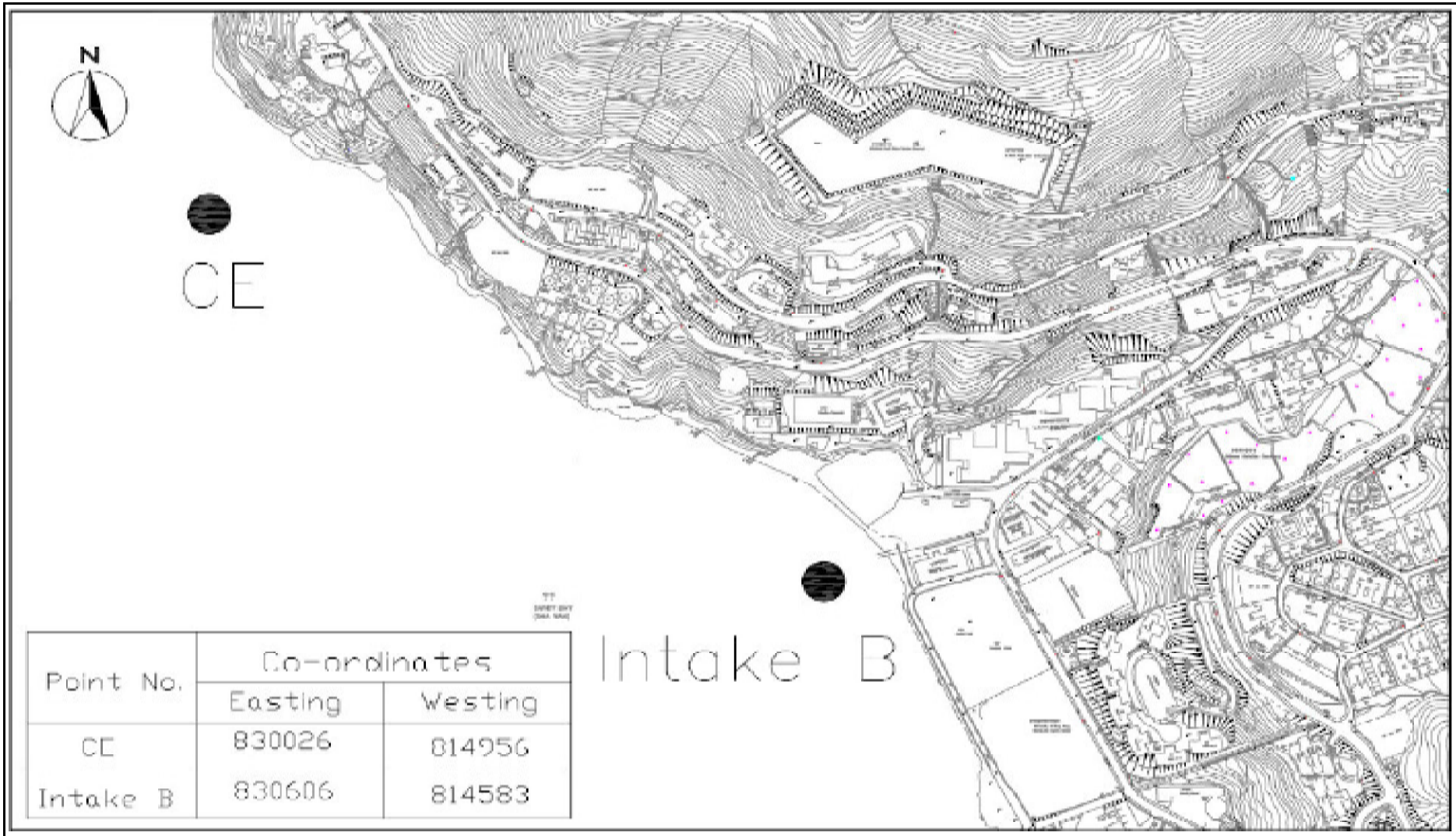
CINOTECH



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 Date: Jul-08	project No.: MA8001 Figure: 4

CINOTECH



Point No.	Co-ordinates	
	Easting	Westing
CE	830026	814956
Intake B	830606	814583

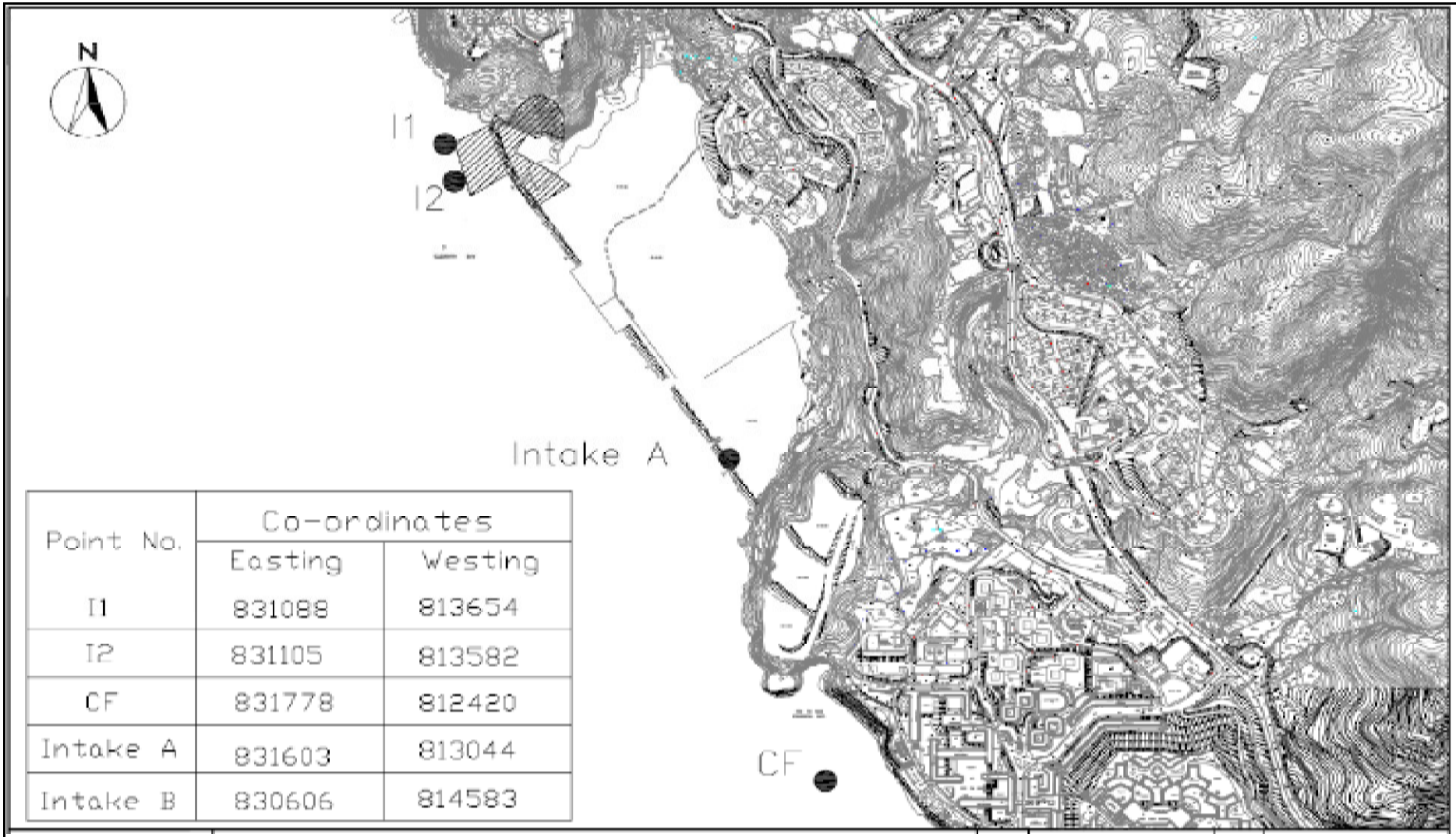
Title

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

Locations of Water Quality Monitoring Stations

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

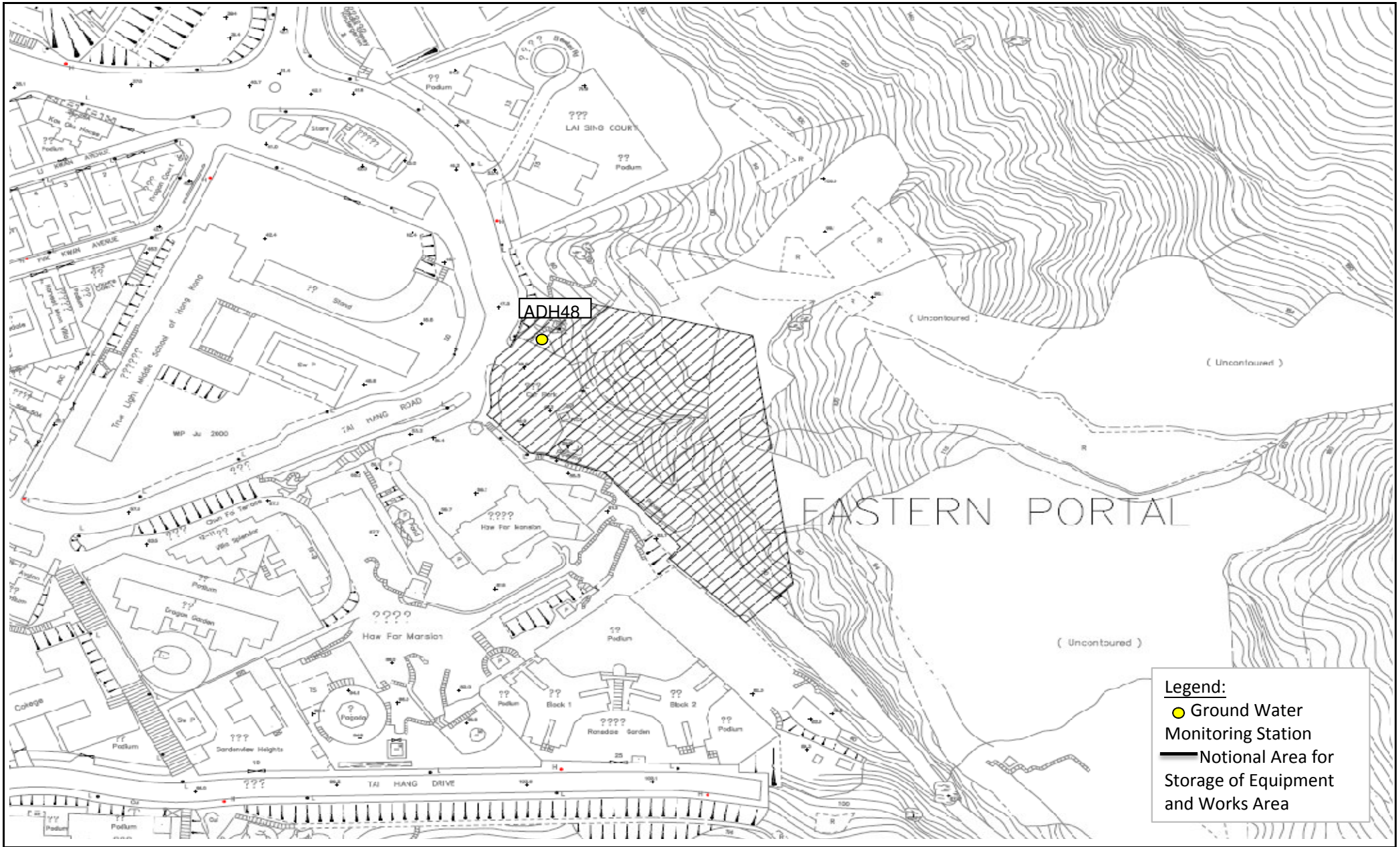
CINOTECH



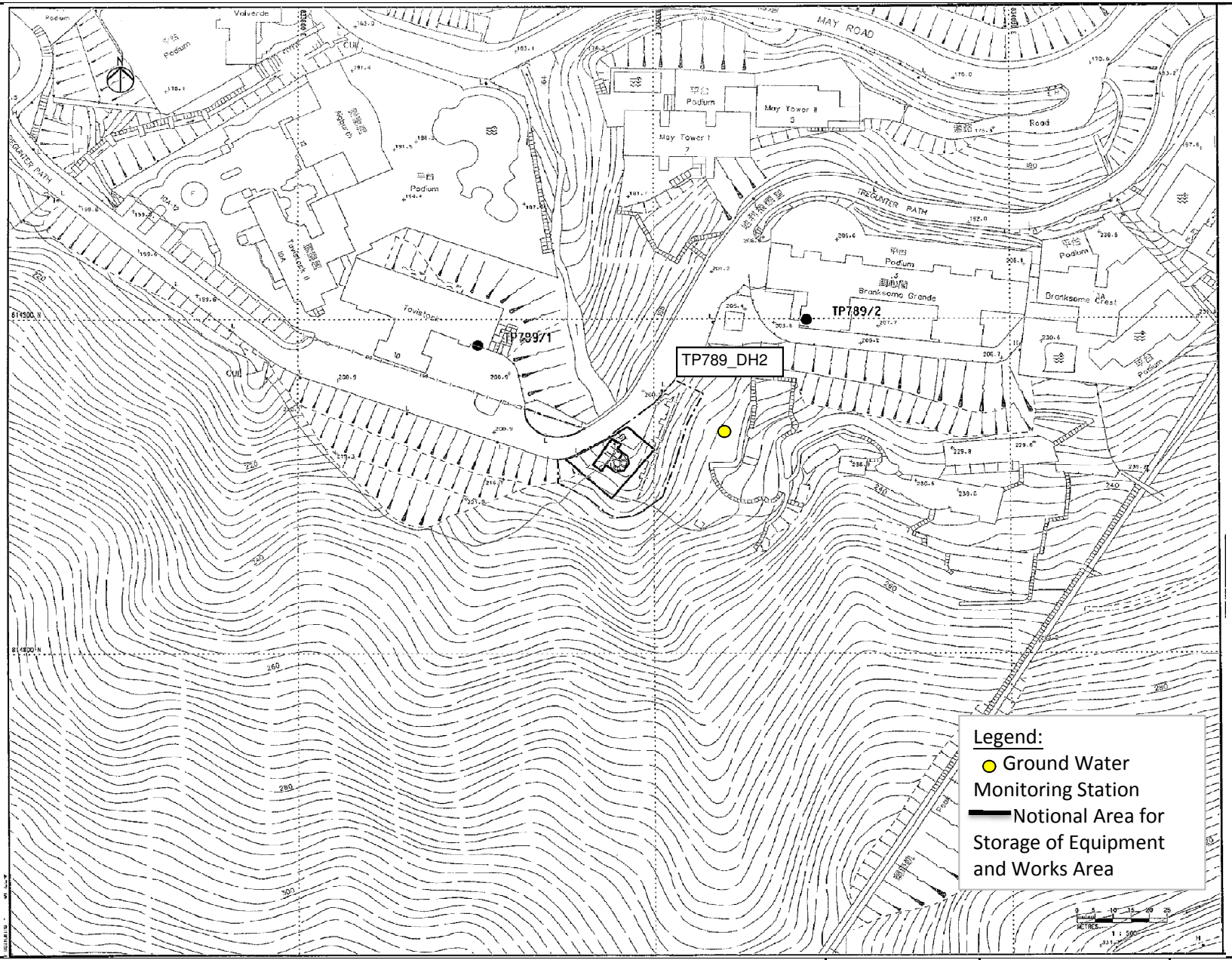
Point No.	Co-ordinates	
	Easting	Westing
I1	831088	813654
I2	831105	813582
CF	831778	812420
Intake A	831603	813044
Intake B	830606	814583

Title		Scale	project
Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001
Locations of Water Quality Monitoring Stations		Date: Jul-08	Figure: 4b

CINOTECH

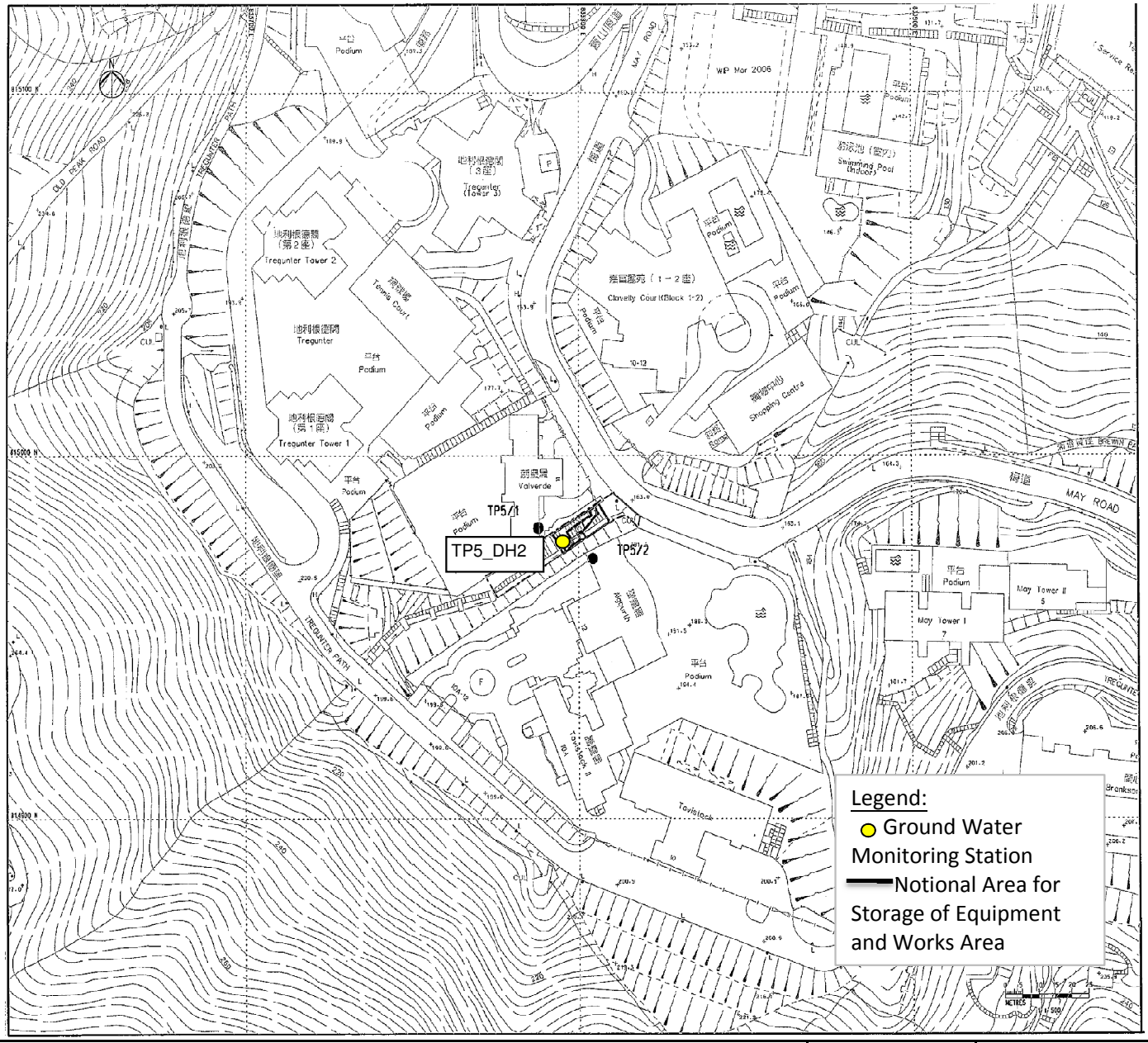


Title	Scale	Project	
Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal) Location of ground water level Monitoring Station	N.T.S	No. MA8001	CINOTECH
	Date Jun-10	Figure 5a	



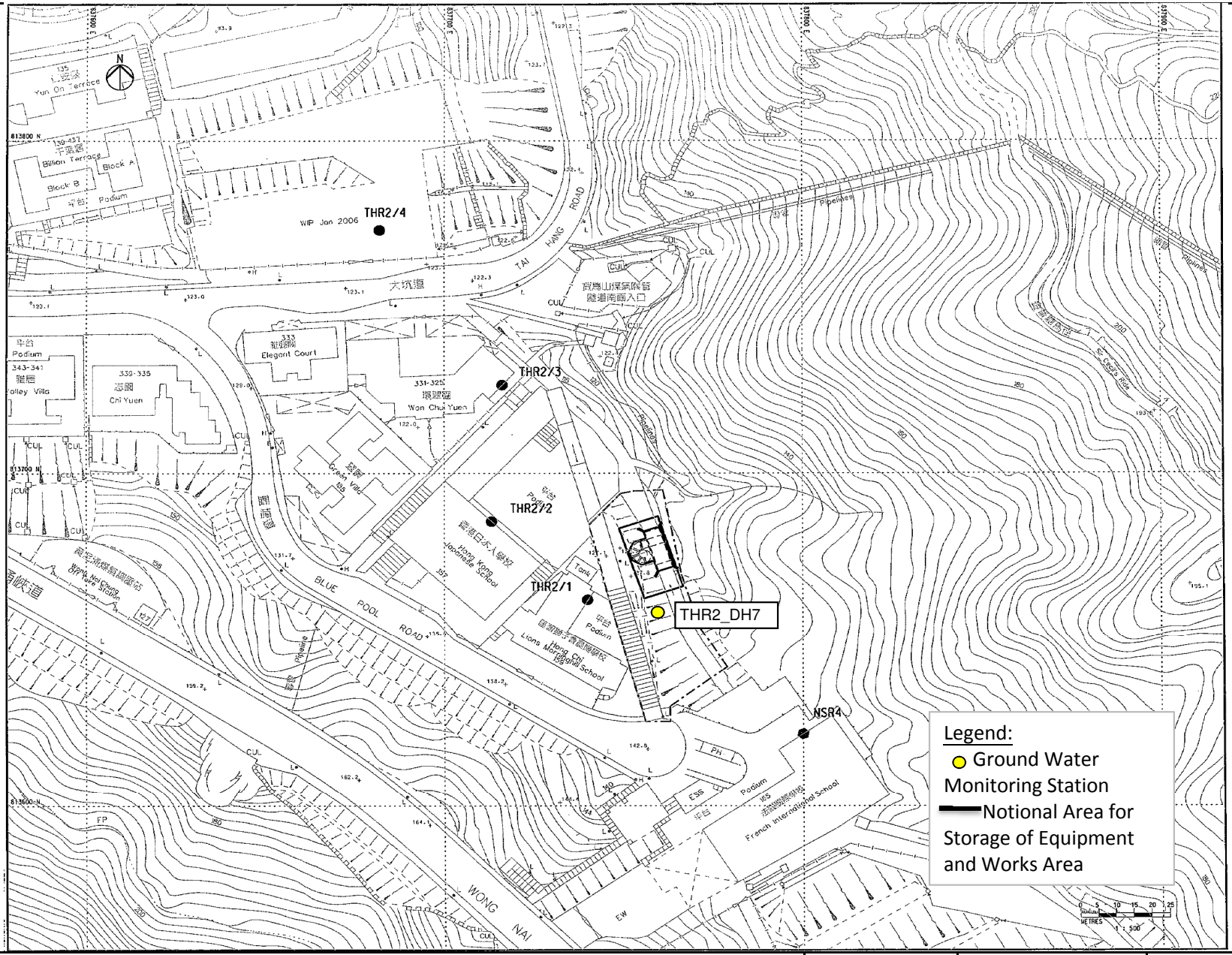
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intake TP789) Location of ground water level Monitoring Station	Scale: N.T.S Date: Jun-10	Project No.: MA8001 Figure: 5b

CINOTECH



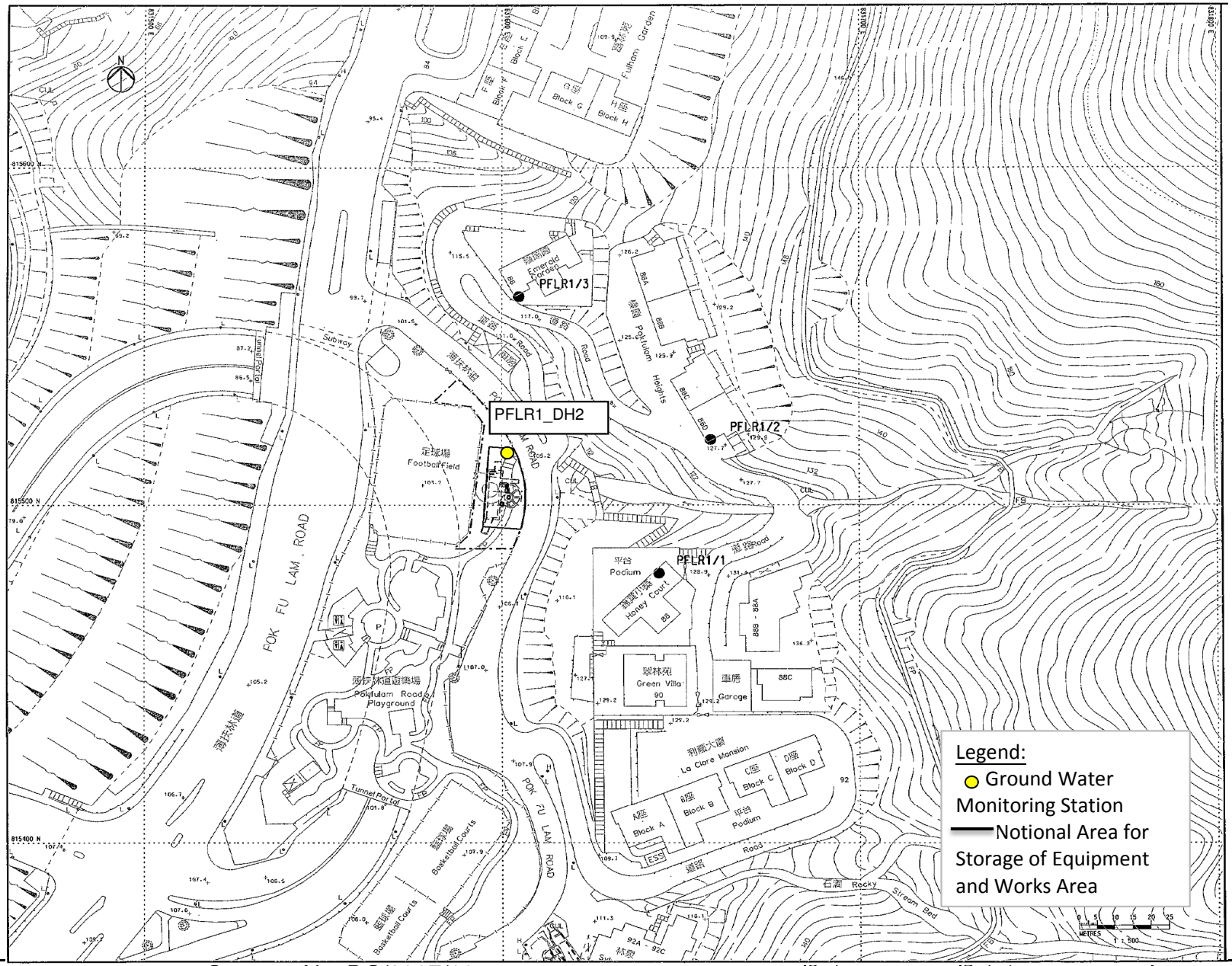
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Intake TP5) Location of ground water level Monitoring Station	Scale: N.T.S Date: Jun-10	Project No.: MA8001 Figure: 5c

CINOTECH



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

CINOTECH



Title

Contract No. DC/2007/10

Design and Construction of Hong Kong West Drainage Tunnel

(Intake PFLR1)

Location of ground water level Monitoring Station

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

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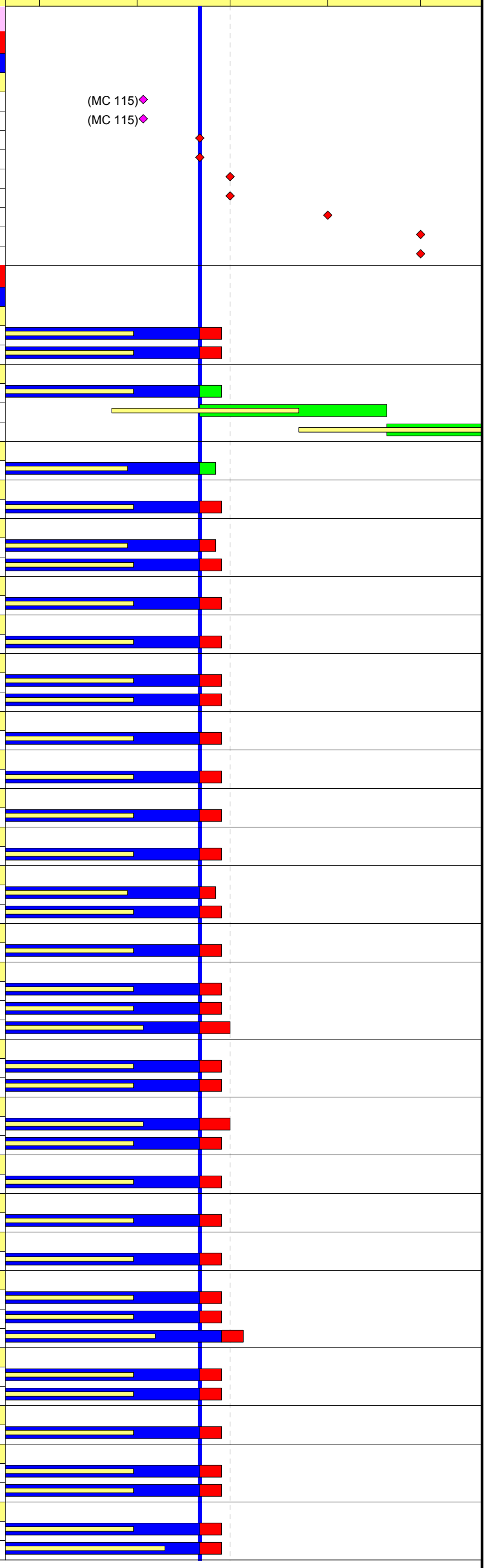
APPENDIX A
CONSTRUCTION PROGRAMME

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance
HK West Drainage Project								
CC01 - PRELIMINARIES & GENERAL REQUIREMENTS								
Milestone								
General								
M1-1200	1.20-Complete to All Obligat's From 901to960d	0	0		02SEP10A	100	0	-33
M1-1600	1.60-Acceptance of Monthly Report on TDMS(31M)	0	0		02SEP10A	100	0	-64
M1-1610	1.61-Acceptance of Monthly Report on TDMS(32M)	0	0		20SEP10*	0	0	-51
M1-1620	1.62-Acceptance of Monthly Report on TDMS(33M)	0	0		20SEP10*	0	0	-20
M1-1210	1.21-Complete to All Obligat's From 961to1020d	0	0		30SEP10*	0	0	0
M1-1630	1.63-Acceptance of Monthly Report on TDMS(34M)	0	0		30SEP10*	0	0	0
M1-1640	1.64-Acceptance of Monthly Report on TDMS(35M)	0	0		31OCT10*	0	0	0
M1-1220	1.22-Complete to All Obligat's From 1021to1080d	0	0		30NOV10*	0	0	0
M1-1650	1.65-Acceptance of Monthly Report on TDMS(36M)	0	0		30NOV10*	0	0	0
CC02 - DESIGN & DESIGN CHECKING OF THE WORKS								
Design Stage								
Secton 1 (Eastern Portal)								
D00275	APP Cofferdam for Intake Shaft DDA	42	7	21MAY08A	27SEP10	90	7	-243
D00279	APP Reinst Perm Slope at Coff Intake Shaft DDA	92	7	31OCT09A	27SEP10	90	7	-240
Section 1 Dropshaft								
D00651	APP Dropshaft Permanent Lining(Excl W0) DDA	92	7	13MAR10A	27SEP10	90	7	-151
D00636	P&S Dropshaft Temp Rock Supt (Excl. W0) DDA	60	60	21SEP10*	19NOV10	0	60	-243
D00639	APP Dropshaft Temp Rock Supt (Excl. W0) DDA	92	92	20NOV10	19FEB11	0	92	-243
Section 1 (Portion W0)								
D01166	APP W0-Permanent Works Intake DDA VO10	7	5	01DEC09A	25SEP10	90	5	-243
Section 29 (Portion W10)								
D02165	APP W10-Permanent Works Intake DDA	92	7	13NOV09A	27SEP10	90	7	-227
Section 26 (Portion RR1)								
D02019	APP RR1-Temp Works & Drainage Diversion DDA	122	5	10SEP09A	25SEP10	95	5	-243
D02015	APP RR1-Permanent Works Intake DDA	92	7	28NOV09A	27SEP10	90	7	-212
Section 5 (Portion MBD2)								
D00845	APP MBD2-Permanent Works Intake DDA	92	7	18NOV09A	27SEP10	90	7	-222
Section 23 (Portion TP4)								
D01855	APP TP4-Permanent Works Intake DDA	92	7	18NOV09A	27SEP10	90	7	-222
Section 28 (Portion P5)								
D02119	APP P5-Temp Works & Drainage Diversion DDA	122	7	28OCT09A	27SEP10	90	7	-121
D02115	APP P5-Permanent Works Intake DDA	92	7	29NOV09A	27SEP10	90	7	-211
Section 22 (Portion TP5)								
D01805	APP TP5-Permanent Works Intake DDA	92	7	25NOV09A	27SEP10	90	7	-151
Section 21 (Portion TP789)								
D01745	APP TP789-Permanent Works Intake DDA	92	7	12DEC09A	27SEP10	90	7	-198
Section 24 (Portion W5)								
D01913	APP W5-Temp Works & Drainage Diversion DDA	122	7	31OCT09A	27SEP10	90	7	-210
Section 2 (Portion E5A)								
D00686	APP E5A-Permanent Works Intake DDA	92	7	29NOV09A	27SEP10	90	7	-211
Section 27 (Portion W8)								
D02069	APP W8-Temp Works & Drainage Diversion DDA	122	5	23SEP09A	25SEP10	95	5	-243
D02065	APP W8-Permanent Works Intake DDA	122	7	29NOV09A	27SEP10	90	7	-181
Section 3 (Portion E5B)								
D00745	APP E5B-Permanent Works Intake DDA	92	7	29NOV09A	27SEP10	90	7	-211
Section 20 (Portion M3)								
D01725	APP M3-Permanent Slopeworks DDA	122	7	28NOV09A	27SEP10	90	7	-192
D01689	APP M3-Temp Works & Drainage Diversion DDA	92	7	12FEB10A	27SEP10	90	7	-151
D01685	APP M3-Permanent Works Intake DDA	92	10	01APR10A	30SEP10	89	10	-128
Section 19 (Portion MA17)								
D01629	APP MA17-Temp Works & Drainage Diversion DDA	92	7	29NOV09A	27SEP10	90	7	-211
D01625	APP MA17-Permanent Works Intake DDA	92	7	29DEC09A	27SEP10	90	7	-180
Section 15 (Portion W3)								
D01415	APP W3-Permanent Works Intake DDA	92	10	29JAN10A	30SEP10	90	10	-140
D01419	APP W3-Temp Works & Drainage Diversion DDA	92	7	15APR10A	27SEP10	90	7	-151
Section 17 (Portion MA14)								
D01515	APP MA14-Permanent Works Intake DDA	92	7	31DEC09A	27SEP10	90	7	-179
Section 18 (Portion MA15)								
D01575	APP MA15-Permanent Works Intake DDA	92	7	24DEC09A	27SEP10	90	7	-185
Section 10 (Portion DG1)								
D01105	APP DG1-Permanent Works Intake DDA	92	7	31DEC09A	27SEP10	90	7	-179
Section 9 (Portion HR1)								
D01057	APP HR1-Temp Works & Drainage Diversion AIP	92	7	01OCT09A	27SEP10	90	7	-240
D01055	APP HR1-Permanent Works Intake DDA	92	7	31JAN10A	27SEP10	90	7	-119
D01059	APP HR1-Temp Works & Drainage Diversion DDA	92	7	17APR10A	04OCT10	90	7	-114
Section 14 (Portion BR6)								
D01385	APP BR6-Temp Works & Drainage Diversion DDA	92	7	16JAN10A	27SEP10	90	7	-156
D01365	APP BR6-Permanent Works Intake DDA	92	7	31JAN10A	27SEP10	90	7	-104
Section 12 (Portion W1)								
D01265	APP W1-Permanent Works Intake DDA	92	7	31JAN10A	27SEP10	90	7	-129
Section 8 (Portion GL1)								
D01005	APP GL1-Permanent Works Intake DDA	92	7	30JAN10A	27SEP10	90	7	-110
D01009	APP GL1--Temp Works & Drainage Diversion DDA	92	7	19MAR10A	27SEP10	90	7	-111
Section 25 (Portion CR1)								
D01965	APP CR1-Permanent Works Intake DDA	92	7	28FEB10A	27SEP10	90	7	-57
D01969	APP CR1-Temp Works & Drainage Diversion DDA	122	7	13APR10A	27SEP10	90	7	-123



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Early Bar
Previous Month (008A)
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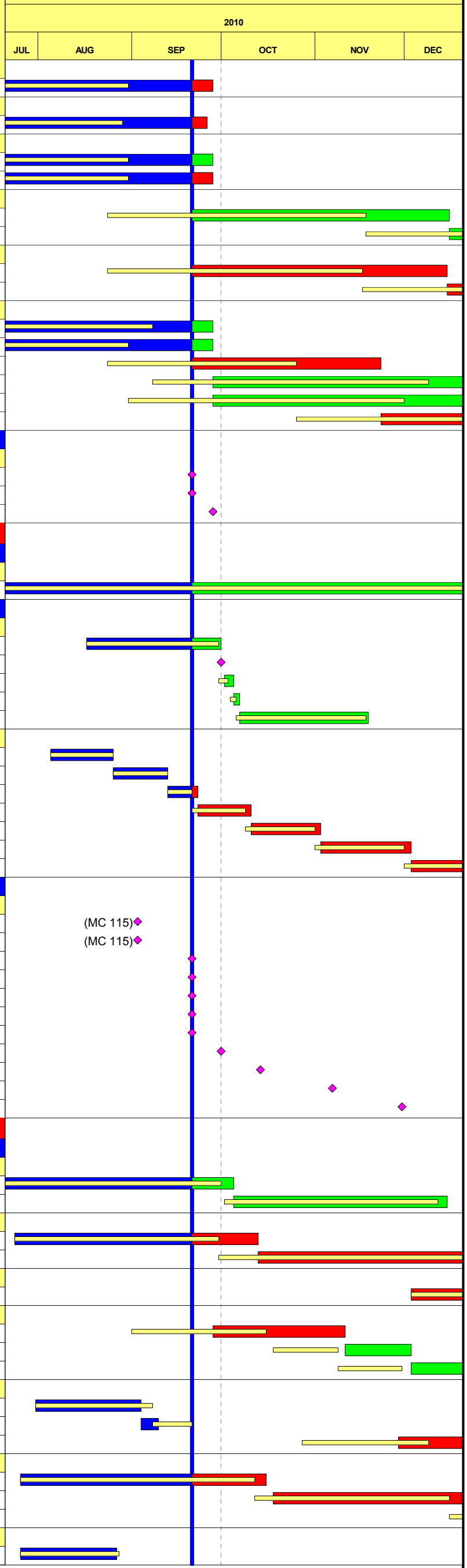
Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
SEPTEMBER/2010 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY

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

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance
Section 13 (Portion BR5)								
D01319	APP BR5-Temp Works & Drainage Diversion DDA	92	7	30JAN10A	27SEP10	90	7	-131
Section 11 (Portion BR4)								
D01209	APP BR4-Temp Works & Drainage Diversion DDA	92	5	25AUG09A	25SEP10	95	5	-243
Section 16 (Portion B2)								
D01465	APP B2-Permanent Works Intake DDA	92	7	01MAR10A	27SEP10	90	7	-29
D01469	APP B2-Temp Works & Drainage Diversion DDA	92	7	27MAR10A	27SEP10	90	7	-96
E&M								
D02350	P&S E&M AIP	86	86	21SEP10*	15DEC10	0	86	-243
D02355	APP E&M AIP	42	42	16DEC10	26JAN11	0	42	-243
Landscaping								
D02370	P&S Landscaping AIP	85	85	21SEP10*	14DEC10	0	85	-243
D02375	APP Landscaping AIP	42	42	15DEC10	25JAN11	0	42	-243
Main Tunnel								
D00510	P&S TBM Dismantle Chamber Temp Supt at W0 DDA	63	7	05MAY10A	27SEP10	90	7	-187
D00480	P&S Adit/main tun intrct Perm Ling at W0 AIP	63	7	12MAY10A	27SEP10	90	7	-187
D00490	P&S Adit/main tunl intrsct Perm Ling at W0 DDA	63	63	21SEP10*	22NOV10	0	63	-243
D00515	APP TBM Dismantle Chamber Temp Supt at W0 DDA	92	92	28SEP10	28DEC10	0	92	-187
D00485	APP Adit/main tun intrct Perm Ling at W0 AIP	92	92	28SEP10	28DEC10	0	92	-187
D00495	APP Adit/main tunl intrsct Perm Ling at W0 DDA	92	92	23NOV10	22FEB11	0	92	-243
Milestone								
Design Submission								
M2-1100	2.10-DDA-Adits&Stilling Chambers Consent	0	0		20SEP10	0	0	-212
M2-1130	2.13-DDA-Dropshaft Submission	0	0		20SEP10	0	0	-236
M2-1140	2.14-DDA-Dropshaft Consent	0	0		27SEP10	0	0	-151
CC03-PART OF SECTION 1 OF THE WORKS(MAIN TUNNEL)								
Preliminary and General Requirements								
Prefabrication Precast Segment for Main Tunnel								
B2280	Precast Segment Fabrication (W.Tunnel)	745	136	17DEC08A	03FEB11	82	136	0
Construction								
TBM Excavation (Eastern Tunnel)								
E1570	TBM Excav (to CH3953-W0)=438m - Ring stop CH3949	36	8	17AUG10A	30SEP10	81	8	1
E1580	TBM Excavation Work Completed	0	0		30SEP10	0	0	1
E1590	TBM Over Boring Beyond to Junction W0 20m	2	2	02OCT10	04OCT10	0	2	2
E1600	TBM Setback to Eastern Tunnel	2	2	05OCT10	06OCT10	0	2	2
E1615	Conveyor Removal (for MainTunnel)-(MT)	36	36	07OCT10	18NOV10	0	36	2
TBM Excavation (Western Tunnel)								
W1220	TBM Excav'n (to CH5936-MA17)+200m =152m	14	0	05AUG10A	25AUG10A	100	0	35
W1230	TBM Excav'n (to CH5753-MA15)+200m =183m	18	0	26AUG10A	12SEP10A	100	0	35
W1240	TBM Excav'n (to CH5676-MA14)+200m =77m	8	2	13SEP10A	22SEP10	75	2	33
W1250	TBM Excav'n (to CH5487-B2)+200m =189m	18	18	23SEP10	10OCT10	0	18	33
W1260	TBM Excav'n (to CH5242-W3)+200m =245m	23	23	11OCT10	02NOV10	0	23	33
W1270	TBM Excav'n (to CH4916-BR5,BR6)+200m =326m	30	30	03NOV10	02DEC10	0	30	33
W1280	TBM Excav'n (to CH4580-W1)+200m =336m	32	32	03DEC10	03JAN11	0	32	33
Milestone								
Section 1 (Main Tunnel)								
M3-1240	3.24-Excavation, Support & Lining CH3250 to 3500	0	0		02SEP10A	100	0	-15
M3-1340	3.34-Excavation, Support & Lining CH5750 to 6000	0	0		02SEP10A	100	0	26
M3-1230	3.23-Excavation, Support & Lining CH3000 to 3250	0	0		20SEP10	0	0	-56
M3-1250	3.25-Excavation, Support & Lining CH3500 to 3750	0	0		20SEP10	0	0	-8
M3-1330	3.33-Excavation, Support & Lining CH5500 to 5750	0	0		20SEP10	0	0	33
M3-1350	3.35-Excavation, Support & Lining CH6000 to 6250	0	0		20SEP10	0	0	-15
M3-1360	3.36-Excavation, Support & Lining CH6250 to 6500	0	0		20SEP10	0	0	-39
M3-1260	3.26-Excav'n,Support&Lin'g CH3750&Junct'n withW0	0	0		30SEP10	0	0	4
M3-1320	3.32-Excavation, Support & Lining CH5250 to 5500	0	0		13OCT10	0	0	33
M3-1310	3.31-Excavation, Support & Lining CH5000 to 5250	0	0		06NOV10	0	0	33
M3-1300	3.30-Excavation, Support & Lining CH4750 to 5000	0	0		29NOV10	0	0	33
CC04 - PART OF SECTION 1 OF THE WORKS (ADITS)								
Construction								
Adit Tunnel Excavation & Tunnel Lining - W0								
S010292	Adit Excavation by Drill & Blast Ch287-119(W0)	61	11	15JUL10A	04OCT10	82	11	21
S010294	Adit Excavation by Drill & Blast Ch119-0(W0)	60	60	05OCT10	14DEC10	0	60	21
Adit Tunnel Excavation & Tunnel Lining - E5A								
S020202	Adit Excavation by Drill & Blast Ch193-336(E5A)	54	18	24JUL10A	12OCT10	66	18	-66
S020204	Adit Excavation by Drill & Blast Ch336-540(E5A)	76	76	13OCT10	13JAN11	0	76	-66
Adit Tunnel Excavation & Tunnel Lining - E5B								
S030250	Adit Excavation by Drill & Blast Ch0 -81(E5B)	37	37	03DEC10	18JAN11	0	37	-42
Adit Tunnel Excavation & Tunnel Lining - MB16								
S040410	Stilling Chamber - Structure Const-(MB16)	36	36	28SEP10	10NOV10	0	36	-25
S040460	Adit Lining (MB16)	19	19	11NOV10	02DEC10	0	19	-25
S040480	Junction of Adit Lining to Main Tunnel (MB16)	18	18	03DEC10	23DEC10	0	18	-25
Adit Tunnel Excavation & Tunnel Lining - MBD2								
S050107	Adit Excavation by Drill & Blast Ch128-236(MBD2)	40	0	31JUL10A	03SEP10A	100	0	-23
S050130	Stilling Chamber Enlargement (MBD2)	10	0	04SEP10A	09SEP10A	100	0	-18
S050290	Stilling Chamber - Structure Const-(MBD2)	36	36	29NOV10	12JAN11	0	36	-20
Adit Tunnel Excavation & Tunnel Lining - E7								
S060270	Adit Excavation by Drill & Blast Ch07-171(E7)	58	21	26JUL10A	15OCT10	65	21	-69
S060274	Adit Excavation by Drill & Blast Ch171-322(E7)	55	55	18OCT10	20DEC10	0	55	-69
S060310	Stilling Chamber Enlargement (E7)	10	10	21DEC10	04JAN11	0	10	-69
Adit Tunnel Excavation & Tunnel Lining - THR2								
S070098	Temp Facilities & Blast Door Installation-(THR2)	29	0	26JUL10A	26AUG10A	100	0	-64



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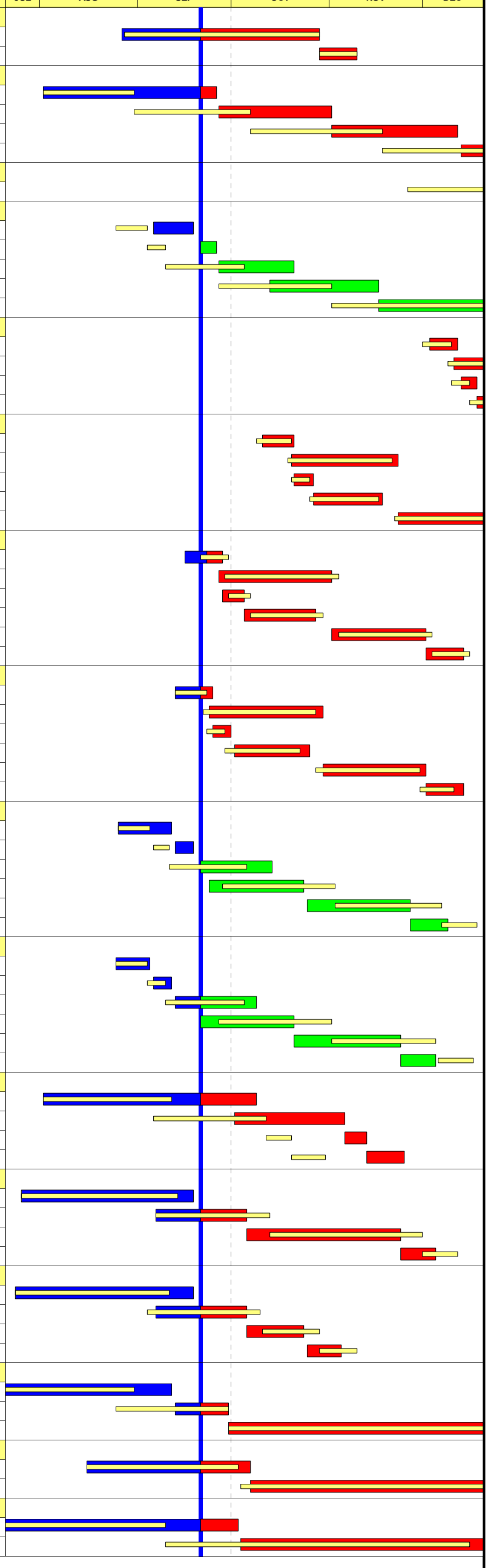
Adit Tunnel Excavation & Tunnel Lining - THR2								
S070130	Adit Excavation by Drill & Blast (THR2)	49	31	27AUG10A	28OCT10	42	31	-65
S070220	Stilling Chamber Enlargement (THR2)	10	10	29OCT10	09NOV10	0	10	-65
Adit Tunnel Excavation & Tunnel Lining - GL1								
S080060	Probe Drilling & Mechanical Excavation - (GL1)	19	5	02AUG10A	25SEP10	85	5	-40
S080065	Temp Facilities & Blast Door Installation-(GL1)	29	29	27SEP10	01NOV10	0	29	-65
S080070	Adit Excavation by Drill & Blast Ch07 - 105(GL1)	35	35	02NOV10	11DEC10	0	35	-65
S080075	Adit Excavation by Drill & Blast Ch105-215(GL1)	42	42	13DEC10	02FEB11	0	42	-65
Adit Tunnel Excavation & Tunnel Lining - HR1								
S090132	Adit Excavation by Drill & Blast Ch0-122(HR1)	47	47	21DEC10	19FEB11	0	47	-65
Adit Tunnel Excavation & Tunnel Lining - DG1								
S100194	Adit Grouting & Rock Dowel Installation - (DG1)	8	0	06SEP10A	18SEP10A	100	0	-15
S100196	Removal of Segments - (DG1)	5	5	21SEP10	25SEP10	0	5	-16
S100198	Probe Drilling & Mechanical Excavation - (DG1)	19	19	27SEP10	20OCT10	0	19	-16
S100201	Temp Facilities & Blast Door Installation-(DG1)	29	29	13OCT10	16NOV10	0	29	-35
S100210	Adit Excavation by Drill & Blast Ch07 - 127(DG1)	42	42	17NOV10	07JAN11	0	42	-35
Adit Tunnel Excavation & Tunnel Lining - BR6								
S140282	Adit Grouting & Rock Dowel Installation - (BR6)	8	8	03DEC10	11DEC10	0	8	25
S140288	Temp Facilities & Blast Door Installation-(BR6)	29	29	11DEC10	17JAN11	0	29	25
S140284	Removal of Segments - (BR6)	5	5	13DEC10	17DEC10	0	5	25
S140286	Probe Drilling & Mechanical Excavation - (BR6)	19	19	18DEC10	12JAN11	0	19	25
Adit Tunnel Excavation & Tunnel Lining - B2								
S160121	Adit Grouting & Rock Dowel Installation - (B2)	8	8	11OCT10	20OCT10	0	8	28
S160127	Temp Facilities & Blast Door Installation-(B2)	29	29	20OCT10	22NOV10	0	29	28
S160123	Removal of Segments - (B2)	5	5	21OCT10	26OCT10	0	5	28
S160125	Probe Drilling & Mechanical Excavation - (B2)	19	19	27OCT10	17NOV10	0	19	28
S160150	Adit Excavation by Drill & Blast Ch07 - 180 (B2)	73	73	23NOV10	22FEB11	0	73	28
Adit Tunnel Excavation & Tunnel Lining - MA14								
S170471	Adit Grouting & Rock Dowel Installation - (MA14)	8	4	16SEP10A	27SEP10	50	4	30
S170477	Temp Facilities & Blast Door Installation-(MA14)	29	29	27SEP10	01NOV10	0	29	30
S170473	Removal of Segments - (MA14)	5	5	28SEP10	04OCT10	0	5	30
S170475	Probe Drilling & Mechanical Excavation - (MA14)	19	19	05OCT10	27OCT10	0	19	30
S170490	Adit Excavation by Drill & Blast (MA14)	26	26	02NOV10	01DEC10	0	26	30
S170540	Stilling Chamber Enlargement (MA14)	10	10	02DEC10	13DEC10	0	10	30
Adit Tunnel Excavation & Tunnel Lining - MA15								
S180461	Adit Grouting & Rock Dowel Installation - (MA15)	8	4	13SEP10A	24SEP10	50	4	25
S180467	Temp Facilities & Blast Door Installation-(MA15)	29	29	24SEP10	29OCT10	0	29	25
S180463	Removal of Segments - (MA15)	5	5	25SEP10	30SEP10	0	5	25
S180465	Probe Drilling & Mechanical Excavation - (MA15)	19	19	02OCT10	25OCT10	0	19	25
S180490	Adit Excavation by Drill & Blast CH07-87 (MA15)	28	28	30OCT10	01DEC10	0	28	25
S180500	Stilling Chamber Enlargement (MA15)	10	10	02DEC10	13DEC10	0	10	25
Adit Tunnel Excavation & Tunnel Lining - MA17								
S190495	Adit Grouting & Rock Dowel Installation - (MA17)	8	0	26AUG10A	11SEP10A	100	0	22
S190497	Removal of Segments - (MA17)	5	0	13SEP10A	18SEP10A	100	0	22
S190510	Probe Drilling & Mechanical Excavation - (MA17)	19	19	21SEP10	13OCT10	0	19	21
S190520	Temp Facilities & Blast Door Installation-(MA17)	24	24	24SEP10	23OCT10	0	24	17
S190560	Adit Excavation (Drill & Blast) -CH07-90 (MA17)	29	29	25OCT10	26NOV10	0	29	17
S190570	Stilling Chamber Enlargement (MA17)	10	10	27NOV10	08DEC10	0	10	17
Adit Tunnel Excavation & Tunnel Lining - M3								
S200391	Adit Grouting & Rock Dowel Installation - (M3)	8	0	25AUG10A	04SEP10A	100	0	17
S200393	Removal of Segments - (M3)	5	0	06SEP10A	11SEP10A	100	0	16
S200395	Probe Drilling & Mechanical Excavation - (M3)	19	15	13SEP10A	08OCT10	20	15	14
S200397	Temp Facilities & Blast Door Installation-(M3)	24	24	21SEP10	20OCT10	0	24	9
S200420	Adit Excavation by Drill & Blast CH07 - 90 (M3)	29	29	21OCT10	23NOV10	0	29	9
S200510	Stilling Chamber Enlargement (M3)	10	10	24NOV10	04DEC10	0	10	9
Adit Tunnel Excavation & Tunnel Lining - TP789								
S210405	Probe Drilling & Mechanical Excavation - (TP789)	19	15	02AUG10A	08OCT10	20	15	-9
S210407	Temp Facilities &Blast Door Installation-(TP789)	29	29	02OCT10	05NOV10	0	29	-28
S210440	Adit Excavation by Drill & Blast CH07-28 (TP789)	6	6	06NOV10	12NOV10	0	6	-28
S210450	Stilling Chamber Enlargement (TP789)	10	10	13NOV10	24NOV10	0	10	-28
Adit Tunnel Excavation & Tunnel Lining - TP5								
S220325	Probe Drilling & Mechanical Excavation - (TP5)	19	0	26JUL10A	18SEP10A	100	0	-6
S220327	Temp Facilities &Blast Door Installation-(TP5)	29	12	07SEP10A	05OCT10	30	12	-15
S220390	Adit Excavation Drill & Blast CH07 - 124 (TP5)	41	41	06OCT10	23NOV10	0	41	-15
S220410	Stilling Chamber Enlargement (TP5)	10	10	24NOV10	04DEC10	0	10	-15
Adit Tunnel Excavation & Tunnel Lining - TP4								
S230405	Probe Drilling & Mechanical Excavation - (TP4)	19	0	24JUL10A	18SEP10A	100	0	-14
S230407	Temp Facilities & Blast Door Installation-(TP4)	29	12	07SEP10A	05OCT10	30	12	-23
S230420	Adit Excavation by Drill & Blast CH07 - 53 (TP4)	15	15	06OCT10	23OCT10	0	15	-23
S230450	Stilling Chamber Enlargement (TP4)	10	10	25OCT10	04NOV10	0	10	-23
Adit Tunnel Excavation & Tunnel Lining - W5								
S240345	Probe Drilling & Mechanical Excavation - (W5)	19	0	13JUL10A	11SEP10A	100	0	-30
S240347	Temp Facilities & Blast Door Installation-(W5)	29	8	13SEP10A	29SEP10	86	8	-40
S240352	Adit Excavation by Drill & Blast Ch07 - 210(W5)	72	72	30SEP10	24DEC10	0	72	-40
Adit Tunnel Excavation & Tunnel Lining - RR1								
S260380	Adit Excavation by Drill & Blast Ch07 - 115(RR1)	38	13	16AUG10A	06OCT10	67	13	-38
S260384	Adit Excavation by Drill & Blast Ch115- 331(RR1)	78	78	07OCT10	10JAN11	0	78	-38
Adit Tunnel Excavation & Tunnel Lining - P5								
S280122	Adit Excavation by Drill & Blast Ch07 - 210(P5)	72	10	09JUN10A	02OCT10	81	10	-66
S280124	Adit Excavation by Drill & Blast Ch210 - 400(P5)	80	80	04OCT10	08JAN11	0	80	-66



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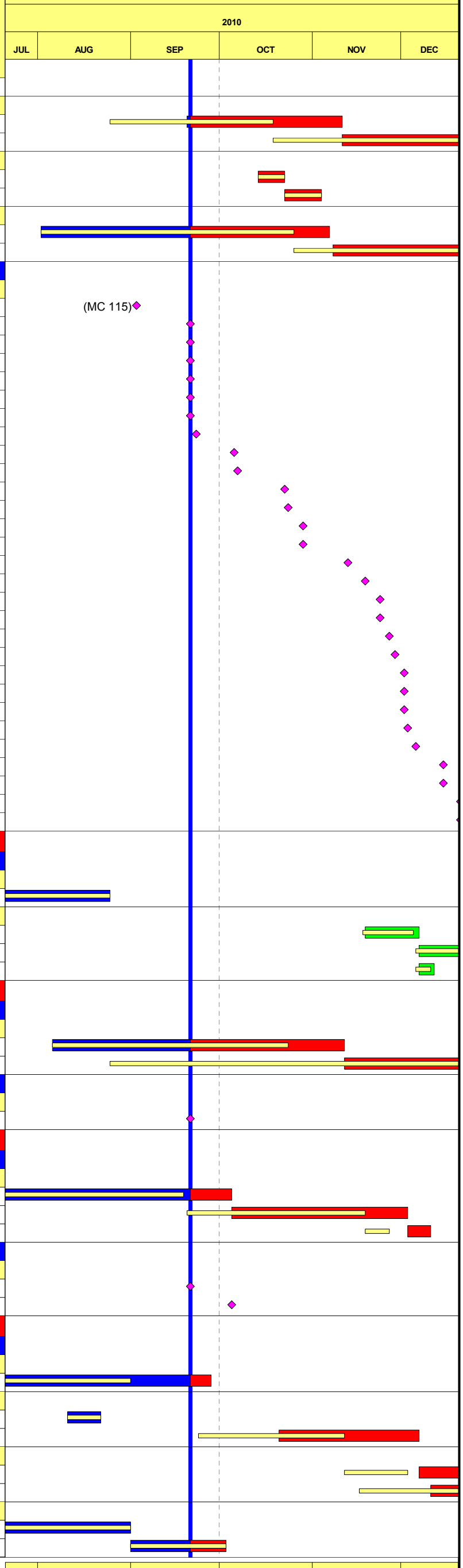
Adit Tunnel Excavation & Tunnel Lining - W10								
S290400	Adit Excavation by Drill & Blast Ch0 - 14(W10)	5	5	21DEC10	28DEC10	0	5	-50
Adit Tunnel Excavation & Tunnel Lining - HKU1								
S300810	Adit Excavation by Drill & Blast Ch0 - 120(HKU1)	43	42	20SEP10A	10NOV10	2	42	-83
S300814	Adit Excavation by Drill & Blast Ch120-269(HKU1)	59	59	11NOV10	21JAN11	0	59	-83
Adit Tunnel Excavation & Tunnel Lining - PFLR1								
S311010	Adit Excavation by Drill & Blast Ch0 - 19(PFLR1)	7	7	14OCT10	22OCT10	0	7	-25
S311760	Stilling Chamber Enlargement (PFLR1)	10	10	23OCT10	03NOV10	0	10	-25
Adit Tunnel Excavation & Tunnel Lining - SM1								
S321644	Adit Excavation by Drill & Blast Ch185-350(SM1)	70	39	02AUG10A	06NOV10	45	39	-30
S321646	Adit Excavation by Drill & Blast Ch350-460(SM1)	48	48	08NOV10	05JAN11	0	48	-30
Milestone								
Section 1 (Adits)								
M41020	4.002-50% Completion of Excav'n (Adit E5A)	0	0		02SEP10A	100	0	-66
M41100	4.010-100% Completion of Excavation(Adit MB16)	0	0		20SEP10	0	0	-131
M41130	4.013-50% Completion of Excavation (Adit MBD2)	0	0		20SEP10	0	0	-105
M41140	4.014-100% Completion of Excavation (Adit MBD2)	0	0		20SEP10	0	0	-48
M41360	4.036-35% Completion of Excavation(Adit W0)	0	0		20SEP10	0	0	-45
M42200	4.120-20% Completion of Excavation(Adit P5)	0	0		20SEP10	0	0	-98
M42420	4.142-25% Completion of Excavation(Adit SM1)	0	0		20SEP10	0	0	-104
M41180	4.018-50% Completion of Excavation (Adit E7)	0	0		22SEP10	0	0	-90
M41370	4.037-70% Completion of Excavation(Adit W0)	0	0		05OCT10	0	0	26
M42430	4.143-50% Completion of Excavation(Adit SM1)	0	0		06OCT10	0	0	-38
M42390	4.139-100% Completion of Excavation(Adit PFLR1)	0	0		22OCT10	0	0	-31
M41950	4.095-100% Completion of Excavation(Adit TP4)	0	0		23OCT10	0	0	-29
M41230	4.023-100% Completion of Excavation (Adit THR2)	0	0		28OCT10	0	0	-83
M42100	4.110-50% Completion of Excavation(Adit RR1)	0	0		28OCT10	0	0	-48
M41890	4.089-100% Completion of Excavation(Adit TP789)	0	0		12NOV10	0	0	-34
M42340	4.134-50% Completion of Excavation(Adit HKU1)	0	0		18NOV10	0	0	-104
M41860	4.086-100% Completion of Excavation (Adit M3)	0	0		23NOV10	0	0	10
M41920	4.092-100% Completion of Excavation (Adit TP5)	0	0		23NOV10	0	0	-18
M41830	4.083-100% Completion of Excavation(Adit MA17)	0	0		26NOV10	0	0	20
M41030	4.003-75% Completion of Excav'n (Adit E5A)	0	0		28NOV10	0	0	-81
M41770	4.077-100% Completion of Excavation(Adit MA14)	0	0		01DEC10	0	0	38
M41800	4.080-100% Completion of Excavation(Adit MA15)	0	0		01DEC10	0	0	33
M42210	4.121-40% Completion of Excavation(Adit P5)	0	0		01DEC10	0	0	-80
M41110	4.011-100% Lining & Stilling Chamber(Adit MB16)	0	0		02DEC10	0	0	-29
M41980	4.098-35% Completion of Excavation(Adit W5)	0	0		05DEC10	0	0	-47
M41380	4.038-100% Completion of Excavation(Adit W0)	0	0		14DEC10	0	0	28
M42440	4.144-75% Completion of Excavation(Adit SM1)	0	0		14DEC10	0	0	-35
M41190	4.019-100% Completion of Excavation (Adit E7)	0	0		20DEC10	0	0	-83
M41260	4.026-50% Completion of Excavation (Adit GL1)	0	0		20DEC10	0	0	-77
CC5-PART OF SECTION 1 OF THE WORKS (EAST PORTAL)								
Construction								
East Portal River Channel Works								
EPC0350	Upper River Channel Structure Constr	84	0	05MAY10A	24AUG10A	100	0	4
East Portal River Channel Finishing Works								
E-1725	Dismantle Spoil pit	15	15	19NOV10	06DEC10	0	15	2
E-1870	N&S Pipe Piling including decking	40	40	07DEC10	25JAN11	0	40	2
E-2010	Re-Diversion of stream	5	5	07DEC10	11DEC10	0	5	2
CC8 - SECTION 2 OF THE WORKS (PORTION E5A)								
Construction								
Intakes - External Structures (Stage1)								
S020210	Cofferdam Wall Driving-(E5A)	68	43	06AUG10A	11NOV10	66	43	-85
S020212	VO # 25 Additional Cofferdam Works	120	120	12NOV10	08APR11	0	120	-154
Milestone								
Section 2 (Portion E5A)								
M81010	8.01-Pre-drilling&Grouting Works(Dropshaft)	0	0		20SEP10	0	0	-150
CC9 - SECTION 3 OF THE WORKS (PORTION E5B)								
Construction								
Intakes - External Structures (Stage1)								
S030220	Cofferdam Excavation-(E5B)	54	11	05JUL10A	04OCT10	81	11	-9
S030230	Main Structure Construciton-(E5B)	50	50	05OCT10	02DEC10	0	50	-9
S030280	Backfilling & Compaction-(E5B)	7	7	03DEC10	10DEC10	0	7	-9
Milestone								
Section 3 (Portion E5B)								
M91040	9.04- Pre-dilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-207
M91070	9.07-Excavation (Intake)	0	0		04OCT10	0	0	-12
CC10-SECTION 4 OF THE WORKS (PORTION MB16)								
Construction								
Preliminary Works								
S041142	VO # 21 - Add'l Slopeworks-(MB16)	38	6	24NOV09A	27SEP10	90	6	-184
Dropshaft - Excavation/ Shaft Lining								
S040380	Stabilization of Drilled Shaft-(MB16)	15	0	11AUG10A	21AUG10A	100	0	3
S040440	Drop Shaft - Lining-(MB16)	40	40	21OCT10	06DEC10	0	40	-25
Intakes - Internal Structures (Stage 2)								
S040490	Vortex Drop-(MB16)	18	18	07DEC10	29DEC10	0	18	-25
S040532	VO # 21 - Add'l Manhole works-(MB16)	38	38	11DEC10	27JAN11	0	38	-25
Pipe Laying								
S040390	Manhole SMH9 to Intake MB16	30	0	23FEB10A	31AUG10A	100	0	-114
S040330	Manhole SMH7 to SMH8	30	10	01SEP10A	02OCT10	50	10	-139



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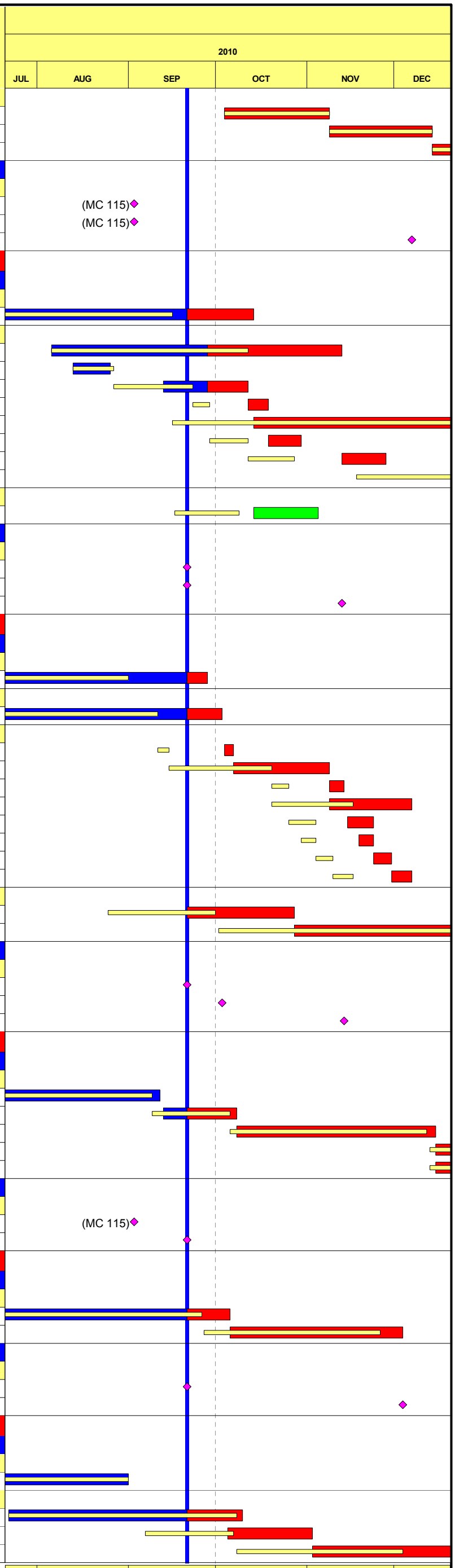
Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance
Pipe Laying								
S040280	Manhole SMH6 to SMH7	30	30	04OCT10	08NOV10	0	30	-87
S040270	Manhole SMH5 to SMH6	30	30	09NOV10	13DEC10	0	30	-147
S040220	Manhole SMH4 to SMH5	30	30	14DEC10	20JAN11	0	30	-207
Milestone								
Section 4 (Portion MB16)								
M101010	10.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		02SEP10A	100	0	-225
M101020	10.02-Excavation (Dropshaft)	0	0		02SEP10A	100	0	-27
M101030	10.03-Lining (Dropshaft)	0	0		06DEC10	0	0	-30
CC11-SECTION 5 OF THE WORKS (PORTION MBD2)								
Construction								
Intakes - External Structures (Stage1)								
S050209	Implement Stage 1 TTA -(MBD2)	216	23	05NOV09A	13OCT10	90	23	-61
Dropshaft - Excavation/ Shaft Lining								
S050250	Raise Boring Setup/Reaming/Demobilization(MBD2)	53	38	06AUG10A	12NOV10	0	38	-20
S050254	Pilot Hole Drilling-(MBD2)	10	0	13AUG10A	25AUG10A	100	0	8
S050256	Back Reaming-(MBD2)	21	11	13SEP10A	11OCT10	25	11	-8
S050258	Rig Down from Hole to Laydown-(MBD2)	5	5	12OCT10	18OCT10	0	5	-8
S050245	Implement Stage 1A TTA -(MBD2)	237	237	14OCT10	07JUN11	0	237	-61
S050259	Demobilize from Site-(MBD2)	10	10	19OCT10	29OCT10	0	10	-8
S050270	Stabilization of Drilled Shaft-(MBD2)	13	13	13NOV10	27NOV10	0	13	-20
S050310	Drop Shaft - Lining-(MBD2)	31	31	20DEC10	27JAN11	0	31	-20
Pipe Laying								
S050403	VO#26 Excav & Pipe Lay stage 1-MBD2 to SMH13(9m)	18	18	14OCT10	04NOV10	0	18	-48
Milestone								
Section 5 (Portion MBD2)								
M11-1010	11.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		20SEP10	0	0	-116
M11-1040	11.04-Excavation (Intake)	0	0		20SEP10	0	0	-116
M11-1020	11.02-Excavation (Dropshaft)	0	0		12NOV10	0	0	-23
CC12-SECTION 6 OF THE WORKS (PORTION E7)								
Construction								
Preliminary Works								
S060142	VO # 15 Resubmission XP permit-(E7)	46	6	20OCT09A	27SEP10	86	6	-184
Intakes - External Structures (Stage1)								
S060381	Excavation (Rock) - (E7)	48	10	10MAY10A	02OCT10	83	10	0
Dropshaft - Excavation/ Shaft Lining								
S060550	Mobilization & Setting Up-(E7)	3	3	04OCT10	06OCT10	0	3	-66
S060560	Hard Rock Excavation (From 0 to 9.5m)by Mechanic	27	27	07OCT10	08NOV10	0	27	-69
S060600	Hard Rock Excavation (Remaining 1.5m by Jumbo)	5	5	09NOV10	13NOV10	0	5	-72
S060440	Strutting (Concrete Lining) & Shotcreting	24	24	09NOV10	06DEC10	0	24	-193
S060610	Demobilization-(E7)	8	8	15NOV10	23NOV10	0	8	-74
S060640	Inspection & Method Approval-(E7)	4	4	19NOV10	23NOV10	0	4	-74
S060650	Stabilization of Shaft-(E7)	5	5	24NOV10	29NOV10	0	5	-76
S060720	Mobilizatn,Setup& Prep(ShaftLining)-(E7)	6	6	30NOV10	06DEC10	0	6	-76
Pipe Laying								
S060170	Pipeline SMH16 to SMH15	30	30	21SEP10	27OCT10	0	30	-184
S060200	Manhole SMH15 & Pipeline SMH15 to SMH14	72	72	28OCT10	22JAN11	0	72	-184
Milestone								
Section 6 (Portion E7)								
M121010	12.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		20SEP10	0	0	-210
M121040	12.04-Excavation (Intake)	0	0		02OCT10	0	0	-86
M121020	12.02-Excavation (Dropshaft)	0	0		13NOV10	0	0	-89
CC13-SECTION 7 OF THE WORKS (PORTION THR2)								
Construction								
Intakes - External Structures (Stage1)								
S070240	Cofferdam Excavation-(THR2)	62	0	03MAY10A	11SEP10A	100	0	-57
S070250	Cast Concrete Column & Backfill-(THR2)	21	14	13SEP10A	07OCT10	20	14	-56
S070260	Main Structure Construciton-(THR2)	57	57	08OCT10	14DEC10	0	57	-56
S070270	Reinstatement of Drain-(THR2)	8	8	15DEC10	23DEC10	0	8	-56
S070280	Backfilling & Compaction-(THR2)	8	8	15DEC10	23DEC10	0	8	-56
Milestone								
Section 7 (Portion THR2)								
M13-1040	13.04-Excavation (Intake)	0	0		02SEP10A	100	0	-65
M13-1010	13.01-Pre-drilling & Grouting Works(Dropshaft)	0	0		20SEP10	0	0	-209
CC14-SECTION 8 OF THE WORKS (PORTION GL1)								
Construction								
Intakes - External Structures (Stage1)								
S080200	Cofferdam Wall Driving-(GL1)	70	12	15JUL10A	05OCT10	88	12	10
S080210	Cofferdam Excavation-(GL1)	50	50	06OCT10	03DEC10	0	50	10
Milestone								
Section 8 (Portion GL1)								
M141010	14.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-59
M141040	14.04-Excavation (Intake)	0	0		03DEC10	0	0	12
CC15-SECTION9 OF THE WORKS(PORTION HR1)								
Construction								
Preliminary Works								
S090200	Install Working Platform	33	0	25JUN10A	31AUG10A	100	0	-38
Intakes - External Structures (Stage1)								
S090240	Cofferdam Wall Driving-(HR1)	46	16	22JUL10A	09OCT10	36	16	-21
S090210	Temp Diversion Natural Stream(Drain)-(HR1)	24	24	05OCT10	02NOV10	0	24	-86
S090250	Cofferdam Excavation-(HR1)	48	48	03NOV10	30DEC10	0	48	-40



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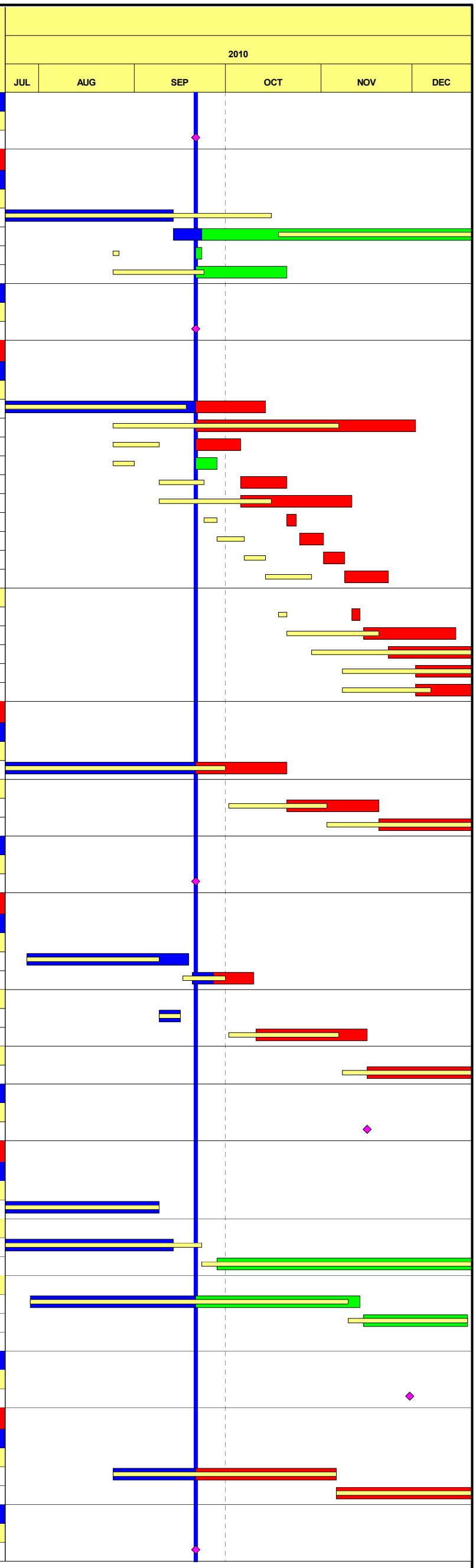
Milestone								
Section 9 (Portion HR1)								
M151060	15.06-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-102
CC16-SECTION 10 OF THE WORKS (PORTION DG1)								
Construction								
Intakes - External Structures (Stage1)								
S100180	Cofferdam Wall Driving / Grouting/Platform(DG1)	45	0	05JUL10A	13SEP10A	100	0	45
S100220	Cofferdam Excavation-(DG1)	98	93	14SEP10A	14JAN11	5	93	43
S100192	VO/Claim # 22-Intake Stucture Increase 40mm -SM1	2	2	21SEP10	22SEP10	0	2	-5
S100170	Temp Diversion Natural Stream(Drain)-(DG1)	24	24	21SEP10	20OCT10	0	24	-30
Milestone								
Section 10 (Portion DG1)								
M16-1010	16.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-7
CC17-SECTION 11 OF THE WORKS (PORTION BR4)								
Construction								
Preliminary Works								
S110180	Site Setting up/Mobilization-(BR4)	24	19	30JUN10A	13OCT10	10	19	-52
S110190	Install Loading/Unloading Platform + Gantry	60	60	21SEP10	01DEC10	0	60	-57
S110240	Relocate the existing Staircase-(BR4)	12	12	21SEP10	05OCT10	0	12	-45
S110220	Install Geotech Instruments-(BR4)	6	6	21SEP10	27SEP10	0	6	-57
S110230	Erect Hoarding,Site Office,Toilet,Desilting Tank	12	12	06OCT10	20OCT10	0	12	-69
S110280	Skin Wall to the Existing Retaining Wall	30	30	06OCT10	10NOV10	0	30	-45
S110250	Mobilization-(BR4)	3	3	21OCT10	23OCT10	0	3	-69
S110260	Pre-drilling-(BR4)	7	7	25OCT10	01NOV10	0	7	-69
S110270	Analysis of the SI-(BR4)	6	6	02NOV10	08NOV10	0	6	-69
S110290	Grouting Works-(BR4)	12	12	09NOV10	22NOV10	0	12	-69
Preparation Works								
S110330	Mobilization for Cofferdam Construction	3	3	11NOV10	13NOV10	0	3	-45
S110340	Preboring by Drilling Machine&Backfill with Sand	26	26	15NOV10	14DEC10	0	26	-45
S110320	Erection of Loading Platform	48	48	23NOV10	20JAN11	0	48	-55
S110310	Permanent Slop Protective Works (Skin Wall+Soil)	62	62	02DEC10	18FEB11	0	62	-57
S110300	Pre-drilling & Grouting Works-(BR4)	25	25	02DEC10	03JAN11	0	25	-57
CC18-SECTION 12 OF THE WORKS (PORTION W1)								
Construction								
Preliminary Works								
S120160	Load/Unload Platf/Overhead Gantry & Access	74	24	28JUN10A	20OCT10	64	24	-52
Intakes - External Structures (Stage1)								
S120220	Stream Diversion	26	26	21OCT10	19NOV10	0	26	-52
S120210	Open Excavation	84	84	20NOV10	04MAR11	0	84	-52
Milestone								
Section 12 (Portion W1)								
M181010	18.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-114
CC19-SECTION 13 OF WORKS (PORTION BR5)								
Construction								
Preliminary Works								
S130140	Cut Slope to Form Working Platform	24	0	28JUL10A	18SEP10A	100	0	-57
S130170	Overhead Gantry	12	11	20SEP10A	09OCT10	5	11	-56
Preparation Works								
S130150	Install Geotech Monitoring Instruments-(BR5)	6	0	09SEP10A	15SEP10A	100	0	-49
S130180	Pre-drilling & Grouting Works-(BR5)	30	30	11OCT10	15NOV10	0	30	-56
Intakes - External Structures (Stage1)								
S130200	Open Excavation-(BR5)	62	62	16NOV10	29JAN11	0	62	-56
Milestone								
Section 13 (Portion BR5)								
M19-1010	19.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		15NOV10	0	0	-69
CC20-SECTION 14 OF THE WORKS (PORTION BR6)								
Construction								
Preliminary Works								
S140140	Site Setting up/Mobilization-(BR6)	24	0	24MAY10A	08SEP10A	100	0	-62
Intakes - External Structures (Stage1)								
S140180	Cofferdam Construction-(BR6)	48	0	19JUL10A	13SEP10A	100	0	6
S140190	Main Structure Excavation-(BR6)	116	116	28SEP10	18FEB11	0	116	-5
Pipe Laying								
S140170	Jacking Pit Construction at SMH17	59	45	29JUL10A	13NOV10	25	45	-57
S140200	Pipejacking from SMH17 to Intake (BR6)	34	30	15NOV10	18DEC10	0	30	-53
S140210	Pipelaying from SMH17 to BR7 (by Open Trench)	54	54	20DEC10	26FEB11	0	54	-53
Milestone								
Section 14 (Portion BR6)								
M201060	20.06-50% P.Length of TrenchlessDrainageWorks	0	0		29NOV10	0	0	-64
CC21-SECTION 15 OF THE WORKS (PORTION W3)								
Construction								
Intakes - External Structures (Stage1)								
S150190	West - Excavation up to West Bottom Rack	59	38	25AUG10A	05NOV10	10	38	-19
S150220	West - Excavation of the Intake Stilling Chamber	48	48	06NOV10	04JAN11	0	48	-19
Milestone								
Section 15 (Portion W3)								
M211010	21.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-126



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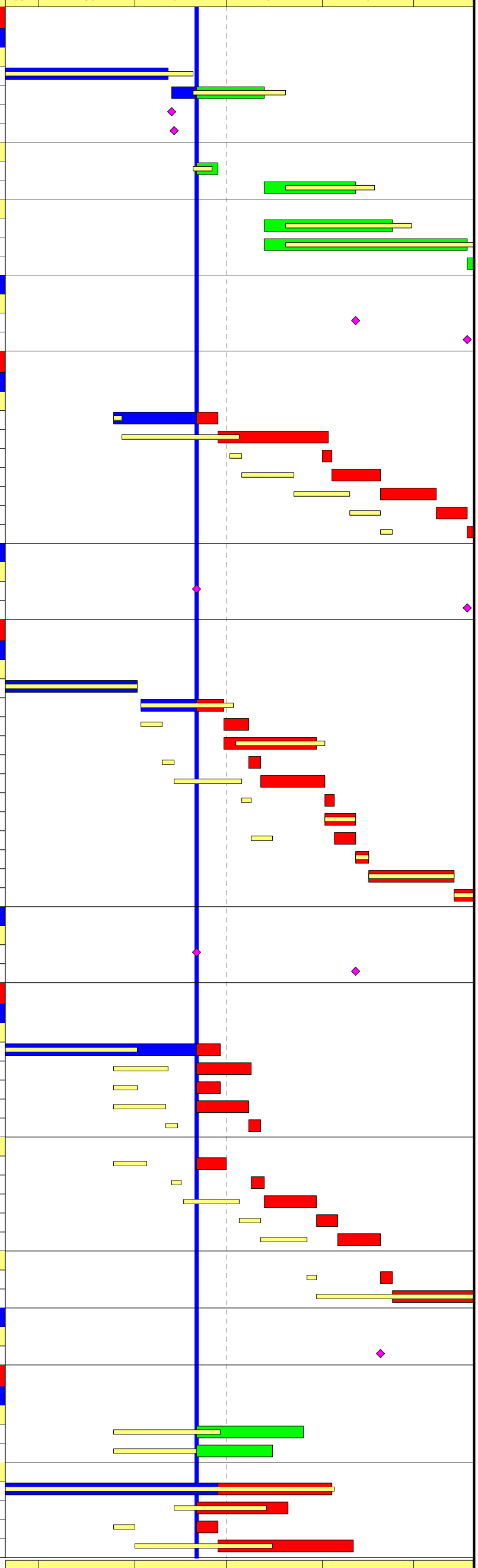
CC22-SECTION 16 OF THE WORKS (PORTION B2)								
Construction								
Preliminary Works								
S160110	25 wks prior to Portion Possess Date-(B2)	152	0	13APR10A	11SEP10A	100	0	0
S160180	Site Setting up/Mobilization-(B2)	24	18	13SEP10A	12OCT10	25	18	0
S160170	Site Possession - B2	0	0	13SEP10A		100	0	0
S160165	Complete All Utility Diversions by Others- (B2)	0	0		13SEP10A	100	0	-1
Preparation Works								
S160200	Install Geotech Monitoring Instruments-(B2)	6	6	21SEP10	27SEP10	0	6	-6
S160210	Pre-drilling & Grouting Works-(B2)	25	25	13OCT10	11NOV10	0	25	0
Intakes - External Structures (Stage1)								
S160220	Temp Diversion Natural Stream(Drain)-(B2)	35	35	13OCT10	23NOV10	0	35	0
S160230	Open Excavation-(B2)	56	56	13OCT10	17DEC10	0	56	0
S160240	Main Structure Construciton-(B2)	60	60	18DEC10	04MAR11	0	60	0
Milestone								
Section 16 (Portion B2)								
M22-1010	22.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		11NOV10	0	0	0
M22-1040	22.04-Excavation (Intake)	0	0		17DEC10	0	0	0
CC23-SECTION 17 OF THE WORKS (PORTION MA14)								
Construction								
Intakes - External Structures (Stage1)								
S170260	Mobilization&Setup(Cofferdam Constn)-(MA14)	30	6	25AUG10A	27SEP10	20	6	-47
S170290	Cofferdam Wall pile driving-(MA14)	29	29	28SEP10	02NOV10	0	29	-47
S170320	Grouting for Rock Socket-(MA14)	3	3	01NOV10	03NOV10	0	3	-47
S170350	Excavation (Soft) Soil-(MA14)	14	14	04NOV10	19NOV10	0	14	-47
S170360	Excavation (Hard) Rock-(MA14)	15	15	20NOV10	07DEC10	0	15	-47
S170370	Strutting-(MA14)	9	9	08DEC10	17DEC10	0	9	-47
S170420	Blinding-(MA14)	3	3	18DEC10	21DEC10	0	3	-47
Milestone								
Section 17 (Portion MA14)								
M23-1010	23.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-59
M23-1040	23.04-Excavation (Intake)	0	0		17DEC10	0	0	-55
CC24-SECTION 18 OF THE WORKS (PORTION MA15)								
Construction								
Intakes - External Structures (Stage1)								
S180300	Grouting for Rock Socket-(MA15)	3	0	12JUL10A	01SEP10A	100	0	-40
S180340	Excavation (Soft) Soil-(MA15)	24	8	03SEP10A	29SEP10	50	8	-38
S180320	Expose Existing Box Culvert by Excav-(MA15)	6	6	30SEP10	07OCT10	0	6	-62
S180380	Excavation (Hard) Rock-(MA15)	24	24	30SEP10	29OCT10	0	24	-38
S180350	Saw-cut Box-culvert&place Steel Pipes-(MA15)	3	3	08OCT10	11OCT10	0	3	-62
S180360	Secure Pipes Hang&SealantConnect-(MA15)	17	17	12OCT10	01NOV10	0	17	-62
S180370	Removal Lower Sector Box-culvert-(MA15)	3	3	02NOV10	04NOV10	0	3	-62
S180400	Strutting-(MA15)	9	9	02NOV10	11NOV10	0	9	-40
S180390	Excavation & Lodging-(MA15)	6	6	05NOV10	11NOV10	0	6	-62
S180420	Blinding-(MA15)	3	3	12NOV10	15NOV10	0	3	-40
S180430	Base Slabs-(MA15)	24	24	16NOV10	13DEC10	0	24	-40
S180480	External Walls-(MA15)	52	52	14DEC10	18FEB11	0	52	-40
Milestone								
Section 18 (Portion MA15)								
M241010	24.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-111
M241040	24.04-Excavation (Intake)	0	0		11NOV10	0	0	-77
CC25-SECTION 19 OF THE WORKS (PORTION MA17)								
Construction								
Preliminary Works								
S190150	Hoarding/Fencing-(MA17)	9	7	07APR10A	28SEP10	10	7	-123
S190160	Cut/Fill/Place Concrete Block&Platform-(M17)	15	15	21SEP10	08OCT10	0	15	-125
S190180	Implement Traffic Divn Scheme-(MA17)	7	7	21SEP10	28SEP10	0	7	-125
S190170	Power & Water Points-(MA17)	14	14	21SEP10	07OCT10	0	14	-118
S190300	Site Office-(MA17)	3	3	08OCT10	11OCT10	0	3	-118
Preparation Works								
S190320	Shotcreting	9	9	21SEP10	30SEP10	0	9	-96
S190260	Mobilization&Setup(Pre-drill & Grouting)-(MA17)	3	3	09OCT10	12OCT10	0	3	-125
S190270	Pre-drilling-(MA17)	14	14	13OCT10	29OCT10	0	14	-125
S190340	Analysis of the SI-(MA17)	6	6	30OCT10	05NOV10	0	6	-125
S190350	Grouting Works-(MA17)	12	12	06NOV10	19NOV10	0	12	-125
Intakes - External Structures (Stage1)								
S190290	Mobilization&Setup(Cofferdam Constn)-(MA17)	3	3	20NOV10	23NOV10	0	3	-124
S190310	Pre-boring,Backfilling with Sand-(MA17)	48	48	24NOV10	21JAN11	0	48	-124
Milestone								
Section 19 (Portion MA17)								
M25-1010	25.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		19NOV10	0	0	-161
CC26-SECTION 20 OF THE WORKS (PORTION M3)								
Construction								
Preliminary Works								
S200170	Cut/Fill/Divn/Place Concrete Block&Platform-(M3)	28	28	21SEP10	25OCT10	0	28	-173
S200180	Power & Water Points-(M3)	21	21	21SEP10	15OCT10	0	21	-173
Intakes - External Structures (Stage1)								
S200230	Slope Protection Works-(M3)	60	30	20APR10A	03NOV10	60	30	-65
S200270	Sheet-piling Wall, Drop Shaft & Manhole	24	24	21SEP10	20OCT10	0	24	-71
S200300	Mobilization&Setup(Cofferdam Constn)-(M3)	6	6	21SEP10	27SEP10	0	6	-110
S200310	Pre-boring,Backfilling with Sand-(M3)	36	36	28SEP10	10NOV10	0	36	-110



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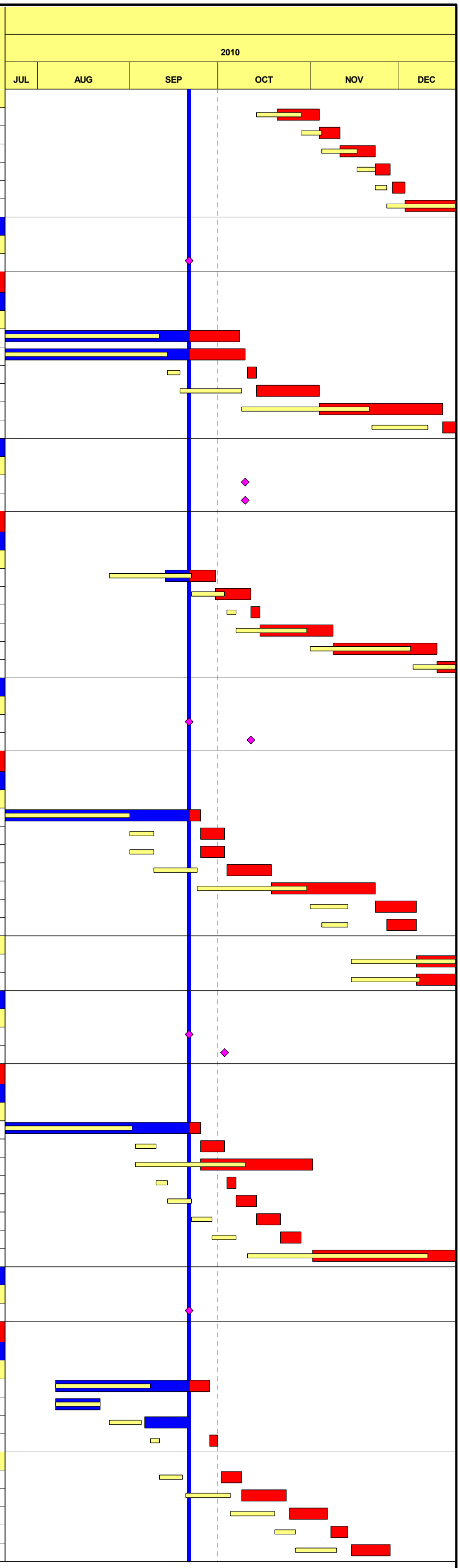
Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	% Comp	Rem Dur	Approved Works Prog 003A EF Variance
Intakes - External Structures (Stage1)								
S200320	Excavatio Laying of Steel Pipes & Strutting	12	12	21OCT10	03NOV10	0	12	-71
S200330	Shotcreting & Diversion and etc. - (M3)	6	6	04NOV10	10NOV10	0	6	-71
S200350	Driving of Sheet-piling-(M3)	10	10	11NOV10	22NOV10	0	10	-71
S200360	Grouting for Rock Socket-(M3)	5	5	23NOV10	27NOV10	0	5	-71
S200390	Excavation (Soft) Soil-(M3)	4	4	29NOV10	02DEC10	0	4	-71
S200400	Excavation (Hard) Rock-(M3)	45	45	03DEC10	27JAN11	0	45	-71
Milestone								
Section 20 (Portion M3)								
M261010	26.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-149
CC27-SECTION 21 OF THE WORKS (PORTION TP789)								
Construction								
Intakes - External Structures (Stage1)								
S210270	Open Cut Excavation	58	14	19APR10A	07OCT10	90	14	-102
S210300	Excavation (Hard) Rock-(TP789)	44	16	05MAY10A	09OCT10	90	16	-104
S210350	Blinding-(TP789)	3	3	11OCT10	13OCT10	0	3	-104
S210360	Base Slabs-(TP789)	17	17	14OCT10	03NOV10	0	17	-104
S210370	External Walls-(TP789)	36	36	04NOV10	15DEC10	0	36	-104
S210420	Top Slab with Opening-(TP789)	17	17	16DEC10	07JAN11	0	17	-104
Milestone								
Section 21 (Portion TP789)								
M27-1010	27.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		09OCT10	0	0	-136
M27-1040	27.04-Excavation (Intake)	0	0		09OCT10	0	0	-136
CC28-SECTION 22 OF THE WORKS (PORTION TP5)								
Construction								
Intakes - External Structures (Stage1)								
S220470	Excavation (Soft) Soil-(TP5)	22	8	13SEP10A	29SEP10	50	8	-47
S220490	Strutting-(TP5)	9	9	30SEP10	11OCT10	0	9	-47
S220510	Blinding-(TP5)	3	3	12OCT10	14OCT10	0	3	-47
S220520	Base Slabs-(TP5)	20	20	15OCT10	08NOV10	0	20	-47
S220530	External Walls-(TP5)	30	30	09NOV10	13DEC10	0	30	-47
S220540	Top Slab with Opening-(TP5)	20	20	14DEC10	08JAN11	0	20	-47
Milestone								
Section 22 (Portion TP5)								
M28-1010	28.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-178
M28-1040	28.04-Excavation (Intake)	0	0		11OCT10	0	0	-60
CC29-SECTION 23 OF THE WORKS (PORTION TP4)								
Construction								
Intakes - External Structures (Stage1)								
S230350	Excavation (Hard) Rock-(TP4)	72	4	22MAR10A	24SEP10	95	4	-56
S230360	Strutting-(TP4)	6	6	25SEP10	02OCT10	0	6	-56
S230380	Blinding-(TP4)	6	6	25SEP10	02OCT10	0	6	-56
S230400	Base Slabs-(TP4)	12	12	04OCT10	18OCT10	0	12	-56
S230410	External Walls-(TP4)	30	30	19OCT10	22NOV10	0	30	-56
S230440	Top Slab with Opening-(TP4)	12	12	23NOV10	06DEC10	0	12	-56
S230470	Backfilling & Compaction-(TP4)	8	8	27NOV10	06DEC10	0	8	-56
Dropshaft - Excavation/ Shaft Lining								
S230480	Raise Boring Setup/Reaming/Demobilization(TP4)	90	90	07DEC10	28MAR11	0	90	-53
S230500	Mobilization & Setting Up (Rise Boring)-(TP4)	20	20	07DEC10	31DEC10	0	20	-53
Milestone								
Section 23 (Portion TP4)								
M291010	29.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-180
M291040	29.04-Excavation (Intake)	0	0		02OCT10	0	0	-73
CC30-SECTION 24 OF THE WORKS (PORTION W5)								
Construction								
Intakes - External Structures (Stage1)								
S240260	Cofferdam Wall Driving-(W5)	46	4	15MAR10A	24SEP10	97	4	-83
S240290	Expose Existing Box Culvert by Excav-(W5)	6	6	25SEP10	02OCT10	0	6	-83
S240300	Dropshaft Temporary Lining	30	30	25SEP10	01NOV10	0	30	-83
S240310	Saw-cut Box-culvert&place Steel Pipes-(W5)	3	3	04OCT10	06OCT10	0	3	-83
S240320	Secure Pipes Hang&SealantConnect-(W5)	6	6	07OCT10	13OCT10	0	6	-83
S240330	Removal Lower Sector Box-culvert-(W5)	6	6	14OCT10	21OCT10	0	6	-83
S240360	Excavation & Lodging-(W5)	6	6	22OCT10	28OCT10	0	6	-83
S240380	Excavation (Soft) Soil-(W5)	52	52	02NOV10	04JAN11	0	52	-83
Milestone								
Section 24 (Portion W5)								
M301010	30.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-152
CC31-SECTION 25 OF THE WORKS (PORTION CR1)								
Construction								
Preliminary Works								
S250180	Power & Water Points-(CR1)	24	6	07AUG10A	27SEP10	50	6	-89
S250170	Hoarding/Fencing-(CR1)	12	0	07AUG10A	21AUG10A	100	0	-73
S250210	Implement Traffic Divn Scheme Stage 2-(CR1)	9	0	06SEP10A	20SEP10A	100	0	-86
S250260	Site Office-(CR1)	3	3	28SEP10	30SEP10	0	3	-89
Preparation Works								
S250209	Mobilization&Setup(Pre-drill & Grouting)-(CR1)	6	6	02OCT10	08OCT10	0	6	-89
S250225	VO#11 - Utility Diversion works (CR1)	12	12	09OCT10	23OCT10	0	12	-89
S250230	Pre-drilling-(CR1)	12	12	25OCT10	06NOV10	0	12	-89
S250270	Analysis of the SI-(CR1)	6	6	08NOV10	13NOV10	0	6	-89
S250290	Grouting Works-(CR1)	12	12	15NOV10	27NOV10	0	12	-89



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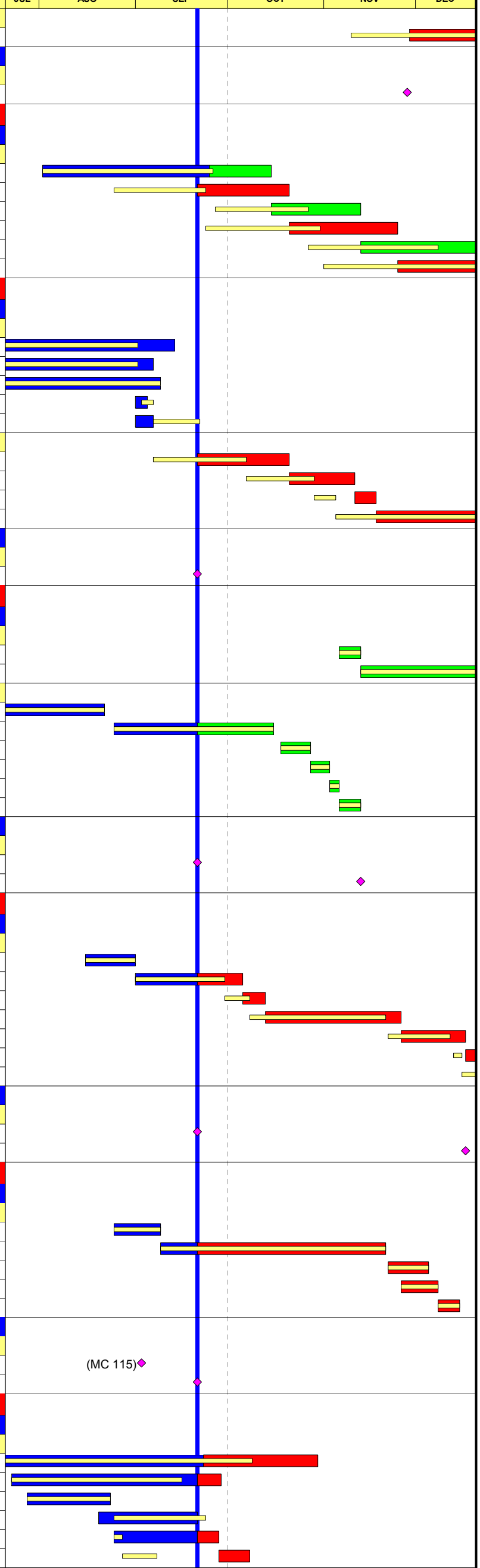
Intakes - External Structures (Stage1)								
S250310	Cofferdam Wall Driving-(CR1)	70	70	29NOV10	24FEB11	0	70	-89
Milestone								
Section 25 (Portion CR1)								
M31-1010	31.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		27NOV10	0	0	-110
CC32-SECTION 26 OF THE WORKS (PORTION RR1)								
Construction								
Intakes - External Structures (Stage1)								
S260310	Pre-bored Pile,SandFile Drive SheetPile-(RR1)	24	16	02AUG10A	14OCT10	30	16	-33
S260240	Upgrading RetainingStructure ofBoxCulvert Outlet	24	24	21SEP10	20OCT10	0	24	-61
S260350	Excavn,Strutt'g&Decking/UpgradeBoxCulvertOutlet	24	24	15OCT10	12NOV10	0	24	-33
S260320	Driving Pile for Drainage Diversion	30	30	21OCT10	24NOV10	0	30	-61
S260370	ProtectiveMeasures toDrainOutlet Wall/PipeLaying	36	36	13NOV10	24DEC10	0	36	-33
S260360	Driving Pile for Cofferdam	48	48	25NOV10	22JAN11	0	48	-61
CC33-SECTION 27 OF THE WORKS (PORTION W8)								
Construction								
Preliminary Works								
S270150	Hoarding/Fencing-(W8)	9	0	12MAR10A	13SEP10A	100	0	-130
S270160	Cut/Fill/Place Concrete Block&Platform-(W8)	15	0	20APR10A	06SEP10A	100	0	-118
S270170	Power & Water Points-(W8)	24	0	22JUN10A	08SEP10A	100	0	-111
S270270	Site Office-(W8)	3	0	01SEP10A	04SEP10A	100	0	-105
S270290	DSD - Foul Sewer	12	0	01SEP10A	06SEP10A	100	0	-94
Intakes - External Structures (Stage1)								
S270310	Cofferdam Wall Driving-(W8)	24	24	21SEP10	20OCT10	0	24	-100
S270320	Excavation, strutting & Decking	18	18	21OCT10	10NOV10	0	18	-100
S270330	Temp Diversion - W8	6	6	11NOV10	17NOV10	0	6	-100
S270340	Temporary Steel Casing of Dropshaft	42	42	18NOV10	08JAN11	0	42	-100
Milestone								
Section 27 (Portion W8)								
M33-1010	33.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-135
CC34-SECTION 28 OF THE WORKS (PORTION P5)								
Construction								
Intakes - External Structures (Stage1)								
S280500	Mobilization&Setup(Cofferdam Constn)-(P5)	6	6	06NOV10	12NOV10	0	6	-1
S280510	Pre-boring,Backfilling with Sand-(P5)	35	35	13NOV10	23DEC10	0	35	-1
Dropshaft - Excavation/ Shaft Lining								
S280430	RCD Drilling in Soft & Driving Casing-(P5)	11	0	12JUL10A	21AUG10A	100	0	0
S280440	RCD Drilling in Rock (40m)-(P5)	42	21	25AUG10A	15OCT10	50	21	-1
S280450	Demobilization of RCD-(P5)	9	9	18OCT10	27OCT10	0	9	-1
S280460	Driving Casing to Rockhead	5	5	28OCT10	02NOV10	0	5	-1
S280470	Airlifting & Cleaning-(P5)	3	3	03NOV10	05NOV10	0	3	-1
S280480	Demob of RCD, Oscillator, Crane & etc.-(P5)	6	6	06NOV10	12NOV10	0	6	-1
Milestone								
Section 28 (Portion P5)								
M341010	34.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-205
M341020	34.02-Excavation (Dropshaft)	0	0		12NOV10	0	0	-1
CC35-SECTION 29 OF THE WORKS (PORTION W10)								
Construction								
Intakes - External Structures (Stage1)								
S290470	Excav(Soft) Soil up to Culvert level +132 -(W10)	12	0	16AUG10A	31AUG10A	100	0	-57
S290372	VO#13 Stg 2 Diversion works (W10)	23	12	01SEP10A	05OCT10	30	12	-61
S290370	Removal Lower Sector Box-culvert-(W10)	6	6	06OCT10	12OCT10	0	6	-61
S290380	Soft Excavation & ELS-(W10)	37	37	13OCT10	25NOV10	0	37	-61
S290480	Excavation (Hard) Rock-(W10)	18	18	26NOV10	16DEC10	0	18	-61
S290510	Blinding-(W10)	3	3	17DEC10	20DEC10	0	3	-61
S290520	Base Slabs-(W10)	12	12	21DEC10	06JAN11	0	12	-61
Milestone								
Section 29 (Portion W10)								
M351010	35.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-200
M351040	35.04-Excavation (Intake)	0	0		16DEC10	0	0	-72
CC36-SECTION 30 OF THE WORKS (PORTION HKU1)								
Construction								
Intakes - External Structures (Stage1)								
S300460	Base Slabs-(HKU1)	12	0	25AUG10A	08SEP10A	100	0	-65
S300470	External Walls-(HKU1)	60	51	09SEP10A	20NOV10	15	51	-65
S300480	Top Slab with Opening-(HKU1)	12	12	22NOV10	04DEC10	0	12	-65
S300500	Backfilling & Compaction-(HKU1)	10	10	26NOV10	07DEC10	0	10	-67
S300510	Extracting of Sheet Piling-(HKU1)	6	6	08DEC10	14DEC10	0	6	-67
Milestone								
Section30 (Portion HKU1)								
M361040	36.04-Excavation (Intake)	0	0		02SEP10A	100	0	-100
M361010	36.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-198
CC37-SECTION 31 OF THE WORKS (PORTION PFLR1)								
Construction								
Intakes - External Structures (Stage1)								
S311250	Excavation & ELS Works-(PFLR1)	66	30	17JUN10A	29OCT10	6	30	-79
S311235	Excavation (Soft) Soil-(PFLR1)	24	7	23JUL10A	28SEP10	60	7	-84
S311270	Expose Existing Box Culvert by Excav-(PFLR1)	20	0	28JUL10A	23AUG10A	100	0	-47
S311233	VO # 23 Const Manhole at +95.5 & +98 -(PFLR1)	24	0	20AUG10A	20SEP10A	100	0	-68
S311280	Saw-cut Box-culvert&place Steel Pipes-(PFLR1)	3	6	25AUG10A	27SEP10	50	6	-71
S311290	Secure Pipes Hang&SealantConnect-(PFLR1)	8	8	28SEP10	07OCT10	0	8	-76



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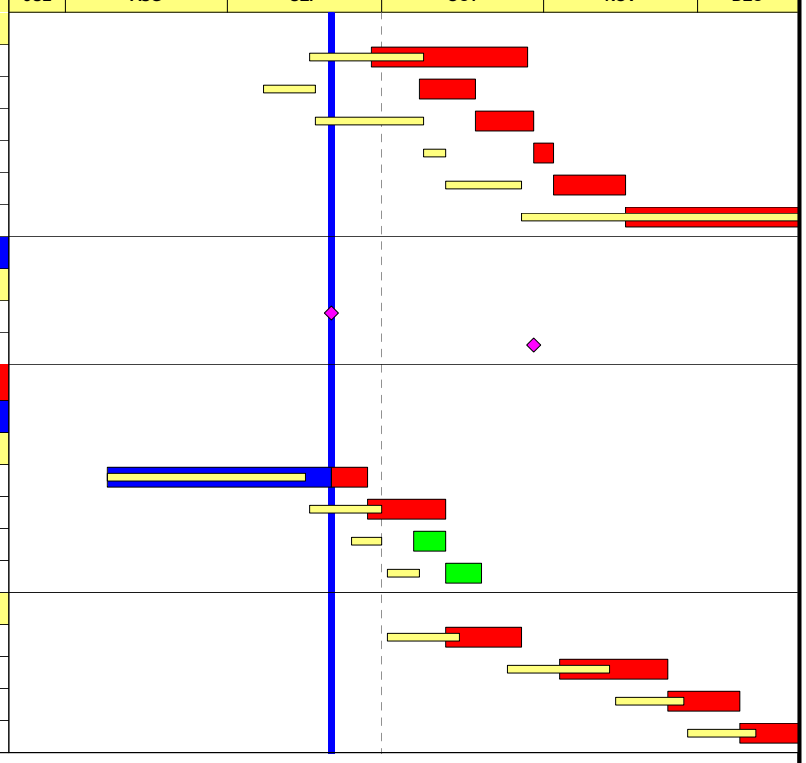
Intakes - External Structures (Stage1)								
S311240	Excavation (Hard) Rock-(PFLR1)	24	24	29SEP10	28OCT10	0	24	-78
S311300	Removal Lower Sector Box-culvert-(PFLR1)	8	8	08OCT10	18OCT10	0	8	-81
S311310	Excavation & Lodging-(PFLR1)	10	10	19OCT10	29OCT10	0	10	-85
S311330	Blinding-(PFLR1)	3	3	30OCT10	02NOV10	0	3	-79
S311340	Base Slabs-(PFLR1)	12	12	03NOV10	16NOV10	0	12	-79
S311350	External Walls-(PFLR1)	62	62	17NOV10	31JAN11	0	62	-79
Milestone								
Section 31 (Portion PFLR1)								
M371010	37.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		20SEP10	0	0	-198
M371040	37.04-Excavation (Intake)	0	0		29OCT10	0	0	-101
CC38-SECTION 32 OF THE WORKS (PORTION SM1)								
Construction								
Intakes - External Structures (Stage1)								
S321270	External Walls-(SM1)	26	6	09AUG10A	27SEP10	75	6	-55
S321290	Top Slab with Opening-(SM1)	12	12	28SEP10	12OCT10	0	12	-55
S321310	Backfilling & Compaction-(SM1)	5	5	07OCT10	12OCT10	0	5	-55
S321320	Extracting of Sheet Piling-(SM1)	5	5	13OCT10	19OCT10	0	5	-55
Intakes - Internal Structures (Stage 2)								
S321430	Low Flow Slab & Bottom Rack Bar-(SM1)	12	12	13OCT10	27OCT10	0	12	-55
S321440	Re-instatemetn of Drains-(SM1)	18	18	04NOV10	24NOV10	0	18	-55
S321460	Access Ladder & Hand Rails-(SM1)	12	12	25NOV10	08DEC10	0	12	-55
S321470	Safety Grille-(SM1)	12	12	09DEC10	22DEC10	0	12	-55



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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	• AQ1 (True Light Middle School of Hong Kong) • AQ2 (Outside Aegean Terrace)	AQ1 – Canopy AQ2 – Roadside AQ3 – Roadside
	24 hour TSP	Once / 6 days	• 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	• NC1 (True Light Middle School of Hong Kong) • NC1a (Outside True Light Middle School of Hong Kong (the nearest of staff accommodation) – for restricted hours (reference only) • NC2 (The Legend) • NC3 (Outside Aegean Terrace) • NC7 (Buddist Li Ka Shing Care & Attention Home for the Elderly) • NC8 (Marymount Secondary School) • NC9 (117 Blue Pool Road) • NC11 (Honey Court) • NC12 (Ying Wa Girl's School) • NC13 (Peaksville Court) • NC14 (Hong Kong Japanese School) • NC15 (Hong Kong Academy) • NC16 (Raimondi College) • NC17 (Hong Kong Institute of	• NC1 - Facade measurement • NC1a – Façade measurement • NC2 - Facade measurement • NC3 - Facade measurement • NC7 - Facade measurement • NC8 – Facade measurement • NC9 – Facade measurement • NC11 – Free field measurement • NC12 - Facade measurement • NC13 - Facade measurement • NC14 - Facade
	L_{eq}, L_{90} & L_{10} at 5 minute intervals during (1900 to 2300)[1]	Once per week (include 3 consecutive 5-min measurements)		
	L_{eq}, L_{90} & L_{10} at 5 minute intervals during (2300 to 0700 of next day)[1]	Once per week (include 3 consecutive 5-min measurements)		
	L_{eq}, L_{90} & L_{10} at 5 minute intervals during (0700 to 2300 on holidays)[1]	Once per week (include 3 consecutive 5-min measurements)		

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
			Technology) • NC18 (Blk A, 80 Robinson Road) • NC19 (Villa Veneto)	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	• GNC6 (French International School)	• Ground floor inside the nearest building during the TBM construction work
	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (1900 to 2300)[(1)]			
	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (2300 to 0700 of next day)[(1)]			
	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (0700 to 2300 on holidays)[(1)]			

Remarks:

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

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Water Quality	• 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	• CE (830026E, 814956N) • CF (831778E, 812420N) • I1 (831088E, 813654N) • I2 (831105E, 813582N) • Intake A (831603E, 813044N) • Intake B (830606E, 814583N)	• 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, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AQ1	345	500
AQ2	321	

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

Location	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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)

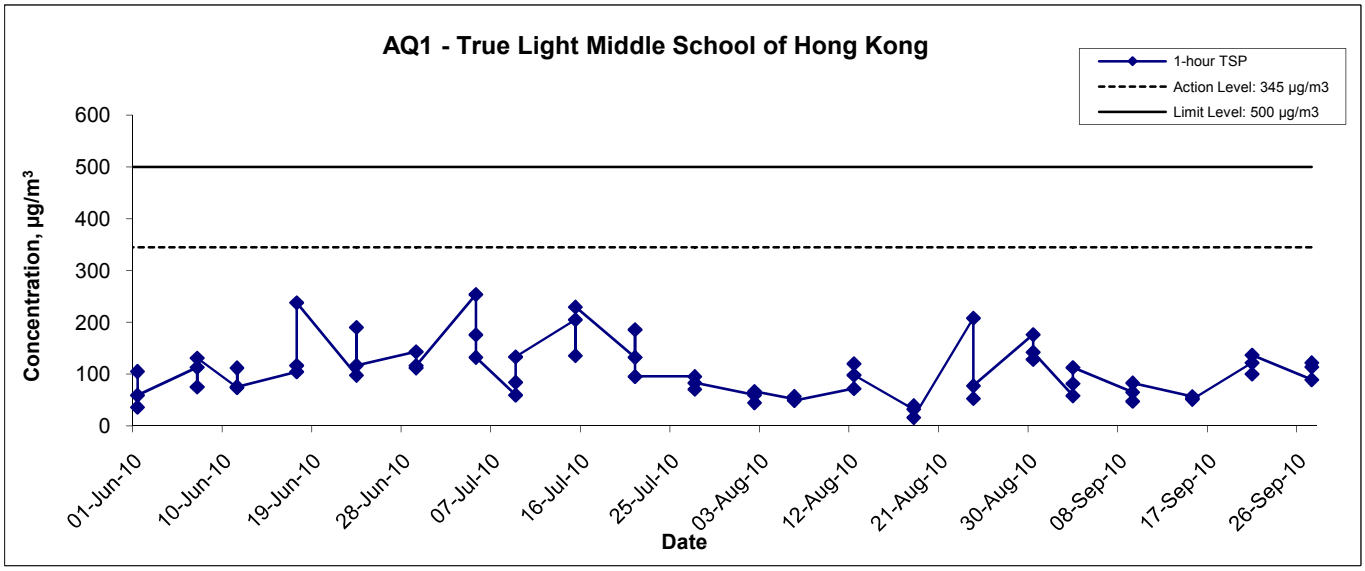
(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.
(**) to be selected based on Area Sensitivity Rating.

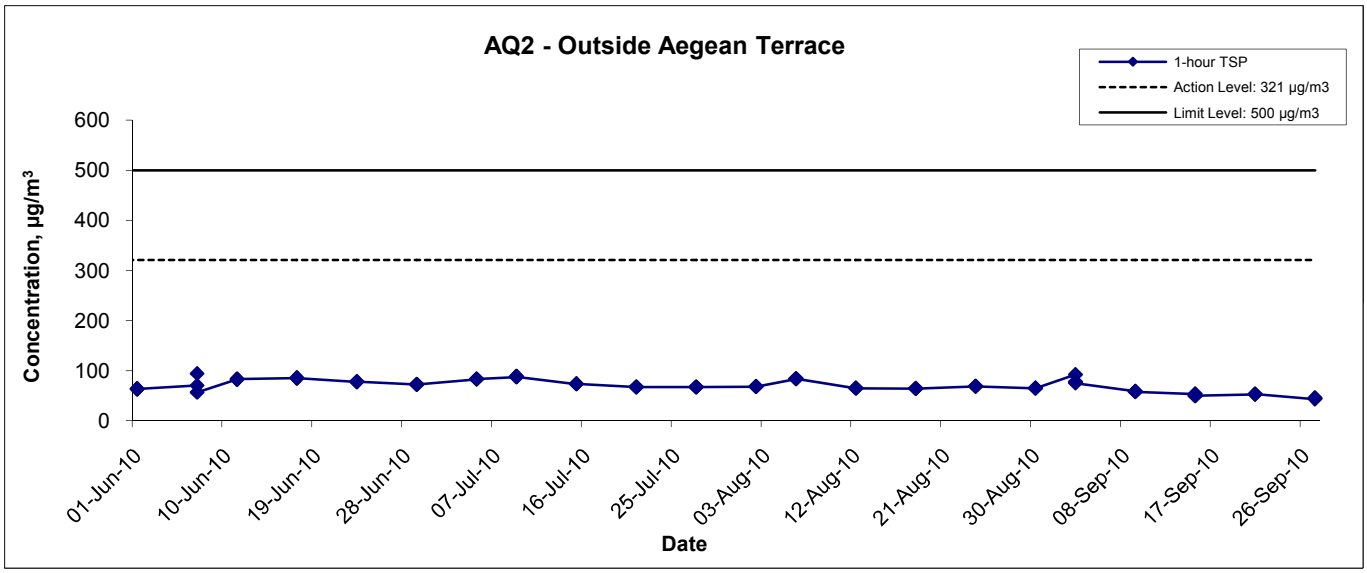
Table C-4 Action and Limit Levels for Water Quality

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

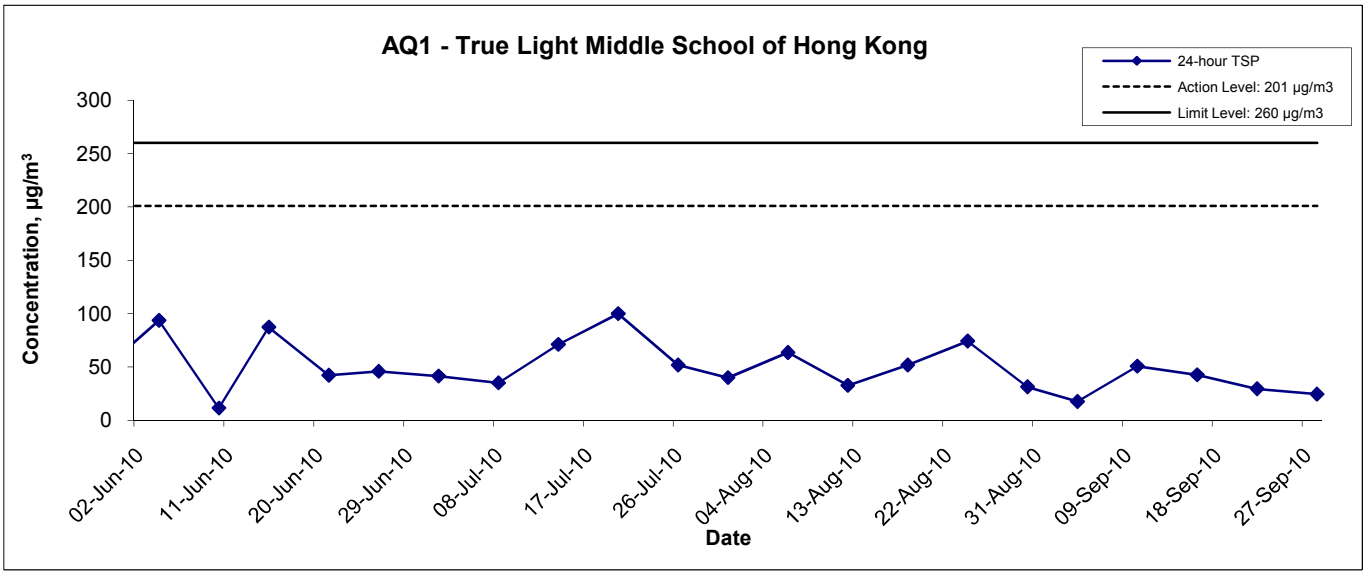
1-hr TSP Concentration Levels

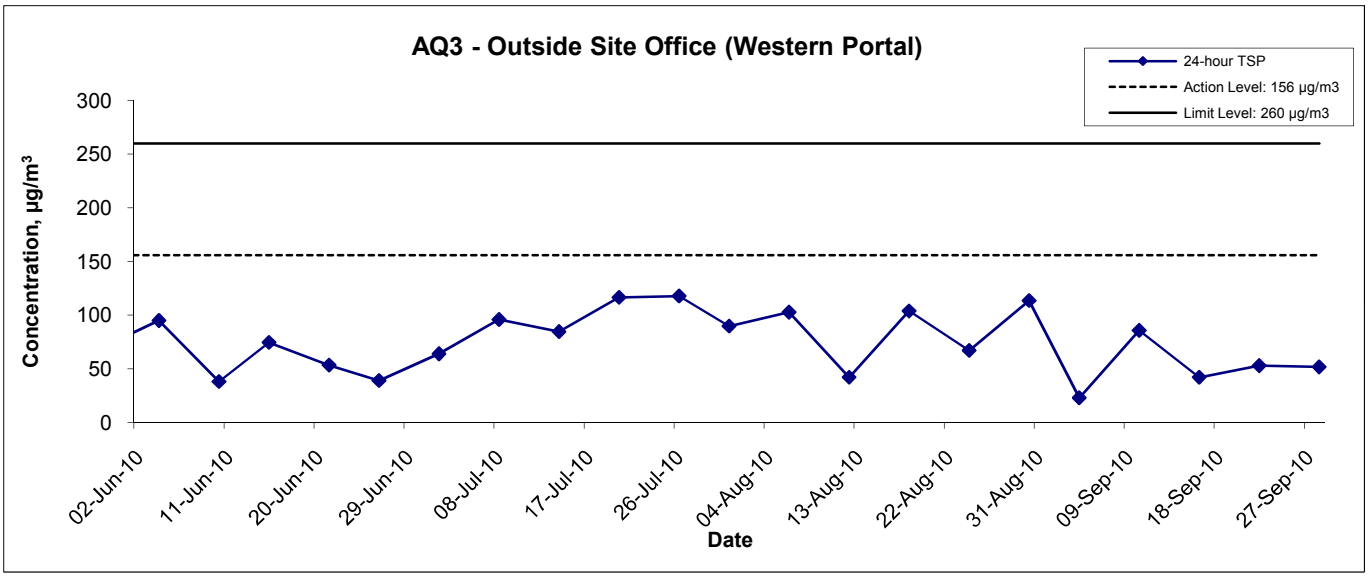




Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 10	Project No.: MA8001 Appendix: D	CINOTECH

24-hr TSP Concentration Levels





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

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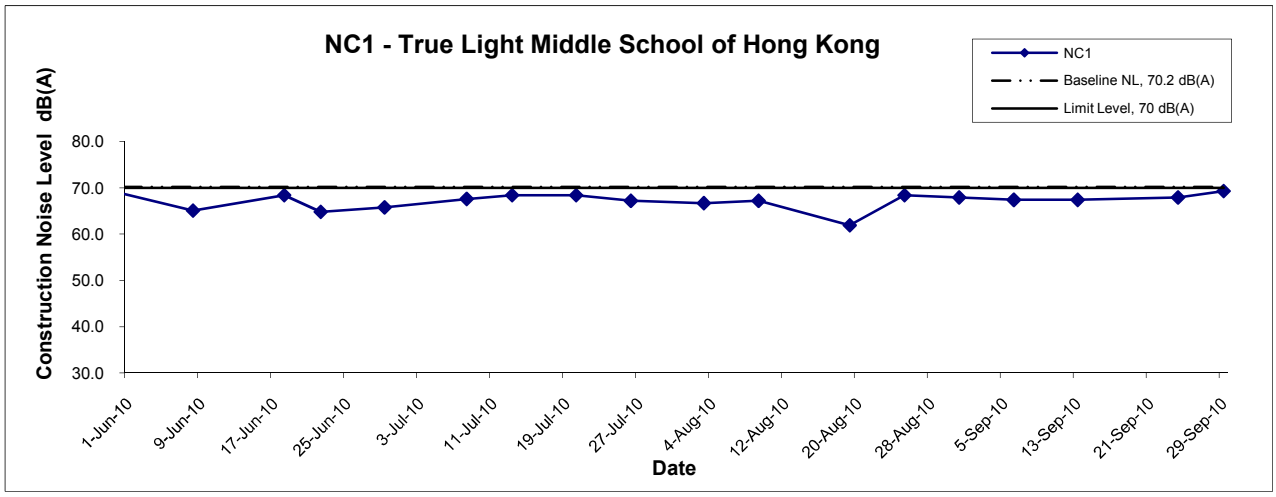
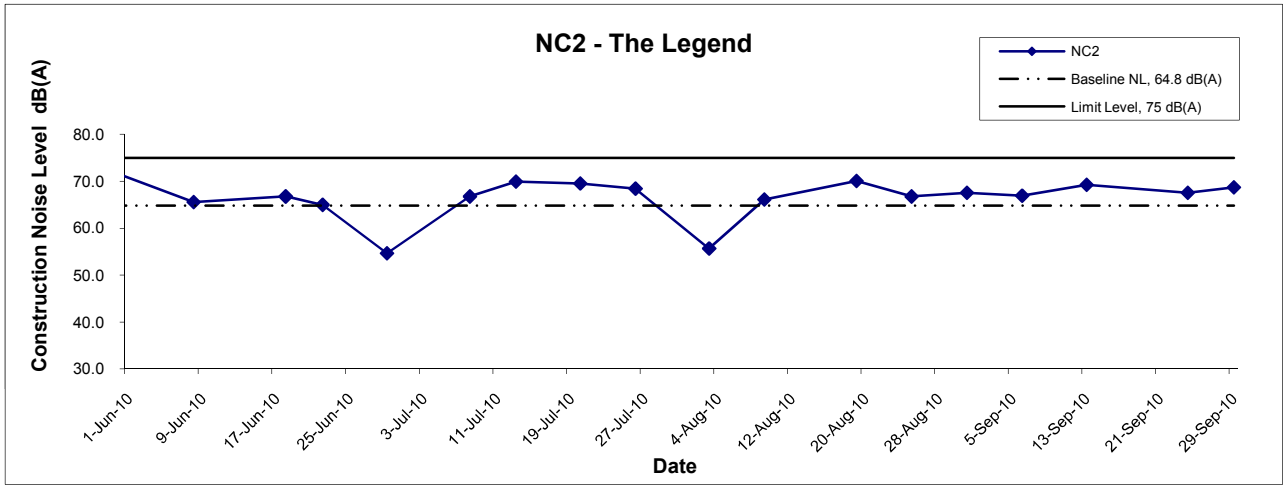
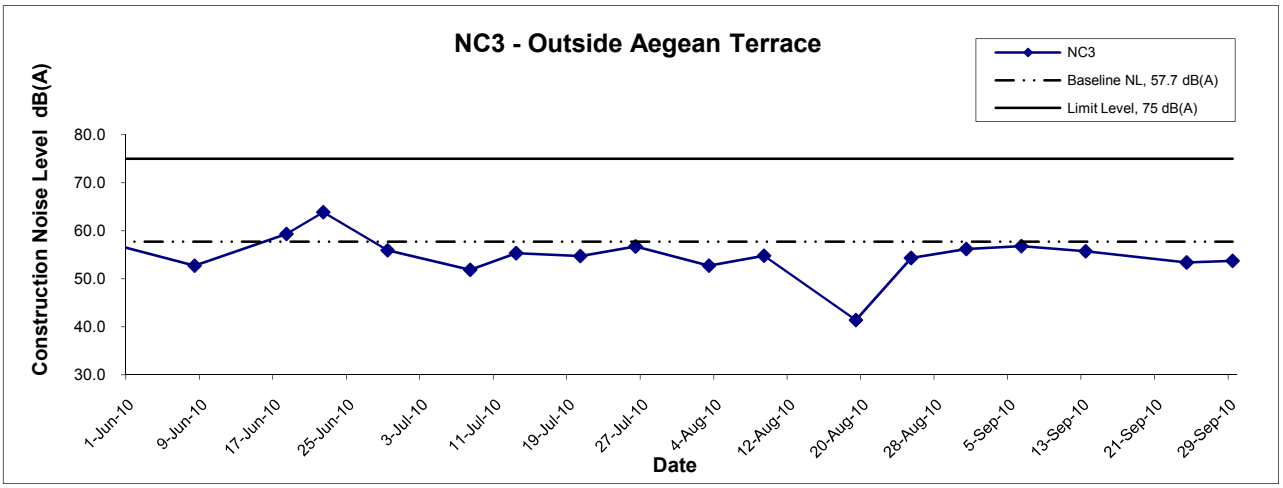
APPENDIX E
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels

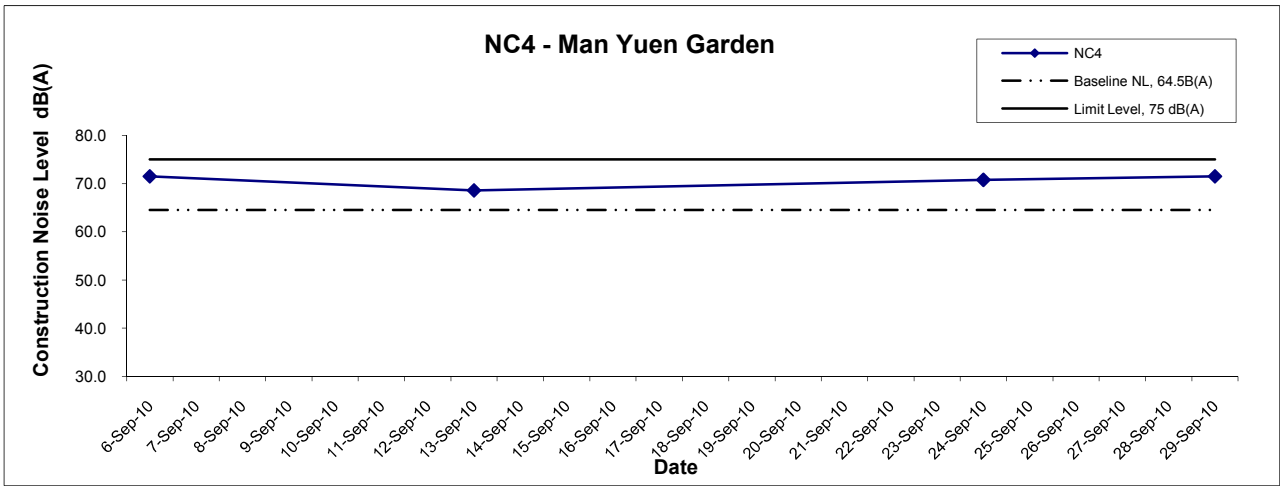


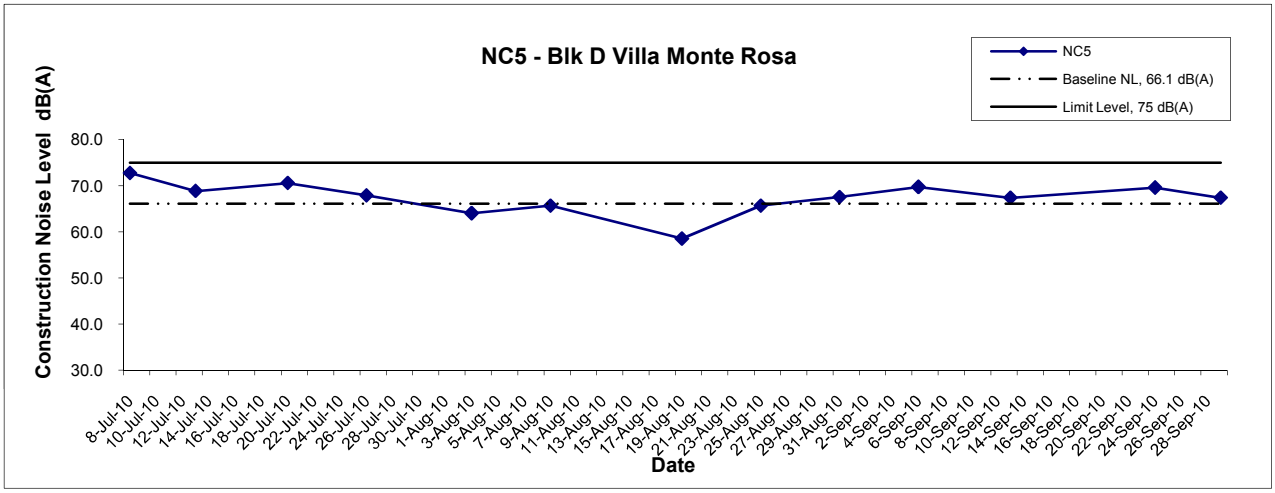


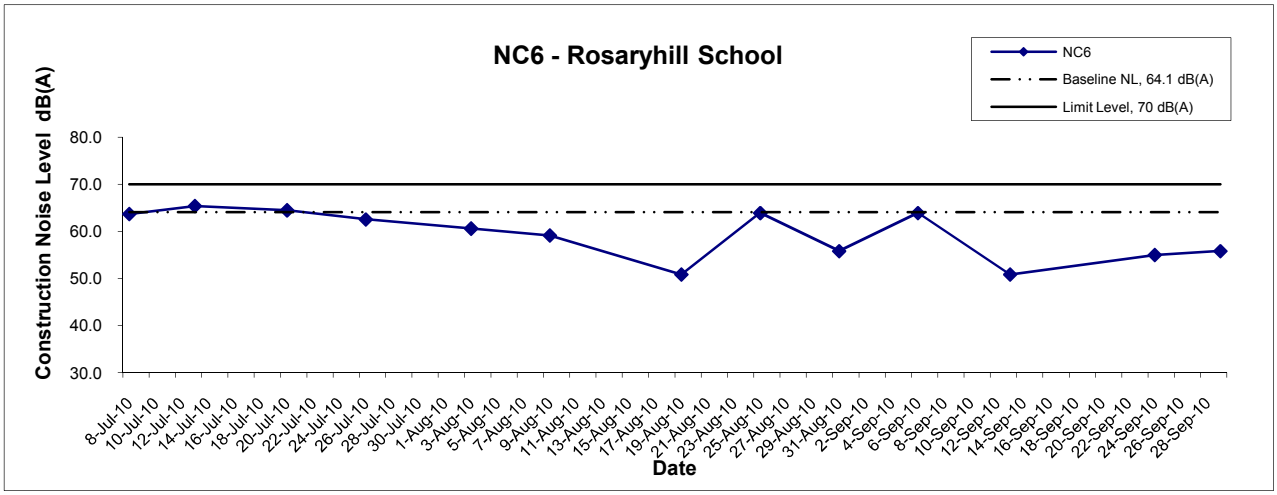


Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep 10	Project No.: MA8001 Appendix: E	CINOTECH

Noise Levels

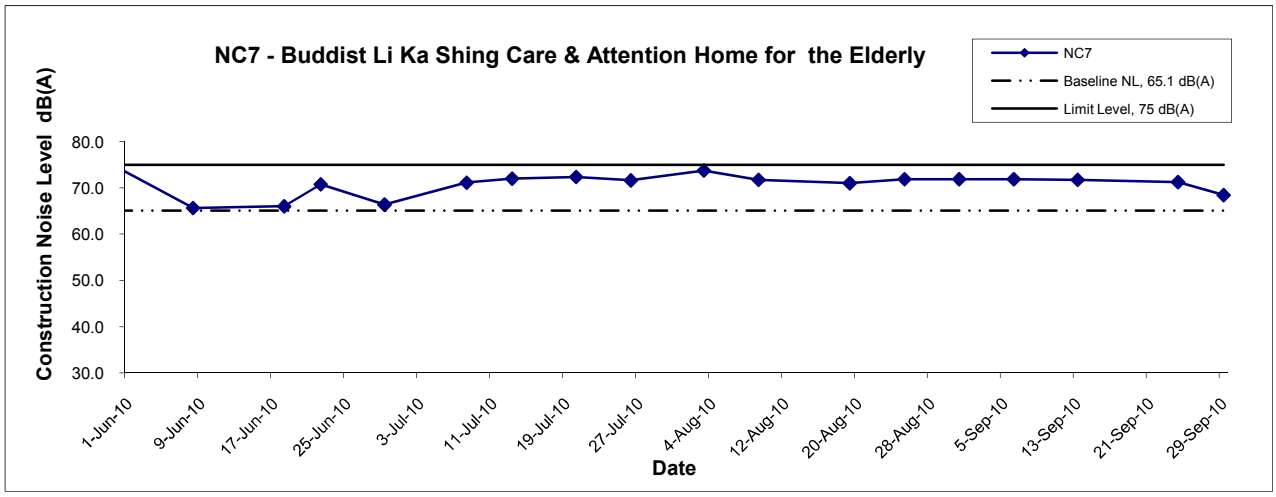


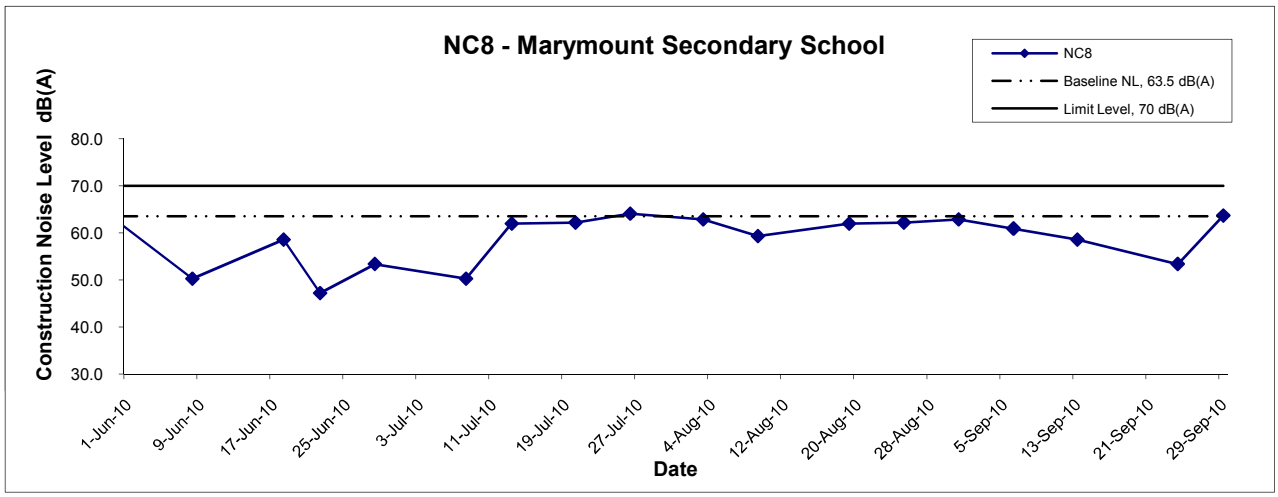


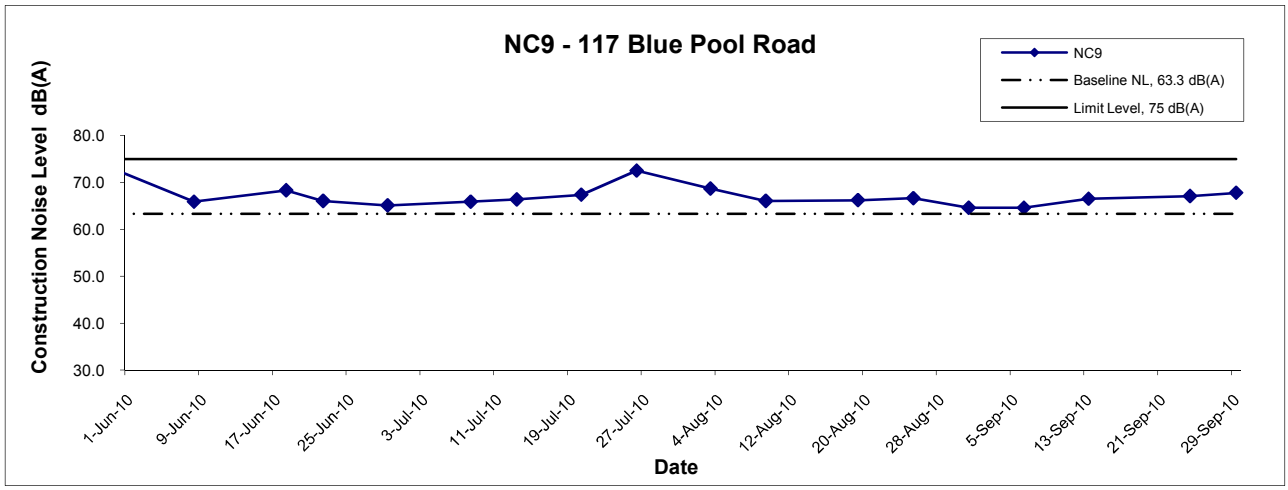


Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Sep 10	Project No. MA8001 Appendix E	CINOTECH

Noise Levels







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

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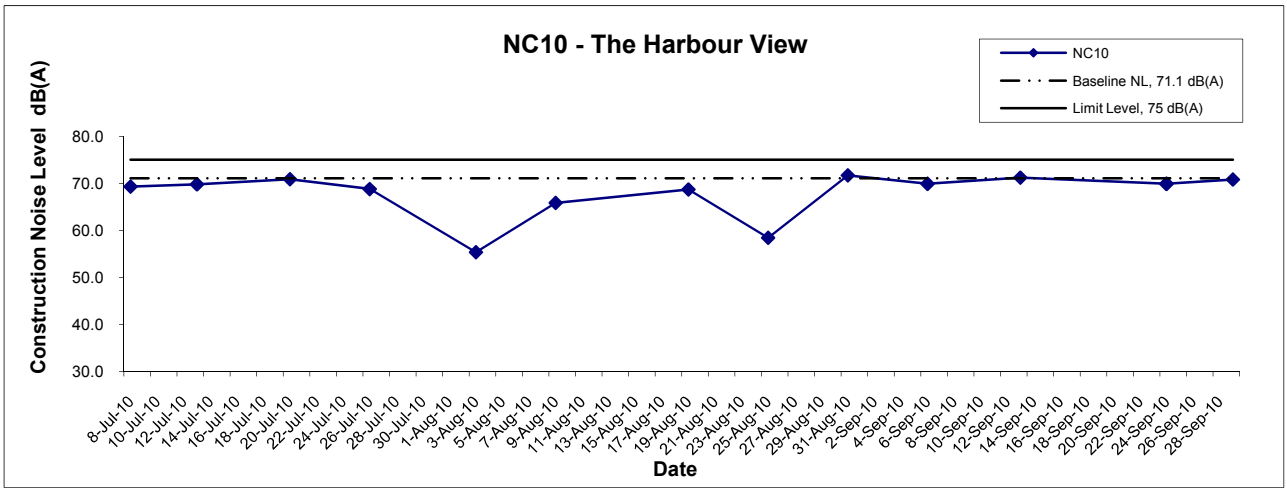
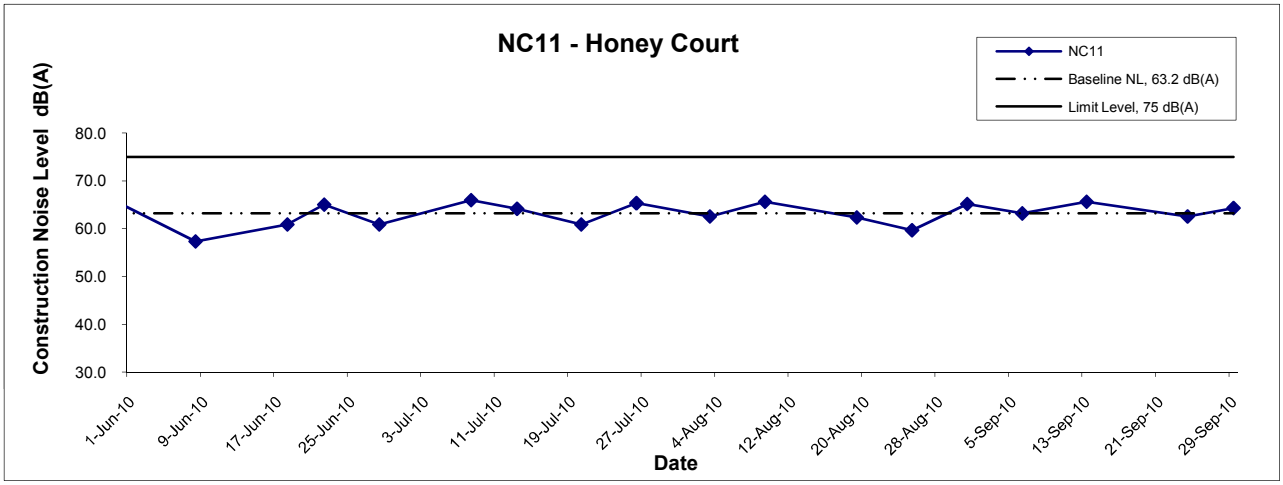
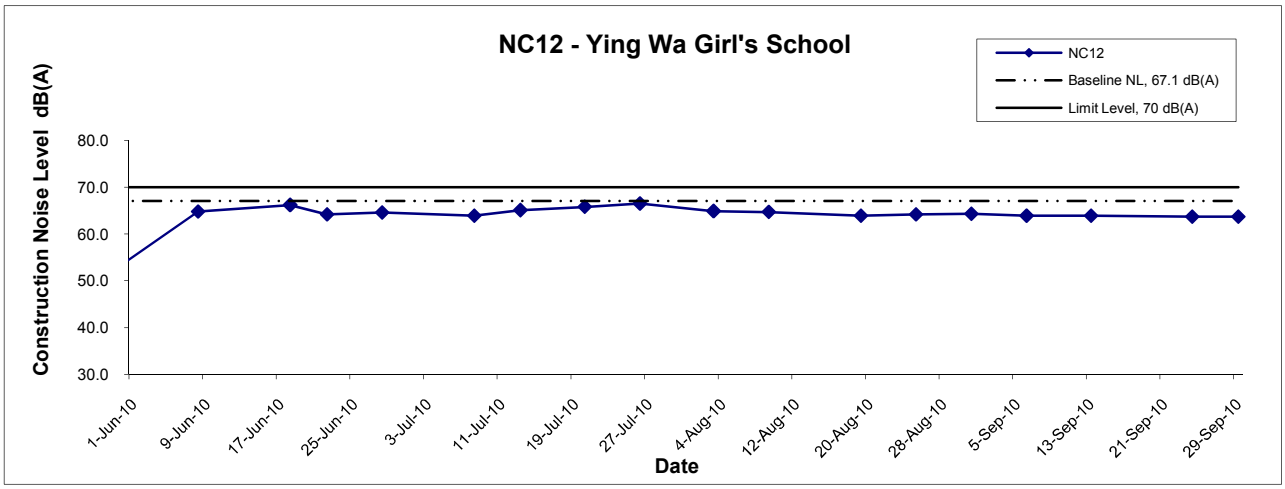
Noise Levels

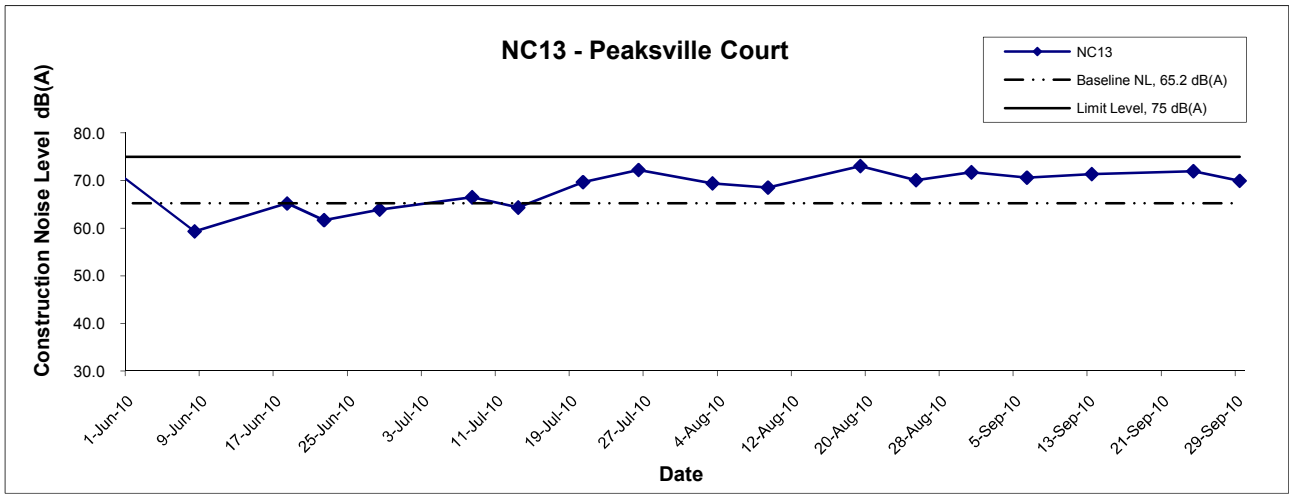


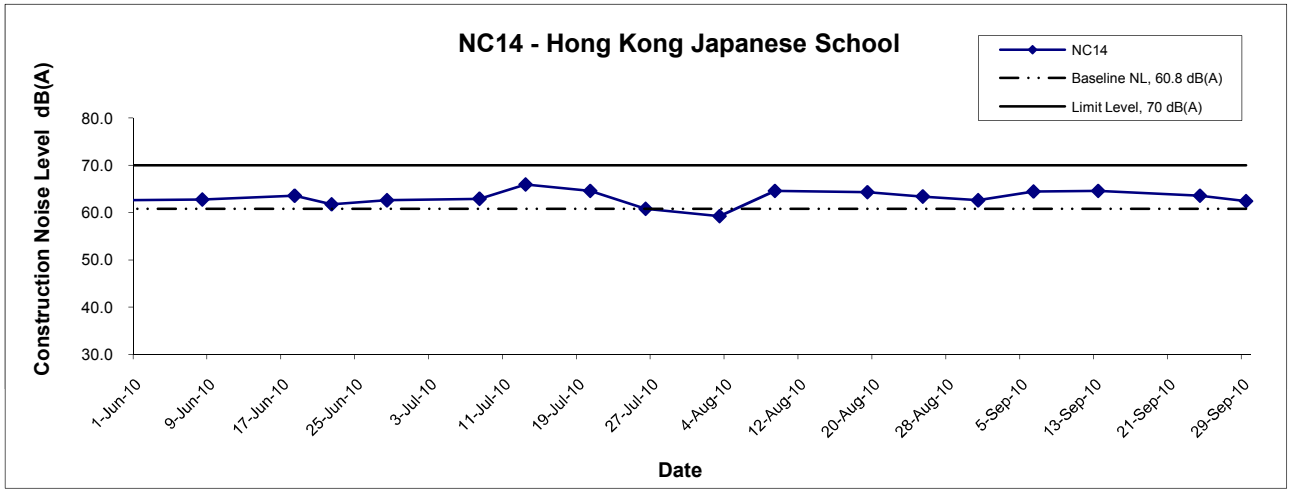


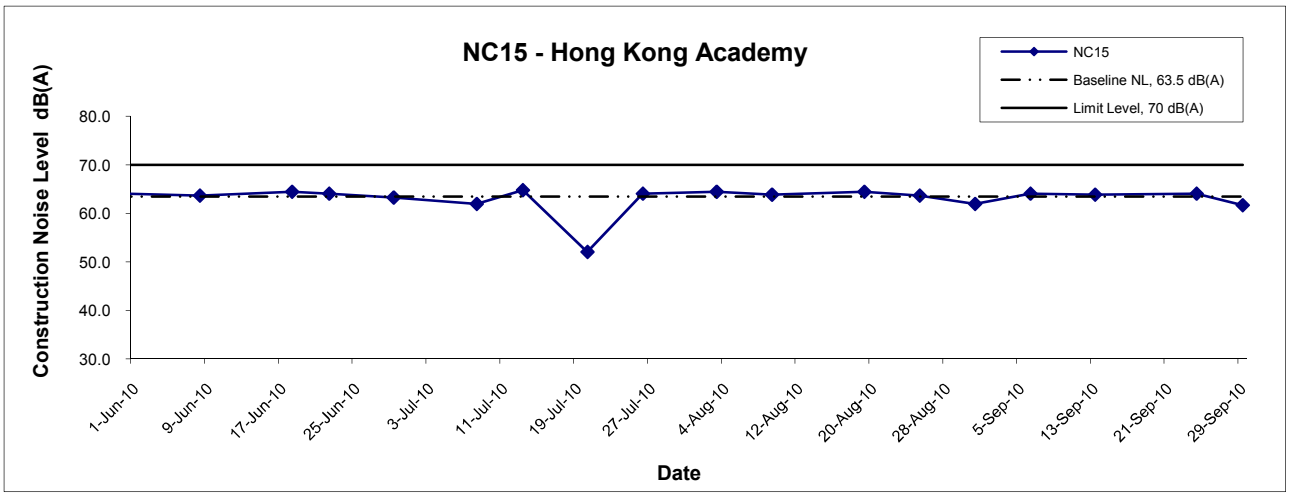


Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep 10	Project No.: MA8001 Appendix: E	CINOTECH

Noise Levels

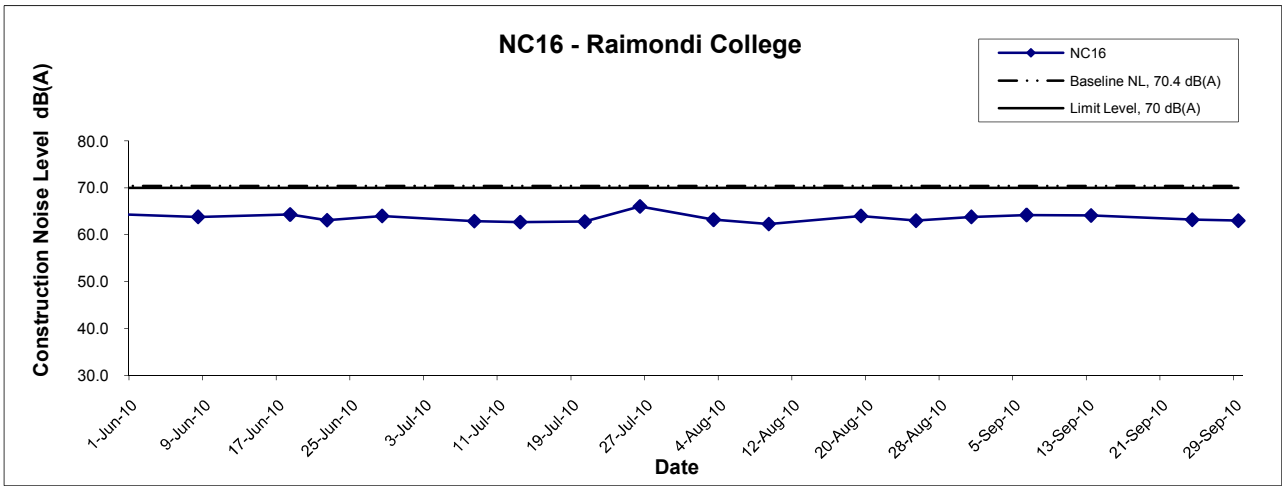


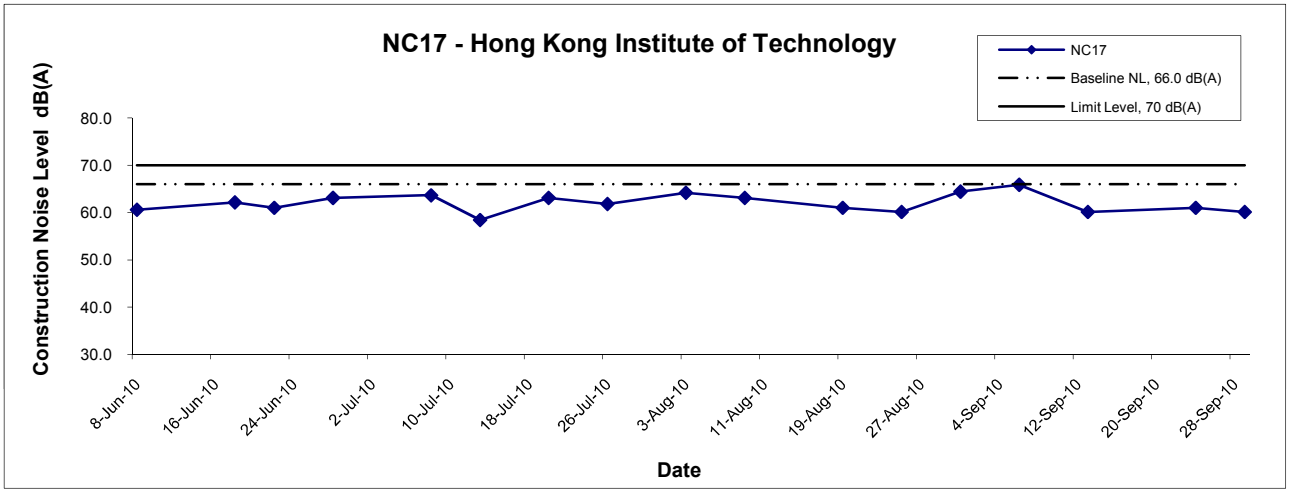


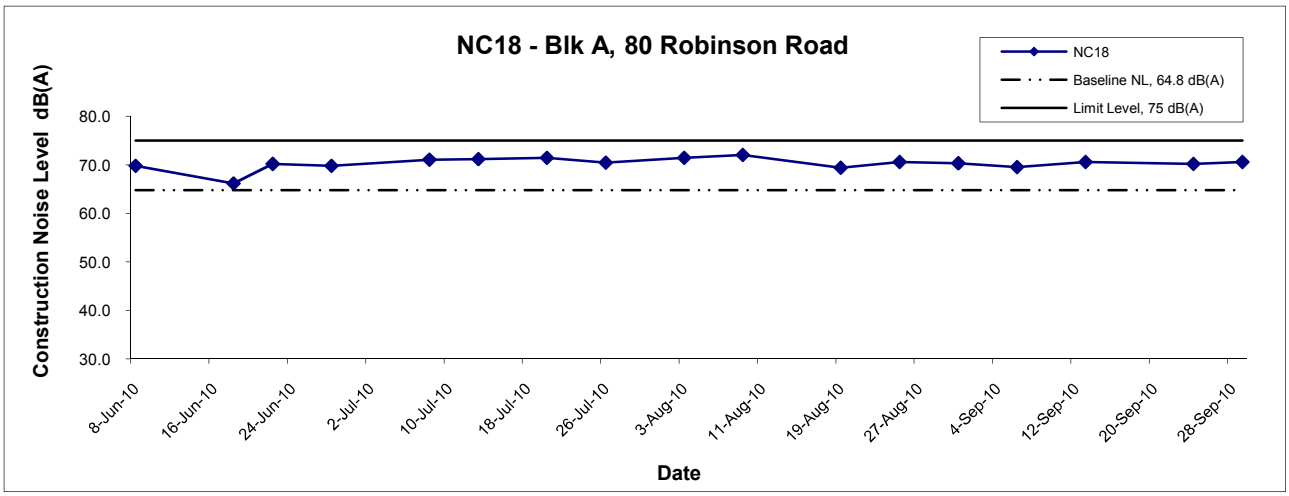


Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep 10	Project No.: MA8001 Appendix: E	CINOTECH

Noise Levels

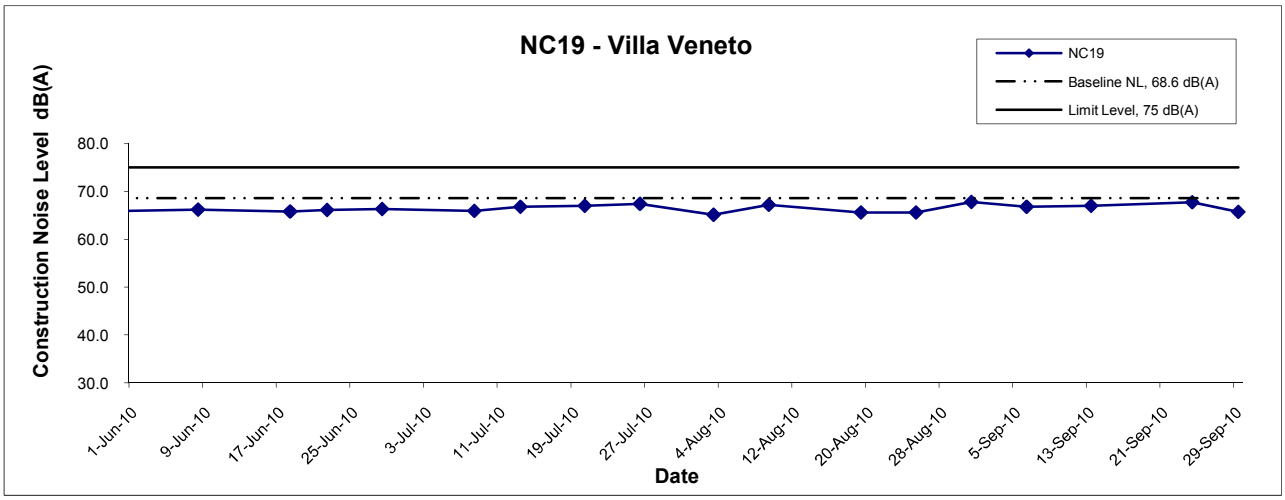


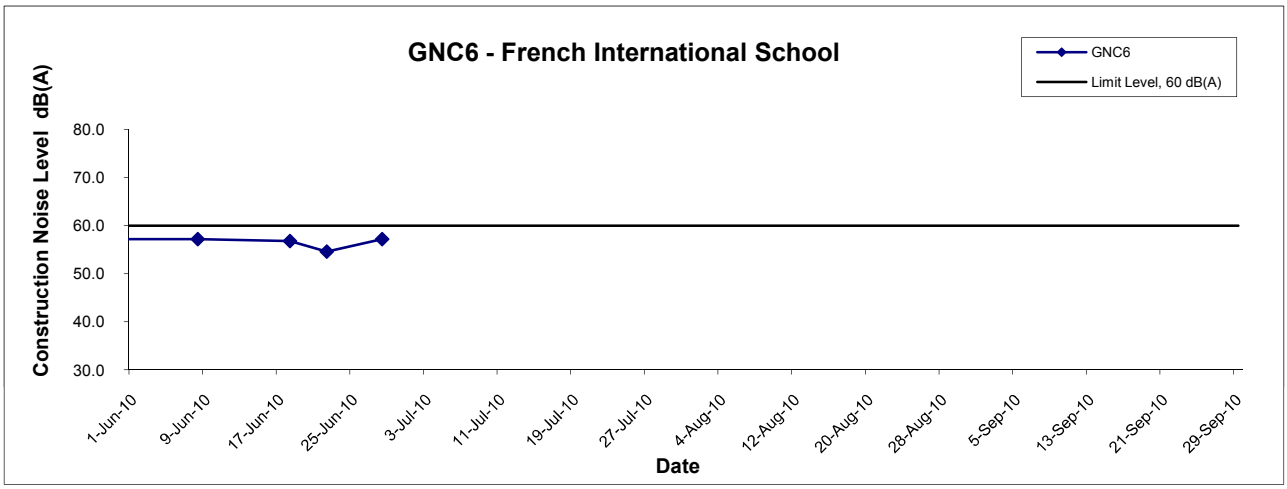




Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep 10	Project No.: MA8001 Appendix: E	CINOTECH

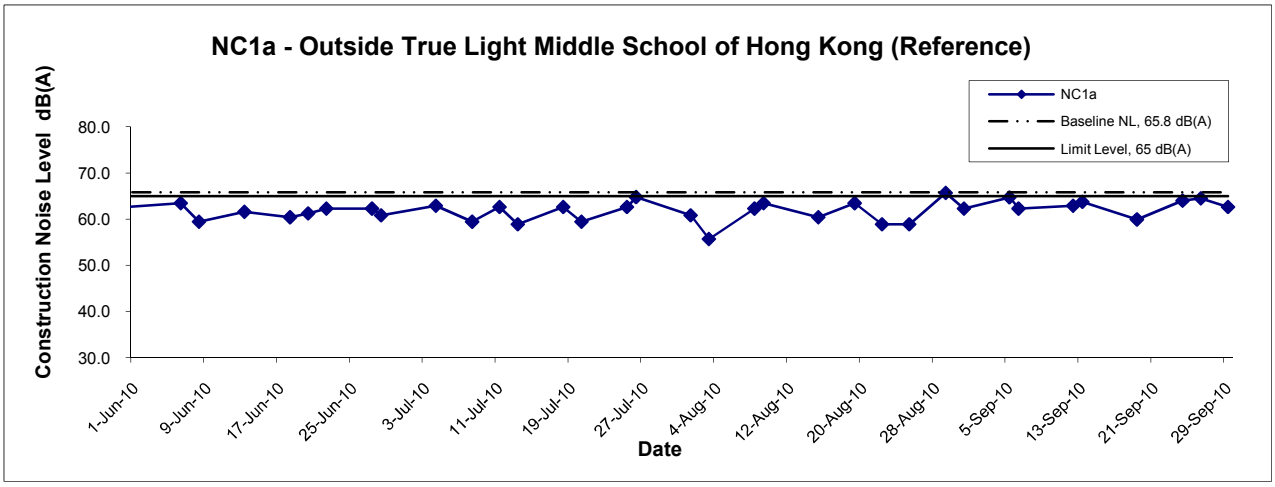
Noise Levels

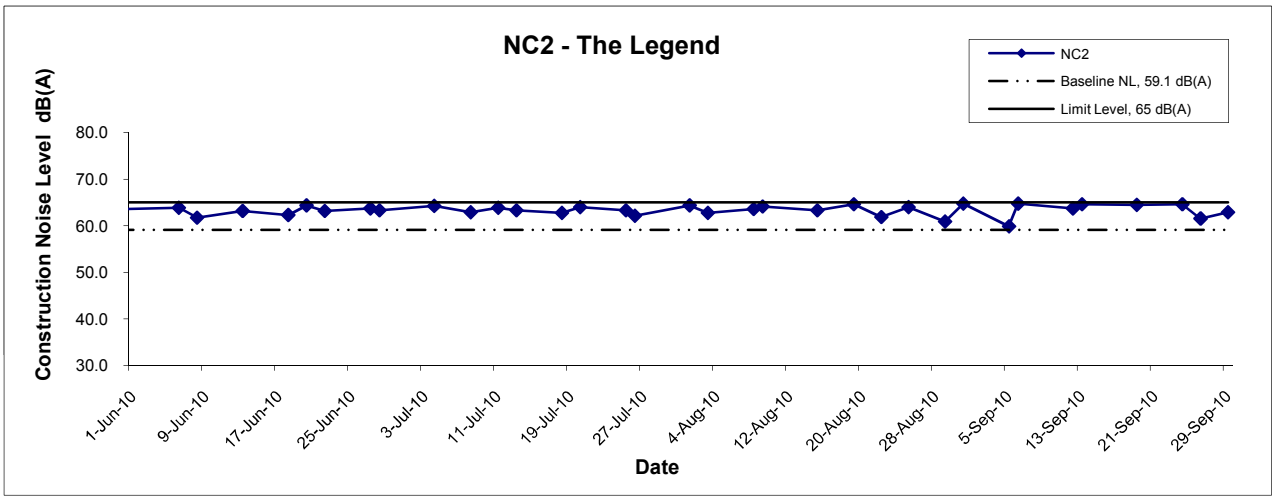


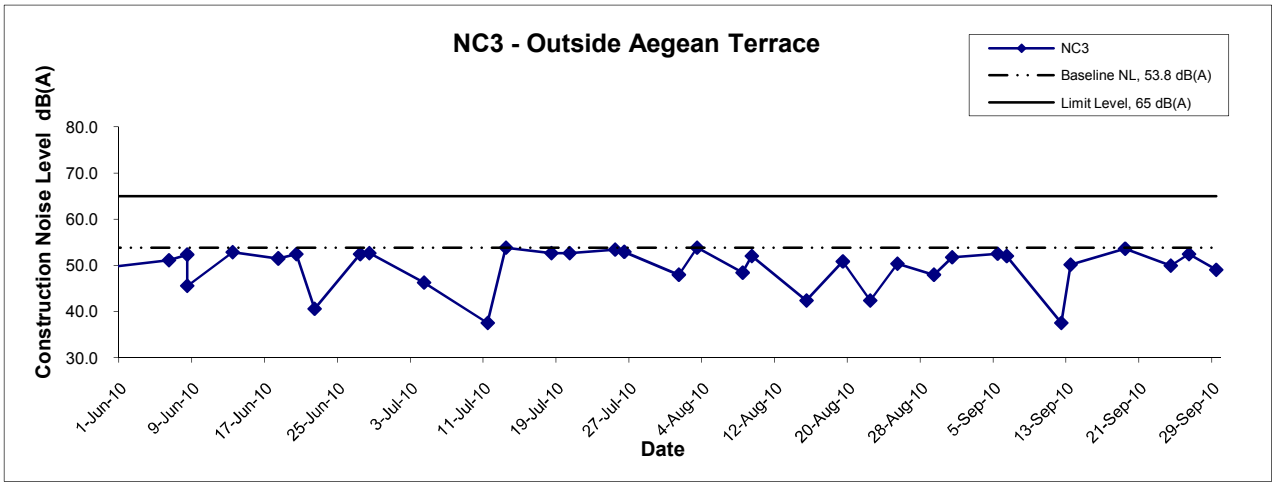


Title: Graphical Presentation of Construction Noise Monitoring Results	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel	Scale: N.T.S Date: Sep 10	Project No.: MA8001 Appendix: E	CINOTECH

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

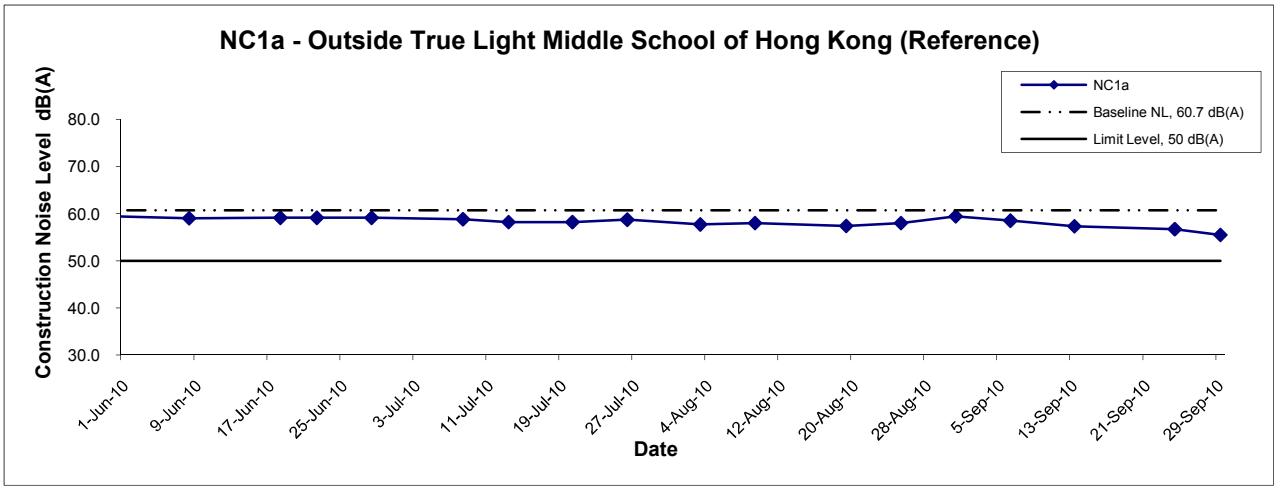


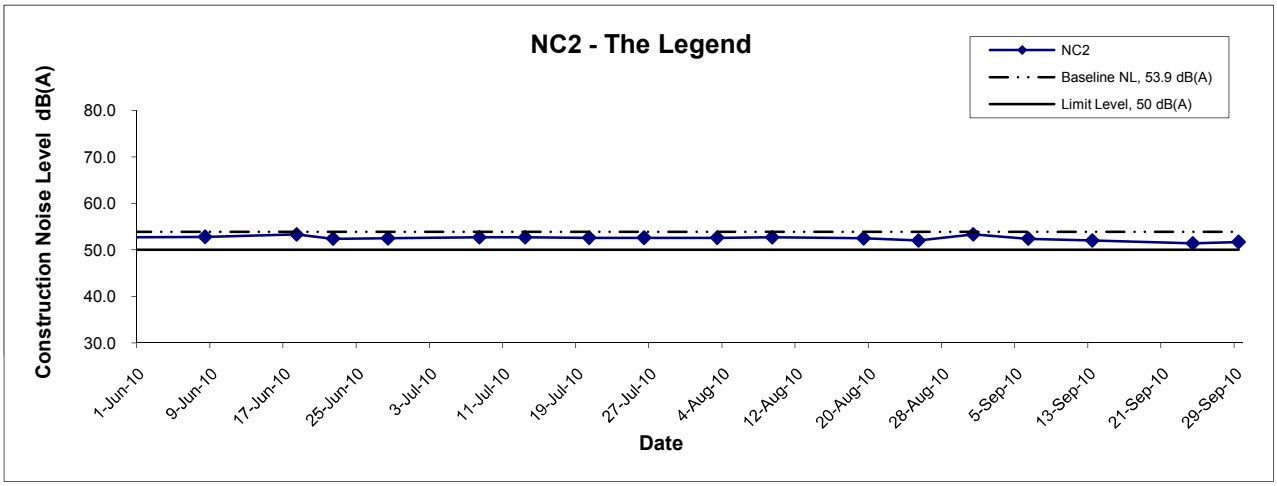


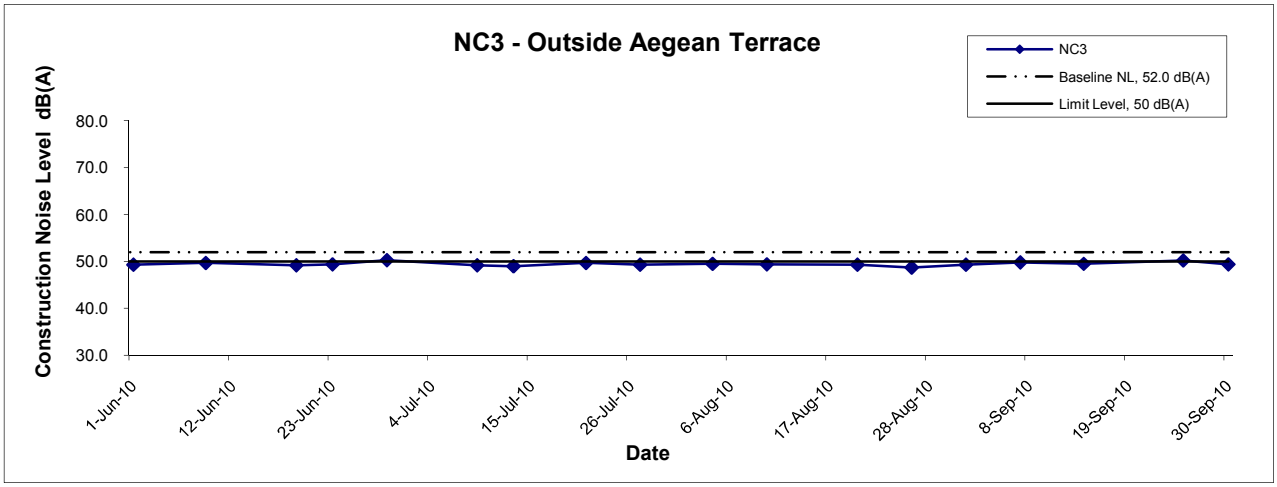


Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Sep 10	Project No. MA8001 Appendix E	CINOTECH

Noise Levels
(Restricted Hours - 23:00 to 07:00 on all days)







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

APPENDIX F
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

Appendix F - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Construction Dust	*Dust Mitigation Measures*	
	• 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.	^
	• 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).	^
	• 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.	^
	• A watering programme of once every 2 hours in normal weather conditions, and hourly in dry/windy conditions.	^
	• 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.	*
	• 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.	^
	• 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.	^
	• The heights from excavated spoils are dropped should be minimise to reduce the fugitive dust arising from unloading/loading.	^
	• 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.	^
	• 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.	^
	• 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.	^
	• Chemical wetting agents shall only be used on completed cuts and fills to reduce wind erosion.	N/A

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

Types of Impacts	Mitigation Measures	Status
	• 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. In addition, based on the *Air Pollution Control (Construction Dust) Regulation*, any works involved regulatory and notifiable works, such as stockpiling, loading and unloading of dusty materials, shall take precautions to suppress dust nuisance. • 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 $20m^3$) 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 Air Pollution Control (Construction Dust). Regulation, where appropriate, should be adopted.	^ ^ ^ ^ ^ ^ ^

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
Construction Noise	*Air borne noise* In general, potential construction noise impact can be minimized or avoided by imposing a combination of the following mitigation measures: • 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 of 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	^ ^ ^ ^ ^ ^ ^ ^ ^

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	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. • 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/m^2. • 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). 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. <u>Level 2 Use of Barriers</u> 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. 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). 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/m^2. 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. 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/m^2) located close to the operating PME. 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.	^ ^ ^ ^ ^ ^ ^

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	No construction activity is recommended during the examination period. <u>*Ground borne noise*</u> 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. Public relationship strategy with 24-hour hotline system.	^ ^

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Water Quality	<u>Precautionary measures for construction work near natural streams</u> 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: • Temporary site access to the work sites should be carefully planned and located to minimize disturbance caused to the substrates of streams/rivers and riparian vegetation by construction plant. • 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. • 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. • 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> A refuse collection vessel shall be provided to collect refuse or materials lost into the sea. 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.	 ^ ^ ^ ^ * ^ N/A

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Types of Impacts	Mitigation Measures	Status
	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).	^
	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, putrescibes, organic wastes and toxic materials and when required a refuse collection vessel be provided to collect float refuse.	^
	<u>Construction of stilling basin at Western Portal outfall</u>	
	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.	^
	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.	^
	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.	^
	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.	^
	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.	N/A
	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.	N/A

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	Transfer of rock fill material (armour rock) from the barge onto the site location should be conducted by grabbing and placement on the seabed to minimize sediment migration. No free dropping of the material will be allowed.	^
	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.	N/A
	<u>Construction of TBM tunnel at both portals and intakes</u>	
	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.	^
	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.	^
	Water flow at streams should be maintained by a temporary diversion system during the construction phase of intakes and manhole drop shafts.	^
	<u>General Construction Activities and Workforce</u>	
	A. Surface runoff	
	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.	*
	Under the *Water Pollution Control Ordinance* (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.	*
	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.	*

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	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.	^
	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 fabric0 or hydroseedings as far as practicable especially during the wet season.	*
	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.	*
	Vehicle washing areas should be drained into a settlement 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.	^
	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.	^
	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.	^
	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.	*
	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.	*

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	C. On-Site Effluent Generation	
	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.	^
	D. Protection of Existing Flora and Fauna	
	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.	^
	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.	^
	<u>Maintaining Baseflow in Downstream Watercourses</u>	
	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.	
	• Purpose of the by-pass device is to maintain the base-flow of the affected stream course.	N/A
	• The by-pass system comprises an approach link and a trapezoidal channel.	N/A
	• 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.	N/A
	• 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.	N/A
	• 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.	N/A
	• 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.	N/A

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Waste/Chemical	<u>General</u> 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. All waste materials shall be segregated into categories covering: • 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 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. 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 responsible for auditing this system. IEC should also 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. Regular cleaning and maintenance of the waste storage area should be conducted throughout the construction stage. <u>Excavated spoil</u> 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:	* ^ ^ ^ ^ ^ ^ ^ ^ ^

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	• Surface of stockpiled soil should be wetted with water when necessary especially during dry season	^
	• Disturbance of stockpiled soil should be minimized	^
	• Stockpiled soil should be properly covered with tarpaulins especially heavy rain storms	^
	• Stockpiling areas should be enclosed if possible	^
	• Stockpiling location should be away from the shoreline	^
	• An independent surface water drainage system equipped with silt traps should be installed at the stockpiling area	^
	<u>Chemical wastes</u>	
	For those processes that generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.	^
	Construction processes produce chemical waste, the contractor must register with EPD as a Chemical Waste Producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation (CWR). It should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste published by the EPD. A producer of chemical wastes should be registered as chemical waste producer and registered with EPD.	^
	The chemical waste generated shall be properly labelled, stored and disposed of according to the CWR. Proper storage area shall be allocated on site for storage of chemical waste. The chemical waste should only be collected by a licensed collector. An updated list of licensed chemical waste collector can be obtained from EPD.	*
	In case of spillage, spill absorbent material and emulsifiers should be available on site. This material should be replaced on a regular basis and the contaminated material stored in a designated, secure place.	*
	<u>General refuse</u> A reputable waste collector should be employed by the contractor to remove general refuse from the site, separate from C&DM and chemical wastes, and on regular basis in order to minimize odour, pest and litter impacts. The burning of refuse at site is not permitted under the Air Pollution Control Ordinance (Cap 311).	*
	Office waste can be reduced through recycling of paper if volumes are large enough to warrant collection.	^
	Good management practices should be implemented to ensure that refuse is properly stored and is transported for disposal of at licensed landfills.	^

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Terrestrial Ecology	During the detailed design stage, the following issues should also be considered as possible to further minimise the impacts: • 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 Artocarpus hypargyreus recorded within the temporary works area of HKU1, if to be encroached, would also be transplanted. Standard site practices including the following, should be enforced to minimise the disturbance to the surroundings: • 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. 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. 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. 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.	^ ^ ^ ^ ^ ^ ^ ^ ^

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	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. 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.	^ ^
Marine Ecology	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. 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. 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.	N/A ^ ^

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

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Cultural Heritage	The Cultural Heritage Impact Assessment has identified the following resources which will require mitigation measures during the construction stage; <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. 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. <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. 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.	^ ^ ^ ^

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Types of Impacts	Mitigation Measures	Status
Fisheries	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. 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.	N/A ^
Hazard to Life	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.	^

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 2010

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	08/07/2010	Silty water from sedimentation tank was observed discharging out at Intake HKU1. The Contractor was reminded to ensure the site discharge comply with WPCO license.	Follow-up action was needed for the item.
	08/07/2010	A pump connected the catchpit with muddy water to the discharging point was observed at Intake P5. The Contractor was reminded to clarify if sedimentation facilities were function properly and ensure all site discharge was treated before discharging out.	Follow-up action was needed for the item.
	15/07/2010	Silty water from sedimentation tank was observed still discharging out at Intake HKU1. The Contractor was reminded to ensure the site discharge comply with WPCO license.	Follow-up action was needed for the item.
	15/07/2010	A pump still connecting the catchpit with muddy water to the discharging point directly at Intake P5. The Contractor was reminded to clarify all site discharge was treated before discharging out.	Follow-up action was needed for the item.
	21/07/2010	Wastewater was observed discharging to the public drain at Intake W10 during heavy rain. The Contractor was reminded to provide sand bags/concrete bunds to direct surface runoff.	Follow-up action was needed for the item.
	21/07/2010	Silty water at the last compartment of sedimentation tank was observed directly pumping out at Intake P5 and MA15. The Contractor was reminded to ensure the silt removal facilities are functioning properly.	Follow-up action was needed for the item.
	29/07/2010	The three compartments of sedimentation tank were observed almost silty at Western Portal. The Contractor was reminded to remove deposited silt regularly to ensure the tank is functional properly.	Rectification/improvement was observed during the follow-up audit session.
Reminders	08/07/2010	The Contractor was reminded of the followings: - Provide drip tray for the air compressor at Intake MBD2.	Follow-up action was needed for the item.
	08/07/2010	The Contractor was reminded of the followings: - Regular clear the sedimentation tanks at Intake E5B, DG1 and THR2.	Follow-up action was needed for the item.
	08/07/2010	The Contractor was reminded of the followings: - Clear the deposited sediment at the U-channel at Intake E5B.	Follow-up action was needed for the item.
	08/07/2010	The Contractor was reminded of the followings: - Clear the wastes at the drainage channel and catchpit at Intake W3.	Rectification/improvement was observed during the follow-up audit session.
	08/07/2010	The Contractor was reminded of the followings:	Rectification/improvement was observed during the

Parameters	Date	Observations and Recommendations	Follow-up
		- Clear/cover the discarded cement bags at Intake MA14 and MA17.	follow-up audit session.
	08/07/2010	The Contractor was reminded of the followings: - Provide three-sides enclosure with top shelter for the grouting works at Intake MA14 and W5.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Clear the deposited slit and sand at the drainage channel at Intake PFLR1.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Clear the worn sand bags and mud at the site entrance at Intake W10.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Provide three-sides enclosure with top shelter for grouting works at Intake W5 and MA14.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - To reinforce the sand bag bund at site entrance at Intake W5.	Rectification/improvement was observed during the follow-up audit session.
	15/07/2010	The Contractor was reminded of the followings: - Clear the used cement bags at Intake MA14.	Rectification/improvement was observed during the follow-up audit session.
	15/07/2010	The Contractor was reminded of the followings: - Clear the construction wastes at the existing stream at Intake MA14.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Clear the deposited mud at the internal drain at Intake MA15.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Clear the oil spillage at the pit area at Intake BR6.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Clear the general refuse at underneath of platform at Intake W1.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - To clarify the location of sedimentation facilities at Intake W1.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - Properly cover the exposed slopes at Intake GL1 and HR1.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the followings: - To review the capacity of sedimentation tank for treating the silty water at Intake THR2.	Follow-up action was needed for the item.
	15/07/2010	The Contractor was reminded of the	Follow-up action was needed

Parameters	Date	Observations and Recommendations	Follow-up
		followings: - To seal the bottom of hoarding at Intake DG1.	for the item.
	21/07/2010	The Contractor was reminded of the followings: - Clear the deposited silt and sand at the drainage channel at Intake PFLR1.	Follow-up action was needed for the item.
	21/07/2010	The Contractor was reminded of the followings: - To provide sand bag bund at the site entrance at Intake PFLR1 for flood protection.	Follow-up action was needed for the item.
	21/07/2010	The Contractor was reminded of the followings: - Clear the sediment outside the bund at Intake P5.	Follow-up action was needed for the item.
	21/07/2010	The Contractor was reminded of the followings: - Clear the construction wastes at the existing stream at Intake MA14.	Follow-up action was needed for the item.
	21/07/2010	The Contractor was reminded of the followings: - Provide sand bags bund to surround areas of earthworks to minimize the silt from getting to the drain at Intake MA15.	Follow-up action was needed for the item.
	29/07/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the drip tray at Intake MB16 and MBD2.	Rectification/improvement was observed during the follow-up audit session.
	29/07/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the H-pile at Intake MBD2 and E7.	Rectification/improvement was observed during the follow-up audit session.
	29/07/2010	The Contractor was reminded of the followings: - Clear the stagnant water at top of tarpaulin at Intake E7.	Follow-up action was needed for the item.

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	12/08/2010	Muddy water was observed directly pumping out to the public drain at Intake PFLR1, W10 and TP789. The Contractor was reminded that all site discharge should be treated by de-silting facilities. Directly discharge of muddy water is not permitted.	Rectification/improvement was observed during the follow-up audit session.
	12/08/2010	Sedimentation tank at Intake HKU1, TP4 and TP5 was observed not functioning properly. The Contractor was reminded to clear the deposited silt/grit in the tank regularly to ensure the discharge comply with WPCO license.	Rectification/improvement was observed during the follow-up audit session.
	19/08/2010	Silty water at the last compartment of sedimentation tank was observed directly pumping out at Intake P5. The Contractor was reminded to ensure the slit removal facilities are functioning properly.	Follow-up action was needed for the item.
Reminders	05/08/2010	The Contractor was reminded of the followings: - Clear the stagnant water at top of tarpaulin at Intake E7.	Rectification/improvement was observed during the follow-up audit session.
	05/08/2010	The Contractor was reminded of the followings: - Clear the discarded leaves at wheel washing bay at Intake E7.	Rectification/improvement was observed during the follow-up audit session.
	05/08/2010	The Contractor was reminded of the followings: - Clear the deposited mud at the internal drain at Intake HR1.	Rectification/improvement was observed during the follow-up audit session.
	05/08/2010	The Contractor was reminded of the followings: - Properly cover the exposed slope at Intake HR1.	Rectification/improvement was observed during the follow-up audit session.
	05/08/2010	The Contractor was reminded of the followings: - To review the capacity of sedimentation tank for treating the silty water at Intake TP4.	Rectification/improvement was observed during the follow-up audit session.
	12/08/2010	The Contractor was reminded of the followings: - Clear the deposited silt at internal drain at Intake PFLR1.	Rectification/improvement was observed during the follow-up audit session.
	12/08/2010	The Contractor was reminded of the followings: - Clear the deposited silt at the drain near the silt entrance at Intake W10.	Rectification/improvement was observed during the follow-up audit session.
	12/08/2010	The Contractor was reminded of the followings: - Clear the construction wastes at the slope area at Intake MA14.	Rectification/improvement was observed during the follow-up audit session.
	12/08/2010	The Contractor was reminded of the followings: - Clear and avoid the mud from the soil nailing works getting to the public road at Intake M3.	Rectification/improvement was observed during the follow-up audit session.
	12/08/2010	The Contractor was reminded of the followings:	Rectification/improvement was observed during the

Parameters	Date	Observations and Recommendations	Follow-up
		- Clear the worn sand bags at the site entrance at Intake TP5.	follow-up audit session.
	12/08/2010	The Contractor was reminded of the followings: - Regular clear the sediment at near the skip at Intake THR2.	Rectification/improvement was observed during the follow-up audit session.
	19/08/2010	The Contractor was reminded of the followings: - To clear the general refuse at PFLR1.	Follow-up action was needed for the item.
	19/08/2010	The Contractor was reminded of the followings: - To clear the worn sand bag at Intake HKU1.	Follow-up action was needed for the item.
	19/08/2010	The Contractor was reminded of the followings: - Clear regularly and avoid the mud from the soil nailing works getting to the public road at Intake M3, for preventing the flow of silty water during rain.	Follow-up action was needed for the item.
	27/08/2010	The Contractor was reminded of the followings: - Clear the silt and debris at the drip tray at Intake BR6.	Follow-up action was needed for the item.
	27/08/2010	The Contractor was reminded of the followings: - Properly pumping the silty water for treatment before discharging out at Intake BR6.	Follow-up action was needed for the item.
	27/08/2010	The Contractor was reminded of the followings: - Clear the chemical oil materials at the pit area at Intake BR6.	Rectification/improvement was observed during the follow-up audit session.
	27/08/2010	The Contractor was reminded of the followings: - Clear the deposited mud at the drainage at the site entrance of Intake W3.	Rectification/improvement was observed during the follow-up audit session.
	27/08/2010	The Contractor was reminded of the followings: - Provide anti-mosquito measures for the stagnant water at Intake W3.	Rectification/improvement was observed during the follow-up audit session.

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

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	01/09/2010	Settling runoff form excavations was observed directly pumping out to public drain at Intake SM1. The Contractor was reminded all site runoff should be treated with desilting facilities prior to disposal.	Rectification/improvement was observed during the follow-up audit session.
	01/09/2010	Water from water recycling tank was observed overflow and discharging to the public road at Intake BR6. The Contractor was reminded to rectify this situation as soon as possible.	Follow-up action was needed for the item.
	09/09/2010	Much of muddy water accumulated at near the existing drain at Intake GL1 after heavy rainstorm. The Contractor was reminded to reinforce the bund area to avoid any silty water from discharging out.	Follow-up action was needed for the item.
	24/09/2010	Discharge from site at Intake THR2 and BR6 were observed not discharge at designated discharging point. The Contractor was reminded to rectify the deficiencies immediately.	Follow-up action was needed for the item.
	24/09/2010	Muddy water and stockpile of sediment were observed accumulate at near the existing stream at Intake GL1. The Contractor was reminded to reinforce the bund area to prevent any silt/wastewater from getting to the stream.	Follow-up action was needed for the item.
Ecology	01/09/2010	Silty water was observed discharging to the stream at Intake TP789. The Contractor was reminded to ensure the capacity of sedimentation tank to treat the muddy water is adequate.	Rectification/improvement was observed during the follow-up audit session.
Reminders	01/09/2010	The Contractor was reminded of the followings: - Clear the deposited mud at the internal drain at Intake PFLR1, P5, BR6 and GL1.	Follow-up action was needed for the item.
	01/09/2010	The Contractor was reminded of the followings: - To remove the accumulated sediment at near the existing drain at Intake HKU1 and GL1.	Follow-up action was needed for the item.
	01/09/2010	The Contractor was reminded of the followings: - To clear the deposited silt/grit in the sedimentation tanks at Intake HKU1, W10, P5 and TP4.	Follow-up action was needed for the item.
	01/09/2010	The Contractor was reminded of the followings: - Clear the worn sand bags at the site entrance of Intake W10.	Follow-up action was needed for the item.
	01/09/2010	The Contractor was reminded of the followings: - Clear the stagnant water with floating paint oil as chemical waste at Intake W8.	Follow-up action was needed for the item.
	01/09/2010	The Contractor was reminded of the followings: - To remove the chemical containers on the drain at Intake TP4.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
	01/09/2010	The Contractor was reminded of the followings: - Clear the silt and debris at the drip tray at Intake BR6.	Rectification/improvement was observed during the follow-up audit session.
	01/09/2010	The Contractor was reminded of the followings: - Properly pumping the silty water for treatment prior to disposal at Intake BR6.	Rectification/improvement was observed during the follow-up audit session.
	01/09/2010	The Contractor was reminded of the followings: - To effective use the sound absorption sheet at Intake E7 to minimize the noise impact.	Rectification/improvement was observed during the follow-up audit session.
	09/09/2010	The Contractor was reminded of the followings: - Clear the deposited silt/debris which blocks the drainage at Intake MBD2, GL1 and W0.	Follow-up action was needed for the item.
	09/09/2010	The Contractor was reminded of the followings: - Clear the deposited silt/debris at the settling tank for wheel washing facilities at Intake E5B and E5A.	Follow-up action was needed for the item.
	09/09/2010	The Contractor was reminded of the followings: - Provide drip tray for the air compressor at Intake E5B.	Follow-up action was needed for the item.
	09/09/2010	The Contractor was reminded of the followings: - To effective use of sedimentation facilities (e.g. wetsep) at Intake DG1.	Follow-up action was needed for the item.
	09/09/2010	The Contractor was reminded of the followings: - Clear the silt and debris at the drip tray at Intake BR6.	Rectification/improvement was observed during the follow-up audit session.
	09/09/2010	The Contractor was reminded of the followings: - To reinforce the bunds to surround area of earthworks at Intake BR6 to prevent muddy water from discharging to public road.	Rectification/improvement was observed during the follow-up audit session.
	09/09/2010	The Contractor was reminded of the followings: - Clear the general refuse and the slope area at Intake W1.	Follow-up action was needed for the item.
	09/09/2010	The Contractor was reminded of the followings: - Provide drip tray for the chemical containers at Intake MA14.	Follow-up action was needed for the item.
	09/09/2010	The Contractor was reminded of the followings: - Clear the standing water at underneath of mobile crane at Intake PFLR1.	Rectification/improvement was observed during the follow-up audit session.
	16/09/2010	The Contractor was reminded of the followings: - Clear the wastes at the drain at Intake HKU1, W10, P5 and GL1.	Follow-up action was needed for the item.
	16/09/2010	The Contractor was reminded of the followings: - To replace the worn sand bags at the entrance of W10.	Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
	16/09/2010	The Contractor was reminded of the followings: - Clear the oil spillage as chemical waste at Intake P5.	Follow-up action was needed for the item.
	16/09/2010	The Contractor was reminded of the followings: - Ensure the water discharge comply with WPCO license at Intake P5 and TP5.	Follow-up action was needed for the item.
	16/09/2010	The Contractor was reminded of the followings: - Clear the standing water at the corner area at Intake W8.	Follow-up action was needed for the item.
	16/09/2010	The Contractor was reminded of the followings: - Clear the general refuse at the slope area at Intake W1.	Follow-up action was needed for the item.
	16/09/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the drip tray at Intake W1 and MB16.	Follow-up action was needed for the item.
	16/09/2010	The Contractor was reminded of the followings: - Provide well maintenance for the plant equipments to avoid smoke emission at Intake HR1.	Rectification/improvement was observed during the follow-up audit session.
	16/09/2010	The Contractor was reminded of the followings: - Provide drip tray for the chemical containers at Intake HR1.	Rectification/improvement was observed during the follow-up audit session.
	16/09/2010	The Contractor was reminded of the followings: - Provide mitigation measures to prevent any mud and sediment from getting to the stream water at Intake GL1.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Provide drip tray for the air compressor at Intake E5B.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Properly store the chemical containers at Intake E5A and GL1.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the H-pile and top of tarpaulin at Intake E7.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Clear the stagnant water at the drip tray at Intake BR6.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Properly deploy the sound absorption sheet at Intake E7 to minimize the noise.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Clear the deposited silt and sediment at the drain at Intake GL1.	Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
	24/09/2010	The Contractor was reminded of the followings: - Clear the stagnant water regularly at Intake M3 especially after the rain.	Follow-up action was needed for the item.
	24/09/2010	The Contractor was reminded of the followings: - Properly provide enclosure during the grouting work to prevent dust generation at Intake TP789.	Follow-up action was needed for the item.
	30/09/2010	The Contractor was reminded of the followings: - To ensure the site discharges at Intake P5 comply with WPCO license.	Rectification/improvement was not observed during the follow-up audit session.
	30/09/2010	The Contractor was reminded of the followings: - Properly cover the stockpile of sediment at Intake W5.	Rectification/improvement was observed during the follow-up audit session.
	30/09/2010	The Contractor was reminded of the followings: - Clear the silt and debris at the internal drain at Intake P5.	Follow-up action was needed for the item.
	30/09/2010	The Contractor was reminded of the followings: - Clear the standing water at the H-pile at Intake W10.	Rectification/improvement was observed during the follow-up audit session.

APPENDIX H
SUMMARY STATUS OF ENVIRONMENTAL LICENCES AND PERMITS

Appendix H - Summary of Environmental Licensing and Permit Status

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

Permit No.	Valid Period		Details	Status
	From	To		
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-RS0512-10	22/06/10	21/12/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Hong Kong West Drainage Tunnel (Eastern Portal) (DSD Contract No. DC/2007/10), Tai Hang Road, Causeway Bay, Hong Kong.	Valid
GW-RS0734-10	25/08/10	24/02/11		
GW-RS0463-10	14/06/10	13/07/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10).	Valid
GW-RS0566-10	14/07/10	13/08/10		
GW-RS0674-10	14/08/10	13/09/10		
GW-RS0774-10	14/09/10	13/10/10		
GW-RS0412-10	24/11/09	23/05/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at a construction site of "Hong Kong West Drainage Tunnel" near Stubbs Road Garden, Wan Chai, Hong Kong	Valid
GW-RS0522-10	24/05/10	23/11/10		
GW-RS0733-10	24/06/10	23/12/10		
GW-RS0075-10	29/01/10	28/07/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at a site near the junction of Mount Butler Road and Henderson Road, Hong Kong.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RS0155-10	23/02/10	21/08/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Smithfield Road outside Mei Wah Mansion, Kennedy Town, Hong Kong.	Valid
GW-RS0128-10	20/02/10	19/08/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Section of Pokfulam Road (near Football Field, Pokfulam Road Playground), Hong Kong	Valid
GW-RS0710-10	19/08/10	18/02/11		
GW-RS0441-10	01/06/10	30/11/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at outside Hongkong Electric Centre, Kennedy Road, Hong Kong	Valid
GW-RS0468-10	10/06/10	09/12/10	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Junction of Magazine Gap Road and May Road, Mid-levels, Hong Kong.	Valid

APPENDIX I
WASTE GENERATED QUANTITY

Monthly Waste Flow Table

Quarter ending		Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see notes 2)	Chemical Waste	Others, e.g. general refuse
	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in Kg)	(in Kg)	(in Kg)	(in Kg)	(in m^3)
Jan 2010	39537		15	38356	1166		6550	220		650	118
Feb 2010	30693		62	29570	1061		10730	180		3222	78
Mar 2010	40031		53	39263	715		13940	300		3726	112
Apr 2010	43025		86	42133	806		12810	350		1685	84
May 2010	42039		38	40859	1142		12290	315		2287	78
Jun 2010	44943		10	42437	2496		14700	350		2531	95
Sub-Total	240268		263	232619	7386		71020	1715		14101	565
July 2010	50156		19	46715	3422		19330	350		8574	78
Aug 2010	38877		0	35282	3595		15190	315		1901	84
Sep 2010	41531		0	38228	3302		36870	560		0	90
Oct 2010											
Nov 2010											
Dec 2010											
Total	370832		282	352844	17705		142410	2940		24576	817

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 2010 are upto 30 September 2010.
(4) Assuming the conversion factor from m^3 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
(Three Action Level exceedances were recorded due to the complaint received on 2nd and 3rd August 2010)

Western Portal

(D) Exceedance Report for Air Quality (1 hour TSP)
(NIL in the reporting quarter)

(E) Exceedance Report for Air Quality (24 hours TSP)
(NIL in the reporting quarter)

(F) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intakes

Intake DG1
(G) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake E5A
(H) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake E7
(I) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake MA14
(J) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake PFLR1
(K) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake RR1
(L) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake THR2
(M) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake W0
(N) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake W5

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

Intake W8

(P) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake P5

(Q) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake BR6

(R) Exceedance Report for Construction Noise
(NIL in the reporting month)

Intake TP789/TP4

(S) Exceedance Report for Construction Noise
(Five Action Level exceedances were recorded due to the complaints received on 2nd, 5th, 12th and 13th August 2010 respectively)

APPENDIX K
COMPLAINT LOGS

APPENDIX K – COMPLAINT LOG

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
Com-2008-05-003	Construction site at Eastern Portal	22 May 2008	The complaint was lodged by Ms. Ng on 22 May 2008 regarding noise nuisance generated from the construction activities at the construction site of Eastern Portal	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. 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. 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-2008-05-004	Construction site at Western Portal (Marine Works)	31 May 2008	The complaint was lodged by one of the local resident on 31 May 2008 regarding the noise nuisance generated from the marine works at Western Portal.	According to the Contractor, only two derrick barges and one tug boat were operated for the seabed formation works around 18:00 hrs on 31 May 2008 at the Western Portal. No other construction activities were conducted.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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.	
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 Limitied) adjacent to Eastern Portal area. 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. 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.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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.	
COM-2008-10-011	Construction site at Western Portal	11 October 2008	The complaint was lodged by one of the resident of Victoria Road, Ms Cheung on 11 October regarding about the noise nuisance generated from the construction works at Western Portal	According to the Contractor, excavation works and marine works including sheet piling works were also conducted at the time of complaint at Western Portal 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) 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.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A). Also, the Contractor has implemented the remedial measure that reschedule the starting time of the construction works to 8:15am on every Saturday immediately after receiving the complaint to minimize the noise nuisance to the nearby residents.	
COM-2008-10-012	Construction site at Intake TP5	15 October 2008	The complaint was lodged by Mr Choi on 15 October 2008 regarding about the noise generated from the GI works, which starts from 8:30 hrs to 17:30 hrs next to Aigburth at May Road.	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. 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 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	Closed
COM-2008-10-013	Construction site at Intake TP5	31 October 2008	The complaint was lodged by Mr Lai on 31 October 2008 regarding the black smoke is emitted and noise is generated from the machine at the site (Intake TP5), he needed to close the windows to prevent the black smoke from entering his flat and to attenuate the noise.		

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-11-019	Construction site at Western Portal	29 November 2008	The complaint was lodged by Ms Cheung on 1 December 2008 regarding noise nuisance at Western Portal at 08:30 hrs approx on 29 November 2008 and 00:30 on 1 December 2008.	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. 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).	Closed
COM-2008-12-020	Construction site at Western Portal	28 December 2008	The complaint was lodged by Ms Cheung on 28 December 2008 regarding the excavator was found working within Western Portal works area on Sunday.	The complaint was considered not justifiable as Construction Noise Permit (CNP) – CNP No. GW-RS0827-08 has been granted from EPD for carrying out the construction works at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10) between 1 December 2008 at 1900 hours and 28 February 2009 at 2400 hours. The powered mechanical equipment can be operated during the hours as below: a) Any day not being a general holiday between 1900 – 2300 hours b) General holiday (**including Sundays**) between 0700 – 1900 hours	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-01-021	Muddy Water Discharged into Sea at Western Portal	21 January 2009	Muddy water was observed from discharging into the sea at Western Portal Site	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 condition of the silt curtain.	Closed
COM-2009-01-022(A)	Construction site at Western Portal	12 January 2009	The complaint was lodged by Mr Chan, the assistant of Mr CHAN Ngok pang (Southern District Councillor) about the resident in Baguio Villa near Victoria Road, Mr Ronald Chan concerns on the noisy activities carried out at Western Portal site.	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.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-02-023	Construction site at Eastern Portal	7 February 2009	Complaint of Construction Noise at Early Morning (07:45hrs) at Eastern Portal Site	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. 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.	Closed
COM-2009-03-025	Construction site at Western Portal	2 March 2009 4 March 2009	Complaint of noise generated by midnight works and night-time lighting at Western Portal Site	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. The Contractor was reminded to strengthen their site supervision and implement necessary noise mitigation measures to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours. Regarding the complaint of spotlight hanging on the plant at the site portion WP, The Contractor was reminded to implement the mitigation measures for Visual during the construction by controlling the night-	Closed
COM-2009-03-026		7 March 2009	Complaint of pipe hitting noise at midnight at Western Portal Site.		

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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. 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. In addition, DNJV already arranged tailors made training for the Production Team including the senior management and foreman to explain the conditions and requirements listed on the CNP and delegated one Engineer to ensure all construction activities and PMEs to be used are fully complying with CNP and legislation requirements before the commencement of the construction activities during the restricted hour.	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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. The Contractor was reminded to strengthen their site supervision by delegated Engineer to ensure all construction activities and PMEs to be used are fully complying with CNP and legislation requirements and implement necessary noise mitigation measures as recommended in the Approved EIA report to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours.	
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	Closed
COM-2009-05-031		4 May 2009	Complaint of low frequency noise emitted from the construction site at Western Portal.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
		11 May 2009	Complaint of Construction Noise nuisance generated from the Western Portal Site from day to night.	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 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 Mr. Lee regarding the transportation and disposal of construction wastes from Hong Kong West	Base on the information collected, alternative disposal ground is proposed by The Contractor and they have been submitted the relevant information and sought the approval from Supervising	Closed

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			hand-held electric breaker.	compliance on air quality was identified. The environmental conditions of the site will be continuously reviewed and monitored. 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.	
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.	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. Regarding the complaint of construction noise impact, the noise levels measured at The Legend (NC2) during the construction works in the normal working hours were well below the construction noise limit level. 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	Closed

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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.	
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.	Based on the information collected, the Contractor has implemented the dust suppression measures to prevent dust nuisance from the construction activities. 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.	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.	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. 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. In addition, a large scale innovation works being undertaken at a resident building adjacent to the Pok Fu Lam Height was observed during the routine site inspection.	Closed

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				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 (Mr. Stephen Chan) on 1st March 2010 about the construction noise nuisance from the construction site at Intake PFLR 1	Based on the information gathered in the Investigation, the noise levels measured at Honey Court (NC11) in February and March 2010 were ranged from 62.3 dB(A) to 74.7 dB(A). The noise levels were marginally below the 75dB (A) limit level. The contractor was reminded to implement necessary mitigation measures to curb inducing contribution to the surrounding noise environment.	Closed

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

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			TP789/TP4 in the morning.	mitigation measures to reduce noise impact to the residents arising from the noise generation works. The Contractor agreed to reschedule the starting time of the noisy works to 9:00am on in the morining that no noisy works such as rock breaking will be conducted before 9:00am. In addition, enclosures consist of noise absorption blankets have been applied for enclosing Intakes construction areas to minimize the noise nuisance to the nearest residents.	
COM-2010-04-100	Western Portal	30 April 2010	The public complaint was received from the resident of Bel-Air on 30th April 2010 regarding the dust nuisance generated during loading / unloading operation from two barges at pier of Cyberport. Dark smoke was also emitted from the two barges.	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: - 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. Although the air quality levels measured at AQ2 and AQ3 were below the air quality criteria, we advised the Contractor to maintain the existing air quality mitigation measures and review the existing measures if such measures are enough and appropriate to suit the site condition from time to time during different construction phases to minimize the dust nuisance. Other suitable dust control measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, where appropriate, should be adopted. Nevertheless, the Contractor is also committed to take sufficient dust mitigation measures as recommended in the approved EIA report including installation of 3-sided curtain-like enclosure at the conveyor discharge point to the barge to minimize the dust nuisance on the nearby residents.	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.		
COM-2010-06-113	Intake PFLR1	2 June 2010	The complaint was received by DSD on 2 June 2010 regarding siren sound was generated from the site throughout the day which caused nuisance.	The noise source was generated from the alert system of the backhoe during operation. The backhoe was removed off site on 3 June 2010.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
	Western Portal	15 June 2010	A public complaint was received by EPD hotline on 15th June 2010 complained about the construction works from Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site) affect their health of respiratory system	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the Action Level (321µg/m3 for 1 hour TSP and 156µg/m3 for 24 hour TSP). Also, the Contractor has implemented appropriate dust mitigation measures, such as providing water sprays on exposed surface, covering dusty materials and placing dust generation works in an area sheltered on the top and three sides etc on site to reduce dust impact to the residents arising from the construction works.	Closed
COM-2010-07-121	Western Portal	15 July 2010	Cyberport Management Office lodged a complaint in writing regarding the sands and mud left by the dump trucks on Cyberport road	DNJV has delivered the reply letter to Cyberport Management Office on 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. 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. 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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				deposited on roads. Proper maintenance of the tailor-made tanks equipped at the trucks is also needed to avoid any leakage.	
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 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-2010-07-123 (2)		2 August 2010	The complaint was received by DSD concerning the noise generated from construction site at 19:00.		
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: - 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. - To arrange the construction working	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 was		

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			carried out after 18:00hrs at Intake TP4	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		