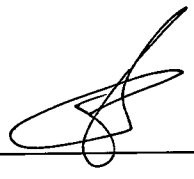
MTR Corporation Limited

West Island Line Project

Environmental Monitoring and Audit Report No.41

(January 2013)

Verified by: 

Position: Independent Environmental Checker

Date: 23 January 2013

MTR Corporation Limited

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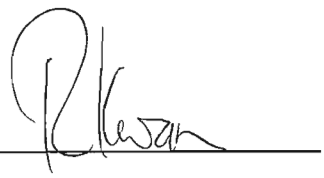
Environmental Monitoring and Audit Report No.41 (January 2013)

Certified by: 

Position: Environmental Team Leader

Date: 21 January 2013

EXECUTIVE SUMMARY

The West Island Line Project commenced on 10 July 2009. The EM&A programme for the West Island Line Project commenced on 10 August 2009, the commencement date of construction of the Project. This is the forty first monthly Environmental Monitoring and Audit (EM&A) Report for West Island Line Project. The Report presents the results of EM&A works and the impact monitoring for the construction works undertaken during the period of 10 December 2012 to 9 January 2013. The major construction activities in the reporting period included tunnel lining construction for overrun tunnel at Works Area A, operation of barging point at Works Area B, station box construction at Works Area C, station box excavation at Works Area D, operation of barging point at Works Area E, excavation by drill and blast for UNI adits at Works Area G, adit excavation and entrance structure construction at Works Area H, shaft excavation at Works Areas I, J3 and M3, adit excavation under decking at Works Areas J2 and L1, decking installation at Works Area M1, excavation by drill and blast for SYP adits inside noise enclosure at Works Area M, south shaft excavation and down track tunnel excavation by TBM towards SHW at Works Area N1.

Impact monitoring for air quality and noise were conducted in accordance with the EM&A Manual in the reporting period, no exceedance was found and there was no breach of Limit Levels for air and noise monitoring.

No environmental notification of summon and prosecution was received in the reporting period. Five environmental complaints were received in the reporting period. The complaints had been handled in accordance with the procedures stipulated in the EM&A Manual.

Site inspections were conducted by the Environmental Team on a weekly basis to monitor proper implementation of environmental pollution control and mitigation measures for the Project. No non-conformance to the environmental requirements was identified by the Environmental Team in the reporting period.

The Environmental Permit (EP-313/2008/F) issued by EPD on 5 October 2012 is being used for the WIL Project.

In the reporting period, there was no reporting change of circumstances which may affect the compliance with the recommendations of the EIA Report.

List of Appendices

1 INTRODUCTION

1.1 Project Background

MTR Corporation Limited (MTRCL) proposes to build a new railway line, the West Island Line (WIL) which is an extension of the Island Line to the Western District. The route length of the fully underground WIL is approximately 3 km with three new underground stations namely Sai Ying Pun Station (SYP), University Station (UNI) and Kennedy Town Station (KET).

1.2 Project Programme

The West Island Line Project commenced on 10 July 2009. Commencement of construction was on 10 August 2009. The commencement of operation of the Project is scheduled to be in mid 2014.

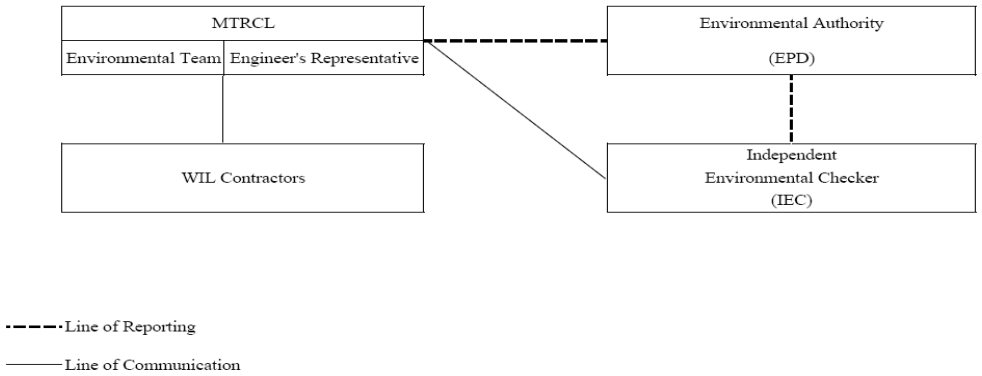
1.3 Coverage of the EM&A Report

The EM&A programme for the West Island Line Project commenced on 10 August 2009. This is the forty first Monthly Environmental Monitoring and Audit (EM&A) Report for the Project. The Report presents the results of EM&A works and the impact monitoring for the construction works undertaken during the period of 10 December 2012 to 9 January 2013.

2 PROJECT INFORMATION

2.1 Project Management Organization and Contact Details

The WIL Project organization chart is presented in Figure 1. Contacts of key environmental personnel of the Project are shown in Tables 1a, 1b and 1c respectively.



PROJECT ORGANIZATION
Figure 1

Table 1a Contact List of Key Personnel for Project Management

Organization	Name	Telephone
Engineer's Representative		
Project Manager – WIL Civil	Mr. Brendan Reilly	3411 9828
Acting Construction Manager(Contract 703/705/706A)	Mr. Ashley Calvert	3411 9613
Construction Manager(Contract 704/706/708)	Mr. Stephen Hamill	34119811
Independent Environmental Checker		
Senior Environmental Consultant	Mr. Coleman Ng	2268 3097
Environmental Team		
Environmental Team Leader	Mr. Richard Kwan	2688 1179 / 9819 9027
Contact 703 Contractor		
Project Director	Mr. Seved Robin	2541 1511
General Construction Manager	Mr. Emmanuel Clech	2541 1586
Contact 704 Contractor		
Project Director	Mr. John Secker	3559 9001
Project Manager	Mr. C.C. Hau	3559 9003
Contact 705 Contractor		
Project Director	Mr. Brian Gowran	9865 0100
Project Manager	Mr. Harry Tsang	9467 0226

Table 1b Contact List of Key Personnel for Emergency Response

Organization	Name	Telephone
Engineer's Representative		
Project Manager – WIL Civil	Mr. Brendan Reilly	3411 9828
Acting Construction Manager(Contract 703/705/706A)	Mr. Ashley Calvert	3411 9613
Construction Manager(Contract 704/706/708)	Mr. Stephen Hamill	3411 9811
Independent Environmental Checker		
Senior Environmental Consultant	Mr. Coleman Ng	2268 3097

Organization	Name	Telephone
Environmental Team		
Environmental Team Leader	Mr. Richard Kwan	2688 1179 / 9819 9027
Contact 703 Contractor		
Project Director	Mr. Seved Robin	6300 0374
General Construction Manager	Mr. Emmanuel Clech	6392 8991
Environmental Officer	Mr. Wesley Wu	9123 1415
Contact 704 Contractor		
Project Director	Mr. John Secker	3559 9001
Project Manager	Mr. C.C. Hau	3559 9003
Environmental Manager	Mr. Eddie Tse	3559 9053
Contact 705 Contractor		
Project Director	Mr. Brian Gowran	9865 0100
Project Manager	Mr. Harry Tsang	9467 0226
Project Environmental Manager	Ms. Michelle Tang	2496 6255

Table 1c Contact List of Environmental Authority

Organization	Name	Telephone
Environmental Protection Department		
Sr Env Protection Offr(Metro Assessment) 3	Mr. Steve Li	2835 1142
Sr Env Protection Offr(Regional S) 1	Mr. Sean Law	2516 1806

2.2 Project Works Areas and Environmental Monitoring Locations

The WIL Project works areas and the locations of environmental monitoring stations are shown in Figures 2 and 3 to 7 respectively. Table 2 shows the details of the active monitoring stations as reported in Sections 3.1 and 3.2 below.

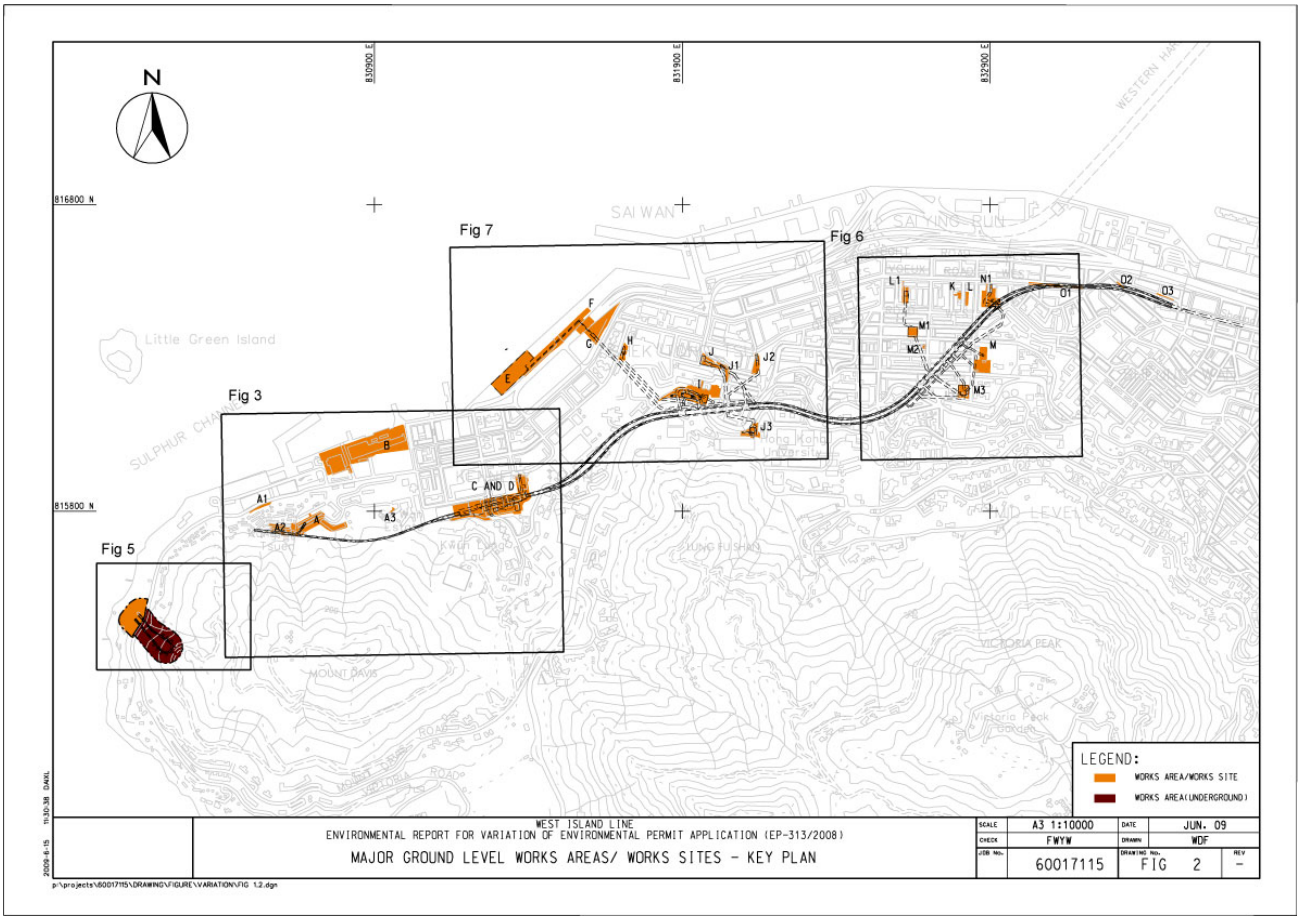


Table 2 Summary of impact air quality and noise monitoring stations

ID	Premise	Monitoring Location (Active)
Air		
AM1a+	Kwun Lung Lau Block 1	Building facing Works Area C
AM2	Victoria Public Mortuary	Building facing Works Area B
AM3a*	Hong Kong Institute of Vocational Education (Tsing Yi) Kennedy Town Centre	Building facing Works Area A
AM4	Chee Sing Kok Social Centre of the Humanity Love (current name for the premise)	Adjacent to building and facing Works Area MA (inactive)
AM5a%	Kennedy Town Fire Station	Building facing Works Area E
AM6a*	St. Paul's College Primary School	Building facing Works Area I
AM7a*	Hill Court	Building facing Works Area J
AM8	Bon-Point	Building facing Works Area M3
AM9a^	No. 28 Sai Woo Lane	Building facing Works Area N1
AM10	Western Garden, Ivy Tower	Building facing Works Area M1
Noise		
CN1	Chee Sing Kok Social Centre of the Humanity Love (current name for the premise)	Adjacent to building and facing Works Area MA (inactive)
CN2	Hong Kong Institute of Vocational Education	Building facing Works Area A

ID	Premise	Monitoring Location (Active)
	(Tsing Yi) Kennedy Town Centre	
CN3	Lui Ming Choi Primary School	Building facing Works Area B
CN4	Luen Tak Apartments	Building facing Works Area C
CN5	Western Court (Block 1)	Building facing Works Area J2
CN6	Yick Fung Garden (Block A)	Building facing Works Area G
CN7a#	Bowie Court	Building facing Works Area J3
CN8	St. Paul's College Primary School	Building facing Works Area I
CN9	Hill Court	Building facing Works Area J
CN11b@	The Belcher's Tower 8	Building facing Works Area H
CN12	Wah Po Building	Building facing Works Area E
CN13	No. 18-20 Eastern Street	Building facing Works Area N1
CN14	Bon-Point	Building facing Works Area M3
CN15	Ivy Tower	Building facing Works Area M1
CN16	No. 9-11 Ki Ling Lane	Building facing Works Area L1
CN17	No. 1 Third Street	Building facing Works Area M
CN18	Princeton Tower	Building facing Works Area O1
CN20	Ka On Building	Building facing Works Area O3
CN21	The Merton (Block 2)	Building facing Works Area B

* The alternative air monitoring stations AM3a, AM6a and AM7a were approved by EPD on 10 August 2009

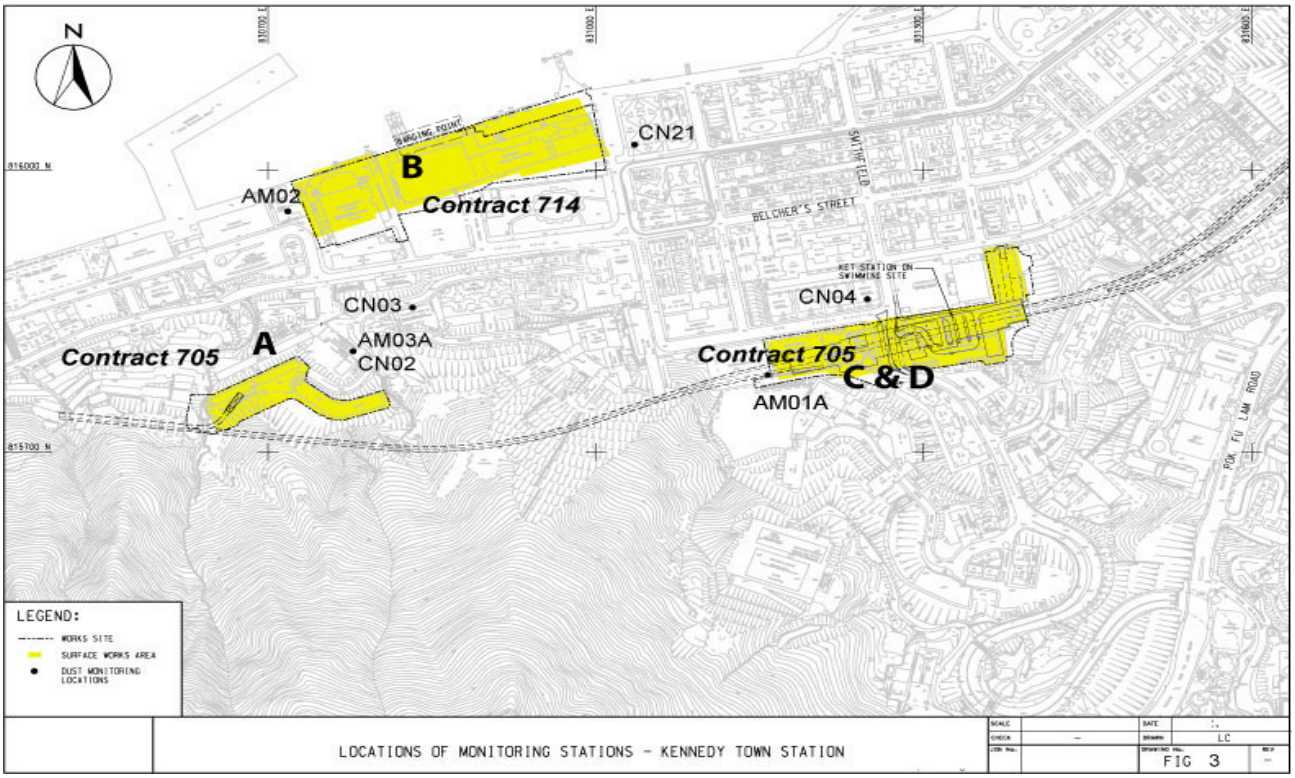
^The alternative air monitoring station AM9a was approved by EPD on 26 November 2009

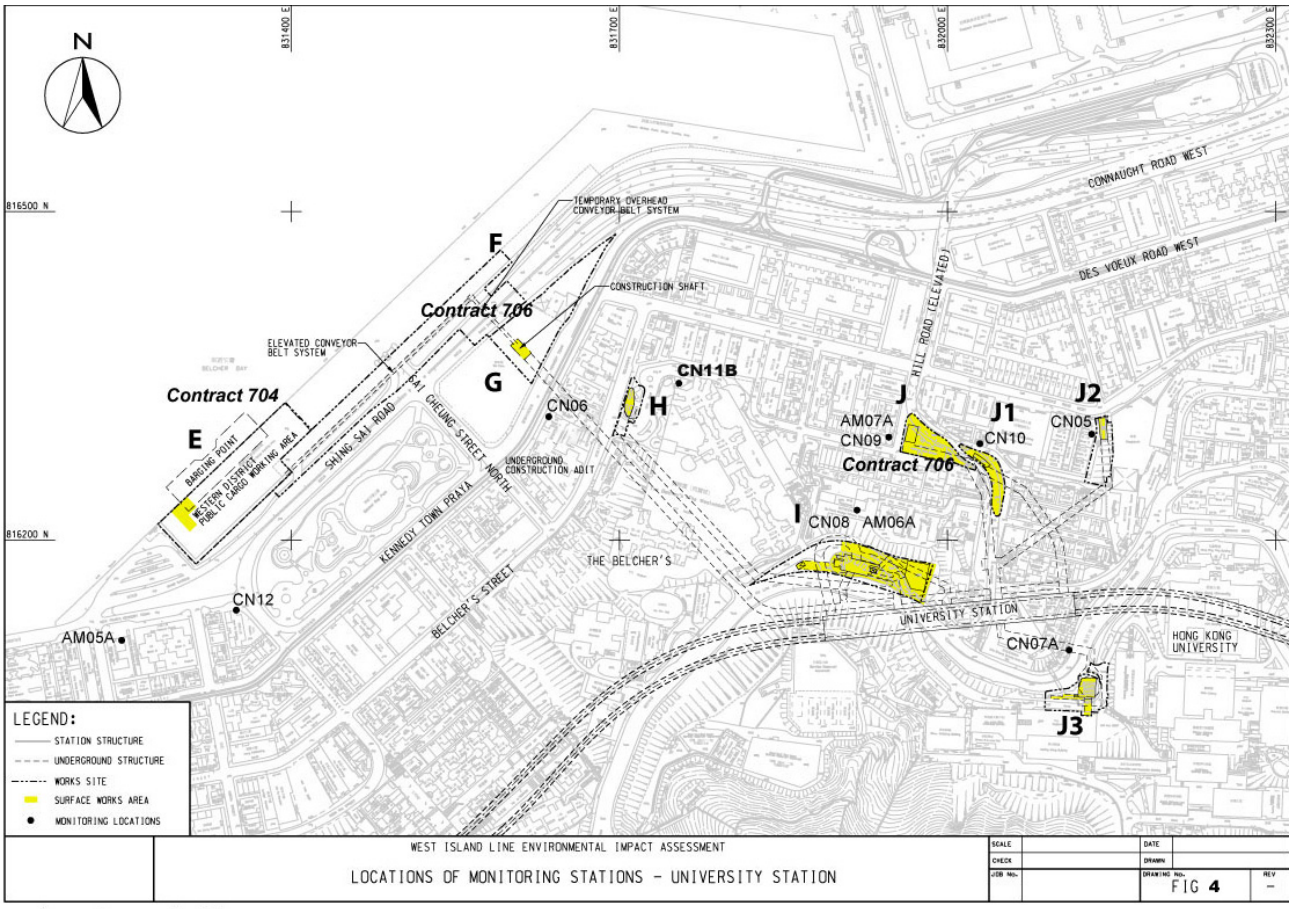
+The alternative air monitoring station AM1a was approved by EPD on 7 September 2010

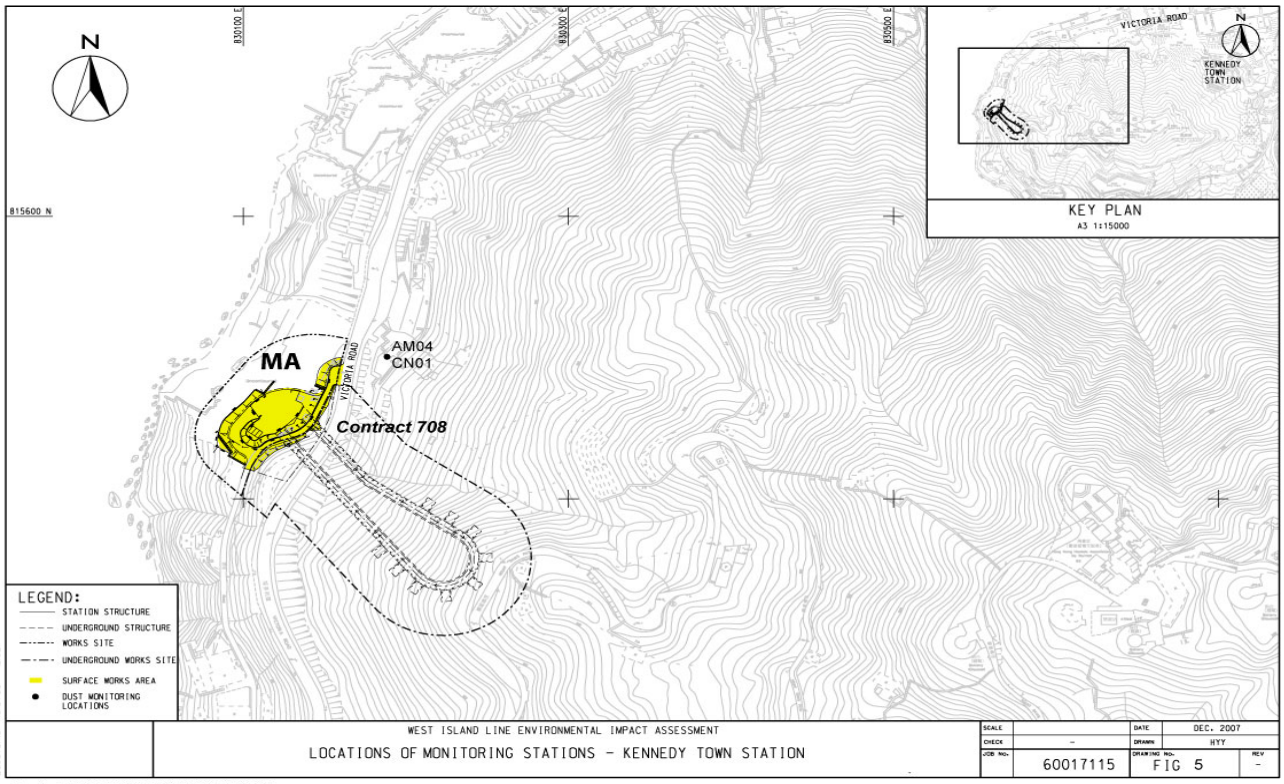
%The alternative air monitoring station AM5a proposal was submitted to EPD on 22 September 2010

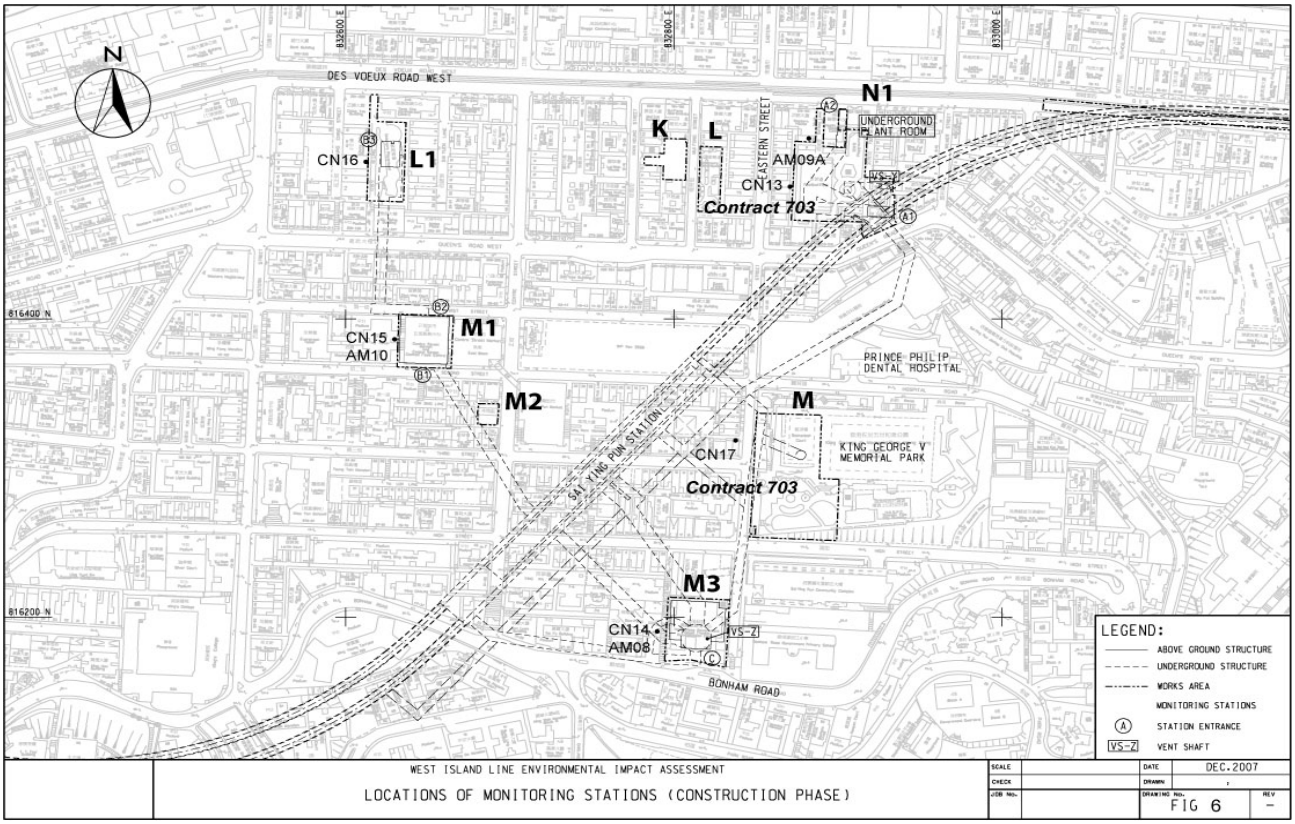
The alternative noise monitoring station CN7a was approved by EPD on 1 September 2010

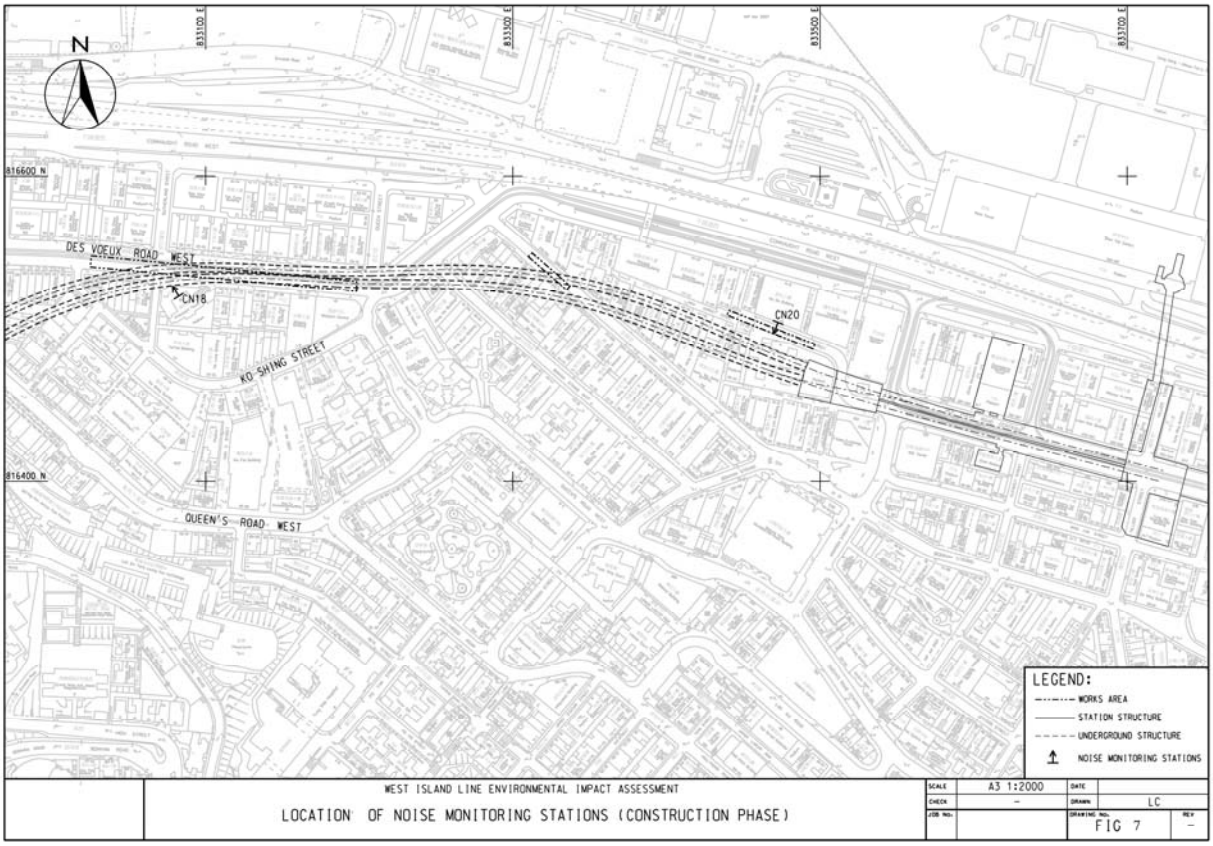
@ The alternative noise monitoring station CN11b was approved by EPD on 14 June 2011


N
816000 N
815700 N
831000 E
831300 E
831600 E
831900 E
B
Contract 714
AM02
CN21
SMITHFIELD
BELCHER'S STREET
KET STATION ON SWIMMING SITE
CN04
CN03
AM03A
CN02
A
Contract 705
Contract 705
C & D
AM01A
POK FU LAM ROAD
LEGEND:
WORKS SITE
SURFACE WORKS AREA
DUST MONITORING LOCATIONS
LOCATIONS OF MONITORING STATIONS – KENNEDY TOWN STATION
FIG 3


N
816500 N
816200 N
831400 E
831700 E
832000 E
832300 E
CONNAUGHT ROAD WEST
DES VOEUX ROAD WEST
HILL ROAD (ELEVATED)
TEMPORARY OVERHEAD CONVEYOR BELT SYSTEM
F
CONSTRUCTION SHAFT
Contract 706
ELEVATED CONVEYOR BELT SYSTEM
Contract 704
G
CN06
CN11B
H
J
J1
J2
AM07A
CN09
CN10
CN05
Contract 706
E
BARGING POINT
WESTERN DISTRICT PUBLIC CARGO WORKING AREA
SHING SAI ROAD
SAI CHEUNG STREET NORTH
UNDERGROUND CONSTRUCTION ADIT
KENNEDY TOWN PRAYA
I
CN08
AM06A
THE BELCHER'S
CN12
AM05A
BELCHER'S STREET
UNIVERSITY STATION
CN07A
HONG KONG UNIVERSITY
J3
LEGEND:
STATION STRUCTURE
UNDERGROUND STRUCTURE
WORKS SITE
SURFACE WORKS AREA
MONITORING LOCATIONS
WEST ISLAND LINE ENVIRONMENTAL IMPACT ASSESSMENT
LOCATIONS OF MONITORING STATIONS – UNIVERSITY STATION
FIG 4


N
830100 E
830000 E
829900 E
815600 N
VICTORIA ROAD
KENNEDY TOWN STATION
KEY PLAN
A3 1:15000
MA
AM04
CN01
VICTORIA ROAD
Contract 708
LEGEND:
STATION STRUCTURE
UNDERGROUND STRUCTURE
WORKS SITE
UNDERGROUND WORKS SITE
SURFACE WORKS AREA
DUST MONITORING LOCATIONS
WEST ISLAND LINE ENVIRONMENTAL IMPACT ASSESSMENT
LOCATIONS OF MONITORING STATIONS - KENNEDY TOWN STATION
SCALE
CHECK
DRAWN
JOB No.
60017115
DATE
DEC. 2007
HYY
DRAWING No.
FIG 5
REV
2008-8-13 15:51:33 LC2
p:\projects\60017115\DRAWING\FIGURE\FIG 9.1_2.dgn


N
832600 E
832800 E
833000 E
DES VOEUX ROAD WEST
N1
UNDERGROUND PLANT ROOM
K
L
EASTERN STREET
AM09A
CN13
Contract 703
CN16
L1
816400 N
CN15
AM10
M1
M2
M
PRINCE PHILIP DENTAL HOSPITAL
KING GEORGE V MEMORIAL PARK
SAI YING PUN STATION
CN17
Contract 703
M3
CN14
AM08
816200 N
BONHAM ROAD
LEGEND:
ABOVE GROUND STRUCTURE
UNDERGROUND STRUCTURE
WORKS AREA
MONITORING STATIONS
STATION ENTRANCE
VENT SHAFT
WEST ISLAND LINE ENVIRONMENTAL IMPACT ASSESSMENT
LOCATIONS OF MONITORING STATIONS (CONSTRUCTION PHASE)
SCALE
CHECK
JOB No.
DATE
DEC.2007
DRAWN
DRAWING No.
FIG 6
REV



2.3 Summary of EM&A Requirements

The EM&A programme requires environmental monitoring for air quality, noise, water quality and waste management as specified in the EM&A Manual.

In the reporting month, 24-hour TSP levels at the air monitoring stations shown in Table 2 were monitored during the construction stage.

In the reporting month, construction noise levels at the noise monitoring stations shown in Table 2 were monitored during the construction stage.

A summary of impact EM&A requirements as applicable to this EM&A Report is presented in Table 3 below.

Table 3 Summary of impact EM&A Requirements

Parameters	Descriptions	Locations	Frequencies	Duration
Air Quality	24-hr TSP	Shown in Table 2	Once every 6 days	During construction stage
Noise	Leq(30min)	Shown in Table 2	Once a week	During construction stage

Parameters	Descriptions	Locations	Frequencies	Duration
Waste	On-Site Audit	Active Works Sites	Monthly	During construction stage
Wastewater	On-Site Audit	Active Works Sites	Monthly	During construction stage
General Site Conditions	Environmental Site Inspection	Active Works Sites	Weekly	During construction stage

Environmental Quality Performance Limits for air quality and noise are shown in Appendix A. The Event Action Plan for air quality and noise are shown in Appendix B.

2.4 Implementation of Environmental Mitigation Measures

The WIL Civil Works Contractors are required to implement the mitigation measures as specified in the EP, EIA Report and EM&A Manual. During the regular environmental site inspections, the Contractors' implementation of mitigation measures were inspected and reviewed. A schedule of the implementation of mitigation measures identified in the WIL EIA is given in Appendix C.

2.5 Construction Activities in the Reporting Month

Major construction activities carried out by the respective WIL Civil Works Contractors during the reporting period include:

Contract 703 - Works Area K/L
- No site work

Contract 703 - Works Area M
- Tunnel excavation inside noise enclosure

Contract 703 - Works Area N1
- South shaft excavation
- Down track tunnel excavation by TBM towards SHW

Contract 703 - Works Areas O1/O2/O3
- Demolition of overrun tunnel completed at Works Area O1
- Road reinstatement completed at Works Area O3
- Site preparation for modification of vent shaft at Ko Shing Street which is a non-EP work

Contract 704 - Works Area E
- Operation of barging point

Contract 704 - Works Area G
- Excavation by blasting for UNI adits

Contract 704 - Works Area H
- Adit excavation
- Entrance structure construction

Contract 704 - Works Area I
- Shaft excavation

Contract 704 - Works Area J
- Excavation by blasting for Hill Road Entrance adits and tunnels towards SYP completed

Contract 704 - Works Area J2
- Adit excavation under decking

Contract 704 - Works Areas J3
- Shaft excavation

Contract 704 - Works Area L1
- Adit excavation under decking

Contract 704 - Works Area M
- SYP adits excavation by blasting inside noise enclosure

Contract 704 - Works Area M1
- Bored piling completed
- Decking installation

Contract 704 - Works Area M2
- Reprovisioning of transformer and public toilet completed

Contract 704 - Works Area M3
- Shaft excavation by blasting

Contract 704 - Works Area MA
- Management of magazine

Contract 705 - Works Area A
- Tunnel lining construction for overrun tunnel

Contract 705 - Works Area B
- Management of Works Area B
- Operation of barging point

Contract 705 - Works Area C
- Station box construction

Contract 705 - Works Area D
- Station box excavation

Contract 706A - Works Areas A/A1/A2/A3
- Contract completed

Contract 706 - Works Area G/I/J
- Contract completed

Contract 708 - Works Area MA
- Contract completed

Contract 714 - Works Area B
- Contract completed

2.6 Construction Activities for the Coming Month

According to the construction programme for the Civil Works Contracts, the scheduled major construction activities in the next reporting month are as follows:

Contract 703 - Works Areas K/L
- No site work

Contract 703 - Works Area M
- Tunnel excavation inside noise enclosure

Contract 703 - Works Area N1
- South shaft excavation
- Down track tunnel excavation by TBM towards SHW

Contract 703 - Works Areas O1/O2/O3
- Demolition of overrun tunnel completed at Works Area O1
- Road reinstatement completed at Works Area O3
- Site preparation for modification of vent shaft at Ko Shing Street which is a non-EP work

Contract 704 - Works Area E
- Operation of barging point

Contract 704 - Works Area G
- Excavation by blasting for UNI adits

Contract 704 - Works Area H
- Adit excavation
- Entrance structure construction

Contract 704 - Works Area I
- Shaft excavation

Contract 704 - Works Area J
- Excavation by blasting for Hill Road Entrance adits and tunnels towards SYP completed

Contract 704 - Works Area J2
- Adit excavation under decking

Contract 704 - Works Areas J3
- Shaft excavation

Contract 704 - Works Area L1
- Adit excavation under decking

Contract 704 - Works Area M
- SYP adits excavation by blasting inside noise enclosure

Contract 704 - Works Area M1
- Bored piling completed
- Decking installation

Contract 704 - Works Area M2
- Reprovisioning of transformer and public toilet completed

Contract 704 - Works Area M3
- Shaft excavation by blasting

Contract 704 - Works Area MA
- Management of magazine

Contract 705 - Works Area A
- Tunnel lining construction for overrun tunnel

Contract 705 - Works Area B
- Management of Works Area B
- Operation of barging point

Contract 705 - Works Area C
- Station box construction

Contract 705 - Works Area D
- Station box excavation
- Station box construction

Contract 706A - Works Areas A/A1/A2/A3
- Contract completed

Contract 706 - Works Areas G/I/J
- Contract completed

Contract 708 - Works Area MA
- Contract completed

Contract 714 - Works Area B
- Contract completed

3 IMPACT MONITORING

3.1 Air Quality

24-Hour TSP Levels Monitoring

The sampling procedure follows that described in the App. B of Pt 50 in 40CFR Ch.1 (U.S. Environmental Protection Agency). TSP is sampled by drawing air through a conditioned, pre-weighed filter paper inside the high volume sampler at a controlled rate. After 24-hour sampling the filter paper with retained particles is collected and returned to the laboratory for drying in a desiccator followed by weighing. TSP levels are calculated from the ratio of the mass of particulate retained on the filter paper to the total volume of air sampled.

The samplers should be properly maintained. Prior to dust monitoring commencing, appropriate checks should be made to ensure that all equipment and necessary power supply are in good working condition.

Calibration Requirements

The flow rate of the high volume sampler with mass flow controller will be calibrated using an orifice calibrator. Initial calibration (five points) will be conducted upon installation and prior to commissioning. Calibration will be carried out every six months. Calibration certificates are attached in Appendix E.

The sensing system of MIE will be calibrated by clean filtered air passing through the flow-sensing system, providing a controlled check of the zero-concentration condition. Calibration of the MIE by certified laboratory or manufacturer shall be carried out every year and properly documented. Calibration certificate is attached in Appendix E.

To examine the construction dust levels, 24-hour TSP monitoring was undertaken according to the EM&A Manual. The dust monitoring locations are shown in the Section 2.2 above. Monitoring results are presented in the following table (see Appendix D for graphical plot). The 24-hour TSP levels when there were construction activities during the monitoring period were within the Action Level. No exceedance was found. This indicates that the construction activities did not have a noticeable adverse effect on the general air quality for the works areas.

Monitoring schedules are shown in Appendix F.

In addition, air baseline check for monitoring station AM6a was conducted on Sunday when no construction work was carried out in the vicinity. It is observed that there is no significant deviation of the air baseline level obtained from the previous air baseline check.

AM1a- Kwun Lung Lau Block 1+					
Date	TSP (µg/m3)	Action Level (µg/m3)	Limit Level (µg/m3)	Compliance (Yes/No)	Weather Condition
13/12/2012	116.1	170	260	Yes	Fine
19/12/2012	58.2	170	260	Yes	Occasionally raining
24/12/2012	95.7	170	260	Yes	Fine
29/12/2012	142.8	170	260	Yes	Occasionally raining
04/01/2013	115.6	170	260	Yes	Fine
AM2- Victoria Public Mortuary					
13/12/2012	138.3	155	260	Yes	Fine
19/12/2012	65.0	155	260	Yes	Occasionally raining
24/12/2012	79.6	155	260	Yes	Fine
29/12/2012	130.1	155	260	Yes	Occasionally raining
04/01/2013	107.1	155	260	Yes	Fine
AM3a- Hong Kong Institute of Vocational Education (Tsing Yi) Kennedy Town Centre*					
13/12/2012	109.6	155	260	Yes	Fine
19/12/2012	63.4	155	260	Yes	Occasionally raining
24/12/2012	103.6	155	260	Yes	Fine
29/12/2012	132.0	155	260	Yes	Occasionally raining
04/01/2013	72.6	155	260	Yes	Fine
AM5a- Kennedy Town Fire Station%					
13/12/2012	88.0	178	260	Yes	Fine
19/12/2012	92.4	178	260	Yes	Occasionally raining
24/12/2012	87.0	178	260	Yes	Fine
29/12/2012	89.3	178	500	Yes	Occasionally raining
04/01/2013	71.6	178	260	Yes	Fine
AM6a- St. Paul's College Primary School*					
13/12/2012	96.1	157	260	Yes	Fine
16/12/2012@	70.7	157	260	Yes	Fine
19/12/2012	104.0	157	260	Yes	Occasionally raining
24/12/2012	97.9	157	260	Yes	Fine
29/12/2012	86.3	157	260	Yes	Occasionally raining
04/01/2013	72.5	157	260	Yes	Fine
AM7a- Hill Court*					

13/12/2012	103.1	151	260	Yes	Fine
19/12/2012	116.0	151	260	Yes	Occasionally raining
24/12/2012	142.6	151	260	Yes	Fine
29/12/2012	82.8	151	260	Yes	Occasionally raining
04/01/2013	123.4	151	260	Yes	Fine
AM8- Bon-Point					
13/12/2012	109.9	181	260	Yes	Fine
19/12/2012	126.0	181	260	Yes	Occasionally raining
24/12/2012	114.9	181	260	Yes	Fine
29/12/2012	111.7	181	260	Yes	Occasionally raining
04/01/2013	130.9	181	260	Yes	Fine
AM9a- No.28 Sai Woo Lane^					
13/12/2012	106.2	168	260	Yes	Fine
19/12/2012	73.1	168	260	Yes	Occasionally raining
24/12/2012	98.4	168	260	Yes	Fine
29/12/2012	78.8	168	260	Yes	Occasionally raining
04/01/2013	101.5	168	260	Yes	Fine
AM10- Western Garden, Ivy Tower					
13/12/2012	97.2	187	260	Yes	Fine
19/12/2012	66.0	187	260	Yes	Occasionally raining
24/12/2012	88.1	187	260	Yes	Fine
29/12/2012	120.0	187	260	Yes	Occasionally raining
04/01/2013	125.1	187	260	Yes	Fine

*The alternative air monitoring stations AM3a, AM6a and AM7a were approved by EPD on 10 August 2009

^The alternative air monitoring station AM9a was approved by EPD on 26 November 2009

+The alternative air monitoring station AM1a was approved by EPD on 7 September 2010

%The alternative air monitoring station AM5a proposal was submitted to EPD on 22 September 2010

#Additional 3nos. 1-hr TSP monitoring for the complaint case

@ Baseline Check

3.2 Noise

B&K 2236 sound level meters which complied with the International Electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1), specification as referred to in the Technical Memoranda to the NCO were used for the construction noise impact monitoring. The B&K sound level meters and B&K 4231 calibrator are verified by the certified laboratory or manufacturer once every two years to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications. Calibration certificates are attached in Appendix E.

Immediately prior to and following each set of measurements at any NSR, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure

level at a known frequency. If the calibration levels before and after the measurement differ by more than 1.0dB the measurement shall be repeated to obtain a reliable result (note: maximum deviation during this initial baseline monitoring period was 0.3dB). Periods of prolonged or repeated overloading of the sound level meter detector were avoided by setting the meter with adequate headroom prior to commencing measurements. Measurements were recorded to the nearest 0.1 dB, with values of 0.05 being rounded up.

Impact noise monitoring of $L_{A,eq30}$ was undertaken to measure construction noise levels in accordance with the EM&A Manual. The noise monitoring locations are shown in Section 2.2 above.

Monitoring results are presented in the following table (see Appendix D for graphical plot). No exceedance was found. Monitoring schedules are shown in Appendix F.

In addition, noise baseline check for monitoring station CN8 was conducted during noon time when no construction work was carried out in the vicinity. It is observed that there is no significant deviation from the noise baseline level obtained from the previous noise baseline check.

CN2- Hong Kong Institute of Vocational Education (Tsing Yi) Kennedy Town Centre					
Date	Time	Leq(dBA)	Limit Level (dBA)	Compliance (Yes/No)	Weather Conditions
10/12/2012	16:55	68.8	70	Yes	Fine, wind<2m/s
17/12/2012	16:02	67.1	70	Yes	Fine, wind<2m/s
24/12/2012	16:10	68.1	70	Yes	Fine, wind<2m/s
02/01/2013	16:10	68.7	70	Yes	Fine, wind<2m/s
CN3- Lui Ming Choi Primary School					
13/12/2012	16:00	64.7	70	Yes	Fine, wind<2m/s
19/12/2012	14:30	67.1	70	Yes	Occasionally raining, wind<2m/s
27/12/2012	16:45	68.8	70	Yes	Fine, wind<2m/s
02/01/2013	16:00	66.3	70	Yes	Fine, wind<2m/s
CN4 - Luen Tak Apartments					
10/12/2012	14:30	73.3	75	Yes	Fine, wind<2m/s
19/12/2012	13:30	68.8	75	Yes	Occasionally raining, wind<2m/s
27/12/2012	15:45	68.3	75	Yes	Fine, wind<2m/s
02/01/2013	10:30	68.3	75	Yes	Fine, wind<2m/s
CN5- Western Court (Block 1)					
10/12/2012	13:09	70.1	75	Yes	Fine, wind<2m/s
18/12/2012	13:05	69.1	70	Yes	Occasionally raining, wind<2m/s
24/12/2012	13:10	68.6	75	Yes	Fine, wind<2m/s
31/12/2012	13:10	68.7	75	Yes	Fine, wind<2m/s
08/01/2013	13:08	68.9	75	Yes	Fine, wind<2m/s
CN6- Yick Fung Garden (BlockA)					
10/12/2012	08:43	72.1	75	Yes	Fine, wind<2m/s
17/12/2012	08:27	71.1	75	Yes	Fine, wind<2m/s
24/12/2012	08:20	71.7	75	Yes	Fine, wind<2m/s
02/01/2013	08:20	71.5	75	Yes	Fine, wind<2m/s

08/01/2013	08:19	71.9	75	Yes	Fine, wind<2m/s
CN7a- Bowie Court#					
12/12/2012	14:31	72.4	75	Yes	Fine, wind<2m/s
17/12/2012	14:40	72.2	75	Yes	Fine, wind<2m/s
24/12/2012	14:40	71.7	75	Yes	Fine, wind<2m/s
31/12/2012	14:20	71.1	75	Yes	Fine, wind<2m/s
07/01/2013	14:10	71.9	75	Yes	Fine, wind<2m/s
CN8- St. Paul's College Primary School					
10/12/2012	11:25	68.6	70	Yes	Fine, wind<2m/s
10/12/2012@	12:00	67.4	70	Yes	Fine, wind<2m/s
12/12/2012%	14:48	69.5	70	Yes	Fine, wind<2m/s
17/12/2012	11:14	68.7	70	Yes	Fine, wind<2m/s
24/12/2012	11:05	68.9	70	Yes	Fine, wind<2m/s
31/12/2012	11:15	69.3	70	Yes	Fine, wind<2m/s
07/01/2013	11:11	69.0	70	Yes	Fine, wind<2m/s
CN9- Hill Court					
10/12/2012	09:25	70.3	75	Yes	Fine, wind<2m/s
19/12/2012	13:40	70.1	75	Yes	Occasionally raining, wind<2m/s
24/12/2012	13:55	70.2	75	Yes	Fine, wind<2m/s
31/12/2012	13:50	70.2	75	Yes	Fine, wind<2m/s
CN11b- The Belcher's Tower 8+					
10/12/2012	10:13	70.5	75	Yes	Fine, wind<2m/s
17/12/2012	15:20	70.6	75	Yes	Fine, wind<2m/s
27/12/2012	09:20	71.6	75	Yes	Fine, wind<2m/s
02/01/2013	09:40	71.4	75	Yes	Fine, wind<2m/s
09/01/2013	09:20	71.3	75	Yes	Fine, wind<2m/s
CN12- Wah Po Building					
10/12/2012	15:00	69.7	75	Yes	Fine, wind<2m/s
17/12/2012	13:57	70.2	75	Yes	Fine, wind<2m/s
27/12/2012	14:00	70.3	75	Yes	Fine, wind<2m/s
03/01/2013	13:15	70.1	75	Yes	Fine, wind<2m/s
09/01/2013	13:15	70.6	75	Yes	Fine, wind<2m/s
CN13- No. 18-20 Eastern Street					
11/12/2012	13:01	73.5	75	Yes	Fine, wind<2m/s
18/12/2012	13:05	73.9	75	Yes	Occasionally raining, wind<2m/s
24/12/2012	13:08	74.3	75	Yes	Fine, wind<2m/s
31/12/2012	13:03	74.1	75	Yes	Fine, wind<2m/s
07/01/2013	13:00	73.8	75	Yes	Fine, wind<2m/s
CN14- Bon-Point					
11/12/2012	15:04	73.0	75	Yes	Fine, wind<2m/s
18/12/2012	15:00	73.4	75	Yes	Occasionally raining, wind<2m/s
24/12/2012	15:00	73.7	75	Yes	Fine, wind<2m/s
31/12/2012%	08:30	71.9	75	Yes	Fine, wind<2m/s
31/12/2012	09:03	73.0	75	Yes	Fine, wind<2m/s
07/01/2013	15:30	73.1	75	Yes	Fine, wind<2m/s
CN15- Ivy Tower					
10/12/2012	15:45	73.0	75	Yes	Fine, wind<2m/s
17/12/2012	15:49	72.6	75	Yes	Fine, wind<2m/s

28/12/2012	15:43	72.8	75	Yes	Fine, wind<2m/s
04/01/2013	15:50	73.2	75	Yes	Fine, wind<2m/s
CN16- No.9-11 Ki Ling Lane					
12/12/2012	16:30	72.5	75	Yes	Fine, wind<2m/s
19/12/2012	16:34	72.3	75	Yes	Occasionally raining, wind<2m/s
27/12/2012	16:35	72.6	75	Yes	Fine, wind<2m/s
02/01/2013	16:35	72.0	75	Yes	Fine, wind<2m/s
09/01/2013	16:30	72.5	75	Yes	Fine, wind<2m/s
CN17- No.1 Third Street					
12/12/2012	14:03	72.3	75	Yes	Fine, wind<2m/s
19/12/2012	14:00	72.6	75	Yes	Occasionally raining, wind<2m/s
20/12/2012%	19:00	63.3	75	Yes	Fine, wind<2m/s
27/12/2012	14:05	73.0	75	Yes	Fine, wind<2m/s
02/01/2013	14:02	72.8	75	Yes	Fine, wind<2m/s
07/01/2013%	06:30	62.8	75	Yes	Fine, wind<2m/s
09/01/2013	14:13	73.1	75	Yes	Fine, wind<2m/s
CN18- Princeton Tower					
12/12/2012	08:28	72.6	75	Yes	Fine, wind<2m/s
19/12/2012	08:30	73.3	75	Yes	Occasionally raining, wind<2m/s
27/12/2012	08:25	72.8	75	Yes	Fine, wind<2m/s
02/01/2013	08:20	73.0	75	Yes	Fine, wind<2m/s
09/01/2013	08:15	72.5	75	Yes	Fine, wind<2m/s
CN20- Ka On Building					
10/12/2012	17:10	73.2	75	Yes	Fine, wind<2m/s
17/12/2012	17:15	73.0	75	Yes	Fine, wind<2m/s
28/12/2012	17:18	73.3	75	Yes	Fine, wind<2m/s
04/01/2013	17:15	73.5	75	Yes	Fine, wind<2m/s
CN21- The Merton (Block 2)					
13/12/2012	14:30	69.3	75	Yes	Fine, wind<2m/s
19/12/2012	15:00	69.8	75	Yes	Occasionally raining, wind<2m/s
27/12/2012	10:30	70.6	75	Yes	Fine, wind<2m/s
02/01/2013	11:00	70.7	75	Yes	Fine, wind<2m/s

The alternative noise monitoring station CN7a was approved by EPD on 1 Sept 2010
%Additional monitoring due to complaint as per Noise Event Action Plan
@ Baseline Check
+ The alternative noise monitoring station CN11b was approved by EPD on 14 June 2011
* Monitoring was conducted in non-raining period

3.3 Action taken in Event of Exceedence

There was no exceedance in air quality and noise monitoring parameters recorded in the reporting period, therefore no action was taken.

3.4 Ground-borne Noise for TBM operation

Ground-borne noise measurement was conducted for TBM tunneling work in accordance with EP condition 6.1(i) and the approved Construction Ground-borne Noise Monitoring Plan submitted

as per EM&A Manual Clause 3.1 requirement. No ground-borne noise measurement was carried out in the reporting period. The TBM tunneling work had been completed.

4 LANDSCAPE AND VISUAL

4.1 Monitoring Requirements

Monitoring of the implementation of the landscape and visual mitigation measures during construction phase was conducted in accordance with the requirements as stipulated in the EM&A Manual.

The landscape and visual monitoring and audit will be conducted once a month throughout the construction stage covering the entire project site areas.

4.2 Audit Results

Monthly monitoring and audit was undertaken in accordance with the EM&A Manual.

Tree Felling at Contract 703 Works Area L

15 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 703 Works Area M

11 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 703 Works Area N1

29 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 704 Works Area H

12 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 704 Works Area I

42 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 704 Works Area J2

16 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 704 Works Area J3

6 nos. of trees were removed in accordance with the approved Tree Removal Application during

the site clearance work.

Tree Felling at Contract 704 Works Area L1

19 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 704 Works Area M1

16 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 704 Works Area M3

8 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 705 Works Areas C and D

77 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 706 Works Area G

4 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 706 Works Area J

16 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 708 Works Area MA

107 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Felling at Contract 714 Works Area B

2 nos. of trees were removed in accordance with the approved Tree Removal Application during the site clearance work.

Tree Transplantation in past reporting periods

7 nos. of trees were transplanted from Works Area J to the Receptor Sites at Sheung Wan Pumping Station site (4nos.), Junction of Shing Sai Road/New Praya (2 nos.) and Shing Sai Road (1 no.) in accordance with the approved Tree Removal Application. In the approved Tree Removal Application, 5nos. of trees were approved to be transplanted in Works Area J, 2 nos. additional trees were transplanted in response to the request made by LCSD with a view to preserving the landscape resources as much as practicable.

In addition, 2nos. of trees from Works Area C and 6nos. of trees from Works Area J3 were

transplanted to the Receptor Site at Sheung Wan Pumping Station site in accordance with the approved Tree Removal Application. The tree transplanting works for these two works areas were carried out prior to the construction contracts award.

3 nos. of trees were transplanted from Works Area N1 to the Receptor Sites at Sheung Wan Pumping Station site, road side planter at Shing Sai Road and Connaught Road West. 1 no. of tree was transplanted from Works Area L to the Receptor Site at road side planter at Connaught Road West. 14 nos. of trees were transplanted within the park area for Works Area M.

11 nos. of trees were transplanted from Works Area C to the Receptor Site at the road side planter at Shing Sai Road.

20 nos. of trees were transplanted from Works Area I to the Receptor Site at Shing Sai Road/Pok Fu Lam Road Playground and CEDD's GMP sites. 17 nos. of trees were transplanted from Works Area L1 to the CEDD's GMP sites. 2 nos. of trees were transplanted from Works Area G to the Receptor Site at Shing Sai Road.

Tree Transplantation in this reporting period

There was no tree transplant carried out in the reporting period. Tree transplantation had been completed.

The Certified Arborist as required by the EP has conducted inspections and audits and found that the transplanting works and the tree protection works being carried out by the civil works and transplanting contractors were in accordance with the EP/EIA, Tree Protection Plan and contract requirements. No non compliance was identified in the reporting period. Monthly inspection record for December 2012 is attached in Appendix G.

Others

In accordance with EP Condition 2.8, the two individual plants, *Pavetta hongkongensis* located at the Works Area MA shall be transplanted.

It was identified that only one of the plant as mentioned above require transplanting and the other can be retained at its original location.

With consent from AFCD on the proposed method statement for transplanting the plant and protecting the retained plant, the plant was transplanted to a nearby location with similar habitat in September 2009 as agreed by AFCD and supervised by the Certified Arborist. The retained plant was properly protected in accordance with the agreed method.

The existing trees and species of conservation importance (ie the two identified *Artocarpus hypargyreus*) located near the Works Area MA were fenced off and the trunk protected with hessian sacking.

In addition, the tree (no. BT049A) at Pok Fu Lam Road which was originally proposed for transplant was toppled by Typhoon Koppu on 14 September 2009 and was removed by LCSD. Access to this site had not been given to MTR and no work had been carried out to the tree.

The ET had reminded the ER and the civil works contractors to implement appropriate tree

protection measures to ensure tree stability. In addition, as there was safety concern for the trees no. BT92 and BT93 at Works Area I, decision was made by the Project Team to fell the trees which posed potential safety risk to the residents of the Hillview Garden. The trees had been felled in the reporting period for October 2010 due to public safety consideration in accordance with Emergency Tree Felling procedures stipulated in LAO practice note 7/2007 Appendix II Section III. The felling of the two trees had been requested and strongly supported by the Incorporated Owners of Hillview Garden in order to mitigate the safety risk to the Hillview Garden residents and the public.

Wall tree No. T04 collapsed at Forbes Street due to Typhoon Vicente on 23 July 2012 and was removed on 24 July 2012. No injury was reported in this incident. The incident had been reported to the concerned Government Departments.

5 WASTE MANAGEMENT

Mitigation measures on waste management have been implemented in accordance with the Waste Management Plans for the respective civil works contracts submitted under the Environmental Permit. The C&D materials are to be disposed of at the public filling reception facilities while C&D wastes are to be disposed of at the landfills. Quantities of wastes disposed in the reporting period are summarized in the following table:

Amount of Construction Wastes Disposed				
Reporting Period	**Inert C&D Materials to Public Fill (ton)**	**Inert C&D Materials Reused (ton)**	**Non-inert Waste to Landfill (ton)**	**Chemical Waste to designated treatment facility (litre)**
Contract 703				
Aug – Sept 2009	387.0	0	23.4	0
Oct – Dec 2009	4581.4	0	35.6	0
Jan – Mar 2010	7943.0	0	86.6	0
Apr – Jun 2010	11691.1	0	98.6	0
Jul – Sept 2010	15461.1	0	94.3	2.9m3^+200kg+800 litres
Oct – Dec 2010	20092.9	0	66.1	800 litres
Jan – Mar 2011	45689.3	0	175.4	200kg+600 litres
Apr – Jun 2011	67312.3	0	128.9	1800 litres
Jul - Sept 2011	32531.4	0	123.5	1600 litres
Oct – Dec 2011	23917.0	0	126.4	200kg+1600 litres
Jan – Mar 2012	38472.3	0	94.9	200 litres
Apr - Jun 2012	11702.3	0	95.0	600 litres
Jul 2012	4259.9	0	36.6	400 litres
Aug 2012	8266.5	0	41.4	0
Sept 2012	8224.3	0	35.2	800 litres
Oct 2012	16346.2	0	23.4	0
Nov 2012	11746.6	0	22.1	400 litres+150kg
Dec 2012	1952.8	0	43.0	0
Cumulative	330577.6	0	1350.3	2.9m3^+750kg+ 9600 litres

Contract 704				
Apr – Jun 2010	3257.8	0	198.5	0
Jul - Sept 2010	4364.2	0	295.4	0
Oct – Dec 2010	17230.6	17216.8	215.9	0
Jan – Mar 2011	5391.6	73638.7	221.2	1400 litres
Apr – Jun 2011	5163.2	108205.3	229.0	3000kg^+20kg+ 1000 litres
Jul - Sept 2011	6093.0	210113.8	168.9	7kg+3600 litres
Oct – Dec 2011	2800.5	282756.4	142.2	3200 litres
Jan – Mar 2012	12155.2	252941.7	203.1	4400 litres
Apr – Jun 2012	22093.6	205734.7	367.9	2600 litres
Jul 2012	1707.9	82729.2	142.8	400 litres
Aug 2012	1351.5	44997.6	187.4	16 litres
Sept 2012	1239.1	32258.4	273.9	611 litres
Oct 2012	1367.0	27411.3	237.3	613 litres
Nov 2012	1298.3	19214.8	214.8	0
Dec 2012	1380.0	11089.0	216.5	405 litres
Cumulative	86893.4	1368307.7	3314.8	3000kg^+27kg+ 18245 litres
Contract 705				
Dec 2009	0	0	0	0
Jan – Mar 2010	291.2	0	22.4	0
Apr - Jun 2010	4840.4	0	65.8	287m3^+400 litres
Jul - Sept 2010	14730.2	0	130.7	400 litres
Oct – Dec 2010	8778.7	4447.3	130.6	390kg^+200 litres
Jan – Mar 2011	6829.3	48244.3	101.2	0
Apr – Jun 2011	1154.3	6967.4	131.7	0
Jul - Sept 2011	3022.4	33635.5	170.5	0
Oct – Dec 2011	31687.3	33632	115.4	1000 litres
Jan – Mar 2012	11257.5	58666.5	216.3	0
Apr - Jun 2012	50844.8	12845.9	1493.1	0
Jul 2012	724.1	5267	801.8	0
Aug 2012	248.5	5514	1017.5	0
Sept 2012	108.7	1087	925.2	0
Oct 2012	135	1560	875.3	0
Nov 2012	75	506	244.4	0
Dec 2012	76	778	162	0
Cumulative	134803.4	213150.9	6603.9	287m3^+390kg^+ 2000 litres
Contract 706 (Contract completed in November 2010)				
Jul – Sept 2009	1746.6	0	12.7	0
Oct – Dec 2009	5641.3	0	10.4	200 litres
Jan – Mar 2010	13633.9	0	54.9	0
Apr – Jun 2010	21208.8	0	72.6	0
Jul – Sept 2010	5657.9	0	39.3	0
Oct 2010	742.7	0	2.4	0
Nov 2010	0	0	0	0

Cumulative	48631.2	0	192.3	200 litres
Contract 706A (Contract completed in April 2011)				
Dec 2009	0	0	0	0
Jan – Mar 2010	8238.6	0	96.2	0
Apr – Jun 2010	1054.7	0	1724	0
Jul - Sept 2010	195.7	0	196.6	0
Oct – Dec 2010	1231.5	0	90.6	0
Jan 2011	1453.6	0	37.6	0
Feb 2011	25.6	0	34.4	0
Mar 2011	0	0	25.4	0
Cumulative	12199.7	0	2204.8	0
Contract 708 (Contract completed in August 2010)				
Jul – Sept 2009	0	0	181	0
Oct - Dec 2009	5698.9	0	12	0
Jan – Mar 2010	9989.6	0	12.5	0
Apr – Jun 2010	2741	0	54.3	0
Jul 2010	1035.4	0	13.3	0
Aug 2010	0	0	0	0
Cumulative	19464.9	0	273.1	0
Contract 714 (Contract completed in April 2010)				
Jul – Sept 2009	0	0	42.1	0
Oct - Dec 2009	271.9	0	161.6	0
Jan – Mar 2010	87.7	0	124.7	0
Apr 2010	0	0	0	0
Cumulative	359.6	0	328.4	0

^ACM disposal from buildings demolition

6 WATER QUALITY

Monitoring of the implementation of the water quality mitigation measures during construction phase was conducted in accordance with the requirements as stipulated in the EM&A Manual.

Weekly site inspection will be conducted throughout the construction stage covering the entire project site areas to ensure the recommended mitigation measures are properly implemented.

In the reporting period, the water quality mitigation measures were implemented in accordance with the requirements as stipulated in the EM&A Manual.

Water sample tests were conducted for Works Areas A, C, D, E, G, H, I, J, J2, J3, L1, M, M1 and M3 in the reporting period. Results were satisfactory and were in compliance with the requirement under the WPCO licence.

Impact on tree walls at Forbes Street due to the potential for groundwater drawdown induced by tunnelling is controlled, as a precautionary measure, through monitoring of groundwater level. Groundwater level monitoring were conducted weekly at the monitoring well adjacent to the two tree walls located outside the boundary of Works Area C in the reporting period. Water had been recharged at recharging wells installed at relevant locations such that the maximum allowable draw down of ground water table would be typically about 1m.

7 CULTURAL HERITAGE

Archaeological Watching Brief monitoring for Works Area J2 had been completed as mentioned in the EM&A Report for June 2012. No archaeological finding was observed.

Archaeological Watching Brief monitoring for Works Area J3 had been completed as mentioned in the EM&A Report for June 2011. No archaeological finding was observed.

Archaeological Watching Brief monitoring for Works Area I had been completed as mentioned in the EM&A Report for May 2011. No archaeological finding was observed.

Archaeological Watching Brief monitoring for Works Areas C and H had been completed as mentioned in the EM&A Report for February 2011. No archaeological finding was observed.

Archaeological Watching Brief monitoring for Works Area J had been completed as mentioned in the EM&A Report for January 2011. No archaeological finding was observed.

Archaeological Watching Brief monitoring for Works Area M had been completed as mentioned in the EM&A Report for July 2010. No archaeological finding was observed.

Archaeological Watching Brief monitoring for Works Area M2 had been completed as mentioned in the EM&A Report for May 2010. No archaeological finding was observed.

Vibration monitoring at the identified vibration sensitive historical buildings within 100m in plan of the blast location were conducted in accordance with the requirements stipulated in Chapter 5 of the EM&A Manual. From the monitoring results obtained in the reporting period, the measured PPV were far below the PPV criterion of 25mm/s. As such, it is considered that there was no adverse indirect vibration impact on the vibration sensitive historical buildings due to the use of drill and blast method for the WIL tunnel construction.

8 RECORD OF ENVIRONMENTAL COMPLAINTS

Five environmental complaints were received from EPD in the reporting period as follows:

1. An environmental complaint referred to the ET on 11 December 2012 regarding general construction noise except renovation from construction site near Yam Pak Building at Pok Fu Lam.

2. An environmental complaint referred to the ET on 19 December 2012 regarding night time construction noise causing nuisance to a resident living at High Street (between Centre Street and Eastern Street) , Sai Ying Pun.

3. An environmental complaint referred to the ET on 21 December 2012 regarding polluting effluent discharged from a construction site of MTR near no.48-52 Hill Road and malodour from drains, Kennedy Town.

4. An environmental complaint referred to the ET on 28 December 2012 regarding day time construction work from MTR site at 9B Boham Road, Sai Ying Pun.

5. An environmental complaint referred to the ET on 4 January 2013 regarding general construction noise from MTR KGV site.

Complaint case 1

Upon investigation, there was no tunnelling work carried out in the vicinity of the complainant's premise during the period as mentioned in the complaint. No rock breaking works and other noisy activity were carried out. Noise generated from operation of crawler crane located at the construction shaft near Yam Pak Building was noted. Construction of ventilation shaft was being carried out at the bottom of the construction shaft. The 704 Contractor had a valid CNP No. GW-RS1053-12 up to 10 April 2013 for construction work in the restricted periods near the complainant's premise.

The following noise mitigation measures had been implemented:-
1. Acoustic blankets had been equipped on both sides of the crawler crane;
2. Additional acoustic blankets had been installed on top of the hoarding facing Hillview Garden to further reduce construction noise;
3. The shaft opening was completely covered by acoustic decking during restricted hours.

Additional noise impact monitoring had been conducted at St. Paul's College Primary School, CN8 for the noise complaint as per the Event Action Plan in the EM&A Manual and no exceedance of noise Limit Level was recorded for the additional noise monitoring.

Complaint case 2

Upon investigation, there was tunnelling work carried out in the vicinity of the complainant's premise during the period as mentioned in the complaint. The 704 Contractor had a valid CNP No. GW-RS0876-12 up to 16 February 2013 for construction work near the complainant's premise in the restricted periods including Sundays and General Holidays. The ER had requested the 704 Contractor to review and re-arrange the tunnelling work near the complainant's premise as far as practicable in order to minimize the noise disturbance to the complainant.

In addition, blastings conducted at 7:00am are in accordance with the approved blasting permit. The MTR and Contract 704 Contractor will enhance the communication with the nearby residents and ensure proper notification of the blasting works. In addition, the ER had reminded the 704 Contractor to strictly comply with the blasting permit requirements for the tunnel works.

Additional noise impact monitoring had been conducted at No.1 Third Street, CN17 for the noise complaint as per the Event Action Plan in the EM&A Manual and no exceedance of noise Limit Level was recorded for the additional noise monitoring.

Complaint case 3

Upon investigation, the water was from the retaining wall and the upstand of the surface drain (sub-standard) at the foot of the retaining wall was broken, that causes the water running across the footpath. Since both the retaining wall and the drain were outside the Hill Road works site boundary, MTR had reported the case to RDO and for follow up with FEHD / DO. It should be noted that the issue was raised by DO and a member of CLG in August 2012, a site visit had been held with DO and the member of CLG on 6 August 2012 during which DO and the member of CLG had been briefed of the above finding.

Complaint case 4

Upon investigation, as reported by the Contract 704 Contractor, loading and unloading activity for rock material was carried out during the period as mentioned in the complaint which might result in noise disturbance affecting the complainant. The ER had requested the 704 Contractor to re-arrange the above activity at a later time in the morning as far as practicable in order to minimize the noise disturbance to the complainant.

Additional noise impact monitoring had been conducted at Bon-Point, CN14 for the noise complaint as per the Event Action Plan in the EM&A Manual and no exceedance of noise Limit Level was recorded for the additional noise monitoring.

Complaint case 5

Upon investigation, as reported by the Contract 704 Contractor, there was no PME in operation within the KGV works site during the period as mentioned in the complaint but there was plant manoeuvring at the junction of Eastern Street and High Street. Plant manoeuvring scheduled in early morning was to minimize the traffic impact to road users. The ER had requested the 704 Contractor to re-arrange the above activity at a later time in the morning as far as practicable in order to minimize the potential noise disturbance to the complainant.

Additional noise impact monitoring had been conducted at No.1 Third Street, CN17 for the noise complaint per the Event Action Plan in the EM&A Manual and no exceedance of noise Limit Level was recorded for the additional noise monitoring.

A summary of environmental complaints since commencement of construction is shown below:

Reporting Period	Frequency	Cumulative	Nature	Status
10 Aug 2009 – 9 Nov 2009	3	3	3nos.- Noise	Cases closed
10 Nov 2009 – 9 Feb 2010	6	9	3 nos. - Noise/Air 3 nos. – Noise	Cases closed
10 Feb 2010 – 9 May 2010	10	19	6 nos. - Noise 4 nos. – Dust/Smoke	Cases closed
10 May 2010 – 9 Aug 2010	5	24	1 no. – Dust/Smoke 2 nos – Other 1 no. - Noise 1 no. – Water	Cases closed
10 Aug 2010 – 9 Nov 2010	14	38	7 nos. - Noise 2 nos. – Smoke/Smell 2 nos. – Dust/Noise 2 nos. – Dust 1 no. – Water	Cases closed
10 Nov 2010 – 9 Feb 2011	17	55	12 nos. – Noise 2 nos. – Dust 1 no. – Dust/Noise 2 nos. – Other	Cases closed
10 Feb 2011 – 9 May 2011	24	79	12 nos. - Noise 2 nos. – Dust/Noise 2 nos. – Dust 8 nos. – Other	Cases closed
10 May 2011 – 9 Aug 2011	10	89	5 nos. - Noise 2 nos. – Dust/Smoke/Water 1 no. – Dust/Smell 1 no. – Water 1 no. – Dust	Cases closed
10 Aug 2011 – 9 Nov 2011	6	95	1 no. – Noise 1 no. – Dust 1 no. – Smell 2 nos. - Water 1 no. – Other	Cases closed
10 Nov 2011 – 9 Feb 2012	17	112	12 nos. – Noise 2 nos. – Water 3 nos. – Other	Cases closed
10 Feb 2012 – 9 May 2012	13	125	6 nos. – Noise 2 nos. – Dust 4 nos. – Smell 1 no. - Water	Cases closed
10 May 2012 – 9 Aug 2012	24	149	9 nos. – Noise 2 nos. – Dust 6 nos. – Water 5 nos. – Smell 2 nos. – Other	Cases closed
10 Aug 2012 – 9 Nov 2012	6	155	3 nos. – Noise 1 no. – Dust 1no. – Water 1 no. – Smell	Cases closed
10 Nov 2012 – 9 Dec 2012	1	156	1 no. – Noise	Case closed

10 Dec 2012 – 9 Jan 2013	5	161	4 nos. – Noise 1no. – Water	Cases closed

9 RECORD OF NON-COMPLIANCES

There was no non-compliance identified in the reporting period.

10 NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

No summon or prosecution related to environmental issue was received or made against the Project in the reporting period.

A Record of Inspection (yellow form) was issued by EPD regarding construction works not carried out in accordance with requirements of the Air Pollution Control (Construction Dust) Regulation for the control of dust emission as revealed in the EPD inspection to non-EP works site at the junction of Rock Hill Street and Sands Street on 3 December 2012. The Contract 705 Contractor was advised to comply with 22 of Schedule of Air Pollution Control (Construction Dust) Regulation when carrying out mechanical breaking operation.

A summary of environmental prosecution since commencement of construction is shown below:-

Reporting Period	Frequency	Cumulative	Nature	Status
10 Aug – 9 Nov 2009	0	0	N/A	N/A
10 Nov 2009– 9 Feb 2010	0	0	N/A	N/A
10 Feb 2010 – 9 May 2010	1	1	Noise	Summon served
10 May 2010 – 9 Aug 2010	0	1	N/A	N/A
10 Aug 2010 – 9 Nov 2010	0	1	N/A	N/A
10 Nov 2010 – 9 Feb 2011	0	1	N/A	N/A
10 Feb 2011 – 9 May 2011	0	1	N/A	N/A
10 May 2011 – 9 Aug 2011	0	1	N/A	N/A
10 Aug 2011 – 9 Nov 2011	0	1	N/A	N/A
10 Nov 2011 – 9 Feb 2012	0	1	N/A	N/A
10 Feb 2012 – 9 May 2012	0	1	N/A	N/A
10 May 2012 – 9 Aug 2012	0	1	N/A	N/A
10 Aug 2012 – 9 Nov 2012	0	1	N/A	N/A
10 Nov 2012 – 9 Dec 2012	0	1	N/A	N/A
10 Dec 2012 – 9 Jan 2013	0	1	N/A	N/A

11 STATUS OF STATUTORY SUBMISSIONS

11.1 Submissions required under Environmental Permit

A summary of the status of submissions required under the WIL Environmental Permit as of 9 January 2013 is shown below:

EP-313/2008/D Clause No.	Description		Status
1.11	1	Commencement date of construction	submitted on 10 July 2009
2.1 & 2.2	2	Employment of IEC, ET Leader	submitted on 23 June 2009
2.1	3	Employment of ET Leader	submitted on 19 September 2011
2.3	4	Contractor Management Organization for Civil Works Contracts 706, 708 and 714	submitted on 24 July 2009
2.3	5	Contractor Management Organization for Civil Works Contract 703	submitted on 14 September 2009 and 6 October 2009
2.3	6	Contractor Management Organization for Civil Works Contracts 705 and 706A	submitted on 22 January 2010
2.3	7	Contractor Management Organization for Civil Works Contract 704	submitted on 16 April 2010
2.5 & 2.7	8	Certified Arborist and Tree Protection Plan	submitted on 24 July 2009 and 5 August 2009
2.5 & 2.7	9	Certified Arborist and Tree Protection Plan – Responses to Comments	submitted on 10 September 2009
2.5 & 2.7	10	Certified Arborist and Tree Protection Plan – Certified Arborist	submitted on 3 November 2009
2.5 & 2.7	11	Tree Protection Plan Rev A	submitted on 19 July 2010
2.5 & 2.7	12	Tree Protection Plan Rev B	submitted on 13 October 2010
2.5	13	Certified Arborist	submitted on 22 June 2010
2.6	14	Set up of Community Liaison Groups and designated complaint hotline	submitted on 20 July 2009
2.11.1	15	Archaeological Watching Brief Proposal	submitted on 31 August 2009
2.11.1	16	Revised Archaeological Watching Brief Proposal	submitted on 23 September 2009
2.11.1	17	Revised Archaeological Watching Brief Proposal	submitted on 16 October 2009
2.12	18	Waste Management Plans for Civil Works Contracts 706, 708 and 714	submitted on 24 July 2009
2.12	19	Revised Waste Management Plans for Civil Works Contracts 706, 708 and 714 Rev A	submitted on 7 September 2009
2.12	20	Revised Waste Management Plans for Civil Works Contracts 706, 708 and 714 Rev B	submitted on 16 October 2009
2.12	21	Waste Management Plan for Civil Works Contract 703	submitted on 2 December 2009
2.12	22	Revised Waste Management Plan for Civil Works Contract 703 Rev A	submitted on 14 January 2010
2.12	23	Waste Management Plan for Civil Works Contract 706A	submitted on 22 January 2010
2.12	24	Waste Management Plan for Civil Works Contract 705	submitted on 5 February 2010
2.12	25	Revised Waste Management Plan for Civil Works Contract 705 Rev A	submitted on 2 September 2010
2.12	26	Waste Management Plan for Civil Works Contract 704	submitted on 22 July 2010

2.12	27	Waste Management Plan for Civil Works Contract 704 Rev A	submitted on 14 April 2011
2.12	28	Waste Management Plan for Civil Works Contract 704 Rev B	submitted on 7 October 2011
2.12	29	Waste Management Plan for Civil Works Contract 704 Rev C	submitted on 22 May 2012
3.1.1(a) & 2.4	30	Works Area B programme, site layout plan and drawings of mitigation measures	submitted on 23 June 2009
3.1.1(a)	31	Remediation Report for Works Area B	submitted on 10 June 2009
3.1.2(a) & 3.1.2(b)	32	Appointment of ISC and certification of additional concrete paving for the small western portion of Works Area B occupied by HyD Depot	submitted on 13 July 2009 and 25 August 2009
3.1.2(a) & 3.1.2(b)	33	Appointment of ISC and certification of additional concrete paving for Works Area B for WIL Project	submitted on 30 October 2009
6.1(i)	34	Construction Ground-borne Noise Monitoring Plan for TBM	submitted on 27 May 2011
6.1(i)	35	Construction Ground-borne Noise Monitoring Plan for TBM Rev A	submitted on 9 September 2011
6.3	36	Baseline Monitoring Report (Part 1) for Works Area B	submitted on 10 July 2009
6.3	37	Baseline Monitoring Report (Part 1) for Works Area B Rev A	submitted on 10 February 2012
6.3	38	Baseline Monitoring Report (Part 2) for Works Area MA	submitted on 12 August 2009
6.3	39	Baseline Monitoring Report (Part 3) for Works Areas G and J	submitted on 28 August 2009
6.3	40	Baseline Monitoring Report (Part 4) for Works Areas M and N1	submitted on 9 October 2009
6.3	41	Baseline Monitoring Report (Part 5) for Works Area I	submitted on 8 December 2009
6.3	42	Baseline Monitoring Report (Part 6) for Works Area C	submitted on 10 February 2010
6.3	43	Baseline Monitoring Report (Part 7) for Works Areas C and D	submitted on 15 April 2010
6.3	44	Baseline Monitoring Report (Part 7) for Works Areas C and D Rev A	submitted on 11 June 2010
6.3	45	Baseline Monitoring Report (Part 8) for Works Area A	submitted on 23 April 2010
6.3	46	Baseline Monitoring Report (Part 8) for Works Area A Rev A	submitted on 15 June 2010
6.3	47	Baseline Monitoring Report (Part 9) for Works Area L1	submitted on 7 July 2010
6.3	48	Baseline Monitoring Report (Part 10) for Works Areas H and J3	submitted on 6 October 2010
6.3	49	Baseline Monitoring Report (Part 11) for Works Areas O1, O2 and O3	submitted on 12 October 2010
6.3	50	Baseline Monitoring Report (Part 12) for Works Area E	submitted on 4 November 2010

6.3	51	Baseline Monitoring Report (Part 12) Rev A for Works Area E	submitted on 17 December 2010
6.3	52	Baseline Monitoring Report (Part 13) for Works Area M1	submitted on 17 January 2011
6.3	53	Baseline Monitoring Report (Part 14) for Works Area J2	submitted on 1 February 2011
6.3	54	Baseline Monitoring Report (Part 15) for Works Area M3	submitted on 22 July 2011
6.3	55	Baseline Monitoring Report (Part 15) for Works Area M3 Rev A	submitted on 20 October 2011
6.3	56	Baseline Monitoring Report (Part 15) for Works Area M3 Rev B	submitted on 9 December 2011
6.4	57	EM&A Report for September 2009	submitted on 23 September 2009
6.4	58	EM&A Report for October 2009	submitted on 23 October 2009
6.4	59	EM&A Report for November 2009	submitted on 23 November 2009
6.4	60	EM&A Report for December 2009	submitted on 23 December 2009
6.4	61	EM&A Report for January 2010	submitted on 22 January 2010
6.4	62	EM&A Report for February 2010	submitted on 25 February 2010
6.4	63	EM&A Report for March 2010	submitted on 23 March 2010
6.4	64	EM&A Report for April 2010	submitted on 23 April 2010
6.4	65	EM&A Report for May 2010	submitted on 24 May 2010
6.4	66	EM&A Report for June 2010	submitted on 24 June 2010
6.4	67	EM&A Report for July 2010	submitted on 23 July 2010
6.4	68	EM&A Report for August 2010	submitted on 23 August 2010
6.4	69	EM&A Report for September 2010	submitted on 24 September 2010
6.4	70	EM&A Report for October 2010	submitted on 25 October 2010
6.4	71	EM&A Report for November 2010	submitted on 23 November 2010
6.4	72	EM&A Report for December 2010	submitted on 23 December 2010
6.4	73	EM&A Report for January 2011	submitted on 24 January 2011
6.4	74	EM&A Report for February 2011	submitted on 25 February 2011
6.4	75	EM&A Report for March 2011	submitted on 23 March 2011
6.4	76	EM&A Report for April 2011	submitted on 27 April 2011
6.4	77	EM&A Report for May 2011	submitted on 23 May 2011
6.4	78	EM&A Report for June 2011	submitted on 24 June 2011
6.4	79	EM&A Report for July 2011	submitted on 26 July 2011
6.4	80	EM&A Report for August 2011	submitted on 23 August 2011
6.4	81	EM&A Report for September 2011	submitted on 23 September 2011
6.4	82	EM&A Report for October 2011	submitted on 21 October 2011
6.4	83	EM&A Report for November 2011	submitted on 23 November 2011
6.4	84	EM&A Report for December 2011	submitted on 23 December 2011

6.4	85	EM&A Report for January 2012	submitted on 20 January 2012
6.4	86	EM&A Report for February 2012	submitted on 23 February 2012
6.4	87	EM&A Report for March 2012	submitted on 23 March 2012
6.4	88	EM&A Report for April 2012	submitted on 23 April 2012
6.4	89	EM&A Report for May 2012	submitted on 23 May 2012
6.4	90	EM&A Report for June 2012	submitted on 22 June 2012
6.4	91	EM&A Report for July 2012	submitted on 23 July 2012
6.4	92	EM&A Report for August 2012	submitted on 23 August 2012
6.4	93	EM&A Report for September 2012	submitted on 21 September 2012
6.4	94	EM&A Report for October 2012	submitted on 22 October 2012
6.1	95	EM&A Report for November 2012	submitted on 23 November 2010
6.1	96	EM&A Report for December 2012	submitted on 21 December 2010
6.1	97	Final EM&A Report for Works Area MA	submitted on 29 December 2010
6.1	98	Final EM&A Report for Works Area MA Rev A	submitted on 16 January 2012
7.2	99	Internet address of web site for environmental monitoring and project data	submitted on 23 September 2009

11.2 Statutory Permits and Licenses

A summary of the status of all relevant environmental permits and licenses as of 9 January 2013 is shown below:

Description	**Status**
Environmental Permit for West Island Line Project (EP-313/2008)	Issued on 12 January 2009 and superseded
Environmental Permit for West Island Line Project (EP-313/2008/A)	Issued on 26 June 2009 and superseded
Environmental Permit for West Island Line Project (EP-313/2008/B)	Issued on 22 July 2009 and superseded
Environmental Permit for West Island Line Project (EP-313/2008/C)	Issued on 31 August 2009 and superseded
Environmental Permit for West Island Line Project (EP-313/2008/D)	Issued on 19 January 2011 and superseded
Environmental Permit for West Island Line Project (EP-313/2008/E)	Issued on 1 August 2012 and superseded
Environmental Permit for West Island Line	Issued on 5 October 2012

Project (EP-313/2008/F)	
Contract 703	
Wastewater Discharge License	WT00005106-2009 (surrendered), WT00005108-2009 (surrendered), WT00008394-2011 (surrendered), WT00006066-2010 (surrendered) WT00007598-2010 and WT00012684-2012
Registration as a Chemical Waste Producer	Approved on 2 September 2009 Permit no. 5213-113-D2422-01 Permit no. 5213-113-D2422-02 Permit no. 5213-113-D2422-03
Disposal of Construction Waste	Billing Account no. 7009262 activated on 21 August 2009
Construction Noise Permit	GW-RS0867-09 (expired), GW-RS0025-10 (expired), GW-RS0176-10 (expired), GW-RS0086-10 (expired), GW-RS0297-10 (expired), GW-RS0367-10 (surrendered), GW-RS0448-10 (expired), GW-RS0467-10 (surrendered), GW-RS0606-10 (surrendered), GW-RS0673-10 (expired), GW-RS0849-10 (expired), GW-RS0876-10 (expired), GW-RS0159-11 (expired), GW-RS0237-11 (expired), GW-RS1052-10 (expired), GW-RS1145-10 (expired), GW-RS0242-11 (expired), GW-RS0284-11 (surrendered), GW-RS0425-11 (surrendered), GW-RS0437-11 (expired), GW-RS0237-11 (surrendered), GW-RS0386-11 (expired), GW-RS0639-11 (expired), GW-RS0641-11 (expired), GW-RS0802-11 (surrendered), GW-RS0587-11 (expired), GW-RS1007-11 (expired), GW-RS1015-11 (expired), GW-RS1037-11 (expired), GW-RS1121-11 (expired), GW-RS1017-11 (expired), GW-RS0310-12 (expired), GW-RS0058-12 (expired), GW-RS0159-12 (expired), GW-RS0176-12 (expired), GW-RS0688-12 (surrendered) GW-RS0863-12 (expired), GW-RS0869-12 (expired) GW-RS1379-12 (31 Dec 12 – 28 Jun 13)
Contract 704	
Wastewater Discharge License	WT00006664-2010, WT00006925-2010, WT00006958-2010 WT00006961-2010, WT00006962-2010, WT00007021-2010, WT00007939-2010, WT00007998-2010, WT00009469-2011, WT00010128-2011, WT00012385-2012, WT00012577-2012
Registration as a Chemical Waste Producer	Approved on 2 June 2010 Permit no. 5214-111-G2260-03 Approved on 12 November 2010 Permit no. 5213-116-G2260-04 Approved on 25 November 2010 Permit no. 5213-112-G2525-02 Approved on 26 November 2010 Permit no. 5213-111-G2525-01 Approved on 25 May 2011 Permit no. 5213-112-G2525-03

	Approved on 20 September 2011 Permit no. 5213-112-G2525-04
Disposal of Construction Waste	Billing Account no. 7010555 activated on 8 April 2010, Billing Account no. 7011159 (by vessel) activated on 10 September 2010
Construction Noise Permit	GW-RS0413-10 (expired), GW-RS0552-10 (expired), GW-RS0572-10 (expired), GW-RS0738-10 (surrendered), GW-RS0836-10 (surrendered), GW-RS0838-10 (surrendered), GW-RS0918-10 (expired), GW-RS1015-10 (surrendered), GW-RS1167-10 (expired), GW-RS0034-11 (expired), GW-RS0112-11 (expired), GW-RS0213-11 (expired), GW-RS0229-11 (expired), GW-RS0327-11 (expired), GW-RS0360-11 (expired), GW-RS0505-11 (expired), GW-RS0238-11 (expired), GW-RS0262-11 (expired), GW-RS0563-11 (expired), GW-RS0575-11 (expired), GW-RS0497-11 (expired) GW-RS0537-11 (expired), GW-RS0837-11 (surrendered) GW-RS0790-11 (expired), GW-RS0928-11 (expired) GW-RS0701-11 (expired), GW-RS0078-12 (expired) GW-RS1082-11 (surrendered), GW-RS0876-11 (expired), GW-RS0888-11 (expired), GW-RS0177-12 (expired), GW-RS0980-11 (expired), GW-RS0300-12 (expired), GW-RS0958-11 (expired), GW-RS1060-11 (expired), GW-RS1126-11 (expired), GW-RS1136-11 (expired), GW-RS1142-11 (expired), GW-RS1197-11 (expired), GW-RS1219-11 (expired), GW-RS0119-12 (expired), GW-RS0144-12 (expired), GW-RS0171-12 (surrendered), GW-RS0217-12 (surrendered), GW-RS0254-12 (expired), GW-RS0305-12 (surrendered), GW-RS0306-12 (expired), GW-RS0349-12 (surrendered), GW-RS0379-12 (surrendered), GW-RS0407-12 (surrendered), GW-RS0431-12 (surrendered), GW-RS0450-12 (expired), GW-RS0592-12 (expired), GW-RS0723-12 (expired), GW-RS0735-12 (expired), GW-RS0757-12 (expired), GW-RS0825-12 (surrendered), GW-RS0354-12 (expired), GW-RS0364-12 (expired), GW-RS0480-12 (surrendered), GW-RS0527-12 (surrendered), GW-RS0921-12 (expired), GW-RS0717-12 (surrendered), GW-RS0981-12 (expired), GW-RS0890-12 (surrendered), GW-RS1098-12 (surrendered), GW-RS0608-12 (expired), GW-RS1041-12 (expired), GW-RS1119-12 (expired), GW-RS1324-12 (expired) GW-RS0805-12 (6 Aug 12– 29 Jan 13), GW-RS0876-12 (23 Aug 12– 26 Feb 13), GW-RS0901-12 (30 Aug 12– 27 Feb 13), GW-RS1012-12 (19 Oct 12– 18 Apr 13), GW-RS1028-12 (8 Oct 12– 10 Apr 13), GW-RS1053-12 (13 Oct 12– 13 Apr 13), GW-RS1183-12 (23 Nov 12– 22 May 13), GW-RS1198-12 (26 Nov 12– 14 May 13), GW-RS1342-12 (4 Dec 12– 3 Feb 13), GW-RS1349-12 (28 Dec 12– 28 Feb 13),

	GW-RS1351-12 (22 Dec 12– 14 Jun 13), GW-RS0589-11 for using PME for general construction works at Works Area J was cancelled by EPD on 31 October 2011 GW-RS0097-12 for using PME for general construction works at Works Area M was cancelled by EPD on 23 February 2012
SP License	L-11-048(1) (returned)
Contract 705	
Wastewater Discharge License	WT00006145-2010(superseded), WT00007226-2010(superseded), WT00006686-2010(superseded), WT00008683-2011(superseded), WT00006685-2010, WT00011927-2012, WT00007225-2010 and WT00012686-2012
Registration as a Chemical Waste Producer	Approved on 8 February 2010 Permit no. 5213-111-G2347-17
Disposal of Construction Waste	Billing Account no. 7009116 activated on 8 January 2010 Billing Account no. 7010026 (by vessel) activated on 30 November 2010– expired Billing Account no. 7011896 (by vessel) activated on 3 November 2011
Construction Noise Permit	GW-RS0661-10 (expired), GW-RS0703-10 (surrendered), GW-RS0873-10 (expired), GW-RS0222-11 (expired), GW-RS0454-11 (expired), GW-RS0601-11 (expired), GW-RS0606-11 (surrendered), GW-RS0629-11 (surrendered), GW-RS0706-11 (expired), GW-RS0821-11 (expired), GW-RS0914-11 (surrendered), GW-RS0973-11 (expired), GW-RS1179-11 (surrendered), GW-RS1194-11 (expired), GW-RS0137-12 (expired), GW-RS0246-12 (surrendered), GW-RS0352-12 (surrendered), GW-RS0373-12 (surrendered), GW-RS0635-12 (expired), GW-RS0740-12 (expired) GW-RS0967-12 (3 Oct 12– 4 Apr 13), GW-RS1218-12 (14 Dec 12– 13 Jun 13), GW-RS1288-12 (12 Dec 12– 27 May 13) GW-RS0653-11 for using PME for general construction works at Works Area C was cancelled by EPD on 15 September 2011
Contract 706 (Contract Completed)	
Wastewater Discharge License	WT00004519-2009, WT00004526-2009 and WT00005600-2009
Registration as a Chemical Waste Producer	Approved on 6 October 2009 Permit no. 5213-116-P2781-16
Disposal of Construction Waste	Billing Account no. 7009056 activated on 16 July 2009
Construction Noise Permit	GW-RS0703-09 for using PME for general

	construction works at Kennedy Town Praya works site was cancelled by EPD on 18 November 2009 GW-RS0174-10 for using PME for general construction works at Kennedy Town Praya works site was cancelled by EPD on 19 May 2010
Contract 706A (Contract Completed)	
Wastewater Discharge License	WT00005647-2009
Registration as a Chemical Waste Producer	Approved on 17 December 2009 Permit no. 5213-111-F2541-02
Disposal of Construction Waste	Billing Account no. 7009743 activated on 17 November 2009
Contract 708 (Contract Completed)	
Wastewater Discharge License	WT00004902-2009
Registration as a Chemical Waste Producer	Approved on 7 September 2009 Permit no. 5213-111-G2347-08
Disposal of Construction Waste	Billing Account no. 7009116 activated on 12 August 2009
Construction Noise Permit	GW-RS0938-09 (expired) GW-RS0283-10 (expired)
Contract 714 (Contract Completed)	
Wastewater Discharge License	WT00004893-2009
Registration as a Chemical Waste Producer	Approved on 21 September 2009 Permit no. 5213-111-S3305-02
Disposal of Construction Waste	Billing Account no. 7009127 activated on 14 August 2009

12 SITE INSPECTIONS

12.1 Observations

Regular site inspections were undertaken by the ET in accordance with the EM&A Manual. The contractors' performance on environmental matters were assessed. The inspection findings and the associated recommendations on improvement to the environmental protection and pollution control works were raised to the contractors for reference and/ or action.

In addition, the ET carried out night time inspections to Works Area B in the reporting period in order to check for compliance with the NCO, the results were in general satisfactory with no construction work was observed.

Observations against the implementation of the mitigation measures recommended in the EP/EIA are summarized as follows:

Item	Description	Follow-up Status
	Contract 703	
1	The contractor was reminded to clear stagnant water inside surface channels to avoid mosquito bleeding	Ongoing
2	The contractor was reminded to properly implement wastes sorting	Ongoing
3	The contractor was reminded to provide sufficient movable noise barriers to minimize noise nuisance to nearby residents	Ongoing
4	No water sample test was conducted in the reporting month	N/A
	Contract 704	
1	The contractor was reminded to clear stagnant water inside surface channels to avoid mosquito bleeding	Ongoing
2	The contractor was reminded to properly implement wastes sorting	Ongoing
3	The contractor was reminded to provide sufficient movable noise barriers/acoustic fabric to minimize noise nuisance to nearby residents	Ongoing
4	Water sample test was conducted in the reporting month for Works Areas E, G, H, I, J, J2, J3, L1, M, M1 and M3, results were satisfactory	N/A
5	An ad-hoc inspection on the recent site record for use of Ultra-low Sulphur Diesel in Contract 704 was conducted in the reporting period, the result was satisfactory and the ULSD being used complied with the statutory requirements. Relevant site record was attached in Appendix H of EM&A Report for October 2012	N/A
	Contract 705	
1	The contractor was reminded to clear stagnant water inside surface channels to avoid mosquito bleeding	Ongoing
2	The contractor was reminded to properly implement wastes sorting	Ongoing
3	The contractor was reminded to provide sufficient movable noise barriers/acoustic fabric to minimize noise nuisance to nearby residents	Ongoing
4	The contractor advised that rock crusher would not be adopted in Works Area B and wastewater treatment plant is being used instead of sedimentation tank	Ongoing
5	The material stockpiling area at Works Area B (KET Abattoir Site) was used for stockpiling the materials to be reused on site as specified in the approved WIL EIA Report clause 7.13	N/A
6	Water sample test was conducted in the reporting month for Works Areas A, C and D, results were satisfactory	N/A
	Contract 706A	
1	Contract completed	N/A
	Contract 706	

1	Contract completed	N/A
	Contract 708	
1	Contract completed	N/A
	Contract 714	
1	Contract completed	N/A

12.2 Other Notable Events

IEC Site Inspections

The IEC conducted site inspections for Works Areas A, C, D, G, J2, H, M and N1 on 18 December 2012, minor irregularities were observed during the site inspections and the respective civil works contractors had followed up and satisfactorily rectified the issues as identified in the site inspections promptly.

Works Area B

The small western portion of Works Area B had been occupied by Highways Department as a depot upon the completion of the additional concrete paving and certification of the paving design by ISC in accordance with the EP requirements. Monthly inspections on the condition of the additional paving, site drainage and foul sewerage systems had been carried out in accordance with EP Condition 3.2.2. No new crack was found in the reporting period, the surface cracks identified previously had been satisfactorily sealed such that the structural integrity of the additional concrete paving can be maintained.

Regular soil monitoring had been conducted at 3-month intervals in accordance with EP Condition 3.2.8 in order to monitor any possible migration of contaminants beneath and across the additional concrete paving in Works Area B. The soil monitoring results for December 2012 had been certified by the ET Leader and verified by the IEC. From the monitoring results obtained, there was no evidence of any possible migration of contaminants beneath and across the additional concrete paving in Works Area B.

Works Area MA

As the construction of the WIL magazine had completed and a portion of land at Works Area MA had been handed over to Lands Department. The concerned plants (2nos. Hong Kong Pavetta and 2nos. Silver-back Artocarpus) as mentioned in WIL EP Condition 2.8 are located in the land area which had been handed over to Lands Department. As these plants falls outside the revised Works Area MA, the regular inspection to these plants by the ET/Certified Arborist had stopped in the reporting period for October 2010. In addition, as there will be no construction activities carried out in Works Area MA, the regular construction dust and noise monitoring at the monitoring stations AM4 and CN1 for Works Area MA had stopped in the reporting period for October 2010.

Proposed Alternative Construction Method for Tunnel Works from KGV to Sai Woo Lane(SWL)

The Contract 703 Contractor proposed an alternative construction method for tunnel works from KGV to SWL instead of from SWL to KGV. The proposed change in tunnel works will shorten the overall adit and tunnel construction by around seven months. Environmental Review was conducted and concluded that the proposed alternative method for tunnel construction from KGV to SWL will not constitute a material change to the WIL Project. No adverse environmental impacts are anticipated from the proposed changes and the environmental performance requirements set out in the WIL EIA Report will not be exceeded. It is believed that there will be a societal benefit from the proposed alternative construction method with shortened construction period and the associated environmental nuisances. The Contract 703 Contractor commenced the captioned tunnel works in November 2010.

Proposed Alternative Construction Method for Shaft Excavation at Sai Woo Lane(SWL)

The Contract 703 Contractor proposed an alternative construction method for shaft excavation by blasting at SWL works site. The proposed change will shorten the construction period for the shaft at SWL. Environmental Review was conducted and concluded that the proposed alternative method for shaft construction will not constitute a material change to the WIL Project. No adverse environmental impacts are anticipated from the proposed changes and the environmental performance requirements set out in the WIL EIA Report will not be exceeded. It is believed that there will be a societal benefit from the proposed alternative construction method with shortened construction period and the associated environmental nuisances.

Proposed Alternative Arrangement in the Magazine

There is a proposal regarding alternative arrangement in the magazine for the Detonator Niche. The Hazard to Life assessments for the Detonator Niche are the same as all the other Niches which is NEQ of 300kg, hence the NEQ for the Detonator Niche can be increased to 300kg with actual Detonator numbers subject to FSD/Mines/HKPF approval. Environmental Review was conducted which concluded that there will not be any significant risk caused by the proposed change. The proposal regarding alternative arrangement in the magazine for the Detonator Niche had been submitted to CEDD/Mines for approval.

Proposed Alternative Delivery Arrangement to Works Area A

There is a proposal regarding alternative delivery arrangement to Works Area A for AM and PM delivery with the total delivery trips and the maximum load per trip maintaining the same as detailed in the WIL EIA Hazard to Life assessments and the Technical Note of Re-examination of the WIL Hazard to Life reported in the Monthly EM&A report for July 2010. Environmental Review was conducted which concluded that there will not be any significant risk caused by the proposed change and the overall risk is still within the acceptable region. The proposed modification of the delivery schedule to Works Area A is negligible in terms of the Potential Loss of Life (PLL) and F-N curve. The proposal regarding the alternative delivery arrangement to Works Area A had been submitted to CEDD/Mines for approval.

Proposed Alternative Noise Mitigation Measure for Works Area J2

The Contract 704 Contractor proposed an alternative noise mitigation measure for Works Area J2 by using noise decking to cover the excavation area. This alternative noise mitigation measure is proposed to replace the full enclosure as specified in the WIL EP condition 2.10.1. In accordance with the requirement stipulated in the WIL EP condition 2.10.1, the proposed alternative noise mitigation measure had been discussed and agreed at the CLG meeting held on 12 January 2012. The presentation material for the proposed noise decking and the extract of the eleventh CLG meeting minutes (item 2 on the proposed noise decking) are shown in Appendix H of EM&A Report for February 2012.

Odour Emission from Works Area M

A Notice to Abate Air Pollution Pursuant to Section 10 of the Air Pollution Control Ordinance (Cap.311) was issued by EPD on 10 August 2012 regarding the emission of air pollutant in the form of objectionable odour produced from the construction of underground tunnels was causing air pollution as revealed in the EPD inspection to Works Area M on 19 July 2012. The Contract 704 Contractor was required to reduce the emission of the air pollutant to such an extent that the emission does not cause or contribute to objectionable odour or irritation to the nearby general public. According to the abatement notice, GNJV was required to rectify the odour disturbance before 18 Nov 12. The ET/ER had worked with GNJV to take steps to abate the emission of air pollutants from KGV enclosure causing/contributing to air pollution as required in the abatement notice. A consultant was commissioned by GNJV to review the existing site practices and the improvement measures for preventing potential odour disturbance from Works Area M. A report on the improvement measures implementation had been prepared.

The following site practices and improvement measures were identified:-

1. Most of the exhaust air from WIL underground tunnel work site pass through the de-duster and watering facilities via the ducts and discharge from the ventilation outlet to the atmosphere.
2. The ventilation outlet is located away from the nearby residential developments.
3. The man-access entrance always keeps closed as far as possible. The vehicular entrance of the acoustic enclosure is always closed except the need of trucks moving in/out avoiding the leakage of dust/odour emission inside the acoustic enclosure.
4. There is no opening on the acoustic enclosure except the ventilation inlet and exhaust locations, vehicular and man-access entrances. The limited openings would prevent the potential odour emissions from the tunnel shaft directly discharging to the atmosphere.
5. A blower is installed at the vehicular entrance.
6. A misting system is installed at the vehicular entrance of the acoustic enclosure for masking the odour if any.
7. 3 small size and 1 large size activated carbon filters have been installed insidie the acoustic enclosure and are well operated. These filters are to remove potential odour emission from the tunnel shaft and mucking out area. The removal efficiency is 80-90% in accordance with the specification.

Upon the implementation of the above improvement measures for preventing odour disturbance to the surrounding air sensitive receivers, odour patrols were conducted from October 2012 to early November 2012, no odour was detected along the site boundary. Therefore , the odour improvement measures are considered effective in preventing odour disturbance to the air sensitive receivers in the vicinity of Works Area M.

In addition, the IEC had noted the implementation of the above odour improvement measures during the site inspection conducted in October 2012.

Community Liaison Groups

The Community Liaison Groups were established on 10 July 2009 in accordance with the EP Condition 2.6. Three CLGs, namely, Sai Ying Pun, University and Kennedy Town have been set up to provide direct communication channel for the local communities to MTR during the construction stage of the Project on the project matters including enquiries and complaints handling on all environmental issues. Members of CLGs include the Central & Western District Councillors, Chairmen of Area Committees, representatives of local groups and government departments. Property management office, schools, and other local committees will be invited to participate in the CLGs. The CLG meetings are being held quarterly with the first CLG meetings held in July 2009. The fourteenth CLG meeting had been held in October/November 2012.

In addition, a MTR Project hotline at 2993 3333 is in operation for public enquiries on the WIL Project and it also serves as the complaint hotline during the construction stage of the Project.

13 FUTURE KEY ISSUES

13.1 Key Issues for the Coming Month

Future key issues envisaged in the coming month include the followings:-

- Disposal of C&D waste;
- Dust generation from site activities;
- Noise impact from operating equipment;
- Site water discharge;
- Chemical wastes;
- Tree protection.

13.2 Solid and Liquid Waste Management Status

Base on the findings of the weekly site inspections, the Contractors' performance in solid and liquid waste management were acceptable and compliance with the EIA requirements were demonstrated. Solid wastes and liquid waste were properly disposed of. The current management standard should be maintained.

13.3 Effectiveness and Efficiency of Mitigation Measures

Based on the environmental monitoring results, the effectiveness and efficiency of the mitigation measures implemented were found to be satisfactory. The current practice should be maintained.

14 CONCLUSIONS

The Report presents the results of EM&A works and the impact monitoring for the construction works undertaken during the period of 10 December 2012 to 9 January 2013. The major construction activities in the reporting period included tunnel lining construction for overrun tunnel at Works Area A, operation of barging point at Works Area B, station box construction at Works Area C, station box excavation at Works Area D, operation of barging point at Works Area E, excavation by drill and blast for UNI adits at Works Area G, adit excavation and entrance structure construction at Works Area H, shaft excavation at Works Areas I, J3 and M3, adit excavation under decking at Works Areas J2 and L1, decking installation at Works Area M1, excavation by drill and blast for SYP adits inside noise enclosure at Works Area M, south shaft excavation and down track tunnel excavation by TBM towards SHW at Works Area N1.

Impact monitoring for air quality and noise were conducted in accordance with the EM&A Manual in the reporting period, no exceedance was found and there was no breach of Limit Levels for air and noise monitoring.

No environmental notification of summon and prosecution was received in the reporting period. Five environmental complaints were received in the reporting period. The complaints had been handled in accordance with the procedures stipulated in the EM&A Manual.

Site inspections were conducted by the Environmental Team on a weekly basis to monitor proper implementation of environmental pollution control and mitigation measures for the Project. No non-conformance to the environmental requirements was identified by the Environmental Team in the reporting period.

The Environmental Permit (EP-313/2008/F) issued by EPD on 5 October 2012 is being used for the WIL Project.

In the reporting period, there was no reporting change of circumstances which may affect the compliance with the recommendations of the EIA Report.

It is concluded from the environmental monitoring and audit works for the West Island Line Project that the construction works were undertaken in an appropriately environmentally sensitive manner in the reporting period. The environmental protection and pollution control measures provided by the contractors were generally acceptable apart from some minor irregularities which were rectified timely by the respective civil works contractors.

The ET will continue the implementation of the environmental monitoring and audit programme in accordance to the EM&A Manual and to a level consistent with MTRCL's Corporate Sustainability Policy.

Appendix A
Environmental Quality Performance Limits

Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level (μg/m3)	Limit Level (μg/m3)
AM1a	170	260
AM2	155	260
AM3a	155	260
AM4	158	260
AM5a	178	260
AM6a	157	260
AM7a	151	260
AM8	181	260
AM9a	168	260
AM10	187	260

Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level (dB(A)), Leq(30min)
0700-1900 hr on normal weekdays	When one documented complaint is received	75*
0700-2300 hr on holidays including Sundays and 1900-2300 hr on all other days		Subject to requirements stipulated in Construction Noise Permits
2300-0700 hr of next day		

* Limit for school is 70 dB(A) and 65 dB(A) during school examination periods.

Appendix B
Event Action Plans

Table 2.4 Event and Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Notify IEC and ER 2. Carry out investigation 3. Report the results of investigation to the IEC and ER 4. Discuss jointly with the ER and Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to ER with copy to IEC 2. Implement noise mitigation proposals
Limit Level	1. Notify IEC, ER, EPD and Contractor 2. Identify source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IEC, ER, EPD the causes and actions taken for the exceedances 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 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are 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 ER with copy to IEC 3. Implement the agreed proposals 4. Revise and resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table 9.4 Event and Action Plan for Ambient Air Quality Monitoring (Construction)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of complaint 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 ER (together with the 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 ER (together with the Contractor) on possible remedial measures; 4. Advise the ET/ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial to ER within three 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 IEC, 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 ER (together with the 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 exceedance 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 ER with a copy to IEC within three 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. 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; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation 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 ER with a copy to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Revise and 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.

Appendix C
Implementation of Environmental Mitigation Measures

Table C1 Project Implementation Schedule for All Works Areas (Status as of 9 January 2013)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
Airborne Noise Impact (Construction Phase)							
S 3.55	S 2.23	The following good site practices shall be implemented: - 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 from NSRs as possible - Machines and plant (such as trucks) that may be in intermittent use shall be shut down between work 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.	To reduce construction noise impact	MTRC / Contractor	All works areas	Construction phase	Being implemented
S 3.56-3.57, Table 3.10	S 2.23	Quieter plant shall be used for the following PME: - Truck - Crane/ Mobile Crane - Backhoe/Excavator/Wheel Loader/ Front-end-loader - Breaker - Concrete Mixer Truck - Pokers, vibratory, hand held - Pile Extractor - Roller, vibratory - Asphalt Paver - Hydraulic Breaker	To reduce construction noise impacts	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		- Pile Rig - Crawler Crane - Sheet Pilling Machine/ Piling, Hydraulic					
S 3.58-3.59	S 2.23	Movable noise barrier shall be used for the following PME where practicable: - Breaker - Mini Backhoe - Generator, super silenced - Backhoe - Crane - Poker, vibratory, hand-held - Hydraulic Breaker - Wheel Loader - Crusher - Hand Held Breaker - Compressor - Grout Plant - Grout Mixer - Concrete Pump - Excavator - Lorry Crane - Mobile Crane - Crawler Crane	To reduce construction noise impacts	MTRC / Contractor	Works areas A, C, D, H, I, J, J1, L1, M1, N1, M3, O1, O2 and O3.	Construction phase	Being implemented
S 3.60	S 2.23	Noise enclosure/acoustic shed shall be used for the following PME where practicable: - Air Compressor - Concrete Pump - Shotcrete Pump - Hand Held Breaker - Grout Pump - Concrete Corer	To reduce construction noise impacts	MTRC / Contractor	All works areas	Construction phase	Being implemented
S 3.61	S 2.23	Acoustic Enclosure shall be used for enclosing the rock drill as fully as possible.	To reduce construction noise	MTRC / Contractor	Works areas H,	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
			impacts		N1 and M		
S 3.62	S 2.23	Noise insulating cover shall be used to cover the following PME: - Breaker - Backhoe - Water pump, submersible (electric) - Crawler mounted rock drill trucks - Rock drill - Air compressor - Electric Winch - Concrete pump - Poker, vibratory, hand-held - Hand Held Breaker - Crane - Shotcrete pump	To reduce construction noise impacts	MTRC / Contractor	Works areas J1, N1, M1 and M3	Construction phase	Being implemented
S 3.63	S 2.23	Silencer shall be used for the ventilation fan	To reduce construction noise impacts	MTRC / Contractor	Works areas MA, A, C, D, G, H, I, J, J1, J2, J3, L1, M, M1, M3, N1, O1, O2 and O3.	Construction phase	Being implemented
S 3.64	S 2.23	Noise insulating fabric shall be applied where practicable to cover the following PME: - Pile Rig - Drill rig - Pile Extractor - Power Rammer - Pilling, earth auger - Piling, hydraulic	To reduce construction noise impacts	MTRC / Contractor	Works areas MA, C, D, G, H, I, J, J1, J2, J3, L1, M, M1, M3, N1, O1, O2 and O3.	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		- Sheet Piling Machine					
S 3.65	S 2.23	Use of "Noise Control Curtain" - a noise insulating fabric to be mounted on the steel scaffold erected on the buildings to be demolished to an extent such that the line of sight between the noise source and NSR would be blocked	To reduce construction noise impacts	MTRC / Contractor	Works area A	Construction Phase – during the demolition of Block A & C of Kennedy Town Ex-Police Quarter	Being implemented
S 3.67-3.70, Figure 3.17 and 3.18.	S 2.23	Temporary noise barriers shall be erected at the works areas of West of KET Station and SYP Entrance A1 & A2.	To reduce construction noise impacts	MTRC / Contractor	Works areas C and N1	Construction phase	Implemented for Works Area C
S 3.71	S 2.23	Decking over would be provided to cover the excavation area.	To reduce construction noise impacts	MTRC / Contractor	Works areas J, J3, G and L1	Construction phase	Implemented for Works Areas G J and J3
S3.72	S 2.23	Full enclosure of entire works area	To reduce construction noise impacts	MTRC / Contractor	Works area J2	Construction Phase (after piling is completed)	To be implemented as per construction programme
S3.73 – 3.74	S 2.23	Use of concrete crusher instead of hydraulic breaker	To reduce construction noise	MTRC / Contractor	Works area J2, M1 and	Construction Phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
			impacts		M3		
Airborne Noise Impact (Operation Phase)							
S 3.50-3.51, Table 3.9	Appendix B	The maximum permissible sound power levels (Max SWLs) for the fixed plant shall be complied with during the selection of equipment and mitigation measures.	To comply with the noise criteria of Noise Control Ordinance	MTRC / Contractor	Vent shafts and chiller plants at KET Station, UNI Entrance C1 and SYP Entrance C, and vent shafts at KET Ex-Police Quarter, UNI Vent Shaft-Y and SYP Entrance A1&A2.	Design and operation phases	To be implemented in operation phase
S 3.77	Appendix A	The following shall be considered as far as possible in the detailed design of fixed plant: - Choose quieter plant such as those which have been effectively silenced. - Include noise levels specification when ordering new plant (including chiller and E/M equipment).	To comply with the noise criteria of Noise Control Ordinance	MTRC / Contractor	Vent shafts and chiller plants at KET Station, UNI Entrance	Design and operation phases	To be implemented in operation phase

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		- Locate fixed plant/louver away from any NSRs as far as practicable. - Locate fixed plant in walled plant rooms or in specially designed enclosures. - Locate noisy machines in a basement or a completely separate building. - Install direct noise mitigation measures including silencers, acoustic louvers and acoustic enclosure where necessary.			C1 and SYP Entrance C, and vent shafts at KET Ex-Police Quarter, UNI Vent Shaft-Y and SYP Entrance A1&A2.		
Groundborne Noise Impact							
S4.91	S3.1	Ground-borne construction noise monitoring shall be conducted. The measurement locations shall be above the cutting face of the TBM, and shall be located as close to the cutting face as practicable.	To comply with the noise criteria of Noise Control Ordinance	MTRC / Contractor	Works areas of tunneling by TBM	Construction phase	To be implemented as per construction programme
S 4.88 & Table 4.10	S 3.2	Type 1a Trackform – Resilient Baseplate with stiffness of about 25 KN/mm shall be installed at both the west- and east-bounds starting from turnout in proximity of Hongway Garden towards the Sai Ying Pun Station and also the alignment under Po Shu Lau to Sai Wan Estate. A commissioning test shall be included in the Contract document in order to ensure compliance of the operational ground-borne noise criteria.	To comply with the noise criteria of Noise Control Ordinance	MTRC	Tunnel alignment	Operation phase	To be implemented as per construction programme
Landscape and Visual Impact (Construction Phase)							
Table 5.4	Table 4.2	Re-use of Existing Soil Existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider	To reduce the volume of soil for disposal	MTRC / Contractor	All Works areas	Construction phase	Being Implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. ▪					
Table 5.4	Table 4.2	No-intrusion Zone To maximize protection to existing trees, ground vegetation and the associated understory habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should close monitor and restrict the site working staff not to enter the "no-intrusion zone", even for non-direct construction activities and storage of equipment.	To protect the existing trees, ground vegetation and the associated understory habitats.	MTRC / Contractor	All Works areas	Construction phase	Being Implemented
Table 5.4	Table 4.2	Decorative Hoarding Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.	To reduce visual impact due to construction	MTRC / Contractor	All Works areas	Construction phase	Being Implemented
Table 5.4	Table 4.2	Minimize light pollution and control of night-time glare All security floodlights for construction sites shall be equipped with adjustable shield, frosted diffusers and reflective covers, and be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC users. The Contractor shall consider other security measures which shall minimize the visual impacts.	To minimize the visual impacts.	MTRC / Contractor	All Works areas	Construction phase	Being Implemented
Table 5.4	Table 4.2	Aesthetic design of the conveyor belt system The removal of excavated material requires installation of a conveyor and a barging point. The conveyor will be covered, except the portion where it meets the barging point. The aim of covering or	To minimize the visual intrusion as well as the air and noise quality issues	MTRC / Contractor	Works areas E & F	Construction phase	Implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		enclosing the conveyor is to avoid noise and air quality issues; however, the conveyor where above-ground should be adequately screened and /or constructed of suitable materials and in colours/tones that minimize visual intrusion.					
Table 5.4	Table 4.2	Protection of Retained Trees All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. In addition, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. All implementation of tree protection works and tree preservation measures shall be supervised by a landscape specialist on site.	To protect the retained trees within the site boundary	MTRC / Contractor	All Works areas	Construction phase	Being Implemented
Table 5.4	Table 4.2	Protection of Registered Old and Valuable Trees Detailed tree protection measures as stipulated in WBTC No. 29/2004 – Registration of Old and Valuable Trees, and Guidelines for their Preservation, shall be allowed and included in the Contract Specification. All implementation of OVT protection measures shall be supervised by a landscape specialist on site.	To protect the OVT within the site boundary	MTRC / Contractor	All Works areas	Construction phase	Being Implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
Table 5.4	Table 4.2	Protection of Old Stone Wall-cum-trees Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. All implementation of Old stone wall-cum-trees protection measures shall be supervised by a landscape specialist on site.	To protect the existing trees-cum-wall	MTRC / Contractor	All Works areas	Construction phase	Being Implemented
Landscape and Visual Impact (Operation Phase)							
Table 5.5	Table 4.3	Tree Transplanting Trees of high to medium survival rate after transplanting to be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees will be submitted separately to seek relevant government department's approval.	Tree preservation	MTRC / Contractor	All Works areas	Detail design and operation phase	Being Implemented
Table 5.5	Table 4.3	Compensation Tree Planting Compensatory tree planting should be provided to compensate for felled trees. Compensatory tree planting proposal including location of compensation will be submitted separately to seek relevant government department's approval.	To reduce impact to existing trees.	MTRC / Contractor	All Works areas	Detail design and operation phase	Being Implemented
Table 5.5	Table 4.3	Aesthetic landscape and architectural treatment on Station / Entrance / vent shaft All station entrances, vent shafts and all above ground structures shall be sensitively designed to ensure the element with colour, texture and tonal quality being compatible to the existing urban context, which shall include tree planting where space permits, to minimize the potential adverse landscape and visual impacts. For	To ensure the elements are compatible to the existing urban context and minimize the landscape and	MTRC / Contractor	Stations / Entrances / Vent Shafts	Detail design and operation phase	To be implemented as per construction programme

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		example, roof greening and vertical greening would be applied where possible subject to technical operational and maintenance constraints.	visual impacts.				
Table 5.5	Table 4.3	Re-instatement of excavated Area All excavated area and disturbed area for utilities diversion, temporary road diversion, and pipeline woks shall be reinstated to former conditions or even better, to the satisfaction of the relevant Government departments.	To minimize the visual impacts.	MTRC / Contractor	All Works areas	Operation phase	Being implemented
Table 5.5	Table 4.3	Re-provision of public open space Every effort should be made to so that no public open space would be unnecessarily affected by the Project and if affected, they should be reprovided as far as possible and practicable. Sensitive design and reprovision of the affected Public Open Space (Forbes Street Playground, Hill Road Rest Garden, Ki Ling Lane Children's Playground, Mui Fong Street Children Playground, Sai Woo Lane Playground, Centre Street Market Sitting-out Area, King George V Memorial Park) incorporating replacement facilities for those provided at present, using materials of quality suitable for long term use and acceptable to relevant Government authority. Relevant government departments including LCSD and PlanD should be consulted on the design of the reprovisioned public open spaces at the early stage of the design process.	Re-provision of landscape amenity area and facilities	Contractor	All Works areas	Operation phase	To be implemented as per construction programme
Cultural Heritage Impact (Construction Phase)							
S6.45, S6.51-6.55	S 5.4 – 5.11	The construction vibration control limits shall be followed. Compliance monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme The location and installation of the monitoring stations should be	To minimize vibration impacts on the identified vibration sensitive	MTRC / Contractor	All Works Areas	Detail design, construction and operational	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		discussed and agreed with AMO before installation.	historical buildings.			phase	
S6.46	S5.3	Hoardings or boundary fencing shall be designed in a manner that responds to the existing urban context.	To minimize visual impacts	MTRC / Contractor	All Works Area	Detailed design and operational phase	Being Implemented
S6.44	S5.12-5.14	Archaeological watching brief shall be conducted for the identification of any historical finds in the directly impacted works areas which might have a potential for finds and remains of archaeological interest to be found. Details of the frequency of inspection shall be provided to AMO for review and comment once the detailed construction programme has been finalized. The inspection should be carried out by the qualified archaeologist who have applied to the Antiquities Authority for a License	To indentify any historical finds in the works areas	MTRC / Qualified Archaeologist	Works Area C, H, I, J, J1, J2, J3, M and M2	Construction phase	Being implemented
Cultural Heritage Impact (Operation Phase)							
Table 6.2	5.3	Aboveground structures shall be designed in a manner that responds to the existing urban context.	To minimize visual impacts	MTRC / Contractor	Stations / Entrances / Vent Shafts	Detail design and operation phase	To be implemented as per construction programme
S6.60	S 5.15	Recommended measures for mitigating operational phase landscape and visual impacts shall be implemented.	To minimize potential visual impact on heritage sites	MTRC / Contractor	Stations / Entrances / Vent Shafts	Detail design and operational phase	To be implemented as per construction programme
Waste Management Implications (Construction Phase)							
S7.30	S 6.5	Good site practices - 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	To reduce waste management impacts	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		wastes generated at the site - Training of site personnel in proper waste management and chemical handling procedures - Provision of sufficient waste disposal points and regular collection of waste - Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. - Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre.					
S7.31 & S7.32	S 6.6 – S 6.7	Waste reduction measures - 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 by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force - Proper storage and site practices to minimise the potential for damage or contamination of construction materials	To achieve waste reduction	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		- Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. - A recording system for the amount of wastes generated, recycled and disposed (including disposal sites) should be proposed - Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle. - A Waste Management Plan shall be prepared by the Contractor prior to the commencement of construction work to provide an overall framework for waste management and reduction.					
S7.34 & S7.35	S 6.9 & S6.10	C&D Material - In order to minimise impacts resulting from collection and transportation of C&D material for off-site disposal, the excavated materials arising from station and tunnel construction shall be reused on-site as backfilling material and for landscaping works as far as practicable. - Surplus rock generated from the tunnelling works, shafts/adits construction and the stations cavern construction should be reused in reclamation and site formation projects either in the Mainland or Macau, or disposed of at a PFRF, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses. - C&D waste generated site clearance from the proposed works areas would require disposal to the designated landfill site.	To minimize environmental impacts during the handling, transportation and disposal of C&D material	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		- In order to monitor the disposal of inert C&D material and C&D waste at PFRFs and landfills, respectively, and to control fly-tipping, a trip-ticket system shall be established in accordance with ETWB TCW No. 31/2004. - Material delivered to PFRFs should be of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee.					
S7.36	S 6.11	General refuse - General refuse shall be stored in enclosed bins or compaction units separate from C&D material and chemical wastes. - A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material and chemical wastes. Preferably an enclosed and covered area shall be provided to reduce the occurrence of 'wind blown' light material.	To minimize environmental impacts during the handling, transportation and disposal of general refuse	MTRC / Contractor	All works areas	Construction phase	Being implemented
S7.37	S 6.12	Chemical waste - 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 shall be used, and incompatible chemicals shall be stored separately. - Appropriate labels shall be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	To minimize environmental impacts during the handling, transportation and disposal of chemical refuse	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		- The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, either to the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.					
Waste Management Implications (Operation Phase)							
S7.39	S 6.11	General Refuse and Industrial Waste ▪ A reputable waste collector should be employed to remove general refuse and industrial wastes from the stations on a daily basis to minimise odour, pest and litter impacts.	Storage and handling of waste	MTRC	Stations and entrances	Operational stage	Being implemented
S7.40	S 6.12	Chemical Waste ▪ The requirements given in the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes* should be followed in handling of these chemical wastes. ▪ A trip-ticket system should be operated in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation* to monitor all movements of chemical wastes which would be collected by a licensed collector to a licensed facility for final treatment and disposal. ▪ The guidelines covered under the construction phase mitigation of chemical wastes should be referred.	Storage and handling of the chemical waste to avoid environmental and health hazard	MTRC	Stations and entrances	Operational stage	Being implemented
Water Quality Impact (Construction Phase)							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
S9.31	S 8.4	Construction Site Run-off and Drainage The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area i.e. WSD flushing water intakes along the harbour front, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts: - At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site shall be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers shall be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system would be undertaken by the contractor prior to the commencement of construction. - The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates - Sand/silt removal facilities such as sand/silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps shall be 5	To minimize water quality impacts	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flowrate of 0.1m^3/s a sedimentation basin of 30m^3 would be required and for a flow rate of 0.5 m^3/s the basin would be 150m^3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. - All drainage facilities and erosion and sediment control structures shall be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit shall be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times. - Measures shall be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations shall be discharged into storm drains via silt removal facilities. - If surface excavation works cannot be avoided during the wet season (April to September), temporarily exposed slope/soil surfaces shall be covered by a tarpaulin or other means, as far as practicable, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Interception channels shall be provided (e.g. along the crest/ edge of the excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94. - The overall slope of the site should be kept to a minimum to					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		reduce the erosive potential of surface water flows, and all trafficked areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows - All vehicles and plant shall be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility shall be provided at every construction site exit where practicable. Wash-water shall have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road shall be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. - Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. - Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. - Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. - Bentonite slurries used in diaphragm wall construction shall be reconditioned and reused wherever practicable. Temporary enclosed storage locations shall be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 shall be adhered to in the handling and disposal of bentonite slurries.					
S9.32 & S9.33	S 8.5 & S 8.6	General Construction Activities - Construction solid waste, debris and refuse generated on-site shall be collected, handled and disposed of properly to avoid entering any nearby stormwater drain. Stockpiles of cement and other construction materials shall be kept covered when not being used. Requirements of the solid waste management are described in Section 7 of this EIA Report. - Oils and fuels shall only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to nearby stormwater drain, all fuel tanks and storage areas shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund shall be drained of rainwater after a rain event.	To minimize water quality impacts	MTRC / Contractor	All works areas	Construction phase	Being implemented
S9.34	S 8.7	Sewage from Construction Workforce - Temporary sanitary facilities, such as portable chemical toilets, shall be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and would be responsible for appropriate disposal of waste matter and	To minimize water quality impacts	MTRC / Contractor	All works areas with on-site sanitary facilities	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		maintenance of these facilities.					
S9.35	S 8.8	Tunnelling Wastewater Discharge Wastewater with a high level of suspended solids should be treated before discharge by settlement in tanks with sufficient retention time. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. In case of very high levels of suspended solids, an on-site pre-packaged treatment plant may be required with the addition of flocculants to improve the settlement of solids. A discharge licence under the WPCO would be required for discharge to the stormwater drain. It may be a stipulation of the WPCO licence to require the Contractor to monitor the quality / quantity of the discharge to show compliance with the conditions of the licence.	To minimize water quality impacts	MTRC / Contractor	All works areas with tunneling works	Construction phase	Being implemented
S9.36	S8.9	Groundwater Monitoring Monitoring of groundwater table shall be conducted on a weekly basis and recharge wells will be installed.	To control the potential impact on tree walls at Forbes Street due to groundwater drawdown induced by tunneling	MTRC / Contractor	Works Areas C & D	Construction phase	Being implemented
Water Quality Impact (Operation Phase)							
S9.27	S8.10-S8.11	Runoff from Rail Track and operational tunnel drainage - The tunnel wall would be equipped with water-tight liner and designed for no seepage. - Standard designed silt trap or grease trap (if necessary) and oil interceptor would be provided to remove the oil, lubricants, grease, silt and grit from the tunnel runoff before discharge into	To control runoff from rail track and tunnel seepage	MTRC	Tunnels and rail tracks	Operation phase	To be implemented in operation phase

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
S9.37	S8.12-S8.14	stormwater drainage. - Track drainage channels discharge should pass through oil/grit interceptors/chambers to remove oil, grease and sediment before being pumped to the public stormwater drainage system. - The silt traps and oil interceptors should be cleaned and maintained regularly. - Oily contents of the oil interceptors should be transferred to an appropriate disposal facility, or to be collected for reuse, if possible.					
S9.27	S8.15-S8.16	Sewage from Station - Sewage and wastewater effluents generated from the staff at stations and food and beverage outlets, if any, would be connected to the existing foul sewerage system. - Runoff from cleaning activities at the stations which would enter floor drains would also be connected to the foul sewer.	To control sewage from stations	MTRC	WIL Stations	Operation phase	To be implemented in operation phase
Hazard to Life							
S10	S10.1	Blasting activities regarding transport, storage and use of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions.	To ensure that the risks from the proposed explosives storage, handling and transport would be acceptable	MTRC / Contractor	Works areas at which explosives would be stored and/or used.	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
S10	S10.1	Delivery vehicles shall not be permitted to remain unattended within the magazine. In addition, they shall not be allowed to park overnight, or when not in use, within the magazine and its audits	To reduce the risk of fire within the magazine	MTRC / Contractor	Explosive Magazine	Operational phase	Being implemented
S10	S10.1	Blast doors or heavy duty blast curtains should be installed at the access adits and shafts to prevent flyrock, and control the air over-pressure	To reduce the risk of injury due to flyrock during the WIL construction	MTRC / Contractor	At suitable locations, access adits and shafts	Construction phase	Being implemented
S10	S10.1	Detonators shall not be transported in the same vehicle with other Class 1 explosives	To reduce the risk of explosion during the transport of cartridged emulsion	MTRC / Contractor	-	Construction phase	Being implemented
Air Quality (Construction Phase)							
Table 11.6	Table 9.5	Rock Crushing Plants The unloading process would be undertaken within enclosed rock crushing facility. Water spraying would be provided at the unloading point. The crushing process is the secondary crushing. The rock crushing plant is enclosed and water spraying system would be installed. Dust extraction and collection system with 80% dust removal efficiency would be provided. The crushed stone/rock would be screened by the screening and sorting facility before transporting to the temporary stockpile via enclosed conveyor. Water spraying system would be installed. Dust extraction and collection system with 80% dust removal efficiency would be provided.	To minimize dust impacts	MTRC / Contractor	Rock crushing plants at works areas B and E	Construction phase	Being implemented at Works Area E
Table 11.7	Table 9.6	Temporary Stockpiles Kennedy Town Abattoir Site:	To minimize dust impacts	MTRC / Contractor	Temporary stockpiles at works	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		Loading point – Loading of crushed materials from rock crushing facility onto stockpile - The transportation would be via an enclosed conveyor belt system and water spraying and flexible dust curtains would be provided at the loading point to suppress the dust impact. Storage of materials - Active area for loading & unloading materials - The active area would be minimized to 20% of the total area of the stock piles. The 80% inactive area would be well covered with impervious sheeting. Water spraying system would be applied on the active area and watering with complete coverage of active area four times a day would be required. Transportation of materials to Barging Point 1 - Wheel wash facilities provided at the site exit. The vehicles would be washed before leaving the stockpiles. The spoils would also be well covered before leaving the site in order to minimise generation of dusty materials. - The haul roads within the site would be all paved and water spraying would be provided to keep the wet condition. Western PCWA: Loading point – Loading of crushed materials from rock crushing facility onto stockpile - The transportation would be via an enclosed conveyor belt system and water spraying and flexible dust curtains would be provided at the loading point to suppress the dust impact. Storage of materials - Active area for loading & unloading materials - Water spraying system would be applied on the active area and watering with complete of active area four times a day would be required.			areas B and E		

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		Transportation of materials to Barging Point 2 - The vehicles would be washed before leaving the stockpiles. The spoils would also be well covered before leaving the site in order to minimise generation of dusty materials. - The haul road would be paved and water spraying would be provided to keep the wet condition					
Table 11.8	Table 9.7	Barging Facilities Kennedy Town Abattoir Site Transportation of spoils to Barging Point 1 - All road surfaces within the barging facilities would be paved and water spraying would be provided to keep the wet condition. Unloading of spoil materials - The unloading process would be undertaken within enclosed tipping hall. Flexible dust curtains and water spraying would be provided at the discharge point for dust suppression. Vehicles leaving the barging facility - Vehicle wheel washing facilities provided at site exit Western PCWA Transportation of spoils to Barging Point 2 - All road surfaces within the barging facilities would be paved and water spraying would be provided to keep the wet condition. Unloading of spoil materials from trucks to Barging Point 2 - The unloading process should be undertaken within the enclosed tipping hall. Flexible dust curtains and water spraying would be provided at the discharge point for dust suppression. Unloading of spoil materials from enclosed tipping hall to Barging	To minimize dust impacts	MTRC / Contractor	Barging points at works areas B and E	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		Point 3 - The tipping hall would be enclosed structure. The conveyor from tipping hall to the Barging Point 3 would be enclosed. Water spraying and flexible dust curtains would be provided at the receiving point of the tipping hall. Flexible dust curtains and water spraying would be provided at the discharge point of barging facilities for dust suppression. Vehicles leaving the barging facility - Vehicle wheel washing facilities provided at site exit					
Table 11.9	S 9.26	Rock Crushing Plant at Kennedy Town Abattoir Site - Dust extraction and collection system (80% dust removal efficiency) should be installed at the rock crushing facility and the discharge point is located at least 39m away from the west boundary of the rock crushing facility under the preliminary design	To minimize dust impacts	MTRC / Contractor	Rock Crushing Plant at works area B - Kennedy Town Abattoir Site	Construction phase	N/A
Table 11.10	S 9.27	Works areas at KET station construction site Active operating area of 50% Watering four times a day with complete coverage of active construction area	To minimize dust impacts	MTRC / Contractor	Works area A, C and D	Construction phase	Being implemented
Table 11.10	S9.27	Open work areas at temporary magazine site Active operating area of 50% Watering two times a day with complete coverage of active construction area	To minimize dust impacts	MTRC / Contractor	Open works area at magazine site	Construction phase	Implemented
S 11.42	S 9.28	For both rock crushing plants, the requirements and mitigation measures stipulated in the *Guidance Note on the Best Practicable*	To minimize dust impacts	MTRC / Contractor	Rock crushing	Construction phase	Being

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		Means for Mineral Works (Stone Crushing Plants) BPM 11/1 should be followed and implemented.			plants		implemented
S 11.42	S 9.28	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: - Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. - Use of frequent watering for particularly dusty construction areas and areas close to ASRs. - 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. - Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. - Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. - Imposition of speed controls for vehicles on unpaved site roads. 8 kilometers per hour is the recommended limit. - Where possible, routing of vehicles and positioning of	To minimize dust impacts	MTRC / Contractor	All works areas	Construction phase	Being implemented

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Implementation Status
		construction plant shall be at the maximum possible distance from ASRs. - Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. - Cement or dry PFA delivered in bulk shall be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed. - Loading, unloading, transfer, handling or storage of bulk cement or dry PFA shall be carried out in a totally enclosed system or facility, and any vent or exhaust shall be fitted with an effective fabric filter or equivalent air pollution control system.					

Table C2 Implementation Schedule Specific for Works Area MA - Underground Magazine Site (Status as of 9 January 2013)

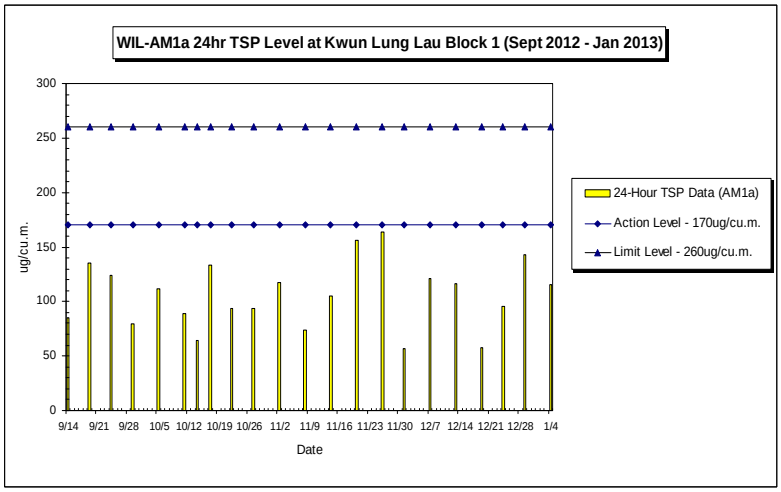
EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Reference
Ecological Impact (Construction Phase)							
App.2.3 – S. 6.1		Proposed works shall be designed to avoid or minimize direct impacts to natural habitats in the works area wherever possible.	To protect the natural habitats in the works area	MTRC / Contractor	Works Area MA	Design and construction of the magazine site	Implemented
App.2.3 – S. 6.2		Planting of vegetation shall be provided to compensate for the unavoidable loss of tall shrubland and woodland habitats. It shall be provided to re-vegetate the areas which would be 1m beyond the security fencing and temporarily affected by the construction works (e.g. slope works, erecting security fence) after the construction phase. The plant species selected for re-vegetation shall make reference to the existing habitats.	To compensate for the ecological impacts associated with the loss of vegetation	MTRC / Contractor	Works Area MA	Construction phase of the magazine site	To be implemented
App.2.3 – S. 6.2		Suitable plants, preferably with native species, shall be planted within the boundary of the completed magazine site to compensate for unavoidable loss of understorey vegetation resulting from the proposed works on-site after the decommissioning of the magazine site. The compensatory planting shall make use of native plant species with flowers/fruits to attract wildlife.	To compensate for the ecological impacts associated with the loss of vegetation	MTRC / Contractor	Works Area MA	After completing the construction of the magazine site	To be implemented
App.2.3 – S. 6.3		The two individuals of Hong Kong Pavetta (*Pavetta hongkongensis*) located within the footprint of the proposed tunnel portal and access entrance shall be transplanted to a suitable nearby tall shrubland or woodland habitats. Transplantation shall be supervised by a suitably qualified ecologist/horticulturalist	To protect the 2 species from the proposed works within the works area	MTRC / Contractor	Works Area MA	Prior to the construction phase of the magazine site	Implemented
App.2.3 – S. 6.4		The trees located within the works area shall be preserved as far as practicable. If tree felling is unavoidable, feasibility of tree transplantation and compensatory planting shall be explored shall be implemented.	To protect the existing trees within the works area	MTRC / Contractor	Works Area MA	Prior to the construction phase of the	Implemented

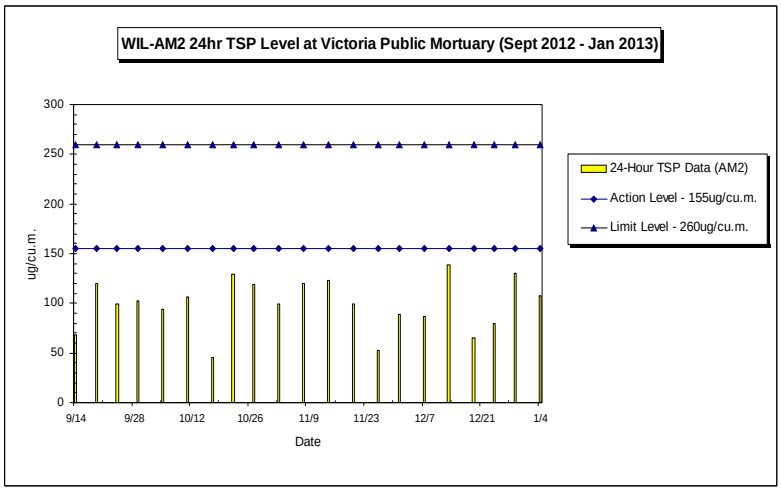
EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Reference
						magazine site	
App.2.3 – S. 6.5		All the existing trees and species of conservation importance (i.e. the two identified Silver-back Artocarpus, *Artocarpus hypargyreus*) located near the proposed works site shall be fenced off and the trunk shall be protected with hessian sacking as far as possible.	To protect the existing trees and the species of conservation importance near the works area	MTRC / Contractor	Works Area MA	Construction and operation phase of the magazine site	Implemented
App.2.3 – S. 6.6		Noise control measures including the use of quiet excavation methods, quiet construction plant and temporary noise barriers shall be implemented	To minimize the noise disturbance to the wildlife near the works area	MTRC / Contractor	Works Area MA	Construction and operation phase of the magazine site	Implemented
App.2.3 – S. 6.7		Standard good site practice measures shall be implemented, including • Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats. • Construction activities should be restricted to work areas that would be clearly demarcated. The work areas should be reinstated after completion of the works. • Waste skips should be provided to collect general refuse and construction wastes. The wastes would be disposed of timely and properly off-site. • General drainage arrangements should include sediment and oil traps to collect and control construction site run-off. • Open burning on works sites is illegal, and should be strictly prohibited.	To minimize ecological impacts	MTRC / Contractor	Works Area MA	Construction and operation phase of the magazine site	Implemented

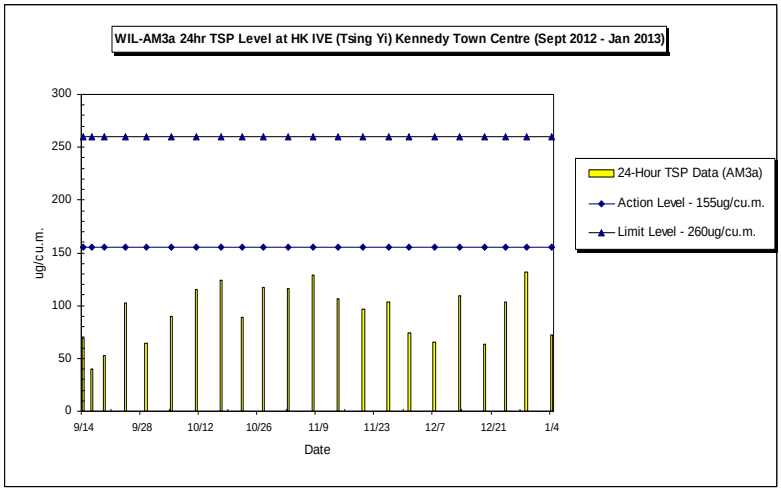
Table C3 Implementation Schedule Specific for Works Area B – Kennedy Town Abattoir and Incinerator Area (Status as of 9 January 2013)

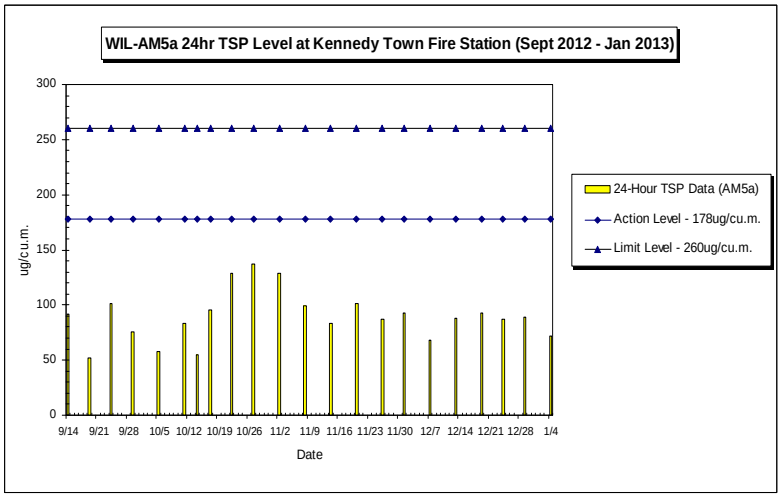
Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	Reference
The existing ground slab/pavement within the works area shall be kept intact.	To minimize human health risk associated with the contaminated soil and groundwater in the works area.	MTRC / Contractor	Works Area B	Construction phase	Implemented
A reinforced concrete paving of no less than 200mm thick for the cleared site shall be provided after the demolition and clearance works. A debonding layer shall be placed between the existing and new concrete slabs to allow the latter to be removed prior to the former.	To minimize human health risk associated with the contaminated soil and groundwater in the works area.	MTRC / Contractor	Works Area B	Construction phase	Implemented
Monthly site inspection shall be conducted to ensure the integrity of the existing and/or the new paving layer. Any surface cracks identified shall be filled out such that underneath soil would not be exposed.	To minimize human health risk associated with the contaminated soil and groundwater in the works area.	MTRC / Contractor	Works Area B	Construction phase	Being implemented
A clear void between the structure slab of the site office and the ground surface shall be created, i.e. the site office is a raised structure.	To allow ventilation by natural air movements to dilute the contaminant vapour released from the soil and groundwater.	MTRC / Contractor	Works Area B	During the construction of the site offices	Implemented
Incorporate gas-resistant membranes into the raised floor of the site office.	To prevent contaminant vapour under the floor slab from entering the site office to protect the staff working in the site office.	MTRC / Contractor	Works Area B	During the construction of the site offices	Implemented
Site hoardings shall be erected around the works area, and they shall be properly maintained to restrict access of trespassers.	To protect the trespassers from the contaminated soil and groundwater in the works area.	MTRC / Contractor	Works Area B	Construction phase	Implemented

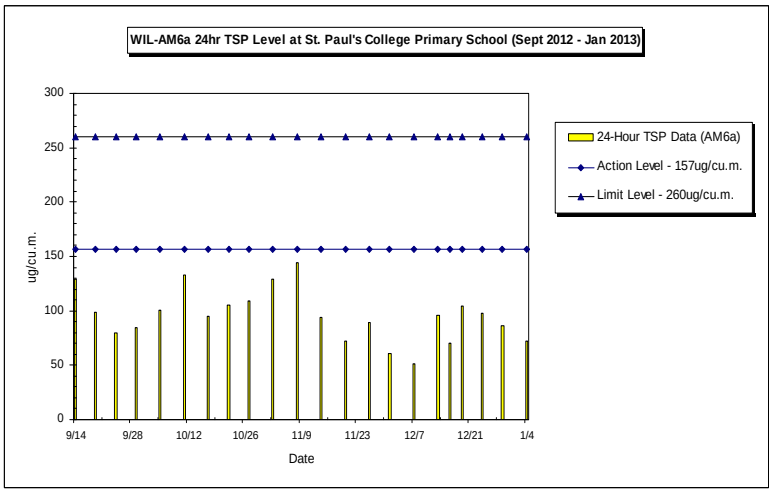
Appendix D
Impact Monitoring Graphical Plots

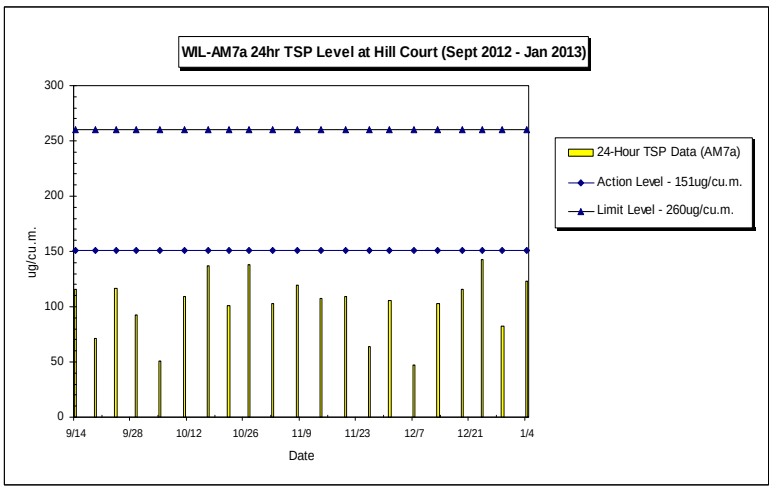

WIL-AM1a 24hr TSP Level at Kwun Lung Lau Block 1 (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/21 9/28 10/5 10/12 10/19 10/26 11/2 11/9 11/16 11/23 11/30 12/7 12/14 12/21 12/28 1/4
Date
24-Hour TSP Data (AM1a)
Action Level - 170ug/cu.m.
Limit Level - 260ug/cu.m.

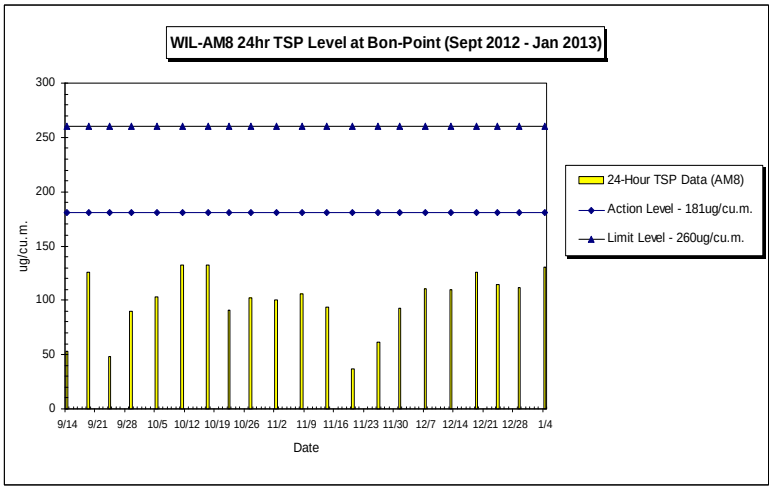

WIL-AM2 24hr TSP Level at Victoria Public Mortuary (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/28 10/12 10/26 11/9 11/23 12/7 12/21 1/4
Date
24-Hour TSP Data (AM2)
Action Level - 155ug/cu.m.
Limit Level - 260ug/cu.m.

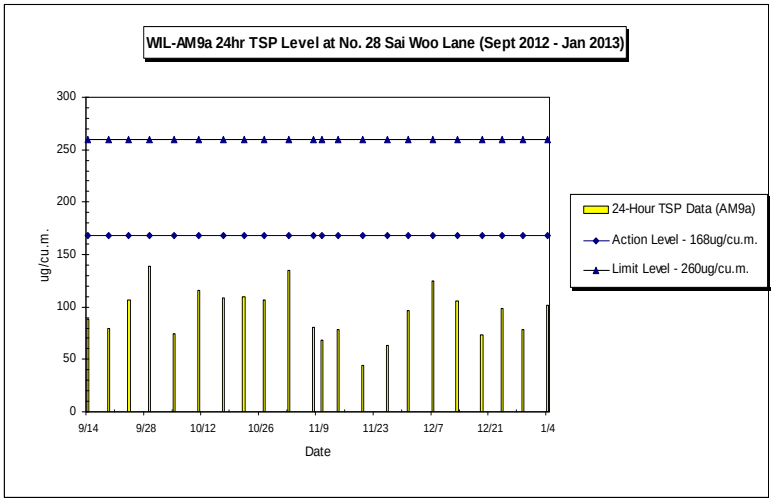

WIL-AM3a 24hr TSP Level at HK IVE (Tsing Yi) Kennedy Town Centre (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/28 10/12 10/26 11/9 11/23 12/7 12/21 1/4
Date
24-Hour TSP Data (AM3a)
Action Level - 155ug/cu.m.
Limit Level - 260ug/cu.m.

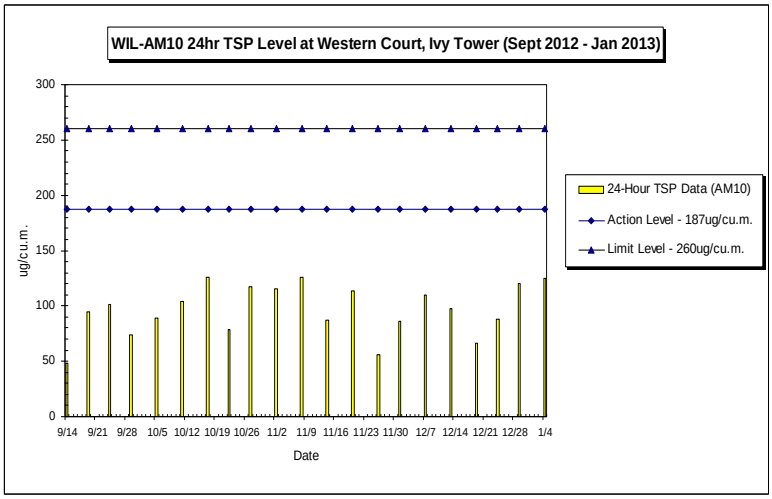

WIL-AM5a 24hr TSP Level at Kennedy Town Fire Station (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/21 9/28 10/5 10/12 10/19 10/26 11/2 11/9 11/16 11/23 11/30 12/7 12/14 12/21 12/28 1/4
Date
24-Hour TSP Data (AM5a)
Action Level - 178ug/cu.m.
Limit Level - 260ug/cu.m.

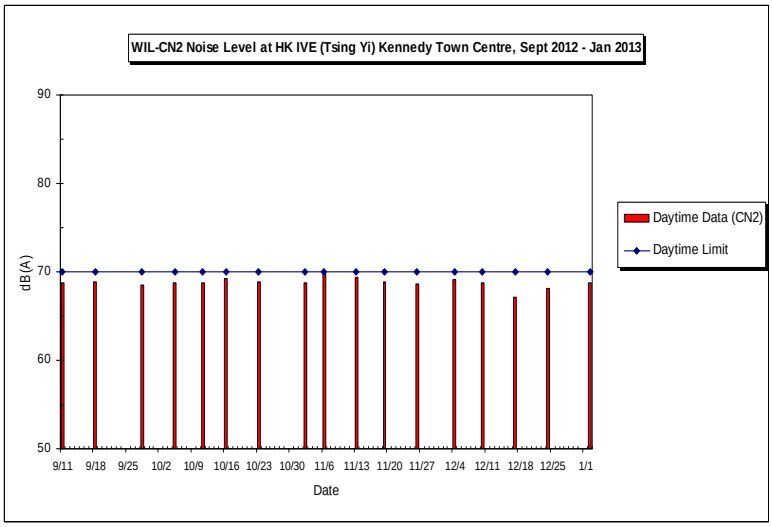

WIL-AM6a 24hr TSP Level at St. Paul's College Primary School (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/28 10/12 10/26 11/9 11/23 12/7 12/21 1/4
Date
24-Hour TSP Data (AM6a)
Action Level - 157ug/cu.m.
Limit Level - 260ug/cu.m.

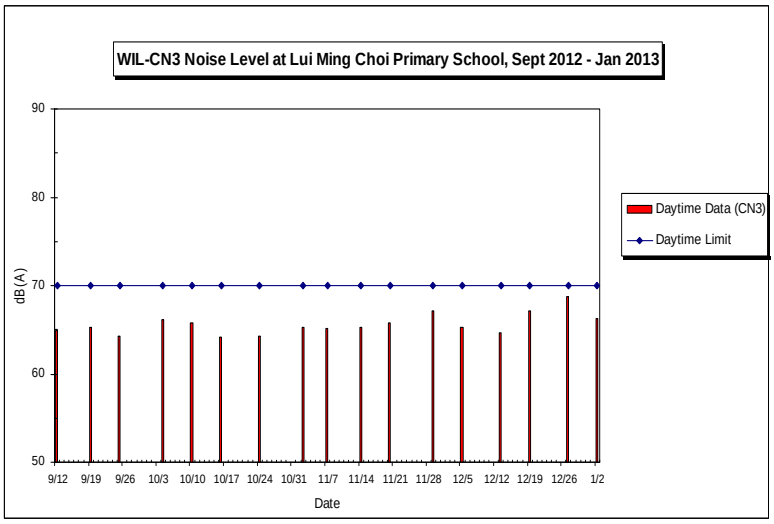

WIL-AM7a 24hr TSP Level at Hill Court (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/28 10/12 10/26 11/9 11/23 12/7 12/21 1/4
Date
24-Hour TSP Data (AM7a)
Action Level - 151ug/cu.m.
Limit Level - 260ug/cu.m.

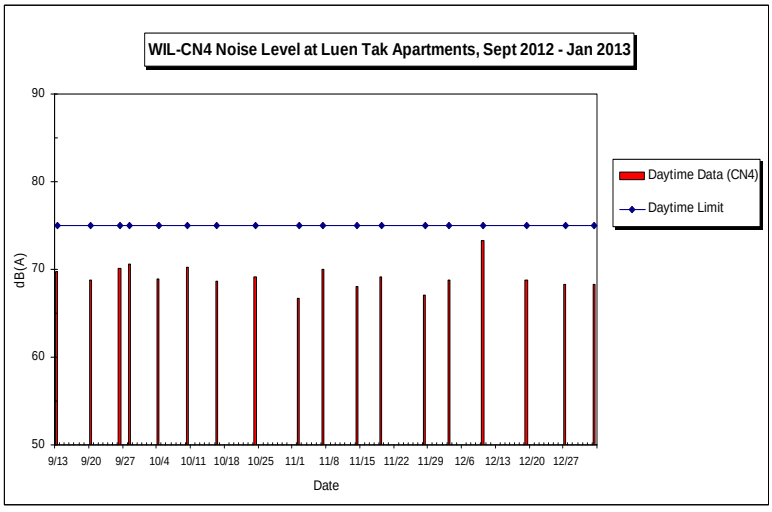

WIL-AM8 24hr TSP Level at Bon-Point (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/21 9/28 10/5 10/12 10/19 10/26 11/2 11/9 11/16 11/23 11/30 12/7 12/14 12/21 12/28 1/4
Date
24-Hour TSP Data (AM8)
Action Level - 181ug/cu.m.
Limit Level - 260ug/cu.m.

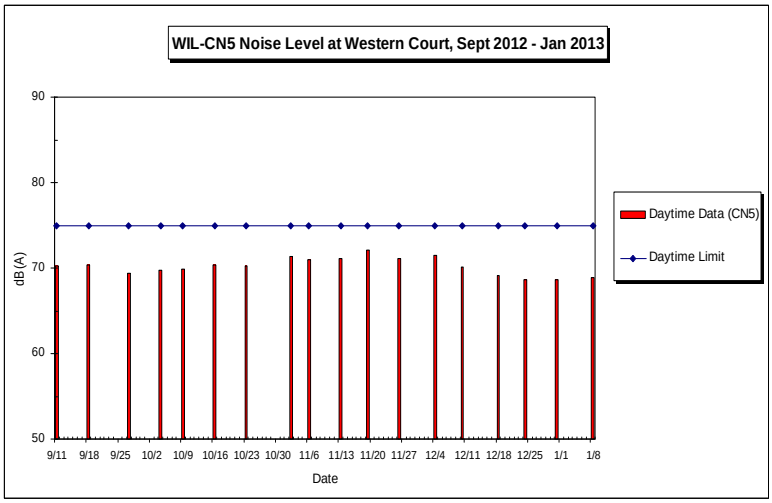

WIL-AM9a 24hr TSP Level at No. 28 Sai Woo Lane (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/28 10/12 10/26 11/9 11/23 12/7 12/21 1/4
Date
24-Hour TSP Data (AM9a)
Action Level - 168ug/cu.m.
Limit Level - 260ug/cu.m.

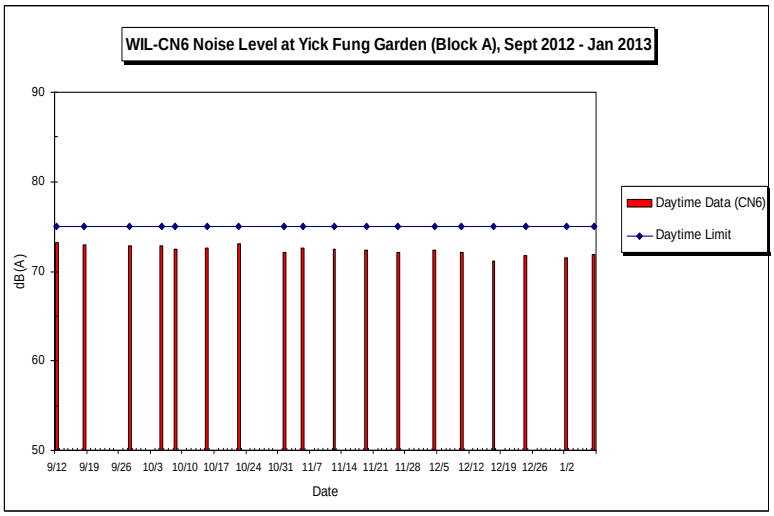

WIL-AM10 24hr TSP Level at Western Court, Ivy Tower (Sept 2012 - Jan 2013)
ug/cu.m.
300
250
200
150
100
50
0
9/14 9/21 9/28 10/5 10/12 10/19 10/26 11/2 11/9 11/16 11/23 11/30 12/7 12/14 12/21 12/28 1/4
Date
24-Hour TSP Data (AM10)
Action Level - 187ug/cu.m.
Limit Level - 260ug/cu.m.

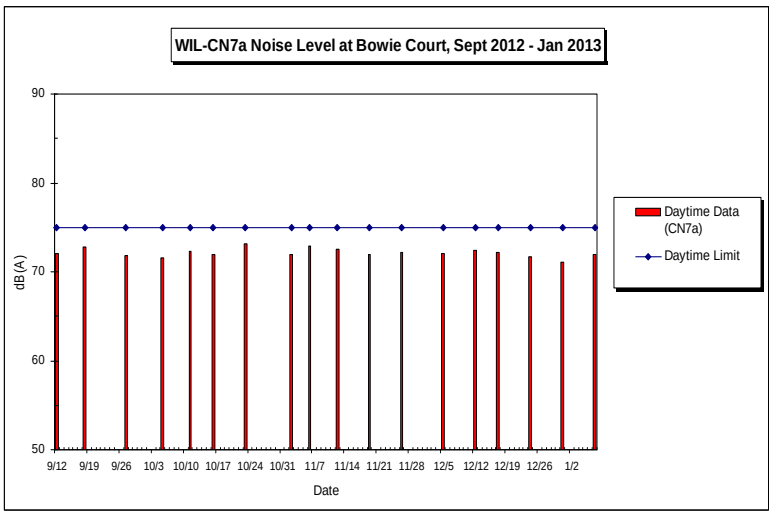

WIL-CN2 Noise Level at HK IVE (Tsing Yi) Kennedy Town Centre, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1
Date
Daytime Data (CN2)
Daytime Limit

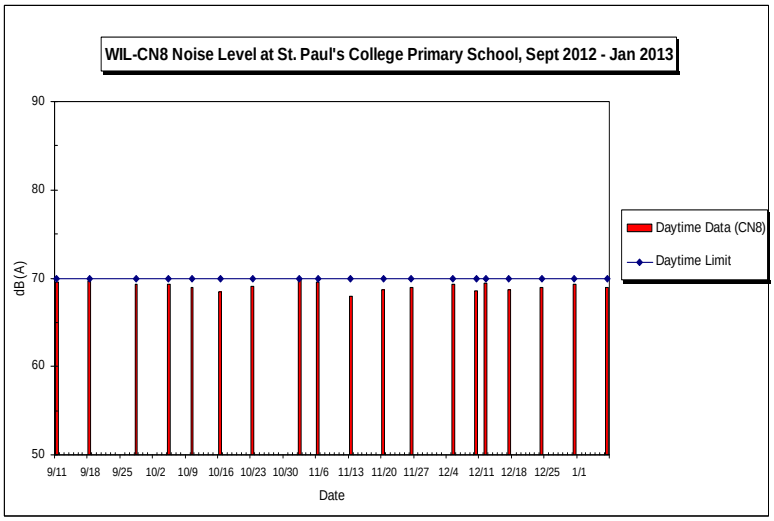

WIL-CN3 Noise Level at Lui Ming Choi Primary School, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2
Date
Daytime Data (CN3)
Daytime Limit

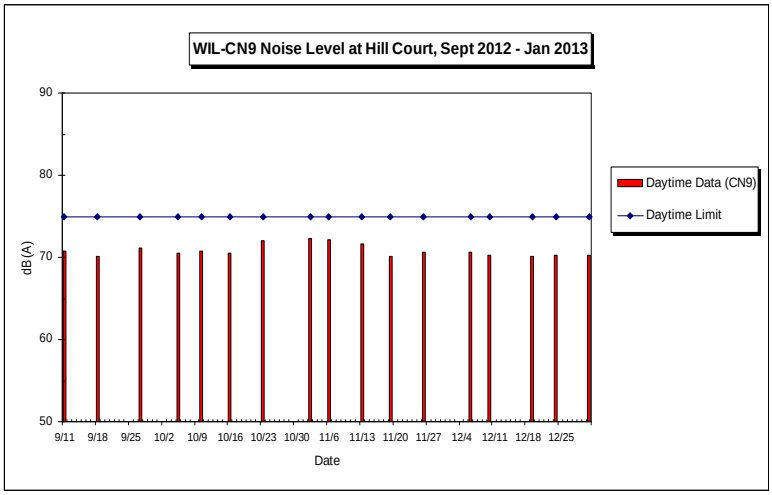

WIL-CN4 Noise Level at Luen Tak Apartments, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/13 9/20 9/27 10/4 10/11 10/18 10/25 11/1 11/8 11/15 11/22 11/29 12/6 12/13 12/20 12/27
Date
Daytime Data (CN4)
Daytime Limit

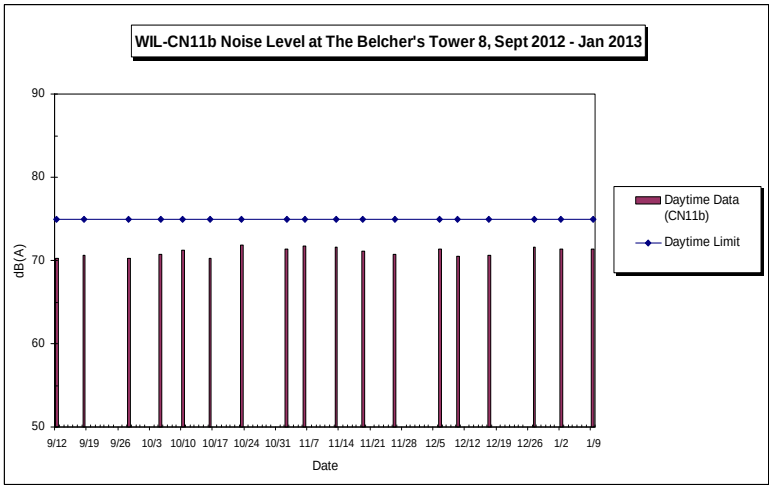

WIL-CN5 Noise Level at Western Court, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1 1/8
Date
Daytime Data (CN5)
Daytime Limit

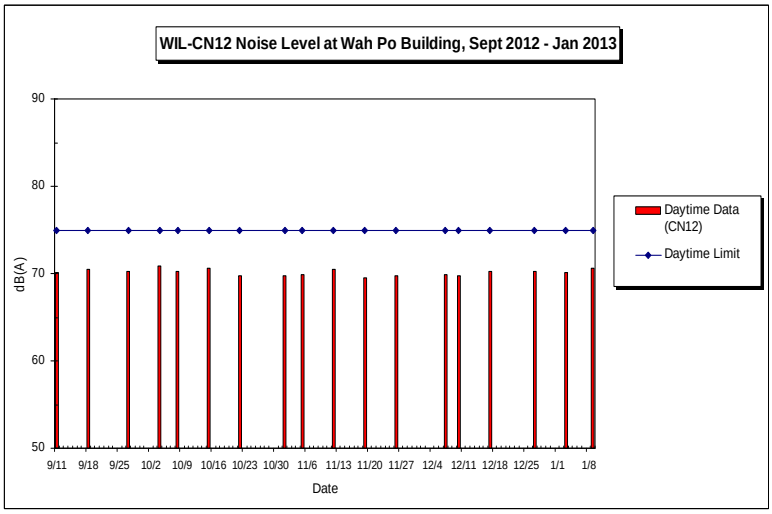

WIL-CN6 Noise Level at Yick Fung Garden (Block A), Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2
Date
Daytime Data (CN6)
Daytime Limit

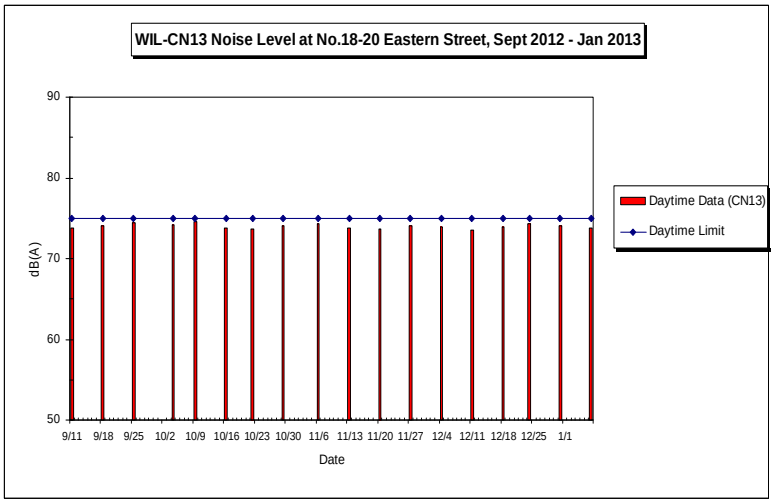

WIL-CN7a Noise Level at Bowie Court, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2
Date
Daytime Data (CN7a)
Daytime Limit

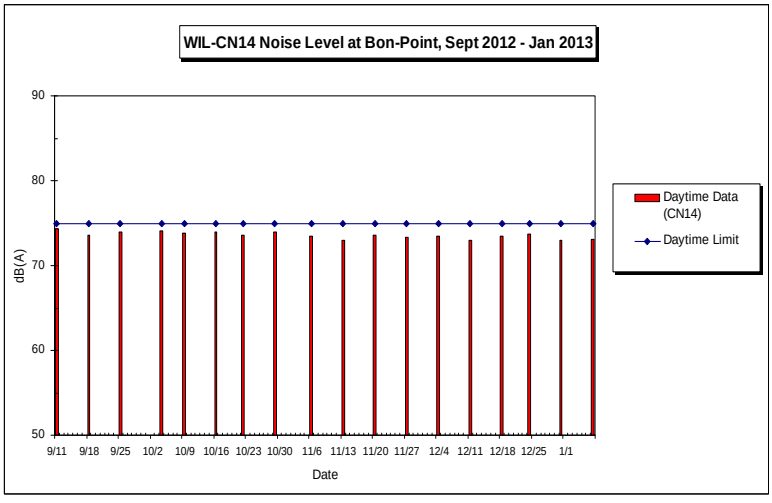

WIL-CN8 Noise Level at St. Paul's College Primary School, Sept 2012 - Jan 2013
90
80
70
60
50
dB (A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1
Date
Daytime Data (CN8)
Daytime Limit

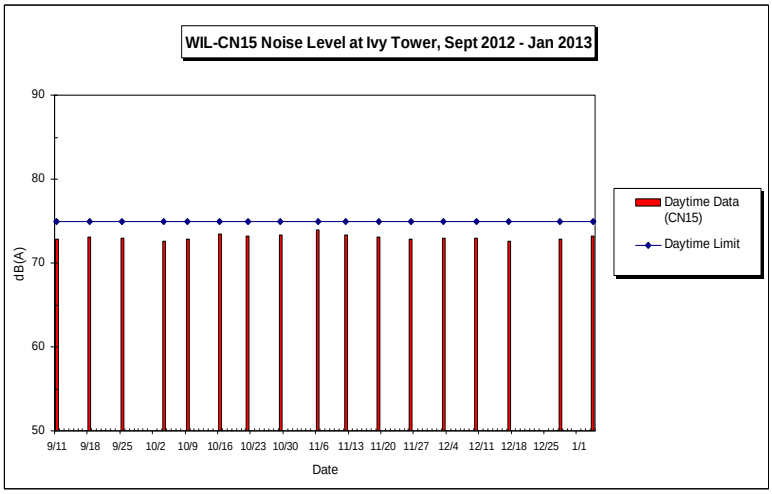

WIL-CN9 Noise Level at Hill Court, Sept 2012 - Jan 2013
90
80
70
60
50
dB (A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25
Date
Daytime Data (CN9)
Daytime Limit

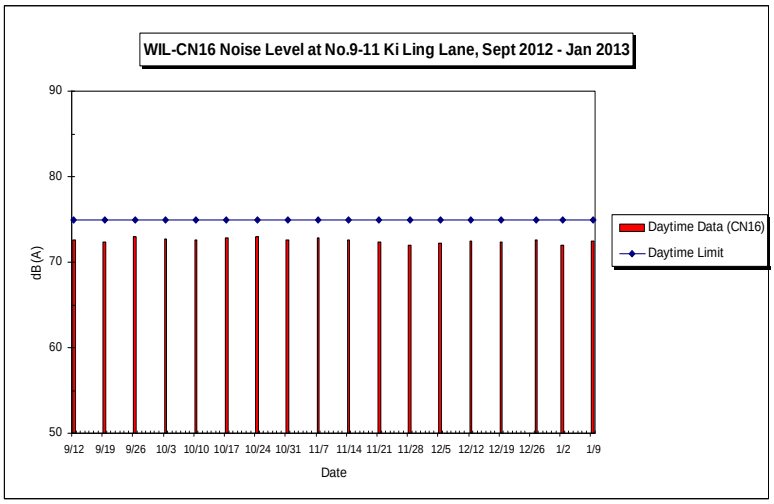

WIL-CN11b Noise Level at The Belcher's Tower 8, Sept 2012 - Jan 2013
90
80
70
60
50
dB (A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2 1/9
Date
Daytime Data (CN11b)
Daytime Limit

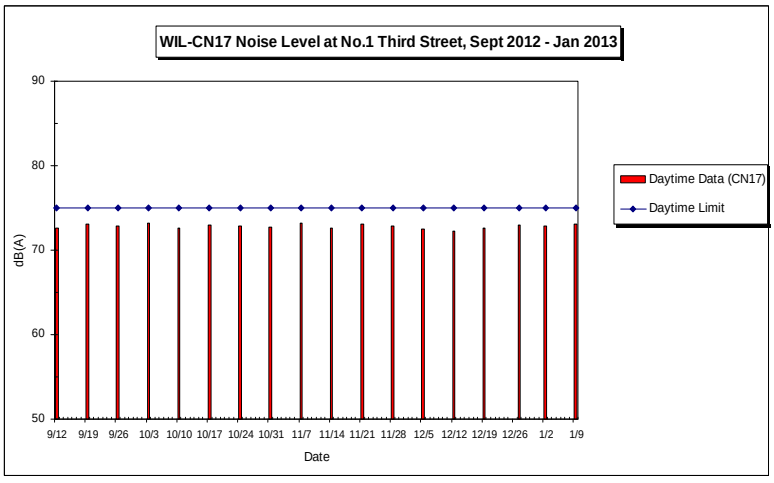

WIL-CN12 Noise Level at Wah Po Building, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1 1/8
Date
Daytime Data (CN12)
Daytime Limit

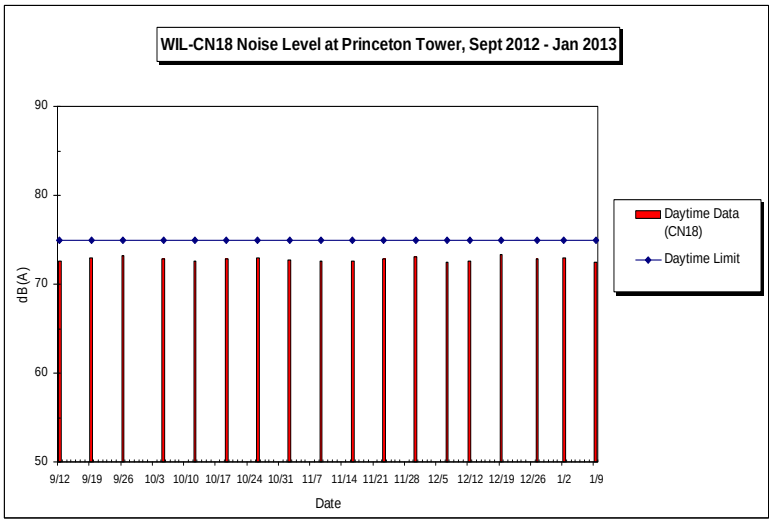

WIL-CN13 Noise Level at No.18-20 Eastern Street, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1
Date
Daytime Data (CN13)
Daytime Limit

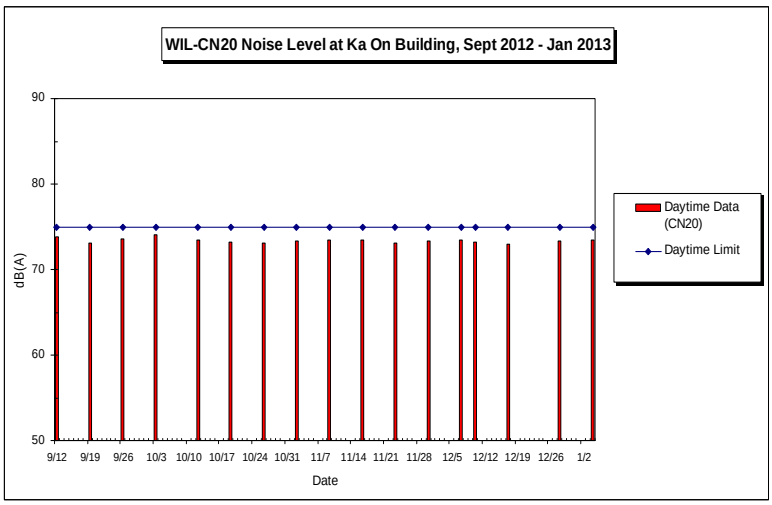

WIL-CN14 Noise Level at Bon-Point, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1
Date
Daytime Data (CN14)
Daytime Limit

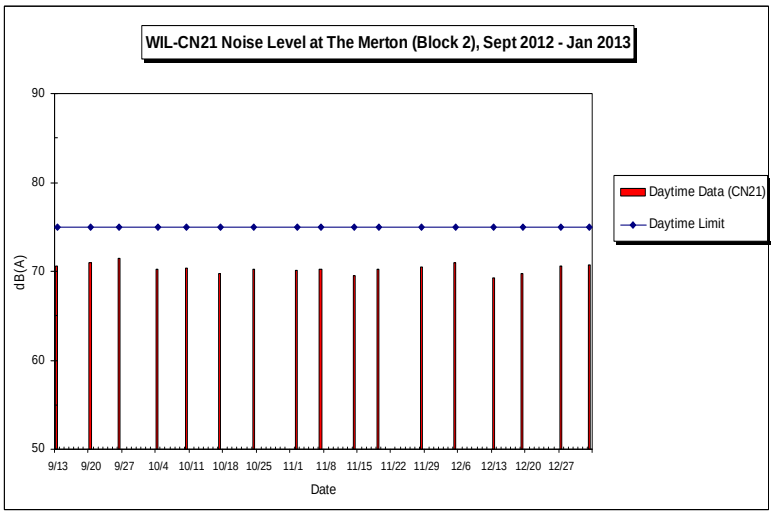

WIL-CN15 Noise Level at Ivy Tower, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/11 9/18 9/25 10/2 10/9 10/16 10/23 10/30 11/6 11/13 11/20 11/27 12/4 12/11 12/18 12/25 1/1
Date
Daytime Data (CN15)
Daytime Limit


WIL-CN16 Noise Level at No.9-11 Ki Ling Lane, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2 1/9
Date
Daytime Data (CN16)
Daytime Limit


WIL-CN17 Noise Level at No.1 Third Street, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2 1/9
Date
Daytime Data (CN17)
Daytime Limit


WIL-CN18 Noise Level at Princeton Tower, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2 1/9
Date
Daytime Data (CN18)
Daytime Limit


WIL-CN20 Noise Level at Ka On Building, Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/12 9/19 9/26 10/3 10/10 10/17 10/24 10/31 11/7 11/14 11/21 11/28 12/5 12/12 12/19 12/26 1/2
Date
Daytime Data (CN20)
Daytime Limit

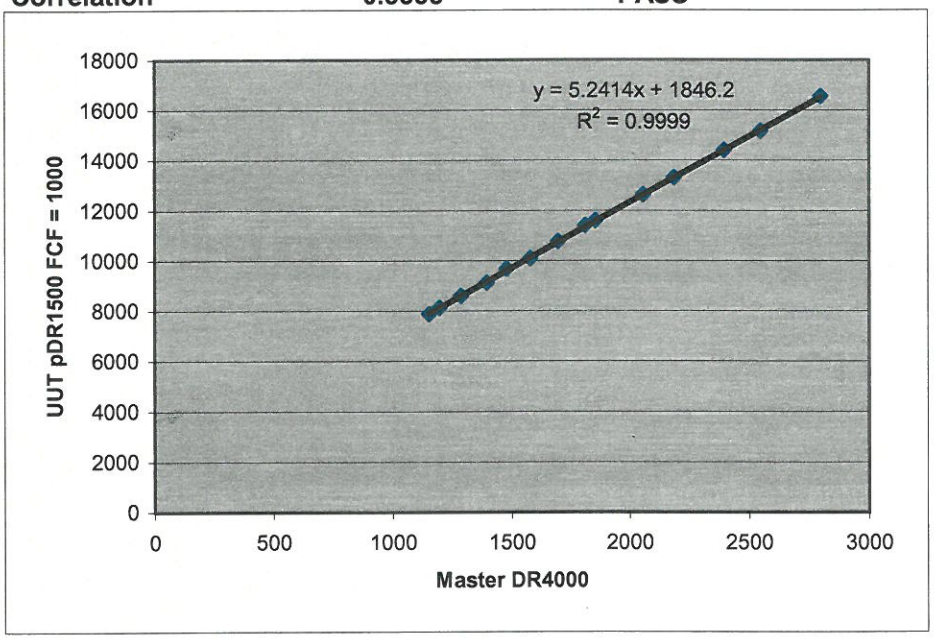

WIL-CN21 Noise Level at The Merton (Block 2), Sept 2012 - Jan 2013
90
80
70
60
50
dB(A)
9/13 9/20 9/27 10/4 10/11 10/18 10/25 11/1 11/8 11/15 11/22 11/29 12/6 12/13 12/20 12/27
Date
Daytime Data (CN21)
Daytime Limit

Appendix E
Calibration Details

Thermo
SCIENTIFIC

Model ADR-1500 Calibration

Calibration Technician	***Bill Davidge***
Date	***5/3/2012***
S/N:	***1030945316***
Calibration Due:	***5/3/2013***
Leak Check @ 10 " w.c.	***PASS***
Ta (deg C)	***22***
RH (%)	***22***
Pa (mmHg)	***773***
Minimum Flow (L/min)	***1.0***
Max Flow (L/min)	***3.5***
Flow Cal Correlation	***0.993***
Source Level	***116***
Source Current (mA)	***60.3***
Ref Det Volts (VDC)	***1.1***
Cal Factor	**191**
Background (ug/m3)	***353***
Correlation	**0.9999** **PASS**



All aerosol calibrations are traceable to Arizona Road Dust

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20120608

Location -> Kwun Lung Lau Block 1 Date -> 19-Jun-12

Sampler -> 994-0879 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1005	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.68	Corrected Pressure	(mm Hg)	751.22
Temperature	(deg C)	30	Temperature	(deg K)	303.00
Seasonal SL Pressure	(in Hg)	29.68	Corrected Seasonal	(mm Hg)	751.22
Seasonal Temperature	(deg C)	30.00	Seasonal Temperature	(deg K)	303.00

CALIBRATION ORIFICE

Make -> Andersen Instruments Inc. Qstd Slope -> 1.99

Model -> G25A Qstd Intercept -> -0.014012

Serial# -> 157N Date Certified ->

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.6	1.695	58	57.186	Slope =	33.3549
2	13	9.3	1.518	52	51.271	Intercept =	0.7283
3	10	6.8	1.299	45	44.369	Corr. Coeff. =	0.9999
4	7	4.4	1.046	36	35.495		
5	5	2.8	0.836	29	28.593		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

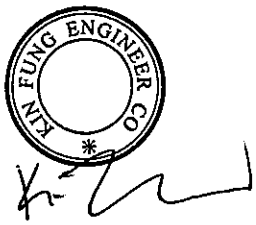
Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20120606	
Location -> Victoria Public Mortuary		Date -> 19-Jun-12	
Sampler -> 994-0871		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1006	Sampler Elevation	(feet)	30
Sea Level Pressure	(in Hg)	29.71	Corrected Pressure	(mm Hg)	753.74
Temperature	(deg C)	29	Temperature	(deg K)	302.00
Seasonal SL Pressure	(in Hg)	29.71	Corrected Seasonal	(mm Hg)	753.74
Seasonal Temperature	(deg C)	29.00	Seasonal Temperature	(deg K)	302.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

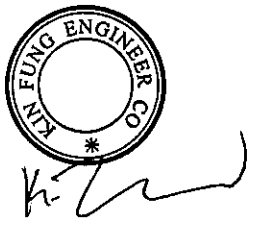
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.8	1.715	61	60.345	Slope =	36.7862
2	13	9.5	1.539	54	53.420	Intercept =	-2.8387
3	10	7.5	1.368	48	47.484	Corr. Coeff. =	0.9994
4	7	4.9	1.107	39	38.581		
5	5	3	0.868	29	28.688		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20120607

Location -> HK IVE (TSING YI) KENNEDY TOWN CENTRE Date -> 19-Jun-12

Sampler -> 994-0875 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1005	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.68	Corrected Pressure	(mm Hg)	751.22
Temperature	(deg C)	30	Temperature	(deg K)	303.00
Seasonal SL Pressure	(in Hg)	29.68	Corrected Seasonal	(mm Hg)	751.22
Seasonal Temperature	(deg C)	30.00	Seasonal Temperature	(deg K)	303.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

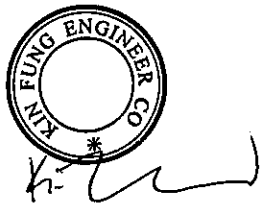
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.8	1.780	63	62.116	Slope =	36.5790
2	13	10.4	1.605	57	56.200	Intercept =	-2.6542
3	10	8.1	1.417	50	49.299	Corr. Coeff. =	0.9996
4	7	5.2	1.137	40	39.439		
5	5	3.2	0.893	30	29.579		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20120601	
Location -> Kennedy Town FSD		Date -> 20-Jun-12	
Sampler -> 294-0406		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1007	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.74	Corrected Pressure	(mm Hg)	752.72
Temperature	(deg C)	29	Temperature	(deg K)	302.00
Seasonal SL Pressure	(in Hg)	29.74	Corrected Seasonal	(mm Hg)	752.72
Seasonal Temperature	(deg C)	29.00	Seasonal Temperature	(deg K)	302.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

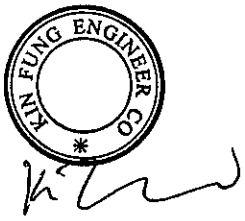
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.6	1.699	57	56.350	Slope =	30.3566
2	13	9.4	1.530	52	51.407	Intercept =	4.8573
3	10	7.2	1.340	46	45.475	Corr. Coeff. =	0.9999
4	7	4.6	1.073	38	37.566		
5	5	2.9	0.853	31	30.646		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20120602

Location -> St' Paul's College Primary Date -> 20-Jun-12

Sampler -> 1294-1113 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1007	Sampler Elevation	(feet)	300
Sea Level Pressure	(in Hg)	29.74	Corrected Pressure	(mm Hg)	747.67
Temperature	(deg C)	29	Temperature	(deg K)	302.00
Seasonal SL Pressure	(in Hg)	29.74	Corrected Seasonal	(mm Hg)	747.67
Seasonal Temperature	(deg C)	29.00	Seasonal Temperature	(deg K)	302.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

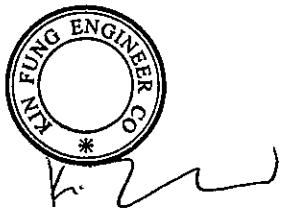
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.3	1.743	61	60.101	Slope =	34.8811
2	13	9.8	1.557	55	54.190	Intercept =	-0.5126
3	10	7.8	1.390	48	47.293	Corr. Coeff. =	0.9982
4	7	5	1.114	40	39.411		
5	5	3.1	0.879	30	29.558		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20120603

Location -> Hill Court Date -> 20-Jun-12

Sampler -> 694-0662 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1007	Sampler Elevation	(feet)	400
Sea Level Pressure	(in Hg)	29.74	Corrected Pressure	(mm Hg)	745.15
Temperature	(deg C)	30	Temperature	(deg K)	303.00
Seasonal SL Pressure	(in Hg)	29.74	Corrected Seasonal	(mm Hg)	745.15
Seasonal Temperature	(deg C)	30.00	Seasonal Temperature	(deg K)	303.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

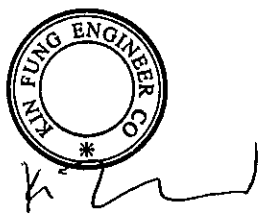
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	9.4	1.520	55	54.009	Slope =	29.1878
2	13	7.6	1.367	51	50.081	Intercept =	10.3775
3	10	6	1.216	48	47.135	Corr. Coeff. =	0.9942
4	7	3.8	0.969	40	39.279		
5	5	2.5	0.787	33	32.405		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20120609

Location -> Monitoring Station AM8 Date -> 19-Jun-12

Sampler -> 3283 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1005	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.68	Corrected Pressure	(mm Hg)	751.22
Temperature	(deg C)	30	Temperature	(deg K)	303.00
Seasonal SL Pressure	(in Hg)	29.68	Corrected Seasonal	(mm Hg)	751.22
Seasonal Temperature	(deg C)	30.00	Seasonal Temperature	(deg K)	303.00

CALIBRATION ORIFICE

Make -> Andersen Instruments Inc. Qstd Slope -> 1.99

Model -> G25A Qstd Intercept -> -0.014012

Serial# -> 157N Date Certified ->

CALIBRATION

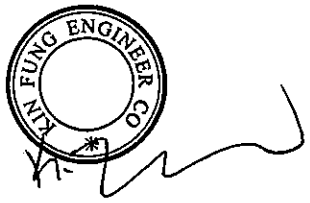
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12	1.723	60	59.158	Slope =	28.2074
2	13	9.5	1.534	55	54.229	Intercept =	10.9260
3	10	7.7	1.382	51	50.285	Corr. Coeff. =	0.9992
4	7	5.2	1.137	44	43.383		
5	5	2.9	0.851	35	34.509		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20120604	
Location -> No.28 Sai Woo Lane		Date -> 20-Jun-12	
Sampler -> 894-0834		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1006	Sampler Elevation	(feet)	30
Sea Level Pressure	(in Hg)	29.71	Corrected Pressure	(mm Hg)	753.74
Temperature	(deg C)	30	Temperature	(deg K)	303.00
Seasonal SL Pressure	(in Hg)	29.71	Corrected Seasonal	(mm Hg)	753.74
Seasonal Temperature	(deg C)	30.00	Seasonal Temperature	(deg K)	303.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.5	1.690	59	58.270	Slope =	35.7734
2	13	9.2	1.512	53	52.344	Intercept =	-1.8198
3	10	7.2	1.339	47	46.418	Corr. Coeff. =	0.9994
4	7	4.5	1.060	37	36.542		
5	5	2.8	0.837	28	27.653		

Calculations

$Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]$

$IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]$

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

KIN FUNG ENGINEER CO

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20120605	
Location -> IVY Tower		Date -> 20-Jun-12	
Sampler -> 894-0832		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1006	Sampler Elevation	(feet)	400
Sea Level Pressure	(in Hg)	29.71	Corrected Pressure	(mm Hg)	744.40
Temperature	(deg C)	30	Temperature	(deg K)	303.00
Seasonal SL Pressure	(in Hg)	29.71	Corrected Seasonal	(mm Hg)	744.40
Seasonal Temperature	(deg C)	30.00	Seasonal Temperature	(deg K)	303.00

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

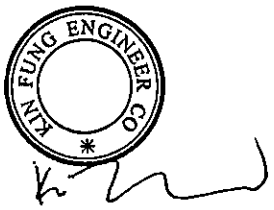
	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.3	1.665	56	54.963	Slope =	26.3722
2	13	9.2	1.503	52	51.037	Intercept =	11.2511
3	10	7.1	1.321	47	46.130	Corr. Coeff. =	0.9997
4	7	4.5	1.053	40	39.259		
5	5	2.9	0.847	34	33.370		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)



m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20130113

Location -> Kwun Lung Lau Block 1 Date -> 16-Dec-12

Sampler -> 994-0879 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	758.87
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	758.87
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.1	1.758	60	60.107	Slope =	35.1777
2	13	9.6	1.567	53	53.095	Intercept =	-1.6863
3	10	7	1.339	46	46.082	Corr. Coeff. =	0.9995
4	7	5	1.133	38	38.068		
5	5	3.2	0.908	30	30.054		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20130111

Location -> Victoria Public Mortuary Date -> 16-Dec-12

Sampler -> 994-0871 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	30
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	760.64
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	760.64
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.1	1.760	62	62.183	Slope =	36.3483
2	13	9.7	1.577	55	55.162	Intercept =	-2.1513
3	10	7.5	1.387	47	47.139	Corr. Coeff. =	0.9979
4	7	5	1.134	40	40.118		
5	5	3.1	0.894	30	30.088		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20130112

Location -> HK IVE (TSING YI) KENNEDY TOWN CENTRE Date -> 16-Dec-12

Sampler -> 994-0875 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	758.87
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	758.87
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.5	1.787	62	62.111	Slope =	37.0094
2	13	9.9	1.591	55	55.098	Intercept =	-3.8685
3	10	7.8	1.413	48	48.086	Corr. Coeff. =	0.9989
4	7	5	1.133	39	39.070		
5	5	3	0.879	28	28.050		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20130106	
Location -> Kennedy Town FSD		Date -> 16-Dec-12	
Sampler -> 294-0406		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	758.87
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	758.87
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.3	1.699	58	58.103	Slope =	32.8915
2	13	9.1	1.526	51	51.091	Intercept =	1.7122
3	10	6.9	1.329	45	45.080	Corr. Coeff. =	0.9969
4	7	4.7	1.098	39	39.070		
5	5	3	0.879	30	30.054		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20130107

Location -> St' Paul's College Primary Date -> 16-Dec-12

Sampler -> 1294-1113 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	300
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	753.82
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	753.82
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.5	1.781	60	59.907	Slope =	34.3614
2	13	10.2	1.609	54	53.916	Intercept =	-0.8886
3	10	7.7	1.399	48	47.925	Corr. Coeff. =	0.9964
4	7	4.9	1.118	39	38.939		
5	5	3	0.876	28	27.956		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20130108	
Location -> Hill Court		Date -> 16-Dec-12	
Sampler -> 694-0662		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	400
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	751.30
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	751.30
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	10.1	1.599	58	57.813	Slope =	34.5859
2	13	7.8	1.406	52	51.832	Intercept =	2.9815
3	10	6.3	1.264	48	47.845	Corr. Coeff. =	0.9967
4	7	4.5	1.070	39	38.874		
5	5	2.7	0.830	32	31.897		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC SITE Certificate -> 20130114

Location -> Monitoring Station AM8 Date -> 16-Dec-12

Sampler -> 3283 Tech -> Chan Kin Fung

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	100
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	758.87
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	758.87
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	12.1	1.758	61	61.109	Slope =	28.7978
2	13	9.5	1.559	54	54.096	Intercept =	9.9330
3	10	7.5	1.386	50	50.089	Corr. Coeff. =	0.9984
4	7	5	1.133	42	42.075		
5	5	3.1	0.893	36	36.064		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20130109	
Location -> No.28 Sai Woo Lane		Date -> 16-Dec-12	
Sampler -> 894-0834		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	30
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	760.64
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	760.64
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.3	1.701	58	58.171	Slope =	36.1564
2	13	9	1.519	52	52.153	Intercept =	-2.6327
3	10	7.1	1.350	47	47.139	Corr. Coeff. =	0.9968
4	7	4.7	1.100	38	38.112		
5	5	3	0.880	28	28.083		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

ANDERSEN INSTRUMENTS INC.

GS2310 Series Sampler Calibration

(Dickson Recorder)

Customer -> MTRC	SITE	Certificate -> 20130110	
Location -> IVY Tower		Date -> 16-Dec-12	
Sampler -> 894-0832		Tech -> Chan Kin Fung	

CONDITIONS

Sea Level Pressure	(hpa)	1015.2	Sampler Elevation	(feet)	400
Sea Level Pressure	(in Hg)	29.98	Corrected Pressure	(mm Hg)	751.30
Temperature	(deg C)	23.5	Temperature	(deg K)	296.50
Seasonal SL Pressure	(in Hg)	29.98	Corrected Seasonal	(mm Hg)	751.30
Seasonal Temperature	(deg C)	23.50	Seasonal Temperature	(deg K)	296.50

CALIBRATION ORIFICE

Make ->	Andersen Instruments Inc.	Qstd Slope ->	1.99
Model ->	G25A	Qstd Intercept ->	-0.014012
Serial# ->	157N	Date Certified ->	

CALIBRATION

	Plate or Test #	H_2O (in)	Qstd (M^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	18	11.1	1.676	55	54.822	Slope =	29.6198
2	13	9	1.510	51	50.835	Intercept =	6.0110
3	10	6.7	1.304	46	45.851	Corr. Coeff. =	0.9966
4	7	4.5	1.070	38	37.877		
5	5	2.7	0.830	30	29.903		

Calculations

Qstd = 1/m [Sqrt (H_2O (Pa/Pstd) (Tstd/Ta)) - b]

IC = I [Sqrt (Pa/Pstd) (Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m ((I) [Sqrt (298/Tav) (Pav/760)] - b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

This is to certify that the above equipment has been calibrated in accordance with manufacturer's procedure.

MTR Corporation
Internal Calibration

Project Laboratory MTR

Balance Calibration Report
Tested to MTRC Method WI/707M/01

Laboratory Equipment Identification Number			BA0011		
Manufacturer	Sartorius	Model	A200S-**DIB	Serial No.	1065989
Capacity	120g	Discrimination	0.1mg	Type	Top Loading
Location	Concrete Testing Area		Temperature	24℃	

Reference Mass Set Used (Equip. ID. No.)		RM001	
Manufacturer	Troemner	OIML Classification	F1
Last Calibration Date	29-04-2002	Calibrated By	South China National Centre of Metrology

(1) Repeatability of Reading

Reference Mass (g)	Standard Deviation of Balance Reading (g)	Maximum Difference Between Successive Readings (g)
10	0.000094	0.0002
60	0.000079	0.0002
120	0.000042	0.0001

Standard Deviation of the Balance = 0.000422 g

(2) Departure from Nominal Value

Reading (g)	Correction (g)	Uncertainty (g)
09.9998	0.00020	±0.000301
19.9980	0.00025	
29.9999	0.00015	
39.9997	0.00043	
49.9998	0.00017	
59.9996	0.00032	
69.9996	0.00037	
79.9996	0.00042	
89.9996	0.00045	
99.9993	0.00050	

Maximum Correction = 0.00050 g

(3) Off-Centre Loading

A mass of approximately 10000g was moved to various position on the balance pan. The balance readings obtained at different position are given in the table.

Centre	Front	Back	Left	Right
59.9986	59.9984	59.9981	59.9987	59.9988

Maximum Difference = 0.0007 g

(4) Hysteresis

Load (g)	Hysteresis (g)
50	0.000367

(5) Limit of Performance of the Balance = ± 0.000783 g

Checked by : Dick Lee Certified by : _____

Date : 14-02-2011 Date : 14/2/2011

Notes:

1.The balance has been tested according to the specifications laid down in Chapter 6 of the CSIRO Publication "The Calibration of Balances - by David B. Prowse".

2.Uncertainties quoted in this report have been estimated on the basis of there being not more than one chance in one hundred that any value differs from the true value by more than the stated uncertainty.

3.The Limit of Performance is the tolerance band within which all readings of the balance will fall.

MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121029S

Customer Information

Company Name	MTR Corporation Limited
Address	MTR Tower, Telford Plaza, 33 Wai Yip St., Kowloon Bay, Kowloon, Hong Kong

Unit Under Test (UUT)

Description	Handheld Analyzer
Manufacturer	Brüel & Kjær
Model Number	Type 2250
Serial Number	2741134
Equipment Number	-

Calibration Result

* The exact manufacturer's specification is not available from the customer.
* Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

* Calibration equipment used for this calibration are traceable to national / international standards.
* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
* MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the UUT.
*

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CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121029S

Calibration Status

Date of Calibration			25th September, 2012
Calibration Equipment Used			4231 (MLTE008)/ DC120076/ 29th Mar 2014
Calibration Procedure			MLCG00 & MLCG15.
Calibration Uncertainty			±0.2 dB
Calibration Condition	*Lab*	*Temperature*	23 °C ± 5 °C
		Relative Humidity	55% ± 25%
	UUT	*Stabilizing Time*	Over 3 hours
		Warm-up Time	10 minutes
		Supply Voltage	Internal battery

Calibration Data

UUT Setting				UUT Rdg	Std Rdg	UUT Error
Frequency Weighted	Parameter	Response	Range (dB)			
A (1 kHz Input)	SPL	F	Auto	93.6 dB	94 dB	-0.4 dB
		S		93.5 dB	94 dB	-0.5 dB
		I		93.6 dB	94 dB	-0.4 dB
C (1 kHz Input)		F		93.6 dB	94 dB	-0.4 dB
		S		93.6 dB	94 dB	-0.4 dB
		I		93.6 dB	94 dB	-0.4 dB
A (1 kHz Input)		F		113.6 dB	114 dB	-0.4 dB
		S		113.6 dB	114 dB	-0.4 dB
		I		113.5 dB	114 dB	-0.5 dB
C (1 kHz Input)		F		113.6 dB	114 dB	-0.4 dB
		S		113.5 dB	114 dB	-0.5 dB
		I		113.5 dB	114 dB	-0.5 dB

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CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121031S

Customer Information

Company Name	MTR Corporation Limited
Address	MTR Tower, Telford Plaza, 33 Wai Yip St., Kowloon Bay, Kowloon, Hong Kong

Unit Under Test (UUT)

Description	Handheld Analyzer
Manufacturer	Brüel & Kjær
Model Number	Type 2250
Serial Number	2551242
Equipment Number	-

Calibration Result

* The exact manufacturer's specification is not available from the customer.
* Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

* Calibration equipment used for this calibration are traceable to national / international standards.
* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
* MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the UUT.
*

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CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121031S

Calibration Status

Date of Calibration			25th September, 2012
Calibration Equipment Used			4231 (MLTE008)/ DC120076/ 29th Mar 2014
Calibration Procedure			MLCG00 & MLCG15.
Calibration Uncertainty			±0.2 dB
Calibration Condition	*Lab*	*Temperature*	23 °C ± 5 °C
		Relative Humidity	55% ± 25%
	UUT	*Stabilizing Time*	Over 3 hours
		Warm-up Time	10 minutes
		Supply Voltage	Internal battery

Calibration Data

UUT Setting				UUT Rdg	Std Rdg	UUT Error
Frequency Weighted	Parameter	Response	Range (dB)			
A (1 kHz Input)	SPL	F	Auto	93.4 dB	94 dB	-0.6 dB
		S		93.5 dB	94 dB	-0.5 dB
		I		93.4 dB	94 dB	-0.6 dB
C (1 kHz Input)		F		93.4 dB	94 dB	-0.6 dB
		S		93.4 dB	94 dB	-0.6 dB
		I		93.4 dB	94 dB	-0.6 dB
A (1 kHz Input)		F		113.4 dB	114 dB	-0.6 dB
		S		113.4 dB	114 dB	-0.6 dB
		I		113.5 dB	114 dB	-0.5 dB
C (1 kHz Input)		F		113.4 dB	114 dB	-0.6 dB
		S		113.4 dB	114 dB	-0.6 dB
		I		113.4 dB	114 dB	-0.6 dB

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MAXLAB

CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121028S

Customer Information

Company Name	MTR Corporation Limited
Address	MTR Tower, Telford Plaza, 33 Wai Yip St., Kowloon Bay, Kowloon, Hong Kong

Unit Under Test (UUT)

Description	Sound Level Calibrator
Manufacturer	Brüel & Kjær
Model Number	4231
Serial Number	2272042
Equipment Number	-

Calibration Result

* All calibration results within the manufacturer's specification.
* Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

* Calibration equipment used for this calibration are traceable to national / international standards.
* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
* MaxLab Calibration Centre Limited shall not be liable for any loss or damage resulting from the use of the UUT.
*

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CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121028S

Calibration Status

Date of Calibration		25th September, 2012	
Calibration Equipment Used		4231 (MLTE008)/ DC120076/ 29th Mar 2014 1351 (MLTE049)/ MLEC12/06/04/ 11th Jun 2013	
Calibration Procedure		MLCG00 & MLCG15.	
Calibration Uncertainty		± 0.15 dB	
Calibration Condition	*Lab*	*Temperature*	23 °C ± 5 °C
		Relative Humidity	55% ± 25%
	UUT	*Stabilizing Time*	Over 3 hours
		Warm-up Time	Not applicable
		Supply Voltage	Internal battery

Calibration Data

UUT Setting	STD Rdg	UUT Error	UUT Error Limit
94 dB	93.9 dB	-0.1 dB	0.2 dB
114 dB	114.1 dB	0.1 dB	0.2 dB

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CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121030S

Customer Information

Company Name	MTR Corporation Limited
Address	MTR Tower, Telford Plaza, 33 Wai Yip St., Kowloon Bay, Kowloon, Hong Kong

Unit Under Test (UUT)

Description	Sound Level Calibrator
Manufacturer	Brüel & Kjær
Model Number	4231
Serial Number	2725558
Equipment Number	-

Calibration Result

* All calibration results within the manufacturer's specification.
* Calibration data are detailed on the attached sheet(s).

Approved By

Laboratory Manager

* Calibration equipment used for this calibration are traceable to national / international standards.
* The results on this Calibration Certificate only relate to the values measured at the time of the calibration and the uncertainties quoted will not include allowance for the UUT long term drift, variation with environmental changes, vibration and shock during transportation, overloading, mishandling, misuse, and the capacity of any other laboratory to repeat the measurement.
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CALIBRATION CERTIFICATE

Certificate Information

Date of Issue	25th September, 2012	*Certificate Number*	MLCN121030S

Calibration Status

Date of Calibration			25th September, 2012
Calibration Equipment Used			4231 (MLTE008)/ DC120076/ 29th Mar 2014 1351 (MLTE049)/ MLEC12/06/04/ 11th Jun 2013
Calibration Procedure			MLCG00 & MLCG15.
Calibration Uncertainty			± 0.15 dB
Calibration Condition	*Lab*	*Temperature*	23 °C ± 5 °C
		Relative Humidity	55% ± 25%
	UUT	*Stabilizing Time*	Over 3 hours
		Warm-up Time	Not applicable
		Supply Voltage	Internal battery

Calibration Data

UUT Setting	STD Rdg	UUT Error	UUT Error Limit
94 dB	94.1 dB	0.1 dB	0.2 dB
114 dB	114.1 dB	0.1 dB	0.2 dB

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Appendix F
Monitoring Schedules

Air Impact Monitoring

1. The air impact monitoring schedule for the present reporting period is shown in Section 3.1.

2. The air impact monitoring schedule for the next reporting period will commence on 10 January 2013 and will be conducted at a sampling frequency of at least once in every six days.

Noise Impact Monitoring

1. The noise impact monitoring schedule for the present reporting period is shown in Section 3.2.

2. The noise impact monitoring schedule for the next reporting period will commence on 10 January 2013 and will be conducted at a frequency of once a week when construction activities are underway.

Appendix G
Certified Arborist Monthly Inspection Record for
December 2012

WEST ISLAND LINE

Consultancy Agreement No. : C735F - Arborist for Tree Protection

Consultant : Muni Arborist Limited

Name : Mike Leung (Certified Arborist)

Monthly Inspection Record for December 2012

Date	Activity Description	Purpose
13/12/2012	Regular Inspection for Dec	Monitor the conditions of retained trees
28/12/2012	Regular Inspection for Dec	Monitor the conditions of retained trees

Signed by Muni Arborist Limited : 

Date :7 January 2013

The Transplant and protection works were carried out in accordance with requirement of the Tree Protection Plan in general