



CONTRACT NO: HK/2011/07

WANCHAI DEVELOPMENT PHASE II AND CENTRAL
WANCHAI BYPASS
SAMPLING, FIELD MEASUREMENT AND TESTING WORK
(STAGE 2)

ENVIRONMENTAL PERMIT NO. EP-364/2009/A,
FURTHER ENVIRONMENTAL PERMIT NOS. FEP-01/364/2009,
FEP-02/364/2009, FEP-03/364/2009, FEP-05/364/2009/A, FEP-
06/364/2009/A AND FEP-07/364/2009/A

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

- MARCH 2012 -

CLIENTS:

Civil Engineering and Development
Department

and

Highways Department

PREPARED BY:

Lam Geotechnics Limited

11/F Centre Point
181-185 Gloucester Road,
Wanchai, H.K.

Telephone: (852) 2882-3939
Facsimile: (852) 2882-3331
E-mail: info@lamenviro.com
Website: <http://www.lamenviro.com>

CERTIFIED BY:

Raymond Dai
Environmental Team Leader

DATE:

16 April 2012

Ref.: AACWBIECEM00_0_2638L.12

16 April 2012

By Post and Fax (2691 2649)

AECOM Asia Company Limited
8/F, Tower 2
Grand Central Plaza
138 Shatin Rural Committee Road,
Shatin, New Territories,
Hong Kong

Attention: Mr. Kelvin CHENG

Dear Sir,

**Re: Wan Chai Development Phase II and Central-Wan Chai Bypass
Monthly Environmental Monitoring and Audit Report (March 2012)
for EP-364/2009/A, FEP-01/364/2009, FEP-02/364/2009, FEP-03/364/2009,
FEP-05/364/2009/A, FEP-06/364/2009/A and FEP-07/364/2009/A**

Reference is made to the Environmental Team's submission of the captioned Monthly Environmental Monitoring and Audit (EM&A) Report for March 2012 dated 16 April 2012.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 in the captioned Environmental Permits.

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

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c.	HyD	Mr. Jones Lai	by fax: 2714 5289
	CEDD	Mr. Patrick Keung	by fax: 2577 5040
	AECOM	Mr. Francis Leong / Mr. Stephen Lai	by fax: 2691 2649
	Lam	Mr. Raymond Dai	by fax: 2882 3331

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EXECUTIVE SUMMARY

- i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – March 2012 specific for Environmental Permit no. EP-364/2009/A, Further Environmental Permit nos. FEP-01/364/2009, FEP-02-364/2009, FEP-03-364/2009, FEP-05/364/2009/A, FEP-06/364/2009/A and FEP-07/364/2009/A. The EM&A report is prepared by the Environmental Team (ET) employed under Contract No. HK/2011/07 – Wan Chai Development Phase II and Central Wanchai Bypass – Sampling, Field Measurement and Testing Works (Stage 2). This report presents the environmental monitoring findings and information recorded during the period of February to March 2012. The cut-off date of reporting is at 27th of each reporting month.
- ii. In the reporting month, the principal work activities of individual contracts are included as follows:

Contract no. HY/2009/17 - Central - Wan Chai Bypass (CWB) at FEHD Whitfield Depot - Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 - Central - Wan Chai Bypass (CWB) - Central Interchange under FEP-05/364/2009/A

- Instrumentation works for Manholes and Intake Culvert Survey
- Excavation of trial pit
- Drainage work
- Site investigation and pre-drilling works
- Diaphragm wall construction
- Hoarding erection
- Roadwork
- Sheet-piling
- Grout curtain
- Tree transplanting

Contract no. HK/2009/01 - Wan Chai Development Phase II - Central - Wan Chai Bypass at Hong Kong Convention and Exhibition Centre - Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction works for CWB (stage 2) and SCL protection works.
- Pre-drilling works for CWB (stage 2).
- Pre-bored H pilling works for CWB (stage 1).
- Pre-bored H pilling for exhaust duct.
- Installation of shoring system for construction of CWB top slab at stage 1.
- Installation of shoring system for construction of exhaust duct structure at stage 1.
- Installation of shoring system for chamber construction at north bank of HKCEC Water Channel.
- Guide wall and temporary flat slab for construction of CWB Diaphragm Wall (stage 2).
- Shear pin installation work for SCL Diaphragm wall.

Contract no. HK/2009/02 - Wan Chai Development Phase II - Central - Wan Chai Bypass at

Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Shear pin at WCR1 area.

Contract no. HY/2009/15 - Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction preparation works at TS4
- ELS works at TS1 and TPCWAE
- Night time protection works at CHT
- Cut off wall preparation works at Hung Hing Road and POC

Contract no. HY/2009/19 - Central - Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Marine Piling
- Preparing for pre-bored H-pile works for Culvert U

Noise Monitoring

- iii. Noise monitoring during daytime was conducted at M1a - Harbour Road Sports Center; M2b - Noon-day gun area; M3a - Tung Lo Wan Fire Station; M4b - Victoria Center; M5b - City Garden, M6 - HK Baptist Church Henrietta Secondary School, M7e and M7w – International Finance Centre Eastern and Western End of Podium on a weekly basis.
- iv. 2 limit level exceedances were recorded at M7e – International Finance Centre Eastern End of Podium on 22 and 27 March 2012. After checking contractors' work schedules and investigation found that construction works were conducted as the major noise sources contributed in the noise monitoring. Both exceedances were considered as project related.
- v. 1 action level was recorded for HY/2009/19 as a complaint regarding noise impact was received on 3 March 2012.
- vi. 3 limit level exceedances were recorded at M6 – HK Baptist Church Henrietta Secondary School on 28 February, 13 and 27 March 2012. After checking contractors' work schedules and investigation found that traffic was the major noise sources contributed in the noise monitoring. The exceedances were considered as non-project related.
- vii. 24-hour real time noise monitoring was conducted at RTN1 - FEHD Hong Kong Transport Section Whitefield Depot for the piling works in FEHD Whitfield Depot and RTN2 – Tunnel (North Point Section) and Island Eastern Corridor Link. No action and limit level exceedance was recorded in the reporting period.

Air Monitoring

- viii. Due to lack of electricity supply, the 24 TSP monitoring at the following stations were rescheduled:

CMA1b: from 13 Mar 2012 to 14 Mar 2012

CMA3a: from 24 Mar 2012 to 26 Mar 2012

- ix. 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted at CMA1b - Oil Street Community Liaison Centre; CMA2a - Causeway Bay Community Center; CMA3a - CWB PRE Site Office Area; CMA4a – Society for the Prevention of Cruelty to Animals; CMA5a - Children Garden opposite to Pedestrian Plaza; MA1e and MA1w – International Finance Centre eastern and western wing on every six days basis. No action and limit level exceedance were recorded in the reporting period.

Complaints, Notifications of Summons and Successful Prosecutions

- x. There was one environmental complaint regarding noise impact received on 3 March 2012, which was referral to HY/2009/19. No further complaint was received after follow-up action and investigation in this reporting month.

Site Inspections and Audit

- xi. The Environmental Team (ET) conducted weekly site inspections for Contract no. HY/2009/15, HY/2009/17, HY/2009/18, HY/2009/19, HK/2009/01 and HK/2009/02 in this reporting period. The Contractors rectified major observations and recommendations made during the audit sessions. No non-conformance was identified during the site inspections.

Future Key Issues

- xii. In the coming reporting month, the principal work activities of individual contracts are anticipated as follows:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- Instrumentation works for Manholes and Intake Culvert Survey
- Excavation of trial pit
- Drainage work
- Site investigation and pre-drilling works
- Diaphragm wall construction
- Hoarding erection
- Roadwork
- Grout curtain
- Sheet-piling
- Tree transplanting

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction works for both CWB and SCL Protection Works.
- Guide wall for construction of CWB Diaphragm wall at Stage 2.
- Pilling works for CWB and exhaust duct at Stage 1.
- Pilling works for SCL Protection Works.
- Installation of sheet pile for construction of exhaust duct and excavation works.
- Installation of sheet pile for construction exhaust duct.
- Installation of sheet pile for construction of SCL top slab.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Continue deep excavation works below -4.5mPD for western tunnel portion and below +0.5mPD for eastern tunnel portion.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction at TS4
- ELS works at TS1 and TPCWAE
- Night time protection works at CHT
- Cut off wall preparation works at Hung Hing Road and POC

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Marine Piling
- Construction of socket-H pile
- Construction of pre-bored H-pile works for Culvert U

1 INTRODUCTION

1.1 Scope of the Report

- 1.1.1. Lam Geotechnics Limited (LGL) has been appointed to work as the Environmental Team (ET) under Environmental Permit no. EP-364/2009A and Further Environmental permit nos. FEP-01/364/2009, FEP-02/364/2009, FEP-03/364/2009, FEP-05/364/2009/A, FEP-06/364/2009/A and FEP-07/364/2009/A to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) and in the EM&A Manual of the approved EIA Report for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-014/2001).
- 1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.3 of EM&A Manual and “*Environmental Monitoring and Audit Requirements*” under Particular Specification Section 27.
- 1.1.3. This report documents the finding of EM&A works for Environmental Permit (EP) no. EP-364/2009/A, Further Environmental Permit (FEP) nos. FEP-01-364/2009, FEP-02/364/2009, FEP-03/364/2009, FEP-05/364/2009/A, FEP-06/364/2009/A and FEP-07/364/2009/A during the period of February to March 2012. The cut-off date of reporting is at 27th of each reporting month.

1.2 Structure of the Report

- Section 1** ***Introduction*** – details the scope and structure of the report.
- Section 2** ***Project Background*** – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.
- Section 3** ***Status of Regulatory Compliance*** – summarizes the status of valid Environmental Permits / Licenses during the reporting period.
- Section 4** ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.
- Section 5** ***Monitoring Results*** – summarizes the monitoring results obtained in the reporting period.
- Section 6** ***Compliance Audit*** – summarizes the auditing of monitoring results, all exceedances environmental parameters.
- Section 7** ***Cumulative Construction Impact due to the Concurrent Projects*** –

summarizes the relevant cumulative construction impact due to the concurrent activities of the concurrent Projects.

Section 8 ***Site Inspection*** – summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.

Section 9 ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution

Section 10 ***Conclusion***

2 PROJECT BACKGROUND

2.1 Background

2.1.1. “Wan Chai Development phase II and Central-Wan Chai Bypass” and “Central-Wan Chai Bypass and Island Eastern Corridor Link” (hereafter called “the Project”) are Designed Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Reports for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-041/2001) and Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) have been approved on 31 August 2001 and 11 December 2008 respectively.

2.1.2. The key purpose of Wan Chai Development Phase II (WDII) is to provide land at Wan Chai North and North Point for construction of the Central-Wan Chai Bypass and Island Eastern Corridor Link (CWB). Land formed under the project will be developed as a world-class waterfront promenade joining that at the new Central waterfront for public enjoyment.

2.1.3. There is a compelling and present need for the CWB to provide relief to the very congested east-west Connaught Road Central/Harcourt Road / Gloucester Road Corridor (the Corridor) which is currently operating beyond its capacity. The CWB will provide relief to the existing congestion along the Corridor and cater for the anticipated growth of traffic on Hong Kong Island. Without the CWB and its access roads, there will not be sufficient capacity to serve the heavy traffic demands at both strategic and local levels.

2.2 Scope of the Project and Site Description

2.2.1. Design and Construction of Central – Wan Chai Bypass and Island Eastern Corridor Link under the Project involves the construction and operation of a trunk road and its road tunnel more than 800m in length between portals that is shown at Figure 2.1.

2.2.2. The study area encompasses existing developments from Central to North Point. The scope of the Central-Wanchai Bypass (CWB) and Island Eastern Corridor Link (IECL) includes:

- A dual three-lane trunk road, approximately 4.5 km in length, and tunnel approximately 3.7 km in length defined from the connection with the existing Rumsey Street Flyover in Central, through to a connection with the existing Island Eastern Corridor to the east of the Causeway Bay Typhoon Shelter (CBTS);
- The Central Interchange near the Rumsey Street Flyover to provide road connections to the Central area;
- Tunnel control buildings and ventilation buildings;
- Slip roads to connect the CWB to the local road system in the Wan Chai North and Causeway Bay area;
- Associated road lighting, road signing, traffic control and surveillance system; and
- Other associated works.

2.2.3. The project also contains various Schedule 2 DPs that, under the EIAO, require Environmental Permits (EPs) to be granted by the DEP before they may be either constructed or operated. **Table 2.1** summarises the five individual DPs under this Project. **Figure 2.1** shows the locations of these Schedule 2 DPs.

Table 2.1 Schedule 2 Designated Projects under this Project

Item	Designated Project	EIAO Reference	Reason for inclusion
DP1	Central-Wanchai Bypass (CWB) including its road tunnel and slip roads	Schedule 2, Part I, A.1 and A.7	Trunk road and road tunnel more than 800 m in length
DP2	Road P2 and other roads which are classified as primary/district distributor roads	Schedule 2, Part I, A.1	Primary / district distributor roads
DP3	Reclamation works including associated dredging works	Schedule 2, Part I, C.1 and C.12	Reclamation more than 5 ha in size and a dredging operation less than 100 m from a seawater intake point
DP5	Wan Chai East Sewage Outfall	Schedule 2, Part I, F.5 and F.6	Submarine sewage pipelines with a total diameter more than 1,200 mm and include a submarine sewage outfall
DP6	Dredging for the Cross-harbour Water Mains from Wan Chai to Tsim Sha Tsui	Schedule 2, Part I, C.12	A dredging operation less than 100 m from a seawater intake point

2.3 Division of the Project Responsibility

2.3.1. Due to the multi-contract nature of the Project, there are a number of contracts sub-dividing the whole works area into different work areas to be commenced. Contractors of individual contracts will be required by the EP holder to apply Further Environmental Permits such that the impact monitoring stations are sub-divided accordingly to facilitate the implementation of EM&A programme and to streamline the EM&A reporting for individual FEP holders correspondingly.

2.3.2. In the reporting month, Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) was commenced on 13 July 2011. The details of individual contracts are summarized in **Table 2.2**.

Table 2.2 Details of Individual Contracts under the Project

Contract No.	Contract Title	Associated DP(s)	Construction Commencement Date
HY/2009/17	Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works.	DP1	5 October 2010
HY/2009/18	Central – Wan Chai Bypass (CWB) – Central Interchange	DP1	21 April 2011
04/HY/2006	Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street	DP1	September 2010 (Completed)
HK/2009/01	Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works	DP1, DP2	25 August 2011

Contract No.	Contract Title	Associated DP(s)	Construction Commencement Date
HK/2009/02	Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East(CWB Tunnel)	DP1	26 April 2011
HY/2009/15	Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)	DP1	13 July 2011
HY/2009/19	Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link	DP1	24 March 2011

2.4 Project Organization and Contact Personnel

- 2.4.1. Civil Engineering and Development Department and Highways Department are the overall project controllers for the Wan Chai Development Phase II and Central-Wan Chai Bypass respectively. For the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.
- 2.4.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in Figure 2.2. Key personnel and contact particulars are summarized in **Table 2.3**:

Table 2.3 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer for WDII	Principal Resident Engineer	Mr. Frankie Fan	2587 1778	2587 1877
	Engineer for CWB	Principal Resident Engineer	Mr. Peter Poon	3916 1818	3529 2829
Lam Woo & CO., LTD.	Contractor under Contract no. HY/2009/17	Project Manager	Mr. K. S. Law	9090 1378	2566 7522
		Site Agent	Mr. Tony Au	9725 5874	2566 7522
		Sub Agent	Mr. Johnny Wong	9725 5870	2566 7522
Chun Wo – Leader Joint Venture	Contractor under Contract no. HK/2009/01	Joint Venture Board Representative	Mr. PL Yue	2162 9909	2634 1626
		Site Agent	Mr. Paul Yu	9456 9819	
		Sub Agent	Mr. Terry Wong	9757 9846	
		Construction Manager	Mr. Wyman Wong	9627 2467	
		Construction Manager	Mr. Jack Chu	9775 2467	
		Construction Manager	Mr KK Yuen	9498 1213	

Party	Role	Post	Name	Contact No.	Contact Fax
		Construction Manager	Mr. Andy Yu	9648 4896	
		Environmental Officer (Compliance Manager)	Mr. Andy Mak	9103 2370	
		Environmental Supervisor	Ms. Kiwi Chan	6227 8840	
		Environmental Supervisor	Mr. Yeung Sze King	9047 9952	
		Environmental Supervisor	Mr. Les Chow	6692 2423	
		Environmental Supervisor	Mr. Otto Yau	9260 4485	
Chun Wo – CRGL Joint Venture	Contractor under Contract no. HK/2009/02	Project Manager	Mr. Chan Sing Cho	3658-3002	2827 9996
		Site Agent	Mr. Mak Kam Wing	3658-3044	
		Quality & Environmental Manager	Mr. C.P. Ho	3658-3000	
		Environmental Officer	Ms Flora Ng	3658-3064	
Chun Wo - CRGL - MBEC Joint Venture	Contractor under Contract no. HY/2009/19	Project Manager	Mr. Rayland Lee	3758 8879	2570 8013
		Site Agent	Mr. Cheung Kit Cheung	6909 1555	
		Environmental Engineer	Mr. Simon Wong	9281 4346	
		Environmental Manager / Environmental Officer	Mr. M.H. Isa	9884 0810	
		Construction Manager (Marine)	William Luk	9610 1101	
		Construction Manager (Land)	Patrick Cheung	9643 3012	
Leighton Contractors (Asia) Limited	Contractor under Contract no. HY/2009/18	Site Agent	Mr. Brian Gillon	2214 7700	2140 6799
		Deputy Site Agent	Mr. Desmond Sze	2214 7703	
		Environmental Officer	Mr. Anfernee Chow	2214 7721	
		Environmental Supervisor	K. P. Lai	6461 4660	
		Environmental Supervisor	Ryan Tsui	2214 7705	

Party	Role	Post	Name	Contact No.	Contact Fax
		Environmental Supervisor	Ray Cheng	2214 7742	
		Environmental Supervisor	K. W. Lee	6461 4623	
China State Construction Engineering (HK) Ltd.	Contractor under Contract no. HY/2009/15	Project Manager	Mr. M Y Wong	2823 7879	2566 2192
		Site Manager	Mr. P J Fan	3557 6368	
		Contractor's Representative	David Lau	3557 6358	
		Head of construction	Mr. Roger Cheung	3557 6371	
		Environmental Officer	Mr. Daniel Sin	3557 6215	
		Environmental Supervisor	Mr. Kelven Yip	3557 6347	
		Environmental Supervisor	Mr. Tim Fung	3557 6349	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3743 0788	3548 6988
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

2.4.3. In this reporting month, the principal work activities of individual contracts are included as follows:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- Instrumentation works for Manholes and Intake Culvert Survey
- Excavation of trial pit
- Drainage work
- Site investigation and pre-drilling works
- Diaphragm wall construction
- Hoarding erection
- Roadwork
- Sheet-piling
- Grout curtain
- Tree transplanting

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at

Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction works for CWB (stage 2) and SCL protection works.
- Pre-drilling works for CWB (stage 2).
- Pre-bored H piling works for CWB (stage 1).
- Pre-bored H piling for exhaust duct.
- Installation of shoring system for construction of CWB top slab at stage 1.
- Installation of shoring system for construction of exhaust duct structure at stage 1.
- Installation of shoring system for chamber construction at north bank of HKCEC Water Channel.
- Guide wall and temporary flat slab for construction of CWB Diaphragm Wall (stage 2).
- Shear pin installation work for SCL Diaphragm wall.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Shear pin at WCR1 area.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction preparation works at TS4
- ELS works at TS1 and TPCWAE
- Night time protection works at CHT
- Cut off wall preparation works at Hung Hing Road and POC

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Marine Piling
- Preparing for pre-bored H-pile works for Culvert U

2.4.4. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- ELS works for basement construction for pile cap construction.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- Instrumentation works for Manholes and Intake Culvert Survey
- Excavation of trial pit
- Drainage work
- Site investigation and pre-drilling works
- Diaphragm wall construction
- Hoarding erection
- Roadwork
- Grout curtain
- Sheet-piling
- Tree transplanting

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- Diaphragm wall construction works for both CWB and SCL Protection Works.
- Guide wall for construction of CWB Diaphragm wall at Stage 2.
- Pilling works for CWB and exhaust duct at Stage 1.
- Pilling works for SCL Protection Works.
- Installation of sheet pile for construction of exhaust duct and excavation works.
- Installation of sheet pile for construction exhaust duct.
- Installation of sheet pile for construction of SCL top slab.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- Continue deep excavation works below -4.5mPD for western tunnel portion and below +0.5mPD for eastern tunnel portion.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

- Diaphragm wall construction at TS4
- ELS works at TS1 and TPCWAE
- Night time protection works at CHT
- Cut off wall preparation works at Hung Hing Road and POC

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- Road works at Watson Road
- Fabrication of bored piling platform
- Bored piling (Land)
- Ground contamination assessment
- Pre-drilling works for bored pile and Diaphragm wall
- D-wall Construction (North & South Section)
- Guide wall construction for D-wall / Barette at North side
- Construction works for Box Culvert T
- Marine Piling



- Construct ion of socket-H pile
- Construction of pre-bored H-pile works for Culvert U

3 STATUS OF REGULATORY COMPLIANCE

3.1 Status of Environmental Licensing and Permitting under the Project

3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in **Table 3.1**.

Table 3.1 Summary of the current status on licences and/or permits on environmental protection pertinent to the Project

Permits and/or Licences	Reference No.	Issued Date	Status
Environmental Permit	EP-356/2009	30 Jul 2009	Valid
Environmental Permit	EP-364/2009	17 Aug 2009	Superseded
Environmental Permit	EP-364/2009/A	4 Aug 2010	Valid
Environmental Permit	EP-376/2009	13 Nov 2010	Valid
Further Environmental Permit	FEP-01/356/2009	18 Feb 2010	Valid
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-04/356/2009	15 Nov 2010	Valid
Further Environmental Permit	FEP-01/364/2009	24 Mar 2010	Valid
Further Environmental Permit	FEP-02/364/2009	21 Apr 2010	Valid
Further Environmental Permit	FEP-03/364/2009	12 July 2010	Valid
Further Environmental Permit	FEP-04/364/2009/A	14 Oct 2010	Surrendered
Further Environmental Permit	FEP-05/364/2009/A	15 Nov 2010	Valid
Further Environmental Permit	FEP-06/364/2009/A	22 Nov 2010	Valid
Further Environmental Permit	FEP-07/364/2009/A	25 Feb 2011	Valid

3.1.2. Due to the multi-contract nature of the Project, the status of permits and/or licences under the individual contract(s) are presented as below:

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

3.1.3. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-03/364/2009 for contract no. HY/2009/17 showed in **Table 3.2** and **Table 3.3**.

Table 3.2 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/17

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-03/364/2009	12 Jul 2010	N/A	Valid
Notification of Works Under APCO	319348	13 Jul 2010	N/A	Valid
Discharge Licence	WT00007212-2010	5 Aug 2010	5 Aug 2010 – 31 Aug 2015	Valid
Registration as a Waste Producer	5213-151-L2608-05	13 July 2010	N/A	Valid
Billing Account under Waste Disposal Ordinance	7010400	16 Mar 2010	N/A	Valid

Table 3.3 Summary of submission status under FEP-03/364/2009

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	18 September 2010
Conditions 2.7 and 2.8	Submission of works schedule and location plan	1 September 2010
Condition 2.9	Noise Management Plan	1 September 2010

Contract no. 04/HY/2006 – Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street under FEP-04/364/2009/A

- 3.1.4. The construction works was completed, and the FEP was surrendered by the Contractor on 11 February 2011.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- 3.1.5. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-02/364/2009 for contract no. HK/2009/01 are shown in **Table 3.4** and **Table 3.5**

Table 3.4 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2009/01

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-02/356/2009	24 Mar 2010	N/A	Valid
	FEP-02/364/2009	21 Apr 2010	N/A	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Notification of Works Under APCO	313088	6 Jan 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0832-11	7 Sep 2011	03 Sep 2011 to 02 Mar 2012	Cancelled
	GW-RS0850-11	12 Sept 2011	14 Sept 2011 to 13 Mar 2012	Expired on 13 Mar 2012
	GW-RS0851-11	12 Sept 2011	16 Sept 2011 to 15 Mar 2012	Expired on 15 Mar 2012
	GW-RE0716-11	28 Sept 2011	07 Oct 2011 to 29 Mar 2012	Valid (Expired on 29 Mar 2012)
	GW-RS1031-11	02 Nov 2011	07 Nov 2011 to 05 May 2012	Valid
	GW-RS1094-11	23 Nov 2011	27 Nov 2011 to 26 May 2012	Valid
	GW-RS1227-11	30 Dec 2011	30 Dec 2011 to 26 Jul 2012	Cancelled
	GW-RS0038-12	16 Jan 2012	15 Jan 2012 to 12 Jul 2012	Cancelled
	GW-RS0158-12	24 Feb 2012	24 Feb 2012 to 23 Aug 2012	Valid
	GW-RS0181-12	24 Feb 2012	27 Feb 2012 to 23 Aug 2012	Valid
	GW-RS0213-12	28 Feb 2012	29 Feb 2012 to 27 Aug 2012	Valid
	GW-RS0225-12	2 Mar 2012	14 Mar 2011 to 13 Sep 2012	Valid
	GW-RS0227-12	2 Mar 2012	16 Mar 2011 to 15 Sep 2012	Valid
	GW-RE0174-12	5 Mar 2012	30 Mar 2012 to 29 Sep 2012	Valid
	GW-RS0312-12	28 Mar 2012	30 Mar 2012 to 29 Sep 2012	Valid
GW-RS-0314-12	29 Mar 2012	30 Mar 2012 to 25 Sep 2012	Valid	
Discharge Licence	WT00006220- 2010	18 Mar 2010	31 Mar 2015	Valid
	WT00009641- 2011	24 Jul 2011	31 Jul 2016	Valid
Billing account under Waste Disposal Ordinance	7010069	21 Jan 2010	N/A	Valid
Registration as a Chemical Waste Producer	WPN5213-134- C3585-01	21 Jan 2010	N/A	Valid

Table 3.5 Summary of submission status under FEP-02/364/2009

EP Condition	Submission	Date of Submission
Special Conditions, Clause 2.7 & 2.8	Works Schedule and Location Plan	18 May 2011
Special Conditions, Clause 2.6	Environmental Management Organization Chart	18 May 2011
Special Conditions, Clause 2.6	Commencement Date of Works	25 Jun 2011
Special Conditions, Clause 2.9	Noise Management Plan	10 Jun 2011

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- 3.1.6. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-01/364/2009 for contract no. HK/2009/02 are shown in **Table 3.6** and **Table 3.7**.

Table 3.6 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2009/02

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-03/356/2009	24 Mar 2010	N/A	Valid
	FEP-01/364/2009	24 Mar 2010	N/A	Valid
Notification of Works Under APCO	313962	2 Feb 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RE0710-11	30 Sept 2011	1 Nov 2011 to 30 Apr 2012	Valid
	GW-RS0833-11	8 Sept 2011	10 Sept 2011 to 4 Mar 2012	Cancelled
	GW-RS0918-11	7 Oct 2011	10 Oct 2011 to 9 Apr 2012	Valid
	GW-RS0929-11	7 Oct 2011	10 Oct 2011 to 9 Apr 2012	Cancelled
	GW-RS0930-11	11 Oct 2011	1 Nov 2011 to 30 Apr 2012	Valid
	GW-RS0931-11	7 Oct 2011	10 Oct 2011 to 9 Apr 2012	Valid
	GW-RS0941-11	20 Oct 2011	23 Nov 2011 to 22 May 2012	Valid
	GW-RS0955-11	14 Oct 2011	23 Nov 2011 to 22 May 2012	Valid
	GW-RS0968-11	20 Oct 2011	18 Nov 2011 to 17 May 2012	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
	GW-RS0983-11	24 Oct 2011	26 Oct 2011 to 23 April 2012	Cancelled
	GW-RS0984-11	25 Oct 2011	30 Oct 2011 to 27 April 2012	Valid
	GW-RS1028-11	3 Nov 2011	7 Dec 2011 to 6 June 2012	Valid
	GW-RS1052-11	18 Nov 2011	21 Nov 2011 to 18 May 2012	Valid
	GW-RS1111-11	28 Nov 2011	29 Nov 2011 to 28 May 2012	Valid
	GW-RS1116-11	28 Nov 2011	13 Dec 2011 to 12 June 2012	Valid
	GW-RS1209-11	3 Jan 2012	17 Jan 2012 to 16 July 2012	Valid
	GW-RS0037-12	19 Jan 2012	1 Feb 2012 to 31 July 2012	Valid
	GW-RS0051-12	19 Jan 2012	1 Feb 2012 to 31 July 2012	Valid
	GW-RS0052-12	19 Jan 2012	1 Feb 2012 to 30 April 2012	Valid
	GW-RS0086-12	30 Jan 2012	3 Feb 2012 to 2 Aug 2012	Valid
	GW-RS0105-12	3 Feb 2012	10 Feb 2012 to 9 Aug 2012	Valid
	GW-RS0153-12	17 Feb 2012	21 Feb 2012 to 20 Aug 2012	Valid
	GW-RS0233-12	6 Mar 2012	9 Mar 2012 to 8 Sept 2012	Cancel
	GW-RS0255-12	14 Mar 2012	17 Mar 2012 to 15 Sept 2012	Valid
	GW-RS0298-12	22 Mar 2012	26 Mar 2012 to 25 June 2012	Valid
	GW-RS0301-12	20 Mar 2012	21 Mar 2012 to 20 Sept 2012	Valid
	GW-RS0303-12	26 Mar 2012	27 Mar 2012 to 27 Sept 2012	Valid
Construction Noise Permit (CNP) for piling equipment	PP-RS0007-12	27 Mar 2012	28 Mar 2012 to 27 Sept 2012	Valid
Discharge Licence	WT00006249- 2010	22 Mar 2010	31 Mar 2015	Valid
	WT00006436- 2010	15 Apr 2010	30 Apr 2015	Valid
	WT00006673- 2010	14 May 2010	31 Mar 2015	Valid
	WT00006757- 2010	28 May 2010	31 May 2015	Valid
	WT00007129- 2010	28 July 2010	31 Jul 2015	Valid
	WT00008982- 2011	26 April 2011	30 April 2016	Valid
	WT00009691- 2011	1 Aug 2011	31 July 2016	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Billing Account under Waste Disposal Ordinance (Land)	7010255	10 Feb 2010	N/A	Valid
Registration as Chemical Waste Producer (Wan Chai)	WPN5213-135-C3593-01	10 Mar 2010	N/A	Valid
Registration as Chemical Waste Producer (TKO 137)	WPN5213-839-C3593-02	22 Sep 2010	N/A	Valid

Table 3.7 Summary of submission status under FEP-01/364/2009

EP Condition	Submission	Date of Submission
Special Conditions, Clause 2.7 & 2.8	Works Schedule and Location Plan	14 Jun 2011
Special Conditions, Clause 2.6	Environmental Management Organization Chart	14 Jun 2011
Special Conditions, Clause 2.6	Commencement Date of Works	21 Jun 2011
Special Conditions, Clause 2.9	Noise Management Plan	28 Jun 2011
Condition 2.11	Landscape Plan (Revision B)	21 Feb 2012
Condition 2.9	Noise Management Plan (Rev.A)	13 Jan 2012

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

3.1.7. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-05/364/2009A for contract no. HY/2009/18 are shown in Table 3.8 and Table 3.9.

Table 3.8 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/18

Permit / Licence / Notification / Approval	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-05/364/2009/A	15 Nov 2010	Permit issued	Valid
Notification of Works Under APCO	322293	07 Oct 2010	Notified	Valid

Permit / Licence / Notification / Approval	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Construction Noise Permit (CNP) for non-piling equipment	GW-RS0993-11	28 Oct 2011	28 Oct 2011 – 25 Apr 2012	Valid
	GW-RS0261-12	09 Mar 2012	10 Mar 2012 – 09 Sep 2012	Valid
Discharge Licence	WT00008229-2011	13 Jan 2011	31 Jan 2016	Valid
Registration as a Waste Producer	WPN: 8335-121-L1048-04	17 Dec 2010	N/A	Registration completed
Billing Account under Waste Disposal Ordinance (Land)	Account No.: 7011587	11 Oct 2010	Account approved	Valid

Table 3.9 Summary of submission status under FEP-05/364/2009/A

EP Condition	Submission	Date of Submission
Condition 2.9	Noise Management Plan	01 March 2011
Condition 2.10	Landscape Plan (Rev. 5)	12 March 2012

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

3.1.8. Summary of the current status on licences and/or permits on environmental protection pertinent and submission under FEP-06/364/2009/A for contract no. HY/2009/15 are shown in **Table 3.10** and **Table 3.11**

Table 3.10 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/15

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-04/356/2009	22 Nov 2010	N/A	Valid
	FEP-06/364/2009/A	22 Nov 2010	N/A	Valid
Notification of Works Under APCO	321822	24 Sep 2010	N/A	Valid
Construction Noise Permit (CNP) for non-piling equipment	GW-RS1021-11	4 Nov 2011	10 Nov 2011 to 9 May 2012	Valid
	GW-RS0847-11	14 Sep 2011	19 Sep 2011 to 16 Mar 2012	Cancelled
	GW-RS1153-11	9 Dec 2011	12 Dec 2011 to 16 Mar 2012	Cancelled

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
	GW-RS0858-11	16 Sep 2011	18 Sep 2011 to 16 Mar 2012	Cancelled
	GW-RS1211-11	22 Dec 2011	24 Dec 2011 to 21 Jun 2012	Valid
	GW-RS0883-11	4 Oct 2011	5 Oct 2011 to 4 Apr 2012	Valid (To be expired on 4 Apr 2012)
	GW-RS0820-11	5 Sep 2011	8 Sep 2011 to 7 Mar 2012	Expired
	GW-RS1149-11	7 Dec 2011	8 Dec 2011 to 7 Jun 2012	Cancelled
	GW-RS1138-11	7 Dec 2011	8 Dec 2011 to 21 May 2012	Cancelled
	GW-RS1190-11	30 Dec 2011	22 Dec 2011 to 21 Jun 2012	Valid
	GW-RS0997-11	2 Nov 2011	2 Nov 2011 to 2 May 2012	Valid
	GW-RS1021-11	4 Nov 2011	10 Nov 2011 to 9 May 2012	Cancelled
	GW-RS0150-12	22 Feb 2012	27 Feb 2012 to 24 Aug 2012	Valid
	GW-RS0094-12	1 Feb 2012	3 Feb 2012 to 31 Jul 2012	Valid
	GW-RS0190-12	27 Jan 2012	28 Feb 2012 to 11 Aug 2012	Valid
	GW-RS0249-12	10 Feb 2012	9 Mar 2012 to 31 Aug 2012	Valid
Registration as a Chemical Waste Producer	WPN: 5213-147-C1169-35	15 Nov 2010	N/A	Valid
Billing Account under Waste Disposal Ordinance	7011553	30 Sep 2010	27 Sep 2010 to 27 Jan 2016	Valid

Table 3.11 Summary of submission status under FEP-06/364/2009/A

EP Condition	Submission	Date of Submission
Condition 2.6	Management Organization of Main Construction Companies	11 Mar 2011
	Amendment for Management Organization of Main Construction Companies	16 May 2011
Condition 2.7	Works Schedule	15 Mar 2011
Condition 2.8	Location Plan	15 Mar 2011
Condition 2.23	Noise Management Plan	6 May 2011

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

3.1.9. The current status on licences and/or permits on environmental protection pertinent and submission under FEP-07/364/2009/A for contract no. HY/2009/19 are shown in **Table 3.12** and **Table 3.13**.

Table 3.12 Cumulative Summary of Valid Licences and Permits under Contract no. HY/2009/19

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-07/364/2009/A	25 Feb 2011	N/A	Valid
Notification of Works Under APCO	326160	24 Jan 2011	N/A	Valid
Registration as a Waste Producer	7012306	10 Feb 2011	N/A	Valid
Registration as Chemical Waste Producer	5213-151-C3654-01	24 Mar 2011	N/A	Valid
Application for Vessel Disposal	7012306	21 July 2011	N/A	Valid
Construction Noise Permit (CNP)	GW-RS1097-11	22-Nov-11	07-May-12	Cancelled
	GW-RS0180-12	22-Feb-12 (Effective 27-Feb-12)	26-Aug-12	Valid
	GW-RS0028-12	18-Jan-12	17-Jun-12	Valid
	GW-RS0286-12	23-Mar-12 (Effective 27-Mar-12)	26-Sep-12	Valid
Water Discharge Licence	WT00010093-2011	31-Aug-11	30-Sep-16	Valid
	WT00010865-2011	3-Nov-11	30-Nov-16	Valid

Table 3.13 Summary of submission status under FEP-07/364/2009/A

EP Condition	Submission	Date of Submission
Condition 2.9	Noise Management Plan	02 Jun 2011
Condition 2.13	Landscape Plan	16 March 2012
Condition 2.9	Noise Management Plan(Rev.2)	28-Oct-11

4 Monitoring Requirements

4.1 Noise Monitoring

NOISE MONITORING STATIONS

4.1.1. The noise monitoring stations for the Project are listed and shown in **Table 4.1** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

Table 4.1 Noise Monitoring Stations

Station	Description
M1a	Harbour Road Sports Centre
M2b	Noon Gun Area
M3a	Tung Lo Wan Fire Station
M4b	Victoria Centre
M5b	City Garden
M6	HK Baptist Church Henrietta Secondary School
M7e	International Finance Centre (Eastern End of Podium)
M7w	International Finance Centre (Western End of Podium)

REAL TIME NOISE MONITORING STATIONS

4.1.2. Review of feasibility on the real time noise monitoring stations was conducted in July with IEC. Station, RTN1a, Tung Lo Wan fireboat Station was found not appropriate to be a monitoring station for monitoring the IECL Piling works and Demolition after visited.

4.1.3. The noise monitoring stations for the Project are listed and shown in **Table 4.2** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

Table 4.2 Real Time Noise Monitoring Stations

District	Station	Description
Tin Hau	RTN1	FEHD Hong Kong Transport Section Whitefield Depot
North Point	RTN2	Oil Street Community Liaison Centre

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

4.1.4. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq(30\text{ minutes})}$ shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, $L_{eq(5\text{ minutes})}$ shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.

- 4.1.5. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:
- One set of measurements between 0700 and 1900 hours on normal weekdays.
- 4.1.6. Real time noise shall be carried out at the designated monitoring stations. The following is an initial guide on the regular monitoring frequency for each station on a 24 hours daily basis when noise generating activities are underway:
- One set of measurements between 0700 and 1900 hours on normal weekdays.
 - One set of measurements between 1900 and 2300 hours on normal weekdays and 0700 and 2300 hours on public holidays.
 - One set of measurements between 2300 and 0700 hours on next day on everyday.
- 4.1.7. If construction works are extended to include works during the hours of 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted hours periods. Applicable permits under NCO shall be obtained by the Contractor.

MONITORING EQUIPMENT

- 4.1.8. As referred to in the Technical Memorandum TM issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.
- 4.1.9. Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 4.1.10. The sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency before deployment to the site and during each site visit. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

4.2 Air Monitoring

AIR QUALITY MONITORING STATIONS

- 4.2.1. The air monitoring stations for the Project are listed and shown in **Table 4.3** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

Table 4.3 Air Monitoring Stations

Station ID	Monitoring Location	Description
CMA1b	Oil Street Community Liaison Centre	North Point (Re-commenced on 14 November 2011)
CMA2a	Causeway Bay Community Centre	Causeway Bay
CMA3a	CWB PRE Site Office *	Causeway Bay
CMA4a	Society for the Prevention of Cruelty to Animals	Wan Chai
CMA5a	Children Garden opposite to Pedestrian Plaza	Wan Chai
MA1e	International Finance Centre (Eastern End of Podium)	Central
MA1w	International Finance Centre (western End of Podium)	Central

Remarks: As per the ENPC meeting in March 2011, the monitoring stations CMA3a – Future CWB site office at Wanchai Waterfront Promenade was renamed as remark.

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.
- 4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.
- 4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

- 4.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
 - 0.6 – 1.7 m3 per minute adjustable flow range;
 - Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
 - Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
 - Capable of providing a minimum exposed area of 406 cm2;
 - Flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
 - Equipped with a shelter to protect the filter and sampler;

- Incorporated with an electronic mass flow rate controller or other equivalent devices;
- Equipped with a flow recorder for continuous monitoring;
- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easily changeable filter; and
- Capable of operating continuously for a 24-hour period.

4.2.6. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The concern parties such as IEC shall properly document the calibration data for future reference. All the data should be converted into standard temperature and pressure condition.

LABORATORY MEASUREMENT / ANALYSIS

4.2.7. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.

4.2.8. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling.

4.2.9. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.

4.2.10. All the collected samples shall be kept in a good condition for 6 months before disposal.

4.2.11. Current calibration certificates of equipments are presented in [Appendix 4.2](#).

5.0 MONITORING RESULTS

5.0.1. The environmental monitoring will be implemented based on the division of works areas of each designed project managed under different contracts with separate FEP applied by individual contractors. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in **Figure 2.1** and **Figure 4.1**. The monitoring results are presented in according to the Individual Contract(s).

5.0.2. In the reporting month, the concurrent contracts are as follows:

- Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A
- Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009
- Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A
- Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009
- Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre
- Contract no. HK/2009/02 Wan Chai Development Phase II – Central-Wan Chai Bypass at Wan Chai East

5.0.3. The environment monitoring schedules for reporting month and coming month are presented in **Appendix 5.1**.

5.1 Noise Monitoring Results

5.1.1. Monitoring for report of review baseline noise level was performed from 11 April 2011 to 8 June 2011. Then the report was submitted on the 20 June 2011, verified by IEC on 18 July 2011 and was approved by ER by January 2012. The new baseline is used for the noise calculation of this reporting month starting from January 2012.

Contract no. HY/2009/17 –Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

5.1.2. The proposed division of noise monitoring stations for Contract no. HY/2009/17 are summarized in **Table 5.1** below:

Table 5.1 Noise Monitoring Stations for Contract no. HY/2009/17

Station	Description
M4b	Victoria Centre

5.1.3. No action or limit level exceedance was recorded during daytime period in the reporting month. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

5.1.4. Noise monitoring for the Central Interchange works under contract no. HY/2009/18 was commenced on 22 April 2011. The proposed division of noise monitoring stations for Contract no. HY/2009/18 are summarized in **Table 5.2** below:

Table 5.2 Noise Monitoring Stations for Contract no. HY/2009/18

Station	Description
M7e	International Finance Centre (Eastern End of Podium)
M7w	International Finance Centre (Western End of Podium)

5.1.5. No action level exceedance and two limit level exceedances were recorded during daytime period in the reporting month.

5.1.6. During 22 March 2012 monitoring, a limit level exceedance was recorded. After checking with contractor’s work schedules and investigation found that drilling by drill rigs and breaking works for diaphragm wall construction were conducted by during monitoring.

5.1.7. During 27 March 2012 monitoring, a limit level exceedance was recorded. After checking with contractor’s work schedules and investigation found that drilling by drill rigs, breaking works for diaphragm wall construction and crane moving steel cages were conducted during monitoring.

5.1.8. Both the limit level exceedances were considered as project-related.

5.1.9. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**. Details of the Notification of Exceedance can be referred in **Appendix 6.2**.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009 and Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

5.1.10. The commencement of construction works for Contract no. HK/2009/01 under FEP-02/364/2009 is on 25 August 2011 and HK/2009/02 under FEP-01/364/2009 is on 26 April 2011. The proposed division of noise monitoring stations are summarized in **Table 5.3** below.

Table 5.3 Noise Monitoring Station for Contract no HK/2009/01 and HK/2009/02

Station	Description
M1a	Harbour Road Sports Centre

5.1.11. No action or limit level exceedance was recorded in the reporting month. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

5.1.12. The commencement of construction works for Contract no. HY/2009/15 under FEP-06/364/2009/A was on 13 July 2011. Noise monitoring was commenced on 13 July 2011. The proposed divisions of noise monitoring stations are summarized in **Table 5.4** below.

Table 5.4 Noise Monitoring Stations for Contract no. HY/2009/15

Station	Description
M2b	Noon Gun Area
M3a	Tung Lo Wan Fire Station

5.1.13. No action or limit level exceedance was recorded in the reporting month. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.1.14. Noise monitoring for the tunnel works under contract no. HY/2009/19 was commenced on 24 April 2011. The proposed division of noise monitoring stations are summarized in **Table 5.5** below.

Table 5.5 Noise Monitoring Stations for Contract no. HY/2009/19

Station	Description
M3a	Tung Lo Wan Fire Station
M4b	Victoria Centre
M5b	City Garden
M6	HK Baptist Church Henrietta Secondary School

5.1.15. One action level exceedance was recorded as a noise impact complaint was received on 3 March 2012.

- 5.1.16. Three limit level exceedances were recorded on 28 February, 13 and 27 March 2012 at M6 – HK Baptist Church Henrietta Secondary School in the reporting month.
- 5.1.17. Major traffic jam and no major work activities were observed during monitoring, the limit level exceedances were considered as non-project related.
- 5.1.18. Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in **Appendix 5.2**. Details of the Notification of Exceedance can be referred in **Appendix 6.2**.

5.2 Real Time Noise Monitoring Results

- 5.2.1. No construction activity was conducted during nighttime period (2300 to 0700) in this reporting month.

Contract no. HY/2009/17 –Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009 and Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- 5.2.2. The proposed division of noise monitoring stations are summarized in **Table 5.6** below. Real time noise monitoring for the piling works under contract no. HY/2009/17 was commenced on 5 October 2010

Table 5.6 Real Time Noise Monitoring Stations for Contract no. HY/2009/17

Location ID	District	Description
RTN1	Tin Hau	FEHD Hong Kong Transport Section Whitefield Depot

Real time noise monitoring results and graphical presentation during night time period are for information only.

- 5.2.3. No action and limit level exceedance were recorded in the reporting period. Real time noise monitoring results measured in this reporting period are reviewed and summarized. Details of real time noise monitoring results and graphical presentation can be referred to **Appendix 5.4**.
- 5.2.4. The proposed division of noise monitoring stations are summarized in **Table 5.7** below. Real time noise monitoring for major construction works under contract no. HY/2009/19 was commenced on 24 April 2011.

Table 5.7 Real Time Noise Monitoring Stations for Contract no. HY/2009/19

Location ID	District	Description
RTN1	Tin Hau	FEHD Hong Kong Transport Section Whitefield Depot
RTN2	North Point	Oil Street Community Liaison Center

Real time noise monitoring results and graphical presentation during night time period are for information only.

- 5.2.5. No action and limit level exceedance were recorded in the reporting period. Real time noise monitoring results measured in this reporting period are reviewed and summarized. Details of

real time noise monitoring results and graphical presentation can be referred to **Appendix 5.4**.

5.3 Air Monitoring Results

5.3.1 Due to lack of electricity supply, the 24 TSP monitoring at the following stations were rescheduled:

CMA1b: from 13 Mar 2012 to 14 Mar 2012
 CMA3a: from 24 Mar 2012 to 26 Mar 2012

Contract no. HY/2009/17 –Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

5.3.2 The proposed division of air monitoring stations are summarized in **Table 5.8** below. Air monitoring for the piling works under contract no. HY/2009/17 was commenced on 8 October 2010.

Table 5.8 Air Monitoring Station for Contract no. HY/2009/17

Station	Description
CMA1b	Oil Street Community Liaison Centre
CMA2a	Causeway Bay Community Centre

5.3.3 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

5.3.4 Air monitoring for the Central Interchange works under contract no. HY/2009/18 was commenced on 21 April 2011. The proposed division of air monitoring stations are summarized in **Table 5.9** below.

Table 5.9 Air Monitoring Stations for Contract no. HY/2009/18

Station	Description
MA1e	International Finance Centre (Eastern End of Podium)
MA1w	International Finance Centre (Western End of Podium)

5.3.5 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

5.3.6 The commencement of construction works for Contract no. HK/2009/01 under FEP-02/364/2009 is on 25 August 2011. Air quality monitoring was commenced on 25 August 2011. The proposed division of air monitoring stations are summarized in **Table 5.10** below.

Table 5.10 Air Monitoring Station for Contract no. HK/2009/01

Station	Description
CMA5a	Children Playgrounds opposite to Pedestrian Plaza

5.3.7 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

5.3.8 The commencement of construction works for HK/2009/02 under FEP-01/364/2009 is on 26 April 2011. The proposed division of air monitoring stations are summarized in **Table 5.11** below.

Table 5.11 Air Monitoring Station for Contract no. HK/2009/02

Station	Description
CMA4a	Society for the Prevention of Cruelty to Animals

5.3.9 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

5.3.10 The commencement of construction works for Contract no. HY/2009/15 under FEP-06/364/2009/A was on 13 July 2011. Air quality monitoring was commenced on 14 July 2011. The proposed division of air monitoring stations are summarized in **Table 5.12** below.

Table 5.12 Air Monitoring Station for Contract no. HY/2009/15

Station	Description
CMA3a	CWB PRE Site Office

5.3.11 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.3.12 The proposed division of air monitoring stations are summarized in **Table 5.13** below. Air monitoring for the tunnel works under contract no. HY/2009/19 was commenced on 26 April 2011.

Table 5.13 Air Monitoring Stations for Contract no. HY/2009/19

Station	Description
CMA1b	Oil St Community Liaison Centre
CMA2a	Causeway Bay Community Centre

5.3.13 No exceedance was recorded in the reporting month. Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in **Appendix 5.3**.

5.4 Waste Monitoring Results

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- 5.4.1. No Inert and non-inert C&D wastes were disposed in the reporting month. Details of the waste flow table are summarized in **Table 5.14**

Table 5.14 Details of Waste Disposal for Contract no. HY/2009/17

Waste Type	Quantity this month, m ³	Cumulative Quantity-to-Date, m ³	Disposal / Dumping Grounds
Inert C&D materials disposed	NIL	NIL	Chai Wan Barging Point
Inert C&D materials recycled	NIL	1354.82	N/A
Non-inert C&D materials disposed	NIL	NIL	N/A
Non-inert C&D materials recycled	NIL	NIL	N/A
Chemical waste disposed	N/A	N/A	N/A

Contract nos. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- 5.4.2. Inert and non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.15**.

Table 5.15 Details of Waste Disposal for Contract no. HK/2009/01

Waste Type	Quantity this month, m ³	Cumulative-to-Date, m ³	Disposal / Dumping Grounds
Inert C&D materials disposed	2904.12	19444.21	TKO137, TM38
Inert C&D materials recycled	NIL	389.96	N/A
Non-inert C&D materials disposed	37.24	647.2	SENT Landfill
Non-inert C&D materials recycled (kg)	3560	139314	N/A
Chemical waste disposed (kg)	200	5860	N/A

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

5.4.3. Inert C&D & non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.16**.

Table 5.16 Details of Waste Disposal for Contract no. HK/2009/02

Waste Type*	Quantity this month, m ³	Cumulative-to-Date, m ³	Disposal / Dumping Grounds
Inert C&D materials disposed	23,629	111,378	TKO137, TM 38
Inert C&D materials recycled	NIL	NIL	N/A
Non-inert C&D materials disposed	35	216	SENT Landfill
Non-inert C&D materials recycled	NIL	NIL	N/A
Chemical waste disposed	NIL	3,175	N/A

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

5.4.4. Inert C&D and non-inert C&D waste was disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.17**.

Table 5.17 Details of Waste Disposal for Contract no. HY/2009/18

Waste Type*	Quantity this month, m ³	Cumulative-to-Date, m ³	Disposal / Dumping Grounds
Inert C&D materials disposed	3217	18416.1	T.K.O. 137
Inert C&D materials recycled	3377	3435.5	N/A
Non-inert C&D materials disposed	24	243.8	SENT Landfill
Non-inert C&D materials recycled	75	75	N/A
Chemical waste disposed	NIL	NIL	N/A

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

5.4.5. Inert & Non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.18**.

Table 5.18 Details of Waste Disposal for Contract no. HY/2009/15

Waste Type*	Quantity this month, m ³	Cumulative-to-Date, m ³	Disposal / Dumping Grounds
Inert C&D materials disposed	13847.2	131992.4	Tuen Mun Area 38
	31978.9	32871.4	TKO137 FB
Inert C&D materials recycled	NIL	413	HY/2009/11 ex-PCWA TS4
Non-inert C&D materials disposed	15	139.2	SENT Landfill
Non-inert C&D materials recycled	17.69	357.69	Skylight Recycle (paper) Xun Xiang Metalware
Chemical waste disposed	200	8200	Dunwell Group

Remark:s Contractor clarified and updated waste flow table for the reporting month of January.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

5.4.6. Inert and Non-inert C&D wastes were disposed of in this reporting month. Details of the waste flow table are summarized in **Table 5.19**.

Table 5.20 Details of Waste Disposal for Contract no. HY/2009/19

Waste Type*	Quantity this month, m ³	Cumulative-to-Date, m ³	Disposal / Dumping Grounds
Inert C&D materials disposed	19219.16	41104.45	N/A
Inert C&D materials recycled	NIL	630.954	N/A
Non-inert C&D materials disposed	178.51	268.171	SENT Landfill
Non-inert C&D materials recycled	13.18	26.61	N/A
Chemical waste disposed	0.78	2.56	N/A

6 Compliance Audit

6.0.1. The Event Action Plan for construction noise, air qualities are presented in **Appendix 6.1**.

6.1 Noise Monitoring

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

6.1.1. No exceedance was recorded in the reporting month.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

6.1.2. **No action and two limit level exceedances were recorded at M7e on 22 and 27 March 2012 in the reporting month.**

6.1.3. During 22 March 2012 monitoring, a limit level exceedance was recorded. After checking with contractor's work schedules and investigation found that drilling by drill rigs and breaking works for diaphragm wall construction were conducted during monitoring.

6.1.4. During 27 March 2012 monitoring, a limit level exceedance was recorded. After checking with contractor's work schedules and investigation found that drilling by drill rigs, breaking works for diaphragm wall construction and crane moving steel cages were conducted during monitoring.

6.1.5. Both the limit level exceedances were considered as project-related.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention Exhibition Centre – Tunnel Works under FEP-02/364/2009

6.1.6. No exceedance was recorded in the reporting month.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

6.1.7. No exceedance was recorded in the reporting month.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) under FEP-06/364/2009/A

6.1.8. No exceedance was recorded in the reporting month.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

6.1.9. **One action level exceedance was recorded as a complaint regarding noise impact was received on 3 March 2012.**

- 6.1.10. [Three limit level exceedances were recorded at M6 – HK Baptist Church Henrietta Secondary School on 28 February, 13 and 27 March 2012 in the reporting month.](#) Investigation found that major traffic noise was contributed in the noise monitorings and not related to the Project.

Real Time Noise Monitoring

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- 6.1.11. No exceedance was recorded in the reporting month.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- 6.1.12. No exceedance was recorded in the reporting month.

6.2 Air Monitoring

Contract no. HY/2009/17 – Central – Wan Chai Bypass (CWB) at FEHD Whitfield Depot – Advanced piling works under FEP-03/364/2009

- 6.2.1. No exceedance was recorded in the reporting month.

Contract no. HY/2009/18 – Central – Wan Chai Bypass (CWB) – Central Interchange under FEP-05/364/2009/A

- 6.2.2. No exceedance was recorded in the reporting month.

Contract no. HK/2009/01 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Hong Kong Convention and Exhibition Centre – Tunnel Works under FEP-02/364/2009

- 6.2.3. No exceedance was recorded in the reporting month.

Contract no. HK/2009/02 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel) under FEP-01/364/2009

- 6.2.4. No exceedance was recorded in the reporting month.

Contract no. HY/2009/15 – Central-Wanchai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section) FEP-06/364/2009/A

- 6.2.5. No exceedance was recorded in the reporting month.

Contract no. HY/2009/19 – Central – Wanchai Bypass Tunnel (North Point Section) and Island Eastern Corridor Link under FEP-07/364/2009/A

- 6.2.1. No exceedance was recorded in the reporting month.

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

- 6.3.1. There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were presented in Section 8.

- 6.3.2. No project-related non-compliance from monitoring was recorded in the reporting month.

6.4 Summary of action taken in the event of and follow-up on non-compliance

- 6.4.1 There was no particular action taken since no project-related non-compliance was recorded from the site audits and environmental monitoring in the reporting period.
- 6.4.2 There was exceedance of noise level recorded on 22 March 2012 at M7e that was considered in relation to drilling by drill rigs and breaking works for diaphragm wall construction were conducted during monitoring.
- 6.4.3 There was exceedance of noise level recorded on 27 March 2012 at M7e that was considered in relation to the drilling by drill rigs and breaking works for diaphragm wall construction.

7 Cumulative Construction Impact due to the Concurrent Projects

- 7.0.1. According to Condition 3.4 of the EP-364/2009/A, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Central Reclamation Phase III (CRIII), Wan Chai Development Phase II (WDII), Central-WanChai Bypass (CWB), Island Eastern Corridor Link projects (IECL) and Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel).
- 7.0.2. Monthly EM&A report (February 2012) of Central Reclamation Phase III (CRIII) is outstanding in this reporting period, no cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) could be done.
- 7.0.3. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activity under Wan Chai Development Phase II was marine works at HKCEC areas, cross-harbour Watermains, Fresh Watermains, Cooling Watermains and Salt Watermains Installations, tunnel works at Wan Chai East, seawall block construction, reclamation work and diaphragm wall construction at TS4; Diaphragm wall construction at TS1 and TPCWAE TCBR1W. Advanced piling works at FEHD Whitfield Depot, Central Interchange, and diaphragm wall construction at North Point area. The major environmental impact was water quality impact at Causeway Bay and Wan Chai. Land-based construction activity were advance filling works at TS4, Diaphragm wall construction at TS1 and TPCWAE TCBR1W, piling works at FEHD Whitfield Depot, Diaphragm wall at Central and North Point and tunnel works at Wan Chai East in the reporting month.
- 7.0.4. The major environmental impacts generated from advanced piling works at FEHD Whitfield Depot were undertaken and Diaphragm wall construction at Central and tunnel works at Wan Chai East, IECL and Causeway Bay typhoon shelter in the reporting month. No significant air impact was anticipated in the reporting month. Notwithstanding, two project-related exceedances regarding construction noise were recorded during non-restricted hours referred to Contract no. HY/2009/18 in the reporting month. In general, it is evaluated that the cumulative construction impact from the concurrent projects including Wan Chai Development Phase II was mainly insignificant.

8 Environmental Site Audit

8.0.1. During this reporting month, weekly environmental site audits were conducted for Contracts no. HY/2009/15, HY/2009/17, HY/2009/18, HY/2009/19, HK/2009/01 and HK/2009/02. No non-conformance was identified during the site audits.

8.0.2. Five site inspections for Contract no. HY/2009/15 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.1**.

Table 8.1 Summary of Environmental Inspections for Contract no. HY/2009/15

Date	Item	Observations	Action taken by Contractor	Outcome
28-Feb-12	120228_01	The condition of slopping seawall should be improved. (Eastern seawall)	Improvement in maintenance of slopping seawall.	Geotextile on slopping seawall was found to be inadequate on 6 Mar 2012.
28-Feb-12	120228_02	Stockpile should be cleared away from seawall edge. (TS1)	Removal of stockpile from seawall edge.	Completion as observed on 6-Mar-12
6-Mar-12	120306_01	Slopping seawall shall be covered well by geotextile. (TS4)	Cover slopping seawall with geotextile.	Completion as observed on 13-Mar-12
6-Mar-12	120306_02	Loading and unloading works shall not be conducted within the tree protection zone. (POC)	Tree protection zone should be kept clear from loading and construction activities,	Completion as observed on 13-Mar-12
13-Mar-12	120313_01	Oil leakage was found from a generator at TS1. The contractor should collect the contaminated topsoil and repair the plant prior re-use.	Clean up oil leakage and treat the contaminated topsoil as chemical waste.	Completion as observed on 20-Mar-12
13-Mar-12	120313_02	The protection of the slopping seawall that is used as a landing area of cement truck should be improved/paved. (TS4)	Paved the landing area of cement truck or improved the water spraying to keep the roads wet.	Completion as observed on 20-Mar-12
20-Mar-12	120320_01	Status on slopping seawall should be improved(TS1), the geotextile should be better maintained and external silt curtain should be provide ASAP.	Improvement in maintenance of slopping seawall, and deployment of silt curtain.	Silt curtains have been deployed as observed on 27 Mar 2012, but the condition of the slopping seawall was still required more care.
27/3/2012	120327_01	Tarpaulin should be placed between barge and seawall during stockpile removal operations. (TS1)	Placement of tarpaulin during transshipment.	Completion as observed on 3 Apr 12
27/3/2012	120327_02	Geotextile of slopping sea wall should be better maintained.	Improvement in maintenance of slopping seawall.	Seawall block was observed to be partially complete on 3

Date	Item	Observations	Action taken by Contractor	Outcome
				Apr 12.

8.0.3. Four site inspections for Contract no. HY/2009/18 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.2**.

Table 8.2 Summary of Environmental Inspections for Contract no. HY/2009/18

Item	Date	Observations	Action taken by Contractor	Outcome
120308_01	8-Mar-12	Stockpile should be covered with tarpaulin. (Below western end of IFC footbridge)	Cover stockpile with tarpaulin.	Completion as observed on 15 Mar 12.
120308_02	8-Mar-12	Drip trap tray should be provided to relevant plants and machines.	Provide drip trays to plants and machines.	Completion as observed on 15 Mar 12.
120308_03	8-Mar-12	Protection should be provided around drainage outlet and manholes to prevent runoff.	Provide protection around drainage outlet and manholes.	Completion as observed on 15 Mar 12.
120315_01	15-Mar-12	Plants and machineries on-site should be well maintained to prevent black smoke.	Better maintenance of equipment.	Completion as observed on 22 Mar 12.
120315_02	15-Mar-12	Appropriate drip trays should be provided for oil drums to prevent leakage.	Provide drip trays for oil drums.	Completion as observed on 22 Mar 12.
120322_01	22-Mar-12	Plants should be well maintained to prevent oil leakage. Drip tray should be provided in-case of breakdown. (Old Man Yiu Street)	Better maintenance of plants.	Completion as observed on 29 Mar 12.

8.0.4. Four site inspections for Contract no. HY/2009/19 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.3**.

Table 8.3 Summary of Environmental Inspections for Contract no. HY/2009/19

Item	Date	Observations	Action taken by Contractor	Outcome
120229_01	29-Feb-12	Stagnant water near seawall should be removed. (Portion 7 behind desander)	Removal of stagnant water	Completion as observed on 7-Mar-12
120229_02	29-Feb-12	Oil leakage near seawall should be removed and treated as chemical waste. (Portion 7 behind desander)	Removal and treatment of oil leakage.	Completion as observed on 7-Mar-12
120229_03	29-Feb-12	Concrete curb design at culvert-u (temp read) should be improved to avoid runoff into sea. (Portion III)	Improve design of concrete curb at culvert-u.	Completion as observed on 7-Mar-12

Item	Date	Observations	Action taken by Contractor	Outcome
120229_04	29-Feb-12	Stockpile should be removed to avoid falling into sea. (platform 8,9)	Cover stockpile with tarpaulin.	Completion as observed on 7-Mar-12
120307_01	7-Mar-12	Silt curtain should be well maintained to avoid holes, gaps and floating. (All platforms)	Improve maintenance of silt curtains.	Completion as observed on 14-Mar-12
120314_01	14-Mar-12	Stockpile should be covered by tarpaulin and be placed away from side of box-tunnel. (portion 3)	Remove stockpile from side of box-tunnel and cover with tarpaulin.	Completion as observed on 21-Mar-12
120321_01	21-Mar-12	Muddy water was observed to have gone into the sea after wheelwash. Although contractor has taken immediate action to rectify the situation, they are still reminded that runoff should not be found out of site area.	Improve design on drainage around site boundaries.	Completion as observed on 28-Mar-12
120328_01	28-Mar-12	Proper maintenance of silt curtain to ensure no gaps or holes.	Improve maintenance of silt curtains.	Completion as observed on 5 Apr 12
120328_02	28-Mar-12	Contractor is reminded that silt curtains should be deployed before start of work on platform (platform 14)	Deployment of silt curtain before works at platform 14.	Completion as observed on 5 Apr 12
120328_03	28-Mar-12	Oil stain should be removed and treated as chemical waste. (platform 14)	Removal and treatment of oil stain.	Completion as observed on 5 Apr 12
120328_04	28-Mar-12	Rubbish should be cleared regularly, both from sea surface and on land. (platform 14 and inside silt curtains)	Regular clearance of rubbish from sea and land.	Completion as observed on 5 Apr 12

8.0.5. Four site inspections for Contract no. HK/2009/01 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.4**.

Table 8.4 Summary of Environmental Inspections for Contract no. HK/2009/01

Item	Date	Observations	Action taken by Contractor	Outcome
120229_01	29-Feb-12	Sand bags for gully protection shall be replaced. (Northern Gate under HKCEC)	Replacement of sandbags for gully protection.	Completion as observed on 7-Mar-12
120307_01	7-Mar-12	Stockpile near the seawall should be removed (west side of HKCEC)	Removal of stockpile near seawall.	Completion as observed on 14-Mar-12
120314_01	14-Mar-12	The tree (黃欖) T0656 located in TST should be surrounded by barrier.	Better maintenance of tree protection zones.	Completion as observed on 22-Mar-12
120314_02	14-Mar-12	The floating debris on the water channel (HKCEC)	Removal of rubbish from sea	Completion as observed on 22-

Item	Date	Observations	Action taken by Contractor	Outcome
		should be cleaned regularly.	surface at regular intervals.	Mar-12
120322_01	22-Mar-12	The oil stains were observed in A4-2. They should be removed and the oil leakage should be prevented.	Better maintenance of plants.	Completion as observed on 28-Mar-12

8.0.6. Four site inspections for Contract no. HK/2009/02 was carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 8.5**.

Table 8.5 Summary of Environmental Inspections for Contract no. HK/2009/02

Item	Date	Observations	Action taken by Contractor	Outcome
120301_01	1-Mar-12	Piling pool should be protected by sandbags around the piling work area.	Provided protection around piling area.	Completion as observed on 8-Mar-12
120301_02	1-Mar-12	Tarpaulin should be replaced for the route of transfer of soil. (Between Barge and soil storage area)	Replacement of tarpaulin.	Completion as observed on 8-Mar-12
120308_01	8-Mar-12	The water from U-channel should be cleaned more regularly.	Keeping the u-channel clear.	Completion as observed on 16-Mar-12
120316_01	16-Mar-12	The tarpaulin for the transfer of sediment from barge should be replaced. (WCR1)	Replacement of tarpaulin.	Completion as observed on 21-Mar-12
120316_02	16-Mar-12	The leakage of sediment out the silt curtain is observed and it should be well maintained. (WCR1)	Maintenance of silt curtain.	Completion as observed on 21-Mar-12
120316_03	16-Mar-12	Drip tray should be provided for the chemical storage around WCR1.	Provided drip tray for chemical storage.	Completion as observed on 21-Mar-12
120321_01	21-Mar-12	Cement mixing plant should be covered on 3 sides, including the top, with tarpaulin. (small pet park)	Provide adequate cover for cement mixing plant.	Completion as observed on 29-Mar-12

8.0.7. Five site inspections for Contract no. HY/2009/17 were carried out during this reporting period. No observation was found in the reporting month.

9 COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

- 9.0.1. One environmental complaint was received on 3 March 2012 in the reporting period.
- 9.0.2. A noise impact complaint was received by ET on 5 March 2012 (ICC Ref. No.: 1-344632511 dated on 3 March 2012, forwarded by RSS). The complaint was reported by the resident of Harbour Heights that excessive noise from construction sites of CWB was observed outside Harbour Heights from Monday to Saturday before 8am. The plants were frequently turned on before 7:30am creating nuisance. The complainant requested a speedy follow-up and reply from relevant department.
- 9.0.3. ET confirmed with the Resident Site Staff that PME for diaphragm wall construction started to operate at about 7:30am whilst the other PME, including those for land bored piling work, started to operate after 8am.
- 9.0.4. After reviewing the results of noise monitoring (M4b), no exceedance was recorded during daytime period and the noise level was below 75dB(A). Site inspection for HY/2009/19 was conducted on 7 March 2012. The condition of noise mitigation measures near Harbour Heights was found satisfactory. RSS confirmed that no operation was active before 7:00am everyday. The suspected nuisance was to be considered caused by the PME for diaphragm wall construction. A surprise check was performed on 13 March 2012 by RSS. It was found that no noisy PME was in operation by Contractor of HY/2009/19 before 8am, and the construction noise level was minimal and not disturbing. The noise level and operation time both complied with statutory requirements set up in NCO.
- 9.0.5. Complainant called ICC on 8 March 2012 to confirm HyD has provided a response. No further complaint was received after the response.
- 9.0.6. The details of cumulative complaint log and updated summary of complaints are presented in **Appendix 9.1**
- 9.0.7. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 9.1** and **Table 9.2** respectively.

Table 9.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
Mar 12	1
Sep 10 to Feb 12	17
Total	18

Table 9.2 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	-	0	0
Noise	-	0	0
Water	-	0	0
Waste	-	0	0
Total	-	0	0

10. CONCLUSION

10.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.

10.0.2. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in **Table 10.1**. The construction programmes of individual contracts are provided in **Appendix 10.1**.

Table 10.1 Summary of Key Construction Activities of Individual Contract(s) to be commenced in Coming Reporting Month

Contract No.	Key Construction Works	Recommended Mitigation Measures
HY/2009/15	<ul style="list-style-type: none"> • Diaphragm wall construction at TS4 • ELS works at TS1 and TPCWAE • Night time protection works at CHT • Cut off wall preparation works at Hung Hing Road and POC 	<ul style="list-style-type: none"> • Watering any dust generating activities • Checking all drip trays frequently and clear any stagnant water and mud inside it. • Noise control measures shall be provided during restricted hours.
HY/2009/17	<ul style="list-style-type: none"> • ELS works for basement construction for pile cap construction. 	<ul style="list-style-type: none"> • Noise barrier shall be implemented; and • Watering any dust generating activities
HY/2009/18	<ul style="list-style-type: none"> • Instrumentation works for Manholes and Intake Culvert Survey • Excavation of trial pit • Drainage work • Site investigation and pre-drilling works • Diaphragm wall construction • Hoarding erection • Roadwork • Grout curtain • Sheet-piling • Tree transplanting 	<ul style="list-style-type: none"> • Noise barrier shall be implemented; and • Noise level shall be controlled by reducing piling rate and no. of plants working in parallel. • Dust control during dust generating works

<p>HY2009/19</p>	<ul style="list-style-type: none"> • Road works at Watson Road • Fabrication of bored piling platform • Bored piling (Land) • Ground contamination assessment • Pre-drilling works for bored pile and Diaphragm wall • D-wall Construction (North & South Section) • Guide wall construction for D-wall / Barette at North side • Construction works for Box Culvert T • Marine Piling • Construction of socket-H pile • Construction of pre-bored H-pile works for Culvert U 	<ul style="list-style-type: none"> • Noise level shall be controlled by reducing the piling operation rate. • Noise barrier shall be implemented. • Dust control during dust generating works
<p>HK2009/01</p>	<ul style="list-style-type: none"> • Diaphragm wall construction works for both CWB and SCL Protection Works. • Guide wall for construction of CWB Diaphragm wall at Stage 2. • Pilling works for CWB and exhaust duct at Stage 1. • Pilling works for SCL Protection Works. • Installation of sheet pile for construction of exhaust duct and excavation works. • Installation of sheet pile for construction exhaust duct. • Installation of sheet pile for construction of SCL top slab. 	<ul style="list-style-type: none"> • Noise level shall be controlled by reducing pilling rate and no. of plants working in parallel. • Well maintain the enclosures for grouting and bentonite mixing plants.
<p>HK/2009/02</p>	<ul style="list-style-type: none"> • Continue deep excavation works below -4.5mPD for western tunnel portion and below +0.5mPD for eastern tunnel portion. 	<ul style="list-style-type: none"> • Well maintain the enclosures for grouting and bentonite mixing plants.

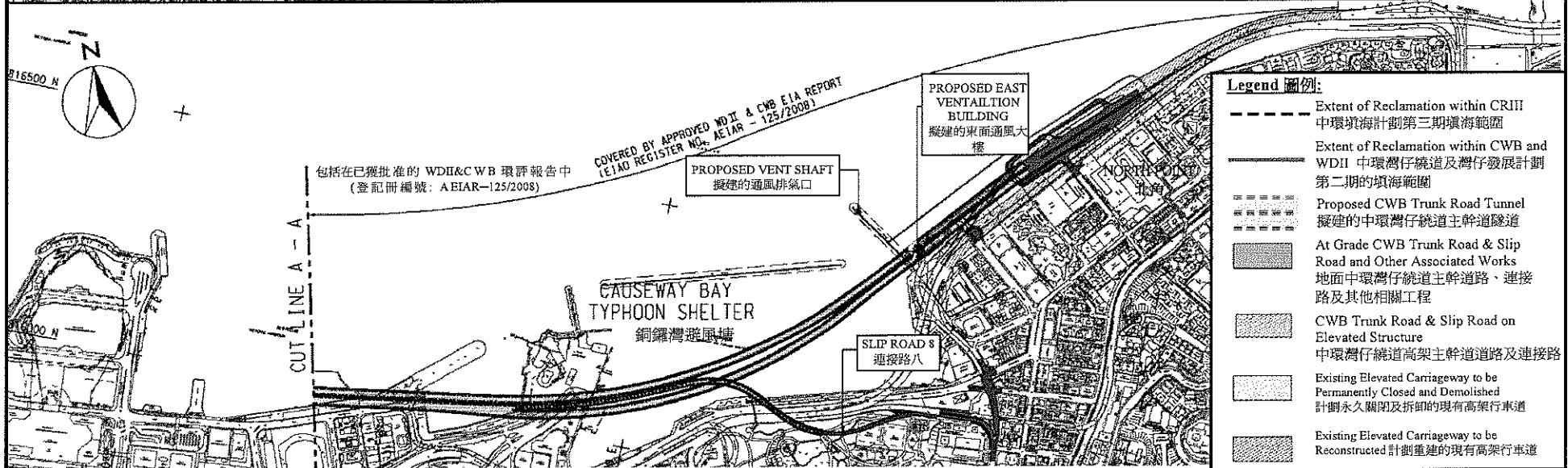
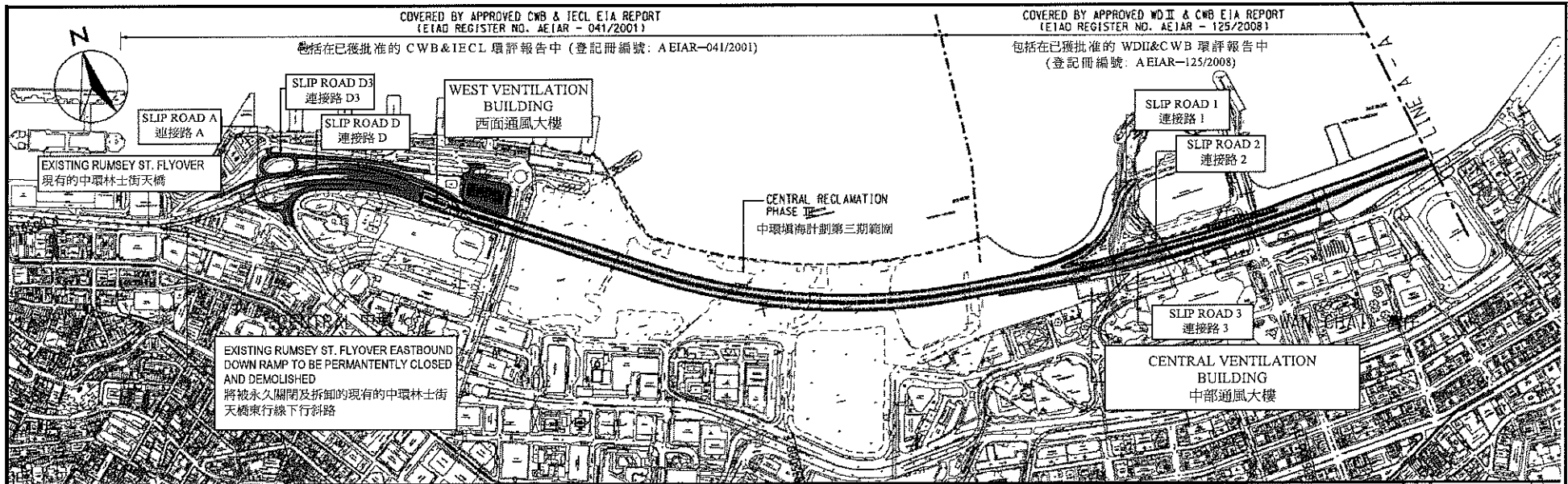


10.0.3. The construction works of Contract no. 04/HY/2006 – Reconstruction of Bus Terminus near Man Yiu Street and Man Kwong Street under FEP-04/364/2009/A was completed, and the FEP was surrendered by the Contractor on 11 February 2011.



Figure 2.1

Project Layout

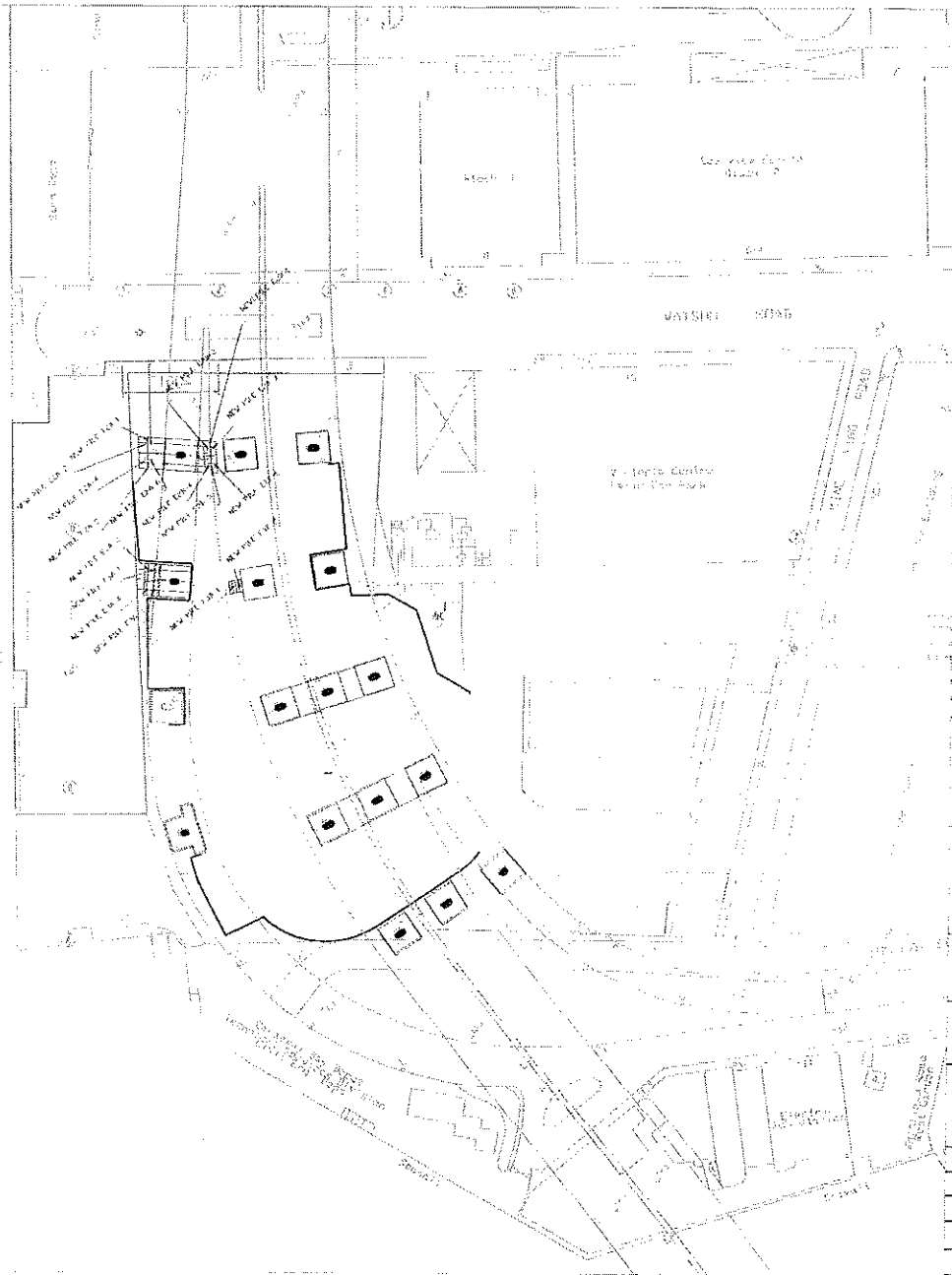


Project Title: Central-Wanchai Bypass (CWB) Including Its Road Tunnel and Slip Roads
 工程項目名稱: 中環灣仔繞道包括其行車隧道及連接路

Environmental Permit No.: EP-364/2009/A
 環境許可證編號: EP-364/2009/A

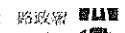

Figure 1: Location of the Project
 圖 1: 工程項目位置

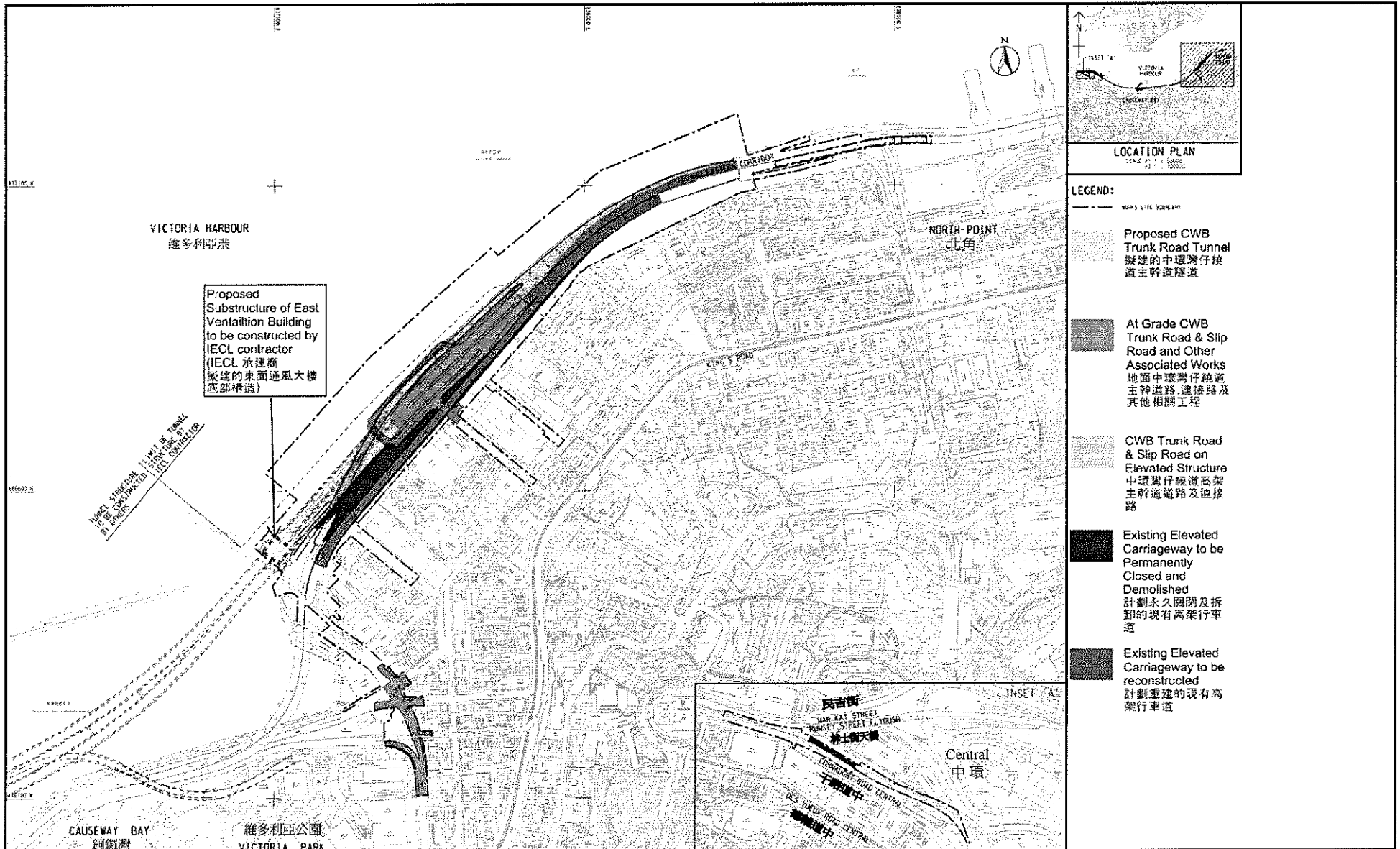
(This figure was prepared based on Figure 1.1 of the Application for Environmental Permit (Application No.: AEP-364/2009))
 (本圖是根據環境許可證的申請(申請書編號 AEP-364/2009 圖 1.1 編製)



Drawn: [Name] Date: [Date]
 Checked: [Name] Date: [Date]

Project: [Name]

REV.	DATE	DESCRIPTION	CHK BY	AUTH BY
Highways Department  Major Works Project Management Office 				
CENTRAL - WAN CHAI BYPASS AND IEC LINE				
PWP ITEM NO.		579 TH		
工程項目編號		579 TH		
Project:				
CENTRAL - WAN CHAI BYPASS - ADD WATER SUPPLY RE-PROVISIONING WORKS				
AECOM				
Drawing Title				
CENTRAL - WAN CHAI BYPASS AND IEC LINE				
Contractor				
LAM WOO & COMPANY LIMITED				
DRAWING NO. [Number]				
SURVEY DATE [Date]				
DRAWN BY [Name]				
CHECKED BY [Name]				
SCALE	1:100	SHEET	1	



Project Title: Central-Wanchai Bypass (CWB) – Tunnel (North Point Section) and Island Eastern Corridor Link
 工程項目名稱：中環灣仔繞道—北角段隧道及東區走廊連接路
 Environmental Permit No. : FEP-07-364/2009/A
 環境許可證編號 : FEP-07-364/2009/A

Figure 1b: General Layout Plan
 圖 1b: 工程項目佈局圖

(This figure was prepared based on Sketch No. 60095653/IEC/DF0006 of Application for Further Environmental Permit (Application No.: FEP-120/2011))
 (本圖是根據申請新的環境許可證 (申請書編號 FEP-120/2011) 圖 60095653/IEC/DF0006 編製)



Figure 2.2

Project Organization Chart



Project Organization chart

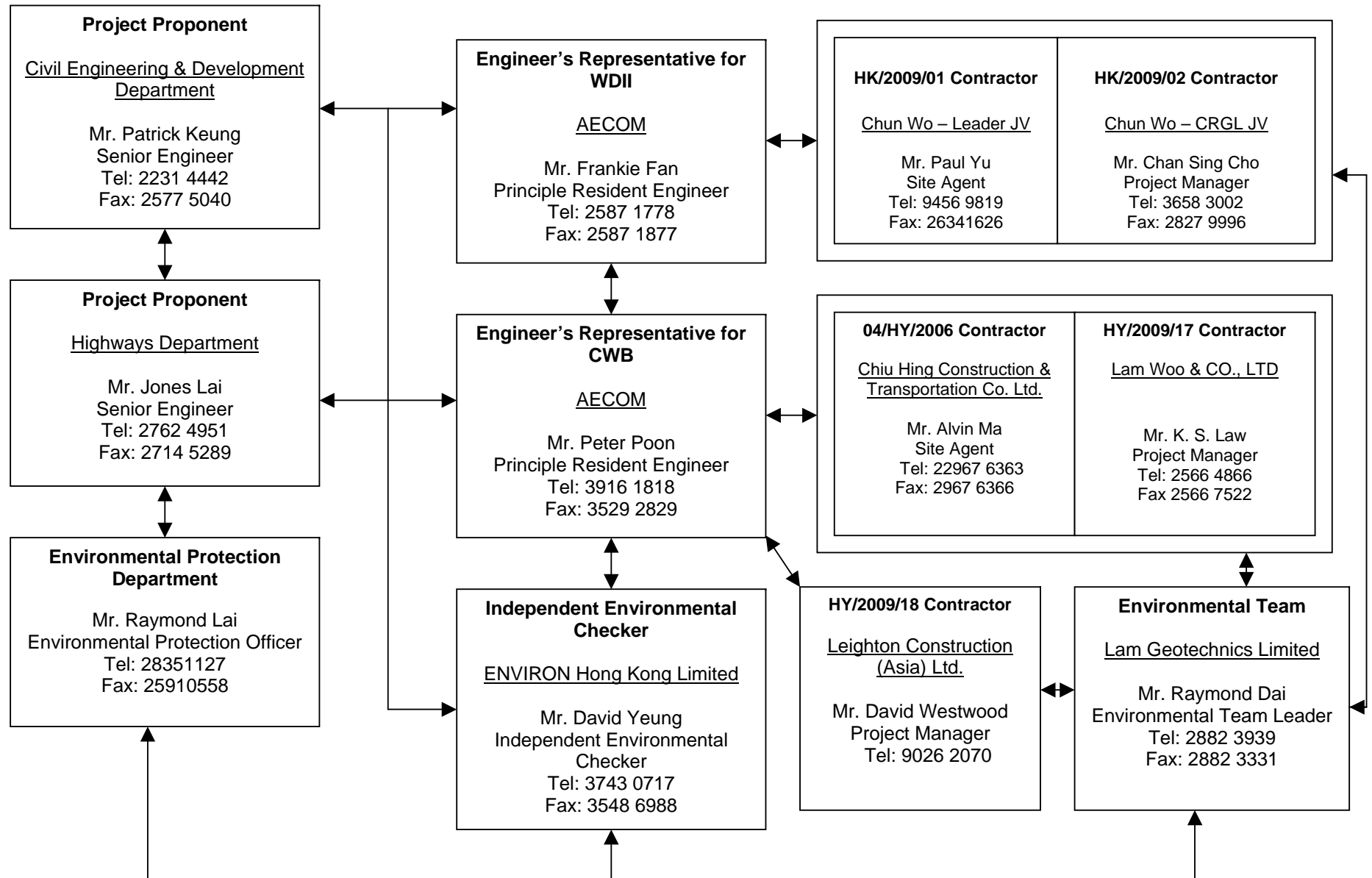
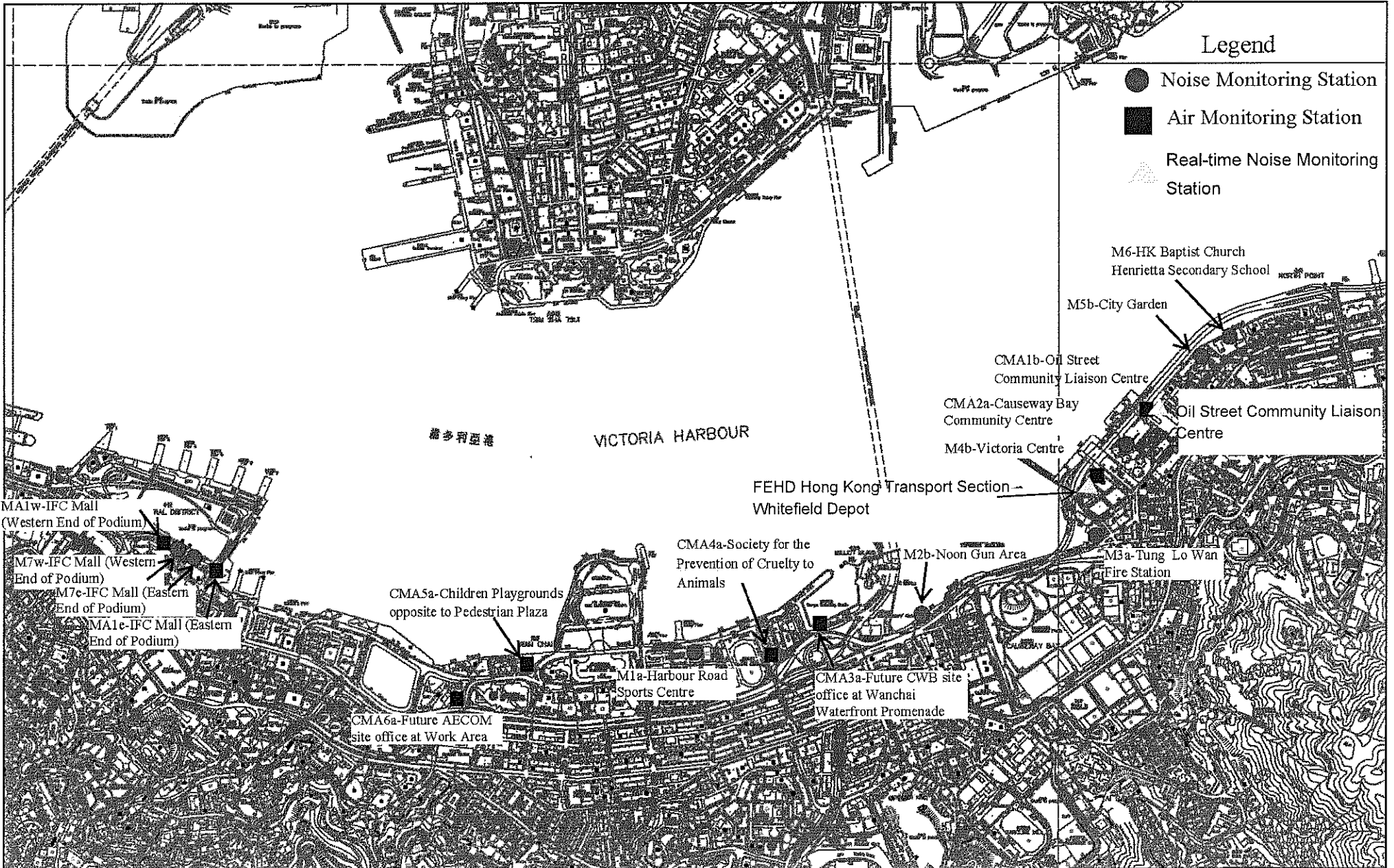




Figure 4.1

Locations of Monitoring Stations



Legend

- Noise Monitoring Station
- Air Monitoring Station
- ▲ Real-time Noise Monitoring Station



Location plan of Environmental Monitoring Stations



Appendix 3.1

Environmental Mitigation Implementation Schedule

IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES**Table A.1 Implementation Schedule for Air Quality Control**

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
S3.6.5	Four times a day watering of the work site with active operations.	Work site / during construction	Contractor		√			EIAO-TM
S3.8.1	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts. <ul style="list-style-type: none"> Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition; Watering during excavation and material handling; Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. 	Work site / during construction	Contractor		√			
Operational Phase								
S3.6.53 – S3.6.54	The design parameters of the East and Central Ventilation Buildings as set in Tables 3.10 and 3.11 of Volume 1 of the WDII & CWB EIA Report.	East and Central Ventilation Buildings / During operation of the Trunk Road	HyD			√		
S3.10.2	Air quality monitoring for the operation performance of the East Ventilation Building and associated East Vent Shaft will be conducted.	East Vent Shaft / During operation of the East Ventilation Building and associated East Vent Shaft	HyD			√		EIAO-TM

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table A.2 Implementation Schedule for Noise Control

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
S4.9.3	<p>Good Site Practice:</p> <ul style="list-style-type: none"> Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program. Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program. Mobile plant, if any, shall be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum. Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO
S4.8.1 – S4.8.11	<p>Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks:</p> <ul style="list-style-type: none"> Slip road 8 tunnel Construction of diaphragm wall and substructures of the tunnel approach ramp Excavation Construction of slabs Backfill 	Work Sites / During Construction	Contractor		√			EIAO-TM, NCO

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<ul style="list-style-type: none"> Demolition and construction of substructures for the IEC Demolition works of existing piers and crossheads of the marine section of the existing IEC <p>Use of PME grouping for the following tasks:</p> <ul style="list-style-type: none"> At-grade road construction Substructure for IECL connection 							
Operation Phase								
S4.8.12 – S4.8.23	<p>For Existing NSRs</p> <ul style="list-style-type: none"> about 235m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC about 230m length of noise semi-enclosure with transparent panel covering the main carriageways (eastbound and westbound) of the CWB and IEC about 135m length of 5.5m high cantilevered noise barrier with 4.5m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC (amended under EP-364/2009/A) about 95m length of 5.5m high cantilevered noise barrier with 1m cantilever inclined at 45° with transparent panel on the eastbound slip road to the IEC about 350m length of 3.5m high vertical noise barrier with transparent panel on the eastbound slip road to the IEC low noise road surfacing for the trunk road (except tunnel section and beneath the landscaped deck at the eastern portal area)) with speed limit of 70 km/hour 	Near North Point / Before commencement of operation of road project	HyD	√	√	√		EIAO-TM

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>For Future/Planned NSRs</p> <ul style="list-style-type: none"> about 265m length of noise semi-enclosure with transparent panel covering the westbound slip road from the IEC The openable windows of the temple, if any, should be orientated so as to avoid direct line of sight to the existing Victoria Park Road as far as practicable. 	<p>In between the Electric Centre (next to City Garden) and CDA(1) site / Before occupation of Planned NSRs in CDA and CDA(1) sites.</p> <p>Near Causeway Bay Fire Station / During detailed design of the re-provisioned Tin Hau Temple</p>	<p>HyD</p> <p>Project Proponent for the re-provisioned Tin Hau Temple</p>	√	√ #			

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Only the steel frame for this section of noise semi-enclosure would be erected in advance during the construction of the westbound slip road.

Table A.4 Implementation Schedule for Waste Management

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
S6.5.14	<i>Floating Refuse</i> During the construction phase, the project proponent's contractor will be responsible for the collection of any refuse within their works area. Floating booms will be provided on the water surface to confine the refuse from the working barges as well as to avoid the accumulation of pollutants within temporary embayment as mentioned in Table D9.3.	Work site / During the construction period	Contractor		√			
S6.6.1	<i>Good Site Practices</i> Recommendations for good site practices during the construction activities include: <ul style="list-style-type: none"> • nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in proper waste management and chemical waste handling procedures; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites). 	Work site / During the construction period	Contractor		√			Waste Disposal Ordinance (Cap.354)

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.6.2	<p><i>Waste Reduction Measures</i></p> <p>Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • to encourage collection of aluminium cans, PET bottles and paper, separate labelled bins shall be provided to segregate these wastes from other general refuse generated by the work force; • any unused chemicals or those with remaining functional capacity shall be recycled; • use of reusable non-timber formwork, such as in casting the tunnel box sections, to reduce the amount of C&D material. • prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill; • proper storage and site practices to minimise the potential for damage or contamination of construction materials; and • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	Work site / During planning and design stage, and construction stage	Contractor	√	√			

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.6.4	<p><i>General Refuse</i></p> <p>General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material.</p> <p>A collection area shall be provided where wastes can be stored and loaded prior to removal from site. An enclosed and covered area is recommended to reduce the occurrence of 'wind blow' light material.</p>	Work site / During the construction period	Contractor		√			Public Health and Municipal Services Ordinance (Cap. 132)
S6.6.5	<p><i>Chemical Wastes</i></p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) shall be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals shall be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	Work site / During the construction period	Contractor		√			<p>Waste Disposal (Chemical Waste) (General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</p>
S6.6.6	<p><i>Construction and Demolition Material</i></p> <p>C&D material shall be sorted on-site into inert C&D material (that is, public fill) and C&D waste. All the suitable inert C&D material shall be broken down to 250 mm in size for reuse as public fill in the WDII reclamation. C&D waste, such as wood, glass, plastic, steel and other metals shall be reused or recycled and, as a last resort, disposed of to landfill. A suitable area shall be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials.</p>	Work site / During the construction period	Contractor		√			ETWB TCW No. 33/2002, 31/2004, 19/2005

WDH & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S6.6.7	In order to monitor the disposal of public fill and C&D waste at public fill reception facilities and landfills, respectively, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements and implemented by the Environmental Team undertaking the environmental monitoring and audit work. An Independent Environment Checker shall be responsible for auditing the results of the system.	Work site / During the construction period	Contractor and Independent Environmental Checker		√			ETWB TCW No. 31/2004
S6.6.8	<p><i>Bentonite Slurry</i></p> <p>The disposal of residual used bentonite slurry shall follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage" and listed as follows:</p> <ul style="list-style-type: none"> • If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis. • If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the Technical Memorandum of Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. • If the used bentonite slurry is intended to be disposed to public fill reception facilities, it will be mixed with dry soil on site before disposal. 	Work site / During the construction period	Contractor		√			ProPECC PN 1/94

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table A.5 Implementation Schedule for Land Contamination

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction and Operation Phase								
S.7.1.1	As no potential contaminative land uses were identified within the Study Area, adverse land contamination impacts associated with the construction and operation of the Project is not expected. As such, environmental protection and mitigation measures are considered not necessary and will not be covered in this EM&A Manual.	-	-					-

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table A.7 Implementation Schedule for Landscape and Visual

WDII & CWB EIA Report Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
Table 10.5	CM1 Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM2 Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM3 Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM4 Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM5 Control of night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Table 10.5	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Operation Phase								
Table 10.6, Figure 10.5.1-10.5.5	OM1 Aesthetic design of buildings and road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM3 Buffer Tree and Shrub Planting to screen proposed roads and associated structures.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM5 Aesthetic streetscape design.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM6 Aesthetic design of roadside amenity areas.	Work site / During Design Stage and Operation Phases	HyD	√	√	√		ETWB TCW 2/2004

*Des - Design, C - Construction, O – Operation, and Dec - Decommissioning



Appendix 4.1

Action and Limit Level



Action and Limit Level

Action and Limit Level for Noise Monitoring

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)/ 70 dB(A)/ 65 dB(A) ^{Note 1}

Note 1:

- 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.
- If works are to be carried out during the restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

Action and Limit Level for Air Monitoring

Monitoring Location	1-hour TSP Level in $\mu\text{g}/\text{m}^3$		24-hour TSP Level in $\mu\text{g}/\text{m}^3$	
	Action Level	Limit Level	Action Level	Limit Level
CMA1b	320.1	500	176.7	260
CMA2a	323.4	500	169.5	260
CMA3a	311.3	500	171.0	260
CMA4a	312.5	500	171.2	260
CMA5a	332.0	500	181.0	260
MA1e	325.1	500	173.4	260
MA1w	325.1	500	173.4	260



Appendix 4.2

Copies of Calibration Certificates



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jul 11, 2011 Rootmeter S/N 0438320 Ta (K) - 298
 Operator Tisch Orifice I.D. - 0005 Pa (mm) - 749.3

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3710	3.2	2.00
2	NA	NA	1.00	0.9730	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8300	8.8	5.50
5	NA	NA	1.00	0.6860	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9817	0.7160	1.4042	0.9957	0.7263	0.8919
0.9775	1.0046	1.9859	0.9915	1.0190	1.2613
0.9754	1.1225	2.2203	0.9894	1.1385	1.4101
0.9743	1.1739	2.3286	0.9882	1.1907	1.4790
0.9690	1.4126	2.8084	0.9829	1.4328	1.7837
Qstd slope (m) = 2.01593			Qa slope (m) = 1.26234		
intercept (b) = -0.03978			intercept (b) = -0.02526		
coefficient (r) = 0.99999			coefficient (r) = 0.99999		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol} \left[\frac{(Pa - \text{Diff. Hg})}{760} \right] \left(\frac{298}{Ta} \right)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} \left[\frac{(Pa - \text{Diff Hg})}{Pa} \right]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

$$Qstd = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$$

$$Qa = 1/m \{ [\text{SQRT} \text{H2O}(\text{Ta}/\text{Pa})] - b \}$$



Calibration Certificate

Certificate No. **13784**

Page 1 of 4 Pages

Customer : Lam Geotechnics Limited

Address : 11/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong

Order No. : Q11569

Date of receipt : 6-Jul-11

Item Tested

Description : Sound Level Meter

Manufacturer : B&K

Model : 2250

Serial No. : 2722311

Test Conditions

Date of Test : 6-Jul-11

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1, IEC 804 Type 1 & IEC 1260 Class 1 specification.

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

Main Test equipment used:

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

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 

P. F. Wong

Approved by : 

Dorothy Cheuk

This Certificate is issued by:
Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Date: 6-Jul-11



Calibration Certificate

Certificate No. 13784

Page 2 of 4 Pages

Results :

1. SPL

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range	Freq. Wgt.	Time Const.	Center Freq.		
20 - 140	A (SPL)	Fast	--	94.0	93.9
		Slow	--		93.9
	C (SPL)	Fast	--	94.0	93.9
	A (SPL)	Fast	--	114.0	113.8
		Slow	--		113.8
	C (SPL)	Fast	--	114.0	113.8
	--	1/1 – Oct/Fast	1 kHz	94.0	93.8
				114.0	113.7
	--	1/3 – Oct/Fast	1 kHz	94.0	93.7
				114.0	113.6

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.01 dB

3. Linearity

Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
20~140	84.0	83.9	0.0	± 0.4 dB
	94.0	93.9 (Ref.)	--	
	95.0	95.0	+0.1	± 0.2 dB

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 13784

Page 3 of 4 Pages

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.8	- 39.4 dB, ± 1.5 dB
63 Hz	-26.5	- 26.2 dB, ± 1.5 dB
125 Hz	-16.5	- 16.1 dB, ± 1 dB
250 Hz	-9.0	- 8.6 dB, ± 1 dB
500 Hz	-3.5	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref)	0 dB, ± 1 dB
2 kHz	+1.1	+ 1.2 dB, ± 1 dB
4 kHz	+1.1	+ 1.0 dB, ± 1 dB
8 kHz	-1.3	- 1.1 dB, + 1.5 dB \sim -3 dB
16 kHz	-5.9	- 6.6 dB, + 3 dB \sim - ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	--	--
1/10	40.0	40.1	± 0.5 dB
1/10 ²	40.0	40.0	
1/10 ³	40.0	40.0	± 1.0 dB
1/10 ⁴	40.0	40.0	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 13784

Page 4 of 4 Pages

6. Filter Characteristics

6.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec. (dB)
125 Hz	-64.2	< - 61
250 Hz	-44.9	< - 42
500 Hz	-21.1	< - 17.5
707 Hz	-3.8	- 2 ~ - 5
1 kHz (Ref)	--	--
1.414 kHz	-3.6	- 2 ~ - 5
2 kHz	-20.9	< - 17.5
4 kHz	-56.0	< - 42
8 kHz	-86.0	< - 61

Uncertainty : ± 0.25 dB

6.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec.(dB)
326 Hz	-64.9	< - 61
530 Hz	-48.1	< - 42
772 Hz	-23.6	< - 17.5
891 Hz	-3.9	+ 0.3 ~ - 5.0
1 kHz (Ref)	--	--
1.122 kHz	-3.9	+ 0.3 ~ - 5.0
1.296 kHz	-23.7	< - 17.5
1.887 kHz	-48.8	< - 42
3.070 kHz	-70.4	< - 61

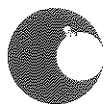
Uncertainty : ± 0.25 dB

Remarks : 1. UUT : Unit-Under-Test

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

3. Atmospheric pressure : 996 hPa.

----- END -----



Calibration Certificate

Certificate No. 13813

Page 1 of 4 Pages

Customer : Lam Geotechnics Limited

Address : 11/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong

Order No. : Q11569

Date of receipt : 7-Jul-11

Item Tested

Description : Sound Level Meter

Manufacturer : B&K

Model : 2250

Serial No. : 2722310

Test Conditions

Date of Test : 8-Jul-11

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1, IEC 804 Type 1 & IEC 1260 Class 1 specification.

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

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 

P. F. Wong

Approved by : 

Dorothy Cheuk

Date: 8-Jul-11

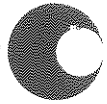
This Certificate is issued by:

Hong Kong Calibration Ltd.

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

Tel: 2425 8801 Fax: 2425 8646

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Calibration Certificate

Certificate No. **13813**

Page 2 of 4 Pages

Results :

1. SPL

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range	Freq. Wgt.	Time Const.	Center Freq.		
20 - 140	A (SPL)	Fast	--	94.0	93.8
		Slow	--		93.8
	C (SPL)	Fast	--	94.0	93.9
	A (SPL)	Fast	--	114.0	113.7
		Slow	--		113.7
	C (SPL)	Fast	--	114.0	113.7
	--	1/1 - Oct/Fast	1 kHz	94.0	93.8
				114.0	113.7
	--	1/3 - Oct/Fast	1 kHz	94.0	93.8
				114.0	113.7

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

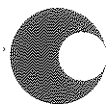
Uncertainty : ± 0.01 dB

3. Linearity

Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.8	0.0	± 0.4 dB
	94.0	93.8 (Ref.)	--	
	95.0	94.8	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 13813

Page 3 of 4 Pages

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.9	- 39.4 dB, ± 1.5 dB
63 Hz	-26.6	- 26.2 dB, ± 1.5 dB
125 Hz	-16.5	- 16.1 dB, ± 1 dB
250 Hz	-9.0	- 8.6 dB, ± 1 dB
500 Hz	-3.5	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref)	0 dB, ± 1 dB
2 kHz	+1.4	+ 1.2 dB, ± 1 dB
4 kHz	+1.2	+ 1.0 dB, ± 1 dB
8 kHz	-1.2	- 1.1 dB, + 1.5 dB \sim -3 dB
16 kHz	-5.8	- 6.6 dB, + 3 dB \sim - ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	--	--
1/10	40.0	40.0	± 0.5 dB
1/10 ²	40.0	39.9	
1/10 ³	40.0	40.0	± 1.0 dB
1/10 ⁴	40.0	40.0	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 13813

Page 4 of 4 Pages

6. Filter Characteristics

6.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec. (dB)
125 Hz	-64.2	< - 61
250 Hz	-44.9	< - 42
500 Hz	-21.0	< - 17.5
707 Hz	-3.8	- 2 ~ - 5
1 kHz (Ref)	--	--
1.414 kHz	-3.5	- 2 ~ - 5
2 kHz	-20.8	< - 17.5
4 kHz	-55.9	< - 42
8 kHz	-85.7	< - 61

Uncertainty : ± 0.25 dB

6.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	IEC 1260 Class 1 Spec.(dB)
326 Hz	-63.6	< - 61
530 Hz	-47.9	< - 42
772 Hz	-23.5	< - 17.5
891 Hz	-3.7	+ 0.3 ~ - 5.0
1 kHz (Ref)	--	--
1.122 kHz	-3.6	+ 0.3 ~ - 5.0
1.296 kHz	-23.4	< - 17.5
1.887 kHz	-48.1	< - 42
3.070 kHz	-69.8	< - 61

Uncertainty : ± 0.25 dB

Remarks : 1. UUT : Unit-Under-Test

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

3. Atmospheric pressure : 1 000 hPa.

----- END -----



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : MA1w
 Equipment no. : EL080

Calibration Date : 17-Feb-12
 Calibration Due Date : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7717	54	55.0567
2	4.9	4.9	9.8	1.6030	46	46.9002
3	3.7	3.7	7.4	1.3955	39	39.7632
4	2.3	2.3	4.6	1.1045	26	26.5088
5	1.5	1.5	3.0	0.8957	16	16.3131

By Linear Regression of Y on X

Slope, m = 43.5274 Intercept, b = -22.0317
 Correlation Coefficient* = 0.9987
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam
 Date : 17-Feb-12

Checked by : Cherry Mak
 Date : 17-Feb-12



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : MA1e
 Equipment no. : EL455

Calibration Date : 17-Feb-12
 Calibration Due Dat : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.8007	59	60.1546
2	5.0	5.0	10.0	1.6191	51	51.9980
3	3.9	3.9	7.8	1.4322	42	42.8219
4	2.5	2.5	5.0	1.1506	30	30.5871
5	1.5	1.5	3.0	0.8957	22	22.4305

By Linear Regression of Y on X

Slope, m = 42.2999 Intercept, b = -16.7615
 Correlation Coefficient* = 0.9973
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam
 Date : 17-Feb-12

Checked by : Cherry Mak
 Date : 17-Feb-12



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA5a Calibration Date : 17-Feb-12
 Equipment no. : EL380 Calibration Due Date : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7863	57	58.1155
2	4.9	4.9	9.8	1.6030	50	50.9785
3	3.6	3.6	7.2	1.3768	42	42.8219
4	2.4	2.4	4.8	1.1278	33	33.6458
5	1.5	1.5	3.0	0.8957	26	26.5088

By Linear Regression of Y on X

Slope, m = 35.6554 Intercept, b = -6.0031
 Correlation Coefficient* = 0.9993
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam Checked by : Cherry Mak
 Date : 17-Feb-12 Date : 17-Feb-12



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA4a
 Equipment no. : EL390

Calibration Date : 17-Feb-12
 Calibration Due Date : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.9	5.9	11.8	1.7571	59	60.1546
2	4.9	4.9	9.8	1.6030	52	53.0176
3	3.5	3.5	7.0	1.3578	45	45.8806
4	2.3	2.3	4.6	1.1045	35	35.6849
5	1.4	1.4	2.8	0.8660	29	29.5675

By Linear Regression of Y on X

Slope, m = 34.2898 Intercept, b = -1.0076
 Correlation Coefficient* = 0.9968
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam
 Date : 17-Feb-12

Checked by : Cherry Mak
 Date : 17-Feb-12



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA3a Calibration Date : 17-Feb-12
 Equipment no. : EL888 Calibration Due Dat : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.8	5.8	11.6	1.7423	46	46.9002
2	4.6	4.6	9.2	1.5538	41	41.8023
3	3.6	3.6	7.2	1.3768	34	34.6654
4	2.3	2.3	4.6	1.1045	25	25.4892
5	1.5	1.5	3.0	0.8957	15	15.2935

By Linear Regression of Y on X

Slope, m = 37.1881 Intercept, b = -16.8016
 Correlation Coefficient* = 0.9962
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam Checked by : Cherry Mak
 Date : 17-Feb-12 Date : 17-Feb-12



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA2a Calibration Date : 17-Feb-12
 Equipment no. : EL449 Calibration Due Date : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.3	6.3	12.6	1.8150	52	53.0176
2	5.2	5.2	10.4	1.6507	45	45.8806
3	4.0	4.0	8.0	1.4502	38	38.7436
4	2.6	2.6	5.2	1.1730	28	28.5479
5	1.6	1.6	3.2	0.9245	16	16.3131

By Linear Regression of Y on X

Slope, m = 40.2228 Intercept, b = -19.9196
 Correlation Coefficient* = 0.9982
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam Checked by : Cherry Mak
 Date : 17-Feb-12 Date : 17-Feb-12



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA1b
 Equipment no. : EL452

Calibration Date : 17-Feb-12
 Calibration Due Dat : 17-Apr-12

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	288	Kelvin	Pressure, P _a
			1018 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m _c	2.01593
		Intercept, b _c	-0.03978
Last Calibration Date	11-Jul-11	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	11-Jul-12		

Calibration of RSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7863	61	62.1937
2	5.0	5.0	10.0	1.6191	54	55.0567
3	3.8	3.8	7.6	1.4140	46	46.9002
4	2.5	2.5	5.0	1.1506	36	36.7045
5	1.6	1.6	3.2	0.9245	25	25.4892

By Linear Regression of Y on X

Slope, m = 41.8759 Intercept, b = -12.4733
 Correlation Coefficient* = 0.9990
 Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by : Sam Lam
 Date : 17-Feb-12

Checked by : Cherry Mak
 Date : 17-Feb-12



Calibration Certificate

Certificate No. 12889

Page 1 of 2 Pages

Customer : Lam Geotechnics Limited

Address : 11/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong

Order No. : Q10982

Date of receipt : 25-May-11

Item Tested

Description : Sound Level Calibrator

Manufacturer : Rion

Model : NC-73

Serial No. : 10465798

Test Conditions

Date of Test : 26-May-11

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification after adjustment.

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

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	03926	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR
S041	Universal Counter	04461	SCL-HKSAR
S206	Sound Level Meter	04462	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 

P. F. Wong

Approved by : 

Alan Chu

Date: 26-May-11

This Certificate is issued by:

Hong Kong Calibration Ltd.

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

Tel: 2425 8801 Fax: 2425 8646

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Calibration Certificate

Certificate No. 12889

Page 2 of 2 Pages

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value		Mfr's Spec.
	Before Adjust.	After Adjust.	
94 dB	*95.20 dB	93.94 dB	± 1 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.994 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.5 %

Mfr's Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

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

3. The above measured values are the mean of 3 measurement.

4. Atmospheric Pressure : 1 004 hPa

5. *Out of Specification

----- END -----



Appendix 5.1

Monitoring Schedules for Reporting Month and Coming Reporting Month

Contract No. HK/2011/07
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage2)
Environmental Monitoring Schedule
March 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26-Feb	27-Feb	28-Feb Noise Monitoring	29-Feb	1-Mar 24hr TSP	2-Mar 1hr TSP x 3	3-Mar
4-Mar	5-Mar	6-Mar Noise Monitoring	7-Mar 24hr TSP	8-Mar 1hr TSP x 3	9-Mar	10-Mar
11-Mar	12-Mar	13-Mar 24hr TSP Noise Monitoring	14-Mar 1hr TSP x 3 24hr TSP (CMA1b)	15-Mar	16-Mar	17-Mar
18-Mar	19-Mar 24hr TSP	20-Mar 1hr TSP x 3	21-Mar	22-Mar Noise Monitoring	23-Mar	24-Mar 24hr TSP
25-Mar	26-Mar 1hr TSP x 3 24hr TSP (CMA3a)	27-Mar Noise Monitoring	28-Mar	29-Mar	30-Mar	31-Mar

Contract No. HK/2011/07
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage2)
Tentative Environmental Monitoring Schedule
April 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25-Mar	26-Mar 1hr TSP x 3	27-Mar Noise Monitoring	28-Mar	29-Mar	30-Mar 24hr TSP	31-Mar 1hr TSP x 3
1-Apr	2-Apr	3-Apr 24hr TSP Noise Monitoring	4-Apr	5-Apr 1hr TSP x 3	6-Apr	7-Apr
8-Apr	9-Apr 24hr TSP	10-Apr 1hr TSP x 3	11-Apr	12-Apr	13-Apr Noise Monitoring	14-Apr 24hr TSP
15-Apr	16-Apr 1hr TSP x 3	17-Apr Noise Monitoring	18-Apr	19-Apr	20-Apr 24hr TSP	21-Apr 1hr TSP x 3
22-Apr	23-Apr	24-Apr Noise Monitoring	25-Apr	26-Apr 24hr TSP	27-Apr 1hr TSP x 3	28-Apr

Remarks (Water)

1. Cut-off date is at the 27th of each reporting month.
2. Actual monitoring will subject to change due to any safety concern or adverse weather condition.
3. Water Quality Monitoring Stations corresponding to active contracts are sub-divided below:
 - Contract HY/2009/11: WSD9, WSD10, WSD15, WSD17, C8, C9 (Commenced on 23 March 2010)
 - Contract HY/2009/15: C6 and C7 (Commenced on 9 Nov 2010)
 - Contract HK/2009/01: WSD7, WSD19, WSD20, C1, C2, C3, C4e, C4w (Commenced on 8 July 2010); Contract HK/2010/06 share station C2 from 23 Mar 2011
 - Contract HK/2009/02: WSD21, C5e, C5w (Commenced on 8 July 2010)

Remarks (Air)

1. Cut-off date is at the 27th of each reporting month.
2. Actual monitoring will subject to change due to any safety concern or adverse weather condition.
3. Air Quality Monitoring Stations corresponding to active contracts are sub-divided below
 - Contract HK/2009/01: CMA5a and CMA6a (Commenced and reported in Apr 2011)
 - Contract HK/2009/02: (Commenced and reported in Feb 2011)
 - Contract HY/2009/11: CMA1b and CMA2a (Commenced on 17 Jun 2010, To be reported in Monthly report on 11 Aug 2010) and CMA2a (Commenced on 12 May 2010, To be reported in Monthly report on 11 Aug 2010)
 - Due to the changing of land ownership at Oil Street Community Liaison Centre from Contractor to FEHD, the air quality monitoring at CMA1b was suspended on 18 September 2011. The permit for the installation of HVS at temporary FEHD depot was obtained from the premises owner on early November 2011 and TSP monitoring at CMA1b was resumed on 14 November 2011.
 - Contract HY/2009/15: CMA3a (Commenced and reported on 15 Mar 2011)

Remarks (Noise)

1. Cut-off date is at the 27th of each reporting month.
2. Actual monitoring will subject to change due to any safety concern or adverse weather condition.
3. Noise Quality Monitoring Stations corresponding to active contracts are sub-divided below
 - Contract HK/2009/01 and HK/2009/02: M1a (Commenced on 30 Mar 2010, To be reported in Monthly report on 6 July 2010)
 - Contract HY/2009/11: M4b, M5b (Commenced on 23 Mar 2010 when dredging work starts)
 - Contract HY/2009/15: M2b (Commenced and reported on 10 Nov 2010) and M3a (Commenced on 10 May 2010, To be reported in Monthly report on 10 Nov 2010)
4. Day time noise will be monitored for Leq(30min) during the period between 07:00 and 19:00 for active contract(s)
5. Restricted hours noise (i.e. outside 07:00-19:00 of normal weekday) will be monitored for 3 nos. Leq(5min) as per the relevant Construction Noise Permit(s) in force for the following contract(s): Contracts HY/2009/11, HK/2009/01, HK/2009/02 and HY/2009/15



Appendix 5.2

Noise Monitoring Results and Graphical Presentations



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: M1a - Harbour Road Sports Centre

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
28/02/12	13:05	Cloudy	72.8	75.5	68.0	72	64	75
06/03/12	10:56	Sunny	73.1	76.0	68.5	72	66	75
13/03/12	15:32	Cloudy	72.8	74.5	69.5	72	64	75
22/03/12	10:58	Fine	73.1	75.5	69.0	72	66	75
27/03/12	9:05	Fine	73.6	76.0	70.0	72	68	75

Location: M2b - Noon-day gun area

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
28/02/12	13:51	Cloudy	72.4	76.0	67.5	68	71	75
06/03/12	17:50	Cloudy	70.5	72.0	67.0	68	67	75
13/03/12	16:23	Cloudy	70.0	71.0	68.0	68	66	75
22/03/12	16:15	Fine	69.7	71.0	67.5	68	66	75
27/03/12	13:50	Fine	70.2	71.6	68.0	68	67	75

Location: M3a - Tung Lo Wan Fire Station

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
28/02/12	09:19	Cloudy	67.3	69.5	64.0	69	67	75
06/03/12	13:31	Fine	67.6	70.0	65.0	69	68	75
13/03/12	09:53	Cloudy	67.8	69.5	65.5	69	68	75
22/03/12	08:16	Cloudy	71.2	74.0	66.0	69	67	75
27/03/12	13:58	Fine	67.4	69.0	64.0	69	67	75



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: M4b - Victoria Centre

Date	Time	Weather	Measurement Noise Level			Baseline Noise Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30min)								
28/02/12	08:25	Cloudy	72.4	73.0	71.0	67	71	75
06/03/12	14:49	Fine	70.9	72.5	68.5	67	68	75
13/03/12	09:08	Cloudy	71.6	73.0	68.5	67	70	75
22/03/12	07:23	Cloudy	67.1	68.5	65.0	67	67	75
27/03/12	14:41	Fine	70.4	72.0	68.0	67	67	75

Location: M5b - City Garden

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30min)								
28/02/12	10:22	Cloudy	74.3	75.0	72.0	68	73	75
06/03/12	15:42	Cloudy	74.1	74.5	73.0	68	73	75
13/03/12	13:00	Cloudy	71.1	73.5	67.0	68	68	75
22/03/12	09:13	Fine	67.6	69.0	65.5	68	68	75
27/03/12	15:28	Fine	70.4	72.1	68.4	68	67	75

Location: M6 - HK baptist Church henrietta Secondary School

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
28/02/12	11:31	Cloudy	75.7	76.5	74.0	71	74	70
06/03/12	16:30	Cloudy	73.5	75.5	73.0	71	70	70
13/03/12	11:20	Cloudy	75.6	76.5	74.0	71	74	70
22/03/12	09:57	Fine	73.3	74.5	71.0	71	70	70
27/03/12	15:57	Fine	74.2	75.0	72.5	71	72	70



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: M7e - International Finance Centre (Eastern End of Podium)

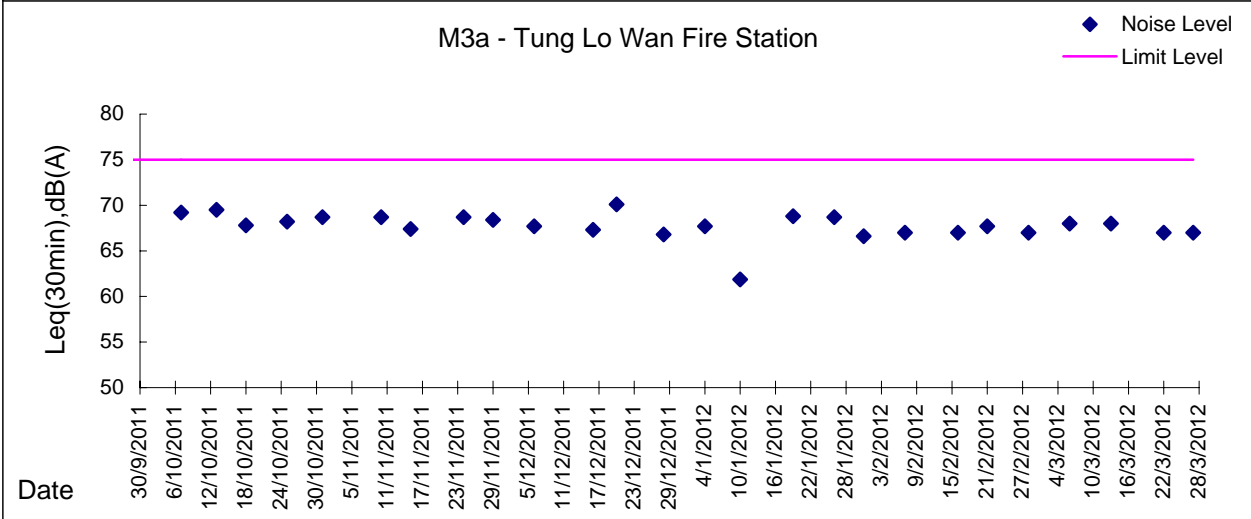
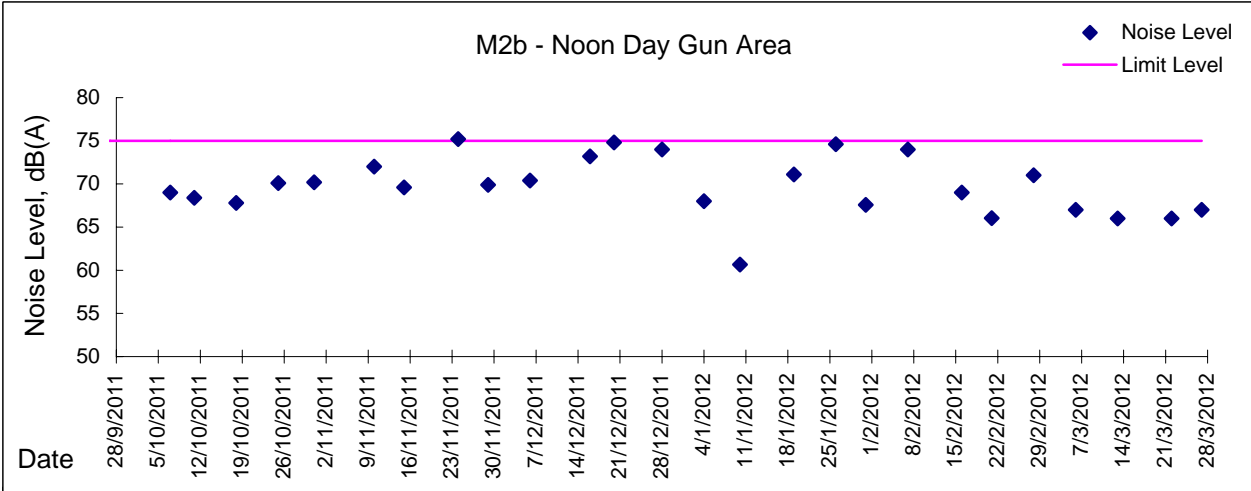
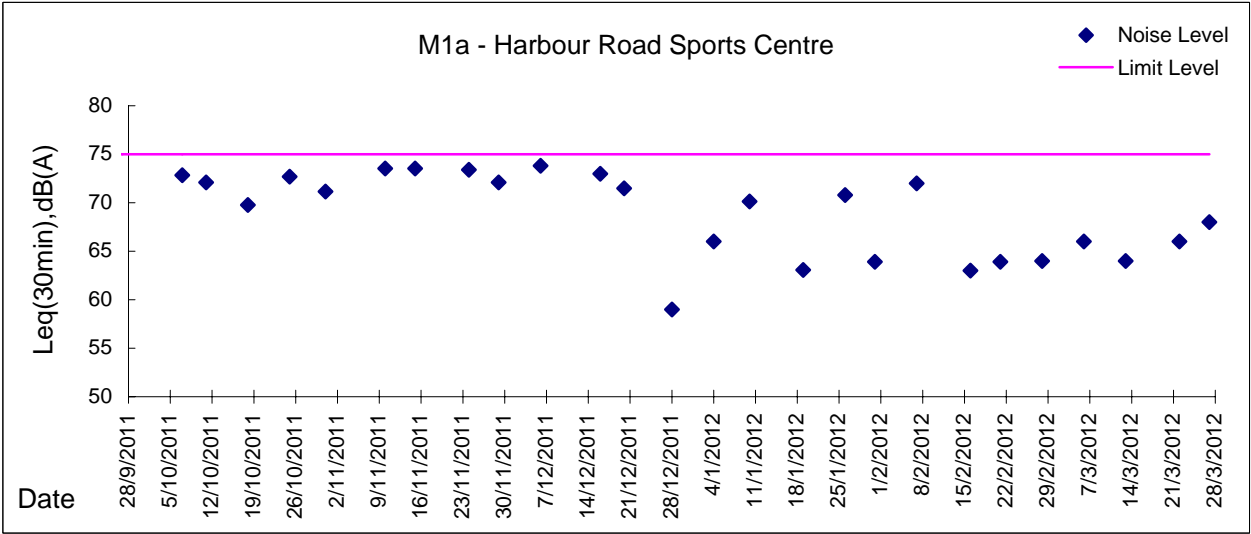
Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
28/02/12	15:35	Cloudy	74.5	77.0	70.5	67	74	75
06/03/12	09:25	Cloudy	74.4	76.0	71.5	67	74	75
13/03/12	14:01	Cloudy	75.8	77.5	73.0	67	75	75
22/03/12	13:50	Fine	77.1	78.0	74.5	67	77	75
27/03/12	11:13	Fine	76.8	77.0	75.0	67	76	75

Location: M7w - International Finance Centre (Western End of Podium)

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
Unit: dB(A), (30-min)								
28/02/12	14:51	Cloudy	66.4	68.0	64.0	69	66	75
06/03/12	10:03	Cloudy	68.2	69.5	64.5	69	68	75
13/03/12	14:13	Cloudy	69.8	71.5	67.0	69	59	75
22/03/12	15:09	Fine	69.4	71.0	67.0	69	69	75
27/03/12	13:00	Fine	68.5	69.5	66.5	69	69	75

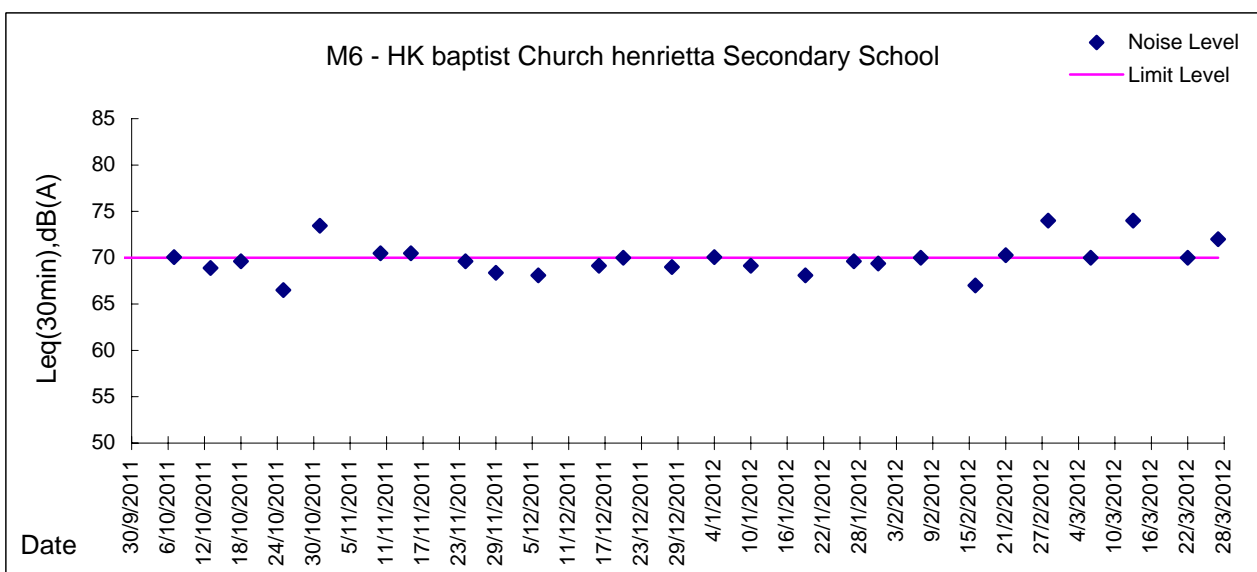
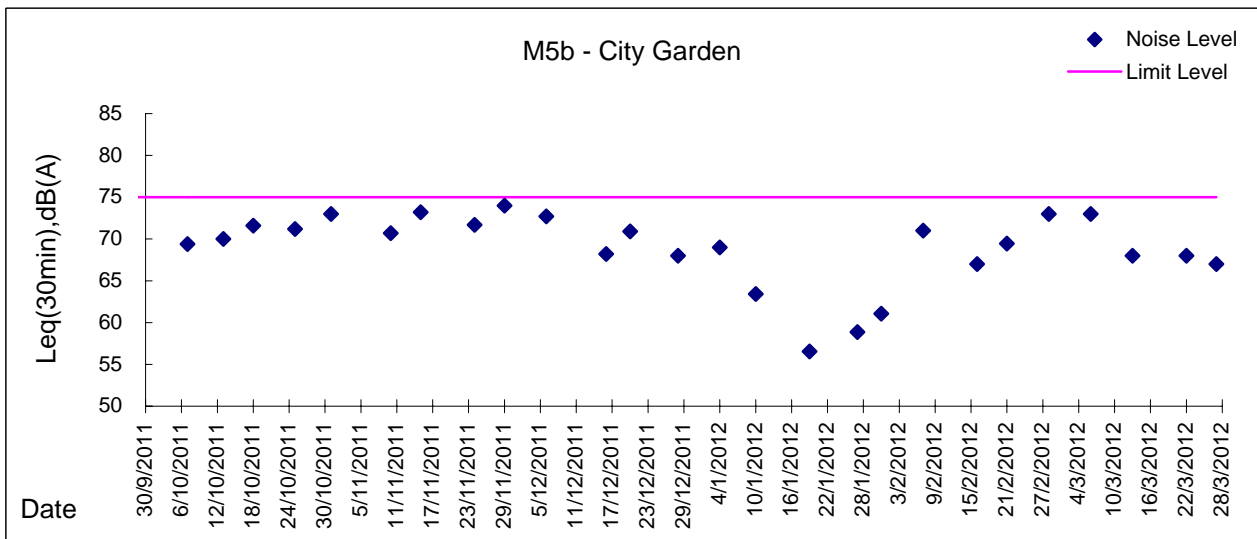
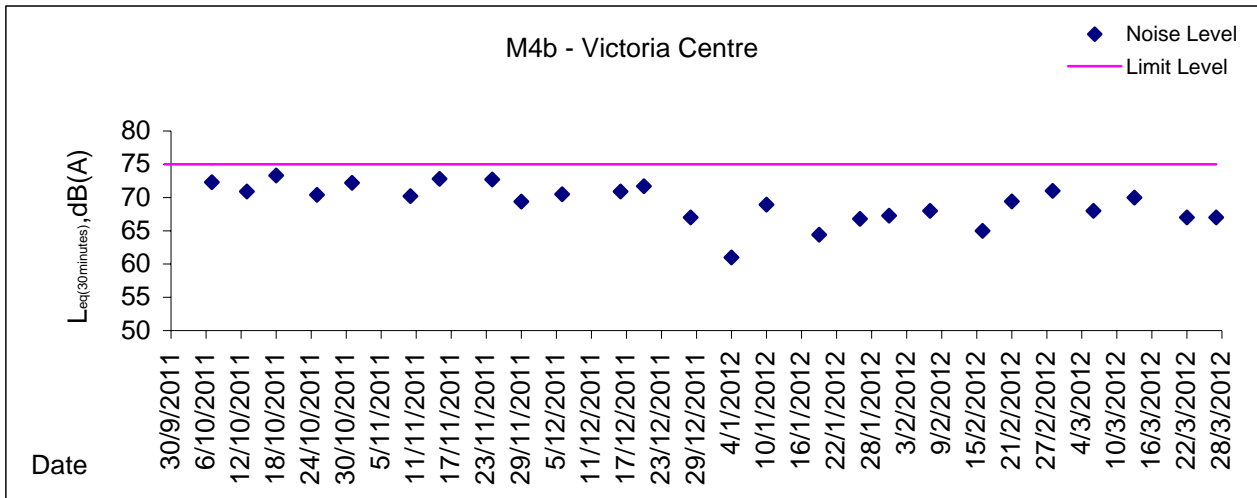


Graphic Presentation of Noise Monitoring Result
Day Time (0700 - 1900hrs on normal weekdays)



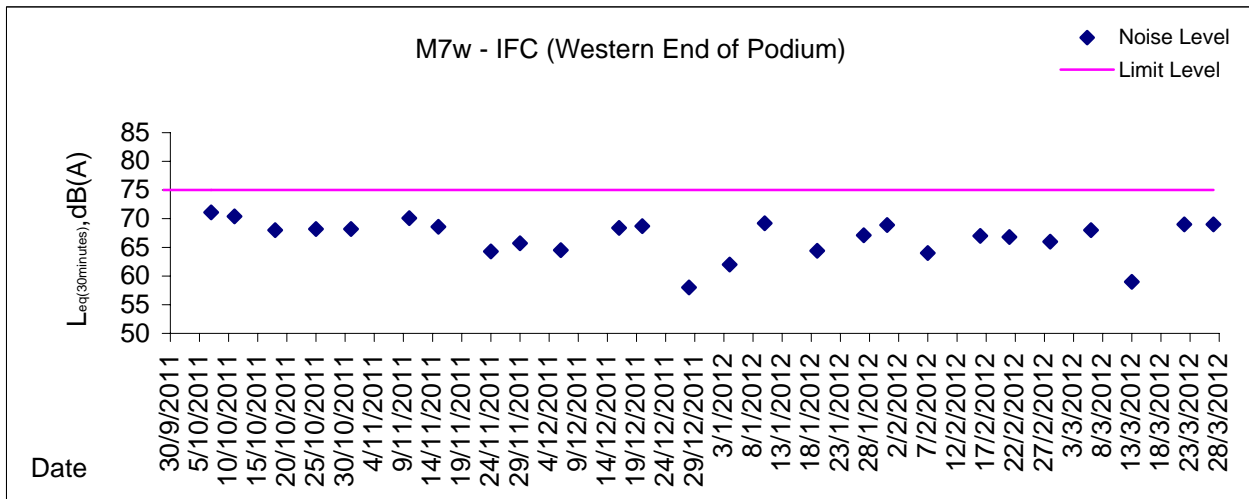
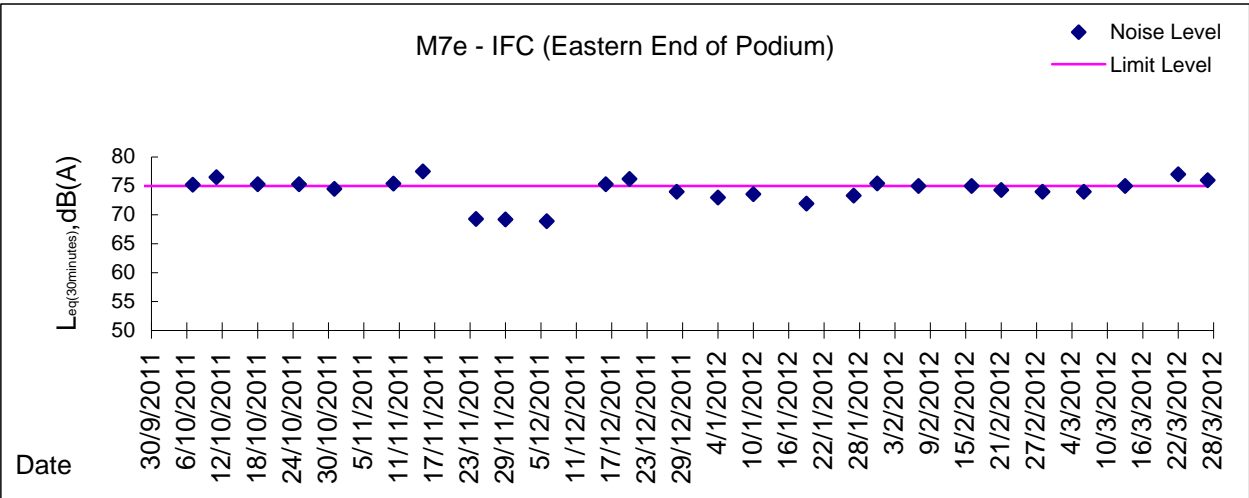


Graphic Presentation of Noise Monitoring Result
Day Time (0700 - 1900hrs on normal weekdays)





Graphic Presentation of Noise Monitoring Result
Day Time (0700 - 1900hrs on normal weekdays)





Appendix 5.3

Air Quality Monitoring Results and Graphical Presentations



Location: CMA1b - Oil St Community Liaison Centre

Report on 24-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 176.7

Limit Level ($\mu\text{g}/\text{m}^3$) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002204	2.7211	2.8528	585.73	609.72	23.99	1.23	1.18	1.20	1731	76
7-Mar-12	8:00	Cloudy	002219	2.8040	3.0205	612.72	636.72	24.00	1.25	1.18	1.21	1750	124
14-Mar-12	12:10	Cloudy	002291	2.8033	2.9010	639.72	663.16	23.44	1.18	1.23	1.21	1696	56
19-Mar-12	8:00	Fine	002305	2.8089	3.0522	690.17	714.17	24.00	1.22	1.18	1.20	1727	141
24-Mar-12	8:00	Fine	002138	2.7245	2.9724	717.17	741.17	24.00	1.23	1.25	1.24	1787	139

* Due to lack of electricity supply, the 24 hr-TSPs were rescheduled from 13 Mar 2012 to 14 Mar 2012

Report on 1-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 320.1

Limit Level ($\mu\text{g}/\text{m}^3$) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	8:27	Fine	002278	2.8049	2.8204	609.73	610.72	0.99	1.22	1.24	1.23	73	212
2-Mar-12	9:33	Fine	002280	2.7888	2.8009	610.72	611.72	1.00	1.22	1.29	1.26	75	161
2-Mar-12	10:36	Fine	002257	2.8162	2.8325	611.72	612.72	1.00	1.22	1.27	1.24	75	218
8-Mar-12	8:48	Cloudy	002213	2.7459	2.7574	636.72	637.72	1.00	1.20	1.18	1.19	72	161
8-Mar-12	10:48	Cloudy	002212	2.7325	2.7395	637.72	638.72	1.00	1.23	1.23	1.23	74	95
8-Mar-12	14:25	Cloudy	002315	2.8149	2.8241	638.72	639.72	1.00	1.18	1.18	1.18	71	130
14-Mar-12	8:05	Cloudy	002263	2.8195	2.8303	663.16	664.16	1.00	1.00	1.02	1.01	61	178
14-Mar-12	9:10	Cloudy	002265	2.7926	2.8026	664.16	665.16	1.00	1.23	1.28	1.25	75	133
14-Mar-12	10:55	Cloudy	002292	2.7912	2.7986	665.16	666.16	1.00	1.18	1.18	1.18	71	104
20-Mar-12	8:36	Fine	002458	2.7707	2.7786	714.17	715.17	1.00	1.08	1.20	1.14	69	115
20-Mar-12	9:40	Fine	002454	2.7403	2.7504	715.17	716.17	1.00	1.18	1.22	1.20	72	140
20-Mar-12	10:43	Fine	002451	2.7314	2.7402	716.17	717.17	1.00	1.13	1.13	1.13	68	130
26-Mar-12	9:53	Fine	002367	2.8313	2.8512	741.17	742.17	1.00	1.23	1.27	1.25	75	266
26-Mar-12	11:00	Fine	002361	2.8205	2.8412	742.17	743.17	1.00	1.23	1.25	1.24	74	279
26-Mar-12	12:03	Fine	002362	2.8091	2.8279	743.17	744.17	1.00	1.20	1.20	1.20	72	261



Location: CMA2a - Causeway Bay Community Centre

Report on 24-hour TSP monitoring
 Action Level ($\mu\text{g}/\text{m}^3$) - 169.5
 Limit Level ($\mu\text{g}/\text{m}^3$) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002208	2.7392	2.8387	10386.88	10410.88	24.00	1.42	1.36	1.39	1999	50
7-Mar-12	8:00	Cloudy	002220	2.8049	3.0196	10413.88	10437.88	24.00	1.51	1.34	1.42	2050	105
13-Mar-12	8:00	Cloudy	002315	2.8177	3.0677	10440.88	10464.88	24.00	1.49	1.47	1.48	2127	118
19-Mar-12	8:00	Fine	002290	2.8105	2.9385	10467.89	10491.89	24.00	1.26	1.29	1.28	1839	70
24-Mar-12	8:00	Fine	002137	2.7211	2.9892	10494.89	10518.90	24.01	1.49	1.46	1.48	2128	126

Report on 1-hour TSP monitoring
 Action Level ($\mu\text{g}/\text{m}^3$) - 323.4
 Limit Level ($\mu\text{g}/\text{m}^3$) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	8:16	Fine	002277	2.7816	2.7933	10410.88	10411.88	1.00	1.31	1.31	1.31	79	149
2-Mar-12	9:20	Fine	002279	2.7966	2.8085	10411.88	10412.88	1.00	1.46	1.46	1.46	87	136
2-Mar-12	10:25	Fine	002258	2.8132	2.8222	10412.88	10413.88	1.00	1.46	1.46	1.46	87	103
8-Mar-12	8:30	Cloudy	002215	2.7685	2.7791	10437.88	10438.88	1.00	1.41	1.37	1.39	83	127
8-Mar-12	11:00	Cloudy	002149	2.7532	2.7687	10438.88	10439.88	1.00	1.61	1.61	1.61	97	161
8-Mar-12	14:35	Cloudy	002150	2.7676	2.7830	10439.88	10440.88	1.00	1.49	1.49	1.49	89	173
14-Mar-12	8:23	Cloudy	002264	2.7927	2.8030	10464.89	10465.89	1.00	1.37	1.34	1.36	81	127
14-Mar-12	9:27	Cloudy	002266	2.8212	2.8292	10465.89	10466.89	1.00	1.34	1.34	1.34	81	99
14-Mar-12	10:45	Cloudy	002268	2.8145	2.8194	10466.89	10467.89	1.00	1.39	1.47	1.43	86	57
20-Mar-12	8:20	Fine	002455	2.7416	2.7470	10491.89	10492.89	1.00	1.41	1.41	1.41	85	64
20-Mar-12	9:25	Fine	002459	2.7229	2.7277	10492.89	10493.89	1.00	1.17	1.17	1.17	70	68
20-Mar-12	10:30	Fine	002452	2.7518	2.7610	10493.89	10494.89	1.00	1.31	1.34	1.33	80	116
26-Mar-12	10:08	Fine	002366	2.8103	2.8317	10518.90	10519.90	1.00	1.46	1.51	1.49	89	240
26-Mar-12	11:10	Fine	002370	2.8109	2.8324	10519.90	10520.90	1.00	1.41	1.41	1.41	85	254
26-Mar-12	12:10	Fine	002363	2.8277	2.8526	10520.90	10521.90	1.00	1.51	1.51	1.51	91	275



Location: CMA3a - CWB PRE Site Office Area

Report on 24-hour TSP monitoring
 Action Level ($\mu\text{g}/\text{m}^3$) - 171
 Limit Level ($\mu\text{g}/\text{m}^3$) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002147	2.7298	2.8741	10976.63	11000.63	24.00	1.53	1.57	1.55	2230	65
7-Mar-12	8:00	Cloudy	002154	2.7402	2.9559	11003.63	11027.63	24.00	1.52	1.50	1.51	2175	99
13-Mar-12	8:00	Cloudy	002286	2.7884	3.1057	11062.62	11086.62	24.00	1.50	1.50	1.50	2161	147
19-Mar-12	8:00	Fine	002306	2.8092	3.1135	11089.62	11113.62	24.00	1.65	1.68	1.66	2393	127
26-Mar-12	13:00	Fine	002430	2.7354	2.9873	11143.79	11167.79	24.00	1.65	1.60	1.63	2342	108

* Due to lack of electricity supply, the 24 hr-1SPs were rescheduled from 24 Mar 2012 to 26 Mar 2012

Report on 1-hour TSP monitoring
 Action Level ($\mu\text{g}/\text{m}^3$) - 311.3
 Limit Level ($\mu\text{g}/\text{m}^3$) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	13:00	Fine	002241	2.7774	2.7924	11000.63	11001.63	1.00	1.57	1.52	1.54	93	162
2-Mar-12	14:11	Fine	002152	2.7655	2.7804	11001.63	11002.63	1.00	1.52	1.52	1.52	91	164
2-Mar-12	15:16	Fine	002151	2.7591	2.7736	11002.63	11003.63	1.00	1.54	1.54	1.54	93	157
8-Mar-12	8:09	Cloudy	002131	2.7398	2.7560	11059.64	11060.64	1.00	1.47	1.50	1.49	89	182
8-Mar-12	9:21	Cloudy	002281	2.7896	2.8030	11060.64	11061.64	1.00	1.45	1.45	1.45	87	154
8-Mar-12	10:30	Cloudy	002284	2.7967	2.8130	11061.64	11062.64	1.00	1.45	1.45	1.45	87	188
14-Mar-12	13:00	Cloudy	002297	2.7877	2.8043	11086.62	11087.62	1.00	1.53	1.53	1.53	92	181
14-Mar-12	14:35	Cloudy	002310	2.7991	2.8133	11087.62	11088.62	1.00	1.55	1.53	1.54	92	154
14-Mar-12	15:37	Cloudy	002308	2.8175	2.8308	11088.62	11089.62	1.00	1.48	1.50	1.49	89	149
20-Mar-12	9:00	Fine	002440	2.7266	2.7393	11113.62	11114.62	1.00	1.52	1.55	1.53	92	138
20-Mar-12	10:20	Fine	002435	2.7275	2.7416	11114.62	11115.62	1.00	1.62	1.73	1.68	101	140
20-Mar-12	13:00	Fine	002433	2.7205	2.7369	11115.62	11116.62	1.00	1.57	1.57	1.57	94	174
26-Mar-12	9:35	Fine	002372	2.8243	2.8514	11140.80	11141.79	0.99	1.60	1.65	1.63	97	280
26-Mar-12	10:37	Fine	002293	2.7521	2.8110	11141.79	11142.79	1.00	1.60	1.60	1.60	96	301
26-Mar-12	13:00	Fine	002431	2.7458	2.7667	11142.79	11143.79	1.00	1.55	1.63	1.59	95	219



Location: CMA4a - SPCA

Report on 24-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 171.2
Limit Level ($\mu\text{g}/\text{m}^3$) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002148	2.7456	2.8435	14605.30	14629.30	24.00	1.22	1.21	1.22	1755	56
7-Mar-12	8:00	Cloudy	002141	2.7430	2.9071	14632.30	14656.30	24.00	1.25	1.22	1.23	1778	92
13-Mar-12	8:00	Cloudy	002287	2.8107	3.0063	14659.40	14683.40	24.00	1.19	1.22	1.21	1741	112
19-Mar-12	8:00	Fine	002307	2.8150	3.0139	14686.40	14710.40	24.00	1.13	1.13	1.13	1627	122
24-Mar-12	8:00	Fine	002438	2.7141	2.9243	14713.41	14737.41	24.00	1.11	1.11	1.11	1598	132

Report on 1-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 312.5
Limit Level ($\mu\text{g}/\text{m}^3$) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	13:00	Fine	002242	2.7857	2.7984	14629.30	14630.30	1.00	1.10	1.10	1.10	66	192
2-Mar-12	14:33	Fine	002153	2.7655	2.7690	14630.30	14631.30	1.00	1.07	1.07	1.07	64	54
2-Mar-12	15:38	Fine	002155	2.7408	2.7502	14631.30	14632.30	1.00	1.16	1.16	1.16	69	135
8-Mar-12	8:31	Cloudy	002283	2.8114	2.8207	11656.39	11657.39	1.00	1.19	1.17	1.18	71	131
8-Mar-12	9:43	Cloudy	002282	2.8000	2.8084	11657.39	11658.39	1.00	1.17	1.19	1.18	71	119
8-Mar-12	10:50	Cloudy	002285	2.7960	2.8041	11658.39	11659.39	1.00	1.28	1.28	1.28	77	106
14-Mar-12	13:00	Cloudy	002296	2.8123	2.8202	14683.40	14684.40	1.00	1.23	1.23	1.23	74	107
14-Mar-12	14:20	Cloudy	002311	2.8103	2.8172	14684.40	14685.40	1.00	1.23	1.23	1.23	74	94
14-Mar-12	15:20	Cloudy	002309	2.7999	2.8074	14685.40	14686.40	1.00	1.23	1.23	1.23	74	102
20-Mar-12	8:50	Fine	002441	2.7375	2.7439	14710.40	14711.40	1.00	1.07	1.10	1.09	65	98
20-Mar-12	10:02	Fine	002437	2.7142	2.7235	14711.40	14712.40	1.00	1.10	1.05	1.07	64	144
20-Mar-12	13:00	Fine	002436	2.7284	2.7371	14712.40	14713.40	1.00	1.10	1.13	1.12	67	130
26-Mar-12	8:05	Fine	002371	2.7979	2.8117	14737.42	14738.42	1.00	1.11	1.11	1.11	66	208
26-Mar-12	9:15	Fine	002374	2.7935	2.8064	14738.42	14739.42	1.00	1.11	1.11	1.11	66	194
26-Mar-12	10:18	Fine	002375	2.7946	2.8068	14739.42	14740.42	1.00	1.13	1.16	1.15	69	177



Location: CMA5a - Children Garden opposite to Pedestrian Plaza

Report on 24-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 181
 Limit Level ($\mu\text{g}/\text{m}^3$) - 260

181
 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002032	2.7753	2.8791	15602.42	15626.42	24.00	1.23	1.23	1.23	1778	58
7-Mar-12	8:00	Cloudy	002249	2.7949	2.9675	15629.42	15653.42	24.00	1.09	1.10	1.10	1578	109
13-Mar-12	8:00	Cloudy	002275	2.7982	2.9884	15656.42	15680.43	24.01	1.21	1.21	1.21	1740	109
19-Mar-12	8:00	Fine	002295	2.7992	3.0295	15683.43	15707.42	23.99	1.20	1.25	1.23	1766	130
24-Mar-12	8:00	Fine	002379	2.8013	2.9865	15710.42	15734.43	24.01	1.10	1.15	1.13	1621	114

Report on 1-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 332
 Limit Level ($\mu\text{g}/\text{m}^3$) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	13:00	Fine	002243	2.7775	2.7847	15626.42	15627.42	1.00	0.98	0.98	0.98	59	122
2-Mar-12	14:16	Fine	002245	2.7793	2.7876	15627.42	15628.42	1.00	1.14	1.14	1.14	69	121
2-Mar-12	15:26	Fine	002247	2.7677	2.7766	15628.42	15629.42	1.00	1.20	1.20	1.20	72	124
8-Mar-12	8:30	Cloudy	002276	2.7716	2.7809	15653.42	15654.42	1.00	1.23	1.23	1.23	74	126
8-Mar-12	9:33	Cloudy	002272	2.7942	2.8024	15654.42	15655.42	1.00	1.23	1.26	1.25	75	110
8-Mar-12	10:38	Cloudy	002270	2.7972	2.8049	15655.42	15656.42	1.00	1.23	1.23	1.23	74	104
14-Mar-12	8:32	Cloudy	002229	2.8043	2.8137	15680.43	15681.43	1.00	1.21	1.21	1.21	73	130
14-Mar-12	9:41	Cloudy	002226	2.7771	2.7855	15681.43	15682.43	1.00	1.21	1.21	1.21	73	116
14-Mar-12	10:45	Cloudy	002236	2.7880	2.7968	15682.43	15683.43	1.00	1.21	1.21	1.21	73	121
20-Mar-12	9:55	Fine	002384	2.8075	2.8166	15707.42	15708.42	1.00	1.20	1.20	1.20	72	126
20-Mar-12	11:00	Fine	002382	2.8132	2.8206	15708.42	15709.42	1.00	1.09	1.09	1.09	66	113
20-Mar-12	13:00	Fine	002380	2.7964	2.8077	15709.42	15710.42	1.00	1.20	1.25	1.23	74	153
26-Mar-12	10:23	Fine	002391	2.8048	2.8226	15734.43	15735.43	1.00	1.04	1.04	1.04	62	285
26-Mar-12	13:40	Fine	002413	2.8057	2.8195	15735.43	15736.43	1.00	1.04	1.01	1.03	62	224
26-Mar-12	14:40	Fine	002415	2.8059	2.8186	15736.43	15737.43	1.00	1.23	1.26	1.24	75	170



Location: MA1e - International Finance Centre (Eastern Wing)

Report on 24-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 173.4

Limit Level ($\mu\text{g}/\text{m}^3$) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002166	2.7780	2.8571	8277.34	8301.34	24.00	1.27	1.26	1.27	1827	43
7-Mar-12	8:00	Cloudy	002239	2.8094	2.9529	8304.34	8328.35	24.01	1.29	1.27	1.28	1846	78
13-Mar-12	8:00	Cloudy	002232	2.8032	2.9862	8331.36	8355.36	24.00	1.27	1.27	1.27	1830	100
19-Mar-12	8:00	Fine	002303	2.7878	2.9762	8358.36	8382.36	24.00	1.26	1.27	1.27	1822	103
24-Mar-12	8:00	Fine	002445	2.7387	2.9792	8385.36	8409.37	24.01	1.30	1.32	1.31	1883	128

Report on 1-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 325.1

Limit Level ($\mu\text{g}/\text{m}^3$) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	8:13	Fine	002164	2.7481	2.7553	8301.34	8302.34	1.00	1.26	1.26	1.26	76	95
2-Mar-12	9:17	Fine	002162	2.7297	2.7382	8302.34	8303.34	1.00	1.26	1.26	1.26	76	112
2-Mar-12	10:25	Fine	002237	2.7748	2.7816	8303.34	8304.34	1.00	1.26	1.26	1.26	76	90
8-Mar-12	8:29	Cloudy	002251	2.7780	2.7879	8328.35	8329.35	1.00	1.27	1.27	1.27	76	130
8-Mar-12	9:37	Cloudy	002253	2.8080	2.8168	8329.35	8330.35	1.00	1.27	1.27	1.27	76	115
8-Mar-12	10:41	Cloudy	002234	2.7926	2.7998	8330.35	8331.35	1.00	1.27	1.27	1.27	76	94
14-Mar-12	9:25	Cloudy	002298	2.7917	2.7995	8355.36	8356.36	1.00	1.30	1.32	1.31	78	99
14-Mar-12	10:28	Cloudy	002222	2.7877	2.7959	8356.36	8357.36	1.00	1.27	1.27	1.27	76	107
14-Mar-12	13:00	Cloudy	002224	2.7776	2.7857	8357.36	8358.36	1.00	1.27	1.27	1.27	76	106
20-Mar-12	8:46	Fine	002126	2.7735	2.7828	8382.36	8383.36	1.00	1.27	1.27	1.27	76	122
20-Mar-12	9:51	Fine	002450	2.7501	2.7591	8383.36	8384.36	1.00	1.27	1.27	1.27	76	118
20-Mar-12	13:00	Fine	002446	2.7338	2.7446	8384.36	8385.36	1.00	1.27	1.27	1.27	76	142
26-Mar-12	9:10	Fine	002302	2.7909	2.7980	8409.37	8410.37	1.00	1.27	1.27	1.27	76	93
26-Mar-12	11:00	Fine	002353	2.8120	2.8196	8410.37	8411.37	1.00	1.22	1.22	1.22	73	104
26-Mar-12	13:00	Fine	002411	2.8224	2.8346	8411.37	8412.37	1.00	1.13	1.13	1.13	68	180



Location: MA1w - International Finance Centre (Western Wing)

Report on 24-hour TSP monitoring

Action Level ($\mu\text{g}/\text{m}^3$) - 173.4

Limit Level ($\mu\text{g}/\text{m}^3$) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
1-Mar-12	8:00	Cloudy	002165	2.7662	2.8547	11405.69	11429.69	24.00	1.36	1.48	1.42	2045	43
7-Mar-12	8:00	Cloudy	002240	2.7883	2.9477	11432.69	11456.70	24.01	1.44	1.54	1.49	2145	74
13-Mar-12	8:00	Cloudy	002231	2.7940	2.9855	11459.71	11483.71	24.00	1.38	1.56	1.47	2115	91
19-Mar-12	8:00	Fine	002304	2.7832	2.8574	11486.71	11510.71	24.00	1.42	1.40	1.41	2025	37
24-Mar-12	8:00	Fine	002444	2.7530	3.0547	11513.71	11537.72	24.01	1.49	1.53	1.51	2181	138

Report on 1-hour TSP monitoring

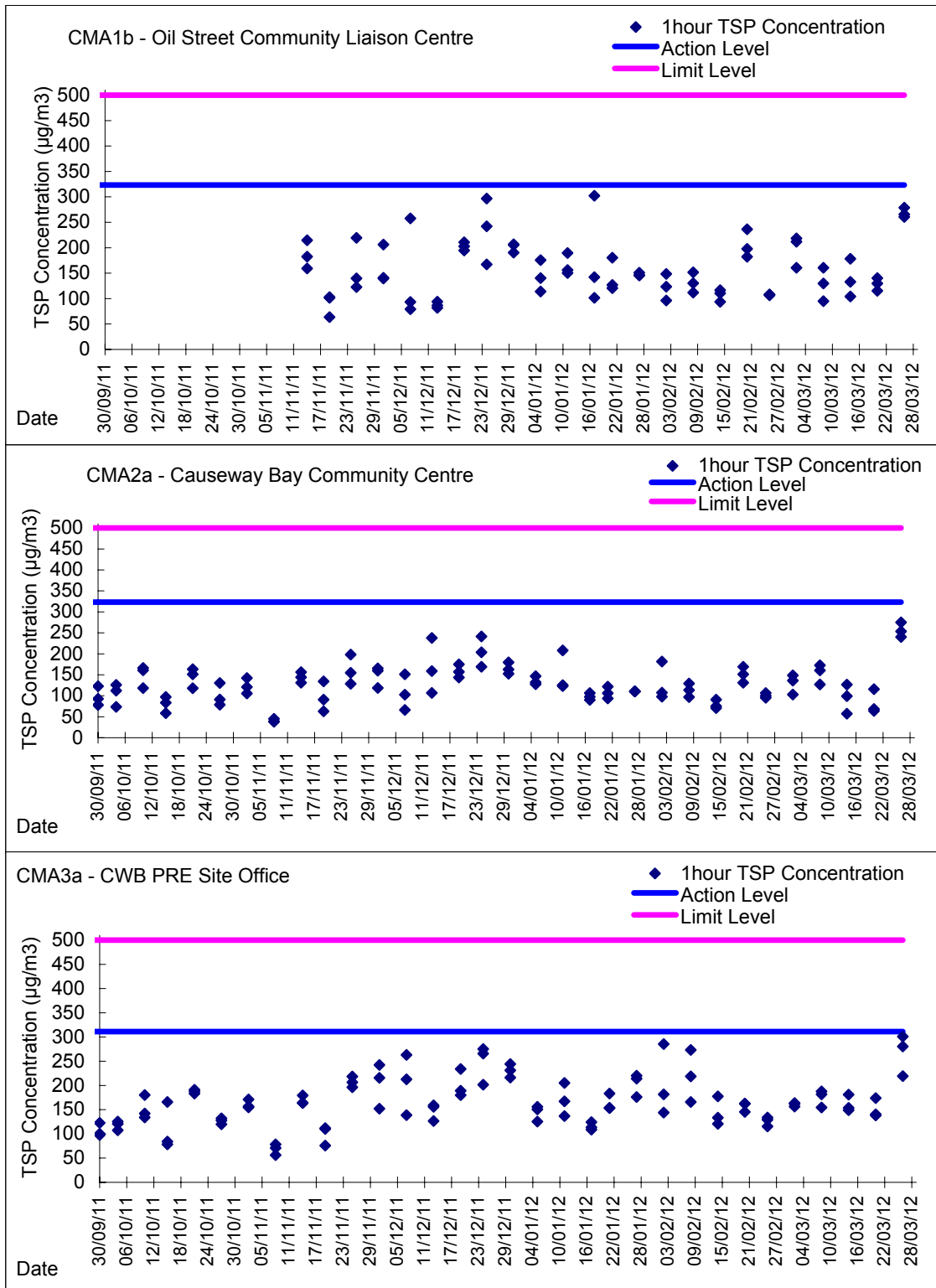
Action Level ($\mu\text{g}/\text{m}^3$) - 325.1

Limit Level ($\mu\text{g}/\text{m}^3$) - 500

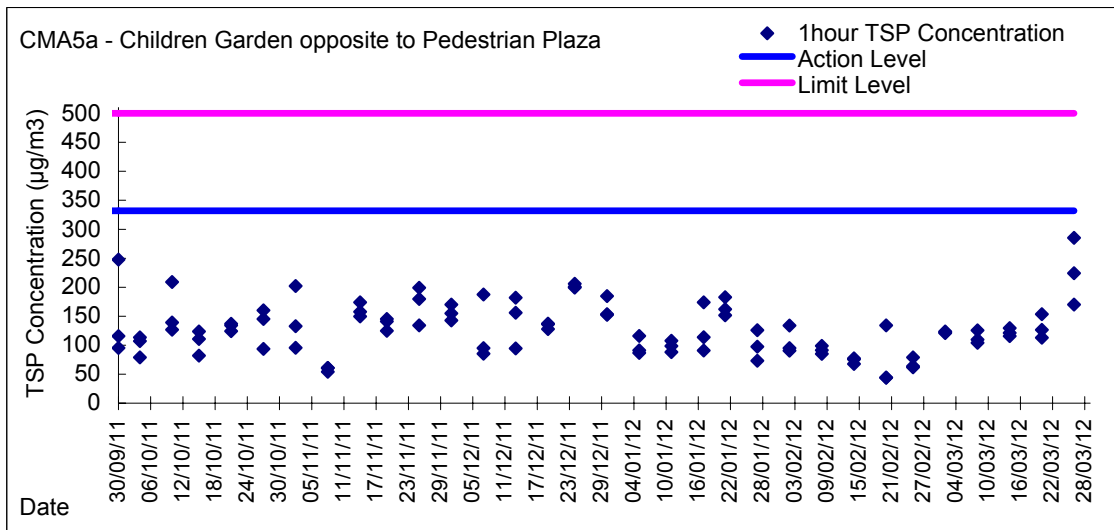
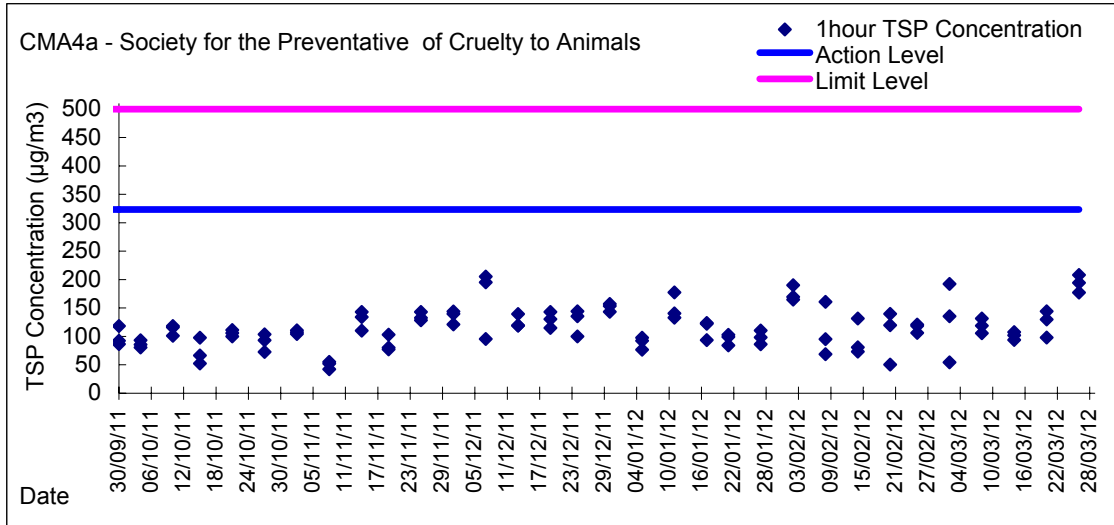
Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, $\mu\text{g}/\text{m}^3$
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
2-Mar-12	8:20	Fine	002163	2.7500	2.7610	11429.69	11430.69	1.00	1.44	1.44	1.44	86	127
2-Mar-12	9:26	Fine	002161	2.7370	2.7471	11430.69	11431.69	1.00	1.42	1.44	1.43	86	118
2-Mar-12	10:31	Fine	002238	2.7801	2.7884	11431.69	11432.69	1.00	1.44	1.44	1.44	86	96
8-Mar-12	8:37	Cloudy	002251	2.7780	2.7879	11456.70	11457.70	1.00	1.45	1.47	1.46	88	113
8-Mar-12	9:44	Cloudy	002235	2.7951	2.8050	11458.70	11459.70	1.00	1.38	1.38	1.38	83	120
8-Mar-12	10:48	Cloudy	002233	2.7893	2.7987	11459.70	11460.70	1.00	1.36	1.31	1.34	80	117
14-Mar-12	9:14	Cloudy	002269	2.8088	2.8172	11483.71	11484.71	1.00	1.45	1.45	1.45	87	97
14-Mar-12	10:18	Cloudy	002225	2.7740	2.7840	11484.71	11485.71	1.00	1.45	1.47	1.46	88	114
14-Mar-12	13:00	Cloudy	002223	2.7920	2.8021	11485.71	11486.71	1.00	1.43	1.43	1.43	86	118
20-Mar-12	9:00	Fine	002449	2.7367	2.7472	11510.71	11511.71	1.00	1.46	1.46	1.46	88	120
20-Mar-12	10:03	Fine	002448	2.7381	2.7496	11511.71	11512.71	1.00	1.42	1.37	1.40	84	137
20-Mar-12	13:00	Fine	002447	2.7173	2.7314	11512.71	11513.71	1.00	1.40	1.31	1.35	81	174
26-Mar-12	9:15	Fine	002301	2.7861	2.7990	11537.72	11538.72	1.00	1.35	1.40	1.38	83	156
26-Mar-12	11:00	Fine	002352	2.7748	2.7850	11538.72	11539.72	1.00	1.35	1.35	1.35	81	126
26-Mar-12	13:00	Fine	002410	2.8174	2.8294	11539.72	11540.72	1.00	1.47	1.49	1.48	89	135



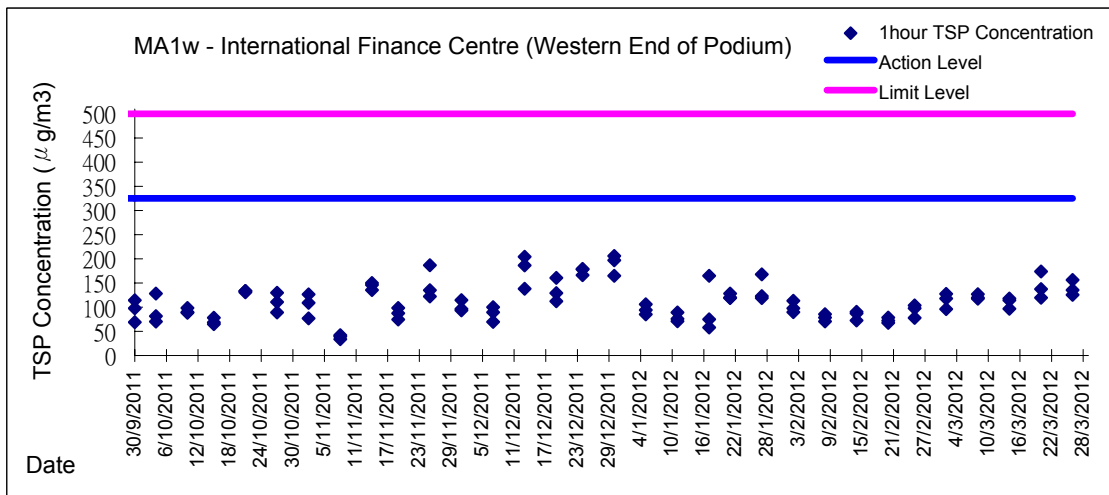
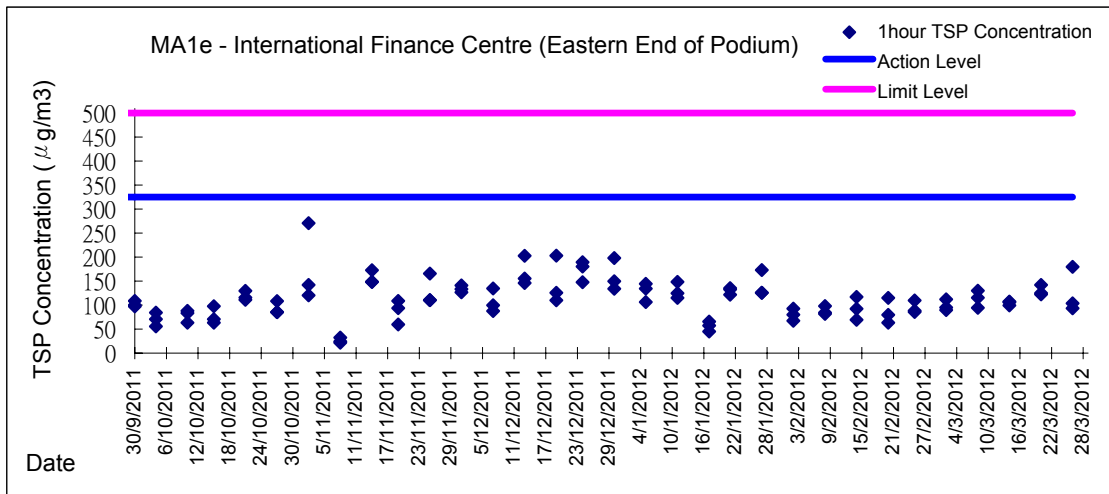
Graphic Presentation of 1 hour TSP Result



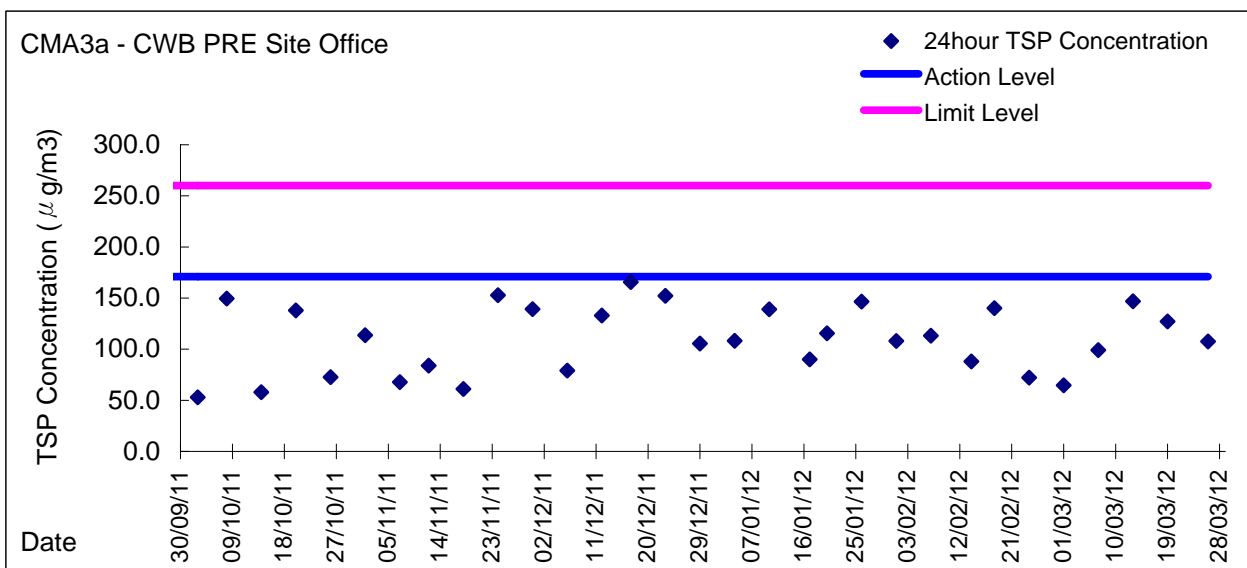
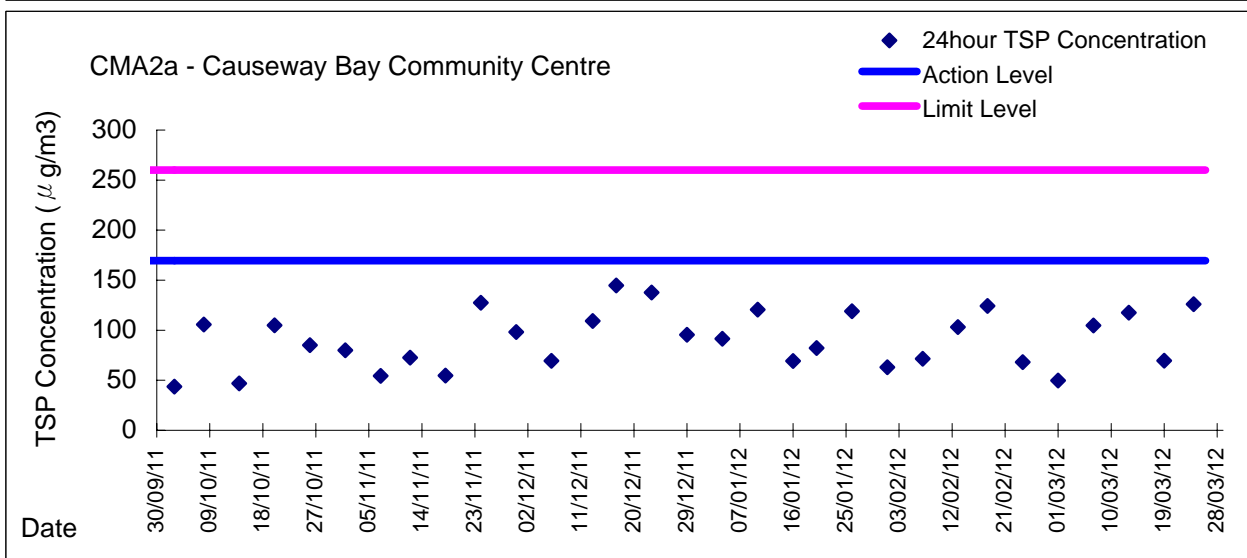
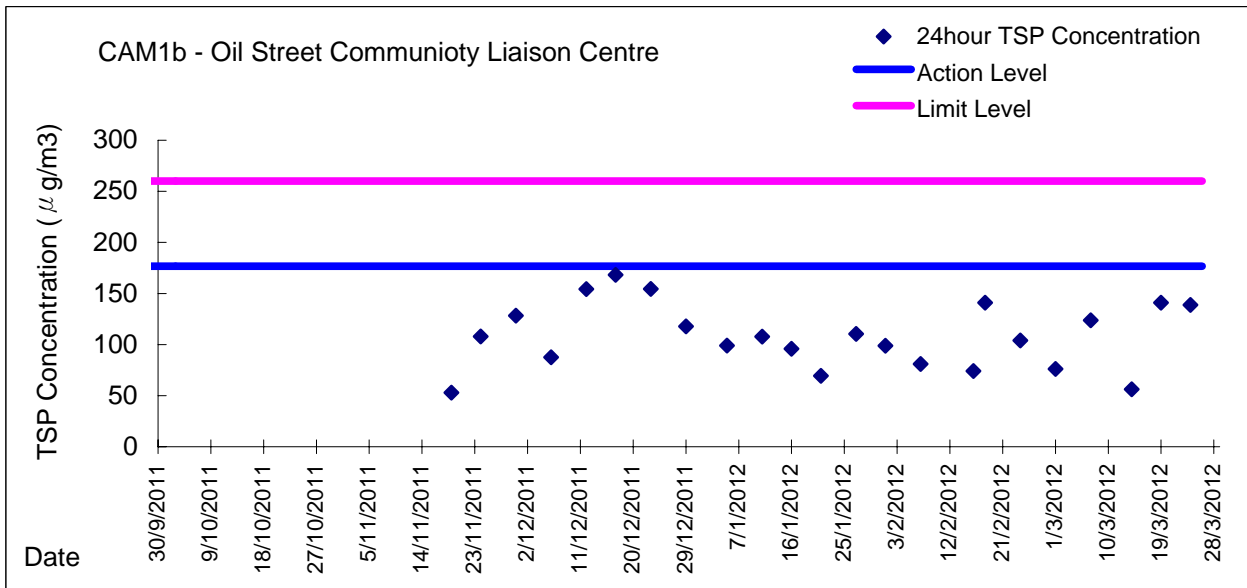
Graphic Presentation of 1 hour TSP Result



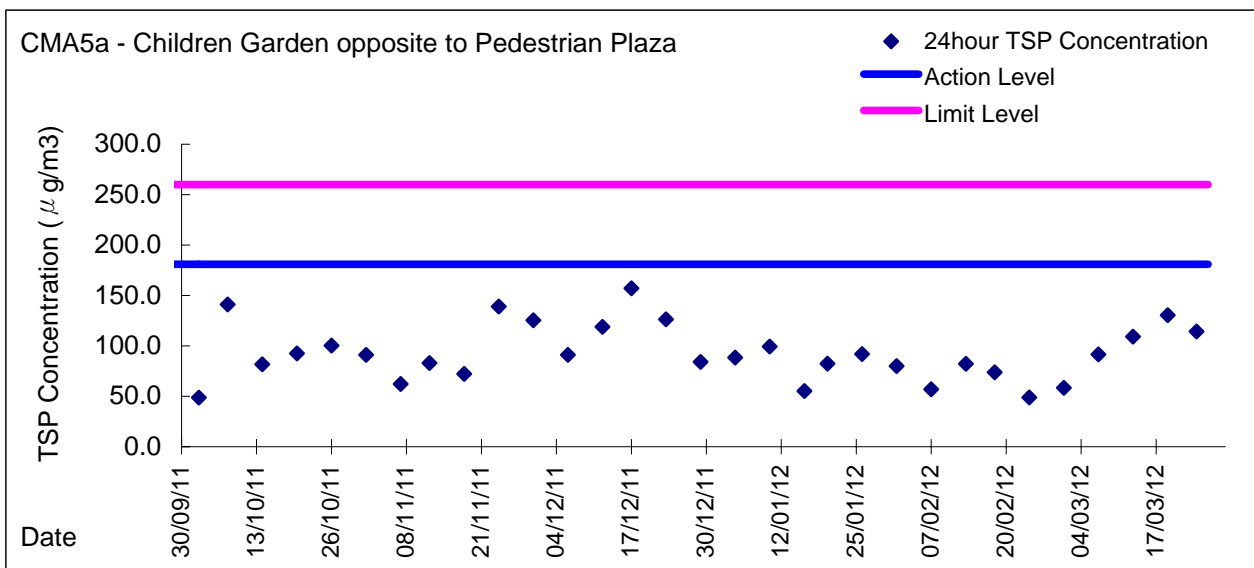
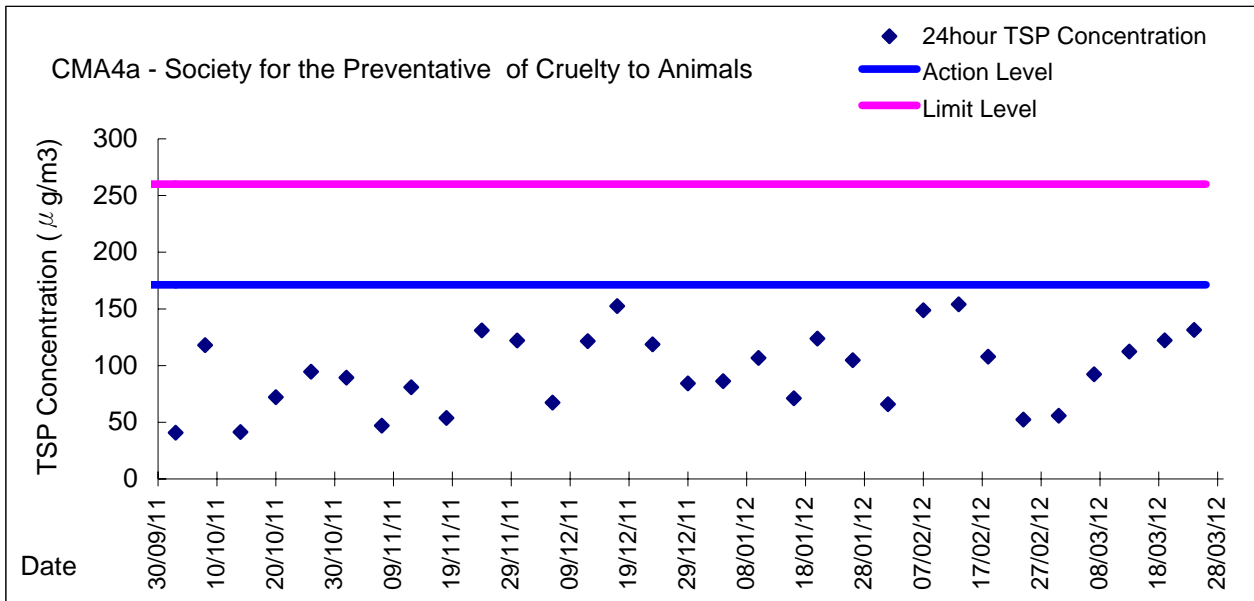
Graphic Presentation of 1 hour TSP Result



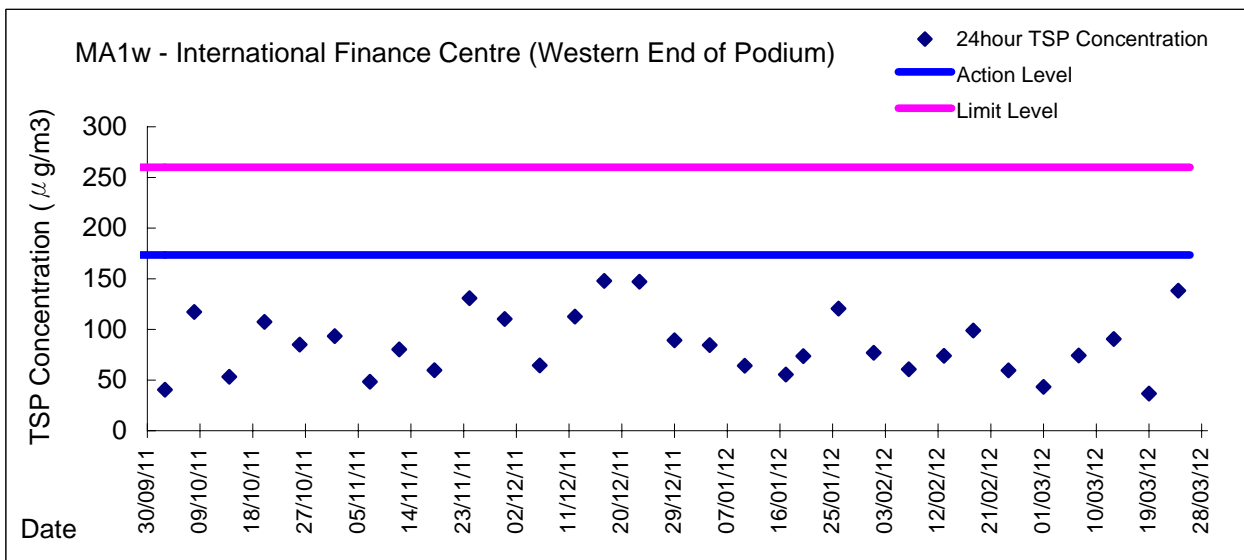
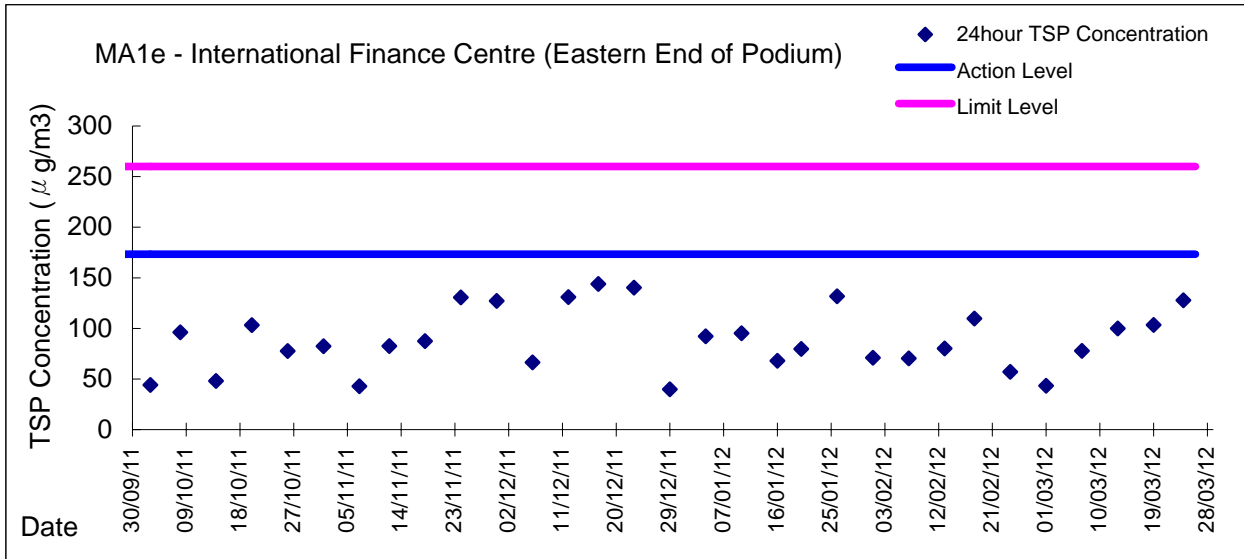
Graphic Presentation of 24 hour TSP Result



Graphic Presentation of 24 hour TSP Result



Graphic Presentation of 24 hour TSP Result





Appendix 5.4
Real Time Noise Monitoring Results and Graphical Presentations

Real-time Noise Data RTN1 (FEHD Hong Kong Transport Section Whitefield Depot)

27/3/2012 1:31	60.1
27/3/2012 1:36	59.0
27/3/2012 1:41	59.1
27/3/2012 1:46	59.4
27/3/2012 1:51	59.1
27/3/2012 1:56	59.2
27/3/2012 2:01	58.8
27/3/2012 2:06	58.6
27/3/2012 2:11	60.6
27/3/2012 2:16	58.6
27/3/2012 2:21	58.9
27/3/2012 2:26	58.5
27/3/2012 2:31	59.5
27/3/2012 2:36	59.4
27/3/2012 2:41	61.4
27/3/2012 2:46	63.7
27/3/2012 2:51	67.5
27/3/2012 2:56	69.5
27/3/2012 3:01	70.9
27/3/2012 3:06	64.9
27/3/2012 3:11	57.5
27/3/2012 3:16	57.3
27/3/2012 3:21	57.4
27/3/2012 3:26	57.7
27/3/2012 3:31	57.7
27/3/2012 3:36	58.1
27/3/2012 3:41	57.9
27/3/2012 3:46	57.6
27/3/2012 3:51	57.2
27/3/2012 3:56	57.8
27/3/2012 4:01	57.3
27/3/2012 4:06	57.6
27/3/2012 4:11	57.6
27/3/2012 4:16	57.8
27/3/2012 4:21	58.0
27/3/2012 4:26	57.2
27/3/2012 4:31	57.7
27/3/2012 4:36	57.5
27/3/2012 4:41	57.0
27/3/2012 4:46	58.1
27/3/2012 4:51	57.6
27/3/2012 4:56	57.9
27/3/2012 5:01	57.8
27/3/2012 5:06	57.4
27/3/2012 5:11	57.9
27/3/2012 5:16	58.2
27/3/2012 5:21	58.1
27/3/2012 5:26	58.1
27/3/2012 5:31	58.3
27/3/2012 5:36	59.1
27/3/2012 5:41	59.3
27/3/2012 5:46	59.3
27/3/2012 5:51	59.3
27/3/2012 5:56	58.7
27/3/2012 6:01	60.3
27/3/2012 6:06	60.0
27/3/2012 6:11	60.6
27/3/2012 6:16	60.4
27/3/2012 6:21	60.8
27/3/2012 6:26	61.7
27/3/2012 6:31	61.9
27/3/2012 6:36	62.3
27/3/2012 6:41	62.6
27/3/2012 6:46	62.5
27/3/2012 6:51	62.9
27/3/2012 6:56	63.3
27/3/2012 23:01	63.0
27/3/2012 23:06	63.0
27/3/2012 23:11	62.8
27/3/2012 23:16	62.9
27/3/2012 23:21	63.1
27/3/2012 23:26	62.8
27/3/2012 23:31	63.0
27/3/2012 23:36	62.8
27/3/2012 23:41	62.4
27/3/2012 23:46	62.7
27/3/2012 23:51	62.4
27/3/2012 23:56	62.3

*Exceedance recorded during monitoring compliance check with NCO

Real-time Noise Data RTN2 (Oil Street Community Liaison Centre)

13/3/2012 3:31	56.6	14/3/2012 4:41	55.8	15/3/2012 5:51	61.0	16/3/2012 23:01	63.3	18/3/2012 0:11	60.9	19/3/2012 1:21	57.0
13/3/2012 3:36	57.3	14/3/2012 4:46	56.4	15/3/2012 5:56	60.2	16/3/2012 23:06	63.5	18/3/2012 0:16	61.1	19/3/2012 1:26	57.5
13/3/2012 3:41	56.4	14/3/2012 4:51	56.0	15/3/2012 6:01	61.0	16/3/2012 23:11	62.1	18/3/2012 0:21	61.3	19/3/2012 1:31	55.9
13/3/2012 3:46	57.0	14/3/2012 4:56	56.1	15/3/2012 6:06	60.4	16/3/2012 23:16	61.6	18/3/2012 0:26	61.2	19/3/2012 1:36	57.0
13/3/2012 3:51	57.3	14/3/2012 5:01	57.7	15/3/2012 6:11	61.3	16/3/2012 23:21	61.3	18/3/2012 0:31	60.5	19/3/2012 1:41	55.4
13/3/2012 3:56	57.8	14/3/2012 5:06	58.5	15/3/2012 6:16	61.3	16/3/2012 23:26	61.2	18/3/2012 0:36	60.6	19/3/2012 1:46	56.6
13/3/2012 4:01	57.6	14/3/2012 5:11	57.0	15/3/2012 6:21	62.1	16/3/2012 23:31	60.8	18/3/2012 0:41	60.2	19/3/2012 1:51	56.4
13/3/2012 4:06	57.4	14/3/2012 5:16	58.3	15/3/2012 6:26	62.3	16/3/2012 23:36	61.4	18/3/2012 0:46	59.4	19/3/2012 1:56	56.6
13/3/2012 4:11	58.2	14/3/2012 5:21	59.3	15/3/2012 6:31	62.5	16/3/2012 23:41	61.4	18/3/2012 0:51	60.1	19/3/2012 2:01	55.5
13/3/2012 4:16	58.2	14/3/2012 5:26	57.8	15/3/2012 6:36	62.7	16/3/2012 23:46	60.8	18/3/2012 0:56	59.4	19/3/2012 2:06	56.3
13/3/2012 4:21	57.3	14/3/2012 5:31	57.1	15/3/2012 6:41	63.5	16/3/2012 23:51	61.0	18/3/2012 1:01	59.5	19/3/2012 2:11	56.7
13/3/2012 4:26	57.2	14/3/2012 5:36	64.3	15/3/2012 6:46	64.2	16/3/2012 23:56	61.7	18/3/2012 1:06	60.3	19/3/2012 2:16	55.5
13/3/2012 4:31	57.5	14/3/2012 5:41	72.6	15/3/2012 6:51	65.6	17/3/2012 0:01	61.1	18/3/2012 1:11	60.2	19/3/2012 2:21	54.8
13/3/2012 4:36	56.9	14/3/2012 5:46	59.9	15/3/2012 6:56	64.2	17/3/2012 0:06	61.1	18/3/2012 1:16	60.3	19/3/2012 2:26	54.9
13/3/2012 4:41	58.9	14/3/2012 5:51	63.6	15/3/2012 23:01	61.6	17/3/2012 0:11	60.4	18/3/2012 1:21	58.8	19/3/2012 2:31	57.0
13/3/2012 4:46	57.8	14/3/2012 5:56	64.4	15/3/2012 23:06	61.8	17/3/2012 0:16	60.8	18/3/2012 1:26	60.6	19/3/2012 2:36	55.0
13/3/2012 4:51	58.5	14/3/2012 6:01	58.7	15/3/2012 23:11	62.2	17/3/2012 0:21	60.8	18/3/2012 1:31	58.8	19/3/2012 2:41	55.4
13/3/2012 4:56	57.6	14/3/2012 6:06	61.1	15/3/2012 23:16	61.0	17/3/2012 0:26	60.6	18/3/2012 1:36	59.2	19/3/2012 2:46	55.8
13/3/2012 5:01	58.6	14/3/2012 6:11	60.7	15/3/2012 23:21	61.0	17/3/2012 0:31	61.1	18/3/2012 1:41	59.8	19/3/2012 2:51	54.6
13/3/2012 5:06	57.7	14/3/2012 6:16	66.4	15/3/2012 23:26	61.5	17/3/2012 0:36	60.3	18/3/2012 1:46	58.9	19/3/2012 2:56	55.4
13/3/2012 5:11	58.2	14/3/2012 6:21	61.8	15/3/2012 23:31	61.3	17/3/2012 0:41	60.7	18/3/2012 1:51	59.3	19/3/2012 3:01	54.6
13/3/2012 5:16	57.9	14/3/2012 6:26	61.8	15/3/2012 23:36	61.9	17/3/2012 0:46	59.9	18/3/2012 1:56	58.9	19/3/2012 3:06	54.0
13/3/2012 5:21	59.4	14/3/2012 6:31	61.7	15/3/2012 23:41	61.1	17/3/2012 0:51	59.7	18/3/2012 2:01	58.4	19/3/2012 3:11	55.4
13/3/2012 5:26	59.3	14/3/2012 6:36	61.9	15/3/2012 23:46	61.0	17/3/2012 0:56	59.7	18/3/2012 2:06	58.5	19/3/2012 3:16	54.4
13/3/2012 5:31	59.1	14/3/2012 6:41	63.5	15/3/2012 23:51	61.1	17/3/2012 1:01	59.5	18/3/2012 2:11	58.5	19/3/2012 3:21	53.7
13/3/2012 5:36	59.4	14/3/2012 6:46	63.8	15/3/2012 23:56	60.9	17/3/2012 1:06	59.0	18/3/2012 2:16	58.2	19/3/2012 3:26	54.9
13/3/2012 5:41	61.1	14/3/2012 6:51	63.1	16/3/2012 0:01	60.6	17/3/2012 1:11	59.4	18/3/2012 2:21	57.9	19/3/2012 3:31	55.8
13/3/2012 5:46	61.6	14/3/2012 6:56	63.6	16/3/2012 0:06	60.6	17/3/2012 1:16	58.7	18/3/2012 2:26	57.7	19/3/2012 3:36	54.7
13/3/2012 5:51	62.1	14/3/2012 23:01	63.2	16/3/2012 0:11	60.2	17/3/2012 1:21	60.0	18/3/2012 2:31	56.9	19/3/2012 3:41	55.3
13/3/2012 5:56	60.1	14/3/2012 23:06	63.4	16/3/2012 0:16	60.2	17/3/2012 1:26	58.8	18/3/2012 2:36	58.5	19/3/2012 3:46	55.4
13/3/2012 6:01	62.4	14/3/2012 23:11	62.8	16/3/2012 0:21	60.2	17/3/2012 1:31	59.6	18/3/2012 2:41	58.2	19/3/2012 3:51	54.1
13/3/2012 6:06	61.6	14/3/2012 23:16	62.8	16/3/2012 0:26	61.0	17/3/2012 1:36	59.0	18/3/2012 2:46	58.4	19/3/2012 3:56	53.6
13/3/2012 6:11	62.3	14/3/2012 23:21	62.2	16/3/2012 0:31	59.7	17/3/2012 1:41	58.4	18/3/2012 2:51	58.1	19/3/2012 4:01	55.5
13/3/2012 6:16	62.3	14/3/2012 23:26	62.2	16/3/2012 0:36	60.0	17/3/2012 1:46	58.4	18/3/2012 2:56	58.1	19/3/2012 4:06	58.4
13/3/2012 6:21	62.9	14/3/2012 23:31	62.5	16/3/2012 0:41	58.8	17/3/2012 1:51	58.7	18/3/2012 3:01	57.6	19/3/2012 4:11	56.4
13/3/2012 6:26	62.6	14/3/2012 23:36	62.1	16/3/2012 0:46	59.1	17/3/2012 1:56	59.3	18/3/2012 3:06	57.4	19/3/2012 4:16	54.4
13/3/2012 6:31	63.5	14/3/2012 23:41	61.7	16/3/2012 0:51	58.8	17/3/2012 2:01	58.5	18/3/2012 3:11	58.5	19/3/2012 4:21	55.3
13/3/2012 6:36	64.2	14/3/2012 23:46	62.0	16/3/2012 0:56	58.5	17/3/2012 2:06	58.7	18/3/2012 3:16	57.0	19/3/2012 4:26	54.8
13/3/2012 6:41	65.3	14/3/2012 23:51	61.8	16/3/2012 1:01	58.0	17/3/2012 2:11	58.5	18/3/2012 3:21	58.2	19/3/2012 4:31	55.0
13/3/2012 6:46	64.5	14/3/2012 23:56	61.9	16/3/2012 1:06	58.4	17/3/2012 2:16	58.1	18/3/2012 3:26	57.6	19/3/2012 4:36	54.5
13/3/2012 6:51	68.6	15/3/2012 0:01	62.0	16/3/2012 1:11	58.0	17/3/2012 2:21	57.9	18/3/2012 3:31	57.5	19/3/2012 4:41	54.6
13/3/2012 6:56	65.2	15/3/2012 0:06	61.6	16/3/2012 1:16	57.6	17/3/2012 2:26	57.8	18/3/2012 3:36	58.8	19/3/2012 4:46	55.2
13/3/2012 23:01	62.8	15/3/2012 0:11	61.7	16/3/2012 1:21	58.1	17/3/2012 2:31	58.1	18/3/2012 3:41	57.5	19/3/2012 4:51	53.9
13/3/2012 23:06	62.2	15/3/2012 0:16	61.4	16/3/2012 1:26	57.5	17/3/2012 2:36	57.2	18/3/2012 3:46	58.5	19/3/2012 4:56	54.6
13/3/2012 23:11	62.1	15/3/2012 0:21	61.7	16/3/2012 1:31	57.5	17/3/2012 2:41	57.5	18/3/2012 3:51	58.8	19/3/2012 5:01	55.0
13/3/2012 23:16	61.6	15/3/2012 0:26	61.6	16/3/2012 1:36	58.7	17/3/2012 2:46	58.0	18/3/2012 3:56	57.7	19/3/2012 5:06	56.0
13/3/2012 23:21	62.1	15/3/2012 0:31	61.4	16/3/2012 1:41	57.7	17/3/2012 2:51	58.1	18/3/2012 4:01	57.7	19/3/2012 5:11	55.4
13/3/2012 23:26	62.2	15/3/2012 0:36	60.9	16/3/2012 1:46	56.9	17/3/2012 2:56	58.3	18/3/2012 4:06	57.1	19/3/2012 5:16	54.9
13/3/2012 23:31	61.6	15/3/2012 0:41	60.9	16/3/2012 1:51	56.9	17/3/2012 3:01	57.0	18/3/2012 4:11	58.0	19/3/2012 5:21	56.5
13/3/2012 23:36	61.9	15/3/2012 0:46	60.9	16/3/2012 1:56	56.6	17/3/2012 3:06	57.6	18/3/2012 4:16	58.8	19/3/2012 5:26	56.8
13/3/2012 23:41	61.5	15/3/2012 0:51	60.5	16/3/2012 2:01	57.4	17/3/2012 3:11	57.8	18/3/2012 4:21	58.3	19/3/2012 5:31	58.8
13/3/2012 23:46	61.7	15/3/2012 0:56	60.3	16/3/2012 2:06	56.6	17/3/2012 3:16	56.8	18/3/2012 4:26	58.6	19/3/2012 5:36	59.1
13/3/2012 23:51	61.0	15/3/2012 1:01	59.7	16/3/2012 2:11	56.8	17/3/2012 3:21	56.6	18/3/2012 4:31	58.2	19/3/2012 5:41	58.3
13/3/2012 23:56	60.5	15/3/2012 1:06	60.1	16/3/2012 2:16	56.4	17/3/2012 3:26	56.7	18/3/2012 4:36	59.6	19/3/2012 5:46	58.4
14/3/2012 0:01	61.3	15/3/2012 1:11	60.0	16/3/2012 2:21	56.0	17/3/2012 3:31	56.5	18/3/2012 4:41	60.0	19/3/2012 5:51	58.7
14/3/2012 0:06	61.1	15/3/2012 1:16	59.6	16/3/2012 2:26	55.6	17/3/2012 3:36	57.1	18/3/2012 4:46	59.3	19/3/2012 5:56	58.6
14/3/2012 0:11	60.7	15/3/2012 1:21	59.6	16/3/2012 2:31	57.3	17/3/2012 3:41	56.4	18/3/2012 4:51	58.6	19/3/2012 6:01	58.8
14/3/2012 0:16	60.6	15/3/2012 1:26	59.9	16/3/2012 2:36	56.2	17/3/2012 3:46	56.5	18/3/2012 4:56	58.3	19/3/2012 6:06	61.5
14/3/2012 0:21	60.8	15/3/2012 1:31	59.9	16/3/2012 2:41	56.2	17/3/2012 3:51	56.5	18/3/2012 5:01	57.8	19/3/2012 6:11	59.0
14/3/2012 0:26	62.1	15/3/2012 1:36	59.3	16/3/2012 2:46	55.9	17/3/2012 3:56	56.7	18/3/2012 5:06	58.1	19/3/2012 6:16	64.3
14/3/2012 0:31	60.9	15/3/2012 1:41	58.9	16/3/2012 2:51	56.0	17/3/2012 4:01	56.2	18/3/2012 5:11	55.5	19/3/2012 6:21	59.9
14/3/2012 0:36	60.6	15/3/2012 1:46	59.1	16/3/2012 2:56	55.5	17/3/2012 4:06	56.6	18/3/2012 5:16	57.7	19/3/2012 6:26	61.1
14/3/2012 0:41	60.1	15/3/2012 1:51	59.2	16/3/2012 3:01	55.1	17/3/2012 4:11	56.1	18/3/2012 5:21	59.1	19/3/2012 6:31	61.0
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14/3/2012 1:16	58.4	15/3/2012 2:26	58.3	16/3/2012 3:36	55.9	17/3/2012 4:46	55.5	18/3/2012 5:56	59.4	19/3/2012 23:06	61.6
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Real-time Noise Data RTN2 (Oil Street Community Liaison Centre)

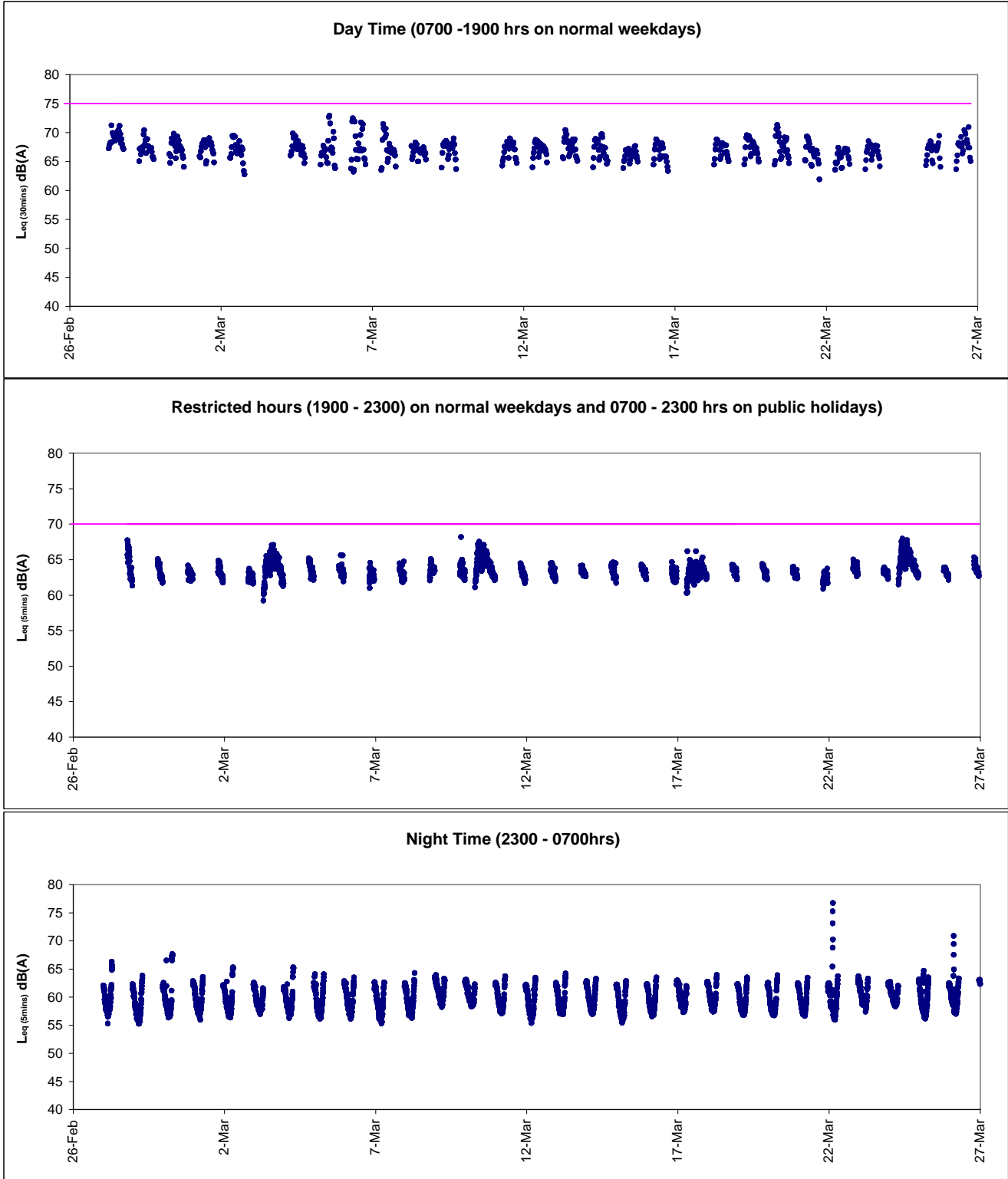
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Real-time Noise Data RTN2 (Oil Street Community Liaison Centre)

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27/3/2012 1:46	57.9
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27/3/2012 23:56	59.5

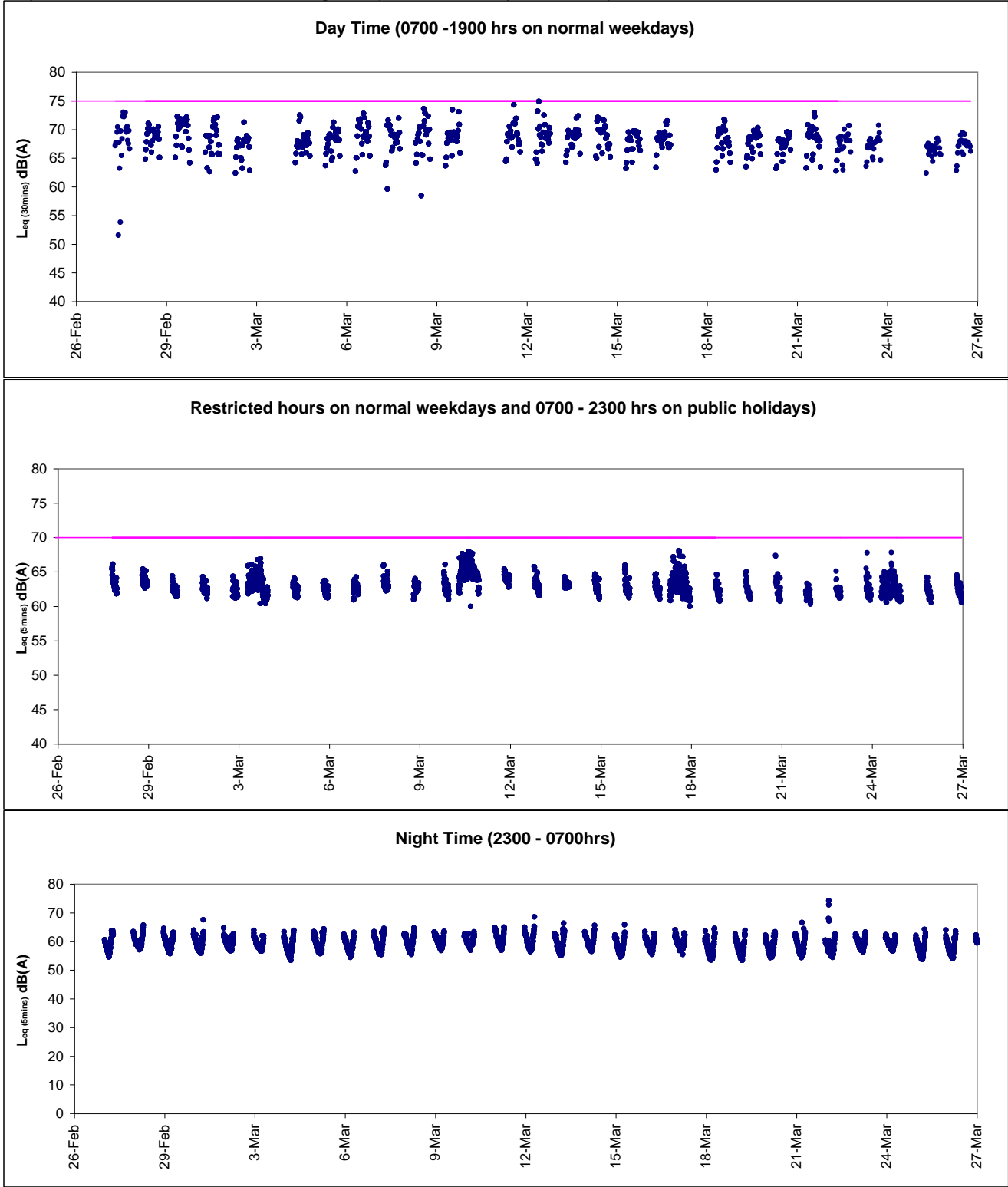
*Exceedance recorded during monitoring compliance check with NCO.

Graphic Presentation of Real Time Noise Monitoring Result (Food and Environmental Hygiene Department Depot)





Graphic Presentation of Real Time Noise Monitoring Result (Oil Street Community Liaison Center)





Appendix 6.1

Event Action Plans



Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none">1. Notify ER, IEC and Contractor;2. Carry out investigation;3. Report the results of investigation to the IEC, ER and Contractor;4. Discuss with the IEC and Contractor on remedial measures required;5. Increase monitoring frequency to check mitigation effectiveness. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none">1. Review the investigation results submitted by the ET;2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;3. Advise the ER on the effectiveness of the proposed remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none">1. Confirm receipt of notification of failure in writing;2. Notify Contractor;3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;4. Supervise the implementation of remedial measures. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none">1. Submit noise mitigation proposals to IEC and ER;2. Implement noise mitigation proposals. <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. (The above actions should be taken within 2 working days after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)



Event / Action Plan for Construction Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Notify Contractor. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Rectify any unacceptable practice; Amend working methods if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Identify source; Inform IEC and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Submit proposals for remedial to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
LIMIT LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Notify IEC, ER, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing; Notify Contractor; In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)



Appendix 6.2

Summary for Notification of Exceedance



Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
X_10N084	28-Feb-12	11:31	M6 - HK baptist Church henrietta Secondary School	74	Leq(30-min)	when one documented complaint was received.	70	<p>Possible reason: No construction activity and major traffic jam nearby were observed during monitoring. Traffic noise contributed as a major noise source during monitoring.</p> <p>Action taken / to be taken: Reviewed the trend of noise measurement results and analysis of contractor's working procedure. Review the baseline noise level at this monitoring station.</p> <p>Remarks / Other Obs: No construction work for Contract no. HK/2009/19 was conducted during the measurement; It is concluded that the exceedance was not due to the Project.</p>
X_10N085	13-Mar-12	11:20	M6 - HK baptist Church henrietta Secondary School	74	Leq(30-min)	when one documented complaint was received.	70	<p>Possible reason: No construction activity and traffic nearby was observed during monitoring. Traffic noise contributed as a major noise source during monitoring.</p> <p>Action taken / to be taken: Reviewed the trend of noise measurement results and analysis of contractor's working procedure. Review the baseline noise level at this monitoring station.</p> <p>Remarks / Other Obs: No construction work for Contract no. HK/2009/19 was conducted during the measurement; It is concluded that the exceedance was not due to the Project.</p>



Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
X 10N086	22-Mar-12	13:50	M7e - IFC-Eastern End of Prodium	77	Leq(30-min)	when one documented complaint was received.	75	<p>Possible reason: <u>Drill rig performing percussive piling, grabbing operations for D-wall construction and crane moving steel cages were observed.</u></p> <p>Action taken / to be taken: Immediate repeated measurement was conducted to confirm the exceedance. The noise levels of repeat-measurement at the same location as below: 22 March 2012 14:21 78 dB (A) Noise barriers were not observed and no major traffic was observed nearby. Additional monitoring was conducted on 29 March 2012 at 11:22. Drill rig and breaker operated at the concerned area with fully erected moveable noise barrier, drilling by drill rig and breaking works for D-wall construction were observed during noise monitoring. No further exceedance was recorded after the mitigation measures were implemented. The noise levels of the same location as below: 29 March 2012 at 11:22 74 dB (A) The contractor is reminded to erect noise barriers when PME are in use.</p> <p>Remarks / Other Obs: To conclude, the exceedance was considered project related and the contractor was asked to submit a proposal for remediation measures following Event Action Plan. Towngas and Hong Kong Electric have operations in the HY/2009/18 site area, but the operations cannot be observed at the monitoring points. Towngas was performing excavation works and Hong Kong Electric was using a breaker for their operations, but during monitoring, it was observed that the major noise source was generated from the HY/2009/18 contractor's activities.</p>



Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
X 10N087	27-Mar-12	10:07	M7e - IFC-Eastern End of Prodium	77	Leq(30-min)	when one documented complaint was received.	75	<p>Possible reason: <u>Drill rig performing drilling works, breaking operations for D-wall construction and crane moving steel cages were observed.</u></p> <p>Action taken / to be taken: The noise levels of the same location as below: 27 March 2012 10:38 77 dB (A) Investigation found that the repeat measurement was exceeded the limit level of construction noise criteria 75 dB (A). Notification of exceedance was immediate informed to Contractor of HY/2009/18, RE and IEC when the exceedances were recorded. During the noise monitoring on 27 Mar 2012, drilling by drill rig, breaking for d-wall construction and crane moving steel cages were observed through out the period of noise monitoring. No mitigation measures were observed during first measurement. Contractor was advised to erect noise barriers during operations. Additional monitoring was conducted on 27 March 2012 11:13. Drill rig and breaker were observed during noise monitoring. Further exceedance was recorded after the mitigation measures were implemented. The mitigation measures taken by the contractor during monitoring was erecting one acoustic blanket. The noise levels of the same location as below: 27 March 2012 11:13 76 dB(A) Additional monitoring was conducted on 29 March 2012 at 11:22. Drill rig and breaker operated at the concerned area with fully erected moveable noise barrier, drilling by drill rig and breaking works for D-wall construction were observed during noise monitoring. No further exceedance was recorded after the mitigation measures were implemented. The noise levels of the same location as below: 29 March 2012 at 11:22 74 dB (A) The contractor is reminded to erect noise barriers when PME are in use and to avoid parallel plant operations.</p> <p>Remarks / Other Obs: Towngas and Hong Kong Electric have operations in the HY/2009/18 site area, but the operations cannot be observed at the monitoring points. Towngas was performing excavation works and Hong Kong Electric was using a breaker for their operations, but during monitoring, it was observed that the major noise source was generated from the HY/2009/18 contractor's activities.</p>



Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
X 10N088	27-Mar-12	15:57	M6 - HK baptist Church henrietta Secondary School	72	Leq(30-min)	when one documented complaint was received.	70	<p>Possible reason: No construction activity and traffic nearby was observed during monitoring. Traffic noise contributed as a major noise source during monitoring.</p> <p>Action taken / to be taken: Reviewed the trend of noise measurement results and analysis of contractor's working procedure. Review the baseline noise level at this monitoring station.</p> <p>Remarks / Other Obs: No construction work for Contract no. HK/2009/19 was conducted during the measurement; It is concluded that the exceedance was not due to the Project.</p>



Appendix 9.1

Complaint Log

**Environmental Complaints Log**

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
110723a	23/07/2011	Ms. Law at Victoria Centre by ICC no. 1-303887687	North Point	She concerned that Highways Department published a notice in their Management Office about construction works will be conducted from 0700 hours to 2300 hours during July to December 2011 including Saturday, Sunday and public holiday.	1) It was referred by AECOM to ET on 28 July 2011 2) RSS confirmed that the notice was prepared by Victoria Centre 'a Management office to their resident and the advice was only given on the extension construction works (for Contract HY/2009/15) to 7am-9pm Monday to Saturday except Public Holidays and Sundays. 3) As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am and is expected to be completed by mid-August 2011. 4) No noise exceedance was recorded at construction noise monitoring station at Victoria Centre on 19 and 25 July 2011 during daytime and evening time period while breaking and excavation works were observed during monitoring. 5) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	Closed
110723b	23/07/2011	Ms. Yau at Block 2, Victoria Centre by ICC no. 1-304013959	North Point	Reclamation work was conducted at Causeway Bay Typhoon Shelter at 7am on 23 July 2011. She complained that the works shall be started later to minimize the noise nuisance to the vicinity of the residents in early morning	1) It was referred by AECOM to ET on 8 August 2011 2) RSS confirmed to start the rock breaking activities for Contract HY/2009/15 at 8am as a mitigation measure to minimize the noise nuisance in the vicinity of the residents. 3) With reference to the construction noise monitoring at Victoria Centre, no exceedance was recorded on 19 and 25 July 2011 during daytime while breaking and excavation works were undertaken during monitoring 4) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	Closed
110727a	27/07/2011	Mr. Law from Victoria Centre Management Office by ICC no. 1-304616162	North Point	It was complained by Mr. Law from Victoria Centre Management Office on 27 July 2011 regarding construction noise generated by the construction operations of	1) It was referred by AECOM to ET on 28 July 2011 2) RSS confirmed to start the rock breaking activities for Contract HY/2009/15 at 8am as a mitigation measure to minimize the noise nuisance in the vicinity of the residents. 3) No noise exceedance was recorded at construction noise monitoring station at Victoria Centre on 25 July and	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				Central-Wanchai Bypass at noon rather than in morning at 7am.	4 August 2011 during daytime and evening time period while breaking and excavation works were observed during monitoring. 5) In conclusion, it was related to the construction works under Contract HY/2009/15 and mitigation measure was provided. No further complaint from complainant was received after proposed the mitigation measure.	
110727b	27/07/2011	Ms. Chiu by ICC no.1-304615409	North Point	Noise nuisance from the excavation works for the Highways Department adjacent to the Victoria Centre was conducted from 7am	1) It was referred by AECOM to ET on 28 July 2011 2) With reference to the construction noise monitoring at Vitoria Centre, no exceedance was recorded on 25 July and 4 and 10 August 2011 during daytime while breaking and excavation works were undertaken during monitoring. 3) As a mitigation measure to minimize the noise nuisance in the vicinity of the residents, rock breaking activities will be started at 8am.	Closed
	07/08/2011				4) However, complainant did not satisfy with the response on the noise nuisance from the rock-breaking during morning in front of Victoria Centre and then further complaint via 1823 on 7 August 2011. 5) Highways contacted the complainant on 15 August 2011 that the noisy rock breaking operation had been completed. <i>Remarks: There will be counted as two complaints in this complaint log.</i>	
110730	30/07/2011	Mr. Tsui by ICC no. 1-305074350	Central	Construction noise generated by operations of Central-Interchange which is near the spa room at Four-Season Hotel. Also, the complaint enquired the commencement time of the construction on Saturday.	1) It was referred by AECOM to ET on 1 August 2011. 2) RSS confirmed that noisy plants from 2 vibratory hammers have been conducted in alternating manner for piling and drilling works for diaphragm wall construction. 3) With reference to the construction noise monitoring at IFC Western End of Podium, no exceedance was recorded on 4 August 2011 during monitoring while sheet piling works were undertaken during monitoring. 4) In order to reduce the noise impact to nearby noise sensitive receivers, Contractor has been implemented the following noise mitigation measures: - Erection of acoustic lining at the hoarding next to Four Seasons Hotel; - Temporary noise barrier with extended acoustic lining; - Reduced in plant such that only have one vibration hammer operating at the west side near Four	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					Seasons Hotel instead of 2 5) In conclusion, it was related to the construction works under Contract HY/2009/18 and mitigation measure was provided. The complainant was satisfied with the arrangement and no further complaint was received after proposed measures.	
110810	10/08/2011	Mr. Yip by ICC no. 1 – 306740207	North Point	Muddy water was discharged from work site to the seafront near Oil Street during heavy rain. The environmental protection measures were not good enough and are needed to rectify.	1) It was referred by AECOM to ET on 17 August 2011. 2) Confirmed with RE, Muddy water was caused by a heap of earth being washed to the sea by heavy rain. The heap of earth was referred as a small stockpile placed close to the seafront in front of Oil Street within the site area under handover transition period from contract HY/2009/11 to contract HY/2009/19. The necessary mitigation measures to protect the small stockpile against rainfall were missing at the time of complaint. 3) Due to the missing of mitigation measures to protect the small stockpile during handover transition period, loose material was washed into the harbour when heavy rain came. Muddy water was formed and dispersed in the sea that caused the water quality and visual concern to the public. The complaint was considered as valid. 4) Contractors were advised to relocate the loose materials away from the coastline as far as practicable. Any loose material placed which needed to be placed near the coastline shall be properly compacted or covered as appropriate. To avoid any further environmental deficiency, Contractors shall ensure all necessary environmental mitigation measures will not be missing during site area handover.	Closed
110817	17/08/2011	ICC no. 1-307657681	North Point	Visual impact generated by light from a large amount of spot-lights on the barge during mid-night nearby City Garden.	1) It was referred by AECOM to ET on 23 August 2011 2) RSS confirmed that some non-essential lights were turned on during night-time period which caused the nuisance to the nearby residents. In addition, absence of lighting shields at flood lights results in visual glare to the complaint at night-time. 3) Follow-up action had been taken by contractor that switches off all non-essential lights to minimized nuisance to the nearby residents. The complainant satisfied to the practice and no further complaint was received after that.	Closed
110826	26/08/2011	Grand Hyatt and a complainant by ICC	Wan Chai	Construction noise and vibration nuisance generated from the works at Convention Avenue and inside the HKCEC1	1) Confirmed with the Resident Site Staff that the construction works were referred to the Contractor HK/2009/01. 2) The Excavator mounted breaker at Convention Avenue	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				reclamation area.	and Drilling rig at HKCEC1 reclamation area were the dominant construction noise source during this period. 3) The drilling rig at HKCEC1 reclamation area and excavator mounted breaker at Convention Avenue were then temporary suspended after received the complaint. 4) Investigation revealed that the erected noise barrier (4m cantilevered movable noise barrier for the drilling rig and 1m movable noise barrier for the excavator mounted breaker) were not located close to the plants to provide adequate noise screening. 5) Contractor was advised to avoid concurrent operation of construction plants at site. Further enhancement of movable noise barriers at HKCEC1 and providing noise enclosure for the excavator mounted breaker at Convention Avenue are needed. 6) Further site investigation and checking on 31 August and 7 September 2011 revealed that the implemented noise mitigation measures were in proper and minimize the noise impact.	
110826A	26/08/2011	A complaint letter from Mr. Au of Cayley Property of City Garden	North Point	Harbor front adjacent to their water intake suction which caused 3 times of system breakdown of the sea water pump on 9, 22 and 25 August 2011.	1) It was referred by AECOM to ET on 29 August 2011 2) Confirmed with the Resident Site Staff that the construction works were referred to the Contractors HY/2009/11 and HY/2009/19. 3) The pump is located on the site area of HY/2009/19 4) A temporary garbage defender was installed on 23 July 2011 by HY/2009/11 and the shape of the defender was adjusted on 8 August 2011 in order to exclude the outfall. 5) An ad hoc inspection of the effectiveness of garbage defender was conducted with RSS (CWB project team), contractor of HY/200911 and HY/2009/19 and IEC on 29 August 2011. Inspection report of it was submitted to RSS on 19 September 2011. 5) Daily cleaning near the water intake was conducted twice a day by contractor HY/2009/19. 6) In response to City Garden request, the contractors have set up the temporary garbage defender in function and collect the floating refuses, but cannot eliminate all refuses, in particular the refuse come from sea bed from entering the intake. 6) According to the complaint letter from Cayley Property, the outcomes of the preventive measures were not complying with their expectation. 7) During on-site inspection, floating refuses observed	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					<p>occasionally outside the garbage defender. No conclusion could be made for the source of these floating refuses. On the other hand, some of the floating refuses were observed immigrating in the protective zone during investigation</p> <p>8) All daily cleaning actions had been taken by contractor to minimize floating refuse inside the construction site. It was noted that the intake (land side) is open access to public, so that many activities such as fishing, feeding fish were conducted there even though a notice has already hoisted. Also, tripping of rubbish by the passers-by could result in a lot of rubbish accumulated around the intake point.</p> <p>9) Referring to the record provided by CPML, there were a lot of nylon/ plastic bags and nylon wire mesh that matched those rubbishes generated from the public activities.</p> <p>10) Contractors have fulfilled the requirement of site cleanness and no exceedance was recorded during Water Quality Monitoring. It is consider the cause of this complaint is not related to project and environmental issue in this project as well. No more complaint received after ad-hoc inspection</p>	
111014	14/10/2011	The complainant, Ms. Tam complained via hotline 1823	Wan Chai	The polluted fumes and exhaust from the excavation by sub-contractor of CEDD on pedestrian way outside no.25 Harbour Road (in front of the Harbour Centre)	<p>1) RSS notified ET to carry out investigation on 17 October 2011.</p> <p>2) ET confirmed with the Resident Site Staff that the location of the excavator was within site area of Contract no. HK/2009/02 undertaking the water cooling main reprovision works along the Harbour Road. The plants including the excavator have been checked before using at the site. However, the polluted fumes and exhausted from the excavator was caused due to insufficient maintenance of the plant after using at site.</p> <p>3) After receiving the complaint, the excavator was then removal off-site for checking and maintenance works on 17 October 2011.</p> <p>4) Contractor was reminded to enhance regular checking and maintenance to all plants at site.</p> <p>5) RSS has replied to the complainant on the arrangement of the measures taken on 17 October 2011. Complainant was satisfied with the response and follow-up action taken by the Contractor.</p>	Closed
111104	04/11/2011	Mr. Liu from	Wan Chai	Complain about a tree near the	<p>1) ET confirmed with the Resident Site Staff that</p>	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
		LCSD complained via Contractor Complaint Hotline		site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road, the status is not healthy and roof ball of two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue were half cut.	<ul style="list-style-type: none">• A tree near the site of pipe installation works outside Wan Chai Swimming Pool at Harbour Road is the Tree no. TA1122 under Contract no. HK/2009/02. Leaves of a branch of this tree were shrivelled.• Two trees inside the site near Renaissance Hong Kong Harbour View Hotel at Convention Avenue are the tree nos. A160 and A161 under Contract no. HK/2009/01. Part of roof ball of these two trees was covered by the metal plate. 2) Independent Tree Specialists for these two inspected the trees. Contractor HK/2009/01 has taken the measure as recommend downgrading the soil level around the trunk base. Reinstating of the ground works will be conducted in mid-December 2011. For the tree no. TA1122 under Contract no. HK/2009/02, the brown leaves were removed and fenced the tree with orange net is provided to prevent damage of tree trunk by construction works. The distance between the tree and the edge of the trench is kept approximate 2m. Two Contractors were reminded to carry out regular watering to the trees within their site area.	
111106	06/11/2011	Police officer	Wan Chai	Construction noise generated from the site at about 6:30 a.m on 6 November 2011 and require to stop the machine operation	<ol style="list-style-type: none">1) According to the information reported by Contractor, one BC cutter and hoist were operated for Diaphragm Wall construction of Shatin-Central Link to inspect bentonite pipes and ensure no damages and all the joints are tightened in good position. Then, the subcontractor for Diaphragm wall, SAMBO Korean foreman stopped the engine of the BC cutter immediately. The police officer recorded the details and HKID number of the foreman and then left. Due to the different language communication between the police officer and the Korean foreman, no CNP was checked by the police officer.2) ET confirmed with the Resident Site Staff that same issue was also raised out by RSS at about 7:00a.m on the same day. Besides, it was confirmed that there is no valid Construction Noise Permit for the conducted construction works in the period between 2300 and 0700.3) Due to insufficient communication between Contractor HK/2009/01 and their Korean Sub-contractor, Korean Sub-contractor had not notified to Contractor before carrying out the inspection of the BC cutter, hoists and	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					bentonite pipes at about 6:00a.m to ensure no damages and all the pipe joints should be tightened and in good position. 4) Contractor was advised to enhance the communication between Contractor and sub-contractor and provide sufficient environmental training to all foreman and operators on restricted hour operation. Furthermore, Construction Noise Permit should be checked and in place for the construction works during restricted hour 5) This complaint was considered in relation to the conducted construction works during restricted hours without valid Construction Noise Permit. No more construction works were conducted during night time period. The construction works will be conducted in accordance with the time period stated in valid CNP. This complaint will be kept in view of any follow-up action from the relevant government activities.	
111212	12/12/2011	The complainant, Mr Tsui from IFCII's management office complained via hotline 1823	Central	A visual impact complaint from hotline 1823 was received by ET on 9 January 2011 (ICC Ref. No.: ICC#1-333037096 dated on 12 December 2011). The complaint, Mr Tsui was reported that visual nuisance caused by lighting in the construction site during night time.	1) RSS notified ET on 9 Jan 2012. 2) ET confirmed with the Resident Site Staff that A joint inspection was conducted by Mr Tsui and contractor on that night to see whether there is any improvement. 3) Due to safety reason, igniting enough lights should not be avoided in construction site. However, the light sources were not directed away from pointing to the sensitive receiver and results in visual glare to the complainant. 4) Confirmed with the Resident Site Staff the complainant was satisfied the new arrangement of the lights with contractor after the joint inspection. No further complaint received after that.	Closed
111220	20/12/2011	The complainant, Ms. Poon complained via hotline 1823 (ICC Ref. No.: ICC#1-334683841)	North Point	Construction air and noise nuisance generated that many trucks carrying construction materials driving along Watson Road and Oil Street and possibly entering/leaving the construction site near the IEC during 0800 to 1900 hours.	1) RSS notified ET on 22 Dec 2011. 2) ET confirmed with the Resident Site Staff that the complainant cannot identify whether the trucks were working under the CWB project or not. 3) The dominant construction air and noise nuisances were emitted by the trucks along Oil Street and Waston Road, however, this is the public road for all vehicles. Reviewing the air quality monitoring and noise monitoring results. No exceedance was recorded during this period. 4) Confirmed with the Resident Site Staff that they provided a contact no. for any future enquiries regarding	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					CWB project to the complainant and she was satisfied on the arrangement and no further complaint was received after that.	
111230	30/12/2011	Residents of Harbour Heights	North Point	Construction air and noise nuisance generated by construction vehicles were found parked illegally at King Wah Road and lining up at Oil Street without the engine turning off.	1) RSS notified ET on 6 January 2011. 2) ET confirmed with the Resident Site Staff that a number of construction activities are concurrently proceeding in the vicinity of Oil Street, King Wah Street and a private development project in King Wah Street 3) The dominant construction air and noise nuisances were emitted by the trucks along Oil Street and King Wah Road, however, this is the public road for all vehicles. Reviewing the results of air quality monitoring station (CMA1b) and noise monitoring (M4b). No exceedance was recorded during this period. Site inspections for HY/2009/19 were conducted on 4 January 2012. The condition of the site access at Oil Street and the public road nearby were found satisfactory. It is noted that HyD also allow and encourage their contractors to maximize the use of marine access, where available, to work sites, so as to minimize burdening nearby public roads. When land trips are unavoidable, they require contractors to tidy up their construction vehicles before leaving works sites. No contractor under CWB project parked their vehicles illegally at King Wah Street, and HyD still reminded them not to commit such offence. 4) According to HyD's staff replied the complaint letter on 10 January 2012, there is a private development project under construction at King Wah Road. To access these works sites, construction vehicles have to use public roads nearby. No further complaint received after HyD's reply.	Closed
120118	18/01/2012	N/A	North Point	A complaint regarding a tree located in front of Victoria Centre under IECL was covered by one meter mud without any protection. The complainant concerns the health of the tree in such condition.	1) RSS notified ET on 20 January 2012. 2) ET confirmed with the Resident Site Staff that The tree is inside the site area of HY/2009/19 and The Botanical name of the tree is Ficus superba var. japonica and the I.D. of the tree is UT48 3) According to the information provided by RSS on 20 Jan 2012, the tree shall be felled that has been approved by DLO on 29 August 2011. Moreover, the tree was felled	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					by contractor on 19 January 2012. 4) No further complaint received after HyD's reply.	
120305	03/03/2012	Resident of Harbour Heights complained via hotline 1823 (ICC Ref. No.: ICC#1-344632511)	North Point	A complaint regarding excessive noise from construction sites of CWB was observed outside Harbour Heights from Monday to Saturday before 8am. The plants were frequently turned on before 7:30am creating nuisance. The complainant requested a speedy follow-up and reply from relevant department.	1) RSS notified ET on 5 March 2012. 2) ET confirmed with the Resident Site Staff that PME for diaphragm wall construction started to operate at about 7:30am whilst the other PME, including those for land bored piling work, started to operate after 8am. 3) After reviewing the results of noise monitoring (M4b), no exceedance was recorded during daytime period and the noise level were below 75dB(A). Site inspection for HY/2009/19 was conducted on 7 March 2012. The condition of noise mitigation measures near Harbour Heights was found satisfactory. RSS confirmed that no operation was active before 7:00am everyday. The suspected nuisance was to be considered caused by the PME for diaphragm wall construction. A surprise check was performed on 13 March 2012 by RSS. It was found that no noisy PME was in operation by Contractor of HY/2009/19 before 8am, and the construction noise level was minimal and not disturbing. The noise level and operation time both complied with statutory requirements set up in NCO. 4) Complainant called ICC on 8 March 2012 to confirm HyD has provided a response. No further complaint was received after the response.	Closed



Appendix 10.1

Construction Programme of Individual Contracts

Activity Name	Original Duration	Planned Start	Planned Finish	2011				2012				2013				2014				2015				2016	
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
HY/2009/15 - CWB TUNNEL (CBTS SECTION)																									
SUBMISSIONS COMPLYING WITH EPs																									
EM&A Manual (rely on the Master EP's submission EP-364/2009/A Condition 2.9)																									
Baseline Monitoring Report (rely on the Master EP's submission EP-364/2009 Condition 3.3)																									
Monthly EM&A (rely on the masters EP's Submission, EP-364/2009/A Condition 3.4)																									
A dedicated website (rely on the master EP's submission, EP-364/2009/A Condition 4.2)																									
Management organization of main construction companies (FEP Condition 2.6)	1d	02-Oct-10	02-Oct-10																						
Work Schedule (FEP Condition 2.7)	1d	27-Oct-10	27-Oct-10																						
Location Plan (FEP Condition 2.8)	1d	27-Oct-10	27-Oct-10																						
Noise Management plan (FEP Condition 2.9)	1d	27-Oct-10	27-Oct-10																						
Landscape plan (FEP condition 2.10)	1d	31-Jan-11	31-Jan-11																						
EAST VENTILATION ADIT																									
CCT @ Portion 1, 2, 4, 6, 22	1315d	27-Sep-10	03-May-14																						
EV Adit @ Portion 4-Advance Works	526d	27-Sep-10	05-Mar-12																						
EV Adit Portion 1, 2, 6, 22	26d	22-Dec-11	16-Jan-12																						
EV Adit-based on Conforming Design	323d	15-Feb-12	02-Jan-13																						
TCBR1E (TS1 Area)																									
Diaphragm Wall Construction (incl. SI, & tests after completion)	107d	26-Apr-11	10-Aug-11																						
Excavation & Lateral Support, ELS	99d	16-Jul-11	22-Oct-11																						
Cut & Cover Tunnel Construction (incl. backfill)	78d	22-Oct-11	07-Jan-12																						
OHVD and Cable Trough (access from Portion 22)	76d	18-Dec-13	03-Mar-14																						
TCBR2 + TCBR3 (TS2 Area)																									
Diaphragm Wall Construction	118d	06-Jul-12	31-Oct-12																						
Excavation & Lateral Support, ELS	248d	06-Jul-12	10-Mar-13																						
Cut & Cover Tunnel Construction	164d	11-Mar-13	21-Aug-13																						
OHVD Cable Trough (Access from Portion 22)	150d	05-Aug-13	01-Jan-14																						
TCBR1W (TS4 Area)																									
Diaphragm Wall Construction	148d	28-Jun-11	22-Nov-11																						
Excavation & Lateral Support, ELS	319d	26-Jun-11	11-May-12																						
Landing Steps - Demolition/Reconstruct as footpath	40d	28-Jun-11	23-Aug-11																						

- ◆ Milestone
- ◆ Milestone
- ▬ Remaining Work
- ▬ Critical Remaining Work
- ▬ Actual Work

1 of 2

China State Construction Engineering (Hong Kong) Ltd.

Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel

(CBTS Section)

Prepared by William Caluza			
Date	Revision	Checked	Approved
14-Mar-11	Revision C	ST	KL
	File: GC01a		
	(Layout:HY/2009/15: CWB - Summary)		

中國建築工程(香港)有限公司

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD

Activity Name	Original Duration	Planned Start	Planned Finish	2011					2012				2013				2014				2015				2016		
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	
Rock Excavation	235d	25-Apr-12	15-Dec-12																								
ME4-Diaphragm Wall	114d	10-May-12	19-Oct-12																								
AS Logistics Area for Mined Tunneling Works	174d	01-Jun-12	07-Feb-13																								
ME4-ELS Works	212d	01-Jun-12	02-Apr-13																								
SCL Entrusted Works	291d	18-Jul-12	08-Sep-13																								
Cut & Cover Tunnel Construction (w/o TS4 +)	111d	17-Dec-12	06-Apr-13																								
ME4-RC Structure	146d	28-Jan-13	21-Aug-13																								
OHVD and Cable Trough (Access from TZ5/TPCWAE/TPCWAW)	180d	17-Jun-13	13-Dec-13																								
MINED TUNNEL																											
CHT Protection Works @ location A, B, C	342d	27-Sep-10	01-Feb-12																								
Tunnel works from West Portal (access from TPCWAE& TZ5)	418d	12-Mar-12	30-Oct-13																								
Tunnel Works from East Portal (Access from TS4 Area)	214d	30-Mar-12	01-Feb-13																								
Tunnel OHVD & Cable Trough	384d	02-Dec-13	22-May-15																								
TPCWAE																											
Drainage Diversion works along Hung Hing Road (Portion 19)	176d	15-Oct-10	24-Jun-11																								
Diaphragm Wall Construction	147d	20-May-11	13-Oct-11																								
Excavation & Lateral Support, ELS	421d	20-May-11	13-Jul-12																								
Rock Excavation	208d	12-Mar-12	03-Oct-12																								
AS Logistics Area for Mined Tunneling works	342d	12-May-12	18-Apr-13																								
Cut & Cover Tunnel Construction	130d	28-Jan-13	06-Jun-13																								
OHVD and Cable Trough (Access from TZ5/TPCWAW)	182d	18-Feb-15	18-Aug-15																								
TPCWAW & PORTION 11																											
Diaphragm Wall Construction + Portion 11	222d	25-Oct-13	03-Jun-14																								
Excavation & Lateral Support, ELS	478d	25-Oct-13	14-Feb-15																								
Cut & Cover Tunnel Construction	143d	30-Dec-14	21-May-15																								
OHVD and Cable Trough Installation (Access from Portion 11)	235d	22-May-15	11-Jan-16																								

- ◆ ◆ Milestone
- ◆ ◆ Milestone
- ▬ Remaining Work
- ▬ Critical Remaining Work
- ▬ Actual Work

China State Construction Engineering (Hong Kong) Ltd.
Contract No. HY/2009/15 - Central Wan Chai By Pass - Tunnel
(CBTS Section)

Prepared by William Caluza			
Date	Revision	Checked	Approved
14-Mar-11	Revision C	ST	KL
	File: 0001a		
	(Layout: HY/2009/15: CWB - Summary)		



Data Date: 20-Aug-11
 Print Date: 29-Aug-11
 CCP3-2

HY/2009/18 Central - Wan Chai Bypass (Central Interchange)

TASK filter: HL

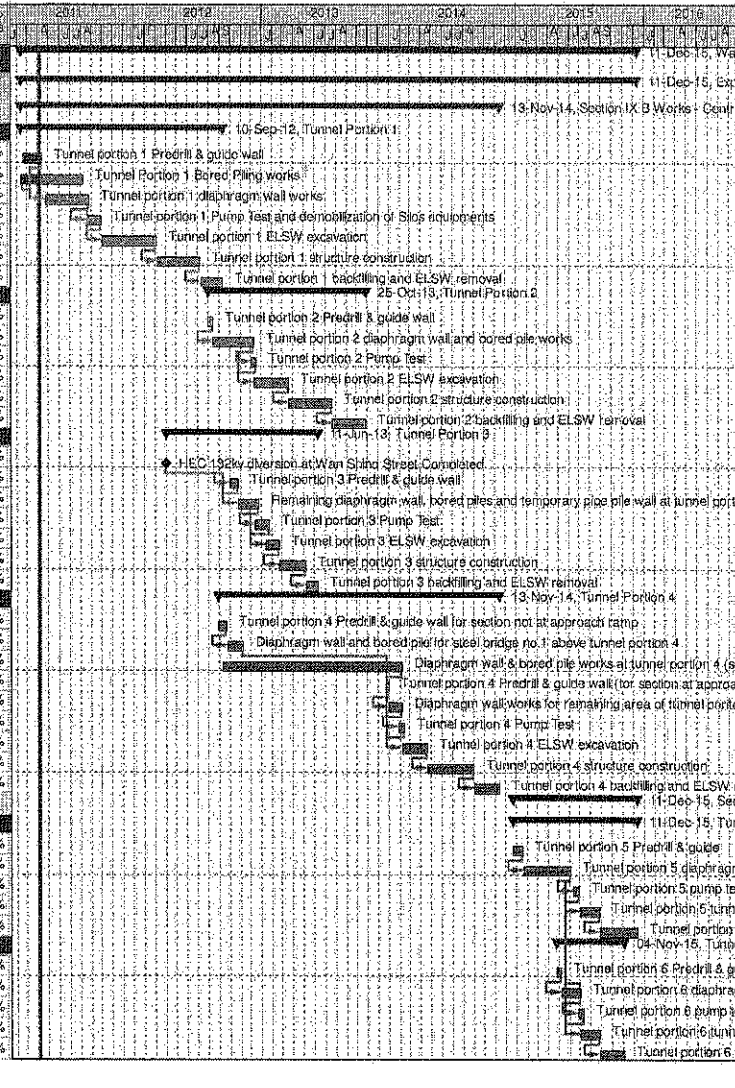


Activity Name	Start	Finish	Total Float	2011												2012												2013												2014												2015												2016												2017																							
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec												
CWB - Central Interchange																																																																																																			
HIGH LEVEL PROGRAMME																																																																																																			
DATE FOR COMMENCEMENT & COMPLETION																																																																																																			
Contract Commencement	21-Sep-10 A	03-Jan-11 A																																																																																																	
Contract Construction Completion		30-Jan-16	365																																																																																																
Contract DLP and Establishment Works Completion		29-Jan-17	0																																																																																																
PRELIMINARIES																																																																																																			
Preliminary Submissions / Approvals	21-Sep-10 A	03-Jan-11 A																																																																																																	
Commence Site Mobilisation	03-Jan-11 A																																																																																																		
Mobilise, Hoarding & Site Clearance	03-Jan-11 A	14-May-11 A																																																																																																	
PORTION IV WORKS																																																																																																			
CWB Tunnel CH1480 to CH1580																																																																																																			
Site Investigation	11-May-11 A	15-Sep-11	28																																																																																																
Construct Guide Walls	27-Jun-11 A	30-Sep-11	20																																																																																																
Construct D-Wall / Barrettes	26-Aug-11	19-Apr-12	20																																																																																																
ELS Works	20-Apr-12	11-Oct-12	19																																																																																																
Construct CWB Tunnel & Ventilation Building	12-Oct-12	21-Jun-13	19																																																																																																
Works inside CWB Tunnel	22-Jun-13	24-Sep-13	18																																																																																																
KD-8 Complete		13-Oct-13*	0																																																																																																
CWB Tunnel CH1580 to CH1646																																																																																																			
Construction Diversion for Finance Street	05-Sep-11	22-Oct-11	42																																																																																																
East End of Finance St. Closed		23-Oct-11	219																																																																																																
Site Investigation	30-Jul-11 A	09-Dec-11	126																																																																																																
Construct Guide Walls	30-Jul-11 A	04-Jan-12	97																																																																																																
Construct D-Wall / Barrettes	19-Mar-12	30-Jul-12	18																																																																																																
ELS Works	31-Jul-12	19-Dec-12	22																																																																																																
Construct CWB Tunnel	20-Dec-12	16-Apr-13	20																																																																																																
Works inside CWB Tunnel	10-Aug-13	13-Dec-13	161																																																																																																
KD-7 Complete		23-May-14*	0																																																																																																
CWB Tunnel CH1646 to CH1685																																																																																																			
Man Yiu St. Diverted (Possess Portion IIA, IIB)		01-Feb-12	52																																																																																																
Site Clearance & Divert Existing Utilities	01-Feb-12	29-Mar-12	60																																																																																																
Site Investigation	30-Mar-12	04-May-12	54																																																																																																
Sheet Pile / Pipe Pile / Grouting	26-Mar-12	29-May-12	63																																																																																																
Construct Guide Walls	05-May-12	02-Jun-12	55																																																																																																
Construct Barrettes	04-Jun-12	04-Jul-12	52																																																																																																
Temporary Works to Support C/W Pipes	30-May-12	25-Jun-12	61																																																																																																
ELS Works	05-Jul-12	08-Dec-12	56																																																																																																
Demolish & Reconstruct CWB Tunnel	07-Dec-12	08-Mar-13	59																																																																																																
Works Inside CWB Tunnel	22-Jun-13	23-Oct-13	212																																																																																																
Surface Works																																																																																																			
Backfill, U/G Services, Roadworks & Landscaping	25-Jan-13	11-Jan-14	295																																																																																																
KD-6 Complete		03-Nov-14*	0																																																																																																
PORTION III WORKS																																																																																																			
CWB Tunnel CH1685 to CH1704																																																																																																			
Access to CRIII Works Area	01-Sep-11		56																																																																																																
Works Area within CRIII Preparation	01-Sep-11	31-Dec-11	61																																																																																																
Site Investigation	01-Feb-12	13-Mar-12	374																																																																																																
Construct Guide Walls	29-Feb-12	30-Mar-12	379																																																																																																
Construct D-Wall / Barrettes (thru old seawall)	31-Mar-12	12-Sep-12	376																																																																																																
Construct Man Yiu Street Temporary Diversion	24-Nov-11	31-Jan-12	52																																																																																																
ELS Works	13-Sep-12	19-Dec-12	377																																																																																																
Construct CWB Tunnel (excl. roof slab)	20-Dec-12	23-Mar-13	375																																																																																																
Break into Existing CWB Tunnel	25-Mar-13	25-Apr-13	377																																																																																																
Construct CWB Tunnel Roof Slab	09-Jul-13	19-Aug-13	304																																																																																																
Works inside CWB Tunnel	20-Aug-13	05-Nov-13	269																																																																																																
CWB Tunnel CH1704 to CH1825																																																																																																			
KD-4 Complete		01-Aug-14*	0																																																																																																
Works inside CWB Tunnel	16-Oct-12	09-Oct-13	271																																																																																																
CWB Tunnel CH1825 to CH2600																																																																																																			
Works inside CWB Tunnel	10-Apr-12	02-Sep-13	100																																																																																																
KD-5 Complete		31-Jan-14*	0																																																																																																
Surface Works																																																																																																			
Road P1 Roadworks & Landscaping	20-Aug-13	19-Mar-14	324																																																																																																
Man Yiu St. Widening Roadworks & Landscaping	31-Jul-13	27-Nov-13	415																																																																																																
KD-3 Complete		06-Feb-15*	0																																																																																																
PORTION V WORKS																																																																																																			
Mobilization, Set up, Utilities Diversion, Tree																																																																																																			
Mobilization, Set up, Utilities Diversion, Tree	03-Jan-11 A	03-Jun-11 A																																																																																																	
Construct Trough B Structure - Phase 1	20-May-11 A	04-Aug-12	587																																																																																																
Construct Trough B Structure - Phase 2b	12-Oct-11	06-Sep-13	335																																																																																																
Temporary Drainage Diversion	15-Jul-13	23-Oct-13	19																																																																																																
Construct Trough B Structure - Phase 2a	24-Oct-13	26-Jul-14	33																																																																																																
Construct Trough B Structure - West End Portion	21-Jul-14	15-Oct-14	19																																																																																																
Portion VI Access Date	12-Nov-12		322																																																																																																
Man Kwong St. WB Widening	12-Nov-12	05-Apr-13	320																																																																																																
Construct Retaining Wall D	29-Jul-13	20-Dec-13	90																																																																																																
Remaining Roadworks & Landscaping	18-Nov-13	15-Jul-14	111																																																																																																
KD-9 Complete		03-Nov-14*	0																																																																																																
PORTION VI WORKS																																																																																																			
Portion VI Access Date																																																																																																			
Portion VI Access Date	12-Nov-12		219																																																																																																
Man Kwong St. WB Widening	12-Nov-12	05-Apr-13	209																																																																																																
Retaining Walls F	15-Oct-14	02-Jun-15	95																																																																																																
Retaining Walls G	12-Nov-12	12-Oct-13	693																																																																																																
Bridge B	12-Nov-12	25-Aug-14	523																																																																																																
Trough A	21-Dec-13	14-Oct-14	83																																																																																																
Elevated Layby at Rumsey St. Flyover	23-Apr-14	29-Jul-15	165																																																																																																
Bridge A	12-Nov-12	01-Aug-14	157																																																																																																
Open Snp Road D / Man Po St.		14-Oct-14	838																																																																																																
Retaining Wall A & B	15-Oct-14	16-Jun-15	91																																																																																																
Remaining U/G Services, Roadworks & Landscaping	07-Nov-14	14-Sep-16	82																																																																																																
KD-10 Complete		30-Jan-16*	0																																																																																																
KD-16 Complete		30-Jan-16*	0																																																																																																
Landscaping Establishment (Last Area)	15-Sep-15	13-Sep-16	138																																																																																																
KD-15 Complete		29-Jan-17	0																																																																																																

Wan Chai Development Phase II - Central - Wan Chai
Bypass at Wan Chai East CONTRACT HK/2009/02

CHUN WO - CRGL JV

Activity ID	Activity Name	OD	Start	Finish	% Planned	2011	2012	2013	2014	2015	2016
Wan Chai Development Phase II - Central - Wan Chai Bypass at Wan Chai East											
Expanded and More Detailed Initial Works Programme											
Section IX B Works - Central - Wan Chai Bypass Tunnel Structure from chainage 3400 to eastern tunnel											
Tunnel Portion 1											
S9B-T1-0005	Tunnel portion 1 Predrill & guide wall	10	18-Feb-11	13-Apr-11	40%						
S9B-T1-0007	Tunnel Portion 1 Bored Piling works	105	08-Feb-11	08-Aug-11	0%						
S9B-T1-0010	Tunnel portion 1 diaphragm wall works	105	26-Apr-11	27-Aug-11	0%						
S9B-T1-0015	Tunnel portion 1 Pump Test and demobilization of Slos equipments	35	20-Aug-11	30-Sep-11	0%						
S9B-T1-0020	Tunnel portion 1 ELSW excavation	130	03-Oct-11	07-Mar-12	0%						
S9B-T1-0030	Tunnel portion 1 structure construction	100	09-Mar-12	09-Jul-12	0%						
S9B-T1-0040	Tunnel portion 1 backfilling and ELSW removal	54	10-Jul-12	10-Sep-12	0%						
Tunnel Portion 2											
S9B-T2-0105	Tunnel portion 2 Predrill & guide wall	10	02-Aug-12	13-Aug-12	0%						
S9B-T2-0010	Tunnel portion 2 diaphragm wall and bored pile works	100	14-Aug-12	10-Dec-12	0%						
S9B-T2-0015	Tunnel portion 2 Pump Test	14	03-Dec-12	18-Dec-12	0%						
S9B-T2-0020	Tunnel portion 2 ELSW excavation	80	11-Dec-12	19-Mar-13	0%						
S9B-T2-0030	Tunnel portion 2 structure construction	100	20-Mar-13	22-Jul-13	0%						
S9B-T2-0040	Tunnel portion 2 backfilling and ELSW removal	80	23-Jul-13	25-Oct-13	0%						
Tunnel Portion 3											
S9B-T3-0005	HEC 132kv diversion at Wan Shing Street Completed	0	01-Apr-12*		0%						
S9B-T3-0008	Tunnel portion 3 Predrill & guide wall	20	02-Oct-12	25-Oct-12	0%						
S9B-T3-0010	Remaining diaphragm wall, bored piles and temporary pipe pile wall at tunnel portion 3	50	25-Oct-12	22-Dec-12	0%						
S9B-T3-0015	Tunnel portion 3 Pump Test	30	15-Dec-12	22-Jan-13	0%						
S9B-T3-0020	Tunnel portion 3 ELSW excavation	30	15-Jan-13	20-Feb-13	0%						
S9B-T3-0030	Tunnel portion 3 structure construction	80	21-Feb-13	08-May-13	0%						
S9B-T3-0040	Tunnel portion 3 backfilling and ELSW removal	30	07-May-13	11-Jun-13	0%						
Tunnel Portion 4											
S9B-T4-0005	Tunnel portion 4 Predrill & guide wall for section not at approach ramp	21	30-Aug-12	22-Sep-12	0%						
S9B-T4-0010	Diaphragm wall and bored pile for steel bridge no. 1 above tunnel portion 4	40	24-Sep-12	10-Nov-12	0%						
S9B-T4-0020	Diaphragm wall & bored pile works at tunnel portion 4 (section not at approach ramp)	420	11-Sep-12	05-Feb-14	0%						
S9B-T4-0025	Tunnel portion 4 Predrill & guide wall (for section at approach ramp)	5	23-Dec-13	30-Dec-13	0%						
S9B-T4-0030	Diaphragm wall works for remaining area of tunnel portion 4 (for section at approach ramp)	30	31-Dec-13	06-Feb-14	0%						
S9B-T4-0035	Tunnel portion 4 Pump Test	14	28-Jan-14	14-Feb-14	0%						
S9B-T4-0040	Tunnel portion 4 ELSW excavation	60	07-Feb-14	19-Apr-14	0%						
S9B-T4-0050	Tunnel portion 4 structure construction	110	22-Apr-14	01-Sep-14	0%						
S9B-T4-0060	Tunnel portion 4 backfilling and ELSW removal	60	02-Sep-14	13-Nov-14	0%						
Section X Works - Central - Wan Chai Bypass Tunnel Structure from western tunnel to chainage 3400											
Tunnel Portion 5											
S10-T5-0005	Tunnel portion 5 Predrill & guide	21	23-Dec-14	19-Jan-15	0%						
S10-T5-0010	Tunnel portion 5 diaphragm wall & bored pile works	110	20-Jan-15	04-Jun-15	0%						
S10-T5-0015	Tunnel portion 5 pump test	14	13-Jun-15	30-Jun-15	0%						
S10-T5-0020	Tunnel portion 5 tunnel ELSW excavation	45	04-Jul-15	25-Aug-15	0%						
S10-T5-0030	Tunnel portion 5 tunnel structure construction	90	26-Aug-15	11-Dec-15	0%						
Tunnel Portion 6											
S10-T6-0040	Tunnel portion 6 Predrill & guide	12	24-Apr-15	08-May-15	0%						
S10-T6-0050	Tunnel portion 6 diaphragm wall & bored pile works at Area 10	45	09-May-15	09-Jul-15	0%						
S10-T6-0055	Tunnel portion 6 pump test	14	25-Jun-15	11-Jul-15	0%						
S10-T6-0060	Tunnel portion 6 tunnel ELSW excavation at Area 10	45	04-Jul-15	26-Aug-15	0%						
S10-T6-0070	Tunnel portion 6 tunnel structure construction at Area 10	58	26-Aug-15	04-Nov-15	0%						



後和 - 中國中鐵聯合
 Chun Wo - CRGL JOINT VENTURE

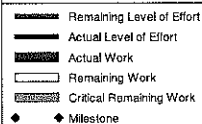
Remaining Level of Effort Milestone
 Actual Level of Effort Summary
 Actual Work
 Remaining Work
 Critical Remaining Work

CEDD CONTRACT NO. HK/2009/02
 Wan Chai Development Phase II - Central Wan Chai Bypass at Wan Chai East (Contract 2)
 Revised Programme dated 7 April 2011

Date	Revision	Checked	Approved
07-Apr-11		KT	KY

Page 10 of 11

Activity ID	Activity Name	Rem Dur	Start	Finish	2012																				
					2011					January					February				March				April		
					26	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09	16				
3MRP - Jan 2012 to Apr 2012																									
01 - CONTRACT DATES																									
01.1 - Conditions																									
0110-1100	PMI for Section 1 of the Works	0		21-Jan-12																					
01.2 - Possession of Site																									
0120-2000	Possession to Portion X	0	21-Jan-12*																						
0120-2100	Possession to Portion III (Partial Possession)	0	31-Dec-11 A		◆ Possession to Portion III (Partial Possession)																				
0120-2200	Possession to Portion VA (Partial Possession)	0	31-Dec-11 A		◆ Possession to Portion VA (Partial Possession)																				
0120-2300	Possession to Portion VB (Partial Possession)	0	31-Dec-11 A		◆ Possession to Portion VB (Partial Possession)																				
0120-2400	Possession to Portion VC (Partial Possession)	0	31-Dec-11 A		◆ Possession to Portion VC (Partial Possession)																				
0120-2500	Possession to Portion VD (Partial Possession)	0	31-Dec-11 A		◆ Possession to Portion VD (Partial Possession)																				
01.5 - Period of Site Possession for each Portion																									
0150-1000	Site possession Period Portion VI	2070	20-Jan-11 A	20-Sep-17																					
0150-1100	Site possession Period Portion VIIA	2070	04-Aug-11 A	20-Sep-17																					
0150-1200	Site possession Period Portion VIIB	862	04-Aug-11 A	31-May-14																					
0150-1300	Site possession Period Portion VIIC	1208	04-Aug-11 A	12-May-15																					
0150-1400	Site possession Period Portion VIID	862	04-Aug-11 A	31-May-14																					
0150-1500	Site possession Period Portion XI	622	05-Oct-11 A	04-Oct-13																					
0150-2000	Site possession Period Portion X	2070	21-Jan-12	20-Sep-17																					
0150-2500	Site possession Period Portion VD	1293	31-Dec-11 A	05-Aug-15																					
02 - PRE-CONSTRUCTION WORKS																									
02.2 - Contractor's Submission																									
0220-1200	Temp. Drainage Management Plan - Approval from ER	7	10-Sep-11 A	27-Jan-12																					
0220-1250	Concrete Ready Mix/Design Mix - Concrete Plant Trials & Approval	8	04-Aug-11 A	28-Jan-12																					
0220-1260	Drainage Pipes & Materials - Submission	14	15-Sep-11 A	03-Feb-12																					
0220-1270	Drainage Pipes & Materials - ER Review/Comment	14	04-Feb-12	17-Feb-12																					
0220-1280	Drainage Pipes & Materials - Resubmission	7	18-Feb-12	24-Feb-12																					
0220-1290	Drainage Pipes & Materials - ER Approval	14	25-Feb-12	09-Mar-12																					
0220-1300	Drainage Pipes & Materials - Procurement & Delivery	14	03-Mar-12	16-Mar-12																					
0220-1360	Tunnel Structures Materials - Submission	28	15-Mar-12	11-Apr-12																					
0220-1370	Tunnel Structures Materials - ER Review/Comment	28	12-Apr-12	09-May-12																					
0220-1460	Bridge Bearing - Submission	15	10-Oct-11 A	04-Feb-12																					
0220-1470	Bridge Bearing - ER Review/Comment	28	05-Feb-12	03-Mar-12																					
0220-1480	Bridge Bearing - Resubmission	14	04-Mar-12	17-Mar-12																					
0220-1490	Bridge Bearing - ER Approval	28	18-Mar-12	14-Apr-12																					
02.3 - Method Statement / Shop Drawings																									
0230-1131	MS Marine Piling - Submission (low headroom)	28	13-Feb-12	11-Mar-12																					
0230-1132	MS Marine Piling - ER Review & Comment (low headroom)	28	12-Mar-12	08-Apr-12																					
0230-1133	MS Marine Piling - Resubmission (low headroom)	28	09-Apr-12	06-May-12																					
0230-1260	MS Cut & Cover Tunnel - Submission	28	21-Jan-12	17-Feb-12																					
0230-1270	MS Cut & Cover Tunnel - ER Review & Comment	28	18-Feb-12	16-Mar-12																					
0230-1280	MS Cut & Cover Tunnel - Resubmission	28	17-Mar-12	13-Apr-12																					
0230-1340	MS Pre-cast Segment Bridge - Submission	28	01-Apr-12	28-Apr-12																					
0230-1460	MS Stressing/De-stressing Tendons - Submission	28	01-Mar-12	28-Mar-12																					



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					January				February				March				April			
					26	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09
0230-1470	MS Stressing/Destressing Tendons - ER Review & Comment	28	29-Mar-12	25-Apr-12																
0230-1540	MS Precasting of Bridge Segment & Beam - Submission	30	14-Dec-11 A	19-Feb-12																
0230-1550	MS Precasting of Bridge Segment & Beam - ER Review & Comment	28	20-Feb-12	18-Mar-12																
0230-1560	MS Precasting of Bridge Segment & Beam - Resubmission	36	19-Mar-12	23-Apr-12																
02.4 - Contractor's Design and Build Items																				
0240-1010	Temp Bridge "TA" Design - Prep & Submit	102	16-Dec-11 A	01-May-12																
0240-1090	Int. Noise Enclosure Design - Public Consultation	126	29-Jul-11 A	25-May-12																
0240-1095	Int. Noise Enclosure Design - ACABAS/ER Consultation/Submission	81	16-Dec-11 A	10-Apr-12																
0240-1100	Int. Noise Enclosure Design - ER review & comment	28	11-Apr-12	08-May-12																
0240-1120	Noise Barrier Design - Public Consultation	126	29-Jul-11 A	25-May-12																
0240-1122	Noise Barrier Design - ACABAS/ER Consultation/Submission	81	16-Dec-11 A	10-Apr-12																
0240-1124	Noise Barrier Design - ER review & comment	28	11-Apr-12	08-May-12																
0240-1130	Perm. Noise Enclosure Design - Public Consultation	180	14-Feb-12	11-Aug-12																
0240-1371	Marine Bored Piling Platform Design (F9 to F14) - Submission	0	07-Nov-11 A	27-Dec-11 A																
0240-1372	Marine Bored Piling Platform Design (F9 to F14) - ER Review/Comment	0	28-Dec-11 A	10-Jan-12 A																
0240-1373	Marine Bored Piling Platform Design (F9 to F14) - Resubmission	3	11-Jan-12 A	23-Jan-12																
0240-1374	Marine Bored Piling Platform Design (F9 to F14) - ER Approval	14	23-Jan-12	06-Feb-12																
02.5 - Bridge Segment/Beam Off-site Precasting																				
0250-1000	Propose, approve and set-up Factory for Pre-cast Unit	114	14-Dec-11 A	13-May-12																
0250-1100	Geometric Design of the Bridge Segments/Beams	44	14-Dec-11 A	04-Mar-12																
0250-1200	Bridge Segment/Beam Mould Preparation	24	05-Mar-12	28-Mar-12																
0250-1300	Trial Casting for Bridge Segment/Beam	18	29-Mar-12	15-Apr-12																
03 - PRELIMINARY WORKS																				
03.1 - Site Establishment																				
0310-1290	Fabrication of Special Hoarding	19	24-Oct-11 A	15-Feb-12																
0310-1300	Hoarding at Portion VA & VB	40	15-Feb-12	02-Apr-12																
0310-1400	Move in Surcharge to Portion III & VD	6	02-Apr-12	12-Apr-12																
0310-1500	Surcharge kept on Site	90	12-Apr-12	11-Jul-12																
03.2 - Geotechnical Instrumentation and Monitoring Works																				
0320-1050	Geotechnical Instrumentation Portion IB, ID	0	14-Nov-11 A	20-Jan-12 A																
0320-1100	Geotechnical Instrumentation Portion X	60	21-Jan-12	03-Apr-12																
03.3 - Interface Works																				
0330-1100	Works at FEHD Permanent Depot (Stage 1)	36	21-Jan-12	06-Mar-12																
0330-1110	Submit to FEHD/ER Relocation Sequence & Programme	6	21-Jan-12	31-Jan-12																
0330-1120	Relocate FEHD to Permanent Depot at Portions IA & X	12	07-Mar-12	20-Mar-12																
04 - SECTION 1 OF THE WORKS (Subject to Excision)																				
04.1 - Drainage & Sewerage																				
0410-0980	Ground investigation + CAR & RAP approval	2	19-Jul-11 A	27-Jan-12																
0410-0990	Engineer Instruction to excision of the works	0		27-Jan-12																
0410-1010	Confirmatory Investigation/Sample/Tests/Decontamination	60	27-Jan-12	10-Apr-12																
0410-1020	Utility Coordination and Liaison	48	27-Jan-12	23-Mar-12																
0410-1030	Setting Out and Utility Detection & Protection at Portion XI	18	10-Apr-12	02-May-12																
05 - SECTION 2 & 2A OF THE WORKS																				
05.2 - Cut & Cover Tunnel Ch 4932-5149																				

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					January				February				March				April			
					25	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09
05.2.1 - D-Wall Construction																				
0521-1667	Construction of Temporary Loading Ramp at Portion VIIA	14	05-Dec-11 A	10-Feb-12	Construction of Temporary Loading Ramp at Portion VIIA															
0521-1710.05	D-wall Panel N106 (6m - 441cu.m)	10	23-Mar-12	03-Apr-12	D-wall Panel N106 (6m - 441cu.m)															
0521-1710.10	D-wall Panel N105 (4.8m - 354cu.m)	10	29-Feb-12	10-Mar-12	D-wall Panel N105 (4.8m - 354cu.m)															
0521-1710.15	D-wall Panel N104 (3.4m - 257cu.m)	10	11-Feb-12	22-Feb-12	D-wall Panel N104 (3.4m - 257cu.m)															
0521-1710.20	D-wall Panel N103 (3.4m - 256cu.m)	10	21-Jan-12	04-Feb-12	D-wall Panel N103 (3.4m - 256cu.m)															
0521-1710.30	D-wall Panel N102 (6m - 452cu.m)	0	21-Dec-11 A	05-Jan-12 A	D-wall Panel N102 (6m - 452cu.m)															
0521-1710.35	D-wall Panel N100 (6m - 456cu.m)	10	12-Mar-12	22-Mar-12	D-wall Panel N100 (6m - 456cu.m)															
0521-1710.40	D-wall Panel N99 (6m - 459cu.m)	12	31-Jan-12	13-Feb-12	D-wall Panel N99 (6m - 459cu.m)															
0521-1710.45	D-wall Panel N98 (6m - 462cu.m)	0	03-Dec-11 A	28-Dec-11 A	D-wall Panel N98 (6m - 462cu.m)															
0521-1710.55	D-wall Panel N96 (6m - 488cu.m)	6	03-Jan-12 A	31-Jan-12	D-wall Panel N96 (6m - 488cu.m)															
0521-1710.60	D-wall Panel N95 (6m - 492cu.m)	10	06-Feb-12	16-Feb-12	D-wall Panel N95 (6m - 492cu.m)															
0521-1750.05	D-wall Panel N94 (6m - 497cu.m)	10	23-Feb-12	05-Mar-12	D-wall Panel N94 (6m - 497cu.m)															
0521-1750.10	D-wall Panel N93 (6m - 501cu.m)	10	17-Mar-12	28-Mar-12	D-wall Panel N93 (6m - 501cu.m)															
0521-1750.15	D-wall Panel N92 (6m - 503cu.m)	10	06-Mar-12	16-Mar-12	D-wall Panel N92 (6m - 503cu.m)															
0521-1750.20	D-wall Panel N91 (6m - 472cu.m)	10	17-Feb-12	28-Feb-12	D-wall Panel N91 (6m - 472cu.m)															
0521-1750.25	D-wall Panel N90 (4.16m - 349cu.m)	0	01-Dec-11 A	30-Dec-11 A	D-wall Panel N90 (4.16m - 349cu.m)															
0521-1750.30	D-wall Panel N89 (4.16m - 349cu.m)	0	03-Nov-11 A	28-Dec-11 A	D-wall Panel N89 (4.16m - 349cu.m)															
0521-1750.35	D-wall Panel N88 (6m - 505cu.m)	0	19-Dec-11 A	13-Jan-12 A	D-wall Panel N88 (6m - 505cu.m)															
0521-1750.40	D-wall Panel N87 (6m - 506cu.m)	10	06-Mar-12	16-Mar-12	D-wall Panel N87 (6m - 506cu.m)															
0521-1750.45	D-wall Panel N86 (6m - 507cu.m)	10	29-Feb-12	10-Mar-12	D-wall Panel N86 (6m - 507cu.m)															
0521-1750.50	D-wall Panel N85 (6m - 507cu.m)	10	17-Feb-12	28-Feb-12	D-wall Panel N85 (6m - 507cu.m)															
0521-1750.55	D-wall Panel N84 (6m - 511cu.m)	5	11-Jan-12 A	30-Jan-12	D-wall Panel N84 (6m - 511cu.m)															
0521-1750.60	D-wall Panel N83 (6m - 517cu.m)	0	15-Dec-11 A	09-Jan-12 A	D-wall Panel N83 (6m - 517cu.m)															
0521-1790.10	D-wall Panel N74 (6m - 562cu.m)	10	12-Mar-12	22-Mar-12	D-wall Panel N74 (6m - 562cu.m)															
0521-1790.15	D-wall Panel N75 (6m - 554cu.m)	10	23-Feb-12	05-Mar-12	D-wall Panel N75 (6m - 554cu.m)															
0521-1790.20	D-wall Panel N76 (6m - 585cu.m)	10	11-Feb-12	22-Feb-12	D-wall Panel N76 (6m - 585cu.m)															
0521-1795.10	D-wall Panel N77 (6m - 570cu.m)	10	31-Jan-12	10-Feb-12	D-wall Panel N77 (6m - 570cu.m)															
0521-1795.15	D-wall Panel N78 (6m - 554cu.m)	5	09-Jan-12 A	30-Jan-12	D-wall Panel N78 (6m - 554cu.m)															
0521-1795.25	D-wall Panel N80 (6m - 537cu.m)	10	06-Feb-12	16-Feb-12	D-wall Panel N80 (6m - 537cu.m)															
0521-1795.30	D-wall Panel N81 (6m - 530cu.m)	0	24-Dec-11 A	16-Jan-12 A	D-wall Panel N81 (6m - 530cu.m)															
0521-1800	D-wall N59-N70 Pre-drilling (6 nos. remaining - 1 rig@6d/hole)	36	19-Sep-11 A	06-Mar-12	D-wall N59-N70 Pre-drilling (6 nos. remaining - 1 rig@6d/hole)															
0521-1810	D-wall N59-N70 Grouting for Existing Seawall Rubble Mound	21	07-Mar-12	30-Mar-12	D-wall N59-N70 Grouting for Existing Seawall Rubble Mound															
0521-1820	D-wall N59-N70 Guide Wall	12	31-Mar-12	17-Apr-12	D-wall N59-N70 Guide Wall															
0521-1840	D-wall N52-N58 Pre-drilling (7 nos@3d - 2 rig)	21	07-Mar-12	30-Mar-12	D-wall N52-N58 Pre-drilling (7 nos@3d - 2 rig)															
0521-1850	D-wall N52-N58 Grouting for Existing Seawall Rubble Mound	21	31-Mar-12	27-Apr-12	D-wall N52-N58 Grouting for Existing Seawall Rubble Mound															
0521-1920	D-wall Temp Grouting for Existing Seawall Rubble Mound	18	23-Feb-12	14-Mar-12	D-wall Temp Grouting for Existing Seawall Rubble Mound															
0521-1930	D-wall Temp End-wall Guide Wall	12	15-Mar-12	28-Mar-12	D-wall Temp End-wall Guide Wall															
0521-1945.15	Slurry-wall TEW2 (Set 2)	4	29-Mar-12	02-Apr-12	Slurry-wall TEW2 (Set 2)															
0521-1945.25	Slurry-wall TEW4 (Set 2)	4	03-Apr-12	10-Apr-12	Slurry-wall TEW4 (Set 2)															
0521-1945.35	Slurry-wall TEW6 (Set 2)	4	11-Apr-12	14-Apr-12	Slurry-wall TEW6 (Set 2)															
0521-1960.10	Site Establishment - Haul Road / Access Road	0	15-Nov-11 A	27-Dec-11 A	Site Establishment - Haul Road / Access Road															
0521-1960.20	Site Establishment - Additional Bentonite Plant	8	03-Jan-12 A	07-Feb-12	Site Establishment - Additional Bentonite Plant															
0521-1980	D-wall S102-S113 Guide Wall	12	10-Jan-12 A	07-Feb-12	D-wall S102-S113 Guide Wall															

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					26	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09
0521-1990.10	D-wall Panel S113 (3.28m - 244cu.m)	10	21-Jan-12	04-Feb-12					D-wall Panel S113 (3.28m - 244cu.m)											
0521-1990.20	D-wall Panel S111 (7.65m - 575cu.m)	10	14-Mar-12	24-Mar-12																
0521-1990.25	D-wall Panel S110 (5.4m - 409cu.m)	10	08-Feb-12	18-Feb-12					D-wall Panel S110 (5.4m - 409cu.m)											
0521-1990.30	D-wall Panel S109 (6m - 455cu.m)	10	25-Feb-12	07-Mar-12																
0521-1990.50	D-wall Panel S105 (6m - 458cu.m)	10	31-Mar-12	14-Apr-12																
0521-1990.55	D-wall Panel S104 (6m - 481cu.m)	10	20-Mar-12	30-Mar-12																
0521-1990.60	D-wall Panel S103 (6m - 484cu.m)	10	14-Feb-12	24-Feb-12					D-wall Panel S103 (6m - 484cu.m)											
0521-1990.65	D-wall Panel S102 (5.96m - 483 cu.m)	10	02-Mar-12	13-Mar-12																
0521-2010	D-wall S90-S101 Guide Wall	15	21-Jan-12	10-Feb-12					D-wall S90-S101 Guide Wall											
0521-2020.20	D-wall Panel S99	10	10-Apr-12	20-Apr-12																
0521-2020.25	D-wall Panel S98	10	26-Mar-12	07-Apr-12																
0521-2020.30	D-wall Panel S97	10	20-Feb-12	01-Mar-12					D-wall Panel S97											
0521-2020.35	D-wall Panel S96	10	08-Mar-12	19-Mar-12																
0521-2020.40	D-wall Panel S95	10	05-Apr-12	18-Apr-12																
0521-2020.45	D-wall Panel S94	10	23-Mar-12	03-Apr-12																
0521-2020.50	D-wall Panel S93	10	13-Apr-12	24-Apr-12																
0521-2020.55	D-wall Panel S92	10	29-Mar-12	12-Apr-12																
0521-2020.65	D-wall Panel S90	10	17-Mar-12	28-Mar-12																
0521-2030	D-wall S78-S89 Pre-drilling	12	10-Nov-11 A	07-Feb-12					D-wall S78-S89 Pre-drilling											
0521-2040	D-wall S81-S89 Guide Wall	15	08-Feb-12	24-Feb-12					D-wall S81-S89 Guide Wall											
0521-2050.20	D-wall Panel S83 (6m - 517cu.m)	12	05-Apr-12	20-Apr-12																
0521-2055.15	D-wall Panel S86 (6m - 507cu.m)	12	13-Apr-12	26-Apr-12																
0521-2060	D-wall S66-S77 Pre-drilling	25	08-Feb-12	07-Mar-12					D-wall S66-S77 Pre-drilling											
0521-2070	D-wall S66-S77 Guide Wall	15	08-Mar-12	24-Mar-12					D-wall S66-S77 Guide Wall											
0521-2085	D-wall S66-S67 Construction (2 nos@8d - Team 4)	12	02-Apr-12*	18-Apr-12																
0521-2090	D-wall S60-S65 Pre-drilling	25	29-Mar-12	30-Apr-12																
0521-2150	D-wall N52-N106 G.I. Preliminary Report / Founding Level	37	07-Mar-12	21-Apr-12																
05.2.2 - Barrette Construction																				
0522-2180	Barrette BC53-BC56 Pre-drilling	18	08-Mar-12	28-Mar-12																
0522-2190	Barrette BC54-BC56 Grouting for Existing Seawall Rubble Mound	12	29-Mar-12	14-Apr-12																
0522-2220	Barrette BC57-BC68 Pre-drilling	0	14-Nov-11 A	28-Dec-11 A					Barrette BC57-BC68 Pre-drilling											
0522-2230	Barrette BC57-BC68 Grouting for Existing Seawall Rubble Mound	30	21-Jan-12	28-Feb-12																
0522-2240	Barrette BC57-BC68 Guide Wall	24	15-Feb-12	13-Mar-12					Barrette BC57-BC68 Guide Wall											
0522-2270	Barrette BC43-BC52 Pre-drilling	25	19-Mar-12	19-Apr-12																
0522-2280	Barrette BC43-BC52 Grouting for Existing Seawall Rubble Mound	12	12-Apr-12	25-Apr-12																
05.2.3 - ELS																				
0523-2398	Prepare & Submit Documents as per ETWB TCW No. 15/2005	30	21-Jan-12	28-Feb-12																
05.3 - Box Culvert T1																				
0530-2990	Bay 4-5 Trench excavation	1	14-Nov-11 A	26-Jan-12					Bay 4-5 Trench excavation											
0530-3000	Bay 4-5 Box Culvert Construction	42	26-Jan-12	15-Mar-12																
0530-3010	Bay 4-5 Road Reinstatement	7	15-Mar-12	23-Mar-12																
0530-3020	Implement Watson Road TTM Stage 2	3	21-Mar-12	23-Mar-12																
0530-3030	Bay 1-3 Site Clearance/Formation	3	24-Mar-12	27-Mar-12																
0530-3040	Bay 1-3 Trench excavation	36	28-Mar-12	12-May-12																

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					January				February				March				April			
					26	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09
0530-3111	Bay 9 - Sheet Piling Works	12	15-Oct-11 A	11-Feb-12	Bay 9 - Sheet Piling Works															
0530-3113	Bay 9 - Excavation	12	23-Feb-12	07-Mar-12	Bay 9 - Excavation															
0530-3114	Bay 9 - Box Culvert/Outfall Construction	48	08-Mar-12	07-May-12																
0530-3200	Storm Drainage 1500 Dia. Within Portion X (FEHD)	60	21-Mar-12	02-Jun-12																
10 - SECTION X OF THE WORKS																				
10.1 - E/B Bridges (Bridge D, E and F)																				
10.1.1 - Marine Pier Construction																				
Prep F02 to F15																				
1011-1420	Extract Existing Dolphin Front Pile pier F9	0	26-Dec-11 A	26-Dec-11 A	Extract Existing Dolphin Front Pile pier F9															
1011-1425	Remove Existing Dolphin pier F9	0	31-Dec-11 A	03-Jan-12 A	Remove Existing Dolphin pier F9															
1011-1430	Extract Existing Dolphin Front Pile pier F10	0	29-Dec-11 A	29-Dec-11 A	Extract Existing Dolphin Front Pile pier F10															
1011-1435	Remove Existing Dolphin pier F10	0	31-Dec-11 A	03-Jan-12 A	Remove Existing Dolphin pier F10															
1011-1570.30	F7 piling platform - temporary piles 5 & 6	0	16-Dec-11 A	29-Dec-11 A	F7 piling platform - temporary piles 5 & 6															
1011-1570.40	F7 piling platform - erect steel platform modules 3 & 4	0	27-Dec-11 A	07-Jan-12 A	F7 piling platform - erect steel platform modules 3 & 4															
1011-1570.50	F7 piling platform - ICE	0	04-Jan-12 A	18-Jan-12 A	F7 piling platform - ICE															
1011-1580.20	F8 piling platform - erect steel platform modules 1 & 2	0	16-Nov-11 A	26-Dec-11 A	F8 piling platform - erect steel platform modules 1 & 2															
1011-1580.30	F8 piling platform - temporary piles 5 & 6	0	27-Dec-11 A	03-Jan-12 A	F8 piling platform - temporary piles 5 & 6															
1011-1580.40	F8 piling platform - erect steel platform modules 3 & 4	0	04-Jan-12 A	11-Jan-12 A	F8 piling platform - erect steel platform modules 3 & 4															
1011-1580.50	F8 piling platform - ICE	0	12-Jan-12 A	16-Jan-12 A	F8 piling platform - ICE															
1011-1590	Erect marine piling platform pier F9	32	10-Jan-12 A	02-Mar-12	Erect marine piling platform pier F9															
1011-1600	Erect marine piling platform pier F10	32	10-Jan-12 A	02-Mar-12	Erect marine piling platform pier F10															
1011-1610	Erect marine piling platform pier F11	18	20-Oct-11 A	15-Feb-12	Erect marine piling platform pier F11															
1011-1620	Erect marine piling platform pier F12	18	26-Oct-11 A	14-Feb-12	Erect marine piling platform pier F12															
1011-1630	Erect marine piling platform pier F13	18	01-Nov-11 A	20-Apr-12	Erect marine piling platform pier F13															
1011-1640	Erect marine piling platform pier F14	18	08-Nov-11 A	09-May-12	Erect marine piling platform pier F14															
1011-1670	Pre-drill F7 raking dolphin piles (2 nos.)	3	03-Dec-11 A	27-Jan-12	Pre-drill F7 raking dolphin piles (2 nos.)															
1011-1680	Pre-drill F8 raking dolphin piles (2 nos.)	5	05-Jan-12 A	02-Feb-12	Pre-drill F8 raking dolphin piles (2 nos.)															
1011-1690	Pre-drill F9 raking dolphin piles (2 nos.)	10	02-Mar-12	14-Mar-12	Pre-drill F9 raking dolphin piles (2 nos.)															
1011-1700	Pre-drill F10 raking dolphin piles (2 nos.)	10	14-Mar-12	26-Mar-12	Pre-drill F10 raking dolphin piles (2 nos.)															
1011-1710	Pre-drill F11 raking dolphin piles (2 nos.)	10	16-Feb-12	27-Feb-12	Pre-drill F11 raking dolphin piles (2 nos.)															
1011-1720	Pre-drill F12 raking dolphin piles (2 nos.)	10	28-Feb-12	09-Mar-12	Pre-drill F12 raking dolphin piles (2 nos.)															
1011-1760.20	Pier F3 Marine Bore Pile - F3-4	0	24-Dec-11 A	17-Jan-12 A	Pier F3 Marine Bore Pile - F3-4															
1011-1760.30	Pier F3 Marine Bore Pile - F3-7	12	21-Jan-12	07-Feb-12	Pier F3 Marine Bore Pile - F3-7															
1011-1760.40	Pier F3 Marine Bore Pile - F3-3	12	08-Feb-12	21-Feb-12	Pier F3 Marine Bore Pile - F3-3															
1011-1760.50	Pier F3 Marine Bore Pile - F3-6	12	22-Feb-12	06-Mar-12	Pier F3 Marine Bore Pile - F3-6															
1011-1760.60	Pier F3 Marine Bore Pile - F3-2	12	07-Mar-12	20-Mar-12	Pier F3 Marine Bore Pile - F3-2															
1011-1760.70	Pier F3 Marine Bore Pile - F3-5	12	21-Mar-12	03-Apr-12	Pier F3 Marine Bore Pile - F3-5															
1011-1760.80	Pier F3 Marine Bore Pile - F3-1	12	05-Apr-12	20-Apr-12	Pier F3 Marine Bore Pile - F3-1															
1011-1790	Pier F6 Dolphin Pile (team 4)	72	16-Mar-12	13-Jun-12	Pier F6 Dolphin Pile (team 4)															
1011-1800.10	Pier F6 Marine Bore Pile - F6-2	10	15-Dec-11 A	04-Feb-12	Pier F6 Marine Bore Pile - F6-2															
1011-1800.20	Pier F6 Marine Bore Pile - F6-3	11	07-Jan-12 A	17-Feb-12	Pier F6 Marine Bore Pile - F6-3															
1011-1800.30	Pier F6 Marine Bore Pile - F6-1	12	17-Feb-12	02-Mar-12	Pier F6 Marine Bore Pile - F6-1															
1011-1800.40	Pier F6 Marine Bore Pile - F6-4	12	02-Mar-12	16-Mar-12	Pier F6 Marine Bore Pile - F6-4															
1011-1802	Pier F9 Dolphin Pile (team 4)	72	16-Mar-12	13-Jun-12	Pier F9 Dolphin Pile (team 4)															

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Activity ID	Activity Name	Rem Dur	Start	Finish	2012																
					January					February				March				April			
					26	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09	16
1011-1810	Pier F5 Dolphin Pile (team 3)	72	29-Feb-12	26-May-12																	
1011-1820.10	Pier F5 Marine Bore Pile - F5-4	0	09-Dec-11 A	07-Jan-12 A	Pier F5 Marine Bore Pile - F5-4																
1011-1820.20	Pier F5 Marine Bore Pile - F5-2	6	13-Jan-12 A	31-Jan-12	Pier F5 Marine Bore Pile - F5-2																
1011-1820.30	Pier F5 Marine Bore Pile - F5-1	12	01-Feb-12	14-Feb-12	Pier F5 Marine Bore Pile - F5-1																
1011-1820.40	Pier F5 Marine Bore Pile - F5-3	12	15-Feb-12	28-Feb-12	Pier F5 Marine Bore Pile - F5-3																
1011-1822	Pier F12 Dolphin Pile (team 3)	72	10-Mar-12	06-Jun-12																	
1011-1850	Pier F4 Dolphin Pile (team 2)	36	21-Mar-12	05-May-12																	
1011-1860.20	Pier F4 Marine Bore Pile - F4-6	0	19-Dec-11 A	14-Jan-12 A	Pier F4 Marine Bore Pile - F4-6																
1011-1860.30	Pier F4 Marine Bore Pile - F4-5	12	21-Jan-12	07-Feb-12	Pier F4 Marine Bore Pile - F4-5																
1011-1860.40	Pier F4 Marine Bore Pile - F4-2	12	08-Feb-12	21-Feb-12	Pier F4 Marine Bore Pile - F4-2																
1011-1860.50	Pier F4 Marine Bore Pile - F4-4	12	22-Feb-12	06-Mar-12	Pier F4 Marine Bore Pile - F4-4																
1011-1860.60	Pier F4 Marine Bore Pile - F4-1	12	07-Mar-12	20-Mar-12	Pier F4 Marine Bore Pile - F4-1																
1011-1864.10	Pier F8 Marine Bored Pile F8-4	8	16-Jan-12 A	03-Feb-12	Pier F8 Marine Bored Pile F8-4																
1011-1864.20	Pier F8 Marine Bored Pile F8-2	12	03-Feb-12	17-Feb-12	Pier F8 Marine Bored Pile F8-2																
1011-1864.30	Pier F8 Marine Bored Pile F8-3	12	17-Feb-12	02-Mar-12	Pier F8 Marine Bored Pile F8-3																
1011-1864.40	Pier F8 Marine Bored Pile F8-1	12	02-Mar-12	16-Mar-12	Pier F8 Marine Bored Pile F8-1																
1011-1910	Pier F7 Dolphin Pile (team 5)	72	19-Mar-12	15-Jun-12																	
1011-1920.10	Pier F7 Marine Bored Pile F7-4	11	19-Jan-12 A	06-Feb-12	Pier F7 Marine Bored Pile F7-4																
1011-1920.20	Pier F7 Marine Bored Pile F7-2	12	06-Feb-12	20-Feb-12	Pier F7 Marine Bored Pile F7-2																
1011-1920.30	Pier F7 Marine Bored Pile F7-3	12	20-Feb-12	05-Mar-12	Pier F7 Marine Bored Pile F7-3																
1011-1920.40	Pier F7 Marine Bored Pile F7-1	12	05-Mar-12	19-Mar-12	Pier F7 Marine Bored Pile F7-1																
1011-2010	Dismantle Piling Platform at Pier F5	6	21-Mar-12	27-Mar-12	Dismantle Piling Platform at Pier F5																
1011-2020	Dismantle Piling Platform at Pier F6	6	10-Apr-12	17-Apr-12	Dismantle Piling Platform at Pier F6																
1011-2100	Marine bored pile testing F5	18	29-Feb-12	20-Mar-12	Marine bored pile testing F5																
1011-2105	Marine bored pile testing F6	18	16-Mar-12	10-Apr-12	Marine bored pile testing F6																
Pier F01 to F02																					
1011-2540	Possession to Portion III	0	31-Dec-11 A		◆ Possession to Portion III																
1011-2550	Marine piling preparation works, portion III	0	31-Dec-11 A	06-Jan-12 A	Marine piling preparation works, portion III																
1011-2560	Erect Piling Platform pier F2B	7	09-Jan-12 A	01-Feb-12	Erect Piling Platform pier F2B																
1011-2570	Erect Pre-drilling Platform pier F2A	9	11-Feb-12	22-Feb-12	Erect Pre-drilling Platform pier F2A																
1011-2580	Erect Pre-drilling Platform pier F1B	9	01-Feb-12	11-Feb-12	Erect Pre-drilling Platform pier F1B																
1011-2590	Erect Pre-drilling Platform pier F1A	9	22-Feb-12	03-Mar-12	Erect Pre-drilling Platform pier F1A																
1011-2600	Pre-drilling pier F2B	10	22-Feb-12	05-Mar-12	Pre-drilling pier F2B																
1011-2610	Pre-drilling pier F2A	15	22-Feb-12	10-Mar-12	Pre-drilling pier F2A																
1011-2620	Pre-drilling pier F1B	10	05-Mar-12	16-Mar-12	Pre-drilling pier F1B																
1011-2630	Pre-drilling pier F1A	15	05-Mar-12	22-Mar-12	Pre-drilling pier F1A																
1011-2635	Portion III Marine Pile G.I. Final Report / Founding Level	30	22-Mar-12	30-Apr-12																	
1011-2680	Remove existing dolphin pier F2	0	31-Dec-11 A	03-Jan-12 A	Remove existing dolphin pier F2																
1011-2690	Remove existing dolphin pier F1	0	31-Dec-11 A	03-Jan-12 A	Remove existing dolphin pier F1																
1011-2770	Marine bored pile F2B	48	29-Mar-12	29-May-12																	
1011-2780	Marine bored pile F1B	48	29-Mar-12	29-May-12																	
10.1.2 - Land Pier Construction																					
Play Out 16 D11																					
1012-1010	Site Survey and Setting Out at Portion III	0	31-Dec-11 A	06-Jan-12 A	Site Survey and Setting Out at Portion III																

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					January							February							March							April						
					26	02	09	16	23	30	06	13	20	27	05	12	19	26	02	09	16	23	30	06	13	20	27	05	12	19	26	02
1012-1015	Pre-drilling for Piling (D08 to D12) at III (28 no.) (4set)	16	03-Jan-12 A	13-Feb-12	Pre-drilling for Piling (D08 to D12) at III (28 no.) (4set)																											
1012-1020	Portion III Land Pile G.I. Prelim Report / Founding Level	6	13-Feb-12	20-Feb-12	Portion III Land Pile G.I. Prelim Report / Founding Level																											
1012-1025	Portion III Land Pile G.I. Final Report / Founding Level	24	20-Feb-12	19-Mar-12	Portion III Land Pile G.I. Final Report / Founding Level																											
1012-1030.10	Pier D08 Bored Pile D8-1	12	13-Feb-12	27-Feb-12	Pier D08 Bored Pile D8-1																											
1012-1030.20	Pier D08 Bored Pile D8-6	12	27-Feb-12	12-Mar-12	Pier D08 Bored Pile D8-6																											
1012-1030.30	Pier D08 Bored Pile D8-2	12	12-Mar-12	26-Mar-12	Pier D08 Bored Pile D8-2																											
1012-1030.40	Pier D08 Bored Pile D8-5	12	26-Mar-12	12-Apr-12	Pier D08 Bored Pile D8-5																											
1012-1030.50	Pier D08 Bored Pile D8-3	12	12-Apr-12	26-Apr-12	Pier D08 Bored Pile D8-3																											
1012-1040.10	Pier D09 Bored Pile D9-1	12	13-Feb-12	27-Feb-12	Pier D09 Bored Pile D9-1																											
1012-1040.20	Pier D09 Bored Pile D9-6	12	27-Feb-12	12-Mar-12	Pier D09 Bored Pile D9-6																											
1012-1040.30	Pier D09 Bored Pile D9-2	12	12-Mar-12	26-Mar-12	Pier D09 Bored Pile D9-2																											
1012-1040.40	Pier D09 Bored Pile D9-5	12	26-Mar-12	12-Apr-12	Pier D09 Bored Pile D9-5																											
1012-1040.50	Pier D09 Bored Pile D9-3	12	12-Apr-12	26-Apr-12	Pier D09 Bored Pile D9-3																											
1012-1050.10	Pier D10 Bored Pile D10-1	12	20-Feb-12	05-Mar-12	Pier D10 Bored Pile D10-1																											
1012-1050.20	Pier D10 Bored Pile D10-6	12	05-Mar-12	19-Mar-12	Pier D10 Bored Pile D10-6																											
1012-1050.30	Pier D10 Bored Pile D10-2	12	19-Mar-12	02-Apr-12	Pier D10 Bored Pile D10-2																											
1012-1050.40	Pier D10 Bored Pile D10-5	12	02-Apr-12	19-Apr-12	Pier D10 Bored Pile D10-5																											
1012-1060.10	Pier D11 Bored Pile D11-1	12	05-Mar-12	19-Mar-12	Pier D11 Bored Pile D11-1																											
1012-1060.20	Pier D11 Bored Pile D11-6	12	19-Mar-12	02-Apr-12	Pier D11 Bored Pile D11-6																											
1012-1060.30	Pier D11 Bored Pile D11-2	12	02-Apr-12	19-Apr-12	Pier D11 Bored Pile D11-2																											
Pier D05 to D07																																
1012-1260	Pre-drilling for 18 nos Piling at VIIB (2set)	11	08-Aug-11 A	06-Feb-12	Pre-drilling for 18 nos Piling at VIIB (2set)																											
1012-1265	Portion VIIB Land Pile G.I. Final Report / Founding Level	15	03-Oct-11 A	23-Feb-12	Portion VIIB Land Pile G.I. Final Report / Founding Level																											
1012-1270	Pier D07 Bored Piles (6 piles)	108	23-Feb-12	05-Jul-12	Pier D07 Bored Piles (6 piles)																											
1012-1280.50	Pier D06 Bored Pile D06-4	8	03-Jan-12 A	02-Feb-12	Pier D06 Bored Pile D06-4																											
1012-1280.60	Pier D06 Bored Pile D06-3	0	21-Dec-11 A	18-Jan-12 A	Pier D06 Bored Pile D06-3																											
1012-1290.20	Pier D05 Bored Pile D05-1	13	02-Dec-11 A	19-Apr-12	Pier D05 Bored Pile D05-1																											
10.1.3 - E/B Bridge Construction																																
Bridge D3																																
1013-1000	Design & Procurement of Launching Girder	75	21-Jan-12	24-Apr-12	Design & Procurement of Launching Girder																											
14 - SECTION 14 OF THE WORKS																																
14.1 - Soft Landscape																																
1410-1000	Transplant. of ex. Trees to Nursery & upkeep	1515	21-Jan-12	09-Feb-17	Transplant. of ex. Trees to Nursery & upkeep																											

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