


Contract No. DC/2009/23
HATS Stage 2A – Upgrading of
Preliminary Treatment Works at
North Point, Wan Chai East and Central

Quarterly Environmental
Monitoring and Audit Report
February 2015 to April 2015

(Version 1.0)

Certified By	 <hr data-bbox="662 1366 1141 1370"/> (Environmental Team Leader)
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REMARKS:

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

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

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2 June 2015
By Post

Attn: Mr. Danny Tang

Dear Sir,

**Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation**

**Contract No. DC/2009/23
Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central
Submission of 17th Quarterly EM&A Report for February to April 2015 (Version 1.0)**

We refer to the revised Quarterly EM&A Report for February to April 2015 (version 1.0) received on 26 May 2015 and confirm that we have no further comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c. Ove Arup & Partners Hong Kong Ltd.
Leader and JEC JV
Cinotech Consultants Ltd.

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Mr. Vincent Chan
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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan
HATS 2A	Harbour Area Treatment Scheme Stage 2A

EXECUTIVE SUMMARY

Introduction

1. This is the 17th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/23 “HATS Stage 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central” (The Project) which documents the key information of EM&A and environmental monitoring works by Contract DC/2007/23 HATS Stage 2A with same Environmental Permit (Permit No. EP-322/2008/G).
2. The site activities undertaken for in the reporting quarter included:

February 2015:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Installation of steel cage and wall opening for sewage pump replacement at flow distribution chamber (Stage 2);
- Building service and E&M works for the administration and workshop building;
- Construction of FRP weir at Flow Distribution chamber.

North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the new flume channel;
- Construction of Grit Handling Room.

Central PTW

- Operation and maintain of the new FSGT Building;
- Substructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work.

March 2015:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Building service and E&M works for the administration and workshop building;
- Construction of FRP weir at Flow Distribution chamber.

North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the new flume channel;
- Construction of Grit Handling Room.

Central PTW

- Operation and maintain of the new FSGT Building;
- Substructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work.

April 2015:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Building service and E&M works for the administration and workshop building;
- Finishing work for the new administration and workshop building.

North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the seawater pumping station;
- Construction of Grit Handling Room;
- Construction of DO Building.

Central PTW

- Operation and maintain of the new FSGT Building;
- Superstructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work.

Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2007/23 under HATS 2A with same Environmental Permit and in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
4. Summary of the non-compliance of the reporting quarter is tabulated in **Table I**.

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

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
AM1	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM2	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM3	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
AM4_2	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
NM1	Noise	0	0	0	0	N/A
NM2	Noise	0	10	0	0	N/A
NM3	Noise	0	0	0	0	N/A

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4_2 on 24 September 2012.

1-hour TSP Monitoring

5. All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No

Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

- 6. All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise

- 7. All Construction Noise monitoring was conducted as scheduled in the reporting quarter. No Action Level exceedance was recorded, while ten non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1st, 10th, 15th & 24th February 2015; 1st, 10th, 15th & 29th March 2015; 12th & 21st April 2015 by the ET of DC/2007/23 at NM2. No works were performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B**.

Environmental Licenses and Permits

- 8. Licenses/Permits granted to the Project include the Environmental Permit (EP) and Registered as a Chemical Waste Producer for North Point, Wan Chai East and Central PTWs sites; water discharge licenses of North Point, Wan Chai East and Central PTWs; Construction Noise Permit (Permit no.: GW-RS0179-15) for construction works at Central PTW during this reporting quarter.

Environmental Mitigation Implementation Schedule

- 9. According to the EIA Report Section 3.74, 4.56, 6.384, 9.154 and 13.44, air quality, noise, water quality, waste management and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix G**.

Key Information in the Reporting Quarter

- 10. Summary of key information in the reporting quarter is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP covering the reporting quarter	3	Monthly Environmental Monitoring and Audit Report for February 2015, March 2015 and April 2015	Submitted to EPD	No Comment	---

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

11. No environmentally related summons, prosecutions or complaints were received for the Project in the reporting quarter.
12. There were no environmentally related summons, prosecutions or complaints were received since the commencement of the Project. The Complaint Log is presented in **Appendix H**.

Future Key Issues:

13. Major site activities for the coming two months include:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Building service and E&M works for the administration and workshop building;
- Finishing work for the new administration and workshop building.

North Point PTW

- Operation and maintain of the new FSGT Building;
- ELS work for the seawater pumping station;
- Construction of Grit Handling Room;
- Construction of DO Building.

Central PTW

- Operation and maintain of the new FSGT Building;
- Superstructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work.

14. The environmental concerns in coming months are mainly surface runoff and waste water control in the wet season. Other concerns including noise generated from construction works; dust emission due to strong wind erosion and vehicle movements, and inappropriate storage of construction equipment within the tree protective zones.

1. INTRODUCTION

Background

- 1.1 The Project ‘HATS Stage 2A - Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central with Contract No: DC/2009/23’ mainly comprises the following major works:
- Decommissioning, demolition and removal of existing structures and buildings, including the associated E&M works;
 - Relocation of sewers, control room, workshop equipment and the associated E&M works; and
 - Construction of new buildings and structures.
- 1.2 The general location plan of the Project is shown in **Figure 1**.
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 9th May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/23 “Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central”. The date of commencement of construction of the Project is 14th February 2011.
- 1.5 Cinotech Consultants Limited was commissioned by LJJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP.
- 1.6 This is the 17th quarterly EM&A report summarizing the EM&A works conducted for the Project from February 2015 to April 2015.

Project Organizations

- 1.7 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 2**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.
Drainage Services Department	Project Proponent	Mr. Vincent Y.K. Wong	Senior Engineer 2	2159 3406
Ove Arup & Partners Hong Kong Ltd	Engineer’s Representative	Mr. Ted Tang	Principal Resident Engineer	2370 4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Ms. Janet Wai	Project Coordinator & Audit Team Leader	2151 2078

Party	Role	Name	Position	Phone No.
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	28285757
Leader and JEC Joint Venture	Contractor	Mr. Vincent Chan	Site Agent	9650 9410
		Mr. Lawrence Lam	Environmental Officer	9650 9410
		General Enquiry Hotline of Contract DC/2009/23		9755 3112

Construction Programme

1.8 The site activities undertaken in the reporting quarter included:

February 2015:

Wan Chai East PTW:

- Construction of concrete plinth at the inlet pumping station (Civil);
- Pump Replacement Work at the inlet pumping station (E&M);
- Installation of steel cage and wall opening for sewage pump replacement at flow distribution chamber (Stage 2);
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- External wall finishing work.

March 2015:

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April 2015:

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- Superstructure construction for FSGT Building;
- Construction of the flume channel, Grit Trap and Deodorization Room;
- Electrical work of sewage pump replacement at inlet pumping station (Sewage pump No.3) (E&M);
- External wall finishing work.

Summary of EM&A Requirements

- 1.9 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the project EIA study final report; and
 - Environmental requirements in contract documents.
- 1.10 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.
- 1.11 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project from February 2015 to April 2015. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the monthly reports for the Contract DC/2007/23.

2. AIR QUALITY

Monitoring Requirements

2.1 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Four designated monitoring stations, AM1, AM2, AM3 and AM4 were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM1	DC/2007/23	Chan's Creative School
AM2		Hong Kong & Islands Regional Office, WSD
AM3		Wan Chai East PTW
AM4_2		A Location next to Sheung Wan Fire Station

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4_2 on 24 September 2012.

Monitoring Equipment

2.3 **Table 2.2** summarizes the equipment used in the impact air monitoring programme in the reporting quarter. Copies of calibration certificates can be found in the relevant monthly reports.

Table 2.2 Air Quality Monitoring Equipment

Monitoring Station	Model and Make	
	HVS Sampler	Calibrator
AM1	GMW GS-2310 ACCU-VOL	CM-AIR-43
AM2		
AM3		
AM4_2		

Note: Since the site area where air monitoring station AM4 was located had to be returned to DSD for another Works Contract, AM4 was relocated to AM4_2 on 24 September 2012.

Monitoring Parameters, Frequency and Duration

2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
All monitoring locations	1-hour TSP	0700-1900 hrs	3 times/ every 6 days
	24-hour TSP	0000-2400 hrs	once in every 6 days

Monitoring Methodology and QA/QC Procedure

2.5 The monitoring methodology and QA/QC procedures are presented in the relevant monthly report for Contract DC/2007/23.

Results and Observations

2.6 **Table 2.4** summarizes the monitoring results at AM1, AM2, AM3 and AM4_2 in reporting quarter.

Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Result in Reporting Quarter

Reporting Month	Air Quality Monitoring Station	Average $\mu\text{g}/\text{m}^3$	Range $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1 hour TSP					
February 2015	AM1	152	99 - 277	340	500
	AM2	145	107 - 186	352	
	AM3	123	89 - 161	355	
	AM4_2	147	108 - 180	393	
March 2015	AM1	115	98 - 134	340	
	AM2	113	98 - 129	352	
	AM3	101	87 - 117	355	
	AM4_2	123	96 - 154	393	
April 2015	AM1	117	84 - 163	340	
	AM2	113	88 - 152	352	
	AM3	107	87 - 123	355	
	AM4_2	126	99 - 147	393	
24 hours TSP					
February 2015	AM1	81	73 - 94	185	260
	AM2	84	64 - 100	182	
	AM3	84	75 - 95	181	
	AM4_2	89	82 - 101	211	
March 2015	AM1	71	54 - 86	185	
	AM2	74	68 - 77	182	
	AM3	73	70 - 78	181	
	AM4_2	82	75 - 91	211	
April 2015	AM1	68	60 - 74	185	
	AM2	70	58 - 79	182	
	AM3	71	59 - 78	181	
	AM4_2	77	70 - 90	211	

- 2.7 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix B**.
- 2.8 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix B**.
- 2.9 Graphical presentation of Air Quality Monitoring in the reporting quarter is shown in **Appendix C**.
- 2.10 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from loading of material, vehicles movement and construction works in site.

3 NOISE

Monitoring Requirements

3.1 Three noise monitoring stations, namely NM1, NM2 and NM3 were designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Noise monitoring was conducted at three designated monitoring stations as listed in **Table 3.1**.

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
NM1	DC/2007/23	Chan's Creative School
NM2		Hyde Building
NM3		Goldfield Building

Monitoring Equipment

3.3 **Table 3.2** summarizes the noise monitoring equipments used in the reporting quarter. Copies of calibration certificates can be found in the relevant monthly reports.

Table 3.2 Noise Monitoring Equipment

Monitoring Station	Model and Make	
	Sound Level Meter	Calibrator
NM1	Rion NL-52 & Casella CEL-633A	Rion NC-73 & Casella CEL-120/1
NM2		
NM3		

Monitoring Parameters, Frequency and Duration

3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM1	L _{eq} (30 min.) dB(A)	0700-1900 hrs. on weekdays	Once per week
	L _{eq} (5 min.) dB(A)	Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)	
NM2 NM3	L _{eq} (30 min.) dB(A)	0700-1900 hrs. on weekdays	

Monitoring Methodology and QA/QC Procedures

3.5 The monitoring methodology and QA/QC procedure could be referring to the monthly reports for Contract DC/2007/23.

Results and Observations

3.6 **Table 3.4** summarizes the monitoring results at NM1, NM2 and NM3 in reporting quarter.

Table 3.4 Summary of the Noise Monitoring Results in Reporting Quarter

For the time period 0700-1900 hrs. on weekdays			
	Monitoring Station	Range, dB(A) L _{eq} (30 min.)	Limit Level ,dB(A) L _{eq} (30 min.)
February 2015	NM1	67 - 68	70.0 *
	NM2	72 - 73	75.0
	NM3	75 - 75	
March 2015	NM1	67 - 68	70.0 *
	NM2	72 - 73	75.0
	NM3	75 - 75	
April 2015	NM1	67 - 68	70.0 *
	NM2	72 - 73	75.0
	NM3	75 - 75	

* 70 dB(A) was adopted as the Limit Level during school normal teaching period in the reporting period.

3.7 **Table 3.5** summarizes the restricted hours noise monitoring results at NM1 and NM2 in reporting quarter.

Table 3.5 Summary of Restricted Hours Noise Monitoring Results in Reporting Quarter

Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)			
	Monitoring Station	Range, dB(A) L _{eq} (30 min.)	Limit Level ,dB(A) L _{eq} (5 min.)
February 2015	NM1	67 - 70	70.0 *
	NM2	71 - 73	
March 2015	NM1	67 - 69	70.0 *
	NM2	69 - 72	
April 2015	NM1	67 - 69	70.0 *
	NM2	69 - 72	

Note: No class was held at the school during all the measurement period

* 70dB (A) was adopted as the Limit Level during restricted hours in the reporting period.

3.8 The construction noise monitoring at the designated locations was conducted by the ET of Contract: DC/2007/23 as scheduled in the reporting quarter. The monitoring results could be referring to Annex C6, D6 and E6 of the monthly reports for Contract DC/2007/23.

3.9 Excavation works were conducted during day time at North Point PTW. No construction

work was conducted during the restricted hours under the Project in the reporting quarter.

- 3.10 No Action Level exceedance was recorded, while ten non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1st, 10th, 15th & 24th February 2015; 1st, 10th, 15th & 29th March 2015; 12th & 21st April 2015 by the ET of DC/2007/23 at NM2. No works were performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B**.
- 3.11 Graphical presentation of Noise monitoring in the reporting quarter is shown in **Appendix D**.
- 3.12 The major noise sources identified at the designated noise monitoring stations were traffic noise and construction activities.

4 ENVIRONMENTAL AUDIT**Site Audits**

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 13 Environmental site audits were conducted by ET and 3 IEC audits were conducted in the reporting quarter for the project. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting quarter in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

Review of Environmental Monitoring Procedures

- 4.4 The monitoring works conducted by the monitoring team of Contract DC/2007/23. The monitoring procedures were reviewed by its ET.

Status of Environmental Licensing and Permitting

- 4.5 All permits/licenses obtained for the Contract DC/2009/23 are summarized in **Table 4.1**.
Table 4.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/23

Ref. No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT000944 3-2011	22/6/2011	30/6/2016	Location: Aberdeen	Valid
WT000164 39-2013	2/7/2013	31/5/2016	Location: North Point PTW	
WT000164 65-2013	21/6/2013	30/4/2016	Location: Wan Chai East PTW	
WT000164 62-2013	2/7/2013	30/4/2016	Location: Central PTW	
Registered Chemical Waste Producer				
5213-153- L2743-01	15/02/2011	N/A	Location: North Point PTW	Valid
5213-115- L2737-01	26/01/2011	N/A	Location: Wan Chai East PTW	
5213-134- L2745-01	16/02/2011	N/A	Location: Central PTW	
Construction Noise Permit				
GW- RS0516-13	29/5/2013	28/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong	Expiry

Ref. No.	Valid Period		Details	Status
	From	To		
			Kong	
GW- RS0906-13	23/8/2013	22/11/2013	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS1387-13	5/12/2013	21/5/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0424-14	5/5/2014	5/7/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at North Point Preliminary Treatment Works Plant House, Man Hong Street, North Point, Hong Kong	Expiry
GW- RS0643-14	3/7/2014	30/9/2014	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Expiry
GW- RS1078-14	10/10/2014	9/4/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Wan Chai East Preliminary Treatment Works, Wan Chai, Hong Kong	Valid until 9/4/2015
GW- RS0179-15	25/2/2015	23/5/2015	Construction Noise Permit for the use of Powered Mechanical Equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work at Central Preliminary Treatment Works, Western Fire Services Street, Hong Kong	Valid
Special Waste Admission Ticket				

Ref. No.	Valid Period		Details	Status
	From	To		
11679	1/10/2014	31/3/2015	Location: North Point PTW	Valid until 31/3/2015
12136	1/4/2015	31/7/2015	Location: North Point PTW	Valid
11816	24/11/2014	23/2/2015	Location: Central PTW	Valid until 23/2/2015
12013	24/2/2015	23/5/2015	Location: Central PTW	Valid

Status of Waste Management

- 4.6 The amount of wastes generated by the activities of the Project in the reporting quarter is shown in **Table 4.2**.

Table 4.2: Summary of Waste Generated in Reporting Quarter

Reporting Month	Inert C&D ¹ Materials ('000 m ³)	Other C&D ² Waste ('000 m ³)	Chemical Waste ('000kg)
February 2015	0.932	0.384	0
March 2015	0.361	0.273	0
April 2015	0.083	0.243	0

1: Inert C&D Materials includes Broken Concrete, Inert C&D waste reused in the Contract/other Project and disposal at Public Fill.

2: Other C&D Waste includes Metals, Paper/Cardboard packaging, plastics and other General Refuse.

- 4.7 The waste flow table in the reporting quarter was shown in **Appendix E**.

Implementation Status of Environmental Mitigation Measures

- 4.8 Details of the implementation of mitigation measures are provided in the **Appendix G**.
- 4.9 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations in the site audits for the Projects are summarized in **Table 4.3**.

Table 4.3 Observations of Site Audit

Parameters	Date/Ref. Number	Observations	Follow Up Action
Water Quality	150206-002	The pH meter of the WetSep was mal-functioned at North Point-PTW. The Contractor was reminded to provide the maintenance and ensure the water quality fulfil the requirement of the WPCO's wastewater discharge license before discharging out.	The pH meter of the WetSep was well functioned at North Point-PTW.

	150217-R02	<u>Reminder:</u> Properly clear the slurry water at North Point-PTW.	Please refer to 150227-R02.
	150227-O01	The chemical inlet system of the WetSep was mal-functioned at North Point-PTW. The Contractor was reminded to provide the maintenance and ensure the water quality of the WetSep fulfill the requirement of the WPCO's wastewater discharge license before discharging out.	The chemical inlet system of the WetSep was functioned at North Point-PTW and the maintenance was provided by the Contractor.
	150227-R02	<u>Reminder:</u> Properly clear the slurry water at North Point-PTW.	The slurry water was cleared at North Point-PTW.
	150327-R02	<u>Reminder:</u> The maintenance of water barrier should be provided to prevent the collection of stagnant water at Central-PTW.	The water barrier was maintained by the Contractor at Central-PTW.
	150402-R05	<u>Reminder:</u> Properly clear the stagnant water and oil stained water at Central-PTW.	The stagnant water and oil stained water were cleared at Central-PTW.
	150410-R04	<u>Reminder:</u> Properly clear the stagnant water at Central-PTW.	The stagnant water was cleared at Central-PTW.
	150417-R05	<u>Reminder:</u> Properly clear the stagnant water in the drip tray at Wan Chai-PTW.	The stagnant water in the drip tray was cleared at Wan Chai-PTW.
	150424-R03	<u>Reminder:</u> Properly clear the stagnant water at North Point-PTW and in the wheel washing facility at Central-PTW.	Please refer to 150430-R03.
	150430-R03	<u>Reminder:</u> Properly clear the stagnant water at North Point-PTW and in the wheel washing facility at Central-PTW.	The stagnant water was cleared at North Point-PTW and in the wheel washing facility at Central-PTW.
Air Quality	150206-R03	<u>Reminder:</u> Properly clear the dusty material at North Point-PTW.	The dusty material was cleared and not observed at North Point-PTW.
	150211-R03	<u>Reminder:</u> Properly clear the dusty material at Central-PTW.	Please refer to 150217-R01.
	150217-R01	<u>Reminder:</u> Properly clear the dusty materials at North Point-PTW and Central-PTW.	Please refer to 150227-R04.
	150227-R04	<u>Reminder:</u> The dusty materials should be cleared properly or covered with the impervious materials at Wan Chai-PTW and Central-PTW.	Please refer to 150306-R02.
	150306-R02	<u>Reminder:</u> The dusty materials should be cleared properly or covered with the impervious materials at Wan Chai-PTW and Central-PTW.	Please refer to 150313-R03.
	150313-R03	<u>Reminder:</u> The dusty materials should be cleared properly or covered with the impervious materials at Wan Chai-PTW and Central-PTW.	The dusty materials were cleared properly at Central-PTW and covered with the impervious materials at Wan Chai-PTW.
	150313-R06	<u>Reminder:</u> The odour emitting material should be cleared or removed regularly at North Point-PTW.	The odour emitting material was cleared at North Point-PTW.

	150327-R03	<u>Reminder:</u> The dusty materials should be covered with the impervious materials at Wan Chai-PTW.	Please refer to 150402-R03.
	150402-R03	<u>Reminder:</u> The dusty materials should be covered with the impervious materials at Wan Chai-PTW.	Please refer to 150410-R02.
	150410-R02	<u>Reminder:</u> The dusty materials and debris should be covered with the impervious materials and cleared properly at Wan Chai-PTW and North Point-PTW.	The dusty materials and debris were cleared at Wan Chai-PTW and North Point-PTW.
	150417-R02	<u>Reminder:</u> The mixing activity should be done in the proper enclosed area at North Point-PTW.	The mixing activity was not observed at North Point-PTW.
	150417-R03	<u>Reminder:</u> The dusty material should be covered with the impervious material at North Point-PTW.	The dusty material was not observed at North Point-PTW.
Waste/ Chemical Management	150130-O01	The oil leakage was observed from the excavator at Central-PTW. The Contractor was reminded to provide the maintenance and keep it in a good condition.	Please refer to 150206-O01.
	150206-O01	The oil leakage was observed from the excavators at North Point-PTW and Central-PTW. The Contractor was reminded to provide the maintenance of them and keep them in a good condition.	Please refer to 150211-O01.
	150206-R04	<u>Reminder:</u> Properly clear the oil stain at North Point-PTW.	The oil stain was cleared at North Point-PTW.
	150206-R05	<u>Reminder:</u> The chemical container should be provided with the drip tray at North Point-PTW.	The chemical container was removed and not observed at North Point-PTW.
	150211-O01	The oil leakage was observed from the excavator at Central-PTW. The Contractor was reminded to provide the maintenance and keep it in a good condition.	The oil leakage was not observed from the excavator at Central-PTW.
	150211-R02	<u>Reminder:</u> Properly clear the oil stain at North Point-PTW.	The oil stain was not observed at North Point-PTW.
	150227-R05	<u>Reminder:</u> Properly clear the oil stain at Wan Chai-PTW.	The oil stain was cleared at Wan Chai-PTW.
	150227-R06	<u>Reminder:</u> Properly clear the construction wastes and general refuses at Central-PTW.	The construction wastes and general refuses were cleared at Central-PTW.
	150227-R07	<u>Reminder:</u> The chemical container should be stored properly and provided with the drip tray at Central-PTW.	The chemical container was removed and not observed at Central-PTW.
	150306-R03	<u>Reminder:</u> The chemical container should be provided with the drip tray at Central-PTW.	The chemical container was provided with the drip tray at Central-PTW.
	150306-R04	<u>Reminder:</u> Properly clear the oil stain at Wan Chai-PTW.	Please refer to 150313-R04.

	150313-001	The oil leakage was observed from the excavator at North Point-PTW. The Contractor was reminded to provide the maintenance and keep it in a good condition.	The oil leakage was not observed from the excavator at North Point-PTW. The maintenance was provided by the Contractor.
	150313-R04	<u>Reminder:</u> Properly clear the oil stain at Wan Chai-PTW.	The oil stain was cleared at Wan Chai-PTW.
	150313-R05	<u>Reminder:</u> The chemical container should be provided with the drip tray at Wan Chai-PTW and North Point-PTW.	The chemical container was cleared and removed at Wan Chai-PTW and North Point-PTW.
	150320-R01	<u>Reminder:</u> The chemical container should be provided with the drip tray at Central-PTW.	Please refer to 150327-R01.
	150320-R02	<u>Reminder:</u> Properly clear the oil stain at Central-PTW.	The oil stain was cleared at Central-PTW.
	150327-R01	<u>Reminder:</u> The chemical container should be provided with the drip tray at Central-PTW.	The chemical container was removed and not observed at Central-PTW.
	150402-R02	<u>Reminder:</u> The general refuses should be sorted out properly and stored in the proper recycle bins at Wan Chai-PTW.	The general refuses were sorted out properly and stored in the proper recycle bins at Wan Chai-PTW.
	150402-R04	<u>Reminder:</u> The chemical containers should be provided with the drip tray at all PTWs.	Please refer to 150410-R03.
	150402-R05	<u>Reminder:</u> Properly clear the stagnant water and oil stained water at Central-PTW.	The stagnant water and oil stained water were cleared at Central-PTW.
	150410-R03	<u>Reminder:</u> The chemical containers should be provided with the drip tray at all PTWs.	Please refer to 150417-R04.
	150410-R05	<u>Reminder:</u> Properly sort out the chemical wastes and general refuses at Wan Chai-PTW.	The chemical wastes and general refuses were cleared and not observed at Wan Chai-PTW.
	150417-001	The oil leakage was observed from the excavators at North Point-PTW and Wan Chai-PTW. The Contractor was reminded to keep them in a good condition and provide the maintenance of them.	The oil leakage was not observed from the excavators at North Point-PTW and the excavator at Wan Chai-PTW was removed.
	150417-R04	<u>Reminder:</u> The chemical containers should be provided with the drip tray at North Point-PTW.	The chemical containers were provided with the drip tray at North Point-PTW.
	150424-001	The oil leakage was observed from the excavator at North Point-PTW. The Contractor was reminded to provide the maintenance and keep it in a good condition.	Please refer to 150430-001.
	150424-R02	<u>Reminder:</u> Properly clear the oil stain at North Point-PTW.	Please refer to 150430-R02.
	150430-001	The oil leakage was observed from the excavators at North Point-PTW. The Contractor was reminded to provide the maintenance of them and keep them in a good condition.	The follow up action will be reported during site inspections in May 2015.
	150430-R02	<u>Reminder:</u> Properly clear the oil stain at North Point-PTW.	The oil stain was cleared and not observed at North Point-PTW.
Noise	--	--	--

Landscape and Visual	150227-R03	<u>Reminder:</u> The construction materials should be placed far away the tree protection area at Wan Chai-PTW and the fence should be provided for the existing tree at Wan Chai-PTW.	Please refer to 150306-R01.
	150306-R01	<u>Reminder:</u> The construction materials should be placed far away the tree protection area at Wan Chai-PTW.	Please refer to 150313-R02.
	150313-R02	<u>Reminder:</u> The construction materials should be placed far away the tree protection area at Wan Chai-PTW.	The construction materials were placed far away the tree protection area at Wan Chai-PTW.
	150402-R01	<u>Reminder:</u> The construction materials should be placed far away the tree protection area at North Point-PTW.	Please refer to 150410-R01.
	150410-R01	<u>Reminder:</u> The construction materials should be placed far away the tree protection area at North Point-PTW.	The construction materials were removed away the tree protection area at North Point-PTW.
Permit/Licenses	--	--	--

Implementation Status of Event Action Plans

4.10 The Event Action Plans for air quality and noise are presented in **Appendix F**.

1-hr TSP

4.11 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.12 No Action/Limit Level exceedance was recorded.

Construction Noise

4.13 No Action Level exceedance was recorded, while ten non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1st, 10th, 15th & 24th February 2015; 1st, 10th, 15th & 29th March 2015; 12th & 21st April 2015 by the ET of DC/2007/23 at NM2. No works were performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B**.

Landscape and Visual

4.14 No non-compliance was recorded.

Summary of Complaints and Prosecutions

4.15 No environmentally related summons, prosecutions or complaints were received for the Project in the reporting quarter.

- 4.16 There were no environmentally related summons, prosecutions or complaints were received since the commencement of the Project. The Complaint Log is presented in **Appendix H**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Months

5.1 Key environmental issues in the coming months include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, roadworks, excavation works and loading and unloading dusty materials on-site;
- Noise from operation of equipment and machinery on-site;
- Provision well maintenance on the storage facilities of chemicals/fuel and chemical waste/waste oil on-site;
- Ponding water generated in pre-drillings;
- Drainage system should be well designed and maintained to prevent flooding and silty water getting into the public area during and after rainstorm;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

Construction Program for the Coming Months

5.2 The tentative construction program is provided in **Appendix I**.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 6.1 Environmental monitoring and audit works were performed in the reporting quarter and all monitoring results were checked and reviewed.

1-hour TSP Monitoring

- 6.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

- 6.3 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

- 6.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded, while ten non-project related Limit Level exceedances were recorded during the restricted hour noise monitoring on 1st, 10th, 15th & 24th February 2015; 1st, 10th, 15th & 29th March 2015; 12th & 21st April 2015 by the ET of DC/2007/23 at NM2. No works were performed by contract DC/2009/23 during these periods of exceedance. Details of the exceedance could be referred to **Appendix B**.

Environmental Audit

- 6.5 Environmental site audits were conducted as weekly basis in the reporting quarter. No non-compliance was recorded.

Complaint and Prosecution

- 6.6 No environmentally related summons, prosecutions or complaints were received in the reporting quarter.

Recommendations

- 6.7 According to the environmental audit performed in the reporting quarter, the following recommendations were made:

Air Quality Impact

- To provide impervious covers for dusty materials to reduce dust generation;
- To avoid the accumulation of the odour emitting materials on the site; and
- To provide the proper enclosed area for main dust-generating activity on the site.

Noise Impact

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from

sensitive receivers;

- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location;
- To provide adequate lubricant on mechanical equipments to reduce frictional noise;
- To ensure the doors of the air compressors are closed; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

Water Impact

- To avoid water from accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed;
- To provide the maintenance of the WetSep including its equipments to ensure the water quality of the WetSep fulfil the requirement of the WPCO's wastewater discharge license before discharging out;
- To provide the maintenance of the water barrier to prevent the collection of stagnant water in the site; and
- To avoid the accumulation of the stagnant water on the site.

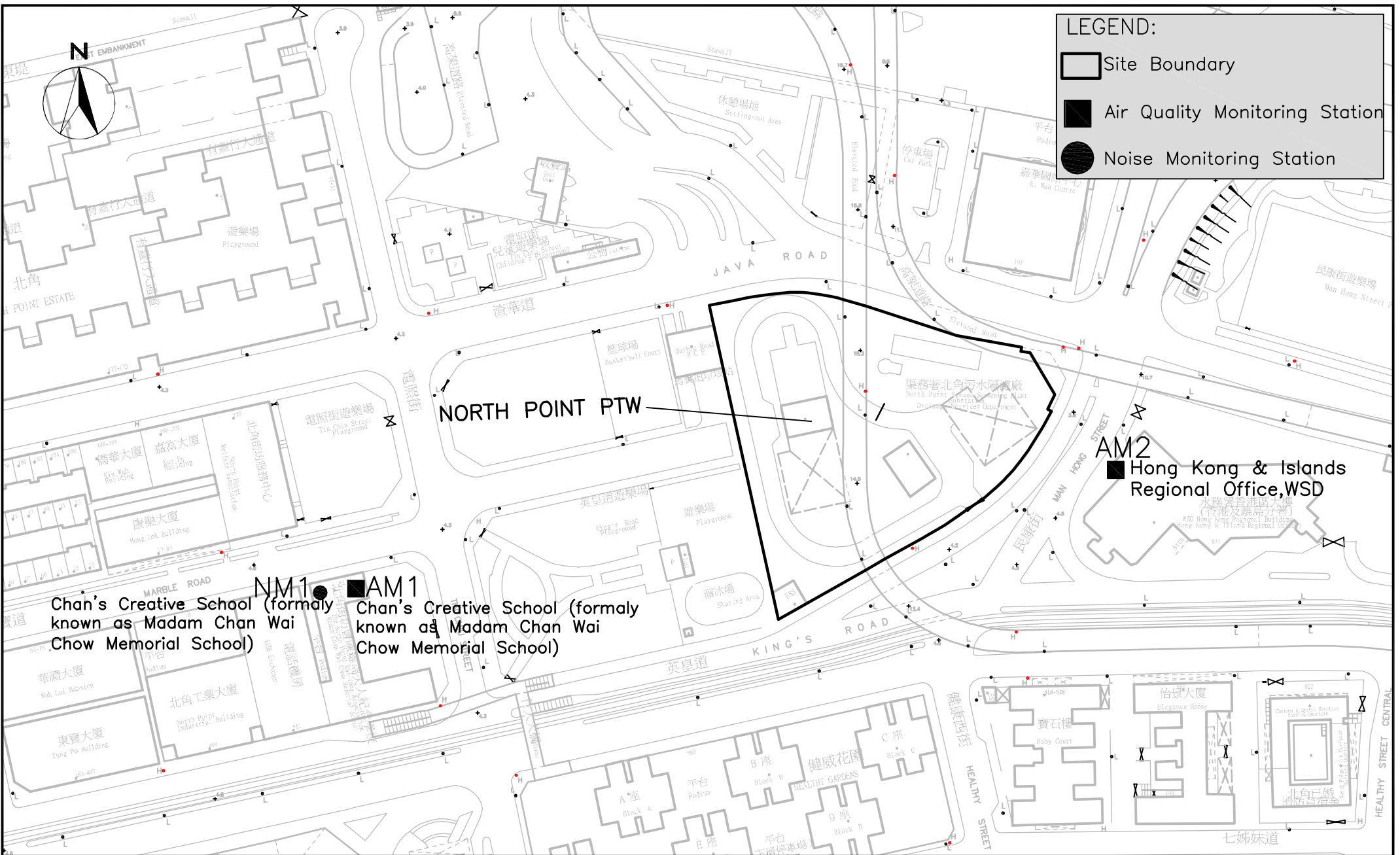
Waste/Chemical Management

- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To well maintain the equipments to avoid oil leakage;
- To avoid improper handling or storage of oil drum on site;
- Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;
- To check for any accumulation of wasted materials on site;
- To sort out and clear the construction wastes / chemical wastes / general refuses properly before dispose; and
- To provide adequate drip trays to store the chemical containers on the site.

Landscape and Visual

- To place the construction materials far away the tree protection area.

FIGURES

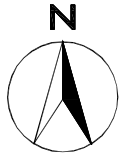


Contract No. DC/2009/23 – Harbour Area Treatment Stage 2A
 – Upgrading of Preliminary Treatment Works at North Point,
 Wan Chai East and Central

Impact Air Quality & Noise Monitoring Stations (North Point)



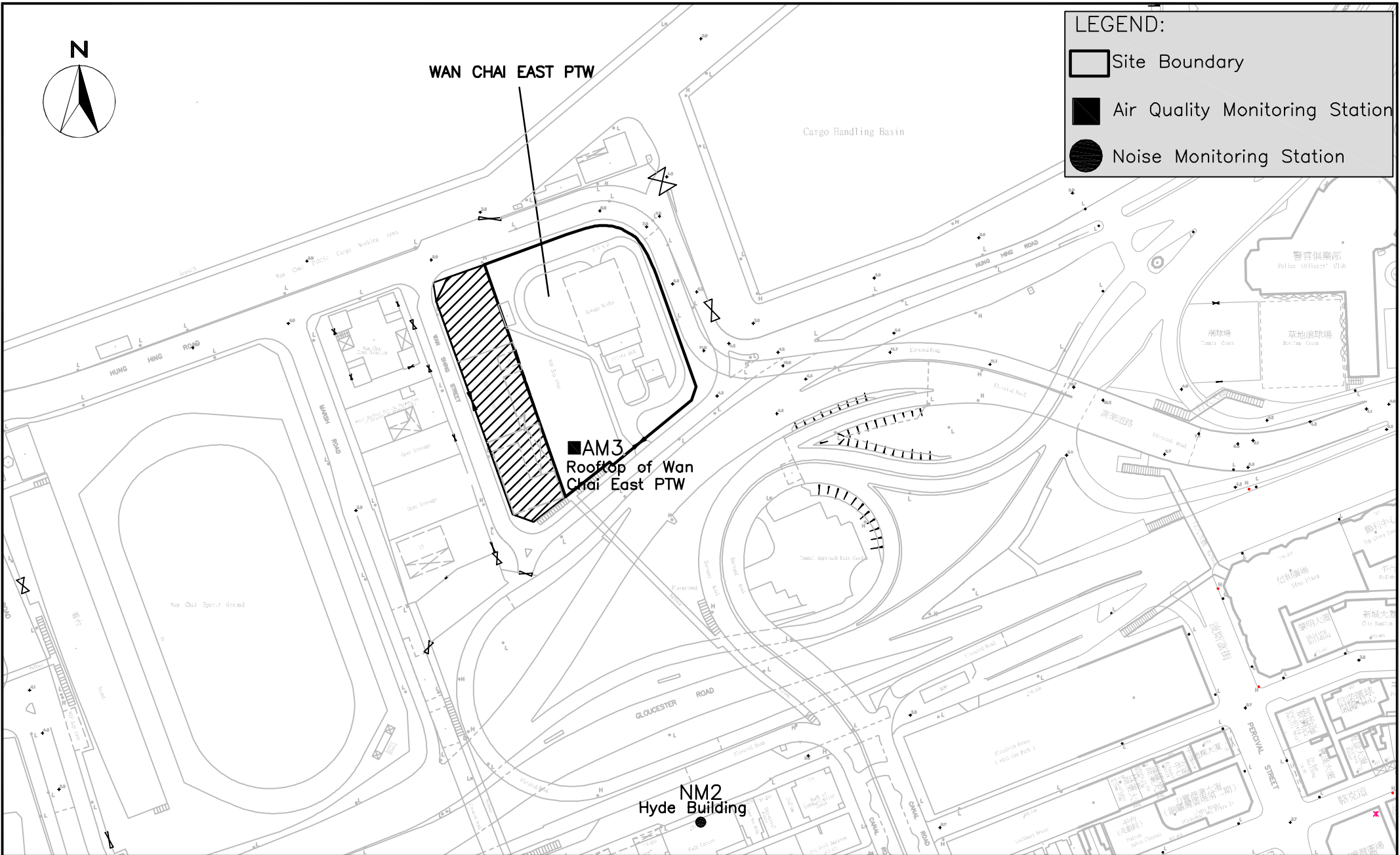
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CHECK	GL	DRAWN	TW
PROJECT NO.	MA11003	FIGURE NO.	1A
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WAN CHAI EAST PTW

LEGEND:

- Site Boundary
- Air Quality Monitoring Station
- Noise Monitoring Station



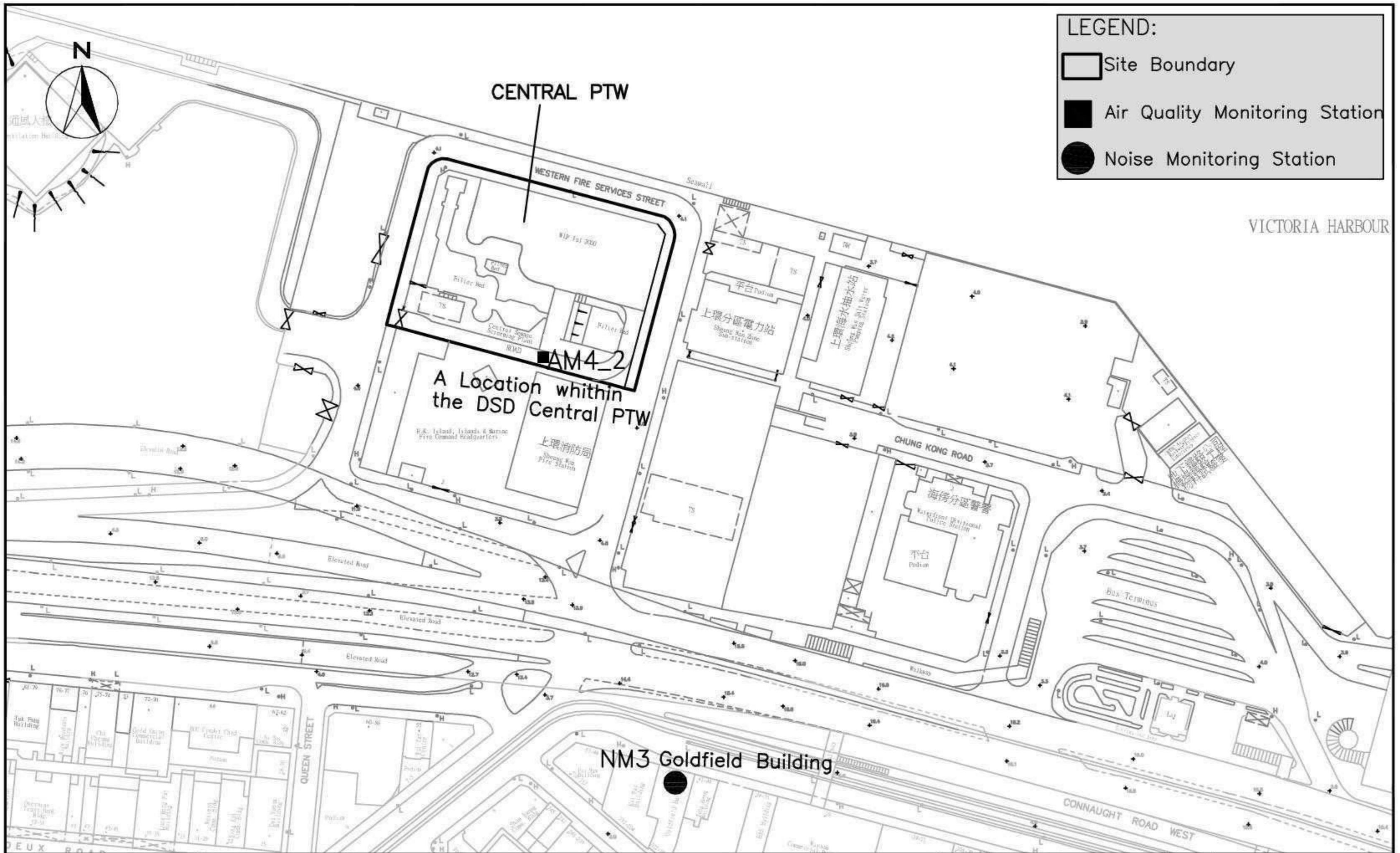
■ AM3
Rooftop of Wan Chai East PTW

● NM2
Hyde Building



Contract No. DC/2009/23 – Harbour Area Treatment Stage 2A
 – Upgrading of Preliminary Treatment Works at North Point,
 Wan Chai East and Central
Impact Air Quality & Noise Monitoring Stations (Wan Chai East)

SCALE	N.T.S	DATE	11 MAR 2011
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PROJECT NO.	MA11003	FIGURE NO.	1B
		REV	—



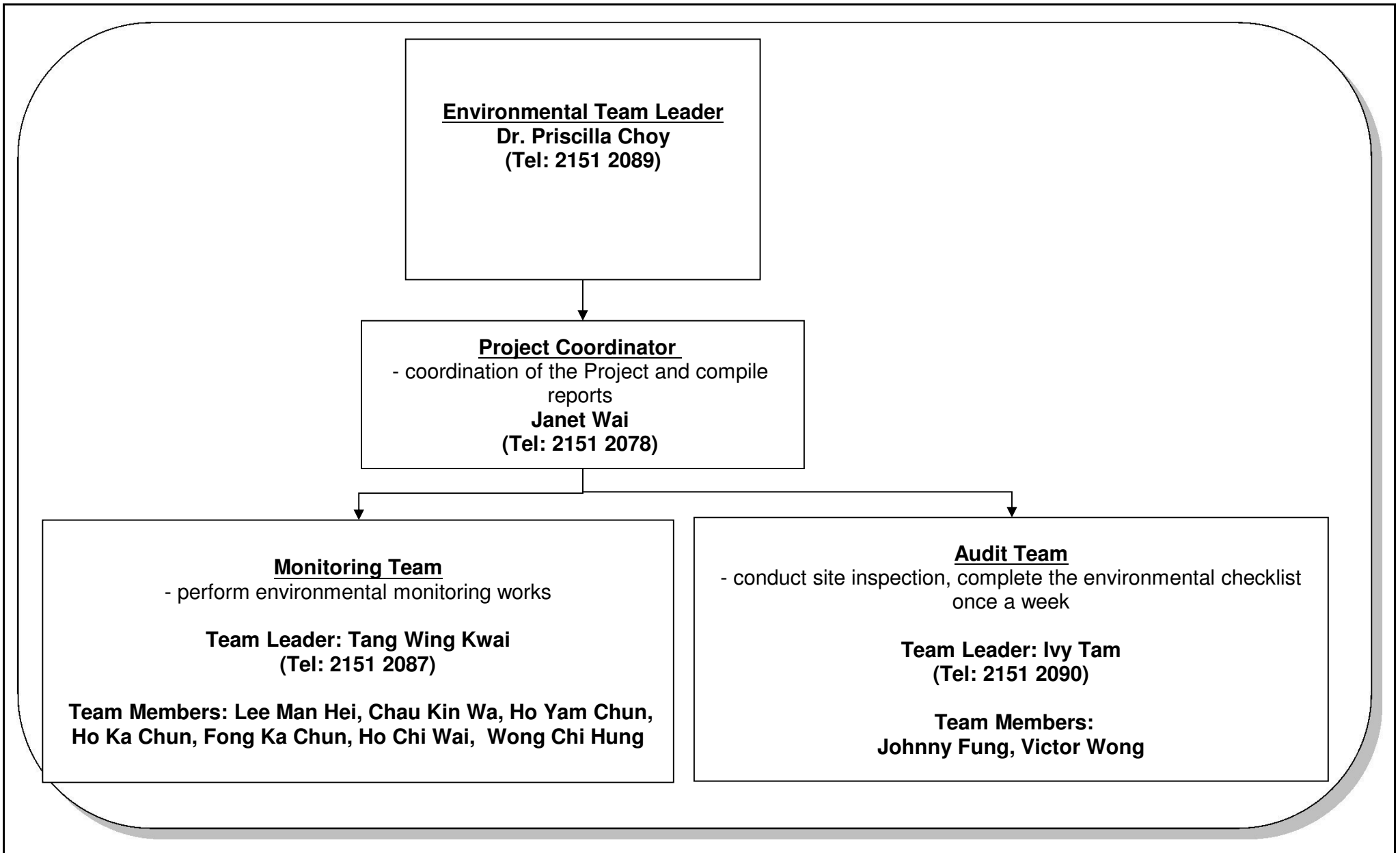
LEGEND:

	Site Boundary
	Air Quality Monitoring Station
	Noise Monitoring Station

Contract No. DC/2009/23 – Harbour Area Treatment Stage 2A
 – Upgrading of Preliminary Treatment Works at North Point,
 Wan Chai East and Central
Impact Air Quality & Noise Monitoring Stations (Central)



SCALE	N.T.S	DATE	11 MAR 2011
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PROJECT NO.	MA11003	FIGURE NO.	1C
		REV	—



Title	Contract No. DC/2009/23	Scale	N.T.S	Project No.	MA11003	CINOTECH
	HATS Stage 2A – Upgrading of Preliminary Treatment Works at North Point, Wanchai East and Central	Date	Mar-15	Figure	2	
ET's Organization Chart						

**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE QUALITY**

Appendix A Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP

Monitoring Stations	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
AM1	340	185	500	260
AM2	352	182		
AM3	355	181		
AM4_2	393	211		

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM1	0700-1900 hours on normal weekdays	When one documented complaint is received	70 *
	Restricted hours (1900-2300 on all days and 0700-2300 on general holidays and Sundays)		70 **
NM2 and NM3	0700-1900 hours on normal weekdays		75

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

* 70 dB(A) was adopted as the Limit Level during school normal teaching period in the reporting period.

** 70 dB(A) was adopted as the Limit Level during restricted hours in the reporting period

APPENDIX B
SUMMARY OF EXCEEDANCE

APPENDIX B – SUMMARY OF EXCEEDANCE**Reporting Quarter:** February 2015 to April 2015

- a) Exceedance Report for 1-hr TSP (NIL)**
- b) Exceedance Report for 24-hr TSP (NIL)**
- c) Exceedance Report for Construction Noise (10)
(4 in February 2015, 4 in March 2015, 2 in April 2015)**

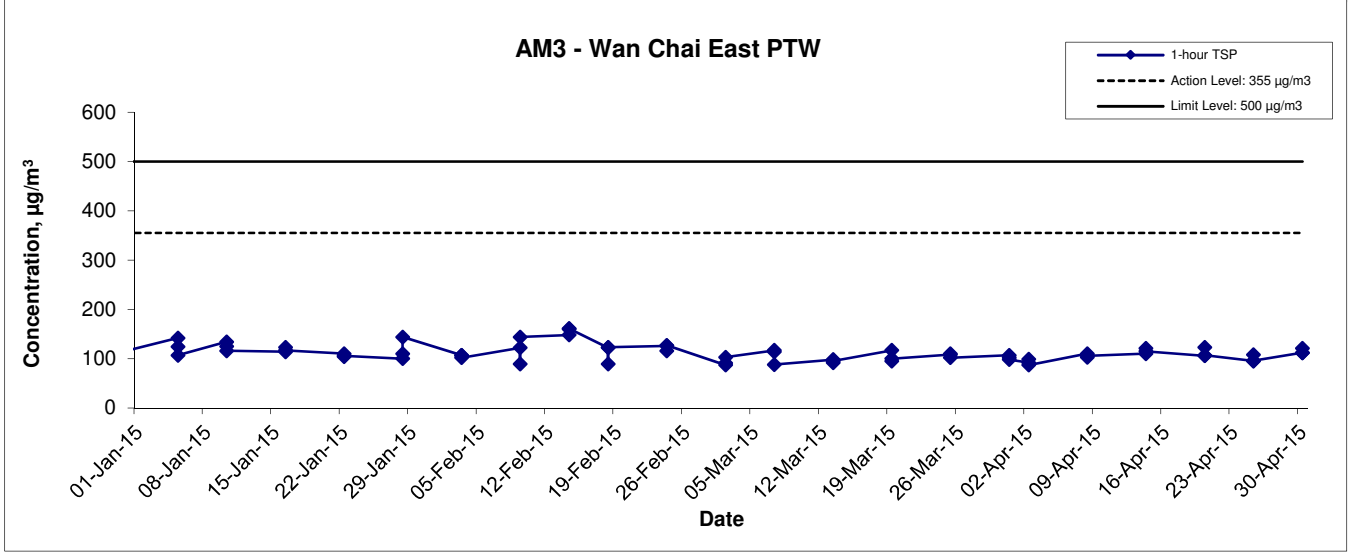
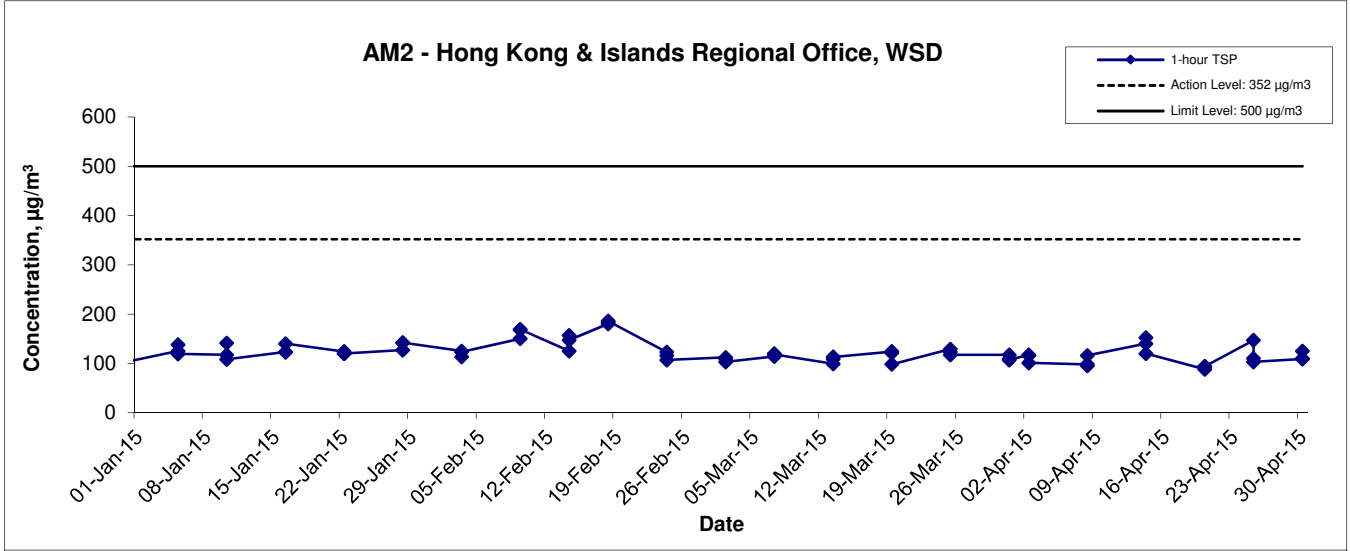
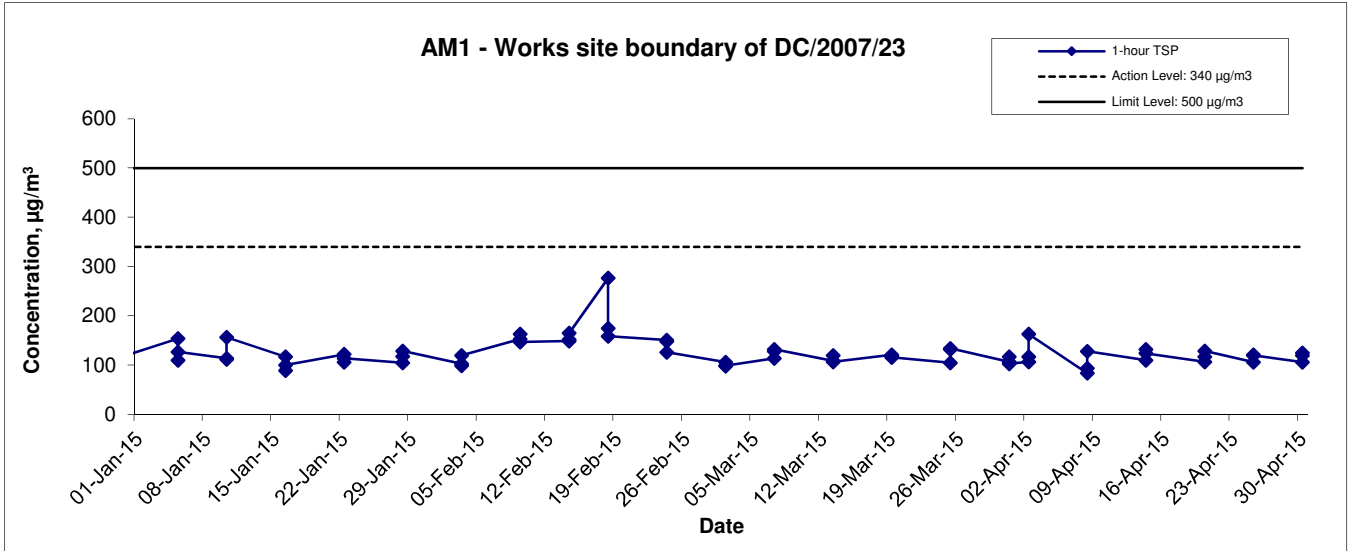
No Action Level exceedance was recorded, while four non-project related Limit Level exceedance were recorded during the restricted hour noise monitoring on 1st, 10th, 15th & 24th February 2015 by the ET of DC/2007/23 at NM2. According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 1st, 10th, 15th & 24th February 2015 at Wan Chai East Preliminary Treatment Works under DC/2009/23.

No Action Level exceedance was recorded, while four non-project related Limit Level exceedance were recorded during the restricted hour noise monitoring on 1st, 10th, 15th & 29th March 2015 by the ET of DC/2007/23 at NM2. According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 1st, 10th, 15th & 29th March 2015 at Wan Chai East Preliminary Treatment Works under DC/2009/23.

No Action Level exceedance was recorded, while two non-project related Limit Level exceedance were recorded during the restricted hour noise monitoring on 12th & 21st April 2015 by the ET of DC/2007/23 at NM2. According to the information provided by the Contractor, no construction works were carried out during the restricted hours period on 12th & 21st April 2015 at Wan Chai East Preliminary Treatment Works under DC/2009/23.

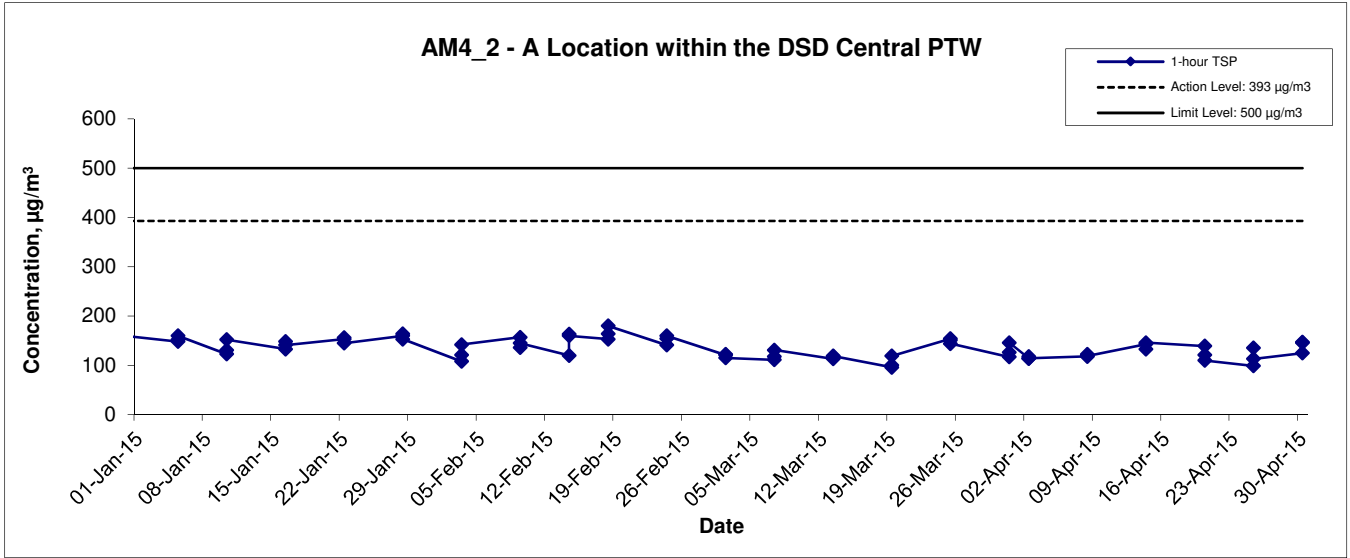
**APPENDIX C
1-HOUR AND 24-HOUR TSP
GRAPHICAL PRESENTATION**

1-hr TSP Concentration Levels



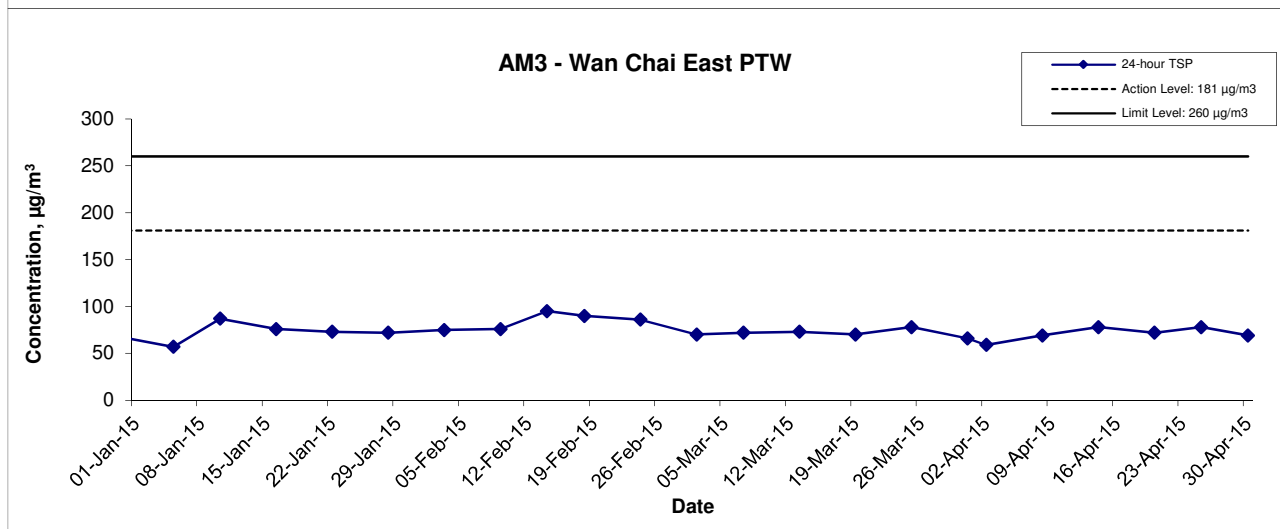
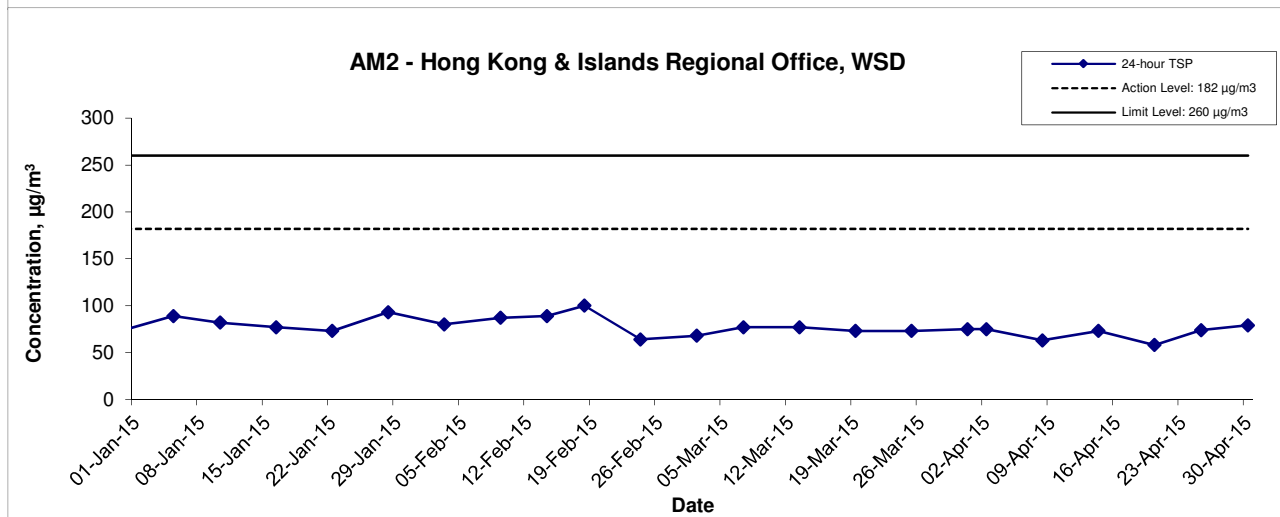
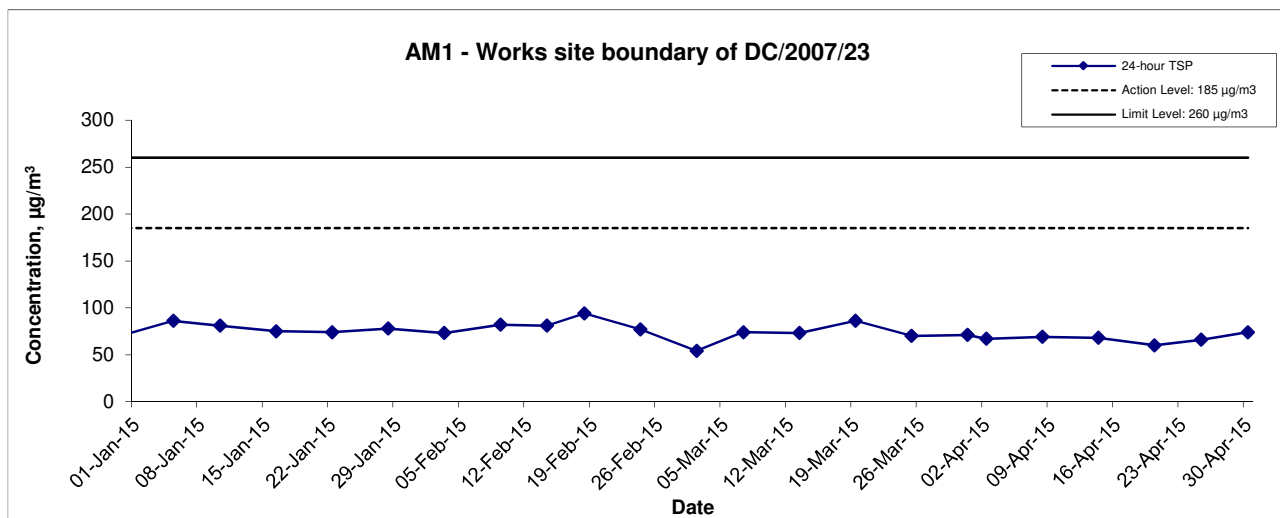
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	Date Apr 15	Appendix C	

1-hr TSP Concentration Levels



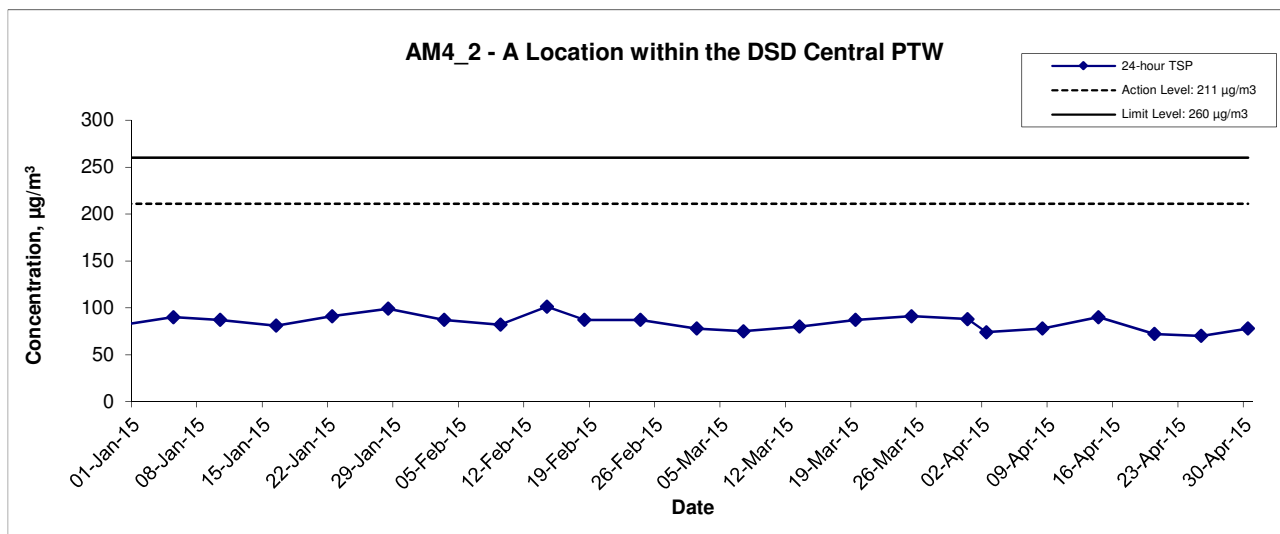
Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11003	CINOTECH
	Date Apr 15	Appendix C	

24-hr TSP Concentration Levels



Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 24-hour TSP Monitoring Results	Scale	N.T.S	Project No.	MA11003	CINOTECH
	Date	Apr 15	Appendix	C	

24-hr TSP Concentration Levels

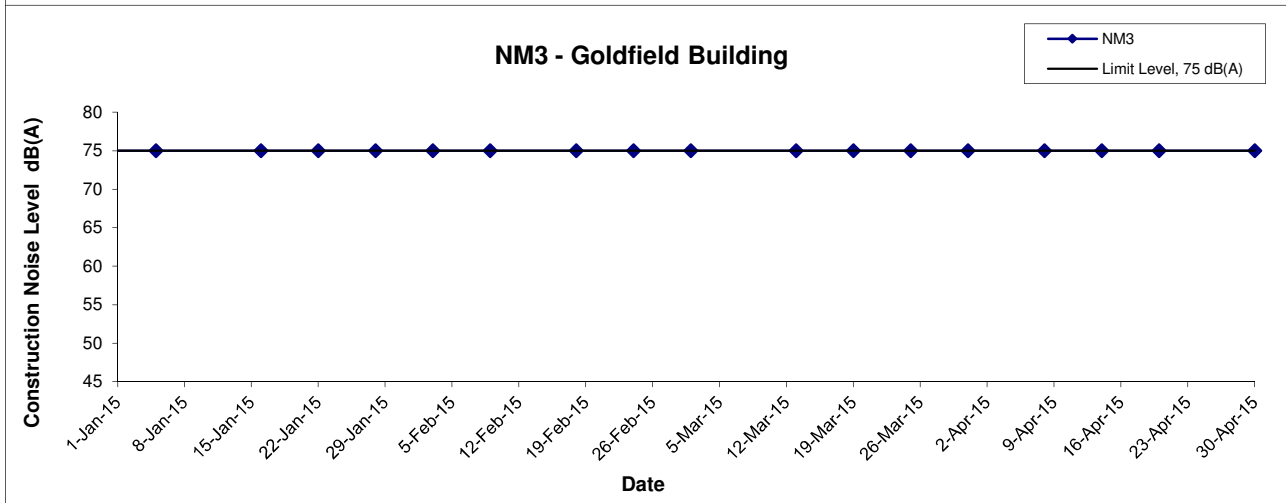
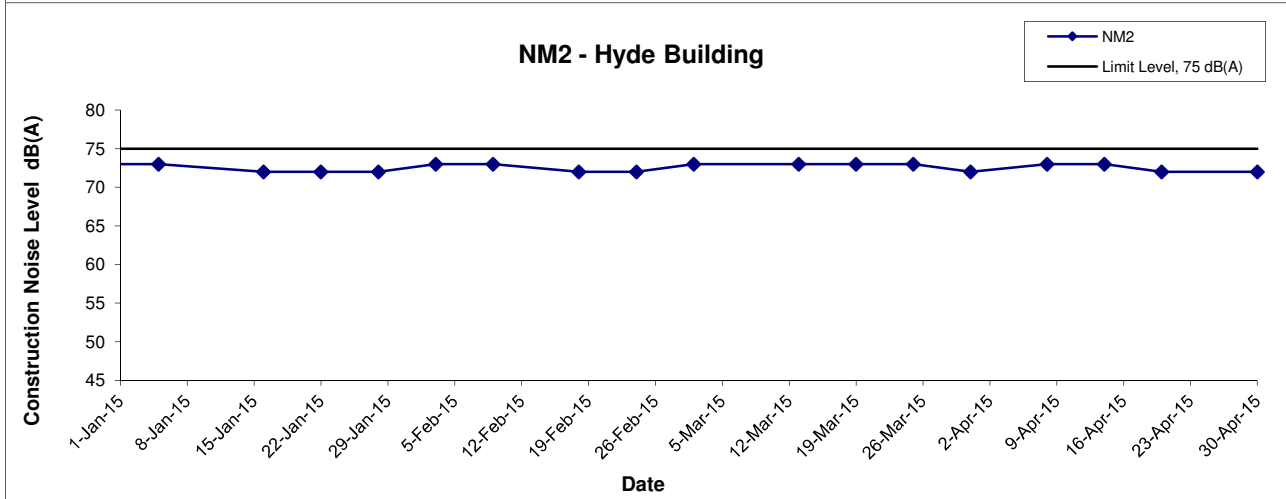
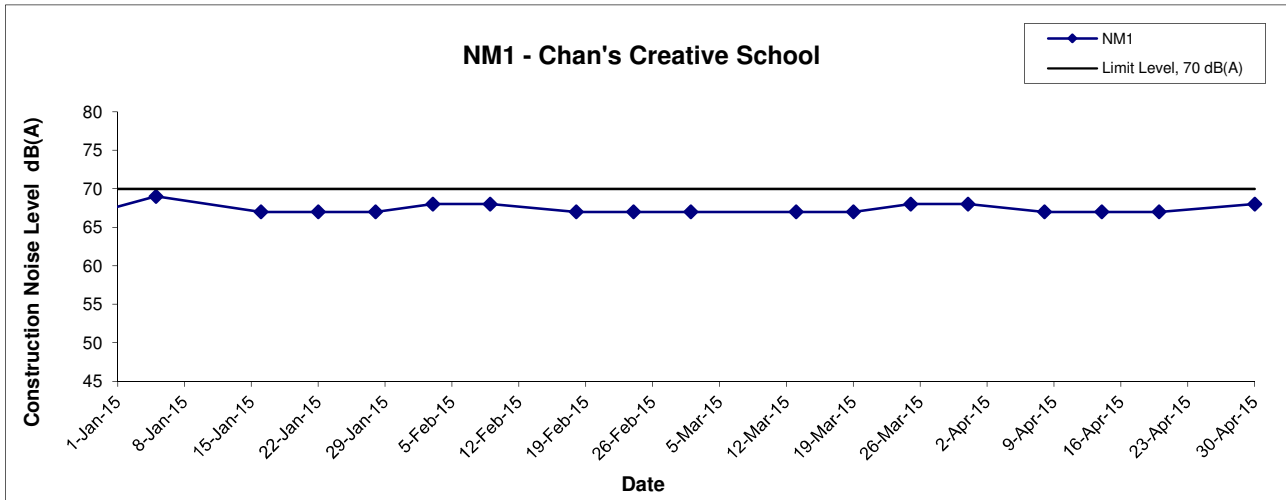


Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11003	CINOTECH
	Date Apr 15	Appendix C	

**APPENDIX D
NOISE MONITORING GRAPHICAL
PRESENTATIONS**

Noise Levels

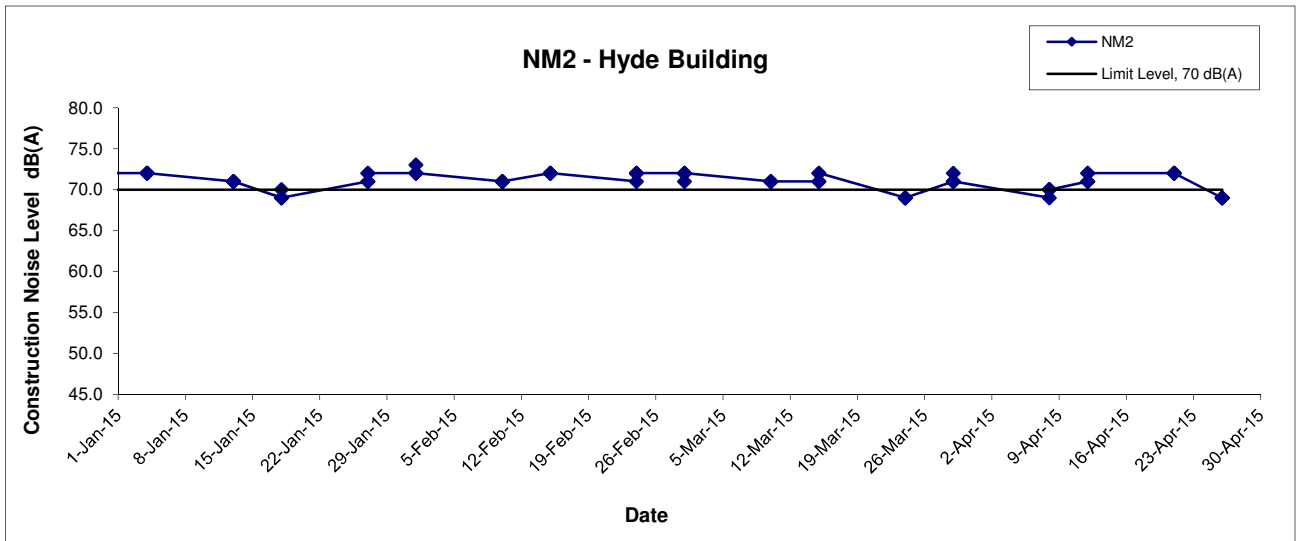
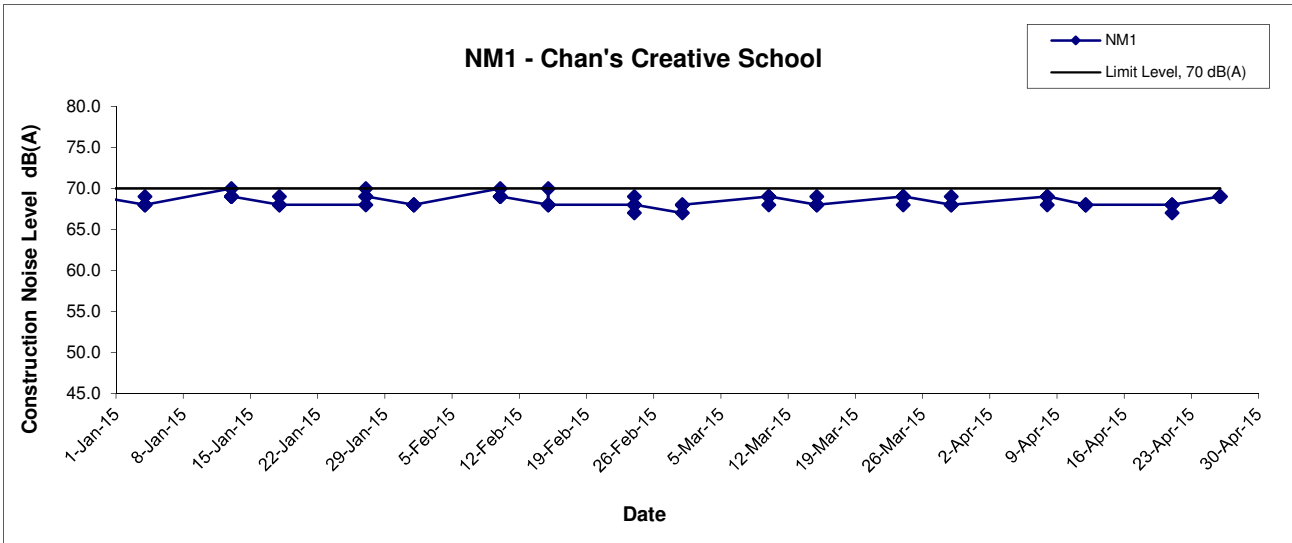
(Daytime Noise - 0700 to 1900 hrs on normal weekdays)



Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No. MA11003	CINOTECH
	Date	Apr 15	Appendix D	

Noise Levels

**(Restricted Hours - 1900 to 2300 hrs on all days
and 0700-2300 on general holidays and Sundays)**



Title Contract No. DC/2009/23 HATS 2A – Upgrading of Preliminary Treatment Works at North Point, Wan Chai East and Central Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA11003	
	Date Apr 15	Appendix D	

**APPENDIX E
SUMMARY OF AMOUNT OF WASTE
GENERATED**

APPENDIX E MONTHLY SUMMARY WASTE FLOW TABLE FOR April (2015)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					Special Waste			
	Total Quantity Generated	Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Screening (CPTW)	Grit (CPTW)	Screening (NPPTW)	Grit (NPPTW)
	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	
Year2014	18.193	0.000	0.000	0.000	18.193	0.000	72.810	2.956	0.304	0.830	1.082	1.503	1.258	0.439	0.223
JAN	1.399	0.000	0.000	0.000	1.399	0.000	0.000	0.190	0.090	0.000	0.022	0.097	0.034	0.060	0.036
FEB	0.932	0.000	0.000	0.000	0.932	0.000	0.000	0.193	0.170	0.000	0.021	0.089	0.040	0.050	0.028
MAR	0.361	0.000	0.000	0.000	0.361	0.000	0.000	0.170	0.050	0.000	0.053	0.103	0.045	0.054	0.034
APR	0.083	0.000	0.000	0.000	0.083	0.000	0.000	0.128	0.070	0.000	0.045	0.091	0.038	0.055	0.034
MAY															
JUN															
SUB-TOTAL	2.775	0.000	0.000	0.000	2.775	0.000	0.000	0.681	0.380	0.000	0.141	0.380	0.157	0.219	0.132
JUL															
AUG															
SEP															
OCT															
NOV															
DEC															
TOTAL	20.968	0.000	0.000	0.000	20.968	0.000	72.810	3.637	0.684	0.830	1.223	1.883	1.415	0.658	0.355

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *											Special Waste		Special Waste	
Total Quantity Generated	Broken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Screening (CPTW)	Grit (CPTW)	Screening (NPPTW)	Grit (NPPTW)
[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	
22.5	0.5	0.2	0.5	21.1	0.2	100	8	1	3	3.5	4.5	3	1.5	1

- Notes :
- The performance targets are given in PS Clause 6(14).
 - The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the site.
 - Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.
 - * The contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where to total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³. (PS Clause 25.25S (6)(b) refers).
[Delete Note (4) and the table above on the forecast, where inapplicable].
 - The assumed density (kg/m³) for both C&D material and general refuse.
C&D material 2000kg/m³
General refuse 500kg/m³
 - Conversion factors for reporting purpose:
broken concrete and bitumen = 2.4 tonnes/m³ in-situ: rock = 2.5 tonnes/m³ ; soil = 2.0 tonnes/m³ excavated: rock = 2.0 tonnes/m³ ; soil = 1.8 tonnes/m³ Special Waste (Grit) = 1.2 tonnes/m³
C&D Waste = 0.9 tonnes/m³ bentonite slurry = 2.8 tonnes/m³ Chemical waste 1 Litres = 1 kg Special Waste (Screening) = 0.31 tonnes/m³

APPENDIX F
EVENT ACTION PLANS

APPENDIX F – Event / Action Plans

Table F-1 Event / Action Plan For Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 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 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures. 	<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. Ensure remedial measures properly implemented; 5. 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table F-2 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 	<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 	<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 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
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 	<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. 	<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 	<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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring		until the exceedance is abated	the ER until the exceedance is abated

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

APPENDIX G IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	Air Quality		
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^
	Vehicle washing facilities should be provided at every vehicle exit point.		^
	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.		^
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		^
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		*
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		^
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.		^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	^	
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
B	Airborne Noise		
4.56– 4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^
4.67	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.		^
4.67	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.		^
C	Water Quality		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		*
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General)		*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Regulation should be observed and complied with for control of chemical wastes.		
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		*
6.379	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 		*
6.380	<p>Construction Works in Close Proximity of Storm Drains or Seafront</p> <p>To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable.</p> <ul style="list-style-type: none"> • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into 	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	the storm culvert or sea.		
D	Waste Management		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	All waste materials should be segregated into categories covering: <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	All construction sites	*
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^
	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.		*
	Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.		^
9.115	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.		^
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Provision of sufficient waste disposal points and regular collection of waste.		^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.		^
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage"	All construction sites	N/A
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		*
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		*
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	Terrestrial Ecology		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		*
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^
F	Landscape and Visual		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		*
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
G	Marine Ecology		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^
H	Hazard to Life		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

Remarks:	^ Compliance of mitigation measure;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.
	X Non-compliance of mitigation measure;
	• Non-compliance but rectified by the contractor;

**APPENDIX H
COMPLAINT LOG**

APPENDIX H – COMPLAINT LOG

Reporting Quarter: February 2015 to April 2015

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Remarks: No environmental complaint was received in the reporting quarter.

**APPENDIX I
CONSTRUCTION PROGRAMME**

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011					2012				2013				2014				2015				2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
DSD - HATSS2 Upgrading of PTW (DC/2009/23)																													
Particulars																													
Key Dates																													
Commencement / Completion																													
FGN0010	Contract Award	0	0	30-Dec-10 A		06-Jan-11																							
FGN0030	Date of Commencement of Contract	0	0	06-Jan-11		06-Jan-11																							
FGN0040	Time for Completion for Project	1393	0	06-Jan-11		29-Oct-14																							
FGN0050	Date of Completion of the Works	0	0			29-Oct-14																							
Portion of the Site																													
North Point																													
Possession / Vacation of Portions																													
FNP00010	H/O Date_NP-1 (135 days after start)	0	0	20-May-11		20-May-11																							
FNP00020	Vacation Date_NP-1 (on Sec. 1 completed)	0	0			01-Jun-13																							
FNP00030	H/O Date_NP-2 (135 days after start)	0	29	20-May-11		18-Jun-11																							
FNP00040	Vacation Date_NP-2 (on Sec. 3 completed)	0	0			14-Oct-14																							
FNP00050	H/O Date_NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																							
FNP00060	Vacation Date_NP-3 (on Sec. 3 completed)	0	0			14-Oct-14																							
Wan Chai East																													
Possession / Vacation of Portions																													
FWC00010	H/O Date_WCE-1 (135 days after start)	0	0	20-May-11		20-May-11																							
FWC00020	Vacation Date_WCE-1 (on Sec. 5 completed)	0	0			23-Nov-13																							
FWC00030	H/O Date_WCE-2 (135 days after start)	0	0	20-May-11		20-May-11																							
FWC00040	Vacation Date_WCE-2 (on Sec. 4ii completed)	0	0			14-Nov-11																							
FWC00050	H/O Date_WCE-2 (after complete Sec. 5-iv)	0	0	27-Jul-13		27-Jul-13																							
FWC00060	Vacation Date_WCE-2 (on Sec. 5 completed)	0	0			23-Nov-13																							
FWC00070	H/O Date_WCE-3 (135 days after start)	0	59	20-May-11		18-Jul-11																							
FWC00080	Vacation Date_WCE-3 (on Sec. 5 completed)	0	0			23-Nov-13																							
FWC00090	H/O Date_WCE-4 (135 days after start)	0	59	20-May-11		18-Jul-11																							
FWC00100	Vacation Date_WCE-4 (on Sec. 5 completed)	0	0			23-Nov-13																							
FWC00110	H/O Date_WCE-T1 (135 days after start)	0	205	20-May-11		11-Dec-11																							
FWC00120	Vacation Date_WCE-T1 (on Sec. 6 completed)	0	0			22-May-14																							
FWC00130	H/O Date_WCE-T2 (135 days after start)	0	205	20-May-11		11-Dec-11																							
FWC00140	Vacation Date_WCE-T2 (on Sec. 6 completed)	0	0			22-May-14																							
Central																													
Possession / Vacation of Portions																													
FCT00110	H/O Date_CTL-1 (45 days after start)	0	0	19-Feb-11		19-Feb-11																							
FCT00120	Vacation Date_CTL-1 (on Sec. 9 completed)	0	0			25-May-14																							
FCT00130	H/O Date_CTL-2 (45 days after start)	0	50	19-Feb-11		10-Apr-11																							
FCT00140	Vacation Date_CTL-2 (on Sec. 9 completed)	0	0			25-May-14																							
FCT00150	H/O Date_CTL-3 (after Sec. 8 completed)	0	0	22-Mar-13		22-Mar-13																							
FCT00160	Vacation Date_CTL-3 (on Sec.10 completed)	0	0			29-Oct-14																							
FCT00170	H/O Date_CTL-T	0	806	06-Jan-11		22-Mar-13																							
FCT00180	Vacation Date_CTL-T (on Sec.10 completed)	0	0			29-Oct-14																							
Management Plans and Programmes																													
Contractor's Design, Submission / Approval																													
Particulars																													
FGN0200	Prepare/Submit Clause 16 Programme	60	11	06-Jan-11		06-Mar-11		17-Jan-11																					
FGN0210	Comment/Approval of Clause 16 Programme	30	41	07-Mar-11		05-Apr-11		17-Apr-11																					
FGN0220	Prepare/Submit Detailed Works Programme	60	11	07-Mar-11		05-May-11		18-Mar-11																					
FGN0230	Comments/Approval of Detailed Works Programme	30	11	06-May-11		04-Jun-11		17-May-11																					
FGN0250	Prepare/Submit Safety Plan	14	159	06-Jan-11		19-Jan-11		14-Jun-11																					
FGN0260	Comments/Approval of Safety Plan	60	159	20-Jan-11		28-Jan-11		26-Aug-11																					
FGN0300	Prepare/Submit Environmental Manag. Plan	21	152	06-Jan-11		26-Jan-11		07-Jun-11																					
FGN0310	Comments/Approval of Environmental Manag. Plan	60	152	27-Jan-11		27-Mar-11		28-Jun-11																					
FGN0330	Prepare / Submit Subcontractor Management Plan	30	143	06-Jan-11		04-Feb-11		29-May-11																					
FGN0340	Comments/Approval of Subcontractor Manag. Plan	60	143	05-Feb-11		05-Apr-11		28-Jun-11																					
FGN0400	Prepare / Submit Interface Management Plan	55	43	06-Jan-11		01-Mar-11		18-Feb-11																					
FGN0410	Comments / Approval of Interface Management Plan	45	43	02-Mar-11		15-Apr-11		14-Apr-11																					
FGN0420	Submit Detailed Interface Documents	60	43	16-Apr-11		14-Jun-11		29-May-11																					
FGN0430	Approval of Detailed Interface Documents	30	43	15-Jun-11		14-Jul-11		28-Jun-11																					
FGN0440	Prepare/Submit Env. Baseline Monitoring report	60	71	19-Feb-11		19-Apr-11		01-May-11																					
FGN0445	Comments/Approval Env. Baseline Report	28	71	20-Apr-11		17-May-11		30-Jun-11																					
FGN0448	Review/submit Construction Noise Permit	28	129	04-Apr-11		01-May-11		11-Aug-11																					
FGN0449	Comments/Approval of Construction Noise Permit	28	129	02-May-11		29-May-11		08-Sep-11																					
Technical Information & Drawings																													
FGN0450	Prepare/Submit initial record for CentralPTW	14	50	19-Feb-11		04-Mar-11		10-Apr-11																					
FGN0455	Prepare/Submit Tree Survey Report Pt. I	14	50	19-Feb-11		04-Mar-11		10-Apr-11																					
FGN0460	Prepare/Submit initial record for remaining area	14	50	20-May-11		02-Jun-11		09-Jul-11																					
FGN0465	Prepare/Submit Tree Survey Report Pt. II	14	13	20-May-11		02-Jun-11		02-Jun-11																					
Civil & Geo. Submission																													
Contractor's Design, Submission and Approval																													

Actual Work Remaining Work Critical Remaining Work Milestone

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011				2012				2013				2014				2015				2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Foundation Works																												
FNP12450	26nos. socket H-pile	65	0	07-Jan-12	11-Mar-12	07-Jan-12	11-Mar-12																					
FNP12480	ELS for pile cap construction for F.S&G.T.Bldg.	15	5	12-Mar-12	26-Mar-12	17-Mar-12	31-Mar-12																					
FNP12490	Construction of pile cap for F.S&G.T. Bldg.	25	5	27-Mar-12	20-Apr-12	01-Apr-12	25-Apr-12																					
RC Structural Works																												
FNP12550	R.C. Structure for Chamber FC-1	45	0	12-Mar-12	25-Apr-12	12-Mar-12	25-Apr-12																					
FNP12600	Construct floor slab for F.Screen,GritTrap Bldg.	47	0	26-Apr-12	11-Jun-12	26-Apr-12	11-Jun-12																					
FNP12610	Construct column&wall of F.Screen,GritTrap Bldg	14	0	12-Jun-12	25-Jun-12	12-Jun-12	25-Jun-12																					
FNP12620	Construct roof slab of FineScreen,Grit Trap Bldg	14	0	26-Jun-12	09-Jul-12	26-Jun-12	09-Jul-12																					
Drainage Works																												
FNP12250	Install New DN1800 & DN1650 Sewer pipes	45	0	09-Oct-11	22-Nov-11	09-Oct-11	22-Nov-11																					
FNP12260	Construct new sewer manholes	30	0	23-Nov-11	23-Dec-11	23-Nov-11	23-Dec-11																					
FNP12265	Connect to Extg. DN1800 & DN1650 Overflow Sewer	15	0	23-Dec-11	06-Jan-12	23-Dec-11	06-Jan-12																					
FNP12750	Construct new FC-2a flow chamber	30	57	12-Mar-12	10-Apr-12	08-May-12	06-Jun-12																					
FNP12755	Laying of Pipes from Fine Screen Bldg. to FC-2	30	47	21-Apr-12	20-May-12	07-Jun-12	06-Jul-12																					
FNP12765	Laying of Pipes from FC-2 to FC-2a	30	57	11-Apr-12	10-May-12	07-Jun-12	06-Jul-12																					
FNP12770	Construct new FC-2 flow chamber	30	47	21-May-12	19-Jun-12	07-Jul-12	05-Aug-12																					
FNP12780	Laying of Pipes from FC-2 to FC-3	30	47	20-Jun-12	19-Jul-12	06-Aug-12	04-Sep-12																					
FNP12800	Construct new FC-3 flow chamber	75	82	20-Jul-12	02-Oct-12	10-Oct-12	23-Dec-12																					
FNP12850	Modification works for existing flow chamber	70	47	20-Jul-12	27-Sep-12	05-Sep-12	13-Nov-12																					
FNP12900	Construct Seawater Intake Chamber	40	47	28-Sep-12	06-Nov-12	14-Nov-12	23-Dec-12																					
FNP13150	Relocate Extg. Rising Mains in NP-3 & NP-4	70	0	24-Dec-12	03-Mar-13	24-Dec-12	03-Mar-13																					
Electrical and Mechanical Works																												
FNP12290	Modification of existing Deodorization Plant	30	158	03-Jun-11	02-Jul-11	08-Nov-11	07-Dec-11																					
FNP12300	Demolish Extg. Deodorization Plant	30	60	09-Oct-11	07-Nov-11	08-Dec-11	06-Jan-12																					
Architectural Works																												
FNP12700	Internal Finishes for F.Screen&Grit Trap Bldg.	30	0	10-Jul-12	08-Aug-12	10-Jul-12	08-Aug-12																					
Transplantation, landscape works																												
FNP12100	2 nos.Trees Transplant	50	11	05-Jun-11	24-Jul-11	16-Jun-11	04-Aug-11																					
Mechanical Installation																												
Electrical and Mechanical Works																												
FNP13100	Install Fine Screen Equipment	60	0	09-Aug-12	07-Oct-12	09-Aug-12	07-Oct-12																					
FNP13110	Install Fine Screen conveyor system	40	0	08-Oct-12	16-Nov-12	08-Oct-12	16-Nov-12																					
FNP13120	Install compactors & equipment	20	27	17-Nov-12	06-Dec-12	14-Dec-12	02-Jan-13																					
FNP13130	Install Grit removal equipment	60	0	17-Nov-12	15-Jan-13	17-Nov-12	15-Jan-13																					
FNP13200	Install Temp. Air Duct to Extg. Deodorizer	21	66	07-Dec-12	27-Dec-12	11-Feb-13	03-Mar-13																					
FNP13250	New Treatment Facilities to Flow Meter Chamber	60	27	07-Dec-12	04-Feb-13	03-Jan-13	03-Mar-13																					
Electrical Installation																												
Electrical and Mechanical Works																												
FNP13500	Modify Extg. Switchboard	45	313	11-Jan-12	24-Feb-12	19-Nov-12	02-Jan-13																					
FNP13550	Install New Switchboard	45	102	09-Aug-12	22-Sep-12	19-Nov-12	02-Jan-13																					
FNP13600	Laying Power Supply Cables (including Termination)	60	47	17-Nov-12	15-Jan-13	03-Jan-13	03-Mar-13																					
FNP13650	Install UPS System	50	97	09-Aug-12	27-Sep-12	14-Nov-12	02-Jan-13																					
FNP13700	Install Electrical Equipments	45	177	28-Sep-12	11-Nov-12	24-Mar-13	07-May-13																					
FNP31800	Install Earthing & Lightning System	60	97	28-Sep-12	26-Nov-12	03-Jan-13	03-Mar-13																					
Control and Monitoring System																												
FNP14100	Install Monitoring & Control System	90	117	09-Aug-12	06-Nov-12	04-Dec-12	03-Mar-13																					
Building Services Installation																												
FNP12650	Construct U/G Drains, Cable Pits & Ducting	90	87	10-Jul-12	07-Oct-12	05-Oct-12	02-Jan-13																					
FNP14500	Install Building Services	75	197	09-Aug-12	22-Oct-12	22-Feb-13	07-May-13																					
Testing and Commissioning																												
FNP15200	T&C of Building Services	25	112	16-Jan-13	09-Feb-13	08-May-13	01-Jun-13																					
FNP15300	T&C of PTW System	90	0	04-Mar-13	01-Jun-13	04-Mar-13	01-Jun-13																					
FNP15500	Complete the Works of Section 1	0	0		01-Jun-13		01-Jun-13																					
Works for Section 2																												
North Point																												
E&M Equipment / Material Delivery on Site																												
FNP20010	Deodorisation System Delivery on Site	7	53	05-Oct-13	11-Oct-13	27-Nov-13	03-Dec-13																					
FNP20060	Control & Monitoring System Delivery on Site	7	108	05-Oct-13	11-Oct-13	21-Jan-14	27-Jan-14																					
Civil Works																												
Site Clearance & Prep. Works																												
FNP20100	Possession of NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																						
Demolition Works																												
FNP20200	Demolish the Extg. Fine Screen Chamber	30	0	23-Jun-13	22-Jul-13	23-Jun-13	22-Jul-13																					
Site Investigation																												
FNP20210	6nos. Pre-drill holes	19	0	23-Jul-13	10-Aug-13	23-Jul-13	10-Aug-13																					
Foundation Works																												
FNP20250	Piling Works for Deodorization Bldg.	55	0	11-Aug-13	04-Oct-13	11-Aug-13	04-Oct-13																					
Drainage Works																												
FNP20150	Relocate DN300 Sewer	50	20	02-Jun-13	21-Jul-13	22-Jun-13	10-Aug-13																					
RC Structural Works																												
FNP20400	Construct Deodorization Bldg. including finishes	60	0	05-Oct-13	03-Dec-13	05-Oct-13	03-Dec-13																					
FNP20450	Construct U/G Drains, Cable Pits & Ducting	24	91	05-Oct-13	28-Oct-13	04-Jan-14	27-Jan-14																					
Mechanical Installation																												

■ Actual Work ■ Critical Remaining Work
■ Remaining Work ◆ Milestone

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011				2012				2013				2014				2015	2016
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Electrical and Mechanical Works																									
FNP21100	Decommission the Existing Grit Traps, Fine Screens	21	0	02-Jun-13	22-Jun-13	02-Jun-13	22-Jun-13																		
FNP21150	Install New Deodorization System	55	0	04-Dec-13	27-Jan-14	04-Dec-13	27-Jan-14																		
Electrical Installation																									
FNP21200	Install Switchgear	45	10	04-Dec-13	17-Jan-14	14-Dec-13	27-Jan-14																		
FNP21400	Power Cables Laying (including termination)	20	0	28-Jan-14	16-Feb-14	28-Jan-14	16-Feb-14																		
FNP21500	Install Earthing & Lightning System	45	10	04-Dec-13	17-Jan-14	14-Dec-13	27-Jan-14																		
Control and Monitoring System																									
FNP23500	Install Control & Monitoring System	20	0	28-Jan-14	16-Feb-14	28-Jan-14	16-Feb-14																		
Building Services Installation																									
FNP24500	Install Building Services System	20	0	28-Jan-14	16-Feb-14	28-Jan-14	16-Feb-14																		
Testing and Commissioning																									
FNP25000	T&C of Deodorization System	30	0	17-Feb-14	18-Mar-14	17-Feb-14	18-Mar-14																		
FNP25500	Completion of the Works of Section 2	0	0		18-Mar-14		18-Mar-14																		
Works for Section 3																									
North Point																									
E&M Equipment / Material Delivery on Site																									
FNP31100	Delivery of Seawater Pumps on Site	10	140	01-Aug-13	10-Aug-13	19-Dec-13	28-Dec-13																		
FNP31150	Delivery of Pipes, Valve, Penstock & Accessories	14	206	02-Jun-13	15-Jun-13	25-Dec-13	07-Jan-14																		
FNP31250	Delivery of Control & Instrumentation	10	55	25-Oct-13	03-Nov-13	19-Dec-13	28-Dec-13																		
Civil Works																									
Site Clearance & Prep. Works																									
FNP32050	Possession of NP-3 (after Sec. 1 completed)	0	0	02-Jun-13		02-Jun-13																			
FNP33100	Demolish Extg. Deodour. Plant & Screen Chamber	30	0	02-Jun-13	01-Jul-13	02-Jun-13	01-Jul-13																		
Foundation Works																									
FNP32150	Construct substructure of Seawater Pump. Station	30	60	02-Jul-13	31-Jul-13	31-Aug-13	29-Sep-13																		
RC Structural Works																									
FNP32160	Construct superstructural for Seawater Pump. St.	90	60	01-Aug-13	29-Oct-13	30-Sep-13	28-Dec-13																		
FNP32200	Construct Twin Seawater Pumping Main	90	0	02-Jul-13	29-Sep-13	02-Jul-13	29-Sep-13																		
FNP32350	Construct U/G Drains, Cable Pits & Ducting	90	0	30-Sep-13	28-Dec-13	30-Sep-13	28-Dec-13																		
Drainage Works																									
FNP32300	Laying pipes between FC-3,FC-3a,FC-3b &FC-4	40	105	02-Jul-13	10-Aug-13	15-Oct-13	23-Nov-13																		
FNP32310	Construct Chamber FC3a,FC-3,FC-4&Flume Channels	35	105	11-Aug-13	14-Sep-13	24-Nov-13	28-Dec-13																		
Road Works																									
FNP32320	Roadworks for PTW	60	65	24-Mar-14	22-May-14	28-May-14	26-Jul-14																		
Transplantation, landscape works																									
FNP32330	Planting and landscape works for PTW	80	65	23-May-14	10-Aug-14	27-Jul-14	14-Oct-14																		
Mechanical Installation																									
Electrical and Mechanical Works																									
FNP33150	Install Seawater Pump Sets	120	60	30-Oct-13	26-Feb-14	29-Dec-13	27-Apr-14																		
Electrical Installation																									
FNP34150	Install Switchgear	30	0	29-Dec-13	27-Jan-14	29-Dec-13	27-Jan-14																		
FNP34250	Power Cables Laying	60	0	28-Jan-14	28-Mar-14	28-Jan-14	28-Mar-14																		
FNP34300	Install Earthing & Lightning System	55	35	28-Jan-14	23-Mar-14	04-Mar-14	27-Apr-14																		
Control and Monitoring System																									
FNP35100	Install DCS Outstation & Instrumentation	90	0	29-Dec-13	28-Mar-14	29-Dec-13	28-Mar-14																		
Building Services Installation																									
FNP36100	Install Building Services	60	0	27-Feb-14	27-Apr-14	27-Feb-14	27-Apr-14																		
Testing and Commissioning																									
FNP37100	T&C of Building Services and E&M Equipment	80	0	28-Apr-14	16-Jul-14	28-Apr-14	16-Jul-14																		
FNP37110	Final T&C of North Point PTW	30	0	17-Jul-14	15-Aug-14	17-Jul-14	15-Aug-14																		
FNP37115	Submission of Draft O&M Manuals for North Point	0	0	09-Jun-12*		08-Jun-12																			
FNP37116	Submission of Updated Draft O&M Manuals for North Point	0	0	16-Oct-12*		15-Oct-12																			
FNP37120	Modified O&M Manuals for North Point	60	30	17-Jul-14	14-Sep-14	16-Aug-14	14-Oct-14																		
FNP37125	Submission of Modified O&M Manuals for North Point	0	30		14-Sep-14		14-Oct-14																		
FNP37130	As-Built Drawings for North Point	60	30	17-Jul-14	14-Sep-14	16-Aug-14	14-Oct-14																		
FNP37140	FSD submission, application and inspection for North Point	60	0	16-Aug-14	14-Oct-14	16-Aug-14	14-Oct-14																		
FNP37150	Completion of the Works of Section 3	0	0		14-Oct-14		14-Oct-14																		
Water Supply from WSD for North Point PTW																									
Key Dates																									
FNP40000	Application for Water Connection	60	5	28-Apr-14	26-Jun-14	03-May-14	01-Jul-14																		
FNP40010	Inspection from representative of WSD	1	5	27-Jun-14	27-Jun-14	02-Jul-14	02-Jul-14																		
FNP40020	Release of Completion Certificate by WSD	7	5	28-Jun-14	04-Jul-14	03-Jul-14	09-Jul-14																		
FNP40030	Installation of Water Meter and Main line connection	7	5	05-Jul-14	11-Jul-14	10-Jul-14	16-Jul-14																		
Works for Section 4																									
Wan Chai East																									
Statutory Submission / Approval / Inspection																									
FWC00270	Application of temporary D.G. Store Licence	0	0	02-May-11		02-May-11																			
FWC00320	Approval of temp. D.G. Store Licence	30	0	02-May-11	31-May-11	02-May-11	31-May-11																		
FWC00370	Application of temp. D.G. Store Inspection	0	0	17-Aug-11		17-Aug-11																			
FWC00420	Temp. D.G. Store Inspection by FSD	35	0	17-Aug-11	20-Sep-11	17-Aug-11	20-Sep-11																		
FWC00470	Obtain Temp. D.G. Store Licence	0	0		20-Sep-11		20-Sep-11																		

Actual Work Remaining Work Critical Remaining Work Milestone

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011 2012 2013 2014 2015 2016																											
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
Civil Works Material Delivery on Site																																			
FWC00500	Ordering of Temp. Workshop Material	7	0	02-May-11	08-May-11	02-May-11	08-May-11	■ Ordering of Temp. Workshop Material																											
FWC00550	Manufacturing / Shipment of Temp. Workshop	60	0	09-May-11	07-Jul-11	09-May-11	07-Jul-11	■ Manufacturing / Shipment of Temp. Workshop																											
FWC00600	Temp. Workshop Material Delivery on Site	10	0	08-Jul-11	17-Jul-11	08-Jul-11	17-Jul-11	■ Temp. Workshop Material Delivery on Site																											
Civil Works																																			
Site Clearance & Prep. Works																																			
FWC01100	Construct Temp. Workshop, General Store	60	0	18-Jul-11	15-Sep-11	18-Jul-11	15-Sep-11	■ Construct Temp. Workshop, General Store																											
FWC01150	Construct Temp. D.G. Store	30	0	18-Jul-11	16-Aug-11	18-Jul-11	16-Aug-11	■ Construct Temp. D.G. Store																											
Demolition Works																																			
FWC01450	Demolish Extg. Workshop, General & D.G. Store	60	0	20-Nov-11	18-Jan-12	20-Nov-11	18-Jan-12	■ Demolish Extg. Workshop, General & D.G. Store																											
Building Service Works																																			
FWC01200	Modify Extg. Office to new control room	180	0	20-May-11	15-Nov-11	20-May-11	15-Nov-11	■ Modify Extg. Office to new control room																											
FWC01205	Lay new cable trench for new control room	30	0	17-Sep-11	16-Oct-11	17-Sep-11	16-Oct-11	■ Lay new cable trench for new control room																											
FWC01210	Modify Ex. of f.pantry, locker rm. to new WSoft	90	0	19-Jul-11	16-Oct-11	19-Jul-11	16-Oct-11	■ Modify Ex. of f.pantry, locker rm. to new WSoft																											
FWC01220	Modify & install new staircase to G/F	90	0	19-Jul-11	16-Oct-11	19-Jul-11	16-Oct-11	■ Modify & install new staircase to G/F																											
Transplantation, landscape works																																			
FWC01050	2nos. Tree Transplant	28	31	20-May-11	16-Jun-11	20-Jun-11	17-Jul-11	■ 2nos. Tree Transplant																											
E&M Installation																																			
FWC01500	Temporary Relocation of Workshop	60	0	16-Sep-11	14-Nov-11	16-Sep-11	14-Nov-11	■ Temporary Relocation of Workshop																											
FWC01550	Temporary Relocation of D.G. Store	60	0	21-Sep-11	19-Nov-11	21-Sep-11	19-Nov-11	■ Temporary Relocation of D.G. Store																											
FWC01600	Relocate Existing Control Rm. to Modified Ctrl Rm	70	0	17-Oct-11	25-Dec-11	17-Oct-11	25-Dec-11	■ Relocate Existing Control Rm. to Modified Ctrl Rm																											
Testing and Commissioning																																			
FWC01650	T&C of Relocated Control System	34	0	26-Dec-11	28-Jan-12	26-Dec-11	28-Jan-12	■ T&C of Relocated Control System																											
FWC01700	Completion of the Works of Sec. 4(ii)	0	0		14-Nov-11		14-Nov-11	◆ Completion of the Works of Sec. 4(ii)																											
FWC01800	Completion of the Works of Sec. 4	0	0		28-Jan-12		28-Jan-12	◆ Completion of the Works of Sec. 4																											
Works for Section 5																																			
Wan Chai East																																			
Possession / Vacation of Portions																																			
FWC01860	Second Possession WCE-2	0	0	27-Jul-13		27-Jul-13		◆ Second Possession WCE-2																											
Statutory Submission / Approval / Inspection																																			
FWC02300	Application of D.G. Store License	0	0	29-Jan-12		29-Jan-12		◆ Application of D.G. Store License																											
FWC02350	Approval of D.G. Store License	30	0	29-Jan-12	27-Feb-12	29-Jan-12	27-Feb-12	■ Approval of D.G. Store License																											
FWC02400	Application of D.G. Store Inspection	0	101	29-Jun-13		08-Oct-13		◆ Application of D.G. Store Inspection																											
FWC02450	D.G. Store Inspection by FSD	35	101	01-Jul-13	04-Aug-13	10-Oct-13	13-Nov-13	■ D.G. Store Inspection by FSD																											
FWC02500	Obtain D.G. Store Licence	0	101		14-Aug-13		23-Nov-13	◆ Obtain D.G. Store Licence																											
FWC02600	Submit F314 (as-built) & F501	0	46	23-Aug-13		08-Oct-13		◆ Submit F314 (as-built) & F501																											
FWC02650	FSD Inspection	35	46	25-Aug-13	28-Sep-13	10-Oct-13	13-Nov-13	■ FSD Inspection																											
FWC02700	Issuance of F.S. Certificate	0	46		08-Oct-13		23-Nov-13	◆ Issuance of F.S. Certificate																											
Civil Works																																			
Site Clearance & Prep. Works																																			
FWC10100	Complete Demolish of Extg. Workshop, D.G. Store	0	0		18-Jan-12		18-Jan-12	◆ Complete Demolish of Extg. Workshop, D.G. Store																											
FWC10120	Site Utilities Supply	60	124	20-May-11	18-Jul-11	21-Sep-11	19-Nov-11	■ Site Utilities Supply																											
Demolition Works																																			
FWC10400	Demolition of Temp. Workshop & D.G. Store	21	0	06-Jul-13	26-Jul-13	06-Jul-13	26-Jul-13	■ Demolition of Temp. Workshop & D.G. Store																											
FWC10410	Install Instrumentation Monitoring Pts.	28	167	08-Jul-11	04-Aug-11	22-Dec-11	18-Jan-12	■ Install Instrumentation Monitoring Pts.																											
Site Investigation																																			
FWC10110	12 nos. Pre-drill holes	60	0	20-Nov-11	18-Jan-12	20-Nov-11	18-Jan-12	■ 12 nos. Pre-drill holes																											
Foundation Works																																			
FWC10150	24nos. socket H-piles	96	0	19-Jan-12	23-Apr-12	19-Jan-12	23-Apr-12	■ 24nos. socket H-piles																											
FWC10160	ELS for pile cap for New Admin. Bldg	28	0	24-Apr-12	21-May-12	24-Apr-12	21-May-12	■ ELS for pile cap for New Admin. Bldg																											
FWC10170	Construct pile cap for New Admin. Bldg.	48	0	22-May-12	08-Jul-12	22-May-12	08-Jul-12	■ Construct pile cap for New Admin. Bldg.																											
RC / Structural Works																																			
FWC10200	Construct New Admin. Bldg. Workshop & DG Store	48	0	09-Jul-12	25-Aug-12	09-Jul-12	25-Aug-12	■ Construct New Admin. Bldg. Workshop & DG Store																											
FWC10210	Construct columns & walls for new Admin. Bldg.,	48	0	19-Aug-12	05-Oct-12	19-Aug-12	05-Oct-12	■ Construct columns & walls for new Admin. Bldg.,																											
FWC10220	Construct roof slab for new Admin. Bldg.	48	0	06-Oct-12	22-Nov-12	06-Oct-12	22-Nov-12	■ Construct roof slab for new Admin. Bldg.																											
Building Service Works																																			
FWC10300	Fitting Out Electrical Works for New Ad.Bldg.	30	0	23-Nov-12	22-Dec-12	23-Nov-12	22-Dec-12	■ Fitting Out Electrical Works for New Ad.Bldg.																											
FWC10320	Fitting Out Mech. Works for New Ad.Bldg.	30	0	14-Dec-12	12-Jan-13	14-Dec-12	12-Jan-13	■ Fitting Out Mech. Works for New Ad.Bldg.																											
FWC10330	Fitting Out Works for New Workshop	30	0	13-Jan-13	11-Feb-13	13-Jan-13	11-Feb-13	■ Fitting Out Works for New Workshop																											
FWC10350	Construct Cable Pits & Ducting inside Bldg.	21	0	12-Feb-13	04-Mar-13	12-Feb-13	04-Mar-13	■ Construct Cable Pits & Ducting inside Bldg.																											
FWC10360	Construct Drains, cable& Ducting at roof slab	21	0	05-Mar-13	25-Mar-13	05-Mar-13	25-Mar-13	■ Construct Drains, cable& Ducting at roof slab																											
Architectural Works																																			
FWC10250	Int'l Finishes for new Bldg.	30	0	26-Mar-13	24-Apr-13	26-Mar-13	24-Apr-13	■ Int'l Finishes for new Bldg.																											
FWC10260	Installation windows, louvre, windows & doors	28	7	25-Apr-13	22-May-13	02-May-13	29-May-13	■ Installation windows, louvre, windows & doors																											
E&M Installation																																			
FWC21150	Relocate Control System, T&C	85	0	12-Apr-13	05-Jul-13	12-Apr-13	05-Jul-13	■ Relocate Control System, T&C																											
FWC21200	Relocate D.G. Store	30	7	30-May-13	28-Jun-13	06-Jun-13	05-Jul-13	■ Relocate D.G. Store																											
FWC21300	Relocate Workshop Facilities	75	4	18-Apr-13	01-Jul-13	22-Apr-13	05-Jul-13	■ Relocate Workshop Facilities																											
FWC21350	Completion of the Works for Section 5 (iv)	0	0		26-Jul-13		26-Jul-13	◆ Completion of the Works for Section 5 (iv)																											
Electrical Installation																																			
FWC10450	Modify Extg. Flow Distribution Chamber	30	0	27-Jul-13	25-Aug-13	27-Jul-13	25-Aug-13	■ Modify Extg. Flow Distribution Chamber																											
FWC10460	Modify Ex. Connection chamber incl. E&M works	30	0	27-Jul-13	25-Aug-13	27-Jul-13	25-Aug-13	■ Modify Ex. Connection chamber incl. E&M works																											
FWC10500	Install E&M Equipment in Flume Channels	45	0	26-Aug-13	09-Oct-13	26-Aug-13	09-Oct-13	■ Install E&M Equipment in Flume Channels																											

■ Actual Work ■ Critical Remaining Work
 ■ Remaining Work ◆ Milestone

Activity ID	Activity Name	Original Duration	Total Float	Early Start	Early Finish	Late Start	Late Finish	2011 2012 2013 2014 2015 2016																											
								Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
Building Service Installation																																			
FWC23250	Install Building Services	60	46	25-Apr-13	23-Jun-13	10-Jun-13	08-Aug-13																												
FWC23300	Install F.S. System	60	46	24-Jun-13	22-Aug-13	09-Aug-13	07-Oct-13																												
Testing and Commissioning																																			
FWC23350	Testing & Commissioning	45	0	10-Oct-13	23-Nov-13	10-Oct-13	23-Nov-13																												
FWC23400	Completion of the Works of Section 5	0	0		23-Nov-13		23-Nov-13																												
Works for Section 6																																			
Wan Chai East																																			
Possession / Vacation of Portions																																			
FWC30110	ST2 approval for working in Area WCE-5	0	338	05-Aug-11		08-Jul-12																													
Civil Works Material Delivery on Site																																			
FWC32100	Ordering of Building Materials	14	209	02-May-11	15-May-11	27-Nov-11	10-Dec-11																												
FWC32150	Manufacturing & Delivery of Building Materials	210	205	20-May-11	15-Dec-11	11-Dec-11	07-Jul-12																												
E&M Equipment / Material Delivery on Site																																			
FWC33100	Sewage Pumps Delivery on Site	10	371	07-Jul-12	16-Jul-12	13-Jul-13	22-Jul-13																												
FWC33150	Pipes & Valves Delivery on Site	14	127	04-Mar-12	17-Mar-12	09-Jul-12	22-Jul-12																												
FWC33200	Electrical Equipment Delivery on Site	7	59	01-Aug-12	07-Aug-12	29-Sep-12	05-Oct-12																												
FWC33250	Deodorization Equipment Delivery on Site	10	191	04-Jan-12	13-Jan-12	13-Jul-12	22-Jul-12																												
FWC33300	Control & monitoring Equipment Delivery on Site	14	97	29-Nov-12	12-Dec-12	06-Mar-13	19-Mar-13																												
Civil Works																																			
RC Structural Works																																			
FWC33310	Modify existing boundary wall	70	219	10-Mar-13	18-May-13	15-Oct-13	23-Dec-13																												
Transplantation, landscape works																																			
FWC33320	Planting and landscape works	90	30	24-Nov-13	21-Feb-14	24-Dec-13	23-Mar-14																												
Modification of Existing Fine Screen Grit Trap / Pumping Station Building																																			
FWC35100	Demolition works for existing Roof Landscape & Advertising Sign	90	205	16-Dec-11	14-Mar-12	08-Jul-12	05-Oct-12																												
FWC35110	Removal of Existing Pipes and Ladders	60	219	15-Mar-12	13-May-12	20-Oct-12	18-Dec-12																												
FWC35120	External Finishing Works	300	219	14-May-12	09-Mar-13	19-Dec-12	14-Oct-13																												
Mechanical Installation																																			
FWC50100	Install Sewage Pumps(phase 1)	50	202	02-Jan-13*	20-Feb-13	23-Jul-13	10-Sep-13																												
FWC50105	Install Pipes, Valves & Accessories (phase1)	50	202	02-Jan-13	20-Feb-13	23-Jul-13	10-Sep-13																												
FWC50110	Install Sewage Pumps(phase2)	50	0	01-Oct-13*	19-Nov-13	01-Oct-13	19-Nov-13																												
FWC50115	Install Pipes, Valves & Accessories (phase2)	50	0	01-Oct-13	19-Nov-13	01-Oct-13	19-Nov-13																												
FWC50120	Install Sewage Pumps(phase3)	50	0	10-Dec-13	28-Jan-14	10-Dec-13	28-Jan-14																												
FWC50125	Install Pipes, Valves & Accessories(phase3)	50	0	10-Dec-13	28-Jan-14	10-Dec-13	28-Jan-14																												
FWC50200	Lay new Deodorization pipeline/ducting	120	127	18-Mar-12	15-Jul-12	23-Jul-12	19-Nov-12																												
FWC50210	Install new Deodorization equipments	60	127	16-Jul-12	13-Sep-12	20-Nov-12	18-Jan-13																												
FWC50220	Connect the new Deod. system to PTW	30	127	14-Sep-12	13-Oct-12	19-Jan-13	17-Feb-13																												
FWC50230	Removal of existing Deod. system	30	127	14-Oct-12	12-Nov-12	18-Feb-13	19-Mar-13																												
Electrical Installation																																			
FWC50106	Electrical Modification on pumps (phase 1)	50	202	02-Jan-13	20-Feb-13	23-Jul-13	10-Sep-13																												
FWC50116	Electrical Modification on pumps (phase 2)	50	0	01-Oct-13	19-Nov-13	01-Oct-13	19-Nov-13																												
FWC50126	Electrical Modification on pumps (phase 3)	50	0	10-Dec-13	28-Jan-14	10-Dec-13	28-Jan-14																												
FWC51100	Install LV Switchboard	90	59	08-Aug-12	05-Nov-12	06-Oct-12	03-Jan-13																												
FWC51200	Install MCBs	75	59	06-Nov-12	19-Jan-13	04-Jan-13	19-Mar-13																												
FWC51500	Laying Power Cables (Including Termination)	60	74	17-Sep-13	15-Nov-13	30-Nov-13	28-Jan-14																												
Control and Monitoring System																																			
FWC52100	Install Control & Monitoring System	120	59	20-Jan-13	19-May-13	20-Mar-13	17-Jul-13																												
Building Services Installation																																			
FWC53100	Install Building Services	120	59	20-May-13	16-Sep-13	18-Jul-13	14-Nov-13																												
Testing and Commissioning																																			
FWC55000	T&C for Pump (Phase 1)	20	202	21-Feb-13	12-Mar-13	11-Sep-13	30-Sep-13																												
FWC55010	T&C for Pump (Phase 2)	20	0	20-Nov-13	09-Dec-13	20-Nov-13	09-Dec-13																												
FWC55020	T&C for Pump (Phase 3)	20	0	29-Jan-14	17-Feb-14	29-Jan-14	17-Feb-14																												
FWC55100	T&C of Building Services and E&M Equipment	30	0	29-Jan-14	27-Feb-14	29-Jan-14	27-Feb-14																												
FWC55110	Final T&C of Wan Chai East PTW	54	0	29-Jan-14	23-Mar-14	29-Jan-14	23-Mar-14																												
FWC55115	Submission of Draft O&M Manuals for Wan Chai East	0	0	19-Apr-12*		18-Apr-12																													
FWC55116	Submission of Updated Draft O&M Manuals for Wan Chai East	0	0	21-Nov-12*		21-Nov-12																													
FWC55120	Modified O&M Manuals for Wan Chai East	60	24	28-Feb-14	28-Apr-14	24-Mar-14	22-May-14																												
FWC55125	Submission of Modified Draft O&M Manuals for Wan Chai East	0	24		28-Apr-14		22-May-14																												
FWC55130	As-Built Drawings for Wan Chai East	60	24	28-Feb-14	28-Apr-14	24-Mar-14	22-May-14																												
FWC55140	FSD submission, application and inspection for Wan Chai East	60	0	24-Mar-14	22-May-14	24-Mar-14	22-May-14																												
FWC55150	Completion of the Works of Section 6	0	0		22-May-14		22-May-14																												
Water Supply from WSD for Wan Chai East PTW																																			
Key Dates																																			
FWC60000	Application for Water Connection	60	59	17-Sep-13	15-Nov-13	15-Nov-13	13-Jan-14																												
FWC60010	Inspection from representative of WSD	1	59	16-Nov-13	16-Nov-13	14-Jan-14	14-Jan-14																												
FWC60020	Release of Completion Certificate by WSD	7	59	17-Nov-13	23-Nov-13	15-Jan-14	21-Jan-14																												
FWC60030	Installation of Water Meter and Main line connection	7																																	

