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Document Title	**Monthly Environmental Monitoring and Audit Report No. 22 Covering the Period from 1 October 2011 to 31 October 2011**		
Document No.	**EMA/027**		

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03	Mott MacDonald Hong Kong Ltd	11	ACL (Project Office)
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B	17 November 2011	Submission to IEC and ER for Further Review	Various	Susana Halliday	Eric Chui
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Rev.	**Date**	**Description**	**Prepared**	**Checked & Reviewed**	**Approved**

Leighton - LNS Joint Venture

ATKINS

Rev.

B

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Environmental Certification Sheet – 31

Reference ~~Procedure~~/Document/~~Plan~~

Document/~~Plan/Changes/Information to be~~ Certified/ Verified:	Monthly Environmental Monitoring and Audit Report No.22 (EMA/027, Rev B)
Date of Report:	18 November 2011
Date of correspondence to IEC:	21 November 2011
Date received:	21 November 2011

Reference Condition

Clause 4.4 of EP-322/2008/E:

"Three hard copies and one electronic copy of the monthly EM&A Report shall be submitted to the Director within 10 working days after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director."

ET Certification

I hereby certify that the above referenced ~~information~~/document/~~plan~~ complies with the above referenced condition.

Susana Halliday, Environmental Team Leader, (ACL): Date: 22 November 2011

Mott MacDonald

Our ref KMY/AFK/FY/TK/T261332/22.01/L-0282
T 2828 5757
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Your ref -

CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
2A Pokfulam Road, Hong Kong

21 November 2011
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/2007/24
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun
Condition 4.4 – Submission of Monthly EM&A Report for October 2011 (no. 22)

I refer to the revised Monthly EM&A Report No. 22 (Rev. B) for October 2011 certified by ETL and received on 18 November 2011 via email. Pursuant to Condition 4.4 of Environmental Permit No. EP-322/2008/E, I hereby verify the captioned Report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c.	AECOM	Mr. Simon Mui	By email
	Leighton – LNS JV	Mr. Stephen Tsang	By email
	Atkins	Ms. Susana Halliday	By email

EXECUTIVE SUMMARY

This is the Twenty-second Monthly Environmental Monitoring and Audit Report prepared by Atkins China Ltd (ACL), for Contract No. DC/2007/24 Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun (hereinafter, the Project), in compliance with the Project EM&A Manual under EP No. EP-322/2008/E. The construction works under the Project was commenced on 23 December 2009. This report summarises the findings and results of the EM&A during the reporting period from 1 October 2011 to 31 October 2011.

Environmental Monitoring and Audit Progress

The monthly EM&A programme has been undertaken in accordance with the Project EM&A Manual. A summary of the monitoring activities carried out during this reporting month is listed below:

Noise and air monitoring at designated monitoring stations was undertaken as below table:

Parameter	ID	Description	Date
Noise Monitoring: $L_{eq(30\ mins)}$ during normal Daytime	M3	Kwan Yick Building Phase III	4, 10, 21 and 27 October 2011
	M5	Chuk Lam Ming Tong	4, 10, 20 and 26 October 2011
	M6a	Aegean Terrace	6, 12, 18 and 24 October 2011(1)
	M7a	Wah Ming House	6, 12, 18 and 24 October 2011(2)
	M8	Wah Lai House	4, 10, 20 and 26 October 2011
Noise Monitoring: $L_{eq(15\ mins)}$ during evening time and daytime of Sundays/ public holidays	M3	Kwan Yick Building Phase III	Daytime of public holiday: 2, 16, 23 and 30 October 2011
	M5a	Near the entrance of Chuk Lam Ming Tong	Daytime of public holiday: 9 October 2011
	M6a	Aegean Terrace	Daytime of public holiday: 2 and 16 October 2011
	M8	Wah Lai House	Daytime of public holiday: 30 October 2011
Noise Monitoring: $L_{eq(15\ mins)}$ during night time	M3	Kwan Yick Building Phase III	11 and 26 October 2011
	M5a	Near the entrance of Chuk Lam Ming Tong	13 and 26 October 2011
	M6a	Aegean Terrace	4 and 20 October 2011
Noise Monitoring: $L_{eq(15\ mins)}$ during evening time	M3	Kwan Yick Building Phase III	4 October 2011
	M5a	Near the entrance of Chuk Lam Ming Tong	13 and 26 October 2011
	M6a	Aegean Terrace	20 October 2011

Air Quality Monitoring: 1-hour and 24-hour TSP	CM_FM1	Western Wholesale Food Market	1-hour and 24-hour: 3, 7, 14, 19, 25 and 31 October 2011(3)
	CM_CB1a	The Arcade, Cyberport	1-hour: 4, 10, 14, 20 and 26 October 2011(4) 24-hour: 3, 7, 13, 19, 25 and 31 October 2011
	CM_WF1a	Wah Ming House	1-hour: 6, 12, 18, 24 and 28 October 2011(5) 24-hour: 3, 7, 13, 19, 25 and 31 October 2011
	CM_AB1a	The Hong Kong Ice and Cold Storage, formally known as Dairy Farm Ice and Cold Storage	1-hour: 4, 10, 14, 20 and 26 October 2011 24-hour: 3, 7, 13, 19, 25 and 31 October 2011
Landscape and Visual	n/a	n/a	25 October 2011
Hazard to Life	n/a	n/a	On-going
Cultural Heritage	n/a	n/a	n/a

(1),(2) The noise monitoring on 12th October was cancelled due to raining.
(3) The TSP monitoring on 13th October had been postpone to14th October due to raining.
(4) The 1-hour TSP monitoring on 14th October was cancelled due to raining.
(5) The 1-hour TSP monitoring on 12th October was cancelled due to raining

Site inspections were undertaken jointly with the Contractor and Engineer Representative on 4, 11, 18 and 25 October 2011, with Independent Environmental Checker's participation on 18 October 2011.

Breaches of Action and Limit Levels

During the reporting period of this monthly EM&A Report No. 22, six non-project related Limit Level (LL) exceedances in noise criteria were recorded on 4, 9, 13, 20 and 26 October 2011. Two non-project related LL exceedance of noise were recorded during the restricted hours (night time) monitoring at station M5a (near the entrance of Chuk Lam Ming Tong). One non-project related LL exceedance of noise was recorded during the restricted hours (evening time) monitoring at station M5a (near the entrance of Chuk Lam Ming Tong).One non-project related LL exceedance of noise was recorded during the restricted hours (public holiday) monitoring at station M5a (near the entrance of Chuk Lam Ming Tong).And two non-project related LL exceedances of noise were recorded during the restricted hours (night time) monitoring at station M6a (Aegean Terrace). A summary of exceedances is provided in the table below.

Date of Exceedance	Monitoring Location	Exceedance	Details
4 October 2011	M6a, Aegean Terrace	Limit Level exceedance 52.2dB(A) during night time	Exceedance was considered to be non-project related.
9 October 2011	M5a, near the entrance of Chuk Lam Ming Tong	Limit Level exceedance 67.0dB(A) during general public holiday	Exceedance was considered to be non-project related.
13 October 2011	M5a, near the entrance of Chuk Lam Ming Tong	Limit Level exceedance 62.3dB(A) during evening time	Exceedance was considered to be non-project related.
13 October 2011	M5a, near the entrance of Chuk Lam Ming Tong	Limit Level exceedance 63.3dB(A) during night time	Exceedance was considered to be non-project related.
20 October 2011	M6a, Aegean Terrace	Limit Level exceedance 56.6dB(A) during night time	Exceedance was considered to be non-project related.
26 October 2011	M5a, near the entrance of Chuk Lam Ming Tong	Limit Level exceedance 62.1dB(A) during night time	Exceedance was considered to be non-project related.

Complaint Log

There were no environmental complaints received during this reporting period.

Notifications of Summons and Prosecutions

There were no notifications of summons or prosecutions received during this reporting period.

Environmental Non-compliance

There were no environmental non-compliances recorded during this reporting period.

Reporting Changes

This report has been developed in compliance with the reporting requirements for the subsequent monthly EM&A report as required by the Project EM&A Manual.

Future Key Issues

Aberdeen

1) Blasting for Shaft (implement method statement and standard EMP mitigations).
2) Rock Excavation (implement method statement and standard EMP mitigations).
3) Shotcrete and Grouting (implement method statement and standard EMP mitigations).

Wah Fu

1) Blasting for Shaft (implement method statement and standard EMP mitigations).
2) Rock Excavation (implement method statement and standard EMP mitigations).
3) Shotcrete and Grouting (implement method statement and standard EMP mitigations).

Cyberport

1) Rock Excavation (implement method statement and standard EMP mitigations).

2) Blasting for Tunnel and Adit (implement method statement and standard EMP mitigations).
3) Grouting (implement method statement and standard EMP mitigations).

Sandy Bay

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Blasting for Tunnel and Adit (implement method statement and standard EMP mitigations).
3) Grouting (implement method statement and standard EMP mitigations).

Sai Ying Pun

1) Shotcrete and Grouting (implement method statement and standard EMP mitigations).
2) Blasting for Shaft (implement method statement and standard EMP mitigations).
3) Rock Excavation (implement method statement and standard EMP mitigations).

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APPENDICES

1 INTRODUCTION

1.1 Basic Project Information

The Harbour Area Treatment Scheme (HATS) Stage 2A Sewage Conveyance System is proposed to collect and convey the pre-treated sewage from eight existing Preliminary Treatment Works (PTW), located along the northern and south-western shoreline of Hong Kong Island, to the Stonecutters Island Sewage Treatment Works (SCISTW) for treatment before final disposal into the western harbour via an existing submarine outfall.

The sewerage tunnels to be constructed under Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from Aberdeen to Sai Yin Pun (hereinafter referred as the Project) run from Aberdeen PTW Production/Drop Shaft towards Sai Ying Pun Junction Shaft. The tunnel has a total length of approximately 7.5km and it has various internal sizes. The transitions are located at the junctions with audits connecting to the drop shafts at Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun. An overall layout plan of the Project is provided in Figure 1.1.

Atkins China Ltd (ACL) was appointed by Leighton-LNS Joint Venture (the Contractor of this Project, hereinafter referred as the Contractor) as the Environmental Team (ET) of this Project, to undertake a Environmental Monitoring and Audit (EM&A) of this Project in accordance with "HATS Stage 2A Environmental Impact Assessment Study – Investigation, Final EM&A Manual" (Register No. AEIAR-121/2008) under Environmental Permit (EP) No. EP-322/2008/E Part D, Condition 4.2.

1.2 Project Organisation and Contact Details

The key parties included:

- Project Proponent – Drainage Services Department
- Contractor – Leighton-LNS JV
- Environmental Authority – Environmental Protection Department
- The Engineer's Representative (ER) – Metcalf & Eddy-AECOM JV
- Independent Environmental Checker (IEC) - Mott MacDonald Hong Kong Ltd.
- Contractor's Environmental Team (ET) – Atkins China Ltd.

Project organisation and contact details are shown in Appendix A.

1.3 Construction Programme

The Contractor's 3-month construction programme is provided in Appendix B.

1.4 Locations of Monitoring Stations

Details of the monitoring stations are provided in Section 3 and relevant figures are shown in Figures 2.1 to 2.7.

2 ENVIRONMENTAL STATUS

2.1 Work undertaken during the Reporting Period

The major construction activities undertaken during this reporting period are summarised below (see Figures 2.1 to 2.7 for the site locations):

Aberdeen

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Blasting for Shaft (implement method statement and standard EMP mitigations).
3) Grouting and shotcreting (implement method statement and standard EMP mitigations).

Wah Fu

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Shotcrete and Grouting (implement method statement and standard EMP mitigations)
3) Blasting for shaft (implement method statement and standard EMP mitigations).

Cyberport

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Shotcrete, Rock Bolt, Rock Dowel (implement method statement and standard EMP mitigations).
3) Blasting for Shaft, Tunnel and Adit (implement method statement and standard EMP mitigations).

Sandy Bay

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Blasting for Tunnel and Adit (implement method statement and standard EMP mitigations).
3) Shotcrete, Rock Bolt, Rock Dowel (Implement method statement and standard EMP mitigations).

Sai Ying Pun

1) Soft Excavation (implement method statement and standard EMP mitigations).
2) Grouting and shotcreting (implement method statement and standard EMP mitigations).
3) Installation of noise enclosure (implement method statement and standard EMP mitigations)

2.2 Environmental Permit and License

There were no changes or clarification to the Environmental Permit (EP-322/2008/E) during the reporting period.

Chemical Waste

The Project's registrations as a Chemical Waste Producer are listed in Table 2.1:

Table 2.1 Summary of Registrations as a Chemical Waste Producer

No.	Location	WPN Number	Issue Date
1	Cyberport	5213-171-L2699-01	30 Oct 2009
2	Sandy Bay	5213-171-L2699-05	30 Oct 2009
3	Sai Ying Pun	5111-112-L2702-01	8 Dec 2009
4	Wah Fu	5213-172-L2699-02	30 Oct 2009
5	Aberdeen PTW	5213-173-L2699-04	30 Oct 2009
6	Aberdeen Workshop	5213-173-L2699-03	30 Oct 2009

No disposal of chemical waste was carried out in the reporting period.

Water Discharge Licence

Details of water discharge licences for all the Project locations are listed in Table 2.2:

Table 2.2 Summary of Water Discharge Licences

No.	Location	Licence Number	Issue Date	Validity
1	Cyberport	WT00005534-2009	3 Dec 2009	31 Dec 2014
2	Sandy Bay	WT00005533-2009	3 Dec 2009	31 Dec 2014
3	Sai Ying Pun	WT00005489-2009	1 Dec 2009	30 Nov 2014
4	Wah Fu	WT00005532-2009	3 Dec 2009	31 Dec 2014
5	Aberdeen PTW	WT00005535-2009	3 Dec 2009	31 Dec 2014
6	Aberdeen Workshop	WT00005530-2009	3 Dec 2009	31 Dec 2014

Construction Noise Permit

The statuses of Construction Noise Permits for this Project are shown in Table 2.3:

Table 2.3 Status of Construction Noise Permits

No	Location	Operations	Time	Duration	Remark
1	Cyberport	Rock excavation, drilling, welding, grouting for shaft and tunnel	1900 - 2300 normal day 0700 – 2300 holiday	2 Aug 2011 ~ 1 Dec 2011	Valid with CNP GW-RS 0632-11
2	Cyberport	Rock excavation, drilling, welding, grouting for shaft and tunnel	2300 -0700 normal day 0700 – 2300 holiday	2 Aug 2011 ~ 1 Dec 2011	Valid with CNP GW-RS 0633-11
3	Cyberport	Waste water treatment and Exhaust fan	1900-2300 normal day 0700-2300 holiday	3 Sep 2011 ~ 2 Mar 2012	Valid with CNP GW-RS 0698-11
4	Sandy Bay	Rock excavation, drilling, welding grouting for shaft and tunnel and water treatment	1900 – 2300 normal day 0700 – 2300 holiday	2 Aug 2011 ~ 1 Nov 2011	Valid with CNP GW-RS 0610-11
		Rock excavation, drilling, welding grouting for shaft and tunnel	24 hours		
5	SYP	Noise enclosure erection and Soft Excavation	24 hours	6 Sep 2011 ~ 1 Mar 2012	Valid with CNP GW-RS 0828-11

6	Wah Fu	Welding, Grouting and Blower	1900 – 2300normal day 0700 – 2300 holiday	22 Jul 2011 ~ 21 Jan 2012	Valid with CNP GW-RS 0670-11
7	Aberdeen	Rock drill and excavation	1900 – 2300normal day 0700 – 2300 holiday	04 Aug 2011 ~ 26 Jan 2012	Valid with CNP GW-RS 0686-11
8	Aberdeen	Water pump, power generator and AquaSED	2300 to 0700 Anyday	13 May 11~ 15 Nov 2011	Valid with CNP GW-RS0422-11

2.3 Environmental Document Submission

A summary of Environmental Certification Sheet submissions within the reporting period under the Project EP is presented in Table 2.4.

Table 2.4 Summary of Environmental Document Submission

No.	Document Title	Date of Submission	Date of Verification/ Approval
1	Monthly Environmental Monitoring and Audit Report No.21, Covering the Period from 1 September 2011 to 30 September 2011 (EMA/025, Rev B)	19 October 2011	20 October 2011

2.4 Environmental Monitoring Locations

There are five noise monitoring stations and four air quality monitoring stations designated for the Project and the relevant locations and sensitive receivers are shown on Figures 2.1 to 2.4 and Figures 2.5 to 2.7 respectively. Descriptions of these monitoring stations are provided in Table 2.5.

Table 2.5 Noise and Air Quality Monitoring Stations Descriptions

Monitoring ID	Description	Uses/ Location of Measurement	Easting	Northing
Noise Monitoring Stations				
M3 (1)	Rooftop (24/F) of Block A, Kwan Yick Building Phase III (Fung Mat Road Site)	Medium-rise domestic premises – private housing estate	832480	816602
M5	Rooftop (4/F) of Chuk Lam Ming Tong (Sandy Bay PTW)	Hospital and clinics - home for the aged	830779	814609
M5a	Near entrance of Chuk Lam Ming Tong (Sandy Bay PTW)	Hospital and clinics - home for the aged	830779	814609
M6a (2), (3)	2m above ground, outside of Aegean Terrace (Cyberport PTW)	Low-rise domestic premises – private housing	831304	813890

M7a (2)	Rooftop (19/F) of Wah Ming House (Wah Fu PTW)	Medium-rise domestic premises – public housing estate	831940	812497
M8 (4)	Roof (39/F) of Wah Lai House (Aberdeen PTW)	High-rise domestic premises – public housing estate	832555	812299
Air Quality Monitoring Stations				
CM_FM1 (5)	Western Wholesale Food Market (Fung Mat Road Site)	Podium	832341	816776
CM_CB1a (2)	The Arcade, Cyberport (Cyberport PTW)	Ground level at children playground, adjacent to Project site office	831298	813514
CM_WF1a (2)	Wah Ming House (Wah Fu PTW)	Roof	831943	812497
CM_AB1a (2), (6)	The Hong Kong Ice and Cold Storage, formally known as Dairy Farm Ice and Cold Storage (Aberdeen PTW)	1.5m raised platform at car park	832873	812158

Notes:
(1) Both baseline and impact noise monitoring are conducted by ET of Contact DC/2007/23. The baseline noise monitoring data will be used as a reference and impact noise monitoring data is adopted in this Report.
(2) Revision to the original monitoring location in Project EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.
(3) A correction factor of +3dB(A) is added as free field to façade measurement conversion.
(4) Both baseline and impact noise quality monitoring was conducted by ET of this Project. The impact noise monitoring data will be adopted by ET of Contract DC/2008/09.
(5) Baseline air quality monitoring was conducted by ET of Contact DC/2007/23, whereas impact air quality monitoring was conducted by ET of this Project. The baseline air quality monitoring data will be used as a reference. The impact air quality data will be adopted by ET of Contact DC/2007/23.
(6) Both baseline and impact air quality monitoring are conducted by ET of this Project and are adopted by ET of Contract DC/2008/09.

3 EM&A REQUIREMENTS

3.1 Summary of Impact EM&A Requirements

The EM&A for this Project requires quantitative monitoring on noise and air quality (Total Suspended Particulates (TSP)) on regular and ad-hoc basis, in addition to site inspections. A summary of key impact EM&A requirements for this Project is presented in Table 3.1.

Table 3.1 Summary of Impact EM&A Requirements

Parameter	Description	Frequency
Noise	$L_{eq(30min)}$ between 07:00 – 19:00 hours on normal weekdays, $L_{eq(15min)}$ for other time periods and L_{10} and L_{90} (On-site measurement using sound level meter)	Once a week. One set of measurements between 0700 and 1900 hours on normal weekdays. If construction works are extended to include works during the hours of 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted periods.
Air Quality	24-hour TSP (On-site measurement using High Volume Sampler) 1-hour TSP (Measured by direct reading methods which are capable of producing comparable results as that by the high volume sampling method) (1) (2)	For 24-hour TSP monitoring, the sampling frequency is at least once in every six-days. For 1-hour TSP monitoring, the sampling frequency is at least three times in every six-days. .
Waste	Routine supervision of construction works	As per site inspection schedule.
Landscape and Visual	Survey of full effectuation of mitigation measures	Once per month
Hazard to Life	Vibration and ground monitoring along boundary of HKCG Depot Vibration level associated with blasting for Tunnel P, shafts and other construction works	On-going
Cultural Heritage	Vibration level at identified historical buildings	On-going

Notes: (1) Except at CM_FM1, where HVS is used for the impact monitoring of 1 hour TSP.
(2) Laser Particle Photometer (hand held) was used. Relevant specification was submitted to IEC for information on 19 October 2009 under Baseline Environmental Monitoring Plan (GEN/023).

3.2 Environmental Quality Performance Limits

Environmental Quality Performance Limits (Action and Limit levels) for noise and air quality have been developed for the Project Baseline Monitoring Report and are summarised in Table 3.2 and Table 3.3 respectively.

Table 3.2 Action and Limit Levels for Impact Noise Monitoring

Time Period	Action	Limit
0700-1900 hrs on normal weekdays	When one documented complaint is received	75dB(A)(1)
0700-2300 hrs on holidays and 1900-2300 hrs on all other days		60/65/70dB(A)(2)
2300-0700 of next day		45/50/55dB(A)(2)

Note: (1) Between 0700-1900, construction noise limit for school during normal term time is 70dB(A) and 65dB(A) during examination period.
(2) To be selected based on Area Sensitivity Rating

Table 3.3 Action and Limit Levels for Air Quality Monitoring

Monitoring ID	1-hour TSP Level, µg/m³		24-hour TSP Level, µg/m³	
	Action	Limit	Action	Limit
CM_FM1	332 (1)	500	188 (2)	260
CM_CB1a	280 (1)	500	178 (2)	260
CM_WF1a	285 (1)	500	185 (2)	260
CM_AB1a	283 (1)	500	174 (2)	260

Notes: (1) For Baseline Level ≤ 384 µg/m³, Action Level = (Baseline Level*1.3 + Limit Level)/2;
For Baseline Level > 384 µg/m³, Action Level = Limit Level
(2) For Baseline Level ≤ 200 µg/m³, Action Level = (Baseline Level*1.3 + Limit Level)/2;
For Baseline Level > 200 µg/m³, Action Level = Limit Level

3.3 Event Action Plan

Event and Action Plans for noise, air quality as well as visual and landscape aspects have been developed as part of the Baseline Monitoring Report for the Project and the details are provided in Appendix C.

3.4 Environmental Measures and Implementation Status

The mitigation measures listed in the Project EIA Report, EM&A Manual and Environmental Permit as well as relevant implementation status are provided in Appendix D. Based on the site inspection findings, it appears that the Contractor has implemented the required mitigation measures during construction works to date.

4 MONITORING RESULTS

4.1 Monitoring Methodology and QA/QC Procedure

Noise Monitoring

Noise monitoring methodology and QA/QC procedure was detailed in Section 4.1 of Monthly EM&A Report No. 1 (GEN/030 Rev B). No change in noise monitoring methodology and QA/QC procedure was made.

Air Quality

Air quality monitoring methodology and QA/QC procedure was detailed in Section 4.1 of Monthly EM&A Report No. 1 (GEN/030 Rev B). No change in air quality monitoring methodology and QA/QC procedure was made.

Landscape and Visual

Monthly site audit is undertaken to check the design, implementation and maintenance of landscape and visual mitigation measures at all Project work sites.

4.2 Monitoring Equipment

Noise

The equipment used for continuous noise monitoring is listed in Table 4.1.

Table 4.1 Equipment for Noise Monitoring

Equipment	Model
Integrated Sound Level Meters	B&K 2238 Serial no. 2684502 And B&K 2238 Serial no. 2684503
Calibrator	B&K 4231, Serial no. 2385180 And B&K 4231, Serial no. 2656516

Air Quality

The equipment used for air quality monitoring is listed in Table 4.2.

Table 4.2 Equipment for Air Quality Monitoring

Parameter Measured	Equipment
1-Hour Sampling for CM_CB1a, CM_WF1a and CM_AB1a	Sibata Laser Dust Monitor Model LD-3B was used for monitoring stations CM_CB1a, CM_WF1a and CM_AB1a. This portable instrument is capable of providing: • Real time TSP concentration • Adjustable logging intervals from 6 to 600 seconds • Average concentration over logging interval and maximum and average values for entire logging period

Parameter Measured	Equipment
24-Hour Sampling for CM_CB1a, CM_WF1a, CM_AB1a and CM_FM1; and 1-Hour Sampling for CM_FM1	A High Volume Sampler Model TE-5170, by Tisch Environmental, Inc., was used for monitoring stations CM_CB1a, CM_WF1a and CM_AB1a. This instrument was equipped with: • Mass flow controller with 20 – 60 SCFM adjustable flow probe • Mechanical timer for recording elapsed-time and 24-hour operation A continuous flow recorder for continuous monitoring

4.3 Equipment Calibration

The calibration frequencies of the monitoring equipment are provided in Table 4.3.

Table 4.3 Equipment Calibration Frequencies

Equipment	Calibration Frequency
Integrated SLM and Calibrator	Every year
High Volume Sampler	Every two months
Laser Dust Monitor	Every year

Copies of the calibration certificates for the equipment are presented in Appendix F.

4.4 Impact Monitoring Schedule from 1 October 2011 to 31 October 2011

The noise and air quality monitoring schedule in reporting period is shown in Appendix G. The visual and landscape monitoring was carried out on 25 October 2011.

Regular site inspections were carried out to assess whether the project's environmental protection and pollution control measures are in compliance with the contract specifications. Inspections were carried out on 4, 11, 18 and 25 October 2011.

4.5 Impact Monitoring Results

Noise Monitoring Results

The noise monitoring results at the monitoring stations are provided in Appendix H. Graphical presentation of the noise monitoring data is shown in Appendix I.

Air Quality Results

The air quality monitoring results at the monitoring stations are presented in Appendix J. Graphical presentation of the air quality monitoring data is provided in Appendix K.

4.6 Weather Condition during Reporting Period

The weather conditions during reporting period are provided in Appendix E.

4.7 Waste Management

A summary of waste flow for October 2011 is outlined in Table 4.4. Inert construction and demolition (C&D) waste (i.e. public fill) was disposed of at Chai Wan Public Fill Barging Point/fill bank at Tseung Kwan O Area 137 (for public fill contains slurry only). Other C&D waste such as paper/ cardboard collected by local waste recycling contractor whilst general refuse was disposed at South East New Territories Landfill.

Table 4.4 Monthly Summary Waste Flow Table during Reporting Period

Month	Actual Quantities of Inert C&D Materials Generated Monthly					
	Total Quantity Generated	Broken Concrete (2)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
	(in '000 m³)					
October 2011	6.531	0	0	3.750	2.781	0
Month	**Actual Quantities of C&D Wastes Generated Monthly**					
	Metals	Paper/ cardboard packaging	Plastics (3)	Chemical Waste	Others, e.g. general refuse	
	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m³)	
October 2011	0	0.378	0	0.142	0.012	

Notes:
(1) The waste flow table will also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Broken concrete for recycling into aggregates.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
(4) Assumption: 1m³ of Inert C&D Materials weigh 1.9 tonnes and 1m³ of C&D Wastes weigh 1.6 tonnes

4.8 Landscape and Visual

The monthly site audit was undertaken on 25 October 2011 to check the design, implementation and maintenance of landscape and visual mitigation measures, as laid out in the Project EM&A Manual, at work sites in Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun. The landscape and visual monitoring report is attached in Appendix L.

4.9 Hazard to Life

324 ground settlement markers, 111 structural settlement markers and 72 piezometers were installed for monitoring. No vibration monitoring was carried out at this month.

No structural settlement was found.

4.10 Cultural Heritage

Vibration of historical buildings and structures was not carried out during the reporting period as no tunneling/ blasting works was carried out.

5 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

5.1 Environmental Exceedance

During the reporting period of this monthly EM&A Report No. 22, six non-project related Limit Level (LL) exceedances in noise criteria were recorded on 4, 9, 13, 20 and 26 October 2011. Two non-project related LL exceedance of noise were recorded during the restricted hours (night time) monitoring at station M5a (near the entrance of Chuk Lam Ming Tong). One non-project related LL exceedance of noise was recorded during the restricted hours (evening time) monitoring at station M5a (near the entrance of Chuk Lam Ming Tong).One non-project related LL exceedance of noise was recorded during the restricted hours (public holiday) monitoring at station M5a (near the entrance of Chuk Lam Ming Tong).And two non-project related LL exceedances of noise were recorded during the restricted hours (night time) monitoring at station M6a (Aegean Terrace).

Besides, all landscape and visual mitigation measures listed out in the Project EM&A Manual have been implemented CM2 at Cyberport site, CM2 at Aberdeen Site, and, CM2 and CM3 at the Sandy Bay site. Formation of stagnant water was still observed at the Cyberport site since the audit undertaken in July and the water may affect the overall health condition of the retained tree T048(R).

Retained trees T036(R), T037(R) and T020(R) in Sandy Bay were still observed in poor health condition and may have been dead since July 2011. The Contractor was advised to check the overall health condition of the retained trees and to take immediate and necessary mitigation measures to revive their health conditions or replaced all affected trees if confirmed dead. Retained trees T036(R) and T037(R) were affected by the formation of stagnant water observed during the site audit and T020(R) was observed to be in poor health condition since the site audit in June 2011.

The retained trees T028(R) and T038(R) exhibited some deterioration and damage to the branches and had dried leaves falling-off from the affected areas.

ERM also spotted a tree within the boundary that protrudes from the adjacent site with the tree name T063 (R). This tree was observed in a very poor health condition and is likely dead. The Contractor was recommended to check if this tree was part of the original tree survey, and if the tree is confirmed to be part of the original tree survey report, the Contractor was advised to properly tag the tree and take immediate action to revive its health condition or replace if confirmed dead.

The transplanted trees T004 (T) and T005 (T) were still observed to be in very poor health condition and may have been dead since the 10th monthly audit undertaken in December 2010.

Construction material in Aberdeen site was observed to be leaning directly on the stem of retained tree T081(R) and a bag of garbage was stored very near to the roots of T083(T). The Contractor was advised to relocate the construction materials away from the retained tree and remove all garbage bags from the roots of the transplanted tree.

According to the Contractor's monitoring data, no exceedance in structural settlement monitoring results was recorded during the reporting period.

5.2 Site Inspections and Audit

A joint site inspection with the IEC and the Contractor was undertaken on 18 October 2011. All the works areas were observed to be generally complied with the environmental mitigation requirements and no particular water quality impacts found.

Records of site inspections observations and corrective actions during the reporting period are provided in Appendix N. Following the environmental inspections, the Contractor has undertaken remedial actions to improve the implementation of mitigation measures.

The Contractor has prepared a Waste Management Plan for the project, although it is not an EP requirement. During the site inspection, the Contractor was seen to have implemented good site practices and mitigation measures as stated in the EM&A Manual.

5.3 Environmental Complaint and Prosecution

No complaints were received in relation to environmental impact during the reporting period. The summary of environmental complaints is shown in Table 5.1.

Table 5.1 Summary of Environmental Complaints

Total No. of Complaints Received	No. of Complaints Received during Reporting Period	No. of Active Complaints	No. of Inactive Closed Complaints
5	0	0	5

No notifications of summons or prosecutions were received in relation to environmental impact during the reporting period (see Table 5.2).

Table 5.2 Summary of Notifications of Summons and Prosecutions

Total No. of Notifications of Summons / Prosecutions Received	No. of Notifications of Summons / Prosecutions Received during Reporting Period	Status of Notifications of Summons / Prosecutions
0	0	N/A

6 FORECAST AND SCHEDULE

6.1 Key Issues for the Coming Months

The key issues with respect to the works in the forthcoming 2 months include:

Aberdeen

1) Blasting for Shaft (implement method statement and standard EMP mitigations).
2) Rock Excavation (implement method statement and standard EMP mitigations).
3) Shotcrete and Grouting (implement method statement and standard EMP mitigations).

Wah Fu

1) Blasting for Shaft (implement method statement and standard EMP mitigations).
2) Rock Excavation (implement method statement and standard EMP mitigations).
3) Shotcrete and Grouting (implement method statement and standard EMP mitigations).

Cyberport

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Blasting for Tunnel and Adit (implement method statement and standard EMP mitigations).
3) Grouting and shotcreting (implement method statement and standard EMP mitigations).

Sandy Bay

1) Rock Excavation (implement method statement and standard EMP mitigations).
2) Blasting for Tunnel and Adit (implement method statement and standard EMP mitigations).
3) Grouting and shotcreting (implement method statement and standard EMP mitigations).

Sai Ying Pun

1) Shotcrete and Grouting (implement method statement and standard EMP mitigations).
2) Blasting for Shaft (implement method statement and standard EMP mitigations).
3) Rock Excavation (implement method statement and standard EMP mitigations).

6.2 Monitoring Schedules for the Next Month

The proposed schedule for noise and air quality monitoring from 1 November 2011 to 30 November 2011 is provided in Appendix G.

7 CONCLUSION

This is the Twenty-second Monthly EM&A Report prepared by Atkins China Ltd (ACL) for Contract No. DC/2007/24 Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun. This Report summarises the results and findings of the EM&A during the reporting period from 1 to 31 October 2011.

During the reporting period of this monthly EM&A Report No. 22, six non-project related Limit Level (LL) exceedances in noise criteria were recorded on 4, 9, 13 20 and 26 October 2011.

There was no environmental, non-compliance attributable to the Project works during the reporting period. Also, no environmental complaint, prosecution or summons was received during the reporting period. Mitigation Measures stated in the Project EIA have been implemented.

The landscape and visual site audit was undertaken on 25 October 2011 to check the design, implementation and maintenance of L&V mitigation measures at work sites. All landscape and visual mitigation measures listed out in the Project EM&A Manual have been implemented except CM2 at Cyberport, CM2 at Aberdeen and, CM2 and CM3 at Sandy Bay site.

Overall, environmental impacts arising from the Project construction activities have been controlled and properly rectified.

FIGURES

Rev	Description	Date	Dgn	Chk	Auth
A	FIRST ISSUE	03/02	SC	SB	EC

渠務署
DRAINAGE SERVICES DEPARTMENT

HARBOUR AREA TREATMENT SCHEME DIVISION

Project title

CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer

AECOM

Metcalf & Eddy – AECOM Joint Venture

Main Contractor

LEIGHTON 禮頓 | LNS

Leighton - LNS Joint Venture

Designer

ATKINS

Drawing title

OVERALL LAYOUT PLAN

Designed: SC	Scale at A3: N.T.S.
Drawn: AC	Status: MONTHLY EM&A REPORT
Checked: SB	
Authorised: EC	Figure No.: 1.1
CAD ref.: 4417-EM-FIG-1-1.dgn	Rev.: A

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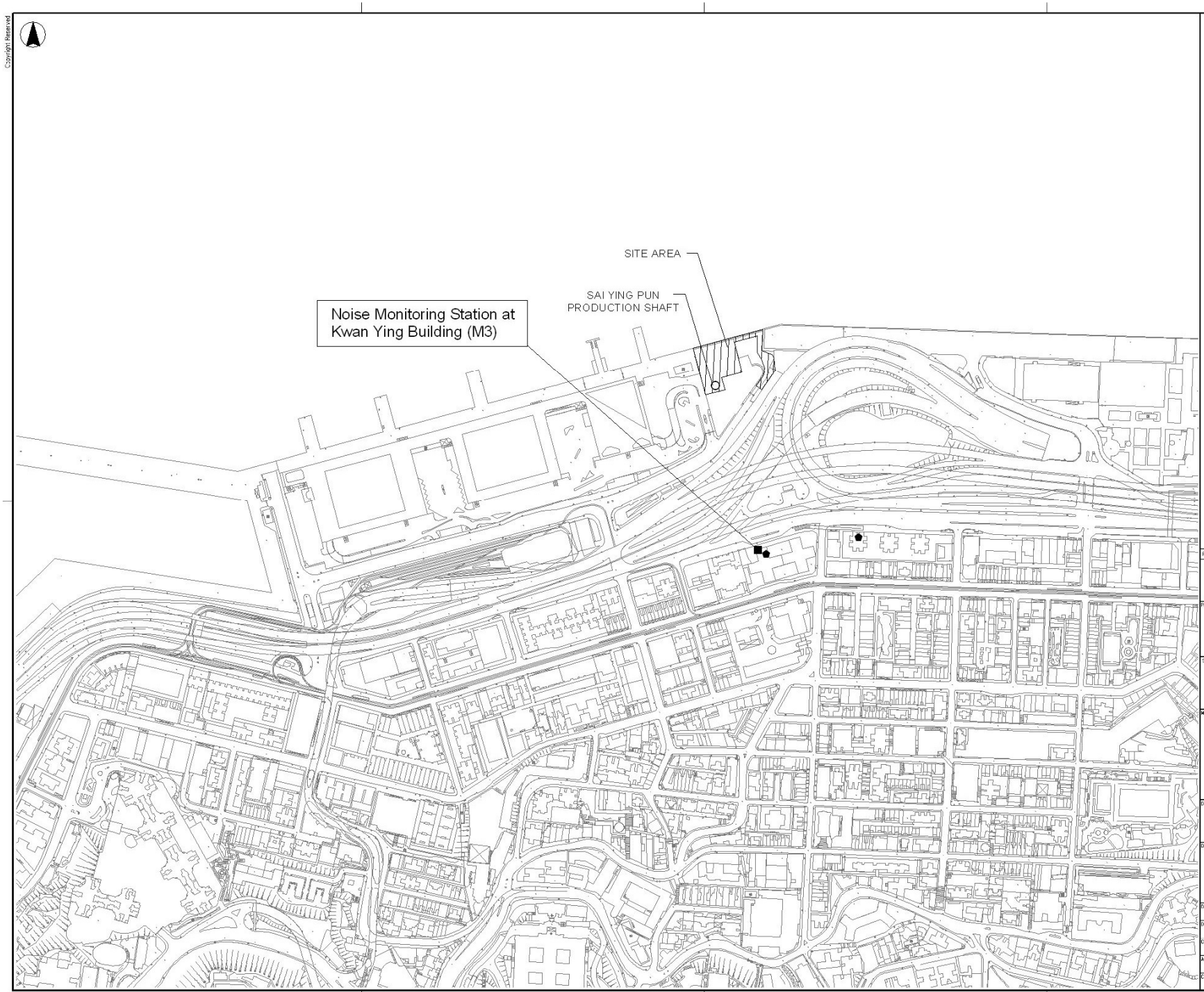


LEGEND
- NOISE MONITORING STATION
- NOISE SENSITIVE RECEIVERS

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

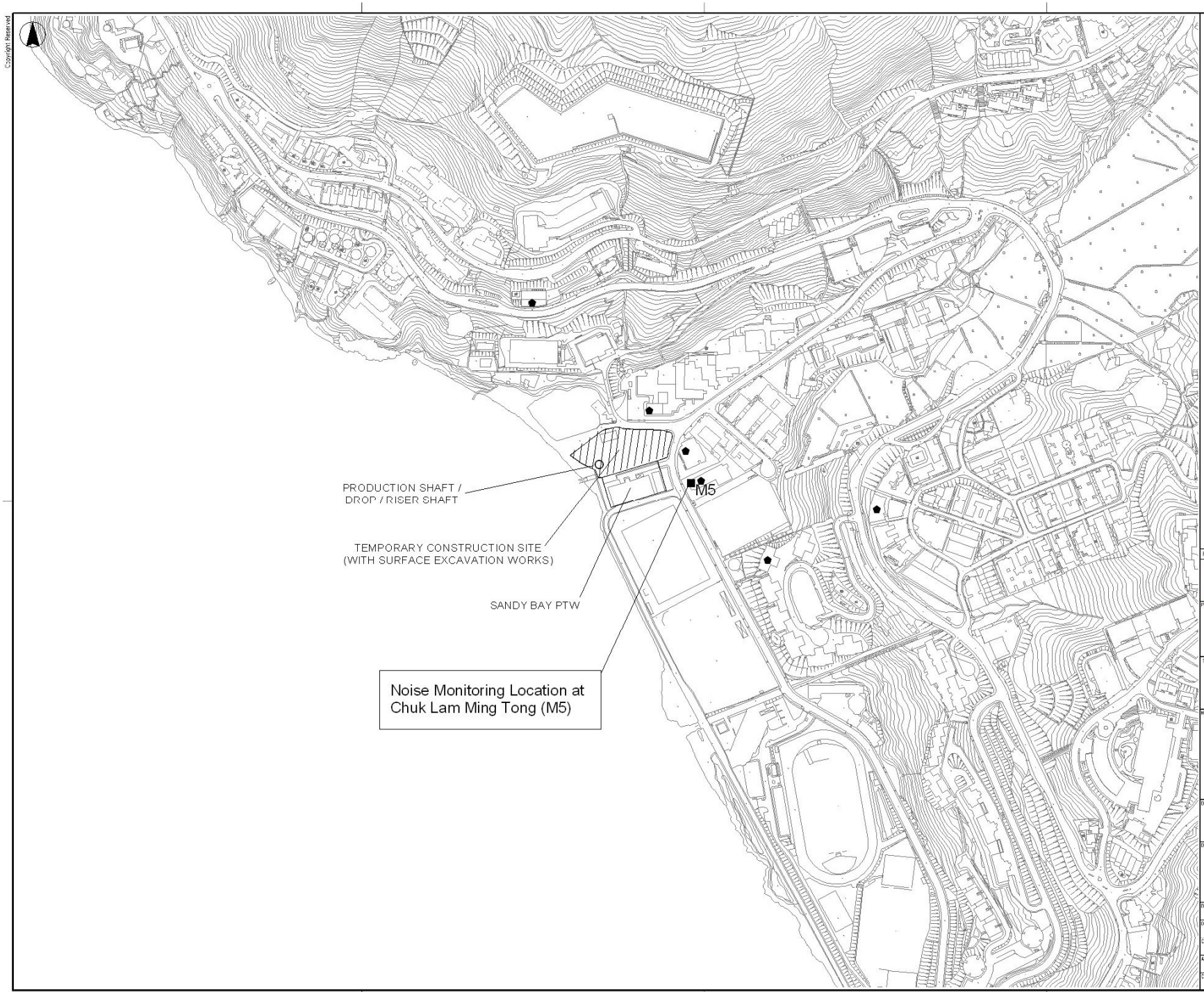
Supervising Officer: AECOM
Metcalf & Eddy – AECOM Joint Venture

Main Contractor: Leighton - LNS Joint Venture

Designer: ATKINS

Drawing Title
CONSTRUCTION NOISE
MONITORING STATION
AT FUNG MAT ROAD SITE

Designed | Scale at A1
Drawn | Status: MONTHLY EM&A REPORT
Checked
Authorised | Drawing No. 2.1 | Rev. A
CAD ref.



LEGEND

- NOISE MONITORING STATION
- NOISE SENSITIVE RECEIVERS

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT

HARBOUR AREA TREATMENT SCHEME DIVISION

Project title

CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer

AECOM

Metcalf & Eddy – AECOM Joint Venture

Main Contractor

Leighton - LNS Joint Venture

Designer

ATKINS

Drawing title

CONSTRUCTION NOISE MONITORING STATION AT SANDY BAY PTW

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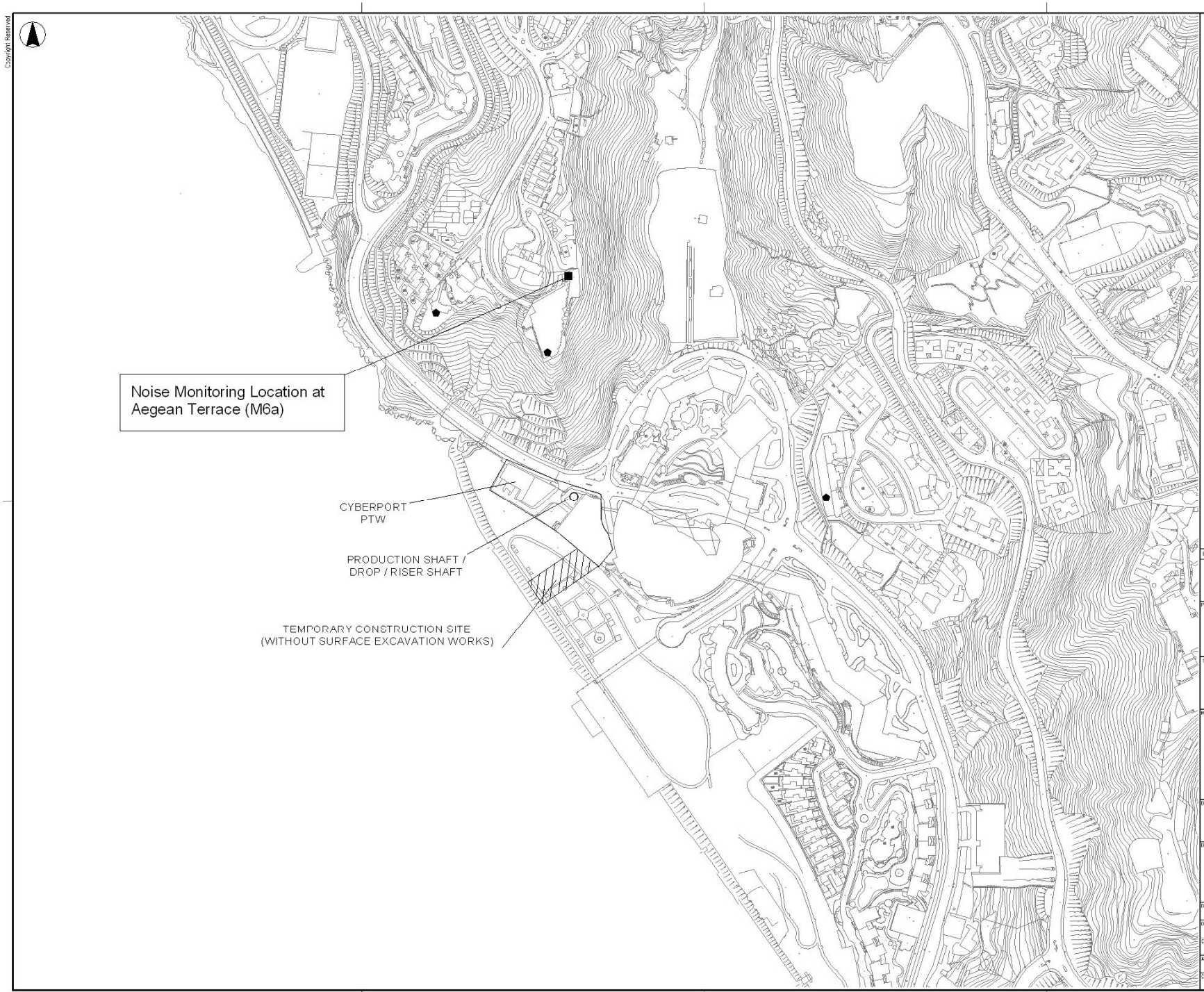
CAD ref.	Rev.: A



LEGEND

- NOISE MONITORING STATION
- NOISE SENSITIVE RECEIVERS

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT

HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title

CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer

AECOM

Metcalf & Eddy – AECOM Joint Venture

Main Contractor

LEIGHTON 禮和 LNS

Leighton - LNS Joint Venture

Designer

ATKINS

Drawing Title

CONSTRUCTION NOISE MONITORING STATION AT CYBERPORT PTW

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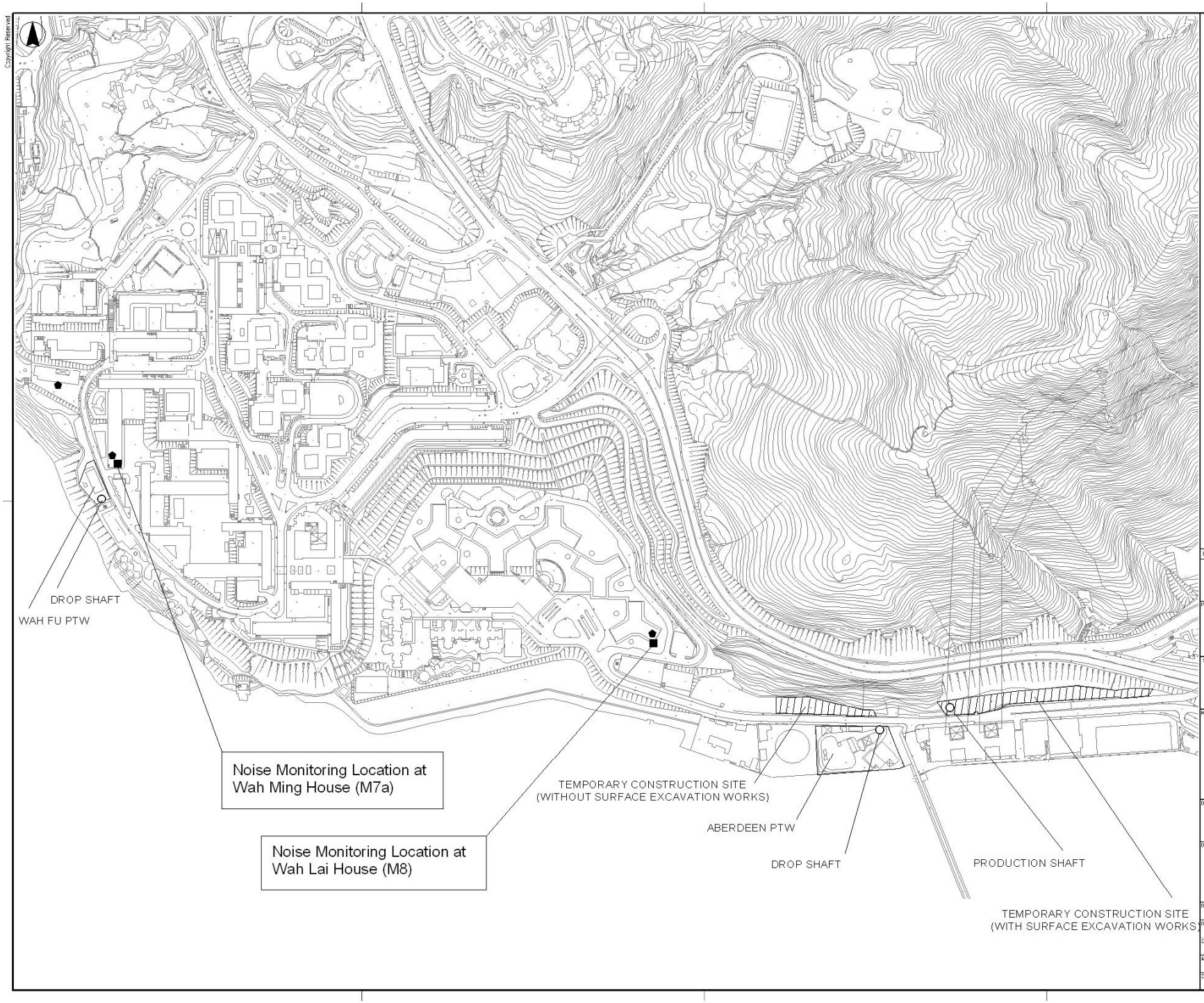
CAD ref.	Rev.: A



Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
AECOM
Metcalf & Eddy - AECOM Joint Venture

Main Contractor
Leighton - LNS Joint Venture

Designer
ATKINS

Drawing title
CONSTRUCTION NOISE MONITORING STATION AT WAH FU AND ABERDEEN PTW

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Checked	
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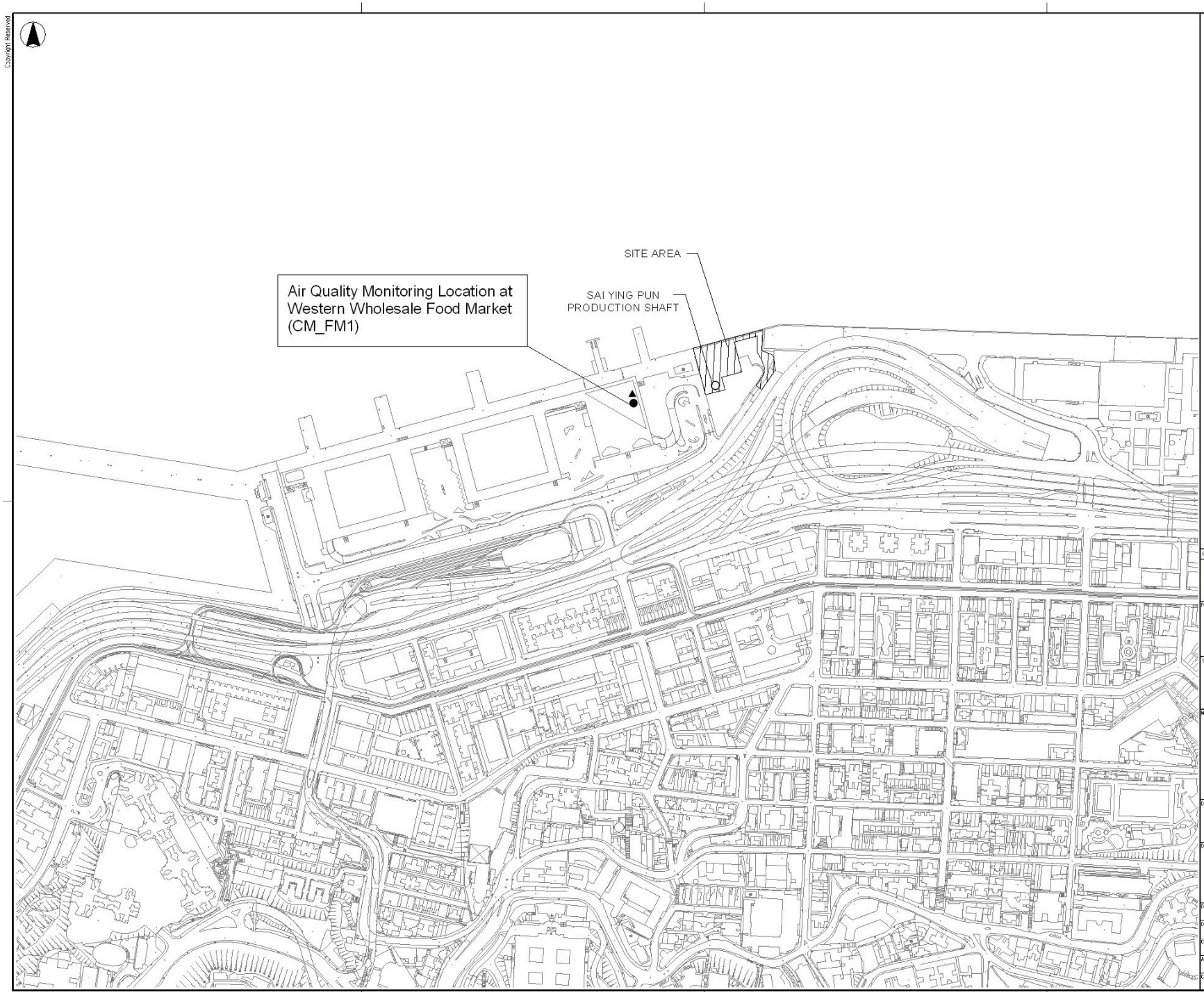

LEGEND
- ▲ AIR SENSITIVE RECEIVERS
- ● DUST MONITORING STATION

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

土木工程拓展署
DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
AECOM
Metcalf & Eddy – AECOM Joint Venture

Main Contractor
LEIGHTON 禮頓 LNS
Leighton - LNS Joint Venture

Designer
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Drawing Title
CONSTRUCTION DUST
MONITORING STATION
AT FUNG MAT ROAD SITE

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Drawn	Status	
Checked	MONTHLY EM&A REPORT	
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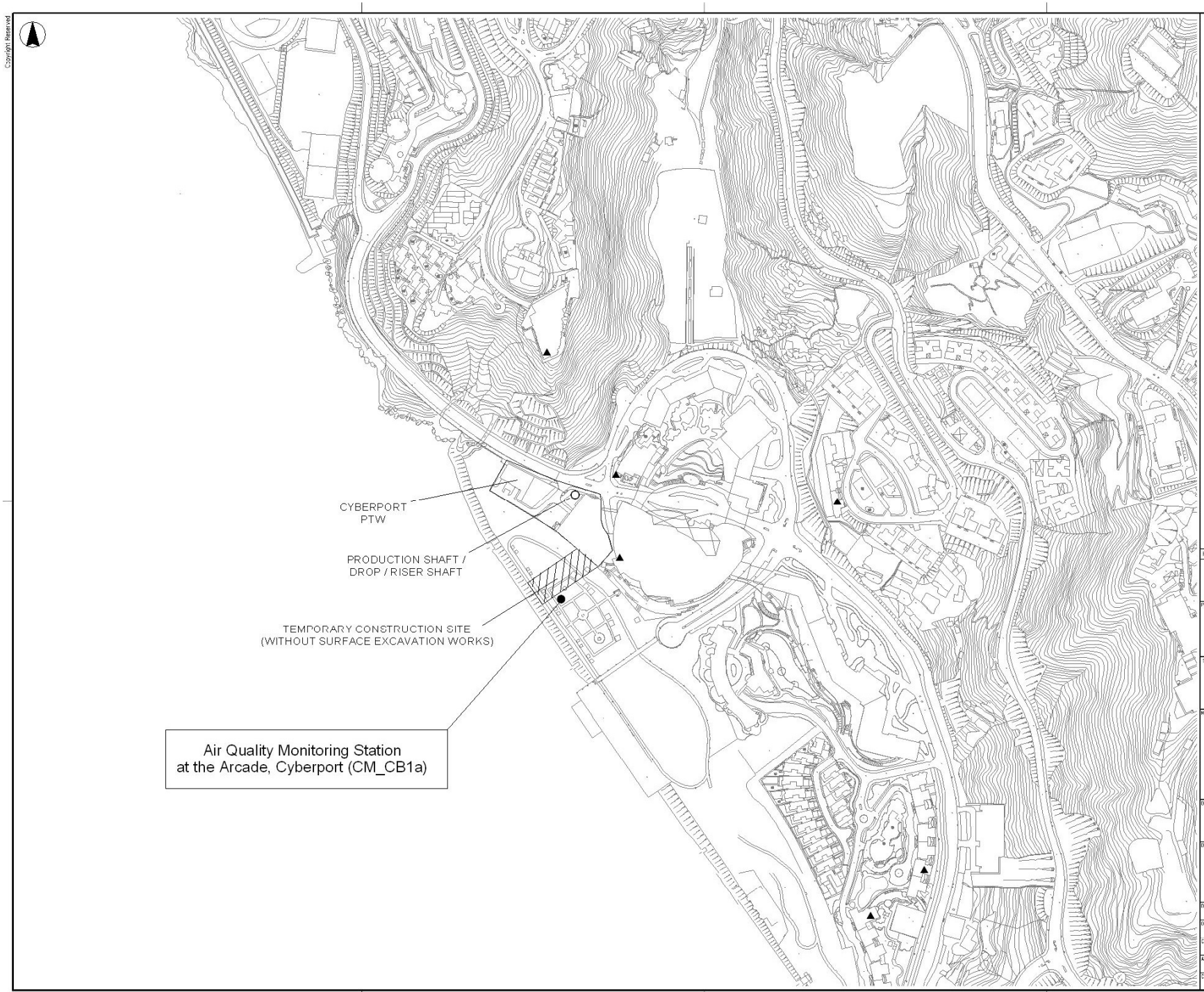

LEGEND
▲ AIR SENSITIVE RECEIVERS
● DUST MONITORING STATION
0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
AECOM
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Main Contractor
LEIGHTON 禮和 LNS
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Drawing title
CONSTRUCTION DUST
MONITORING STATION AT
CYBERPORT PTW

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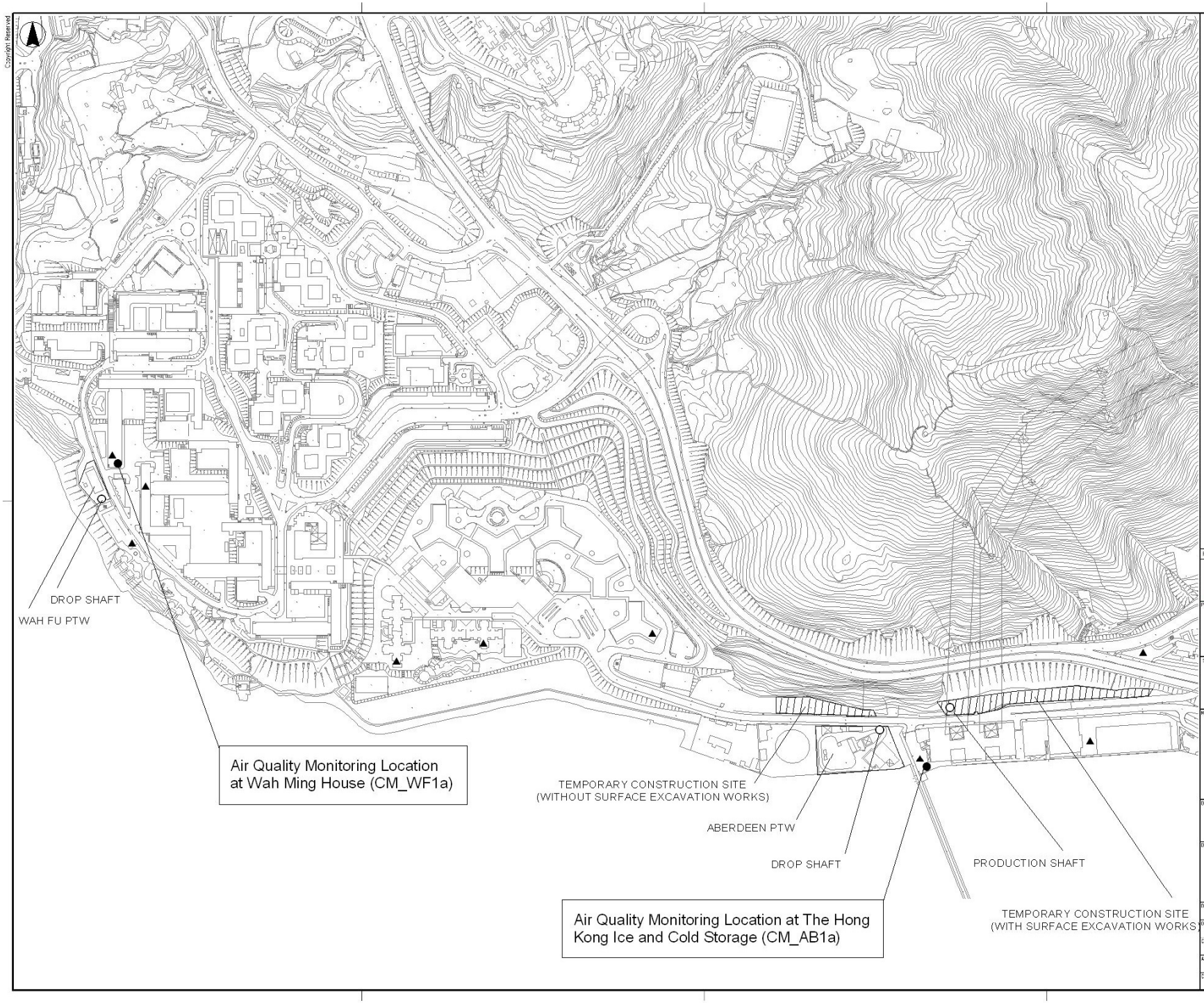

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
AECOM
Metcalf & Eddy - AECOM Joint Venture

Main Contractor
LEIGHTON 禮和 LNS
Leighton - LNS Joint Venture

Designer
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Drawing Title
CONSTRUCTION DUST MONITORING STATION AT WAH FU AND ABERDEEN PTW

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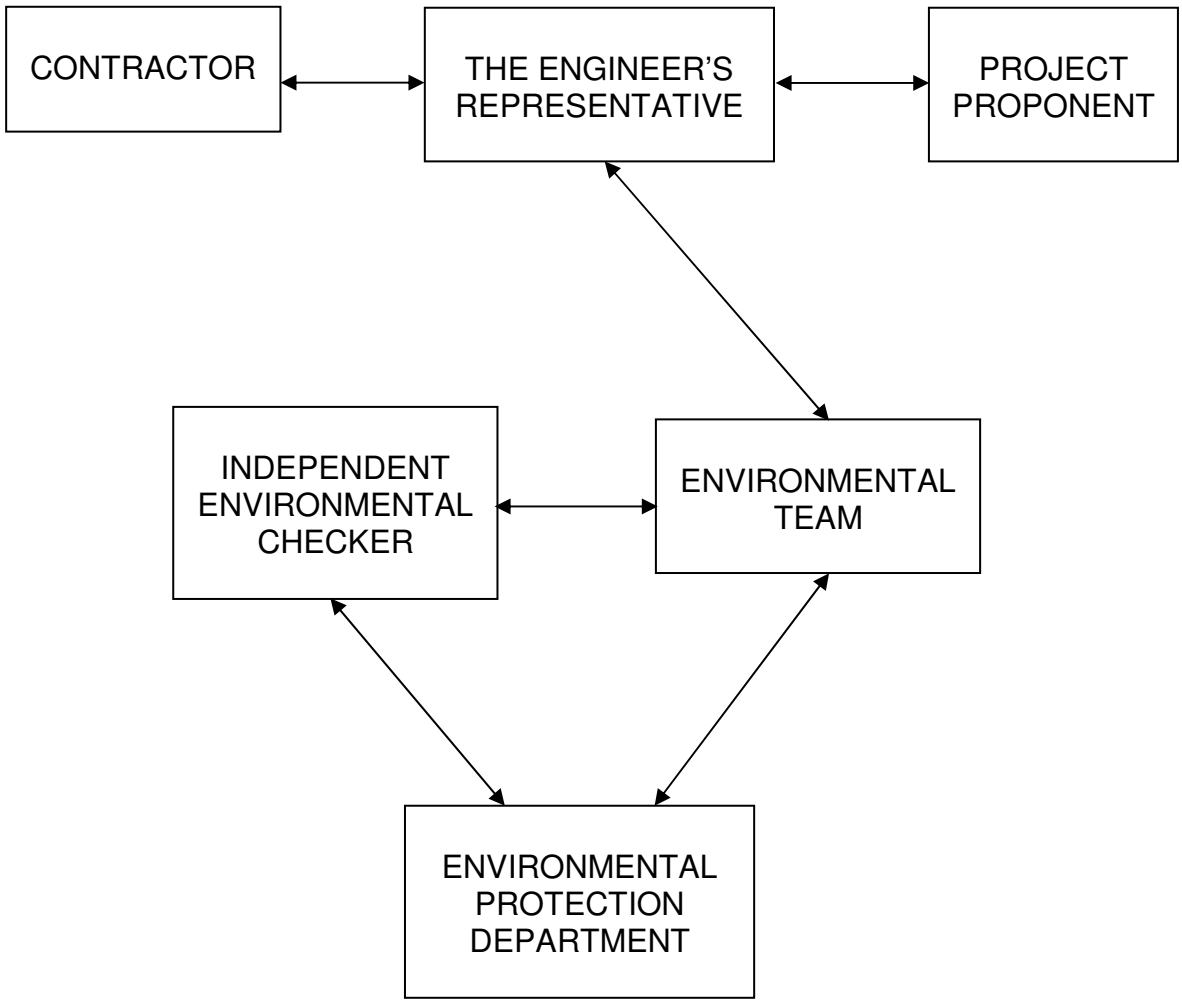
Authorised	Drawing No.: A-72
CAD ref.	Rev.: A

APPENDIX A

PROJECT ORGANISATION AND CONTACT DETAILS

Project Organisation



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↔ Line of communication

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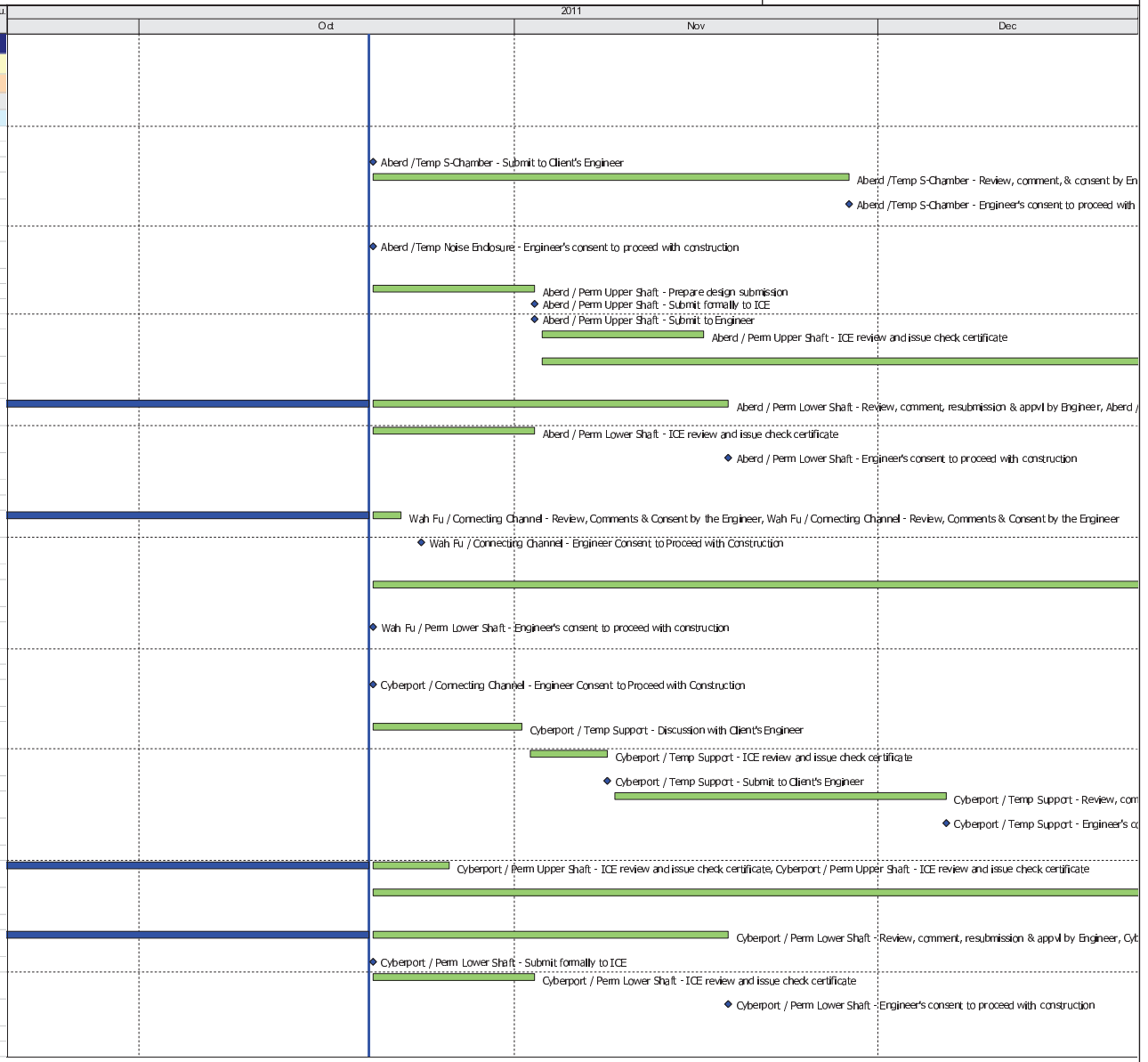
APPENDIX B

THE CONTRACTOR'S 3-MONTH CONSTRUCTION PROGRAMME

Data Date: 20-Oct-11
Print Date: 24-Oct-11 09:27

THREE MONTH ROLLING PROGRAMME (TM27)
STATUS as at 20 Oct 2011

Activity ID	Activity Name	Orig Dur	Rem Dur	Forecast Start (20-Oct-10)	Forecast Finish (20-Oct-10)	% Compl	Total Float
HATS2A - MONTHLY PROGRESS UPDATE (Oct 2011) - Rev.C5.1							
CONTRACT NO. DC/2007/24							
DESIGN WORKS							
DESIGN, SUBMISSION and APPROVAL							
DROP SHAFT - TEMPORARY and PERMANENT WORKS DESIGN							
ABERDEEN - Drop Shaft and Production Shaft							
Temporary Works - Scum Chamber and Connection Channel Excavation							
9656	Aberd /Temp S-Chamber - Submit to Client's Engineer	0	0		20-Oct-11	0%	385
9591	Aberd /Temp S-Chamber - Review, comment, & consent by Engineer	28	28	20-Oct-11	28-Nov-11	0%	385
9658	Aberd /Temp S-Chamber - Engineer's consent to proceed with construction	0	0		28-Nov-11	0%	385
Temporary Works - Shaft Noise Enclosure							
9760	Aberd /Temp Noise Enclosure - Engineer's consent to proceed with construction	0	0		20-Oct-11	0%	-66
Permanent Works - Upper Shaft, Scum Chamber & Connection Channel							
9667	Aberd / Perm Upper Shaft - Prepare design submission	10	10	20-Oct-11	02-Nov-11	0%	352
9770	Aberd / Perm Upper Shaft - Submit formally to ICE	0	0		02-Nov-11	0%	402
9772	Aberd / Perm Upper Shaft - Submit to Engineer	0	0		02-Nov-11	0%	352
9659	Aberd / Perm Upper Shaft - ICE review and issue check certificate	10	10	03-Nov-11	16-Nov-11	0%	402
9671	Aberd / Perm Upper Shaft - Review, comment, resubmission & appvl by Engineer	90	90	03-Nov-11	31-Jan-12	0%	524
Permanent Works - Lower Shaft							
9679	Aberd / Perm Lower Shaft - Review, comment, resubmission & appvl by Engineer	90	30	10-Sep-10 A	18-Nov-11	67%	553
9677	Aberd / Perm Lower Shaft - ICE review and issue check certificate	10	10	20-Oct-11	02-Nov-11	0%	383
9788	Aberd / Perm Lower Shaft - Engineer's consent to proceed with construction	0	0		18-Nov-11	0%	371
WAH FU - Dropt Shaft							
Temporary Works - Connection Channel Excavation							
9561	Wah Fu / Connecting Channel - Review, Comments & Consent by the Engineer	28	3	30-Oct-09 A	22-Oct-11	59%	677
9662	Wah Fu / Connecting Channel - Engineer Consent to Proceed with Construction	0	0		24-Oct-11	0%	458
Permanent Works - Upper Shaft, Scum Chamber and Connection Channel							
9695	Wah Fu / Perm Upper Shaft - Review, comment, resubmission & appvl by Engineer	90	90	20-Oct-11	17-Jan-12	0%	563
Permanent Works - Lower Shaft							
9830	Wah Fu / Perm Lower Shaft - Engineer's consent to proceed with construction	0	0		20-Oct-11	0%	358
CYBER PORT - Droft Shaft							
Temporary Works - Connection Channel Excavation							
9836	Cyberport / Connecting Channel - Engineer Consent to Proceed with Construction	0	0		20-Oct-11	0%	472
Temporary Works - Temporary Support for Rock Excavation							
9844	Cyberport / Temp Support - Discussion with Client's Engineer	9	9	20-Oct-11	01-Nov-11	0%	583
9715	Cyberport / Temp Support - ICE review and issue check certificate	5	5	02-Nov-11	08-Nov-11	0%	583
9852	Cyberport / Temp Support - Submit to Client's Engineer	0	0		08-Nov-11	0%	583
9717	Cyberport / Temp Support - Review, comment, & consent by Engineer	28	28	09-Nov-11	06-Dec-11	0%	863
9854	Cyberport / Temp Support - Engineer's consent to proceed with construction	0	0		06-Dec-11	0%	583
Permanent Works - Upper Shaft, Scum Chamber and Connection Channel							
9725	Cyberport / Perm Upper Shaft - ICE review and issue check certificate	10	5	13-Jul-10 A	26-Oct-11	50%	415
9727	Cyberport / Perm Upper Shaft - Review, comment, resubmission & appvl by Engineer	90	90	20-Oct-11	17-Jan-12	0%	534
Permanent Works - Lower Shaft							
9737	Cyberport / Perm Lower Shaft - Review, comment, resubmission & appvl by Engineer	90	30	10-Sep-10 A	18-Nov-11	67%	553
9886	Cyberport / Perm Lower Shaft - Submit formally to ICE	0	0		20-Oct-11	0%	383
9735	Cyberport / Perm Lower Shaft - ICE review and issue check certificate	10	10	20-Oct-11	02-Nov-11	0%	383
9890	Cyberport / Perm Lower Shaft - Engineer's consent to proceed with construction	0	0		18-Nov-11	0%	371
SANDY BAY - Dropt Shaft and Production Shaft							
Permanent Works - Upper Shaft, Scum Chamber & Connection Channel							



- Current Milestone
- Baseline Milestone
- Actual Work
- Critical Remaining Work
- Remaining Work
- Baseline WPOD

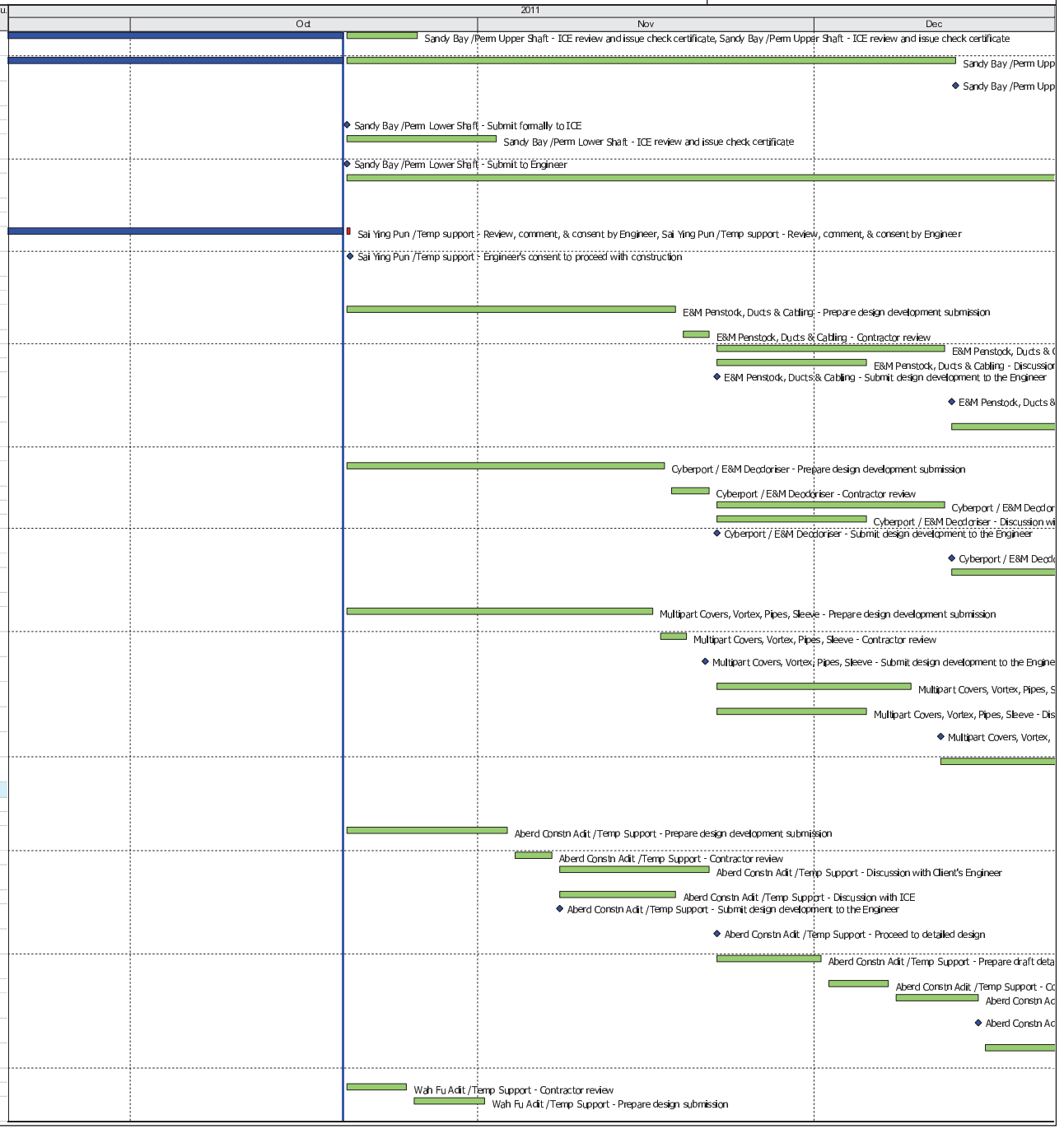
Contract No DC/2007/24
HATS - Harbour Area Treatment Scheme (Stage 2A)
Leighton - LNS Joint Venture

LEIGHTON 禮頓 | LNS 禮頓 - 利安聯營 Harbour Area Treatment Scheme

Date	Revision	Checked	Approved
20-Sep-11	Three Months Rolling Prog (TM26)	AT	AGA
20-Oct-11	Three Months Rolling Prog (TM27)	AT	AGA

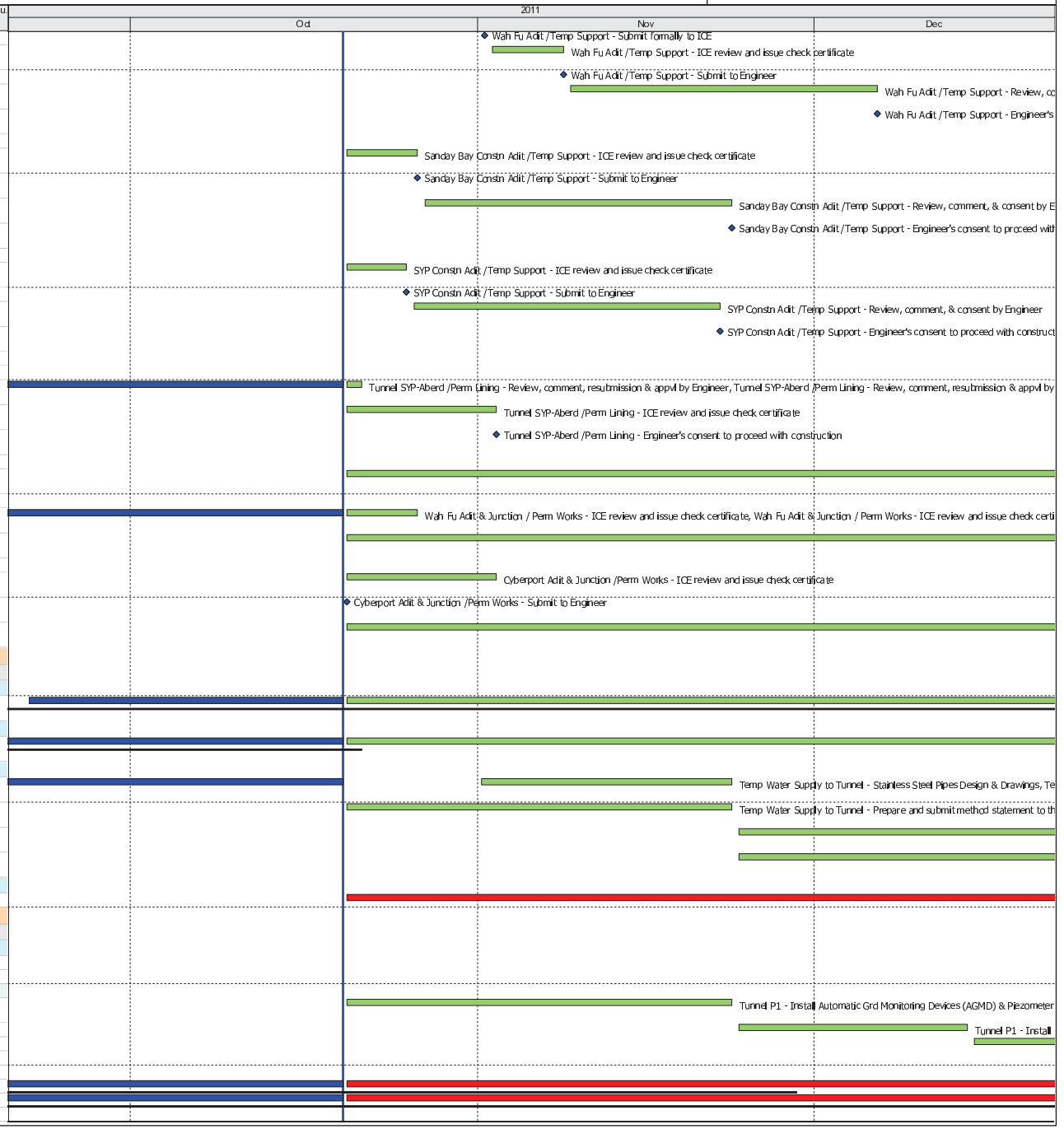
THREE MONTH ROLLING PROGRAMME (TM27)
STATUS as at 20 Oct 2011

Activity ID	Activity Name	Orig Dur	Rem Dur	Forecast Start (20-Oct-10)	Forecast Finish (20-Oct-10)	% Compl	Total Float
9761	Sandy Bay /Perm Upper Shaft - ICE review and issue check certificate	10	5	13-Jul-10 A	26-Oct-11	50%	370
9763	Sandy Bay /Perm Upper Shaft - Review, comment, resubmission & appvl by Engineer	90	55	13-Jul-10 A	13-Dec-11	39%	500
9942	Sandy Bay /Perm Upper Shaft - Engineer's consent to proceed with construction	0	0		13-Dec-11	0%	336
	Permanent Works - Lower Shaft						
9956	Sandy Bay /Perm Lower Shaft - Submit formally to ICE	0	0		20-Oct-11	0%	191
9771	Sandy Bay /Perm Lower Shaft - ICE review and issue check certificate	10	10	20-Oct-11	02-Nov-11	0%	191
9958	Sandy Bay /Perm Lower Shaft - Submit to Engineer	0	0		20-Oct-11	0%	137
9773	Sandy Bay /Perm Lower Shaft - Review, comment, resubmission & appvl by Engineer	90	90	20-Oct-11	17-Jan-12	0%	206
	SAI YING PUN - Production Shaft						
	Temporary Works - Temporary Support for Rock Excavation						
9781	Sai Ying Pun /Temp support - Review, comment, & consent by Engineer	28	1	02-Nov-09 A	20-Oct-11	96%	-107
9974	Sai Ying Pun /Temp support - Engineer's consent to proceed with construction	0	0		20-Oct-11	0%	-75
	E&M - Electrical and Mechanical Works						
	Permanent Works - E&M Penstock, Ducts, Cabling & Control						
9716	E&M Penstock, Ducts & Cabling - Prepare design development submission	22	22	20-Oct-11	18-Nov-11	0%	74
9791	E&M Penstock, Ducts & Cabling - Contractor review	2	2	19-Nov-11	21-Nov-11	0%	87
9996	E&M Penstock, Ducts & Cabling - Discussion with Engineer	15	15	22-Nov-11	12-Dec-11	0%	74
9994	E&M Penstock, Ducts & Cabling - Discussion with ICE	10	10	22-Nov-11	05-Dec-11	0%	79
9992	E&M Penstock, Ducts & Cabling - Submit design development to the Engineer	0	0	22-Nov-11		0%	74
9998	E&M Penstock, Ducts & Cabling - Proceed to detailed design	0	0	13-Dec-11		0%	74
9793	E&M Penstock, Ducts & Cabling - Prepare draft detailed design submission	10	10	13-Dec-11	28-Dec-11	0%	74
	Permanent Works - E&M Interim Deodoriser @ Cyberport (By JEC)						
9720	Cyberport / E&M Deodoriser - Prepare design development submission	21	21	20-Oct-11	17-Nov-11	0%	339
9801	Cyberport / E&M Deodoriser - Contractor review	3	3	18-Nov-11	21-Nov-11	0%	400
10012	Cyberport / E&M Deodoriser - Discussion with Engineer	15	15	22-Nov-11	12-Dec-11	0%	339
10010	Cyberport / E&M Deodoriser - Discussion with ICE	10	10	22-Nov-11	05-Dec-11	0%	344
10008	Cyberport / E&M Deodoriser - Submit design development to the Engineer	0	0	22-Nov-11		0%	339
10014	Cyberport / E&M Deodoriser - Proceed to detailed design	0	0	13-Dec-11		0%	339
9803	Cyberport / E&M Deodoriser - Prepare draft detailed design submission	10	10	13-Dec-11	28-Dec-11	0%	339
	Permanent Works - Misc Multipart Covers, Vortex, Reserve Pipes, Sleeves						
9722	Multipart Covers, Vortex, Pipes, Sleeve - Prepare design development submission	20	20	20-Oct-11	16-Nov-11	0%	295
9811	Multipart Covers, Vortex, Pipes, Sleeve - Contractor review	3	3	17-Nov-11	19-Nov-11	0%	352
10024	Multipart Covers, Vortex, Pipes, Sleeve - Submit design development to the Engineer	0	0	21-Nov-11		0%	296
10028	Multipart Covers, Vortex, Pipes, Sleeve - Discussion with Engineer	14	14	22-Nov-11	09-Dec-11	0%	296
10026	Multipart Covers, Vortex, Pipes, Sleeve - Discussion with ICE	10	10	22-Nov-11	05-Dec-11	0%	300
10030	Multipart Covers, Vortex, Pipes, Sleeve - Proceed to detailed design	0	0	12-Dec-11		0%	296
9813	Multipart Covers, Vortex, Pipes, Sleeve - Prepare draft detailed design submission	10	10	12-Dec-11	23-Dec-11	0%	296
	MAIN TUNNELS						
	Temporary Works - Tunnel M, N, P1 & P2 (Sai Ying Pun to Aberdeen)						
	Temporary Support - Aberdeen Construction Adit						
9602	Aberd Constn Adit /Temp Support - Prepare design development submission	11	11	20-Oct-11	03-Nov-11	0%	311
9533	Aberd Constn Adit /Temp Support - Contractor review	3	3	04-Nov-11	07-Nov-11	0%	371
10060	Aberd Constn Adit /Temp Support - Discussion with Client's Engineer	10	10	08-Nov-11	21-Nov-11	0%	313
10058	Aberd Constn Adit /Temp Support - Discussion with ICE	9	9	08-Nov-11	18-Nov-11	0%	314
9604	Aberd Constn Adit /Temp Support - Submit design development to the Engineer	0	0	08-Nov-11		0%	313
10062	Aberd Constn Adit /Temp Support - Proceed to detailed design	0	0	22-Nov-11		0%	313
9821	Aberd Constn Adit /Temp Support - Prepare draft detailed design submission	8	8	22-Nov-11	01-Dec-11	0%	313
10064	Aberd Constn Adit /Temp Support - Contractor review	5	5	02-Dec-11	07-Dec-11	0%	370
9829	Aberd Constn Adit /Temp Support - Prepare design submission	6	6	08-Dec-11	15-Dec-11	0%	313
10066	Aberd Constn Adit /Temp Support - Submit formally to ICE	0	0		15-Dec-11	0%	313
9831	Aberd Constn Adit /Temp Support - ICE review and issue check certificate	5	5	16-Dec-11	22-Dec-11	0%	313
	Temporary Works - Wah Fu Adit and Shaft Junction						
10078	Wah Fu Adit /Temp Support - Contractor review	5	5	20-Oct-11	25-Oct-11	0%	690
9837	Wah Fu Adit /Temp Support - Prepare design submission	5	5	26-Oct-11	01-Nov-11	0%	583



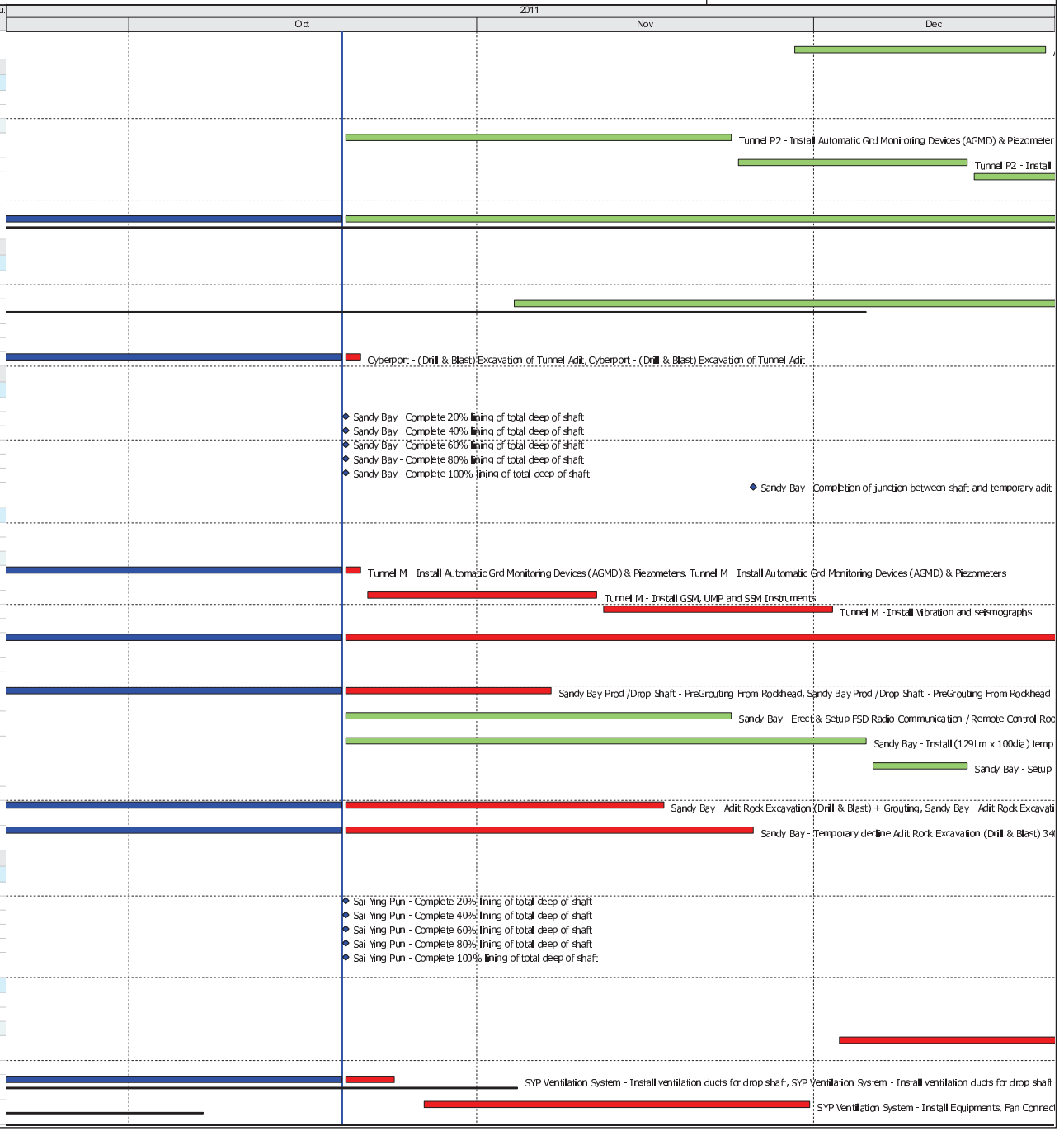
THREE MONTH ROLLING PROGRAMME (TM27)
STATUS as at 20 Oct 2011

Activity ID	Activity Name	Orig Dur	Rem Dur	Forecast Start (20-Oct-10)	Forecast Finish (20-Oct-10)	% Compl	Total Float
10080	Wah Fu Adit /Temp Support - Submit formally to ICE	0	0		01-Nov-11	0%	583
9839	Wah Fu Adit /Temp Support - ICE review and issue check certificate	5	5	02-Nov-11	08-Nov-11	0%	583
10082	Wah Fu Adit /Temp Support - Submit to Engineer	0	0		08-Nov-11	0%	583
9841	Wah Fu Adit /Temp Support - Review, comment, & consent by Engineer	28	28	09-Nov-11	06-Dec-11	0%	863
10084	Wah Fu Adit /Temp Support - Engineer's consent to proceed with construction	0	0		06-Dec-11	0%	583
	Temporary Support - Sandy Bay Construction Adit						
9855	Sandy Bay Constn Adit /Temp Support - ICE review and issue check certificate	5	5	20-Oct-11	26-Oct-11	0%	154
10114	Sandy Bay Constn Adit /Temp Support - Submit to Engineer	0	0		26-Oct-11	0%	154
9857	Sandy Bay Constn Adit /Temp Support - Review, comment, & consent by Engineer	28	28	27-Oct-11	23-Nov-11	0%	230
10116	Sandy Bay Constn Adit /Temp Support - Engineer's consent to proceed with construction	0	0		23-Nov-11	0%	153
	Temporary Support - Sai Ying Pun Construction Adit						
9863	SYP Constn Adit /Temp Support - ICE review and issue check certificate	4	4	20-Oct-11	25-Oct-11	0%	82
10132	SYP Constn Adit /Temp Support - Submit to Engineer	0	0		25-Oct-11	0%	82
9865	SYP Constn Adit /Temp Support - Review, comment, & consent by Engineer	28	28	26-Oct-11	22-Nov-11	0%	122
10134	SYP Constn Adit /Temp Support - Engineer's consent to proceed with construction	0	0		22-Nov-11	0%	82
	Permanent Works - Tunnel M, N, P1 & P2 (Sai Ying Pun to Aberdeen)						
	Tunnel Permanent Works - Permanent Lining Supports						
9875	Tunnel SYP-Aberd /Perm Lining - Review, comment, resubmission & appvl by Engineer	90	2	02-Jul-10 A	21-Oct-11	98%	371
9873	Tunnel SYP-Aberd /Perm Lining - ICE review and issue check certificate	10	10	20-Oct-11	02-Nov-11	0%	243
10152	Tunnel SYP-Aberd /Perm Lining - Engineer's consent to proceed with construction	0	0		02-Nov-11	0%	243
	Tunnel Permanent Works - 1st Pass Lining (Sai Ying Pun to Wah Fu)						
9885	Tunnels SYP-Wah Fu /1st Pass Lining - Review, comment, resubmission & appvl by Engineer	90	90	20-Oct-11	17-Jan-12	0%	175
	Tunnel Permanent Works - Adit and Shaft Junction @ Wah Fu						
9893	Wah Fu Adit & Junction / Perm Works - ICE review and issue check certificate	10	5	13-Jul-10 A	26-Oct-11	50%	272
9895	Wah Fu Adit & Junction / Perm Works - Review, comment, resubmission & appvl by Engr	90	90	20-Oct-11	17-Jan-12	0%	317
	Tunnel Permanent Works - Adit and Shaft Junction @ Cyberport						
9903	Cyberport Adit & Junction /Perm Works - ICE review and issue check certificate	10	10	20-Oct-11	02-Nov-11	0%	243
10204	Cyberport Adit & Junction /Perm Works - Submit to Engineer	0	0		20-Oct-11	0%	191
9905	Cyberport Adit & Junction /Perm Works - Review, comment, resubmission & appvl by Engr	90	90	20-Oct-11	17-Jan-12	0%	283
	PROCUREMENT						
	Procurement; Manufacturing; Deliveries						
	Stainless Steel Resrve Pipes (200 dia)						
1872	200dia SS Pipes - Stainless Steel Pipes Fabrication & Delivery to site	180	160	22-Sep-11 A	27-Mar-12	11%	134
	Temporary Radio Communication, CCTV Camera & Flood Control System (by FSD)						
1888	Radio Comm, CCTV Camera - Procurements, Fabrication & Delivery to s...	180	160	12-Aug-11 A	27-Mar-12	11%	168
	Temporary Water Supply (By FSD)						
1892	Temp Water Supply to Tunnel - Stainless Steel Pipes Design & Drawings	45	20	01-Aug-11 A	23-Nov-11	56%	81
1922	Temp Water Supply to Tunnel - Prepare and submit method statement to the Engineer	30	30	20-Oct-11	23-Nov-11	0%	81
1936	Temp Water Supply to Tunnel - Stainless Steel Pipes Design & Drawings Approval	30	30	24-Nov-11	09-Jan-12	0%	69
1875	Temp Water Supply to Tunnel - Review, comments & consent by the Engineer	30	30	24-Nov-11	09-Jan-12	0%	69
	Shaft Lining PC Pipes						
1854	PC Drop Pipes - Procure Sub-contractor	60	60	20-Oct-11	30-Dec-11	0%	-108
	CONSTRUCTION						
	ABERDEEN						
	Construction Works						
	Site Establishment						
	Geotechnical Monitoring						
	Tunnel P1						
1444	Tunnel P1 - Install Automatic Grd Monitoring Devices (AGMD) & Piezometers	30	30	20-Oct-11	23-Nov-11	0%	61
1393	Tunnel P1 - Install GSM, UMP and SSM Instruments	18	18	24-Nov-11	14-Dec-11	0%	61
1437	Tunnel P1 - Install Vibration and seismographs	12	12	15-Dec-11	30-Dec-11	0%	61
	Aberdeen Temporary Works - Drop Shaft						
	Aberdeen - Excavation of rock to tunnel level						
1023	Aber Prod /Drop Shaft - Pre Grouting From Rockhead	180	61	18-Jun-11 A	31-Dec-11	66%	-32
1712	Aber Prod /Drop Shaft - Rock Excavation 65m (by D&B)	225	90	27-Jun-11 A	11-Feb-12	60%	-32
	Aberdeen Permanent Works - Production / Dropshaft						



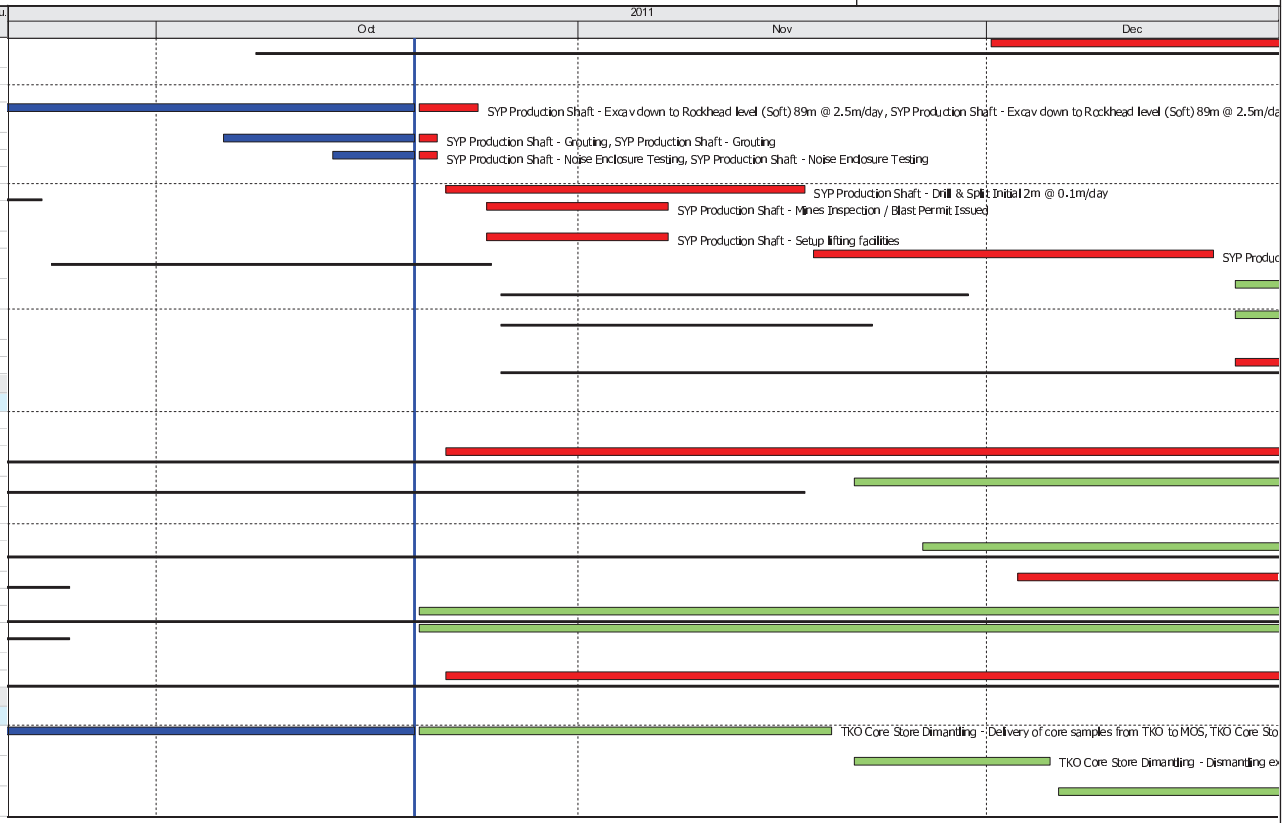
THREE MONTH ROLLING PROGRAMME (TM27)
STATUS as at 20 Oct 2011

Activity ID	Activity Name	Orig Dur	Rem Dur	Forecast Start (20-Oct-10)	Forecast Finish (20-Oct-10)	% Compl	Total Float
	Scum Chamber						
1421	Aberd Scam Chamber - Slurry Wall	20	20	29-Nov-11	21-Dec-11	0%	456
	WAH FU						
	Construction Works						
	Site Establishment						
	Geotechnical Monitoring						
	Tunnel P2						
1452	Tunnel P2 - Install Automatic Grd Monitoring Devices (AGMD) & Piezometers	30	30	20-Oct-11	23-Nov-11	0%	249
1441	Tunnel P2 - Install GSM, UMP and SSM Instruments	18	18	24-Nov-11	14-Dec-11	0%	249
1443	Tunnel P2 - Install Vibration and seismographs	12	12	15-Dec-11	30-Dec-11	0%	249
	Wah Fu Temporary Works - Dropshaft						
	Wah Fu Dropshaft - Rock Excavation						
1618	Wah Fu Dropshaft - Rock excavation to tunnel level (D&B)	245	226	01-Sep-11 A	28-Jul-12	8%	147
	CYBERPORT						
	Construction Works						
	Site Establishment						
	Temporary Ventilation System						
1395	Cyberport Ventilation Syst - Install ventilation ducts for Tunnel N	90	90	04-Nov-11	27-Feb-12	0%	202
	Cyberport Temporary Works - Dropshaft						
	Adit Excavation						
1756	Cyberport - (Drill & Blast) Excavation of Tunnel Adit	91	2	16-Jul-11 A	21-Oct-11	98%	-112
	SANDY BAY						
	IPS Interim Payment Schedule Milestones						
	Sandy Bay PTW - Production Shaft, Except Excavation						
MS7.1.6.06	Sandy Bay - Complete 20% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS7.1.6.07	Sandy Bay - Complete 40% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS7.1.6.08	Sandy Bay - Complete 60% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS7.1.6.09	Sandy Bay - Complete 80% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS7.1.6.10	Sandy Bay - Complete 100% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS7.1.6.11	Sandy Bay - Completion of junction between shaft and temporary adit	0	0		25-Nov-11	0%	874
	Construction Works						
	Site Establishment						
	Geotechnical Monitoring						
	Tunnel M						
1456	Tunnel M - Install Automatic Grd Monitoring Devices (AGMD) & Piezometers	24	2	06-May-10 A	21-Oct-11	92%	-74
1449	Tunnel M - Install GSM, UMP and SSM Instruments	18	18	22-Oct-11	11-Nov-11	0%	-74
1451	Tunnel M - Install Vibration and seismographs	18	18	12-Nov-11	02-Dec-11	0%	-74
	Temporary Ventilation Fan						
1403	Sandy Bay Ventilation Syst - Install ventilation ducts for Tunnel M (L=1987m)	120	110	08-Sep-11 A	06-Mar-12*	8%	-8
	Sandy Bay Temporary Works - Production / Dropshaft						
	Shaft - Excavation of Rock to Tunnel Level Stage 1						
1037	Sandy Bay Prod /Drop Shaft - PreGrouting From Rockhead	60	16	10-Dec-10 A	07-Nov-11	73%	-60
1665	Sandy Bay - Erect & Setup FSD Radio Communication / Remote Control Room & Test	30	30	20-Oct-11	23-Nov-11	0%	285
1705	Sandy Bay - Install (129Lm x 100dia) temp water supply & support @ vertical shaft	40	40	20-Oct-11	05-Dec-11	0%	264
1707	Sandy Bay - Setup 20m3 Reservoir reserve tank adj drop shaft, connect & test	8	8	06-Dec-11	14-Dec-11	0%	264
	Excavation of Tunnel Adit						
1110	Sandy Bay - Adit Rock Excavation (Drill & Blast) + Grouting	49	25	04-May-11 A	17-Nov-11	49%	-60
1112	Sandy Bay - Temporary decline Adit Rock Excavation (Drill & Blast) 340m	52	32	23-May-11 A	25-Nov-11	38%	-60
	SAI YING PUN						
	IPS Interim Payment Schedule Milestones						
	Sai Ying Pun - Production Shaft, Except Excavation						
MS8.1.6.06	Sai Ying Pun - Complete 20% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS8.1.6.07	Sai Ying Pun - Complete 40% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS8.1.6.08	Sai Ying Pun - Complete 60% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS8.1.6.09	Sai Ying Pun - Complete 80% lining of total deep of shaft	0	0		20-Oct-11	0%	911
MS8.1.6.10	Sai Ying Pun - Complete 100% lining of total deep of shaft	0	0		20-Oct-11	0%	911
	Construction Works						
	Site Establishment						
	Geotechnical Monitoring						
	Tunnel M						
1468	Tunnel M - Install Automatic Grd Monitoring Devices (AGMD) & Piezometers	24	24	03-Dec-11	03-Jan-12	0%	-74
	Temporary Ventilation Fan						
1411	SYP Ventilation System - Install ventilation ducts for drop shaft	45	4	12-Sep-11 A	24-Oct-11*	91%	-65
1413	SYP Ventilation System - Install Equipments, Fan Connection and T&C (Tunnel)	30	30	27-Oct-11	30-Nov-11	0%	-90



THREE MONTH ROLLING PROGRAMME (TM27)
STATUS as at 20 Oct 2011

Activity ID	Activity Name	Orig Dur	Rem Dur	Forecast Start (20-Oct-10)	Forecast Finish (20-Oct-10)	% Compl	Total Float
1439	SYP Ventilation System - Install ventilation ducts for Tunnel M (L=1710m)	120	120	01-Dec-11	05-May-12	0%	-90
	Sai Ying Pun Temporary Works - Production Shaft						
	Shaft - Soft Excavation						
1252	SYP Production Shaft - Excav down to Rockhead level (Soft) 89m @ 2.5m/day	83	4	02-May-11 A	24-Oct-11	95%	-90
1298	SYP Production Shaft - Grouting	15	2	06-Oct-11 A	21-Oct-11	87%	-108
1049	SYP Production Shaft - Noise Enclosure Testing	10	2	14-Oct-11 A	21-Oct-11	80%	-95
	Shaft - Excavation of Rock to Tunnel Level						
1045	SYP Production Shaft - Drill & Split Initial 2m @ 0.1m/day	23	23	22-Oct-11	17-Nov-11	0%	-90
1384	SYP Production Shaft - Mines Inspection / Blast Permit Issued	12	12	25-Oct-11	07-Nov-11	0%	-81
1031	SYP Production Shaft - Setup lifting facilities	12	12	25-Oct-11	07-Nov-11	0%	-81
1432	SYP Production Shaft - Rock Excav (Drill & Blast) 32m @ 1.25m/day and Shotcrete Liner	26	26	18-Nov-11	17-Dec-11	0%	-90
1687	SYP - Erect & Setup FSD Radio Communication / Remote Control Room & Test	30	30	19-Dec-11	01-Feb-12	0%	183
1709	SYP - Install (129Lm x 100dia) temp water supply & support @ vertical shaft	24	24	19-Dec-11	18-Jan-12	0%	165
	Excavation of Tunnel Adit						
1114	Sai Ying Pun - Adit Rock Excavation (Drill & Blast)	63	63	19-Dec-11	10-Mar-12	0%	-90
	TUNNEL WORKS						
	Construction Works						
	Tunnel P1 & P2						
	Tunnel P2 - Excav (D&B) From Cyberport to past Wah Fu CH 450 Breakthrough, L=2,042m						
1340	Tunnel P2 - Excav (D&B) From Cyberport Breakthrough to past Wah Fu Ch 0500	392	392	22-Oct-11	23-Feb-13	0%	-85
1341	Tunnel P2 - 1st Pass Lining (925m), bet Ch P2525 to P1600 (Provisional)	53	53	21-Nov-11	31-Jan-12	0%	229
	Tunnel N, M and P2						
	Tunnel M (Drill & Blast) - From Sandy Bay to SYP Breakthrough, L=2,200m						
1460	Tunnel M - Excavation (D&B) from junction of temporary inclined Adit back to shaft	143	143	26-Nov-11	16-Apr-12	0%	29
1348	Tunnel M - Excavation (D&B) 1st 50m 1 Blast	20	20	03-Dec-11	28-Dec-11	0%	-66
	Tunnel N (Drill & Blast) - From Sandy Bay to Cyberport, L=779m						
1362	Tunnel N - Excavation (D&B) to Cyberport	133	133	20-Oct-11	02-Apr-12	0%	202
1363	Tunnel N - 1st Pass Lining (678m), bet Ch N1178 to N500m Provisional	72	72	20-Oct-11	14-Jan-12	0%	263
	Tunnel N (Drill & Blast) - From Cyberport to Sandy Bay, L=400m						
1459	Tunnel N - Excavation (D&B) to Sandy Bay	180	180	22-Oct-11	18-Apr-12	0%	-112
	MA ON SHAN - CORE STORE						
	Dismantling of existing Core Store at TKO						
10272	TKO Core Store Dimantling - Delivery of core samples from TKO to MOS	27	27	20-Jul-11 A	19-Nov-11	0%	588
10274	TKO Core Store Dimantling - Dismantling existing core store in phase A	13	13	21-Nov-11	05-Dec-11	0%	588
10276	TKO Core Store Dimantling - Dismantling existing core store in phase B	17	17	06-Dec-11	24-Dec-11	0%	588



APPENDIX C

EVENT AND ACTION PLAN

Event/ Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level being exceeded	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.	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.	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.	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals.
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	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.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Event/ Action Plan for Construction 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 actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	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.
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.
2. Exceedance for two or more consecutive samples	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.	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.	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.	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.

Event and Action Plan for Landscape and Visual Impact - Construction Phase

Action Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Non-conformity on one occasion	1. Identify source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial action until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement
Repeated Non-conformity	1. Identify source 2. Inform the IEC and the ER 3. Increase monitoring (site audit) frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring (site audit)	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement

APPENDIX D

MITIGATION MEASURES CHECKLIST

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
3.64	2.55	Air Quality Control	• Watering twice per day within the worksites at North Point PTW, Wan Chai East PTW, Fung Mat Road Site, Sandy Bay PTW, Wah Fu PTW, Aberdeen PTW and SCS worksite at Aberdeen; • Watering 4 times per day within worksites at the Central PTW; • Barging points, if any, should be continuous watering throughout the whole unloading process; and • Watering 8 times per day within worksites at the SCS works area at Wan Chai East and North Point, SCISTW and the Disinfection Facilities of SCISTW.	During Construction	√	
3.74	2.54	Air Quality Control	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts. • Skip hoist for material transport should be totally enclosed by impervious sheeting; • 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;	During Construction	√	
3.76	2.58	Air Quality Control	Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimize odour escape • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly	During Operation	N/A	
	2.57	Air Quality Control	Fully covered design og the odour sources of the upgraded PTWs and SCISTW and the installation of deodorization system at the exhaust of ventilation system would adequately control potential odour impact.	During Operation	N/A	
3.77	2.59	Air Quality Control	To avoid excessive extraction of the foul air from the drop shafts of the sedimentation tanks and also from the effluent flume structure of SCISTW to deodorization system, the extraction vent(s) of the deodorization system should be located away from the top openings of the drop shafts.	During Design Stage	N/A	
3.80	2.6	Air Quality Control	Commissioning tests for all deodorization system should be included in the Design and Construction Contract Document.	After completion of construction	N/A	

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
4.56-4.61	3.21-3.24	Noise Control	Use of quiet PME, movable barriers and acoustic mats	During Construction	√	
4.67	3.25	Noise Control	Good Site Practice: • Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program. • Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program. • Mobile plant, if any, shall be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum. • Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	During Construction	√	
4.63	3.28	Noise Control	Use of acoustic louvers for air supply fans/extraction fans of transfer pumping stations and ventilation fans of deodourization unit at Sandy Bay PTW, Cyberport PTW and Wah Fu PTW	During Operation and Design Stage	N/A	
4.64		Noise Control	The maximum allowable sound power level (SWL) of each new transformer at Sandy Bay PTW shall be limited to 89 dB(A).	During Operation and Design Stage	N/A	
6.349 - 6.375		Water Quality Control	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.	During Construction	√	
6.376		Water Quality Control	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.	During Construction	√	
6.377		Water Quality Control	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) Regulation should be observed and complied with for control of chemical wastes.	During Construction	√	
6.378		Water Quality Control	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	During Construction	√	

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
6.379		Water Quality Control	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: • 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.	During Construction	√	
6.380		Water Quality Control	Construction Works in Close Proximity of Storm Drains or Seafront 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. • 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.	During Construction	√	
6.381		Water Quality Control	Temporary Sewage Bypass It is recommended that the temporary sewage bypass required for (i) the modification to the existing pumping station at SCISTW and (ii) the interconnection between the existing main pumping station and the new pumping station on Stonecutters Island, if needed, should be scheduled at the same time as far as practicable in order to minimise the temporary discharge duration. It is also recommended that all the modification and interconnection to the existing facilities (including the modification to the existing NWKPS) should be programmed to avoid temporary sewage bypass in wet or bathing season (March to October) to minimize the potential impacts. Relevant government departments including EPD and LCSD should be informed of the planned sewage bypass prior to any discharge. During the sewage bypass period, water quality monitoring should be carried out at the water sensitive receivers to quantify the water quality impacts and to determine when the baseline water quality conditions are restored. Also, a framework of the response procedures has been formulated to minimize the impact of temporary	During Construction	✓	
6.344		Water Quality Control	Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimize the chance of emergency discharge.	During Operation and Design Stage	N/A	
6.344		Water Quality Control	The response procedure and monitoring requirements for emergency discharge as stated in EM&A Manual should be followed.	During Operation	N/A	
6.345		Water Quality Control	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	During Operation and Design Stage	N/A	

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
6.346		Water Quality Control	In case of total power outage of the dechlorination plant, the uninterruptible power supply (UPS) system to be provided would switch the power supply of the sodium bisulphite dosing pump to a backup battery almost instantaneously, allowing continuous dosage of sodium bisulphite for at least half an hour so that sufficient time can be provided for shutting down the chlorination plant to avoid the possibility of discharge of chlorinated effluent.	During Operation and Design Stage	N/A	
6.347		Water Quality Control	The model predicted that if Stage 2B is not implemented for HATS in 2021 as scheduled, the nutrient contents (both P and N) in the marine water would ultimately increase to exceed the baseline Stage 1 level when the HATS flow is reaching its design capacity of 2.45M m3/day. It is recommended that the future review study for Stage 2B should review the validity of the model predictions provided in this EIA and confirm the need of enhanced nutrient removal for HATS after 2021.	During Operation and Design Stage	N/A	
6.348		Water Quality Control	It should be noted that the mixing zone for TIN predicted for Stage 2B was large with an area of about 30 km2 and the area of exceedance would encroach on the nearby water sensitive receivers (e.g. Ma Wan Fish Culture Zone). This is due to the elevated oxidized nitrogen assumed for the proposed nitrification process at Stage 2B as well as the increased HATS effluent flow assumed for Stage 2B. It is recommended that these water quality issues should be further investigated / assessed under the future EIA for Stage 2B. Further mitigation measures / alternative treatment designs should also be considered under the future EIA for Stage 2B to mitigate / minimize the potential TIN exceedances.	Investigation Stage of Stage 2B	N/A	
9.107	7.8	Waste Management	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.	During Construction	√	
9.109	7.10	Waste Management Implication	All waste materials should be segregated into categories covering: • 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.	During Construction	√	
9.113	7.15	Waste Management Implication	Recommendations to achieve waste reduction include:- • 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; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	During Construction	√	
9.115	7.14	Waste Management Implication	Recommendations for good site practices during construction activities include:- • 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 • 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. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	During Construction	√	

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
9.125	7.14	Waste Management Implication	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	During Construction	N/A	
9.131	7.26	Waste Management Implication	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.	During Construction	√	
9.133	7.22	Waste Management Implication	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.	During Construction	√	
9.135	7.24	Waste Management Implication	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.	During Construction	√	
9.137	7.28	Waste Management Implication	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.	During Construction	√	
9.142	7.32 ~ 7.33	Waste Management Implication	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.	During Construction	N/A	
9.148	7.36	Waste Management Implication	The sludge tanks should be air-tighten. Rotating brushes or other alternative devises should be installed at the upper frame of the sludge tank washing facilities to provide better cleaning of the surface around the top loading opening of the sludge tanks. Prior to making such provision, the top covers of the sludge transfer tanks should be water cleaned manually after unloading.	During Construction	N/A	
9.150	7.35	Waste Management Implication	Since the air tightness of tankers highly relies on the effectiveness of rubber seals at the loading openings and unloading doors, odour leakage from tankers are commonly resulted from the aging rubber seals. It is recommended to develop a preventive maintenance programme for rubber seals of loading openings and unloading doors of sludge transfer tanks to ensure the tightness of covers and doors. Rubber seals should be regularly replaced within its design life as specified by suppliers.	During Construction	N/A	
10.92		Terrestrial Ecology	All the proposed construction activities would be confined to developed area and wasteland of very low ecological value.	Design stage	√	
10.93		Terrestrial Ecology	To implement effective noise mitigation recommended in Section 4.	During Construction	√	
10.94		Terrestrial Ecology	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, should be implemented.	During Construction	√	
10.95		Terrestrial Ecology	Fences/hoardings should be erected and installed along the boundary of the works areas.	During Construction	√	

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
10.96		Terrestrial Ecology	Standard good site practices as suggested in Section 10 should be implemented.	During Construction	√	
10.97		Terrestrial Ecology	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.	During Construction	√	
10.98		Terrestrial Ecology	Provision of compensatory planting of similar native tree species in no less than 1:1 compensatory ratio in terms of quality and quantity.	During Construction	N/A	
11.135		Marine Ecology	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.	During Construction	√	
11.136		Marine Ecology	To avoid/minimize the impact to corals, it is proposed that they are translocated to the eastern end of the existing seawall, which has similar hydrographic parameters and supports healthy growth of the same species and is thus considered as a suitable recipient site (Figure 11.13). Coral translocation should be carried out during the winter season (November- March) in order to avoid disturbance to the transplanted colonies during the spawning period (i.e. July to October).	Pre-construction	N/A	
11.137		Marine Ecology	Dredging works will not be carried out and sheet piles or silt curtains will be used to contain filling material used during demolition/re-construction of the seawall. Water quality modelling predicts that no adverse impact on water quality at the proposed recipient (Figure 11.13) site would occur during construction works. Following this, no construction phase monitoring on translocated coral would be required. However, post-translocation monitoring is suggested to be carried out every 3 months for one year. This would be carried out by a marine ecological specialist that is approved by the Director. Translocation plan for corals will be submitted to the Director for approval prior to the commencement of construction works.	Pre-construction	N/A	
11.139		Marine Ecology	It is recommended that temporary sewage bypass should be programmed to avoid temporary sewage bypass in wet or bathing season (March to October) in order to minimize the potential impacts. Relevant government departments including EPD and LCSD should be informed of the planned sewage bypass prior to any discharge. During the sewage bypass period, water quality monitoring should be carried out at the water sensitive receivers to quantify the water quality impacts and to determine when the baseline water quality conditions are restored. Also, a framework of the response procedures has been formulated to minimize the impact of temporary discharges. Details are provided in the standalone EM&A Manual.	During Construction and Design stage	√	
Table 13.7		Landscape & Visual Impact	• Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • 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. • Erection of decorative screen hoarding the surrounding setting.	Pre-construction	N/A	
Table 13.8		Landscape & Visual Impact	• Aesthetic design of the façade of PTW and associated structures to harmonize with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area	Pre-construction	N/A	
14A.198 & 14A.203		Hazard to Life	Limiting magnitude of ground settlement associated with shafts & tunnels construction, excavation and seawall demolition to 13mm and subject to requirements from relevant authorities.	During Construction	✓	

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
14A.199 & 14A.204		Hazard to Life	Limiting of the vibration levels associated with the blasting programme for the Tunnel P, shafts and other construction works (including demolition & reconstruction of seawall, excavation for seawater pump house at the Aberdeen PTW) at the PTW sites to a peak particle velocity of 5mm/s and subject to requirements from relevant authorities. Moving array of sensors will be used as the tunnel is advanced.	During Construction	N/A	
14A.201		Hazard to Life	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	During Construction	√	
14A.206		Hazard to Life	Establish emergency plan and procedures	During Construction	√	
14.C78		Hazard to Life	Ensuring Quality of Chemical Supplier • Only appoint chemical suppliers with satisfactory quality system. • Request the chemical supplier to employ an independent checker to audit the quality and safety management system of the supplier • The chemical supplied to SCISTW can only be produced in designated chemical production plants and delivered directly from designated locations. This measure will be included in the chemical supply contract.	During Construction	√	
Tables 15.8 - 15.11		Cultural Heritage	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	During Blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	√	
15.7		Cultural Heritage	Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme	During Blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	√	

APPENDIX E

WEATHER CONDITION DURING REPORTING PERIOD

Location	Wong Chuk Hang	
Date	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1-Oct	100	19.0
2-Oct	110	10.1
3-Oct	120#	14.0#
4-Oct	90	19.7
5-Oct	070#	13.8#
6-Oct	90	15.3
7-Oct	100	14.2
8-Oct	90	12.7
9-Oct	90	11.5
10-Oct	90	19.5
11-Oct	100	21.0
12-Oct	100	16.1
13-Oct	90	9.2
14-Oct	90	6.4
15-Oct	50	7.5
16-Oct	80	6.8
17-Oct	80	4.8
18-Oct	90	9.7
19-Oct	100#	12.6#
20-Oct	90	6.7
21-Oct	70	5.5
22-Oct	100	10.5
23-Oct	90	9.7
24-Oct	150	4.2
25-Oct	100	9.4
26-Oct	70	11.1
27-Oct	100	11.2
28-Oct	100	10.8
29-Oct	80	6.0
30-Oct	110	8.8
31-Oct	100	14.2

Location	Green Island	
Date	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1-Oct	***	35.7#
2-Oct	***	28.9
3-Oct	***	45.6
4-Oct	***	40.3
5-Oct	***	30.0#
6-Oct	***	30.0
7-Oct	***	31.7#
8-Oct	***	26.7
9-Oct	***	25.6#
10-Oct	***	36.4
11-Oct	***	39.6
12-Oct	***	28.0#
13-Oct	***	21.0#
14-Oct	***	17.4#
15-Oct	***	19.7#
16-Oct	***	15.8
17-Oct	***	17.3#
18-Oct	***	22.7#
19-Oct	***	28.0
20-Oct	***	19.9#
21-Oct	***	*****#
22-Oct	***	25.0#
23-Oct	***	29.3#
24-Oct	***	*****#
25-Oct	***	*****#
26-Oct	***	*****#
27-Oct	***	*****#
28-Oct	***	*****#
29-Oct	***	*****#
30-Oct	***	20.4#
31-Oct	***	36.4#

*** unavailable

missing (less than 24 hourly observations a day)

APPENDIX F

CALIBRATION CERTIFICATES FOR NOISE AND AIR QUALITY MONITORING EQUIPMENT

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C115096

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2684502

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C115096.

The equipment is supplied by

Co. Name : Atkins China Limited

Address : 5/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

Date of Issue : 8 September 2011

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C115441

Certificate of Calibration

This is to certify that the equipment

Description : Acoustical Calibrator

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2385180

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C115441.

The equipment is supplied by

Co. Name : Atkins China Limited

Address : 5/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

Date of Issue : 26 September 2011

Certified by : K C Lee

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輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C114802

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2684503

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C114802.

The equipment is supplied by

Co. Name : Atkins China Limited

Address : 5/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

Date of Issue : 30 August 2011

Certified by : H C Chan

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C106345

Certificate of Calibration

This is to certify that the equipment

RECEIVED
16 DEC 2010
BY:

Description : Acoustical Calibrator

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2656516

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C106345.

The equipment is supplied by

Co. Name : Leighton-LNS Joint Venture

Address : 39/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

Date of Issue : 18 November 2010

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Aberdeen
Calibrated by : K.F.Ho
Date : 26/08/2011

Sampler
Model : TE-5170
Serial Number : S/N2099

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.02062
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1006
Ta(K) : 299

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.9	3.285	1.648	57	56.7
2	13 holes	9.2	3.018	1.515	52	51.7
3	10 holes	7.3	2.688	1.351	46	45.8
4	7 holes	4.7	2.157	1.086	36	35.8
5	5 holes	2.6	1.604	0.810	25	24.9

Sampler Calibration Relationship

Slope(m):37.884 Intercept(b): -5.590 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 03/09/2011

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Aberdeen
Calibrated by : K.F.Ho
Date : 24/10/2011

Sampler
Model : TE-5170
Serial Number : S/N2099

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.02062
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1014
Ta(K) : 298

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.0	3.318	1.665	57	57.0
2	13 holes	9.4	3.067	1.540	52	52.0
3	10 holes	7.4	2.722	1.368	46	46.0
4	7 holes	4.8	2.192	1.104	36	36.0
5	5 holes	2.8	1.674	0.845	26	26.0

Sampler Calibration Relationship

Slope(m):37.607 Intercept(b): -5.632 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan Date: 26/10/2011

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Cyber Port
Calibrated by : K.F.Ho
Date : 26/8/2011

Sampler
Model : TE-5170
Serial Number : S/N 2098

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.02062
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1006
Ta(K) : 299

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	**18 holes**	10.8	3.269	1.641	55	54.7
2	**13 holes**	9.2	3.018	1.515	50	49.7
3	**10 holes**	7.0	2.632	1.323	43	42.8
4	**7 holes**	5.2	2.269	1.142	36	35.8
5	**5 holes**	2.7	1.635	0.826	24	23.9

Sampler Calibration Relationship

Slope(m):37.720 Intercept(b): 7.247 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 03/09/2011

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Cyber Port
Calibrated by : K.F.Ho
Date : 24/10/2011

Sampler
Model : TE-5170
Serial Number : S/N 2098

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.02062
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1014
Ta(K) : 298

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.0	3.318	1.665	56	56.0
2	13 holes	9.0	3.001	1.507	50	50.0
3	10 holes	7.3	2.703	1.358	45	45.0
4	7 holes	4.9	2.215	1.115	36	36.0
5	5 holes	3.1	1.762	0.889	27	27.0

Sampler Calibration Relationship

Slope(m):37.100 Intercept(b): -5.666 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan Date: 26/10/2011

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Wah Fu Estate
Calibrated by : K.F.Ho
Date : 26/08/2011

Sampler
Model : TE-5170
Serial Number : S/N 2100

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.02062
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1006
Ta(K) : 299

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.0	3.300	1.656	52	51.7
2	13 holes	9.2	3.018	1.515	48	47.8
3	10 holes	7.0	2.632	1.323	42	41.8
4	7 holes	5.2	2.269	1.1412	37	36.8
5	5 holes	2.7	1.635	0.826	28	27.9

Sampler Calibration Relationship

Slope(m):28.812 Intercept(b): 3.954 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan Date: 03/09/2011

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Wah Fu Estate
Calibrated by : K.F.Ho
Date : 24/10/2011

Sampler
Model : TE-5170
Serial Number : S/N 2100

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.02062
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1014
Ta(K) : 298

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.6	3.257	1.635	57	57.0
2	13 holes	9.0	3.001	1.507	52	52.0
3	10 holes	6.9	2.628	1.321	45	45.0
4	7 holes	5.2	2.281	1.148	38	38.0
5	5 holes	2.6	1.613	0.815	25	25.0

Sampler Calibration Relationship

Slope(m):39.057 Intercept(b): -6.776 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 26/10/2011

High-Volume TSP Sampler

5-Point Calibration Record

Location : Sai Ying Pun
Calibrated by : K.T.Ho
Date : 12/09/2011

Sampler
Model : TE-5170
Serial Number : S/N 2146

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1785
Service Date : 25 May 2011
Slope (m) : 2.00506
Intercept (b) : -0.020620
Correlation Coefficient(r) : 0.99999

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 10102
Ta(K) : 301

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.4	3.355	1.683	59	58.6
2	13 holes	9.6	3.078	1.546	54	53.7
3	10 holes	7.8	2.775	1.394	48	47.7
4	7 holes	4.5	2.108	1.061	36	35.8
5	5 holes	2.9	1.692	0.854	28	27.8

Sampler Calibration Relationship

Slope(m):37.054 Intercept(b): -3.747 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 15/09/2011

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-001
Sensitivity Adjustment Scale Setting :	640 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Ice Factory (Aberdeen)
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2099
Last Calibration Date	11/11/2009

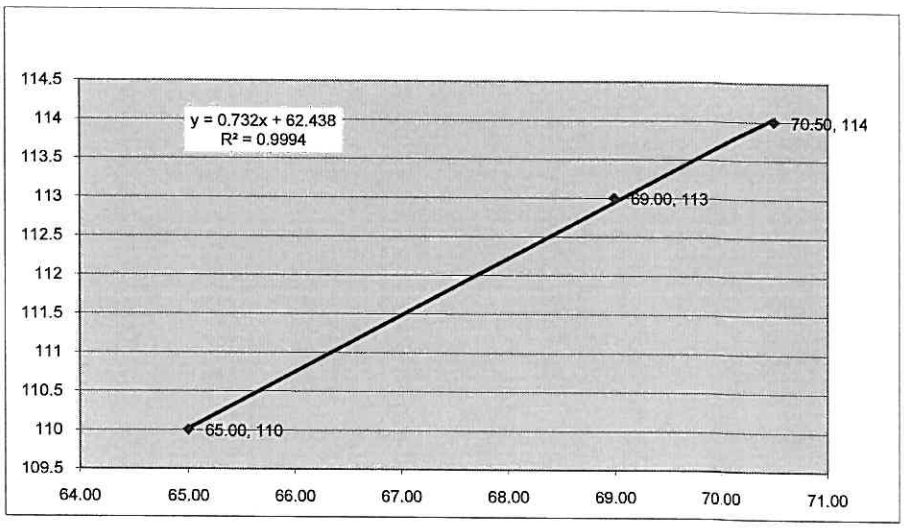
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	640 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	640 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m3) Y-axis	Total Count	Count/Minute X-axis
				Temp (C)	R.H. (%)			
1	19-Oct-10	09:12	10:12	26.1	62%	113	4140	69.00
2	19-Oct-10	10:12	11:12	26.1	62%	114	4230	70.50
3	19-Oct-10	11:12	12:12	26.1	62%	110	3900	65.00

Be Linear Regression of Y or X
Slope (K-factor): 0.732
Correlation coefficient : 0.9994

Remark:



Recorded by: Ruby Law Signature: Date: 21/10/2010

Checked by: Keith Chau Signature: Date: 21/10/2010

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-002
Sensitivity Adjustment Scale Setting :	622 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Wah Ming House, Wah Fu Estate
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2100
Last Calibration Date	11/11/2009

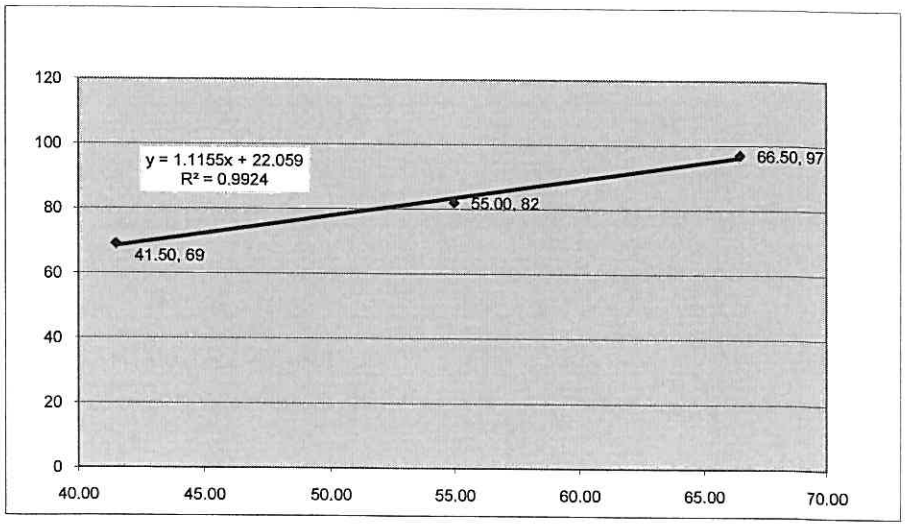
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	622 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	622 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m3) Y-axis	Total Count	Count/Minute X-axis
				Temp (C)	R.H. (%)			
1	19-Oct-10	14:00	15:00	26.1	62%	69	2490	41.50
2	19-Oct-10	15:00	16:00	26.1	62%	82	3300	55.00
3	19-Oct-10	16:00	17:00	26.1	62%	97	3990	66.50

Be Linear Regression of Y or X
Slope (K-factor): 1.1155
Correlation coefficient : 0.9924

Remark: _____



Recorded by: Ruby Law Signature: _____ Date: 21/10/2010

Checked by: Keith Chau Signature: _____ Date: 21/10/2010

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-001
Sensitivity Adjustment Scale Setting :	640 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Ice Factory (Aberdeen)
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2099
Last Calibration Date	19/10/2010

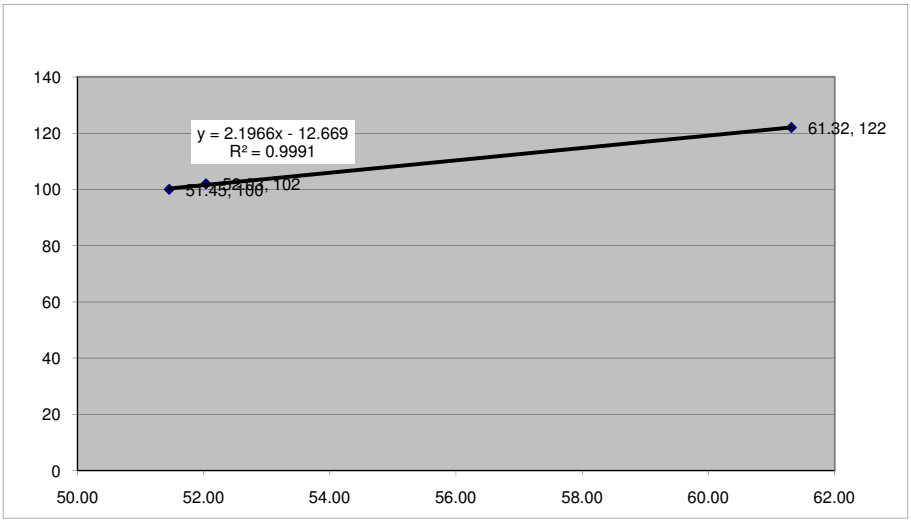
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	640 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	640 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m3) Y-axis	Total Count	Count/Minute X-axis
				Temp (C)	R.H. (%)			
1	17-Oct-11	15:10	16:10	24.3	70%	100	3087	51.45
2	17-Oct-11	16:17	17:17	24.3	70%	102	3122	52.03
3	17-Oct-11	17:20	18:20	24.3	70%	122	3679	61.32

Be Linear Regression of Y or X
Slope (K-factor): 2.1966
Correlation coefficient : 0.9991

Remark:



Recorded by: Ruby Law Signature: Date: 10/21/2011

Checked by: Keith Chau Signature: Date: 10/21/2011

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-002
Sensitivity Adjustment Scale Setting :	622 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Wah Ming House, Wah Fu Estate
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2100

Last Calibration Date 19/10/2010

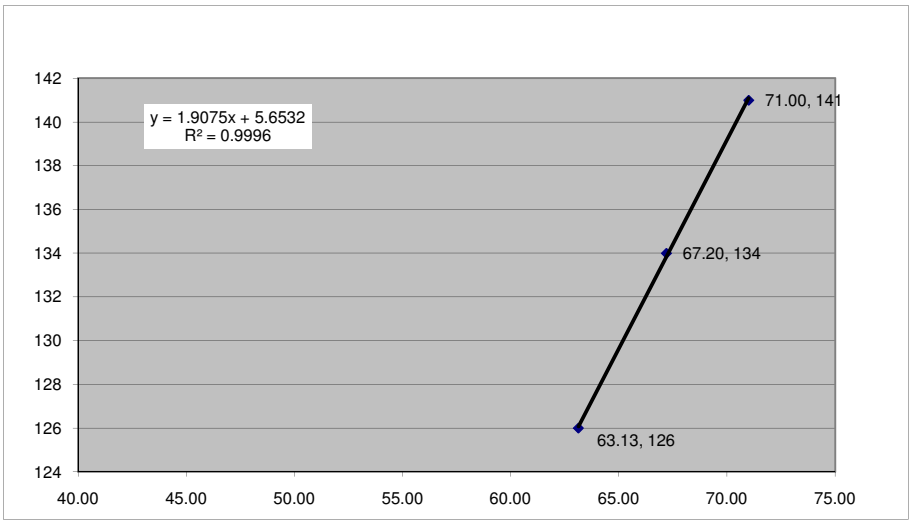
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	622 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	622 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m3) Y-axis	Total Count	Count/Minute X-axis
				Temp (C)	R.H. (%)			
1	18-Oct-11	13:27	14:27	24.3	70%	126	3788	63.13
2	18-Oct-11	14:30	15:30	24.3	70%	141	4260	71.00
3	18-Oct-11	15:34	16:34	24.3	70%	134	4032	67.20

Be Linear Regression of Y or X
Slope (K-factor): 1.9075
Correlation coefficient : 0.9996

Remark:



Recorded by: Ruby Law Signature: Date: 10/21/2011

Checked by: Keith Chau Signature: Date: 10/21/2011

Summary of Calibration Date of Monitoring Equipment

Equipment	Description	ID	Latest Calibration Date	Next Calibration Date
Integrated Sound Level Meters	B&K 2238	2684502	8th September 2011	7th September 2012
Integrated Sound Level Meters	B&K 2238	2684503	30th August 2011	29th August 2012
Calibrator for Sound Level Meters	B&K 4231	2656516	18th November 2010	17th November 2011
Calibrator for Sound Level Meters	B&K 4231	2385180	26th September 2011	25th September 2012
Laser Dust Monitor	LD-3B-001	974350	19th October 2010	18th October 2011
Laser Dust Monitor	LD-3B-001	974350	17th October 2011	16th October 2012
Laser Dust Monitor	LD-3B-002	934393	19th October 2010	18th October 2011
Laser Dust Monitor	LD-3B-002	934393	18th October 2011	17th October 2012
High Volume Sampler	TE-5170	2098 (Cyberport PTW)	26th August 2011	25th October 2011
			24th October 2011	23rd December 2011
High Volume Sampler	TE-5170	2099 (Aberdeen PTW)	26th August 2011	25th October 2011
			24th October 2011	23rd December 2011
High Volume Sampler	TE-5170	2100 (Wah Fu PTW)	26th August 2011	25th October 2011
			24th October 2011	23rd December 2011
High Volume Sampler	TE-5170	2146 (Fung Mat Road Site)	12th September 2011	11th November 2012

APPENDIX G

MONITORING SCHEDULE FOR THE PRESENT AND NEXT REPORTING PERIOD

Monitoring Schedule during the Reporting Period

Parameter	Monitoring Station	Date
Noise	M3, Normal Daytime	4-Oct-11 ; 10-Oct-11 ; 21-Oct-11 and 27-Oct-11
	M3, Holiday Daytime	2-Oct-11 ; 16-Oct-11 ; 23-Oct-11 and 30-Oct-11
	M3, Evening Time	4-Oct-11
	M3, Night-time	11-Oct-11 and 26-Oct-11
	M5, Normal Daytime	4-Oct-11 ; 10-Oct-11 ; 20-Oct-11 and 26-Oct-11
	M5a, Holiday Daytime	9-Oct-11
	M5a, Evening Time	13-Oct-11 and 26-Oct-11
	M5a, Night-time	13-Oct-11 and 26-Oct-11
	M6a, Normal Daytime	6-Oct-11 ; 18-Oct-11 and 24-Oct-11
	M6a, Holiday Daytime	2-Oct-11 and 16-Oct-11
	M6a, Evening Time	20-Oct-11
	M6a, Night-time	4-Oct-11 and 20-Oct-11
	M7a	6-Oct-11 ; 18-Oct-11 and 24-Oct-11
	M8	4-Oct-11 ; 10-Oct-11 ; 20-Oct-11 and 26-Oct-11
	M8, Holiday Daytime	30-Oct-11
Air: 1-hr TSP	CM_FM1	3-Oct-11 ; 7-Oct-11 ; 14-Oct-11 ; 19-Oct-11 ; 25-Oct-11 and 31-Oct-11
	CM_CB1a(1)	4-Oct-11 ; 10-Oct-11 ; 20-Oct-11 and 26-Oct-11
	CM_WF1a(2)	6-Oct-11 ; 18-Oct-11 ; 24-Oct-11 and 28-Oct-11
	CM_AB1a	4-Oct-11 ; 10-Oct-11 ; 14-Oct-11 ; 20-Oct-11 and 26-Oct-11
Air: 24-hrs TSP	CM_FM1	3-Oct-11 ; 7-Oct-11 ; 14-Oct-11 ; 19-Oct-11 ; 25-Oct-11 and 31-Oct-11
	CM_CB1a	3-Oct-11 ; 7-Oct-11 ; 13-Oct-11 ; 19-Oct-11 ; 25-Oct-11 and 31-Oct-11
	CM_WF1a	3-Oct-11 ; 7-Oct-11 ; 13-Oct-11 ; 19-Oct-11 ; 25-Oct-11 and 31-Oct-11
	CM_AB1a	3-Oct-11 ; 7-Oct-11 ; 13-Oct-11 ; 19-Oct-11 ; 25-Oct-11 and 31-Oct-11

(1)The 1-hour TSP monitoring on 14th October was cancelled due to raining
(2)The 1-hour TSP monitoring on 12th October was cancelled due to raining

Proposed Monitoring Schedule for Coming Reporting Period

Parameter	Monitoring Station	Date
Noise	M3, Normal Daytime	2-Nov-11 ; 8-Nov-11 ; 14-Nov-11 and 25-Nov-11
	M3, Holiday Daytime	13-Nov-11 ; 20-Nov-11 and 27-Nov-11
	M3, Evening Time	1-Nov-11 and 29-Nov-11
	M3, Night-time	8-Nov-11 and 22-Nov-11
	M5, Normal Daytime	3-Nov-11 ; 7-Nov-11 ; 17-Nov-11 ; 23-Nov-11 and 29-Nov-11
	M5a, Holiday Daytime	27-Nov-11
	M5a, Evening Time	10-Nov-11
	M5a, Night-time	10-Nov-11 and 21-Nov-11
	M6a, Normal Daytime	1-Nov-11 ; 9-Nov-11 ; 15-Nov-11 and 21-Nov-11
	M6a, Holiday Daytime	6-Nov-11
	M6a, Evening Time	15-Nov-11
	M6a, Night-time	1-Nov-11 ; 15-Nov-11 and 29-Nov-11
	M7a, Normal Daytime	1-Nov-11 ; 9-Nov-11 ; 15-Nov-11 and 21-Nov-11
	M8, Normal Daytime	3-Nov-11 ; 7-Nov-11 ; 17-Nov-11 ; 23-Nov-11 and 29-Nov-11
	M8, Holiday Daytime	13-Nov-11
	M8, Evening Time	21-Nov-11
Air: 1-hr TSP	CM_FM1	4-Nov-11 ; 10-Nov-11 ; 16-Nov-11 ; 22-Nov-11 and 28-Nov-11
	CM_CB1a	1-Nov-11 ; 7-Nov-11 ; 11-Nov-11 ; 17-Nov-11 ; 23-Nov-11 and 29-Nov-11
	CM_WF1a	3-Nov-11 ; 9-Nov-11 ; 15-Nov-11 ; 21-Nov-11 and 25-Nov-11
	CM_AB1a	1-Nov-11 ; 7-Nov-11 ; 11-Nov-11 ; 17-Nov-11 ; 23-Nov-11 and 29-Nov-11
Air: 24-hrs TSP	CM_FM1	4-Nov-11 ; 10-Nov-11 ; 16-Nov-11 ; 22-Nov-11 and 28-Nov-11
	CM_CB1a	4-Nov-11 ; 10-Nov-11 ; 16-Nov-11 ; 22-Nov-11 and 28-Nov-11
	CM_WF1a	4-Nov-11 ; 10-Nov-11 ; 16-Nov-11 ; 22-Nov-11 and 28-Nov-11
	CM_AB1a	4-Nov-11 ; 10-Nov-11 ; 16-Nov-11 ; 22-Nov-11 and 28-Nov-11

APPENDIX H

NOISE MONITORING RESULT

Daytime Noise Monitoring Results -- Normal weekday

Station M3, Kwan Yick building

Date(*)	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
4-Oct-11	10:30	11:00	Cloudy	69.0	70.6	66.5	No outdoor construction	Traffic Noise	-	28.0	0.3	RION- NL31 (S/N 00983400)	RION - NC73 (S/N 10997142)
10-Oct-11	10:30	11:00	Cloudy	69.3	70.9	66.9	Excavation work	Traffic Noise	-	28.0	0.5	RION- NL31 (S/N 00983400)	RION - NC73 (S/N 10997142)
21-Oct-11	13:10	13:40	Sunny	66.5	67.9	65.1	No outdoor construction	Traffic Noise	-	27.0	0.5	RION- NL31 (S/N 00983400)	RION - NC73 (S/N 10997142)
27-Oct-11	14:35	15:05	Sunny	67.0	68.4	65.2	Excavation and lifting	Traffic Noise	-	27.0	0.2	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
			Min.	**66.5**									
			Max.	**69.3**									

Remark: (*): The data were provided by Contract No. DC/2007/23. Calibration certificates for the noise meter(s) and calibrator(s) used were included in the corresponding Monthly EM&A Report for this Contract

Station M5, Chuk Lam Ming Tong

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
4-Oct-11	9:45	10:15	Cloudy	62.3	64.3	58.9	Loading blasting materials	Road traffic noise	N.A	23.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
10-Oct-11	14:51	15:21	Cloudy	63.7	65.0	58.7	Works inside noise enclosure	Road traffic noise	N.A	26.4	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
20-Oct-11	14:04	14:34	Foggy	65.3	67.8	60.7	Works inside noise enclosure	Road traffic noise	N.A	24.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
26-Oct-11	9:55	10:25	Foggy	66.0	68.4	61.7	Operation of mobile crane and excavator, loading activities and welding	Road traffic noise	N.A	23.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	**62.3**									
			Max.	**66.0**									

Station M6a, Aegean Terrace

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq *	L10	L90							
6-Oct-11	10:41	11:11	Cloudy	61.3	63.6	52.1	Mud out	Excavation from the construction site near Cyberport PTW	Free-field measurement, +3dB correction.	25.2	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
18-Oct-11	10:51	11:21	Sunny	56.4	57.2	52.1	Mud out	Excavation from the construction site near Cyberport PTW	Free-field measurement, +3dB correction.	24.7	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
24-Oct-11	11:00	11:30	Sunny	58.0	59.0	54.9	Works inside noise enclosure	Excavation from the construction site near Cyberport PTW	Free-field measurement, +3dB correction.	25.7	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	**56.4**									
			Max.	**61.3**									

Remark: Free-field measurement, +3dB correction.

Station M7a, Wah Ming House

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
6-Oct-11	9:31	10:01	Cloudy	61.8	63.1	59.7	Operation of hand held breaker	N.A	N.A	25.2	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
18-Oct-11	9:45	10:15	Foggy	65.0	66.3	63.0	Operation of hand held breaker	Operation of hand held breaker in Wah Kei House	N.A	25.2	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
24-Oct-11	9:45	10:15	Fine	71.0	73.6	62.2	Operation of hand held breaker	Operation of hand held breaker in Wah Kei House	N.A	25.7	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	**61.8**									
			Max.	**71.0**									

Station M8, Wah Lai House

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
4-Oct-11	9:45	10:15	Cloudy	66.9	67.8	63.1	No major construction works	Road Traffic noise from Shek Pai Wan Road	N.A	23.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
10-Oct-11	11:06	11:36	Cloudy	69.5	72.9	60.5	No major construction works	Road Traffic noise from Shek Pai Wan Road	N.A	26.4	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
20-Oct-11	10:07	10:37	Foggy	65.7	67.0	63.9	Preparing for blasting	Road Traffic noise from Shek Pai Wan Road	N.A	24.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
26-Oct-11	13:49	14:19	Foggy	66.0	67.2	64.3	Operation of excavator and mud out	Road Traffic noise from Shek Pai Wan Road	N.A	23.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	**65.7**									
			Max.	**69.5**									

Restricted Hours Noise Monitoring Results -- Daytime on Public Holiday

Station M3, Kwan Yick building

Date(*)	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
2-Oct-11	10:00	10:15	Fine	64.5	66.6	62.0	No outdoor construction noise	Mainly traffic noise	N.A	29.0	0.5	RION- NL31 (S/N 00983400)	RION - NC73 (S/N 10997142)
16-Oct-11	17:30	17:45	Sunny	65.5	66.9	63.6	No outdoor construction noise	Mainly traffic noise	N.A	26.0	0.4	RION- NL31 (S/N 00983400)	RION - NC73 (S/N 10997142)
23-Oct-11	13:02	13:17	Cloudy	66.9	68.4	63.8	No major construction works	Mainly traffic noise	N.A	25.0	<5	B&K 2238 S/N: 2684502	B&K 4231 S/N: 2385180
30-Oct-11	15:30	15:45	Sunny	65.5	66.9	63.5	No outdoor construction noise	Mainly traffic noise	N.A	24.0	0.4	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
			Min.	64.5									
			Max.	66.9									

Remark(*) The data (2, 16 and 30 Oct) were provided by Contract No. DC/2007/23. Calibration certificates for the noise meter(s) and calibrator(s) used were included in the corresponding Monthly EM&A Report for this Contract

Station M5a, Chuk Lam Ming Tong

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
9-Oct-11	8:15	8:30	Sunny	67.0	68.7	54.7	No major construction works	Road traffic noise at San Wan Drive and noise from opening	N.A	26.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2656516
			Min.	67.0									
			Max.	67.0									

Station M6a, Aegean Terrace

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
2-Oct-11	15:55	16:10	Cloudy	56.3	56.8	50.7	No major construction works	Cars from residents of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	25.0	<5	B&K 2238 S/N : 2684502	B&K 4231 S/N: 2656516
16-Oct-11	8:20	8:35	Sunny	55.1	55.4	55.5	No major construction works	Cars from residents of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	23.0	<5	B&K 2238 S/N : 2684502	B&K 4231 S/N: 2656516
			Min.	55.1									
			Max.	56.3									

Station M8, Wah Lai House

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
30-Oct-11	14:27	14:42	Cloudy	61.3	62.7	50.6	No major constructin works	Road Traffic noise from Shek Pai Wan Road	N.A	24.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	61.3									
			Max.	61.3									

Restricted Hours Noise Monitoring Results -- Evening time

Station M3, Kwan Yick building

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
4-Oct-11	19:00	19:15	Fine	66.8	67.8	65.2	Mud out	Road traffic noise from Western Harbour Crossing, engine of turbojet, planes and helicopter overhead.	N.A	30.6	<5	B&K 2238 S/N : 2684502	B&K 4231 S/N: 2385180
			Min.	66.8									
			Max.	66.8									

Station M5a, Chuk Lam Ming Tong

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
13-Oct-11	22:45	23:00	Fine	62.3	59.1	48.9	No major construction works	Road traffic at San Wan Drive	According to contractor, general construction works was in process accordance to CNP.	24.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
26-Oct-11	22:45	23:00	Cloudy	59.5	59.1	48.9	Works inside noise enclosure	Road traffic at San Wan Drive	According to contractor, general construction works was in process accordance to CNP.	23.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	59.5									
			Max.	62.3									

Station M6a, Aegean Terrace

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
20-Oct-11	22:45	23:00	Fine	53.7	56.0	48.7	No major constructin works	Local traffics of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	24.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	53.7									
			Max.	53.7									

Restricted Hours Noise Monitoring Results -- Night time

Station M3, Kwa Yick Building

Date(*)	Start Time	End Time	Weather	Noise level (dB(A)), 15 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
11-Oct-11	23:10	23:25	Fine	63.7	65.4	61.5	No outdoor construction noise	Mainly traffic noise	N.A	26.0	0.3	RION- NL31 (S/N 00983400)	RION - NC73 (S/N 10997142)
26-Oct-11	6:00	6:15	Fine	62.9	64.8	60.5	No outdoor construction noise	Mainly traffic noise	N.A	26.0	0.8	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
			Min.	**62.9**									
			Max.	**63.7**									

Remark (*) The data (M3_Night Time) were provided by Contract No. DC/2007/23. Calibration certificates for the noise meter(s) and calibrator(s) used were included in the corresponding Monthly EM&A Report for this Contract

Station M5a, Chuk Lam Ming Tong

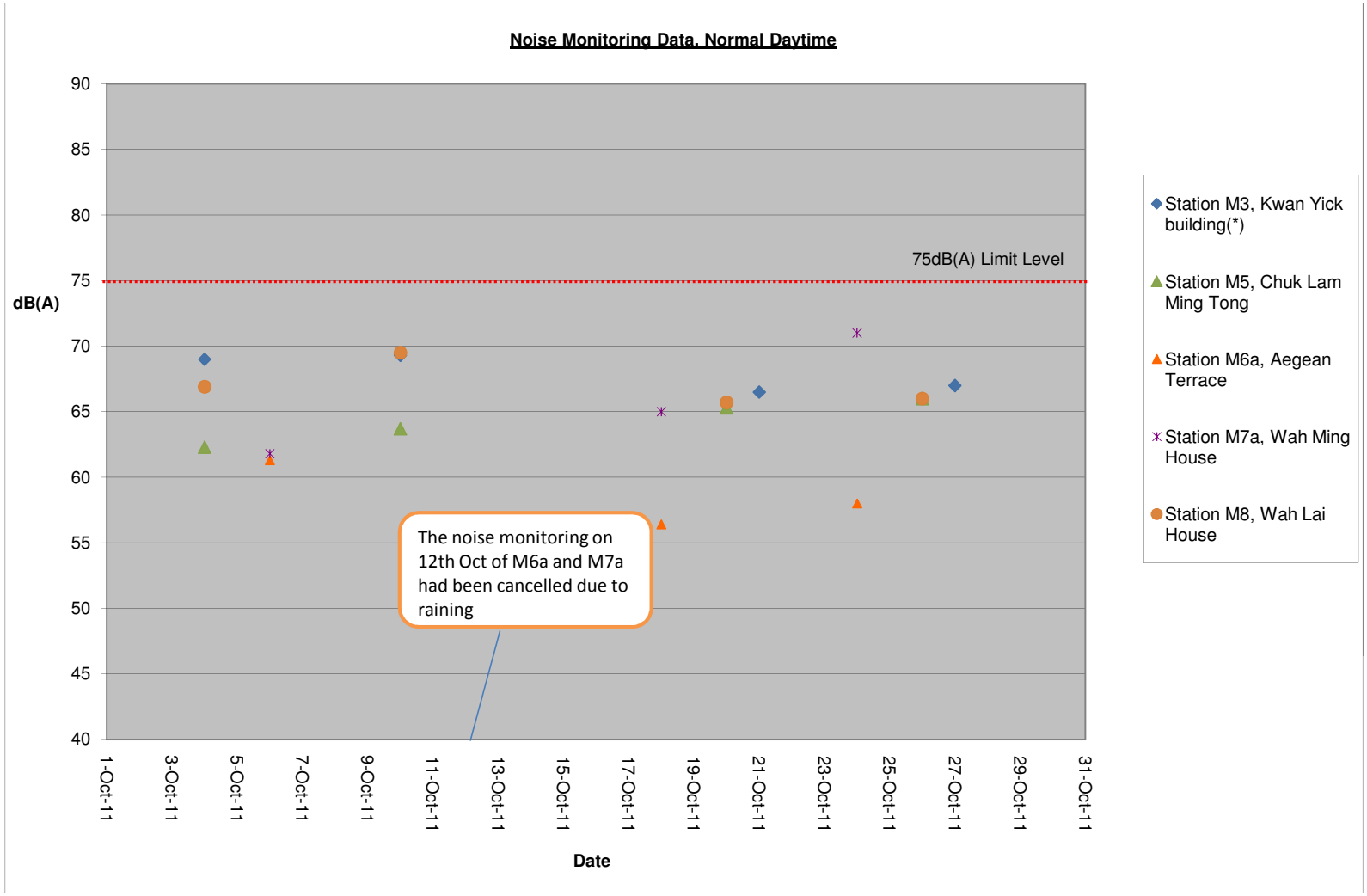
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
13-Oct-11	23:00	23:15	Fine	63.3	59.8	51.5	No major construction works	Road traffic	N.A	24.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
26-Oct-11	23:00	23:15	Cloudy	62.1	59.8	51.5	Works inside noise enclosure	Road traffic	N.A	23.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	**62.1**									
			Max.	**63.3**									

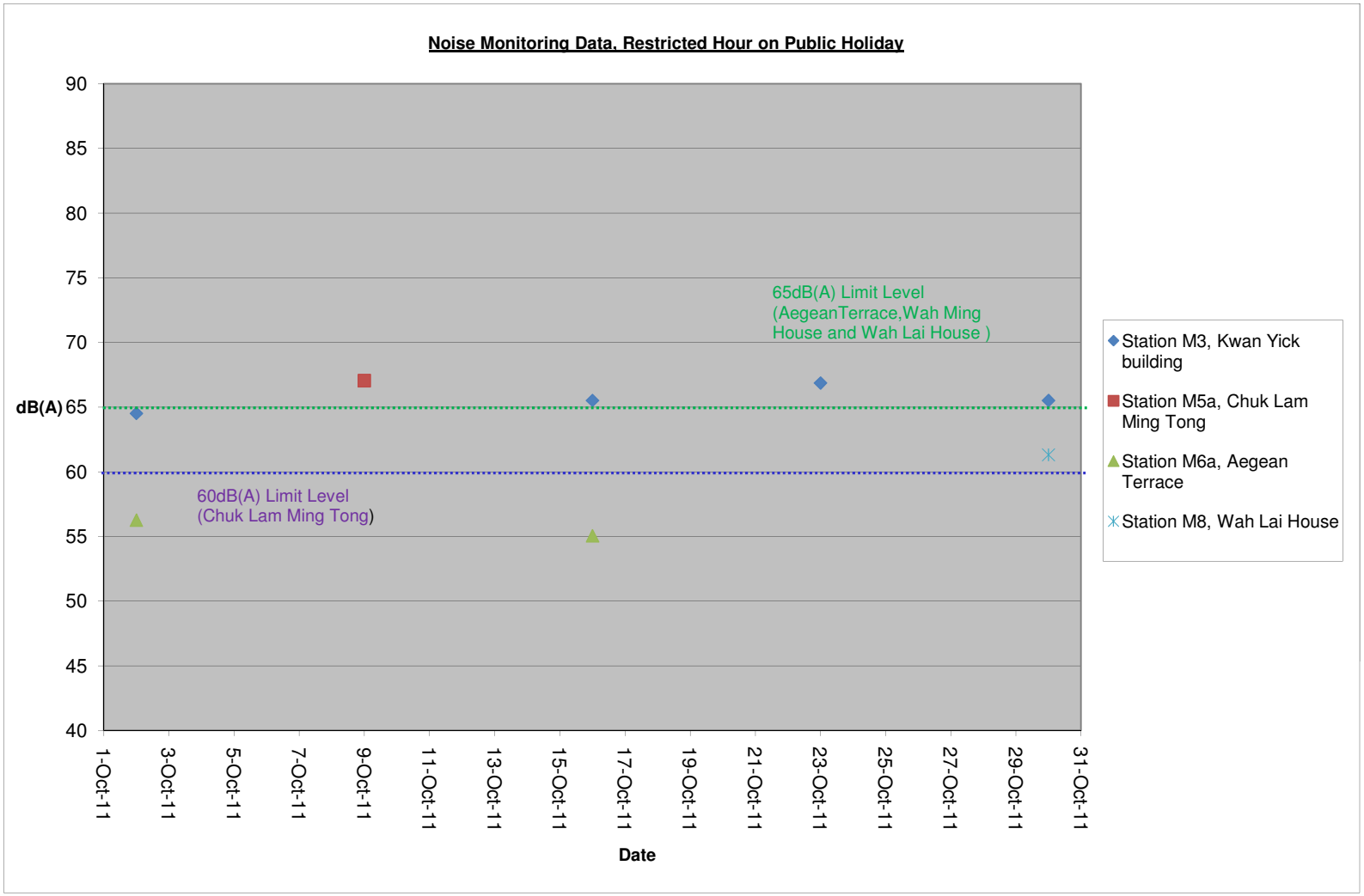
Station M6a, Aegean Terrace

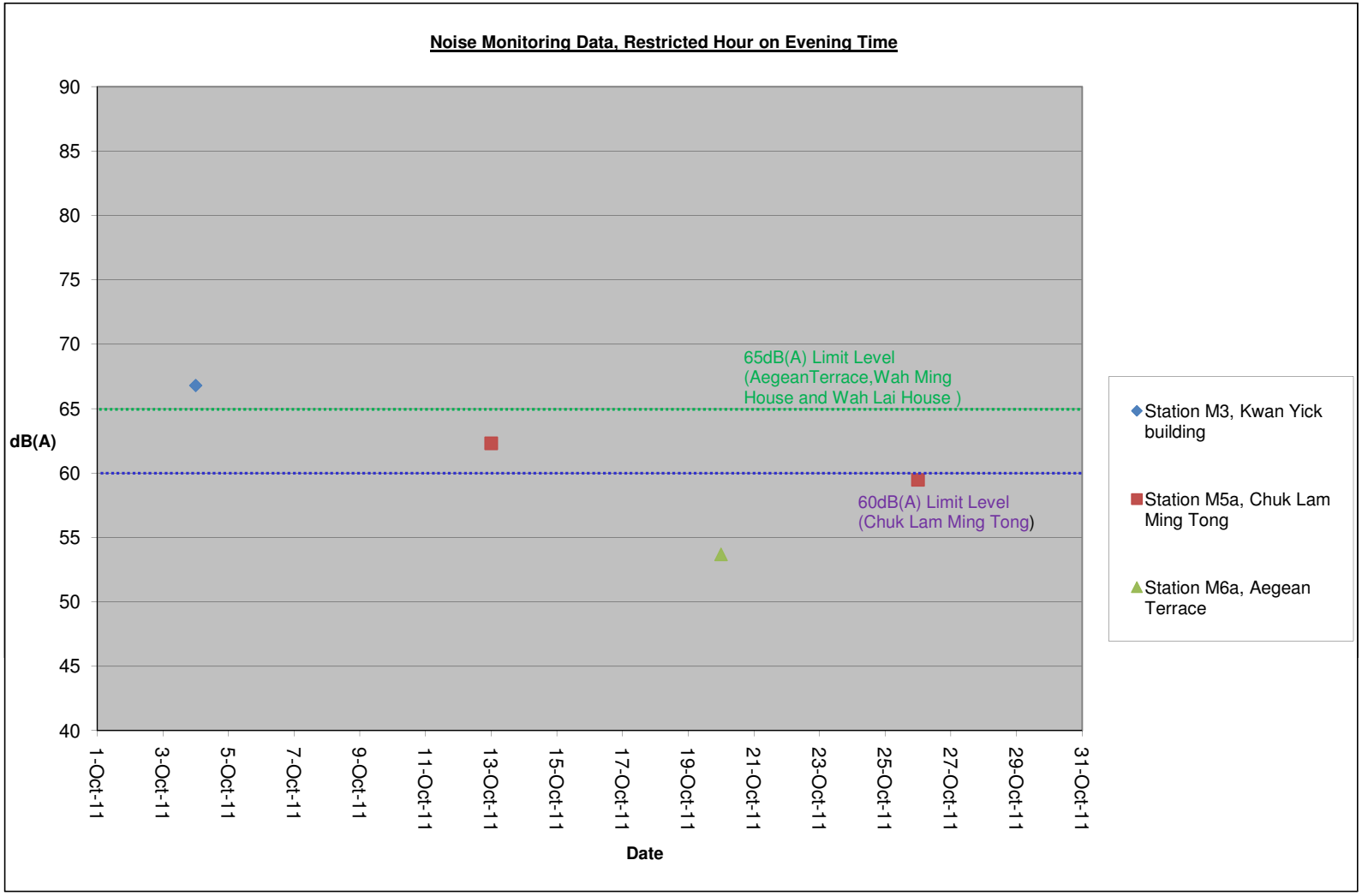
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
4-Oct-11	23:00	23:15	Fine	52.2	53.6	49.6	No major constructin works	Local traffics of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	26.1	<5	B&K 2238 S/N : 2684502	B&K 4231 S/N: 2656516
20-Oct-11	23:00	23:15	Fine	56.6	58.0	56.9	No major constructin works	Local traffics of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	24.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 2385180
			Min.	**52.2**									
			Max.	**56.6**									

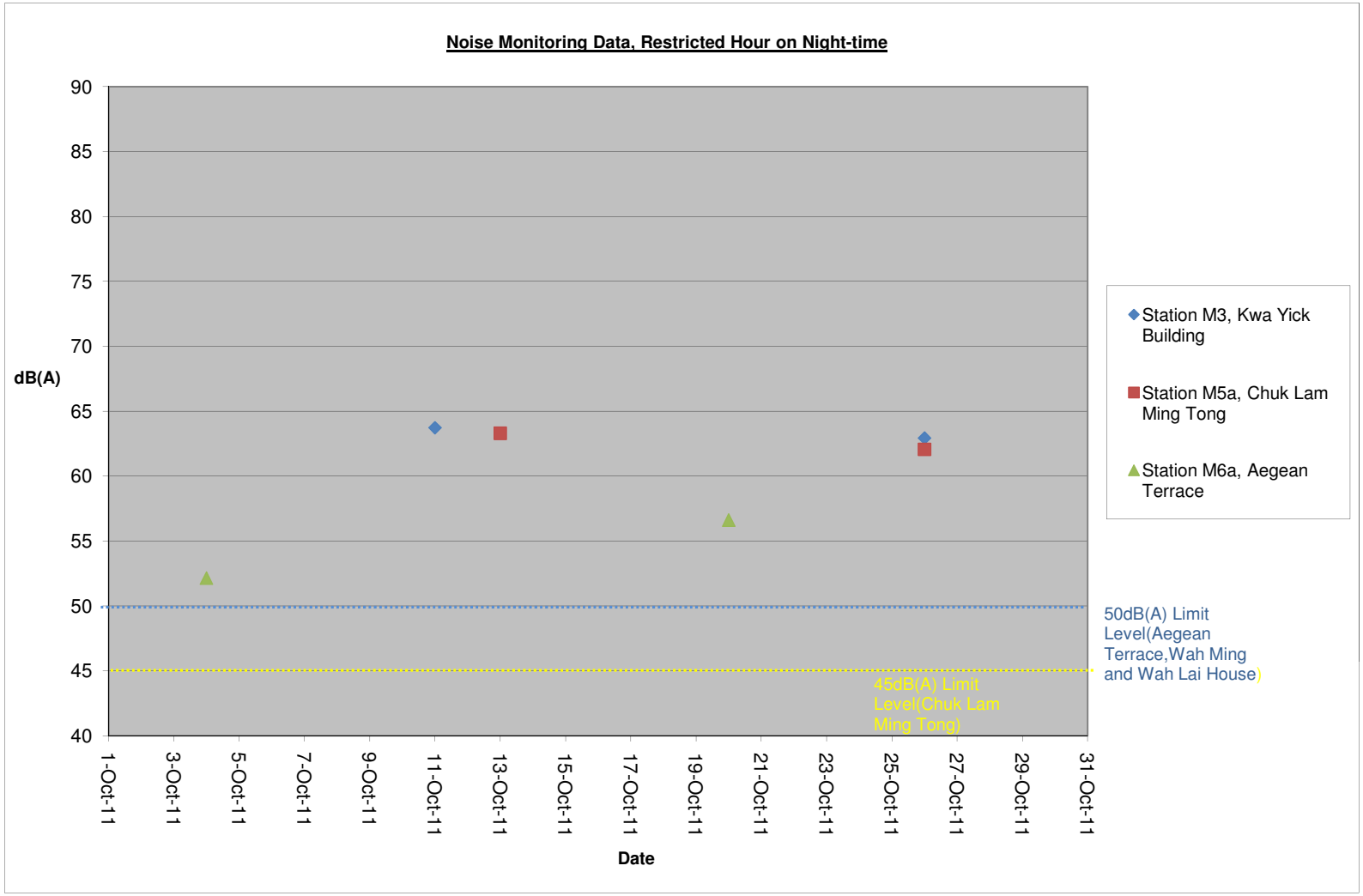
APPENDIX I

GRAPHICAL PRESENTATION OF NOISE MONITORING DATA


Noise Monitoring Data, Normal Daytime
90
85
80
75
70
65
60
55
50
45
40
dB(A)
75dB(A) Limit Level
The noise monitoring on 12th Oct of M6a and M7a had been cancelled due to raining
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Station M3, Kwan Yick building(*)
Station M5, Chuk Lam Ming Tong
Station M6a, Aegean Terrace
Station M7a, Wah Ming House
Station M8, Wah Lai House


Noise Monitoring Data, Restricted Hour on Public Holiday
90
85
80
75
70
dB(A) 65
60
55
50
45
40
65dB(A) Limit Level
(AegeanTerrace,Wah Ming
House and Wah Lai House)
60dB(A) Limit Level
(Chuk Lam Ming Tong)
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Station M3, Kwan Yick building
Station M5a, Chuk Lam Ming Tong
Station M6a, Aegean Terrace
Station M8, Wah Lai House


Noise Monitoring Data, Restricted Hour on Evening Time
90
85
80
75
70
65
60
55
50
45
40
dB(A)
65dB(A) Limit Level
(AegeanTerrace,Wah Ming
House and Wah Lai House)
60dB(A) Limit Level
(Chuk Lam Ming Tong)
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Station M3, Kwan Yick building
Station M5a, Chuk Lam Ming Tong
Station M6a, Aegean Terrace


Noise Monitoring Data, Restricted Hour on Night-time
dB(A)
90
85
80
75
70
65
60
55
50
45
40
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Station M3, Kwa Yick Building
Station M5a, Chuk Lam Ming Tong
Station M6a, Aegean Terrace
50dB(A) Limit Level(Aegean Terrace,Wah Ming and Wah Lai House)
45dB(A) Limit Level(Chuk Lam Ming Tong)

APPENDIX J

AIR QUALITY MONITORING RESULT

1-hour TSP Monitoring Results

Station CM_FM1, Western Wholesale Food Market

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
3-Oct-11	9:45	10:45	Cloudy	93.1	331.9	500	Loading activities, contraction of noise encloseure sub structure	22.6	<5	Western Wholesale Food Market	769
3-Oct-11	9:45	10:45	Cloudy	93.1	331.9	500	Loading activities, contraction of noise encloseure sub structure	22.6	<5	Western Wholesale Food Market	769
3-Oct-11	10:55	11:55	Cloudy	134.9	331.9	500	Loading activities, contraction of noise encloseure sub structure	22.6	<5	Western Wholesale Food Market	770
7-Oct-11	8:00	9:00	Cloudy	259.6	331.9	500	Loading activities, contraction of noise encloseure sub structure	25.7	<5	Western Wholesale Food Market	775
7-Oct-11	16:30	17:30	Cloudy	94.8	331.9	500	Loading activities, contraction of noise encloseure sub structure	25.7	<5	Western Wholesale Food Market	776
7-Oct-11	17:45	18:45	Cloudy	119.7	331.9	500	Loading activities, contraction of noise encloseure sub structure	25.7	<5	Western Wholesale Food Market	777
14-Oct-11	8:00	9:00	Cloudy	164.5	331.9	500	Loading activities, contraction of noise encloseure sub structure	25.4	<5	Western Wholesale Food Market	782
14-Oct-11	13:45	14:45	Cloudy	180.3	331.9	500	Loading activities, contraction of noise encloseure sub structure	25.4	<5	Western Wholesale Food Market	783
14-Oct-11	15:05	16:05	Cloudy	183.6	331.9	500	Loading activities, contraction of noise encloseure sub structure	25.4	<5	Western Wholesale Food Market	784
19-Oct-11	9:22	10:22	Sunny	196.9	331.9	500	Loading activities, contraction of noise encloseure sub structure	24.3	<5	Western Wholesale Food Market	790
19-Oct-11	13:45	14:45	Sunny	136.4	331.9	500	Loading activities, contraction of noise encloseure sub structure	24.3	<5	Western Wholesale Food Market	791
19-Oct-11	15:05	16:05	Sunny	138.0	331.9	500	Loading activities, contraction of noise encloseure sub structure	24.3	<5	Western Wholesale Food Market	792
25-Oct-11	8:00	9:00	Foggy	311.8	331.9	500	Loading activities, contraction of noise encloseure sub structure	24.6	<5	Western Wholesale Food Market	796
25-Oct-11	13:00	14:00	Foggy	173.4	331.9	500	Loading activities, contraction of noise encloseure sub structure	24.6	<5	Western Wholesale Food Market	797
25-Oct-11	15:25	16:25	Foggy	151.2	331.9	500	Loading activities, contraction of noise encloseure sub structure	24.6	<5	Western Wholesale Food Market	798
31-Oct-11	8:00	9:00	Suuny	108.5	331.9	500	Loading activities	24.5	<5	Western Wholesale Food Market	803
31-Oct-11	13:00	14:00	Sunny	93.0	331.9	500	Loading activities	24.5	<5	Western Wholesale Food Market	804
31-Oct-11	15:25	16:25	Sunny	94.6	331.9	500	Loading activities	24.5	<5	Western Wholesale Food Market	805

Min.	**93.0**
Max.	**311.8**
Average	**152**

Station CM_CB1a, The Arcade, Cyberport

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
4-Oct-11	8:55	9:55	Cloudy	17.6	279.9	500	Operation of crane	23.8	<5	LD-3B-001	N/A
4-Oct-11	9:55	10:55	Cloudy	16.8	279.9	500	Operation of crane	23.8	<5	LD-3B-001	N/A
4-Oct-11	10:55	11:55	Cloudy	15.4	279.9	500	Operation of crane	23.8	<5	LD-3B-001	N/A
10-Oct-11	13:00	14:00	Cloudy	32.2	279.9	500	Mud out	26.4	<5	LD-3B-001	N/A
10-Oct-11	14:00	15:00	Cloudy	36.6	279.9	500	Mud out	26.4	<5	LD-3B-001	N/A
10-Oct-11	15:00	16:00	Cloudy	27.8	279.9	500	Mud out	26.4	<5	LD-3B-001	N/A
20-Oct-11	13:00	14:00	Foggy	109.8	279.9	500	Mud out	24	<5	LD-3B-001	N/A
20-Oct-11	14:00	15:00	Foggy	116.4	279.9	500	Mud out	24	<5	LD-3B-001	N/A
20-Oct-11	15:00	16:00	Foggy	119.7	279.9	500	Mud out	24	<5	LD-3B-001	N/A
26-Oct-11	9:01	10:01	Foggy	128.5	279.9	500	Mud out	23.3	<5	LD-3B-001	N/A
26-Oct-11	10:01	11:01	Foggy	119.7	279.9	500	Mud out	23.3	<5	LD-3B-001	N/A
26-Oct-11	11:01	12:01	Foggy	113.1	279.9	500	Mud out	23.3	<5	LD-3B-001	N/A

Min.	**15.4**
Max.	**128.5**
Average	**71**

Station CM_WF1a, The Wah Ming House

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
6-Oct-11	9:09	10:09	Cloudy	74.2	284.5	500	Operation of mobile crane and loading	25.2	<5	LD-3B-002	N/A
6-Oct-11	10:09	11:09	Cloudy	72.5	284.5	500	Operation of mobile crane and loading	25.2	<5	LD-3B-002	N/A
6-Oct-11	11:09	12:09	Cloudy	67.5	284.5	500	Operation of mobile crane and loading	25.2	<5	LD-3B-002	N/A
18-Oct-11	9:27	10:27	Foggy	72.5	284.5	500	Loading	24.7	<5	LD-3B-002	N/A
18-Oct-11	10:27	11:27	Foggy	72.5	284.5	500	Loading	24.7	<5	LD-3B-002	N/A
18-Oct-11	11:27	12:27	Foggy	71.9	284.5	500	Loading	24.7	<5	LD-3B-002	N/A
24-Oct-11	9:30	10:30	Sunny	86.8	284.5	500	Operation of hand-held breaker	25.7	<5	LD-3B-002	N/A
24-Oct-11	10:30	11:30	Sunny	87.7	284.5	500	Operation of hand-held breaker	25.7	<5	LD-3B-002	N/A
24-Oct-11	11:30	12:30	Sunny	80.1	284.5	500	Operation of hand-held breaker	25.7	<5	LD-3B-002	N/A
28-Oct-11	8:57	9:57	Sunny	41.0	284.5	500	Operation of hand-held breaker	24.3	<5	LD-3B-002	N/A
28-Oct-11	9:57	10:57	Sunny	36.2	284.5	500	Operation of hand-held breaker	24.3	<5	LD-3B-002	N/A
28-Oct-11	10:57	11:57	Sunny	42.0	284.5	500	Operation of hand-held breaker	24.3	<5	LD-3B-002	N/A
			Min.	**36.2**							
			Max.	**87.7**							
			Average	**67**							

Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
4-Oct-11	13:13	14:13	Cloudy	17.9	282.5	500	No major construction works	23.8	<5	LD-3B-001	N/A
4-Oct-11	14:13	15:13	Cloudy	22.3	282.5	500	No major construction works	23.8	<5	LD-3B-001	N/A
4-Oct-11	15:13	16:13	Cloudy	25.3	282.5	500	No major construction works	23.8	<5	LD-3B-001	N/A
10-Oct-11	9:10	10:10	Cloudy	46.8	282.5	500	No major construction works	26.4	<5	LD-3B-001	N/A
10-Oct-11	10:10	11:10	Cloudy	54.5	282.5	500	No major construction works	26.4	<5	LD-3B-001	N/A
10-Oct-11	11:10	12:10	Cloudy	50.1	282.5	500	No major construction works	26.4	<5	LD-3B-001	N/A
14-Oct-11	13:10	14:10	Cloudy	17.2	282.5	500	No major construction works	25.4	<5	LD-3B-001	N/A
14-Oct-11	14:10	15:10	Cloudy	20.9	282.5	500	No major construction works	25.4	<5	LD-3B-001	N/A
14-Oct-11	15:10	16:10	Cloudy	24.5	282.5	500	No major construction works	25.4	<5	LD-3B-001	N/A
20-Oct-11	9:13	10:13	Foggy	115.3	282.5	500	Loading blasting material	24	<5	LD-3B-001	N/A
20-Oct-11	10:13	11:13	Foggy	119.7	282.5	500	Loading blasting material	24	<5	LD-3B-001	N/A
20-Oct-11	11:13	12:13	Foggy	107.6	282.5	500	Loading blasting material	24	<5	LD-3B-001	N/A
26-Oct-11	13:00	14:00	Foggy	146.1	282.5	500	Operation of excavator and mud out	23.3	<5	LD-3B-001	N/A
26-Oct-11	14:00	15:00	Foggy	156.0	282.5	500	Operation of excavator and mud out	23.3	<5	LD-3B-001	N/A
26-Oct-11	15:00	16:00	Foggy	193.3	282.5	500	Operation of excavator and mud out	23.3	<5	LD-3B-001	N/A
			Min.	**17.2**							
			Max.	**193.3**							
			Average	**75**							

24-hour TSP Monitoring Results

Station CM_FM1, Western Wholesale Food Market

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)			
3-Oct-11	11:50	4-Oct-11	11:50	Cloudy	2.7905	2.8861	3005.86	3029.86	24.00	1.0746	1.0746	1.0746	62	188.5	260	Loading activities, contraction of noise enclosure sub structure	Western Wholesale Food Market	771
7-Oct-11	19:20	8-Oct-11	19:20	Cloudy	2.8102	2.9913	3032.88	3056.88	24.00	1.0723	1.0723	1.0723	117	188.5	260	Loading activities, contraction of noise enclosure sub structure	Western Wholesale Food Market	778
14-Oct-11	16:30	15-Oct-11	16:30	Cloudy	2.7776	2.933	3059.92	3083.92	24.00	1.0435	1.0435	1.0435	103	188.5	260	Loading activities, contraction of noise enclosure sub structure	Western Wholesale Food Market	785
19-Oct-11	16:15	20-Oct-11	16:15	Sunny	2.7958	2.968	3086.93	3110.93	27.60	1.0481	1.0481	1.0481	114	188.5	260	Loading activities, contraction of noise enclosure sub structure	Western Wholesale Food Market	793
25-Oct-11	16:00	26-Oct-11	16:00	Cloudy	2.769	2.896	3113.92	3137.92	27.60	1.0475	1.0475	1.0475	84	188.5	260	Loading activities, contraction of noise enclosure sub structure	Western Wholesale Food Market	799
31-Oct-11	12:10	1-Nov-11	12:10	Sunny	2.7883	2.9255	3040.91	3064.91	27.60	1.0750	1.0750	1.0750	89	188.5	260	Loading activities	Western Wholesale Food Market	806
												Min.	**84**					
												Max.	**117**					
												Average	**95**					

Station CM_CB1a, The Arcade, Cyberport

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)			
3-Oct-11	8:00	4-Oct-11	8:00	Cloudy	2.7977	2.8672	3231.74	3255.74	24.00	0.8177	0.8177	0.8177	59	178.1	260	Mud out	Arcade	766
7-Oct-11	8:00	8-Oct-11	8:00	Cloudy	2.8043	2.9643	3255.75	3279.75	24.00	0.8153	0.8153	0.8153	136	178.1	260	No major construction works	Arcade	772
13-Oct-11	8:00	14-Oct-11	8:00	Cloudy	2.7816	2.8216	3279.76	3303.76	24.00	0.8147	0.8147	0.8147	34	178.1	260	Operation of mobile crane	Arcade	780
19-Oct-11	8:00	20-Oct-11	8:00	Haze	2.7828	2.887	3303.77	3327.77	24.00	0.8182	0.8182	0.8182	88	178.1	260	No major construction works	Arcade	786
25-Oct-11	8:00	26-Oct-11	8:00	Cloudy	2.7867	2.9283	3327.77	3351.77	24.00	1.1790	1.1790	1.1790	83	178.1	260	Excavation	Arcade	795
31-Oct-11	8:00	1-Nov-11	8:00	Sunny	2.7753	2.8328	3351.77	3375.77	24.00	1.1794	1.1794	1.1794	34	178.1	260	Excavation operation of gantry	Arcade	800
												Min.	**34**					
												Max.	**136.3**					
												Average	**72.5**					

Station CM_WF1a, The Wah Ming House

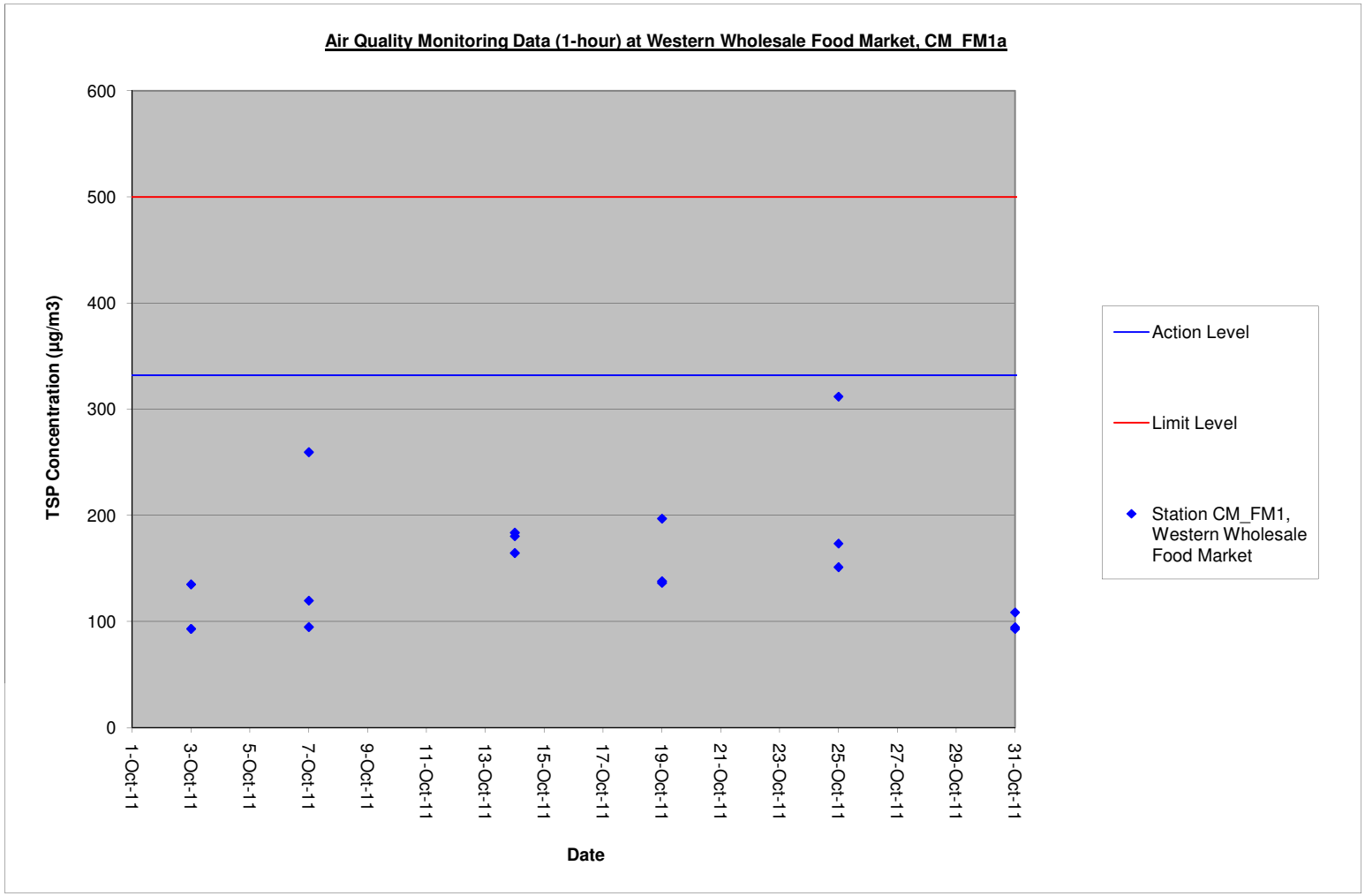
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)			
3-Oct-11	8:00	4-Oct-11	8:00	Cloudy	2.788	2.8445	2902.81	2926.81	24.00	0.9756	0.9756	0.9756	40	185.3	260	Rock out and operation of mobile crane	Wah Fu	767
7-Oct-11	8:00	8-Oct-11	8:00	Cloudy	2.8121	2.9466	2926.82	2950.82	24.00	0.9730	0.9730	0.9730	96	185.3	260	Rock out and operation of mobile crane	Wah Fu	774
13-Oct-11	8:00	14-Oct-11	8:00	Cloudy	2.7917	2.819	2950.83	2974.83	24.00	0.9723	0.9723	0.9723	19	185.3	260	Operation of mobile crane	Wah Fu	781
19-Oct-11	8:00	20-Oct-11	8:00	Fine	2.7866	2.8756	2974.84	2998.84	24.00	0.8370	0.8370	0.8370	74	185.3	260	Operation of hand-held breaker	Wah Fu	788
25-Oct-11	8:00	26-Oct-11	8:00	Cloudy	2.7781	2.895	3001.82	3025.82	24.00	0.9944	0.9944	0.9944	82	185.3	260	Operation of hand-held breaker	Wah Fu	789
31-Oct-11	8:00	1-Nov-11	8:00	Sunny	2.7682	2.865	3025.82	3049.82	24.00	0.9948	0.9948	0.9948	68	185.3	260	Operation of hand-held breaker	Wah Fu	802
												Min.	**19**					
												Max.	**96**					
												Average	**63**					

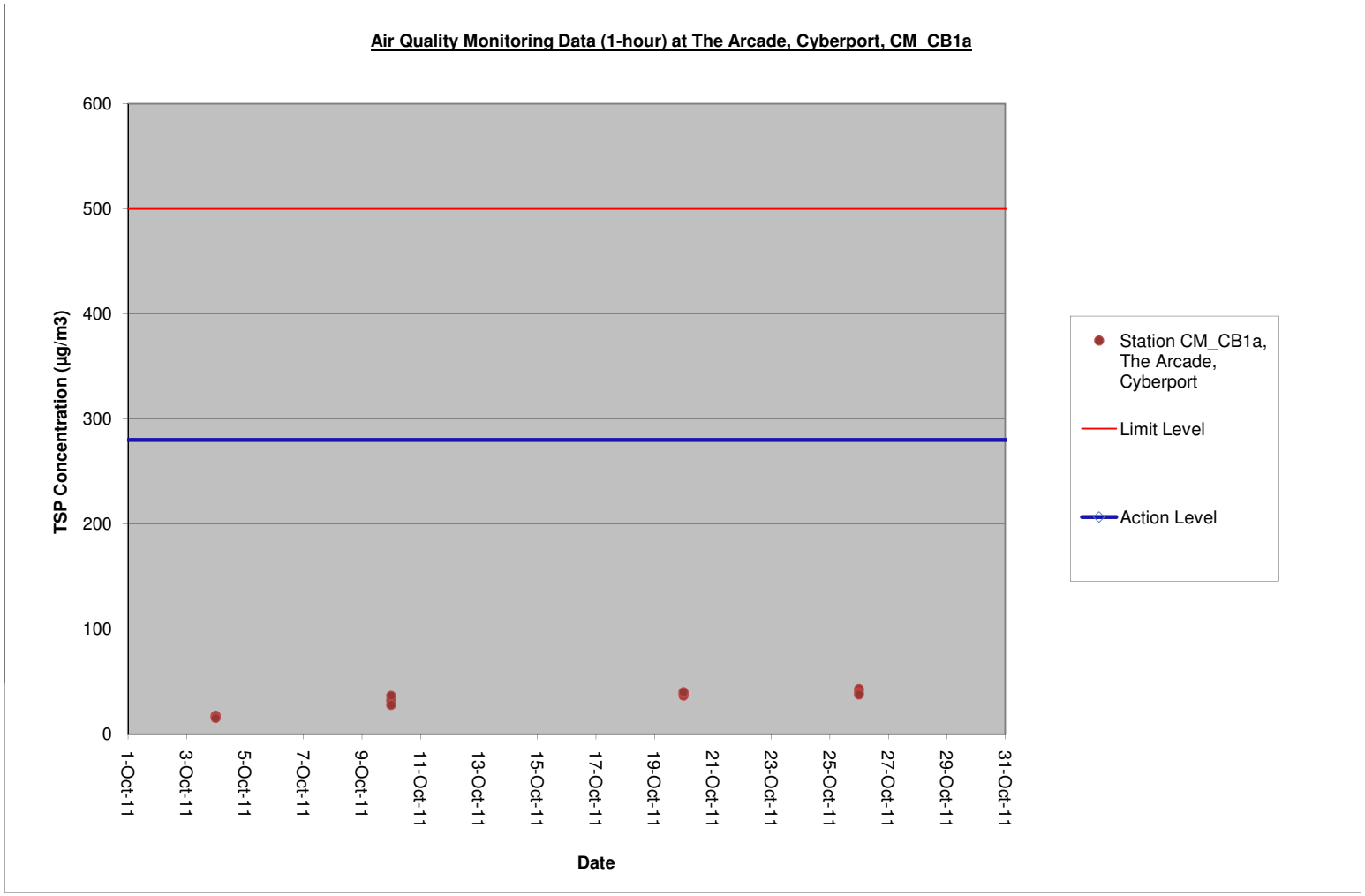
Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)

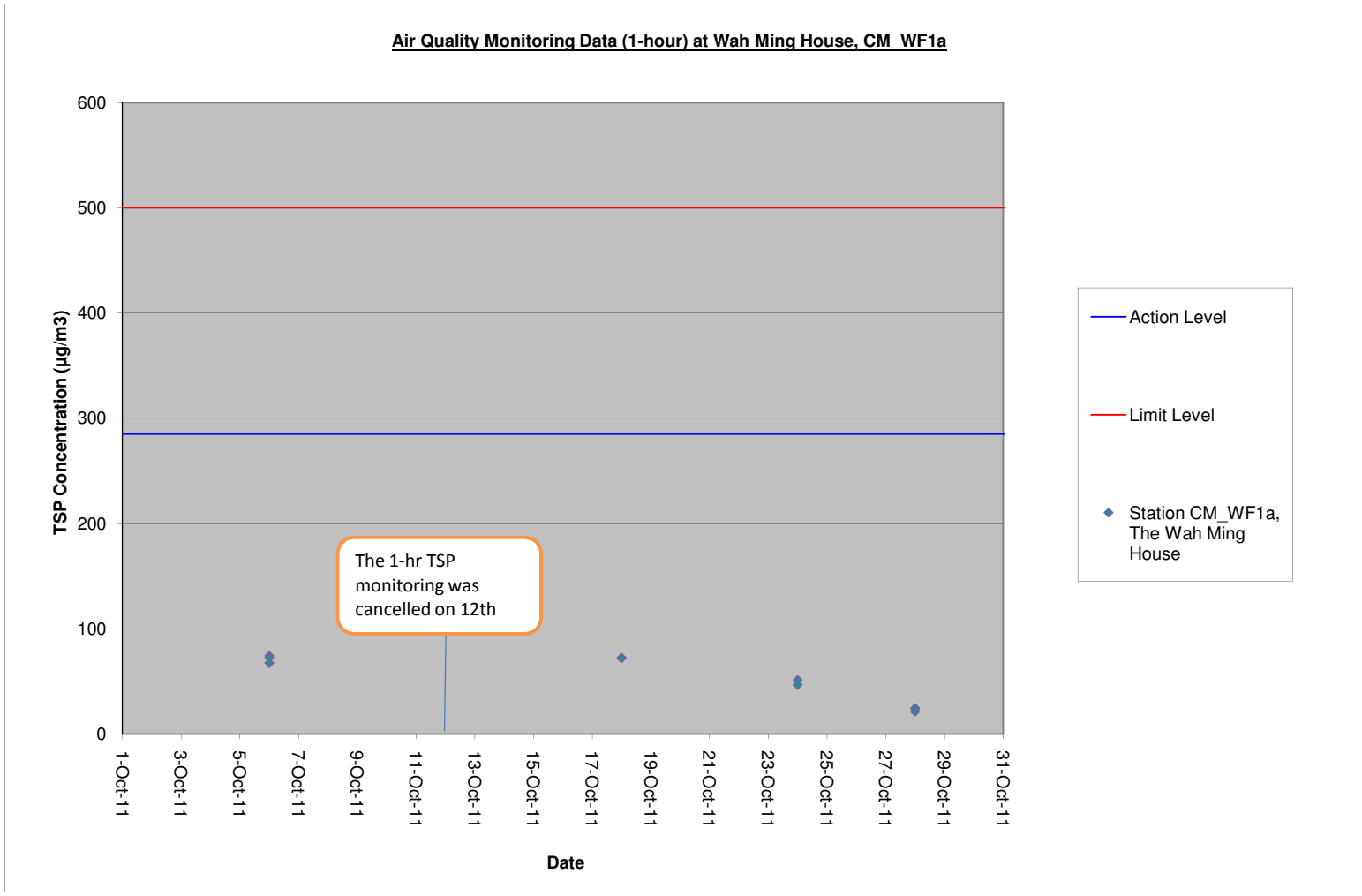
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)			
3-Oct-11	8:00	4-Oct-11	8:00	Cloudy	2.7816	2.8494	3129.53	3153.53	24.00	0.8881	0.8881	0.8881	53	174.2	260	No major construction works	Ice Factory	765
7-Oct-11	8:00	8-Oct-11	8:00	Cloudy	2.7919	2.9424	3153.56	3177.56	24.00	0.9127	0.9127	0.9127	115	174.2	260	No major construction works	Ice Factory	773
13-Oct-11	8:00	14-Oct-11	8:00	Cloudy	2.7944	2.8436	3178.63	3202.63	24.00	0.9123	0.9123	0.9123	37	174.2	260	No major construction works	Ice Factory	779
19-Oct-11	8:00	20-Oct-11	8:00	Haze	2.7868	2.913	3205.76	3229.76	24.00	0.9150	0.9150	0.9150	96	174.2	260	No major construction works	Ice Factory	787
25-Oct-11	8:00	26-Oct-11	8:00	Cloudy	2.787	2.9112	3229.80	3253.80	24.00	0.8957	0.8957	0.8957	96	174.2	260	Operation of excavator and loading activities	Ice Factory	794
31-Oct-11	8:00	1-Nov-11	8:00	Sunny	2.7675	2.8775	3253.80	3277.80	24.00	0.8961	0.8961	0.8961	85	174.2	260	Operation of excavator and loading activities	Ice Factory	801
												Min.	**53**					
												Max.	**115**					
												Average	**80**					

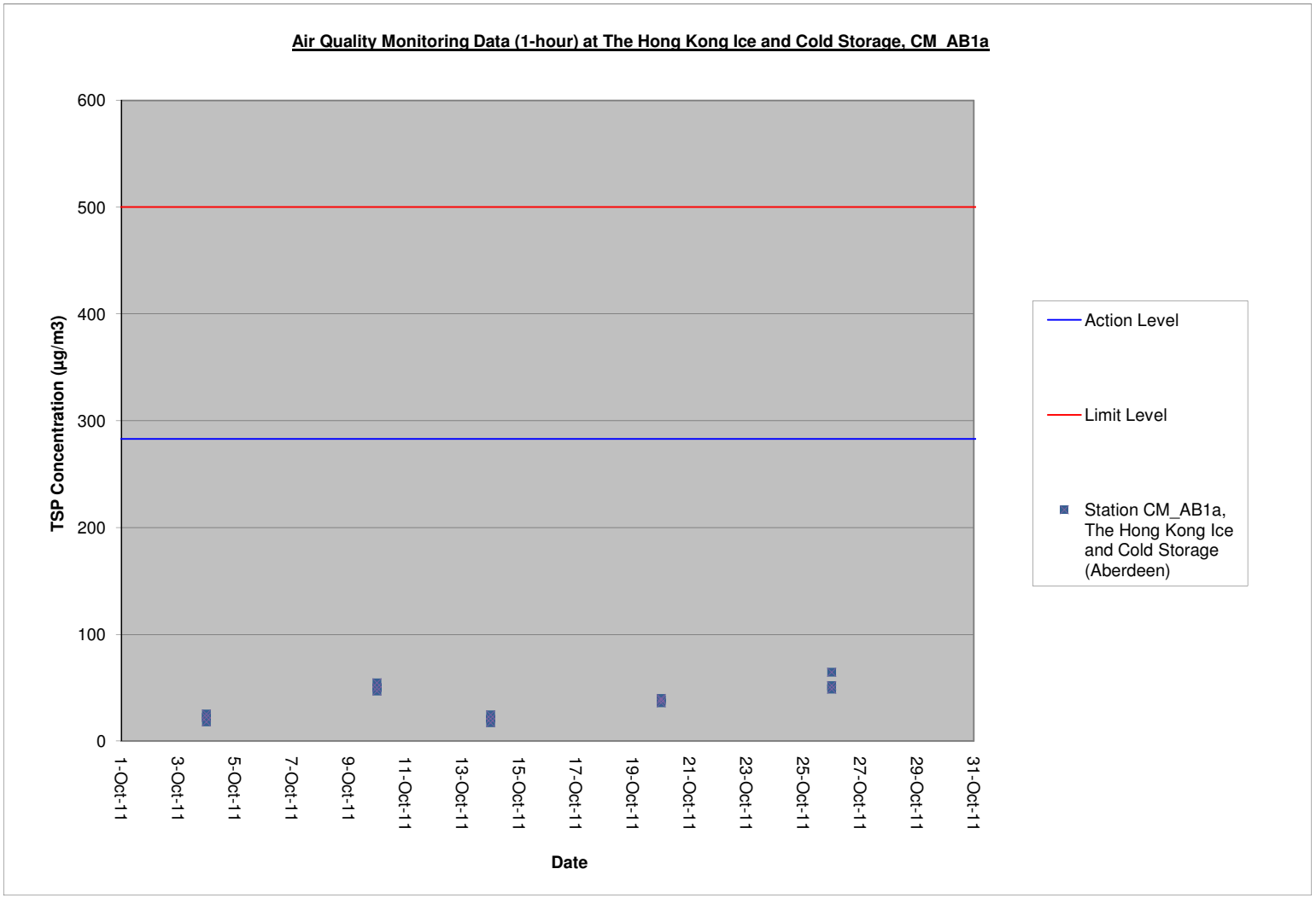
APPENDIX K

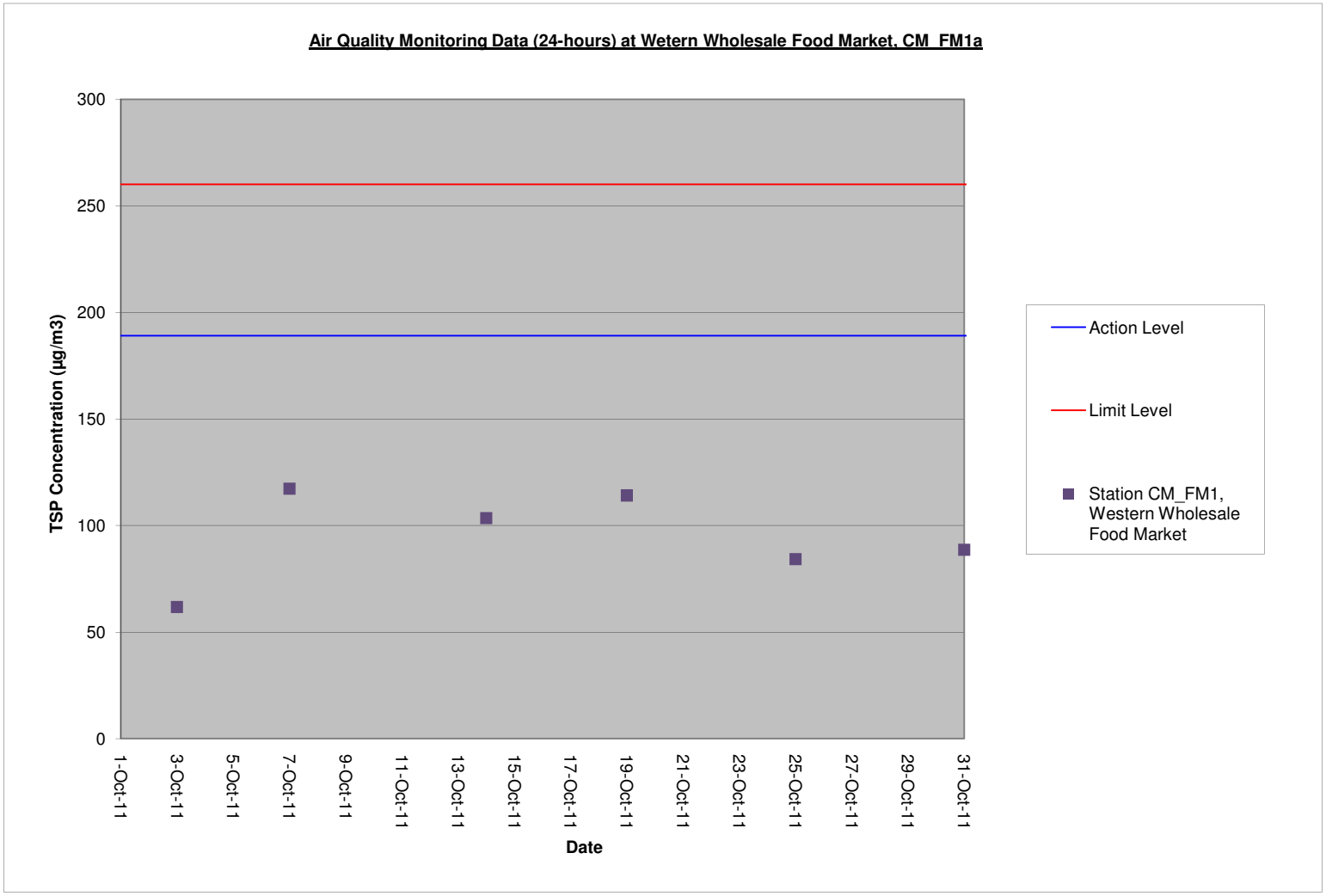
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING DATA

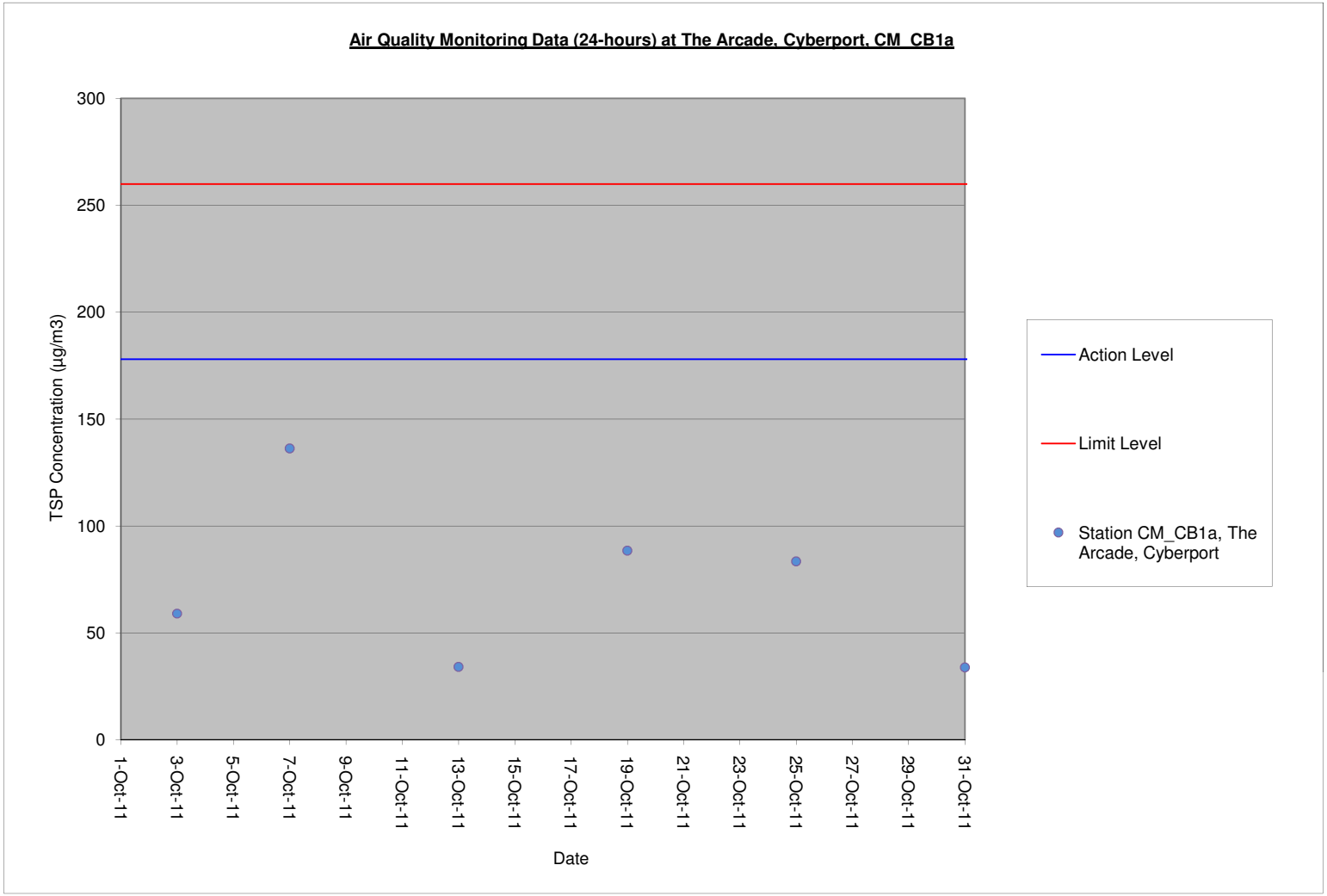

Air Quality Monitoring Data (1-hour) at Western Wholesale Food Market, CM_FM1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Action Level
Limit Level
Station CM_FM1, Western Wholesale Food Market

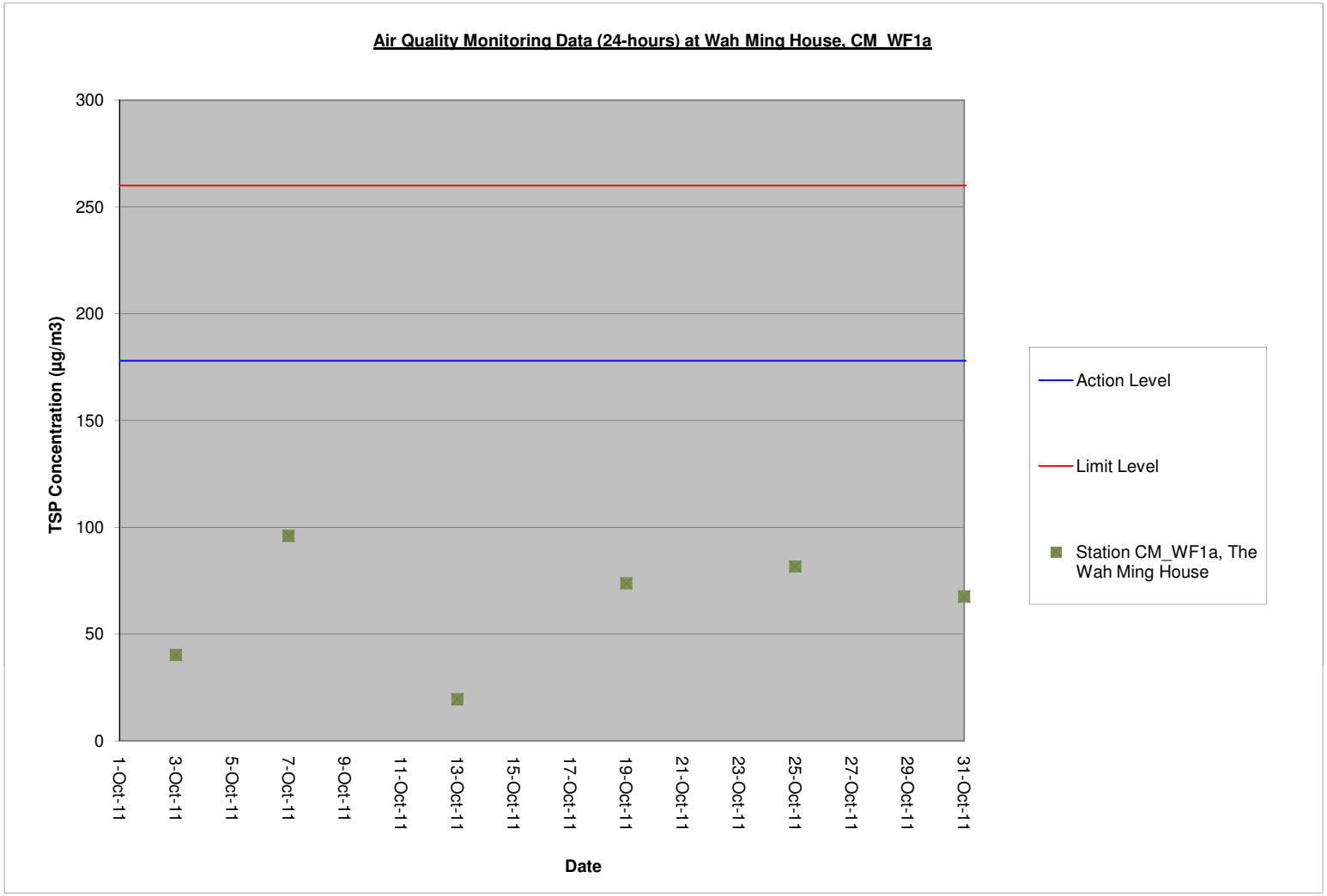

Air Quality Monitoring Data (1-hour) at The Arcade, Cyberport, CM_CB1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Station CM_CB1a, The Arcade, Cyberport
Limit Level
Action Level

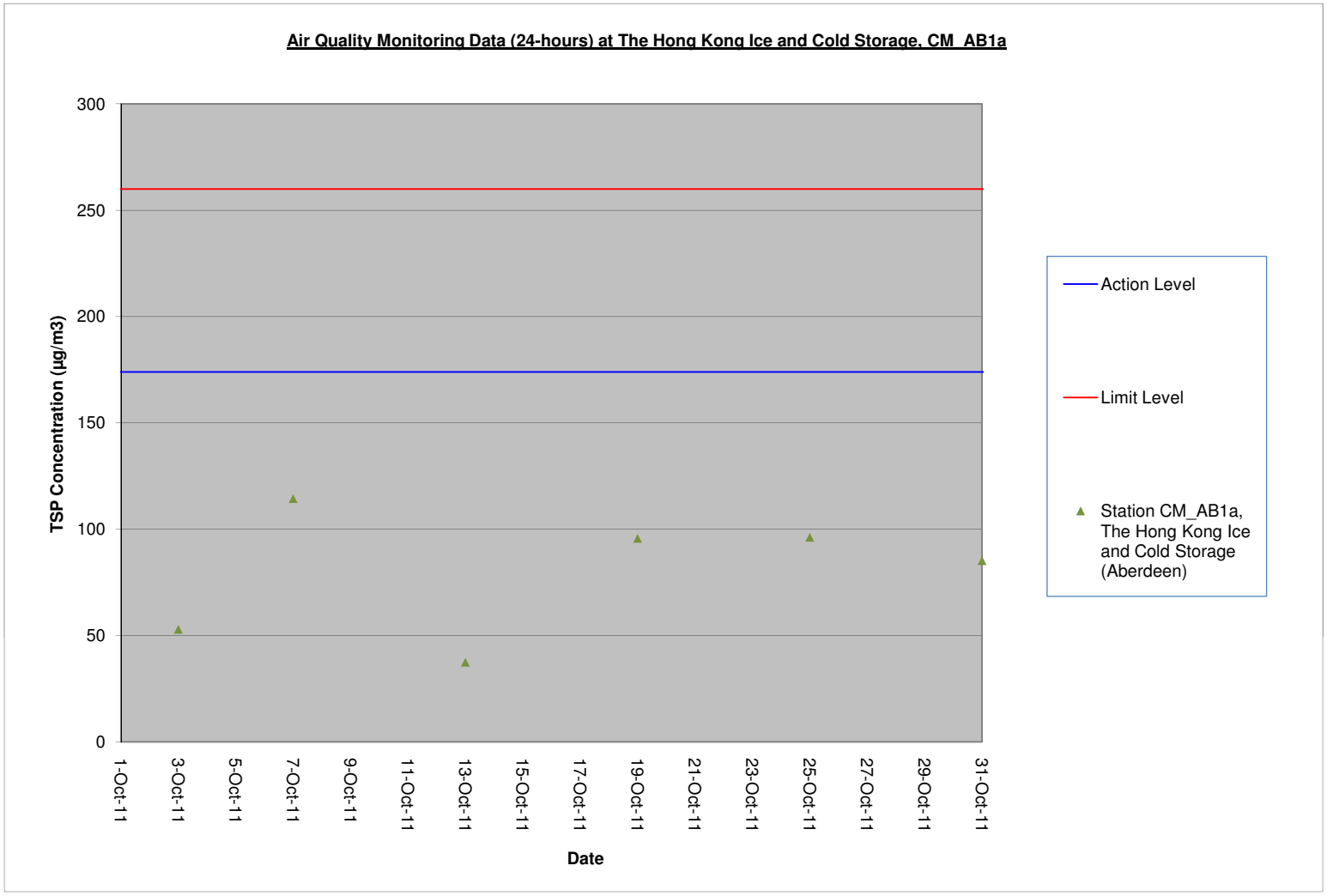

Air Quality Monitoring Data (1-hour) at Wah Ming House, CM_WF1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
The 1-hr TSP monitoring was cancelled on 12th
Action Level
Limit Level
Station CM_WF1a, The Wah Ming House


Air Quality Monitoring Data (1-hour) at The Hong Kong Ice and Cold Storage, CM_AB1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Action Level
Limit Level
Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)


Air Quality Monitoring Data (24-hours) at Wetern Wholesale Food Market, CM_FM1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Action Level
Limit Level
Station CM_FM1, Western Wholesale Food Market


Air Quality Monitoring Data (24-hours) at The Arcade, Cyberport, CM_CB1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Action Level
Limit Level
Station CM_CB1a, The Arcade, Cyberport


Air Quality Monitoring Data (24-hours) at Wah Ming House, CM_WF1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Action Level
Limit Level
Station CM_WF1a, The Wah Ming House


Air Quality Monitoring Data (24-hours) at The Hong Kong Ice and Cold Storage, CM_AB1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Oct-11
3-Oct-11
5-Oct-11
7-Oct-11
9-Oct-11
11-Oct-11
13-Oct-11
15-Oct-11
17-Oct-11
19-Oct-11
21-Oct-11
23-Oct-11
25-Oct-11
27-Oct-11
29-Oct-11
31-Oct-11
Date
Action Level
Limit Level
Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)

APPENDIX L

LANDSCAPE AND VISUAL MONITORING REPORT

REPORT

Leighton – LNS Joint Venture

Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun: *22nd Monthly Landscape & Visual Monitoring Report*

October 2011

Environmental Resources Management
21/F Lincoln House
979 King's Road
Taikoo Place
Island East, Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
http://www.erm.com

REPORT

Leighton – LNS Joint Venture

Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun: *22nd Monthly Landscape & Visual Monitoring Report*

October 2011

Reference 0109356

For and on behalf of ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:

Position: Partner

Certified by:

Registered Landscape Architect,
Christina Ip

Date: 11 November 2011

CONTENTS

1 IMPACT LANDSCAPE AND VISUAL MONITORING

1.1 INTRODUCTION

The construction works of *DC/2007/24 of Harbour Area Treatment Scheme Stage 2A (HATS2A) - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun* (the Project) commenced on 23 December 2009. This is the twenty second monthly impact landscape and visual (L&V) monitoring report presenting the monthly L&V site audit findings conducted during the period from 1 October to 31 October 2011.

1.2 MONITORING PARAMETERS

According to the EM&A Manual, the L&V monitoring should include checking of the design and auditing of the implementation and maintenance of L&V mitigation measures to ensure that they are undertaken in accordance with the recommendations of the approved EIA Report (*EIA-148/2008*).

The twenty second monthly site audit was undertaken on 25 October 2011 to check the design, implementation and maintenance of the L&V mitigation measures at work sites in Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun.

The proposed L&V mitigation measures during the construction phase recommended in the approved EIA Report (*EIA-148/2008*) are listed in *Table 1.1* and shown in *Annex A*.

Table 1.1 Proposed Landscape Mitigation Measures for Construction Phase

ID No.	Landscape and Visual Mitigation Measures	Sites
CM1	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun
CM2	Existing trees to be retained on site should be carefully protected during construction.	Aberdeen, Wah Fu, Cyberport, Sandy Bay
CM3	Trees unavoidably affected by the works should be transplanted where practical.	Aberdeen, Cyberport, Sandy Bay
CM4	Compensatory tree planting should be provided to compensate for felled trees.	Aberdeen, Cyberport, Sandy Bay
CM5	Control of night-time lighting.	Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun
CM6	Erection of decorative screen hoarding compatible with the surrounding setting.	Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun

1.3 SITE AUDIT FINDINGS AND OBSERVATIONS

The findings and observations of the site audit are recorded and summarised in *Annex B*.

2 CONCLUSIONS

The twenty second monthly landscape and visual site audit was undertaken on 25 October 2011 to check the design, implementation and maintenance of L&V mitigation measures at work sites in Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun under the Contract *DC/2007/24 of Harbour Area Treatment Scheme Stage 2A (HATS2A) - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun*.

2.1 FOLLOW-UP ACTIONS TAKEN AFTER PREVIOUS SITE AUDIT

The build up of stagnant water around retained tree T048(R) was observed at the Cyberport site. The retained trees T036(R), T037(R) and T020(R) at the Sandy Bay site were still showing poor health condition and are possibly dead. For general tree issues identified from previous site audits (ie poor health condition of transplanted trees and retained trees), follow up actions remain outstanding at the Sandy Bay and Cyberport sites.

2.2 OBSERVATIONS AND RECOMMENDATIONS

All L&V mitigation measures presented in *Table 1.1* have been implemented in full except for CM2 at Cyberport site, CM2 at Aberdeen Site, and, CM2 and CM3 at the Sandy Bay site.

Cyberport Site

Formation of stagnant water was still observed at the Cyberport site since the audit undertaken in July and the water may affect the overall health condition of the retained tree T048(R). The Contractor was highly advised to take immediate and necessary actions to provide a temporary drain to divert the water away from the retained tree.

Sandy Bay Site

The retained trees T036(R), T037(R) and T020(R) were still observed in poor health condition and may have been dead since the audit undertaken in July. The Contractor was advised to check the overall health condition of the retained trees and to take immediate and necessary mitigation measures to revive their health conditions or replaced all affected trees if confirmed dead. Retained trees T036(R) and T037(R) were affected by the formation of stagnant water observed during the site audit and T020(R) was observed to be in poor health condition since the site audit in June.

The retained trees T028(R) and T038(R) exhibited some deterioration and damage to the branches and had dried leaves falling-off from the affected areas. These conditions were observed during the last audit in July. The Contractor was recommended to schedule trimming o the affected areas and

take necessary mitigation measures to improve the overall health condition of the trees.

ERM also spotted a tree within the boundary that protrudes from the adjacent site with the tree name T063 (R). This tree was observed in a very poor health condition and is likely dead. The Contractor was recommended to check if this tree was part of the original tree survey, and if the tree is confirmed to be part of the original tree survey report, the Contractor was advised to properly tag the tree and take immediate action to revive its health condition or replace if confirmed dead.

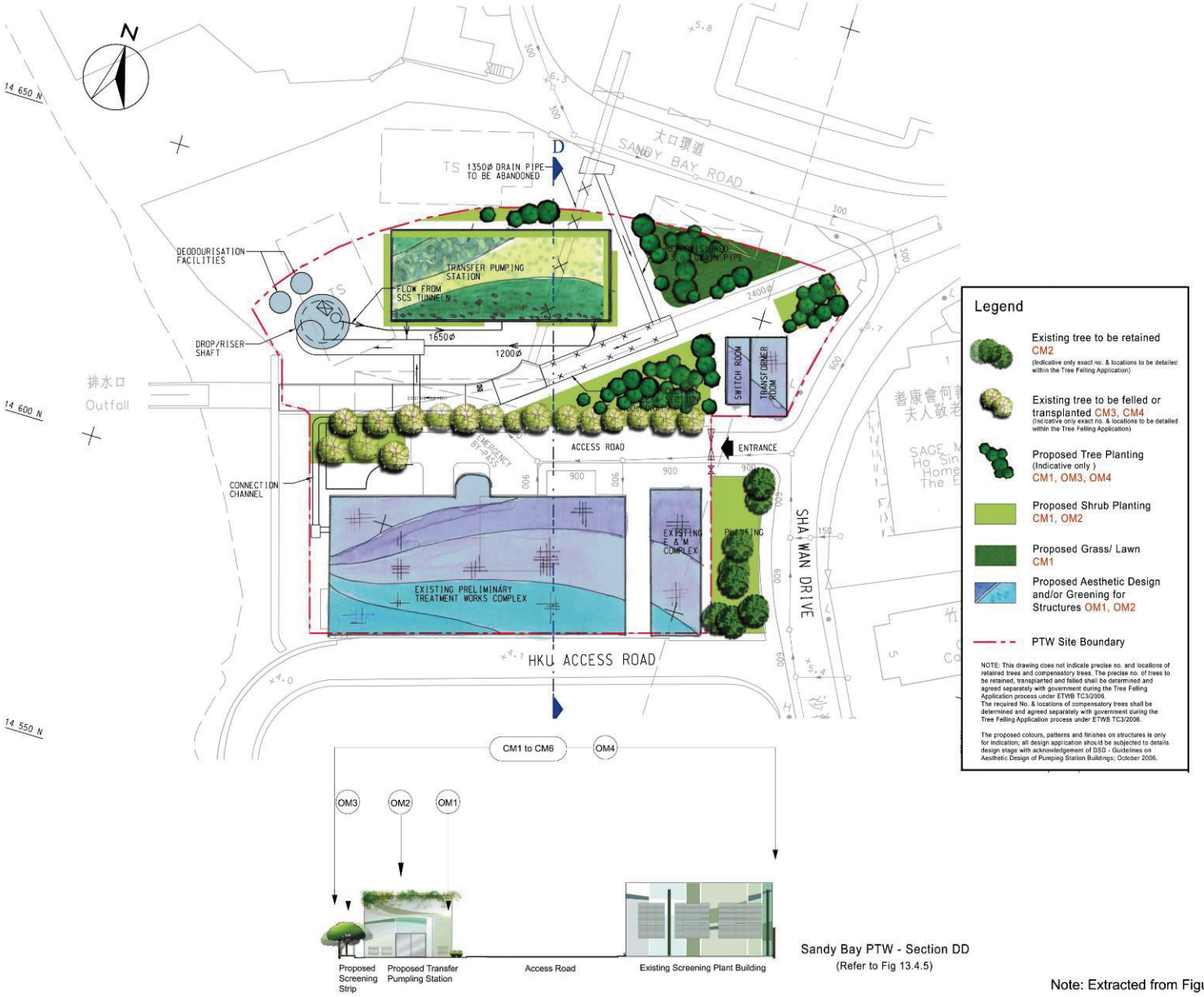
The transplanted trees T004 (T) and T005 (T) were still observed to be in very poor health condition and may have been dead since the 10th monthly audit undertaken in December 2010). The Contractor was reminded to take appropriate action immediately to restore the health condition of the transplanted trees or to replace them if confirmed dead.

Aberdeen Site

Construction material was observed to be leaning directly on the stem of retained tree T081(R) and a bag of garbage was stored very near to the roots of T083(T). The Contractor was advised to relocate the construction materials away from the retained tree and remove all garbage bags from the roots of the transplanted tree.

Annex A

Landscape Mitigation Measures (Reference to Approved EIA Report (EIA-148/2008))



Note: Extracted from Figures 13.4.5 & 13.4.12 of EIA-148/2008.

Figure 1.1

Landscape Mitigation Measure in Sandy Bay

FILE: 0109356-ILV-SB-Fig1.1
DATE: 30 March 2010

Environmental Resources Management

ERM

Cyberport PTW - Section EE
(Refer to Fig 13.4.6)

Note: Extracted from Figures 13.4.6 & 13.4.13 of EIA-148/2008.

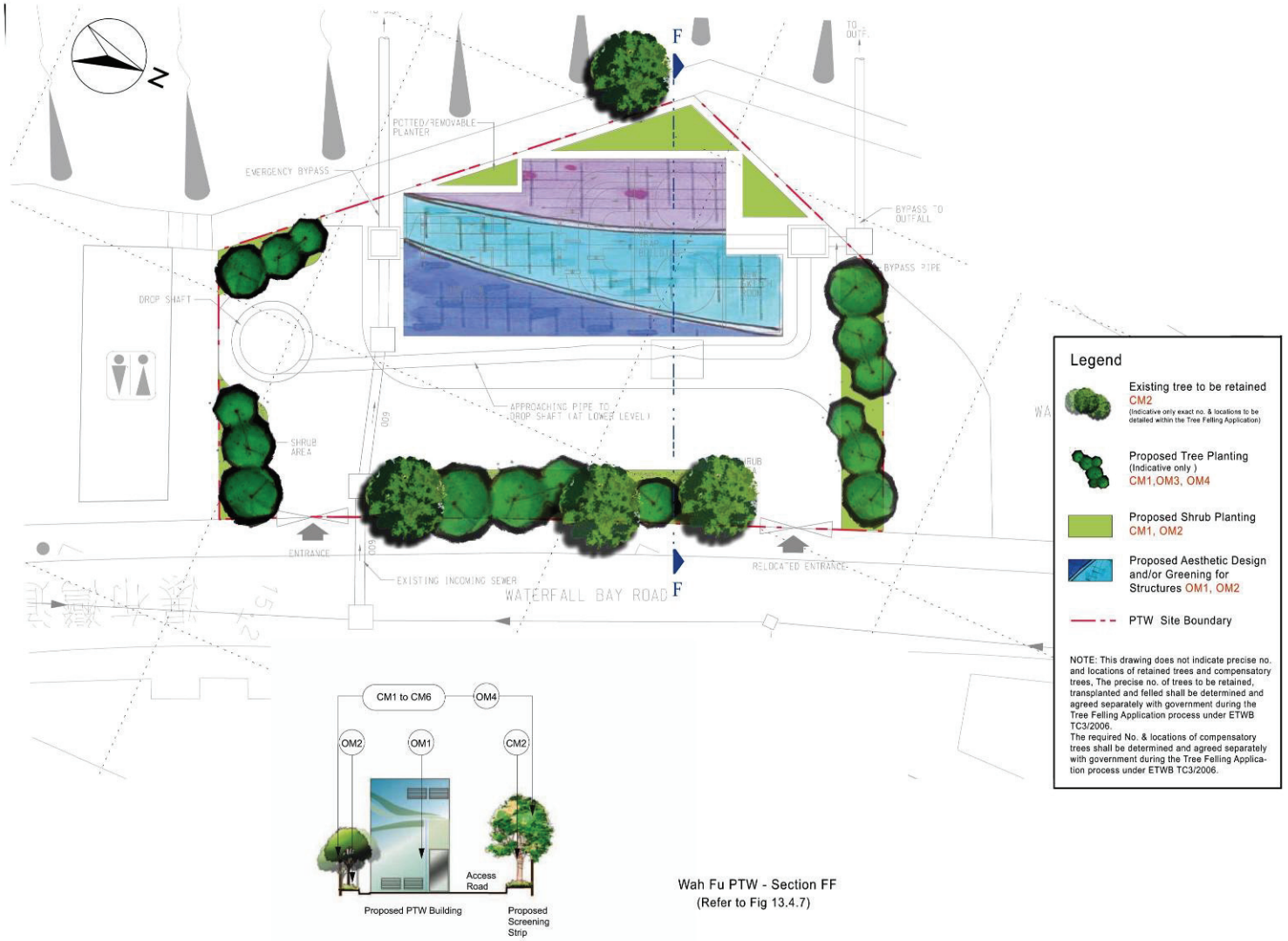
Figure 1.2

Landscape Mitigation Measure in Cyberport

FILE: 0109356-ILV-CP-Fig1.2.cdr
DATE: 30 March 2010

Environmental Resources Management

ERM



Wah Fu PTW - Section FF
(Refer to Fig 13.4.7)

Note: Extracted from Figures 13.4.7 & 13.4.13 of EIA-148/2008.

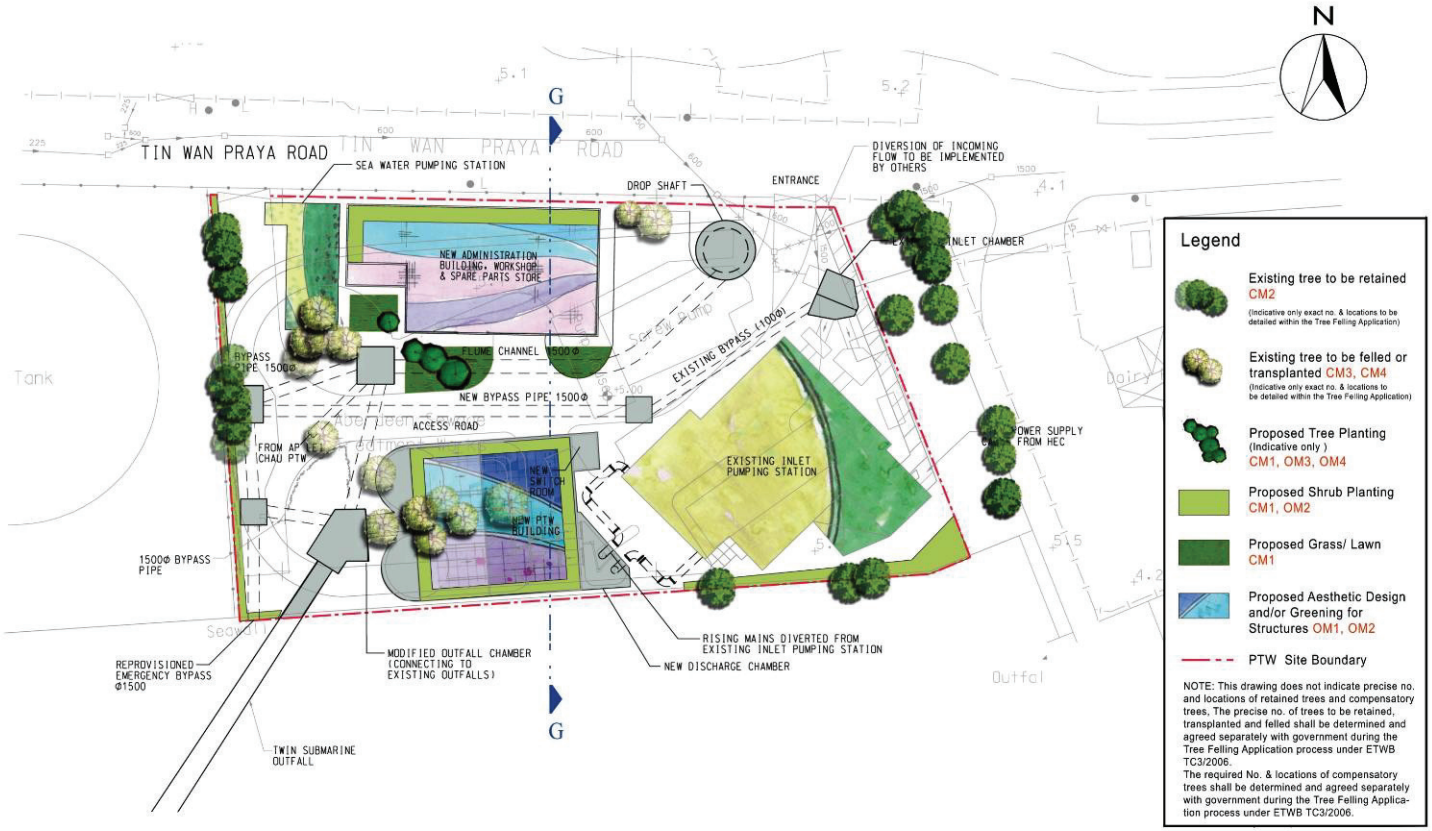
Figure 1.3

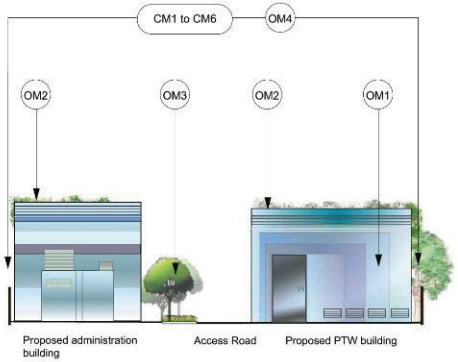
Landscape Mitigation Measure in Wah Fu

FILE: 0109356-ILV-WF-Fig1.3.cdr
DATE: 30 March 2010

Environmental Resources Management

ERM





Aberdeen PTW - Section GG
(Refer to Fig 13.4.8)

Note: Extracted from Figures 13.4.8 & 13.4.14 of EIA-148/2008.

Figure 1.4

Landscape Mitigation Measure in Aberdeen

FILE: 0109356-ILV-A-Fig1.4.cdr
DATE: 30 March 2010

Environmental Resources Management

ERM

Annex B

Site Inspection Checklist

Reporting Period : 1 October to 31 October 2011

Site Inspection Date : 25 October 2011

Inspected By : Jon Binalay

Site	CM1 **Topsoil identified stripped and stored for re-use in the construction of soft landscape works, where practical**	CM2 **Existing trees to be retained on site should be carefully protected during construction**	CM3 **Trees unavoidably affected by the works should be transplanted where practical.**	CM4 **Compensatory tree planting should be provided to compensate for felled trees.**	CM5 **Control of night-time lighting.**	CM6 **Erection of decorative screen hoarding compatible with the surrounding setting.**	Recommendations
Sai Ying Pun	No major excavation works were conducted. No stockpile of excavated soil was observed.	Not Applicable - No tree was identified at the Sai Ying Pun Area	Not Applicable - No tree was identified at the Sai Ying Pun Area	Not applicable - No tree was identified at the Sai Ying Pun Area	Night-time lighting was used until 2300 hours per day on 1st to 31st of October..	Decorative screen hoarding were erected and was compatible to the surrounding setting.	Not required
Sandy Bay	No major excavation works were conducted. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected. T036(R) and T037(R) were still showing poor health condition and it might have been dead since the last audit in July (see *Photos 1, 2, 3 and 4*).	No tree was transplanted during this reporting month. T004 (T) and T005(T) were still found to be in very poor health condition and might be dead (see *Photo 11*).	Not applicable - Compensatory tree planting has not been started.	Night-time lighting was used for 24 hours per day on 1st to 31st of October..	Decorative screen hoarding were erected and was compatible to the surrounding setting.	Contractor was advised to consult their tree consultant regarding the health conditions of T036(R), T037(R) and T020(R), and take necessary mitigation measures to improve the health of the trees immediately. The Contractor is also advised to consult their tree consultant and take appropriate actions to restore the health

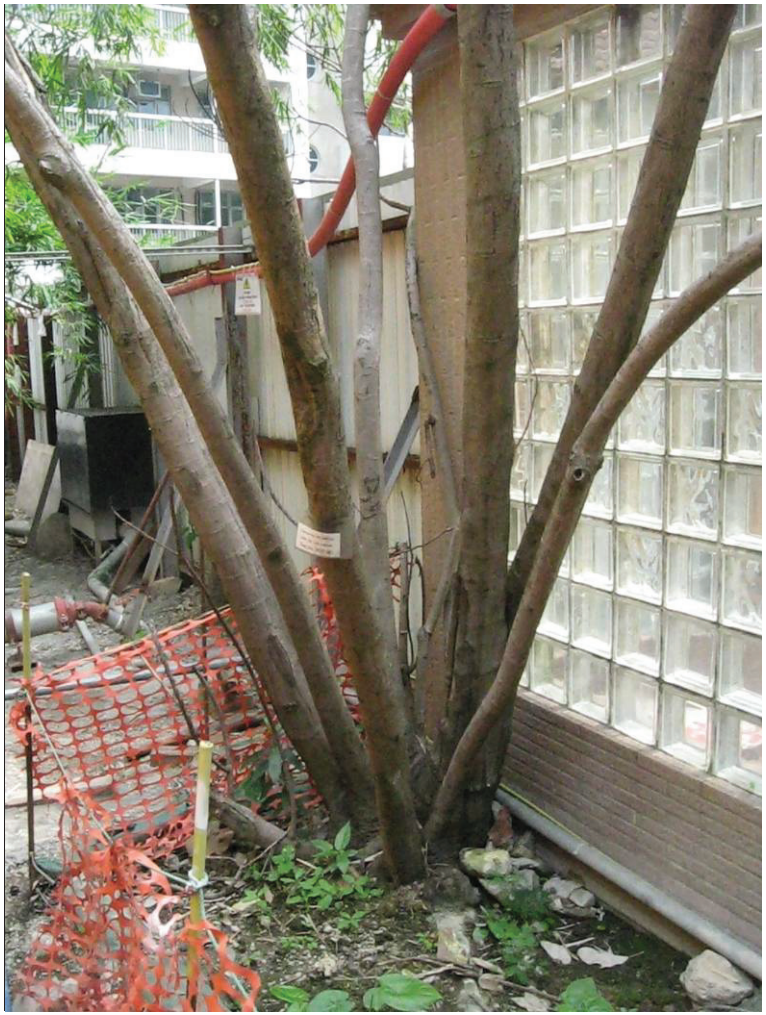
Site	CM1 Topsoil identified stripped and stored for re-use in the construction of soft landscape works, where practical	CM2 Existing trees to be retained on site should be carefully protected during construction	CM3 Trees unavoidably affected by the works should be transplanted where practical.	CM4 Compensatory tree planting should be provided to compensate for felled trees.	CM5 Control of night-time lighting.	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Recommendations
		T020(R) was still showing poor health condition and might have been dead. (see *Photo 5*), T028(R) and T038(R) were observed damages on some parts of its branches. (see *Photos 6* and *7*) A tree protruding adjacent to other site with tree name T063 (R) was spotted and was observed to be in a very poor health condition (see *Photo 8*).					conditions of the transplanted trees T004(T), and T005(T) immediately or replaced it if found dead immediately. The Contractor was also advised to check the damages on T028(R) and T038(R) and take necessary mitigation measures to improve the overall health condition of the trees. The Contractor was advised to double check the tree T063 (R) if this is part of the original tree survey and if it is confirmed part of the survey, the Contractor was advised to tag the tree properly and take necessary action to improve its health condition.

Site	CM1 Topsoil identified stripped and stored for re-use in the construction of soft landscape works, where practical	CM2 Existing trees to be retained on site should be carefully protected during construction	CM3 Trees unavoidably affected by the works should be transplanted where practical.	CM4 Compensatory tree planting should be provided to compensate for felled trees.	CM5 Control of night-time lighting.	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Recommendations
Cyberport	No major excavation works were conducted. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected properly. Formation of stagnant water was still observed around retained tree T048(R) and might affect the overall health condition of the tree. (See *Photo 12*)	No tree was transplanted during this reporting month.	Not applicable - Compensatory tree planting has not been started.	Night-time lighting was used for 24 hours per day on 1st to 31st of October.	Noise enclosure was erected over the shaft. A yellow color was used for the materials of the noise enclosure, similar to the color of the existing STW façade.	Contractor was advised to check the source of the stagnant water that might affect condition of the retained tree and clear the stagnant water immediately.
Wah Fu	No major excavation works were conducted. No stockpile of excavated soil was observed.	Not Applicable - No existing trees were identified to be affected within the works area.	Not Applicable - No existing trees were identified to be affected within the works area.	Not applicable - No existing trees were identified to be affected within the works area.	Not applicable - No night-time lighting was used.	Screening was erected and was compatible to the surrounding setting.	Not required
Aberdeen	No major excavation works were conducted. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected properly. A construction material directly leaning on the stem of T081(R) (see *Photos 9*).	All tree transplantation works have been completed and all transplanted trees are properly supported by tripod.	Not applicable - Compensatory tree planting has not been started.	Night-time lighting was used until 2300 hours on 24th to 29th of October.	Screen hoarding was erected and the grey colour was compatible to the surrounding setting.	The Contractor was advised top relocate the construction materials away from the retained tree T081(R) and remove all garbage bag way from the roots of transplanted tree T083(T).

Site	CM1	CM2	CM3	CM4	CM5	CM6	Recommendations
	Topsoil identified stripped and stored for re-use in the construction of soft landscape works, where practical	**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.**	**Erection of decorative screen hoarding compatible with the surrounding setting.**	
		A bag of garbage was found very near to the roots of T083(T) (see *Photos 10)*					

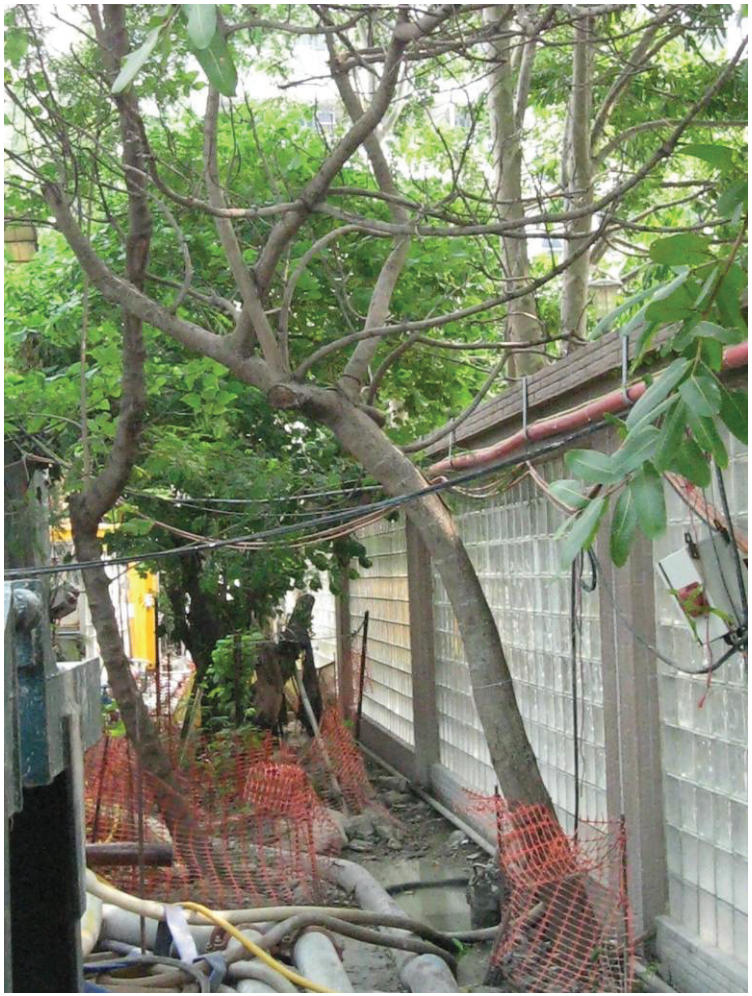
Sandy Bay site --- Photo 1
Retained trees T036(R) were still in poor health condition and it might be dead since the last audit.

Sandy Bay site --- Photo 2
Close-up photo for retained trees T036(R) were still in poor health condition and it might be dead since the last audit.

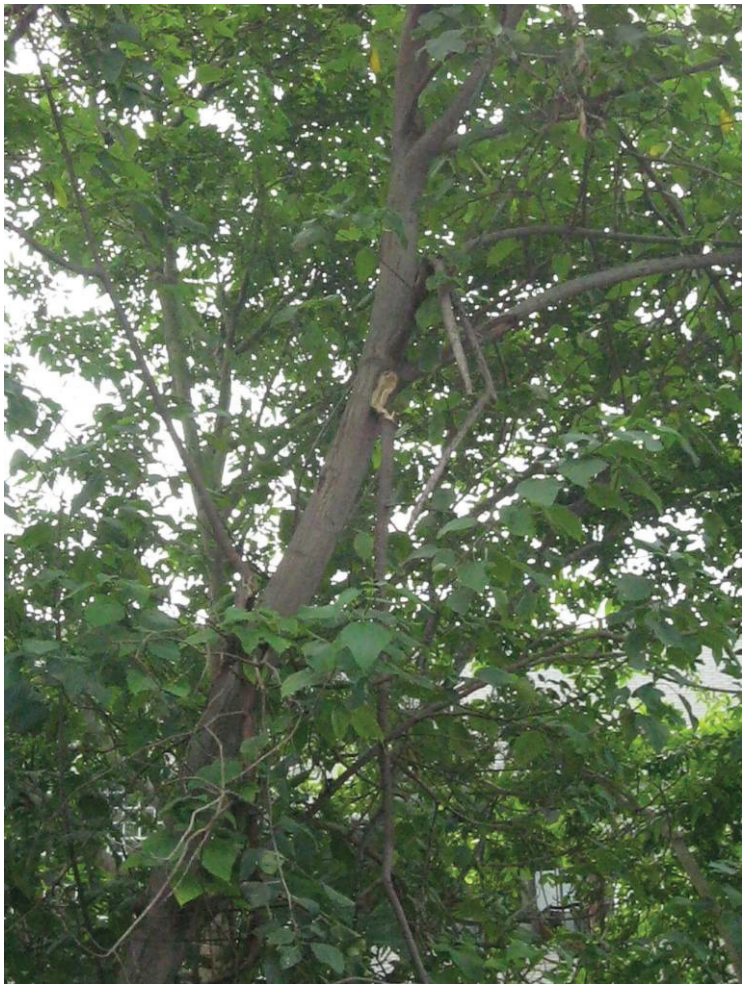


Sandy Bay site --- Photo 3
Retained tree T037(R) were still in poor health condition and it might be dead since the last audit.

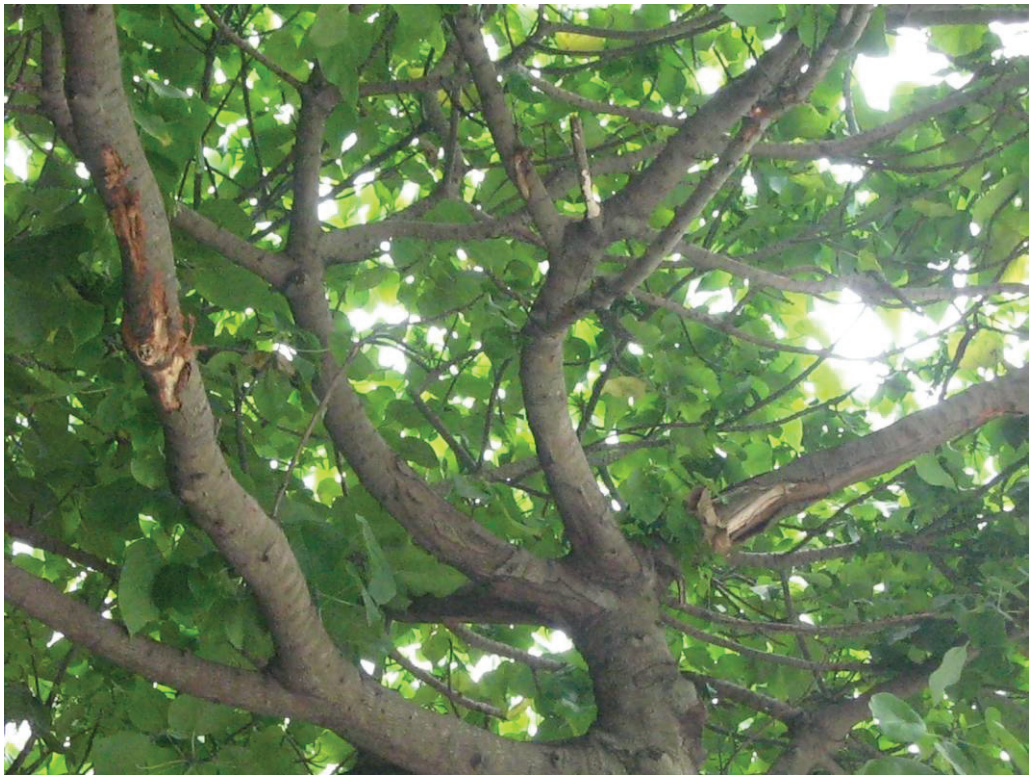
Sandy Bay site --- Photo 4
Close-up photo for retained tree T037(R) were still in poor health condition and it might be dead since the last audit.



Sandy Bay site --- Photo 5
Retained tree T020(R) was still observed to be in poor health condition.



Sandy Bay site --- Photo 6
The retained Trees T028 (R) was still observed some deterioration and damages on the stems.



Sandy Bay site --- Photo 7
The retained Tree T038 (R) was still observed some deterioration on its health.

Sandy Bay site --- Photo 8
Tree T063 (R) was spotted protruding at the adjacent site. This tree needs verification. .

Aberdeen site --- Photo 9
Construction material directly leaning on the stems of retained tree T081(R) was observed.

Aberdeen Site --- Photo 10
Garbage bag was found at the roots of the transplanted Trees T083 (T).

Sandy Bay site --- Photo 11
The transplanted Trees T004 (T) and T005 (T) were still observed in poor health condition and might be dead. .

Cyberport site --- Photo 12
Formation of stagnant water was still observed around retained tree T048(R).

(Name: Christina Ip,
Registered Landscape Architect)

APPENDIX M

NOTIFICATION OF EXCEEDANCES

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 087

Date of Notification: 13th October 2011

Works Inspected: Data collected from night-time (between 23:00-07:00 hrs of next day) noise monitoring on 4th October 2011

Noise Monitoring Location: M6a — Aegean Terrace

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 4th October 2011		
23:00–07:00 hrs Normal weekday	1 complaint	50 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				52.0 dB(A)	52.0 dB(A)	51.1 dB(A)

* Free-field measurement, +3dB correction

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during night-time noise monitoring at M6a on 4th October 2011.

From the Contractor's record, powered mechanical equipment (PME) used in the Cyberport PTW works site during noise monitoring period included powered mechanical equipments as listed in Construction Noise Permit (CNP) No. GW-RS0633-11.

According to the Project Baseline Environmental Monitoring Report (Doc No. GEN/026), the average 5-min baseline noise level was found to be 50.8 dB(A), which already exceeded the Limit Level of 50 dB(A) set out in the Project EM&A Manual. It is also noted that the night-time BGL at M6a ranged from 41.6 dB(A) to 67.0 dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise source were the local traffics of Aegean Terence.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Ruby Law Title : Environmental Technician

Date : 13th October 2011

Reviewed and approved by : Susana Halliday Title : Environmental Team Leader

Date : 13th October 2011

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 088

Date of Notification: 13th October 2011

Works Inspected: Data collected from daytime and evening time during general holiday (between 07:00-23:00 hrs)noise monitoring on 9th October 2011

Noise Monitoring Location: M5a —near entrance of Chuk Lam Ming Tong

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	08:00 – 08:15 hrs on 9th October 2011		
07:00–23:00 hrs	1 complaint	60 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				66.0 dB(A)	66.0 dB(A)	68.6 dB(A)

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during daytime and evening during general holiday noise monitoring at M5a on 9th October 2011.

From the Contractor's record, powered mechanical equipment (PME) used in the Sandy Bay works site during noise monitoring period included powered mechanical equipments as listed in Construction Noise Permit (CNP) No. GW-RS0610-11.

A baseline noise level monitoring at this monitoring location (for restricted hours) was conducted on 7th November 2010 from 16:19 to 16:34 hrs. All PMEs listed under the CNP No. GW-RS0133-11 were ensure to shut down during the measurement. The average 5-min baseline noise level was found to be 65.9dB (A), which already exceeded the Limit Level of 60dB (A) set out in the Project EM&A Manual. It is also noted from the Project Baseline Environmental Monitoring Report (Doc No. GEN/026) that the daytime and evening time BGL at M5 (roof of Chuk Lam Ming Tong) ranged from 55.1dB (A) to 75.2dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise source was road traffic noise at San Wan Drive and the noise from opening/closing of the gate at the entrance of Chuk Lam Ming Tong.

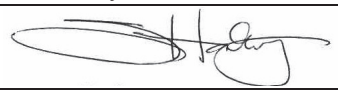
Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Jacky Lee Title : Assistant Environmental Consultant

Date : 13th October 2011

Reviewed and approved by : Susana Halliday Title : Environmental Team Leader



Date : 13th October 2011

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 089

Date of Notification: 19th October 2011

Works Inspected: Data collected from evening-time (between 19:00-23:00 hrs) noise monitoring on 13th October 2011

Noise Monitoring Location: M5a —near entrance of Chuk Lam Ming Tong

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	22:45 – 23:00 hrs on 13th October 2011		
19:00–23:00 hrs Normal weekday	1 complaint	60 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				64.4 dB(A)	59.2 dB(A)	61.8 dB(A)

* façade measurement

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during evening time noise monitoring at M5a on 13th October 2011.

From the Contractor's record, powered mechanical equipment (PME) used in the Sandy Bay works site during noise monitoring period included powered mechanical equipments as listed in Construction Noise Permit (CNP) No. GW-RS0610-11.

A baseline noise level monitoring at this monitoring location (for restricted hours) was conducted on 6th November 2010 from 22:39 to 22:54 hrs. All PMEs listed under the CNP No. GW-RS0940-10 were ensure to shut down during the measurement. The average 5-min baseline noise level was found to be 60.6dB (A), which already exceeded the Limit Level of 60dB (A) set out in the Project EM&A Manual. It is also noted from the Project Baseline Environmental Monitoring Report (Doc No. GEN/026) that the night-time BGL at M5a (roof of Chuk Lam Ming Tong) ranged from 56.2dB(A) to 63.6dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise source was road traffic noise at San Wan Drive.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Ruby Law Title : Environmental Technician

Date : 19th October 2011

Reviewed and approved by : Susana Halliday Title : Environmental Team Leader

Date : 19th October 2011

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 090

Date of Notification: 19th October 2011

Works Inspected: Data collected from night-time (between 23:00-07:00 hrs of next day) noise monitoring on 13th October 2011

Noise Monitoring Location: M5a —near entrance of Chuk Lam Ming Tong

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 13th October 2011		
23:00–07:00 hrs Normal weekday	1 complaint	45 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				64.6 dB(A)	64.5 dB(A)	58.5 dB(A)

* façade measurement

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during night-time noise monitoring at M5a on 13th October 2011.

From the Contractor's record, powered mechanical equipment (PME) used in the Sandy Bay works site during noise monitoring period included powered mechanical equipments as listed in Construction Noise Permit (CNP) No. GW-RS0610-11.

A baseline noise level monitoring at this monitoring location (for restricted hours) was conducted on 6th November 2010 from 23:00 to 23:15 hrs. All PMEs listed under the CNP No. GW-RS0940-10 were ensure to shut down during the measurement. The average 5-min baseline noise level was found to be 60.5dB (A), which already exceeded the Limit Level of 45dB (A) set out in the Project EM&A Manual. It is also noted from the Project Baseline Environmental Monitoring Report (Doc No. GEN/026) that the night-time BGL at M5 (roof of Chuk Lam Ming Tong) ranged from 54.4dB(A) to 70.2dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise source was road traffic noise at San Wan Drive.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Ruby Law Title : Environmental Technician

Date : 19th October 2011

Reviewed and approved by : Susana Halliday Title : Environmental Team Leader

Date : 19th October 2011

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 091

Date of Notification: 21st October 2011

Works Inspected: Data collected from night-time (between 23:00-07:00 hrs of next day) noise monitoring on 20th October 2011

Noise Monitoring Location: M6a — Aegean Terrace

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 20th October 2011		
23:00–07:00 hrs Normal weekday	1 complaint	50 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				53.9 dB(A)	56.1 dB(A)	58.6 dB(A)

* Free-field measurement, +3dB correction

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during night-time noise monitoring at M6a on 20th October 2011.

From the Contractor's record, powered mechanical equipment (PME) used in the Cyberport PTW works site during noise monitoring period included powered mechanical equipments as listed in Construction Noise Permit (CNP) No. GW-RS0633-11.

According to the Project Baseline Environmental Monitoring Report (Doc No. GEN/026), the average 5-min baseline noise level was found to be 50.8 dB(A), which already exceeded the Limit Level of 50 dB(A) set out in the Project EM&A Manual. It is also noted that the night-time BGL at M6a ranged from 41.6 dB(A) to 67.0 dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise source were the local traffics of Aegean Terence.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Ruby Law Title : Environmental Technician

Date : 21st October 2011

Reviewed and approved by : Susana Halliday Title : Environmental Team Leader

Date : 21st October 2011

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 092

Date of Notification: 1st November 2011

Works Inspected: Data collected from night-time (between 23:00-07:00 hrs of next day) noise monitoring on 26th October 2011

Noise Monitoring Location: M5a —near entrance of Chuk Lam Ming Tong

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 26th October 2011		
23:00–07:00 hrs Normal weekday	1 complaint	45 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				64.4 dB(A)	61.7 dB(A)	57.7 dB(A)

* façade measurement

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during night-time noise monitoring at M5a on 26th October 2011.

From the Contractor's record, powered mechanical equipment (PME) used in the Sandy Bay works site during noise monitoring period included powered mechanical equipments as listed in Construction Noise Permit (CNP) No. GW-RS0610-11.

A baseline noise level monitoring at this monitoring location (for restricted hours) was conducted on 6th November 2010 from 23:00 to 23:15 hrs. All PMEs listed under the CNP No. GW-RS0940-10 were ensure to shut down during the measurement. The average 5-min baseline noise level was found to be 60.5dB (A), which already exceeded the Limit Level of 45dB (A) set out in the Project EM&A Manual. It is also noted from the Project Baseline Environmental Monitoring Report (Doc No. GEN/026) that the night-time BGL at M5a (roof of Chuk Lam Ming Tong) ranged from 54.4dB(A) to 70.2dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise source was road traffic noise at San Wan Drive.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Ruby Law Title : Environmental Technician

Date : 1st November 2011

Reviewed and approved by : Susana Halliday Title : Environmental Team Leader

Date : 1st November 2011

Sent to: Engineer's Representative, Contractor, EPD & IEC

APPENDIX N

SUMMARY RECORDS OF SITE INSPECTIONS

4 October 2011

Aberdeen PTW

Notes / Issues Recorded On Site:
Air Quality:
The 3-sides cover at the cement mixing area was found improperly. (Photo 1)
General Housekeeping:
The general refuses were found in the wheel-washing machine. (Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 110927

General Housekeeping:
Nil.
Air Quality:
The cement mixer had been removed. (Photo 3)

Current Environmental Site Inspection Checklist – Report No. 111004

Chemical Management:
The contractor was reminded to provide the properly cover with top & 3 sides for cement mixing process.
General Housekeeping:
The contractor was reminded to remove the refuses in wheel washing machine regularly.

Photo 1 The 3-sides cover at the cement mixing area was found improperly.

Photo 2 The general refuses were found in the wheel-washing machine.

Cyberport PTW

Notes / Issues Recorded On Site:
Landscape:
1. The protection fencing for the tree was found damage at the car park area.(Photo 1)

General Housekeeping:
1. The accumulated water was found on the top of container. (Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 110927

General Housekeeping:

1. Water accumulation near entrance gate was still observed. Contractor was reminded to arrange to spray the larvicide to prevent the mosque breeding.

Chemical Management:

1. Unused chemical materials were removed on roof of workers rest area. (Photo 3)

Current Environmental Site Inspection Checklist – Report No. 111004

General Housekeeping:

1. The contractor was reminded to clear accumulated water regularly.

Landscape:

1. The contractor was reminded to provide the protection fencing for tree properly.

Photo 1 The protection fencing for the tree was found damage at the car park area

Photo 2 The accumulated water was found on the top of container.

Photo 3 Unused chemical materials were removed on roof of workers rest area.

Fung Mat Road Site

Notes / Issues Recorded On Site:

Nil.

Previous Environmental Site Inspection Checklist – Report No. 110927

Nil.

Current Environmental Site Inspection Checklist – Report No. 111004

General Housekeeping:

Nil.

Notes / Issues Recorded On Site:

Nil.

Sandy Bay

Notes / Issues Recorded On Site:

General Housekeeping:

1. The accumulated silt and muddy water was found in the manhole near the site entrance.(Photo 1)
2. The accumulated water was found on the cover of the used tire. (Photo 2)

Landscape and Visual Impacts:

1. The tree protective fence was broken behind the sedimentation tank since last inspection.(Photo 3)

Chemical Management:

1. Waste oil drum near chemical storage was found without drip tray.(Photo 4)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 110927

General Housekeeping:

1. Water accumulation was found in generator's drip tray due to the rainy before site inspection.
2. Muddy water was not found in channel near noise enclosure.

Landscape and Visual Impacts:

1. The tree protective fence was still broken behind the sedimentation tank since last inspection.

Chemical Management:

1. Waste oil drum near chemical storage was found without drip tray since last inspection.
2. Another oil spot was cleared in front of chemical waste storage. (Photo 5)

Current Environmental Site Inspection Checklist – Report No. 111004

General Housekeeping:

1. 1. The contractor was reminded to remove the silt in the manhole regularly.
2. 2. The contractor was reminded to clear the stagnant water in the site regularly during rainy season.

Chemical Management :

1. 1. The contractor was reminded to provide drip tray for the fuel drum near the chemical storage.

Landscape and Visual Impacts:

1. 1. The contractor was reminded to renew the tree's protective fence behind the sedimentation tank

Photo 1 The accumulated silt and muddy water was found in the gully pot near the site entrance.

Photo 2 The accumulated water was found on the cover of the used tire.

Photos 3 The tree protective fence was broken behind the sedimentation tank since last inspection.

Photo 4 Photo 4 Waste oil drum near chemical storage was found without drip tray.

Photo 5 Another oil spot was cleared in front of chemical waste storage.

Wah Fu PTW

Notes / Issues Recorded On Site:
General Housekeeping:
Water accumulation near mobile crane was found(Photo 1)
Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 110927

General Housekeeping:
Nil

Current Environmental Site Inspection Checklist – Report No. 111004

General Housekeeping:
The contractor was reminded to prevent the site runoff enter the public area.
Notes / Issues Recorded On Site:
General Housekeeping:
Water accumulation near mobile crane was found(Photo 1)

Photo 1 Water accumulation near mobile crane was found

11 October 2011

Aberdeen PTW

Notes / Issues Recorded On Site:

Chemical Management:

1. A chemical drum without labels was found. (Photo 1)

General Housekeeping:

1. Weed and trashes were found along the site boundary.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111004

General Housekeeping:

1. The refuses in the wheel washing machine had been cleared. (Photo 2)

Air Quality:

1. The cement mixer had been removed. (Photo 3)

Current Environmental Site Inspection Checklist – Report No. 111011

Chemical Management:

1. To provide properly label to chemical drum.

General Housekeeping:

1. The contractor is reminded to keep the site boundary tidiness.

Photo 1 A chemical drum without labels was found

Photo 2 The refuses in the wheel washing machine had been cleared

Photo 3 The cement mixer had been removed

Cyberport PTW

Notes / Issues Recorded On Site:

General Housekeeping:

1. The non-completed-valve was found top of recycle bin. (Photo 1).

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111004

General Housekeeping:

Landscape and Visual Impacts:

2. The protective fencing had been provided to the tree.(Photo 3)

Chemical Management:

2. The issues of unused chemical materials were found on roof of worker's resting area will be follow-up in the next site inspection (Photo 2)

General Housekeeping:

1. Water accumulation had been reduced and larvicidal oil had been applied near noise enclosure.

Current Environmental Site Inspection Checklist – Report No. 111011

General Housekeeping:

1. To provide cover to recycle bin to prevent water accumulation.

Chemical Management:

2. To remove unused chemical drums near noise enclosure.

Photo 1 Water accumulation was found near noise enclosure

Photo 2 Unused chemical materials were found on roof of workers resting area

Photo 3 The protective fencing had been provided to the tree.

Fung Mat Road Site

Notes / Issues Recorded On Site:

Nil.

Previous Environmental Site Inspection Checklist – Report No. 111004

Nil.

Current Environmental Site Inspection Checklist – Report No. 111011

General Housekeeping:

1. The contractor is reminded to pay attention to water accumulation since the grouting work is operation in the site.

Sandy Bay

Notes / Issues Recorded On Site:

General Housekeeping:

1. Water accumulation was found in generator 's drip tray and near noise enclosure.(Photos 1 and 2)

Landscape and Visual Impacts:

1. The tree protective fence was broken behind the sedimentation tank since last inspection.(Photo 3)

Chemical Management:

1. Chemical drum near chemical storage was found without drip tray since last two inspection.(Photo 4)
2. Oil spot was found around the site, especially near the wheel entrance .(Photo 5)
3. A unknown chemical spot was found in the front of chemical storage.(Photo 6)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111005

General Housekeeping:

1. The silt in the manhole had been removed.(Photo 7)

Current Environmental Site Inspection Checklist – Report No. 111011

General Housekeeping:

3. To clear accumulated water in generator's drip tray and the area next to noise enclosure.
4. The contractor is reminded that all waste water in the site should be treated with sedimentation tank.

Chemical Management :

1. To provide drip tray to chemical drum near the chemical storage as soon as possible.
2. To treat the oil spot in front of chemical waste storage as chemical waste.
3. The contractor is reminded to pay attention to chemical leakage during chemical transportation in the front of chemical transportation.

Landscape and Visual Impacts:

1. To renew the tree's protective fence behind the sedimentation tank.

Photo 1 and 2 Water accumulation was found in generator 's drip tray and next to noise enclosure

Photos 3 The tree protective fence was broken behind the sedimentation tank since last inspection

Photo 4 Chemical drum near chemical storage was found without drip tray

Photo 5 Oil spot was found around the site, especially near the wheel entrance

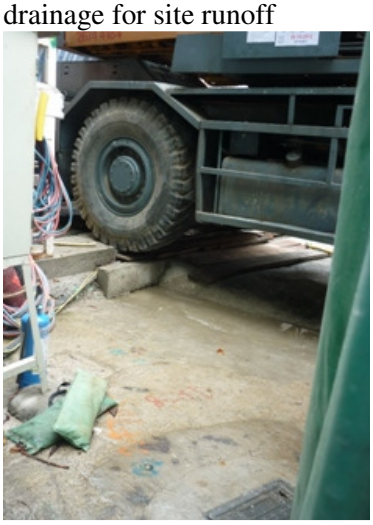
Photo 6 A unknown chemical spot was found in the front of chemical storage

Photo 7

Wah Fu PTW

Notes / Issues Recorded On Site:
Nil
Corrective Actions – Mitigation Measures Implemented or Proposed (if any): **Previous Environmental Site Inspection Checklist – Report No. 111004** **General Housekeeping:** 1. Water accumulation near mobile crane was cleared **Current Environmental Site Inspection Checklist – Report No. 111011** **Site Management:** The contractor is recommended to provide drainage for site runoff. (Photo 1)

Photo 1 The contractor is recommended to provide drainage for site runoff



18 October 2011

Aberdeen PTW

Notes / Issues Recorded On Site: **Waste Management:** 1. Rubbish found in sand bucket (Photo 1)
Corrective Actions – Mitigation Measures Implemented or Proposed (if any): **Previous Environmental Site Inspection Checklist – Report No. 111011** Nil **Current Environmental Site Inspection Checklist – Report No. 111018** **Waste Management:** 1. Clear the rubbish in the sand bucket.

Photo 1 Rubbish found in sand bucket

Cyberport PTW

Notes / Issues Recorded On Site:

Waste/Chemical Management

1. Improper use of recycle bin for metal (Photo 1).
2. Chemical drum without drip tray found in worker resting area near the entrance (Photo 2).

General Housekeeping

1. Stocking of chemicals in the worker resting area near the entrance shall be avoided (Photo 3).

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111011

Nil

Current Environmental Site Inspection Checklist – Report No. 111018

Waste/Chemical Management

1. The Contractor is reminded to provide sufficient environmental training to the workers including the proper usage of the recycle bins and general environmental awareness.
2. Provide drip tray to the chemical drum in worker resting area near the entrance.

General Housekeeping

1. The Contractor is reminded to avoid chemical storage in the worker resting area.

Photo 1 Improper use of recycle bin for metal

Photo 2 Chemical drum without drip tray found in worker resting area near the entrance

Photo 3 Stocking of chemicals in the worker resting area near the entrance shall be avoided

Fung Mat Road Site

Notes / Issues Recorded On Site:
Water Quality:

1. Mud was found underneath the treatment tank and may wash into the sea (Photo 1)

Waste Management:

1. Improper use of recycle bin for metal (Photo 2)

Previous Environmental Site Inspection Checklist – Report No. 111011

Nil.

Current Environmental Site Inspection Checklist – Report No. 111018

Water Quality:

1. Clean up the mud underneath the treatment tank.

Waste Management:

1. The Contractor is reminded to provide sufficient environmental training to the workers including the proper usage of the recycle bins and general environmental awareness.

Notes / Issues Recorded On Site:
Water Quality:

1. Mud was found underneath the treatment tank and may wash into the sea (Photo 1)

Waste Management:

1. Improper use of recycle bin for metal (Photo 2)

Photo 1 Mud was found underneath the treatment tank and may wash into the sea

Photo 2 Improper use of recycle bin for metal

Sandy Bay

Notes / Issues Recorded On Site:

Chemical Management:

1. Oil spots were found in the soil near the chemical storage (Photo 1)

General Housekeeping:

1. Water accumulation was found in the drip tray of the generator (Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111011

General Housekeeping:

1. The accumulated water in the drip tray of the generator next to noise enclosure has been cleared (Photo 3).

Chemical Management :

1. Drip tray has been provided to the chemical drum near the chemical storage (Photo 4).
2. Oil spots in front of chemical waste storage have been treated (Photo 5).

Landscape and Visual Impacts:

1. The tree protective fence behind the sedimentation tank has been repaired (Photo 6).

Current Environmental Site Inspection Checklist – Report No. 111018

Chemical Management:

1. The contaminated soil shall be excavated and treated as chemical waste, and replace with new soil. The Contractor is reminded to provide sufficient environmental training to the workers including the handling of chemicals and oil to avoid spillage.

General Housekeeping:

1. To clear the accumulated water in the drip tray of the generator.

Photo 1 Oil spots were found in the soil near the chemical storage

Photo 2 Water accumulation was found in the drip tray of the generator

Photo 3 The accumulated water in the drip tray of the generator next to noise enclosure has been cleared

Photo 4 Drip tray has been provided to the chemical drum near the chemical storage

Photo 5 Oil spots in front of chemical waste storage have been treated

Photo 6 The tree protective fence behind the sedimentation tank has been repaired

Wah Fu PTW

Notes / Issues Recorded On Site: Nil
Corrective Actions – Mitigation Measures Implemented or Proposed (if any): **Previous Environmental Site Inspection Checklist – Report No. 111011** **General Housekeeping:** 1. Water accumulation near mobile crane was cleared **Current Environmental Site Inspection Checklist – Report No. 111018** **Site Management:** The contractor is recommended to provide drainage for site runoff. (Photo 1)

Photo 1 The contractor is recommended to provide drainage for site runoff

25 October 2011

Aberdeen PTW

Notes / Issues Recorded On Site:

Air Quality:

2. Cement bags were found near site entrance and PTW without properly cover.(Photo 1)

Noise:

1. Some acoustic material missing was observed between the noise cover. (Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111018

Waste Management:

1. The sand bucket was removed

Current Environmental Site Inspection Checklist – Report No. 111025

Air Quality:

2. To cover the storage cement bags properly.

Noise:

1. According to contractor, the acoustic material between noise cover had been removed since some instillation works before. And those acoustic materials will be provided before next inspection.

Photo 1 Cement bags were found near site entrance and PTW without properly cover

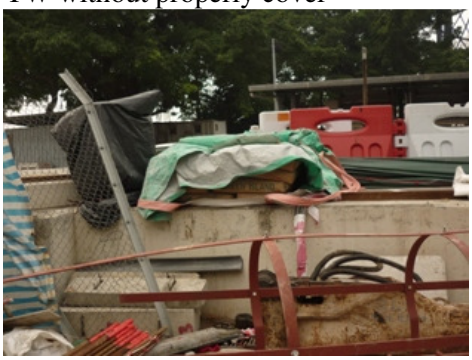


Photo 2 Some acoustic material missing was observed between the noise cover

Cyberport PTW

Notes / Issues Recorded On Site:
N/A
Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111018

Waste/Chemical Management

3. Improper use of recycle bin for metal (Photo 1).
4. Chemical drum without drip tray found in worker resting area near the entrance (Photo 2).

General Housekeeping

Stocking of chemicals in the worker resting area near the entrance shall be avoided (Photo 3).

The issues of waste/chemical management and general housekeeping will be inspecting in next inspection.

Current Environmental Site Inspection Checklist – Report No. 111025

N/A

Photo 1 Improper use of recycle bin for metal

Photo 2 Chemical drum without drip tray found in worker resting area near the entrance

Photo 3 Stocking of chemicals in the worker resting area near the entrance shall be avoided

Fung Mat Road Site

Notes / Issues Recorded On Site:

Chemical Management:

1. Two chemical drums were found on cover panel were missing proper labels.(Photos 3 and 4)

Waste Management:

2. PVC box still had been found in metal recycle bin since last inspection(Photo 2)

Previous Environmental Site Inspection Checklist – Report No. 111018

Water Quality:

1. Mud was found underneath the treatment tank was cleared (Photo 1)

Current Environmental Site Inspection Checklist – Report No. 111025

Waste Management:

1. The Contractor is reminded to provide sufficient environmental training to the workers including the proper usage of the recycle bins and general environmental awareness.

Chemical Management:

1. To provide suitable and clear chemical labels to chemical drums.

Photo 1 Mud was found underneath the treatment tank was cleared

Photo 2 PVC box still had been found in metal recycle bin since last inspection

Photos 3 and 4 Two chemical drums were found on cover panel were missing proper labels

Sandy Bay PTW

Notes / Issues Recorded On Site:
Chemical Management:

1. The responsible person of chemical waste storage was not updated (Photo 1)

General Housekeeping:

1. Water accumulation was still found in the drip tray of the generator since last inspection (Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111018

General Housekeeping:

1. The accumulated water in the drip tray of the generator next to stairs of container was removed (Photo 3).

Chemical Management :

1. Oil spots in the soil near the chemical storage were cleared (Photo 4)

Current Environmental Site Inspection Checklist – Report No. 111025

Chemical Management:

1. To ensure the responsible person of chemical waste storage should be match the person responsible list.

General Housekeeping:

1. To clear the accumulated water in the drip tray of the generator.

Photo 1 The responsible person of chemical waste storage was not updated

Photo 2 Water accumulation was found in the drip tray of the generator near the noise enclosure

Photo 3 The accumulated water in the drip tray of the generator next to stairs of container was removed

Photo 4 Oil spots in the soil near the chemical storage were cleared

Wah Fu PTW

Notes / Issues Recorded On Site:

General Housekeeping:

1. Trashes were found in metal case near water barriers and drip tray under the air compressor.(Photos 2 and 3)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Previous Environmental Site Inspection Checklist – Report No. 111018

Site Management:

1. The contractor was provided drainage system for site runoff.(Photo 1)

Current Environmental Site Inspection Checklist – Report No. 111025

General Housekeeping:

1. The contractor is reminded to clear trashes in metal case and drip tray and cover the metal case to prevent water accumulation.

Photo 1 The contractor was provided drainage system for site runoff

Photo 2 Trashes were found in metal case near water barriers

Photo 3 Trashes were found in drip tray under the air compressor

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System
From Aberdeen to Sai Ying Pun

Comments and Responses

Submission Title: Monthly EM&A Report No. 22 (EMA/027) Rev A

	Comments	Designer (Atkins)'s Responses
Independent Environmental Checker **E-mail** **Date : 16th November 2011**		
1	**Executive Summary, Environmental Monitoring and Audit Progress, table:**	
	i) For Noise Monitoring during night time at M3, please amend "25" to "26". ii) For Air Quality Monitoring (1-hr TSP) at WM_WF1a, please clarify whether the monitoring on 12 Oct was cancelled.	Noted and revised
2	**Executive Summary (Breaches of Action and Limit Levels, line 7) and Section 5.1 (para 1, line 8)**	
	Please amend "exceedances" to "exceedance", and "were " to "was	Noted and revised
3	**Section 6.2, line 1**	
	Please add "and air quality" after "noise".	Noted and revised
4	**Appendix F**	
	i) Please revise the calibration date (more specifically, the year) in the two calibration certificates for HVS units used at Wah Fu Estate ii) Please check and clarify the latest & next calibration dates for the sound level meter with serial number 2385180.	Noted and revised.
5	**Appendix G: In the monitoring schedule for the reporting month**	
	Please add a row to include the M3 Evening Time noise monitoring date (4 Oct)	Noted and revised.
6	**Appendix H, Restricted Hours Noise Monitoring Results - Daytime on Public Holiday, M3:**	
	It is noted that the monitoring data on 2, 16 and 30 Oct was provided by Contract No. DC/2007/23. It is suggested that these data be indicated as such (e.g. *) and that a remark similar to that provided for Normal Weekday noise monitoring at M3 be.	Noted and revised.

	Comments	Designer (Atkins)'s Responses
7	**Appendix H, Restricted Hours Noise Monitoring Results - Night Time**	
	M3: It is noted that the monitoring data was provided by Contract No. DC/2007/23. It is suggested that these data be indicated as such (e.g. *) and that a remark be provided after this results table, similar to that provided for Normal Weekday noise monitoring at M3.	Noted and revised.