CONTRACT NO: CV/2012/07

DEVELOPMENT AT ANDERSON ROAD - FOOTBRIDGE D AND ASSOCIATED WORKS AREA

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

-MAY 2015 -

CLIENTS:

Lam-Po Wing Joint Venture

PREPARED BY:

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CERTIFIED BY:

Derek Lo
Environmental Team Leader

DATE:

11 June 2015

RAMBOLL ENVIRON

Ref.: OAPANDSNEM00_0_1483L.15

17 June 2015

Engineer's Representative
Ove Arup & Partners
Level 5, Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

By Post and Fax: 2407 8382

Attention: Mr. Dennis Leung

Dear Sir/Madam,

Re: Contract No. CV/2012/07
Development at Anderson Road
Footbridge D and Associated Works Area
Monthly EM&A Report for May 2015

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for May 2015 received by e-mail on 15 June 2015 for our review and comment.

We are pleased to inform you that we have no adverse comment on the captioned report.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,
For and on behalf of
Ramboll Environ Hong Kong Limited

David Yeung
Managing Director

c.c. Lam Attn.: Mr. Derek Lo Fax: 2882 3331
LPWJV Attn.: Mr. Tak-Leung Lo Fax: 3171 7222

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EXECUTIVE SUMMARY

i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – May 2015 of "Development at Anderson Road – Footbridge D and Associated Works Area" (Hereafter called "this Project"). The construction works of this project was commenced on 20 July 2013. This is the 23rd month of EM&A report presenting the environmental monitoring findings and information recorded during the period of 1 May 2015 to 31 May 2015. The cut-off date of reporting is at the end of each reporting month.

Construction Activities for the Reported Period

- Construction of Tower D-A
- Construction of Cap C
- Construction of Φ 1500mm drainage pipe

Noise Monitoring

ii. Noise monitoring during daytime was conducted at the stations NM1 and NM2 on a weekly basis in the reporting month. No exceedance was recorded in the reporting month.

Air Quality Monitoring

iii. Air quality monitoring has been conducted at station AQM1. No exceedance was recorded in the reporting month.

Complaints, Notifications of Summons and Successful Prosecutions

iv. No complaint and notifications of summons or successful prosecutions were recorded in this reporting month.

Site Inspections and Audit

v. The Environmental Team (ET) conducted weekly site inspections for Contract no. CV/2012/07 in the reporting month. Major observations and recommendations made during the audit sessions were rectified by the Contractors. No non-conformance was identified during the site inspections.

Future Key Issues

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

- Construction of Tower D-A
- Construction of Tower D- C

- Erection of Tower crane
- Construction of u-channel at slope
- Construction of Φ 1500 drainage pipe

Reporting Change

vii. There are no reporting changes in this Reporting Period.

1. Introduction

1.1 Scope of the Report

1.1.1. Lam Environmental Services Limited (LES) has been appointed to work as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Development of Anderson Road.

1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 1.4 of EM&A Manual and "*Environmental Monitoring and Audit Requirements*" under Particular Specification Section 25.

1.1.3. The construction works of this project was commenced on 20 July 2013. This report documents the finding of EM&A works for this Project and during the period of 1 May 2015 to 31 May 2015. The cut-off date of reporting is at the end of each reporting month.

1.2 Structure of the Report

Section 1 ***Introduction*** – details the scope and structure of the report.

Section 2 ***Project Background*** – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.

Section 3 ***Status of Regulatory Compliance*** – summarizes the status of valid Environmental Permits / Licenses during the reporting period.

Section 4 ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.

Section 5 ***Monitoring Results*** – summarizes the monitoring results obtained in the reporting period.

Section 6 ***Compliance Audit*** – summarizes the auditing of monitoring results, all exceedances environmental parameters.

Section 7 ***Cumulative Construction Impact due to the Concurrent Projects*** – summarizes the relevant cumulative construction impact due to the concurrent

activities of the concurrent Projects.

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

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

Section 10 ***Conclusion***

2. Project Background

2.1 Background

2.1.1. The main objective of the project "Development at Anderson Road – Footbridge D and Associated Works Area" (Hereafter called "this Project") is to construct a footbridge, Footbridge D, and associated lift towers across Shun On Road between the existing Shun Tin Estate and the future development platform.

2.1.2. For this project, Tin Wan House (NM1) and Ning Po No.2 College (NM2 and AQM1) are the designated monitoring station during the construction period. Owing to this contract is under the master project and on the other hand, the construction area is vicinity to the monitoring station (On Yat House) ID2 and (Sau Nga House) ID3 of the master project, so that the baseline noise and air quality monitoring will adopt the baseline data from those stations instead of conducting baseline monitoring. All the baseline data are referred to the baseline report from the public domain web site (www.anderson-road.com/main.htm).

2.1.3. The construction works of this project was commenced on 20 July 2013. During the construction phase of the project, air quality (dust) and noise impacts from the development site itself and the adjacent Anderson Road Quarry and other nearby construction sites are identified as the major environmental issues of concern. Besides, waste management is also identified in the EIA study as another environmental issue during the construction phase of the project that requires mitigation measures.

2.2 Scope of the Project and Site Description

2.2.1. The Project is located mainly near Shun Tin Estate and Ning Po No.2 College, as shown in ***Figure 2.1***.

2.2.2. The scope of the Project comprises:

- Construction of footbridge and associated lift towers between Shun On Road and future platform at +152mPD and across Shun On Road. In Conjunction with these footbridge works are the associated furniture, drainage system, irrigation system and traffic signs.
- Construction of drainage system for diversion of an existing stream on the slope adjoining Footbridge D.
- Site formation and associated slope works for Footbridge D adjacent to Shun On Road.

2.3 Project Organization and Contact Personnel

2.3.1. Civil Engineering and Development Department is the overall project controllers for this project. For the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.

2.3.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in ***Figure 2.2***. Key personnel and contact particulars are summarized in ***Table 2.1***.

Table 2.1 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
Ove Arup	Engineer	Chief Resident Engineer	Dennis Leung	2407 0300	2407 8382
		Resident Engineer	Heidi Fung	3656 3000	3656 1000
Lam-Po Wing Joint Venture	Contractor under Contract no. CV/2012/07	Project Manager	K.C. Wong	2318 0281	3171 7222
		Site Agent	T.L. Lo	2318 0281	
		Safety Officer	K.W. Lau	2318 0281	
		Environmental Officer	K.I. Ip	2318 0281	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3465 2888	3465 2899
Lam Environmental Services Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Derek Lo	2882 3939	2882 3331

2.3.3. For Contract no. CV/2012/07, the principal work activities in this reporting month included:

- Construction of Tower D-A
- Construction of Cap C
- Construction of Φ 1500mm drainage pipe

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

- Construction of Tower D-A
- Construction of Tower D- C
- Erection of Tower crane
- Construction of u-channel at slope
- Construction of Φ 1500 drainage pipe

3. Status of Regulatory Compliance

3.1 Status of Environmental Licensing and Permitting under the Project

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

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

Permits and/or Licences	**Reference No.**	**Issued Date**	**Valid Period/ Expiry Date**	**Status**
Discharge Licence	WT00015447-2013	27 March 2013	31 March 2018	Valid
Billing Account under Waste Disposal Ordinance	7017083	15 March 2013	N/A	Valid
The Air Pollution Control (Construction Dust) Regulation	355705	14 February 2013	N/A	Valid
Form A – Application for Water Pollution Control Licence	355706	14 February 2013	N/A	Valid
Application for Registration as a Chemical Waste Producer	WPN5213-292-L2825-01	28 November 2013	N/A	Valid

4. Monitoring Requirements

4.1 Noise Monitoring

NOISE MONITORING STATIONS

4.1.1. The noise monitoring has been undertaken at the designated locations Tin Wan House (NM1) and Ning Po No.2 College (NM2). The detailed information of monitoring stations for the Project are listed and shown in ***Table 4.1*** and ***Figure 4.1***. ***Appendix 4.1*** shows the established Action/Limit Levels for the monitoring works.

Table 4.1 Noise Monitoring Stations

Station ID	Monitoring Location
NM1	G/F of Tin Wan House
NM2	G/F of Ning Po No.2 College

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

4.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq\ (30\ minutes)}$ shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, $L_{eq\ (5\ minutes)}$ shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.

4.1.3. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:

- one set of measurements between 0700 and 1900 hours on normal weekdays.

4.1.4. If construction works are extended to include works during the hours of 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted hours periods. Applicable permits under NCO shall be obtained by the Contractor.

MONITORING EQUIPMENT

4.1.5. As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound

pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

4.1.6. Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

4.2 Air Monitoring

AIR QUALITY MONITORING STATIONS

4.2.1. The air monitoring has been conducted at the designated location Ning Po No.2 College (AQM1).The air monitoring stations for the Project are listed and shown in ***Table 4.2*** and ***Figure 4.1***. ***Appendix 4.1*** shows the established Action/Limit Levels for the monitoring works.

Table 4.2 Air Monitoring Station

Station ID	Monitoring Location
AQM1	Roof Top of Ning Po No.2 College

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.

4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.

4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

4.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:

- 0.6 - 1.7 m^3 per minute adjustable flow range;
- equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
- installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;

- capable of providing a minimum exposed area of 406 cm^2;
- flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
- equipped with a shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with a peaked roof inlet;
- incorporated with a manometer;
- able to hold and seal the filter paper to the sampler housing at horizontal position;
- easily changeable filter; and
- capable of operating continuously for a 24-hour period.

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

LABORATORY MEASUREMENT / ANALYSIS

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

4.2.8. If a site laboratory is set up or a non-HOKLAS accredited laboratory is retained for analysis, laboratory equipment shall be provided by the ER in consultation with the IC(E). Measurement performed by the laboratory shall be demonstrated to the satisfaction of the ER and the IC(E). The IC(E) shall conduct regular audit to the measurement performed by the laboratory to ensure the accuracy of measurement results. The ET leader shall provide the ER with one copy of the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), and Appendix B for his reference.

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

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

4.2.11. All the collected samples shall be kept in a good condition for 6 months prior to disposal.

5. Monitoring Results

5.0.1. The environmental monitoring will be implemented based on the sensitive receivers which would be mostly affected. Overall layout showing the work area, latest status of work commencement and monitoring stations are shown in ***Figure 2.1*** and ***Figure 4.1***.

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

5.1 Noise Monitoring Results

5.1.1. The noise monitoring results for Contract no. CV/2012/07 are summarized in ***Table 5.1*** below:

Table 5.1 Summary of Noise Monitoring Results at NM1 and NM2

Date	Time	Location	Leq (dB)
6-May-15	9:10	NM1	61.4
	10:00	NM2	62.4
12-May-15	13:50	NM1	64.1
	15:00	NM2	61.2
18-May-15	13:40	NM1	61.2
	14:45	NM2	61.3
29-May-15	9:00	NM1	61.3
	10:12	NM2	62.2
Limit Level			65 / 70 /75*

Note :

- *70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.*

5.1.2. Day time period noise monitoring was conducted at the Tin Wan House (NM1) and Ning Po No.2 College (NM2).

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

5.2 Air Monitoring Results

5.2.1. The air monitoring results are summarized in ***Table 5.2*** and ***Table 5.3*** below. No exceedance was recorded in the reporting month.

Table 5.2 Summary of Air Monitoring Results at AQM1 - 24 hr TSP Monitoring

Date	Time	TSP Level, (μg /m³)
5-May-15	8:00	31
11-May-15	8:00	33
16-May-15	8:00	38
22-May-15	8:00	35
28-May-15	8:00	41
Action Level		**200**
Limit Level:		**260**

Table 5.3 Summary of Air Monitoring Results at AQM1 - 1 hr TSP Monitoring

Date	Time	TSP Level, (μg /m³)
6-May-15	8:31	36
6-May-15	9:40	26
6-May-15	10:50	24
12-May-15	8:15	37
12-May-15	9:25	54
12-May-15	10:35	76
18-May-15	8:20	36
18-May-15	9:30	171
18-May-15	10:40	176
23-May-15	9:00	30
23-May-15	10:14	45
23-May-15	13:00	25
29-May-15	8:40	41
29-May-15	9:50	42
29-May-15	11:00	45
Action Level		**197**
Limit Level:		**500**

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

5.3 Waste Monitoring Results

5.3.1. Inert and non-inert C&D waste were disposed of in this reporting month. Details of the waste flow table are summarized in ***Table 5.4.***

Table 5.4 Details of Waste Disposal for Contract no. CV/2012/07

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m^3	0.0310	8.37663	TKO137
Inert C&D materials recycled, m^3	0	0	N/A
Non-inert C&D materials disposed, m^3	0	0	N/A
Non-inert C&D materials recycled, kg	0	0	N/A
Chemical waste disposed, kg	0	0	N/A
General refuse,m^3	0.0025	0.01846	NENT

Remark: Cumulative Quantity-to-Date of Inert C&D materials disposed was updated by contractor

6. Compliance Audit

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

6.1 Noise Monitoring

6.1.1. No exceedance was recorded in the reporting month.

6.2 Air Monitoring

6.2.1. No exceedance was recorded in the TSP monitoring in the reporting month.

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

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

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

6.4.1. There was no particular action taken since no project-related non-compliance was recorded from the site audits and environmental monitoring in the reporting period.

7. Environmental Site Audit

7.0.1. According to EM&A Manual stipulation, the regular weekly sit inspections on 5, 12, 19 and 26 May 2015 were carried out by ET, IEC, the Contractor and ARUP for Contracts no. CV/2012/07 to ensure the environmental performance. Observations and findings are summarized in ***Table 7.1***.

Table 7.1 Summary of Environmental Inspections for Contract no. CV/2012/07

Date	Observations	Follow-Up
5 May-2015	Oil leakage was observed and oil stain should be cleaned as chemical waste(Portion C2)	The finding was rectified during inspection on 19 May 2015
12-May-2015	Obs.1 Oil leakage was observed, contractor was reminded to clean it as chemical waste and prevent leakage R.1 Chemical containers should be properly stored preventing leakage.	The finding was rectified during inspection on 19 May 2015
19- May-2015	Contractor was reminded to cover the stockpile entirely with impervious sheeting (Portion C3)	The finding was rectified during inspection on 26 April 2015
26- May-2015	Obs1: Broken of water barrier was observed, contractor was reminded to replace the broken water barrier and cover it properly. Obs2:General refuse was observed accumulated, contractor was reminded to clean more frequently(Portion C2)	The finding was rectified during inspection on 3 May 2015

8. Complaints, Notification of Summons and Prosecution

8.0.1. No complaint and notification of summons or successful prosecutions were recorded in this reporting month.

8.0.2. The details of cumulative complaint log and updated summary of complaints are presented in ***Appendix 8.1***.

8.0.3. Cumulative statistic on complaints and successful prosecutions are summarized in ***Table 8.1*** and ***Table 8.2*** respectively.

Table 8.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
May 2015	0
Project-to-Date	**1**

Table 8.2 Cumulative Statistics on Successful Prosecutions

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

9. Conclusion

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

9.0.2. No construction air and noise monitoring results that triggered the Limit Level was recorded. No complaint of air and noise were received by the ARUP and the contractor. Furthermore, no notification of summons or successful prosecution was received in this reporting month.

9.0.3. Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants and installation of temporary noise barrier at the construction noise predominate area should be fully implemented as accordance with the EM&A requirement. Moreover, pay attention should be the potential construction dust impact since the construction site located nearby residential area of Shun Tin Estate. It is reminded that mitigation measures for dust should be properly implemented.

Figure 2.1

Project Layout

NOTES:

1. This drawing shall be read in conjunction with Drawing 24711/1052.
2. The location of fencing and hoarding is indicative only. The exact location is approved on site by Engineer.
3. For Detail of Access gate refer to CEDD Standard Drawing No. C1007.
4. Dimensions Are in Meters Unless Otherwise Shown.
5. The surface water inside Portion C3 will be collected by a pump pit and pump into water settlement tank for recycle purpose.
   In case the water inside the settlement tank is overflow, a ø75 pipe will discharge the overflow water into existing 300U on slope toe.

Legend

- Proposed Chain Link Fence
- Proposed Safety Fence (Type A)
- Proposed Hoarding (Type I)
- Site Boundary

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

CEDD 土木工程拓展署 Civil Engineering and Development Department

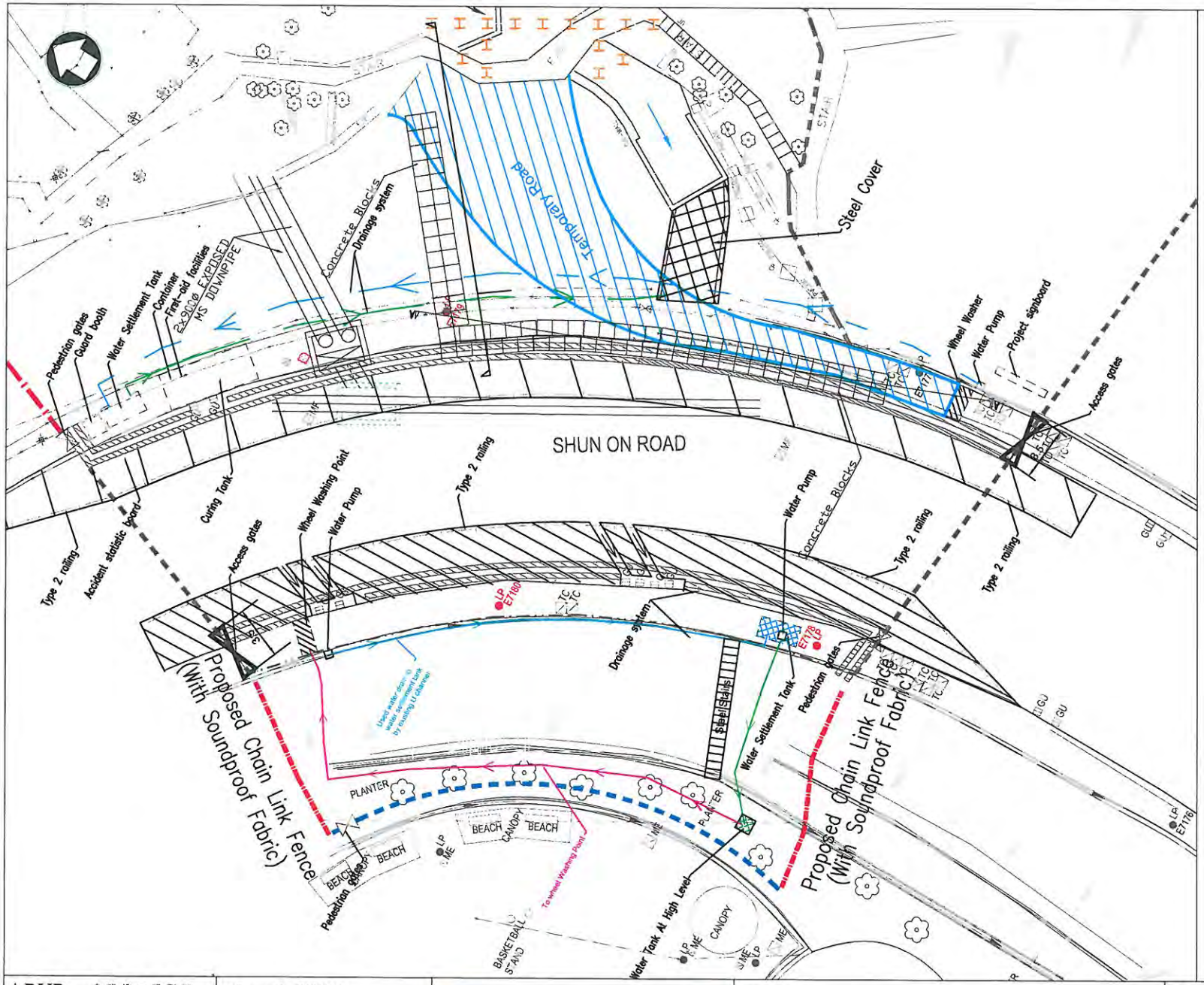
Contract No. CV/2012/07
Development at Anderson Road – Footbridge D and Associated Works

Lam-Po Wing Joint Venture

DRAWING Title.

Site Establishment Plan

SCALE	1:500 @ A3	DATE	30 Sept. 2013
CHECK	HUNG	DRAWN	Bobby
JOB NO.	CV/2012/07	DRAWING NO.	SK011
		REV	I



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Legend

- Proposed Chain Link Fence
- Proposed Safety Fence (Type A)
- Proposed Hoarding (Type I)
- Site Boundary

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

CEDD 土木工程拓展署 Civil Engineering and Development Department

Contract No. CV/2012/07
Development at Anderson Road – Footbridge D and Associated Works

Lam-Po Wing Joint Venture

DRAWING Title.
Wheel Washing System

SCALE	1:250 @ A3	PRINT DATE	20 Nov. 2013
CHECK	HUNG	DATE	20 Nov. 2013
JOB NO.	CV/2012/07	DRAWN	Bobby
		DRAWING NO.	SK024 (Sheet 1/1)
		REV	A

Figure 2.2

Project Organization Chart

Project Organization Chart

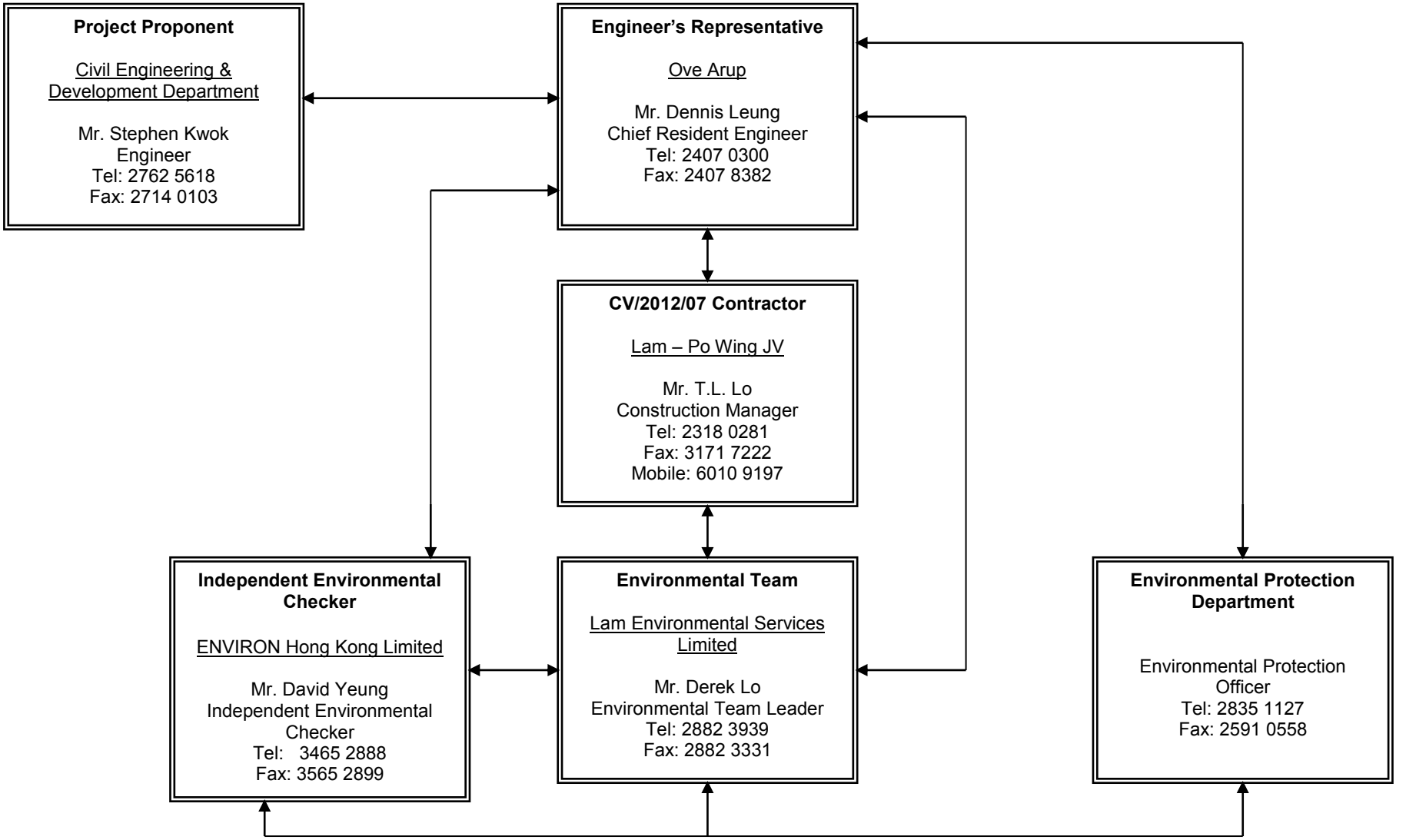

Figure 4.1

Locations of Environmental Monitoring Stations

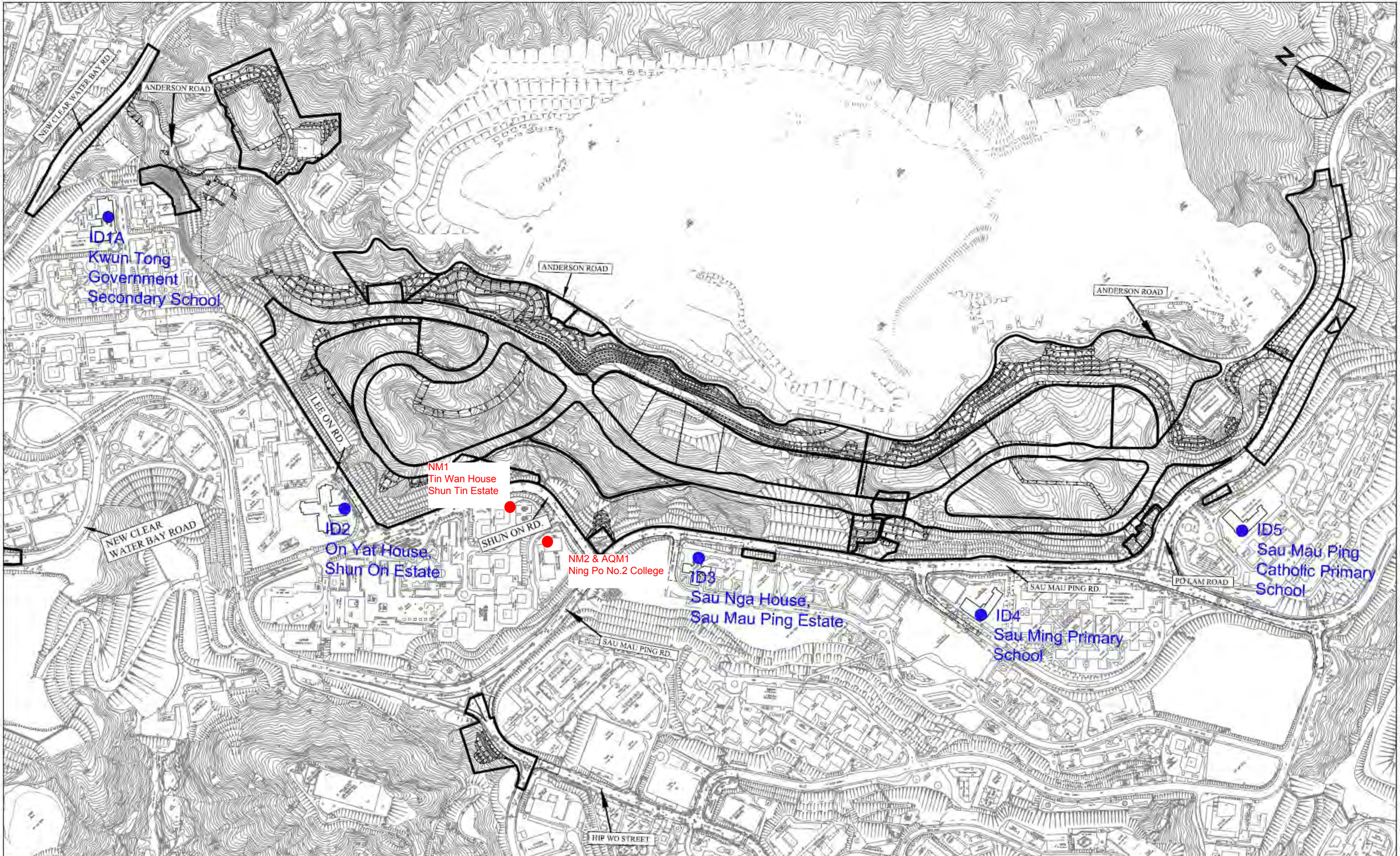

Figure 4.1. Environmental Monitoring Location

Appendix 3.1

Environmental Mitigation Implementation Schedule

Environmental Mitigation Implementation Schedule

Implementation Schedule for Construction Dust Control

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
						D	C	
S2.7	S1, S2.8	*Site Practice* • Mean vehicle speed of haulage trucks at 10 km/hr. • Twice daily watering of all open site areas. • Regular watering (once every 1 hour) of all site roads and access roads with frequent truck movement. • Tarpaulin covering of all dusty vehicle loads transported to, form and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary. • Suitable side and tailboards on haulage vehicles. • Watering of temporary stockpiles. *Blasting* • Use of select aggregate and fines to stem the charge with drill holes and watering of blast face. • Use of vaccum extraction drilling methods. • Carefully sequenced blasting. *Crushing* • Fabric filters installed for the crushing plant. • Water sprays on the crusher. *Loading and Unloading Points, and conyeyor Belt System* • Water sprays at all fixed loading and unloading points (at the crusher and conveyor belts). • The loading point at the crusher is enclosed with dust curtains are used for controlling dust. • When transferring materials from conveyor belt or crusher to the dump trucks, chutes or dust curtains are used for controlling dust. • Cover the conveyor belts with steel roof and canvas sides.	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	√	√	TM on EIA Process, APCO, Air Pollution Control (Construction Dust) Regulation

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,

** D=Design, C=Construction

Implementation Schedule for Construction Noise Control

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
						D	C	
S3.7	S1, S3.7	*Site Formation* • Silenced powered mechanical equipment (PME) for most equipment5 (including drill rig, backhoe, dump truck, breaker and crane) and the decrease of percentage on time usage of drill rig among the Central Area form 50% to 40% is prosed. • Temporary movable noise barrier shall be used to shield the noise emanating from the drilling rig in order to provide adequate shielding for the affected NSRs.	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	√	√	TM on EIA Process, NCO, TM on Noise from Construction Work other than Percussive Pilling, ProPECC Note PN2/93

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,

** D=Design, C=Construction

Implementation Schedule for Water Quality Control

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
						D	C	
S6.4	S1	*Construction Phase* • All active working areas should be bounded to retain storm water with sufficient retention time to ensure that suspended solids are not discharged from the site in concentrations above those specified in the TM for the Victor Harbour (Phase I) WCZ. All fuel storage areas should be bounded with drainage directed to an oil interceptor. • Separate treatment facilities may be required for effluent from site offices, toilets (unless chemical toilets are used) and canteens. • Discharged wastewater from the construction sites to surface water and /or public drainage systems should be controlled through licensing. Discharges should follow fully the terms and conditions in the licences. • Relevant practice for dealing with various typr of construction discharges provided in EPD's ProPECC Note 1/94 should be adopted.	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	√	√	TM on EIA Process, WPCO, ProPECC Note PN 1/94

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,

** D=Design, C=Construction

Implementation Schedule for Construction Waste Management

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
						D	C	
S8.4	S1,S4	*Waste Disposal* • Different types of wastes should be segregated, stored, transported and disposed of proper practice of waste management. • Sorting of wastes should be done on-site. Different types of wastes should be segregated and stored in different stockpiles, containers or skips to enhance recycling of materials and proper disposal of wastes. • Excavated spoil should be used as much as possible to minimize off-site fill material requirements and disposal of spoil. • During road transportation of excavated spoil, vehicles should be covered to avoid dust impact. Wheel washing facilities should be installed at all site exits together with regular qatering of the site access roads. • Chemical waste should be recycled on-site or removed by licenced companies. It should be handled according to the Code of practice on the packaging, Labelling and Storage of Chemical Wastes. When off-site disposal is required, it should be collected and delivered by licenced contractors to Tsing Yi Chemical Waste Treatment Facility and disposed of in accordance with the Chemical Waste (General) Regulation. • Necessary mitigation measures should be adopted to prevent the uncontrolled disposal of chemical and hazardous waste into air, soil, surface waters and ground waters.	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	√	√	TM on EIA Process, WDO, DGO, Waste Disposal (Chemical Waste) (General) Regulation

		Waste Storage • Chemical material storage areas should be bounded, constructed of impervious materials, and have the capacity to contain 120 percent of the total volume of the containers. Indoor storage areas must have sufficient ventilation to prevent the build-up of fumes, and must be capable of evacuating the space in the event of an accidental release. Outdoor storage areas must be covered with a canopy or contain provisions for the safe removal of rainwater. In both cases, storage areas must not be connected to the foul or stormwater sewer system. • Dangerous materials as defined under the DGO, including fuel, oil and lubricants, should be stored and properly labeled on site in accordance with the requirements in the DGO. If transportation of hazardous materials is necessary, hazardous materials, chemical wastes and fuel should be packed or stored in containers or vessels of suitable design and construction to prevent leakage, spillage or escape. • Human waste should be discharged into septic tanks provided by the contractors and removed regularly by a hygiene services company. Refuse containers such as open skips should be provided at every work site for use by the workforce; On-site refuse collection points must also be provided.						

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,

** D=Design, C=Construction

Appendix 4.1

Action and Limit Level

Action and Limit Level

Action and Limit Level for Noise Monitoring

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

Note 1:

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

Action and Limit Level for Air Monitoring

Monitoring Location	1-hour TSP Level in $\mu g/m^3$		24-hour TSP Level in $\mu g/m^3$	
	Action Level	Limit Level	Action Level	Limit Level
AQM1	197	500	200	260

Appendix 4.2

Copies of Calibration Certificates

綜合試驗有限公司
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Fax : (852) 2555 7533

CERTIFICATE OF CALIBRATION

Certificate No.: 15CA0312 03 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	CESVA Instruments s.l.	,	CESVA
Type/Model No.:	SC-20e	,	C-130
Serial/Equipment No.:	T217501	,	12624
Adaptors used:	-	,	-

Item submitted by

Customer Name:	Pilot Testing Limited
Address of Customer:	-
Request No.:	-
Date of receipt:	12-Mar-2015

Date of test: 13-Mar-2015

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1010 ± 5 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 13-Mar-2015 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 15CA0312 03 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	0.8	2.1
	Lin	N/A	N/A	
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	N/A	N/A	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	N/A	N/A	
	Repeated at frequency of 100 Hz	N/A	N/A	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 13-Mar-2015

Checked by: Lam Tze Wai **Date:** 13-Mar-2015

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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Sound level meter type:	SC-20e	Serial No.	T217501	Date	13-Mar-2015
Microphone type:	C-130	Serial No.	12624		
				Report:	15CA0312 03

SELF GENERATED NOISE TEST

The noise test is performed in the most sensitive range of the SLM with the microphone replaced by an equivalent impedance.

Noise level in A weighting	17.3	dB
Noise level in C weighting	21.6	dB

LINEARITY TEST

The linearity is tested relative to the reference sound pressure level using a continuous sinusoidal signal of frequency 4 kHz. The measurement is made on the reference range for indications at 5 dB intervals starting from the 94 dB reference sound pressure level. And until within 5 dB of the upper and lower limits of the reference range, the measurements shall be made at 1 dB intervals.(SLM set to LEQ/SPL)

Reference/Expected level	Actual level		Tolerance	Deviation	
	non-integrated	integrated		non-integrated	integrated
dB	dB	dB	+/- dB	dB	dB
94.0	94.0	94.0	0.7	0.0	0.0
99.0	99.0	99.0	0.7	0.0	0.0
104.0	104.0	104.0	0.7	0.0	0.0
109.0	109.0	109.0	0.7	0.0	0.0
114.0	114.0	114.0	0.7	0.0	0.0
119.0	119.0	119.0	0.7	0.0	0.0
124.0	124.0	124.0	0.7	0.0	0.0
125.0	125.0	125.0	0.7	0.0	0.0
126.0	126.0	126.0	0.7	0.0	0.0
127.0	127.0	127.0	0.7	0.0	0.0
128.0	127.9	127.9	0.7	-0.1	-0.1
129.0	128.9	128.9	0.7	-0.1	-0.1
130.0	129.9	129.9	0.7	-0.1	-0.1
89.0	89.0	89.0	0.7	0.0	0.0
84.0	84.0	84.0	0.7	0.0	0.0
79.0	79.0	79.0	0.7	0.0	0.0
74.0	74.0	74.0	0.7	0.0	0.0
69.0	69.0	69.0	0.7	0.0	0.0
64.0	64.0	64.0	0.7	0.0	0.0
59.0	59.0	59.0	0.7	0.0	0.0
54.0	53.9	53.9	0.7	-0.1	-0.1
49.0	48.9	48.9	0.7	-0.1	-0.1
44.0	43.9	43.9	0.7	-0.1	-0.1
39.0	38.9	38.9	0.7	-0.1	-0.1
34.0	33.9	33.9	0.7	-0.1	-0.1

Test Data for Sound Level Meter

Sound level meter type: SC-20e Serial No. T217501 Date 13-Mar-2015
Microphone type: C-130 Serial No. 12624
Report: 15CA0312 03

33.0	33.0	33.0	0.7	0.0	0.0
32.0	32.1	32.1	0.7	0.1	0.1
31.0	31.1	31.1	0.7	0.1	0.1
30.0	30.1	30.1	0.7	0.1	0.1

Measurements for an indication of the reference SPL on all other ranges which include it

Other ranges	Expected level	Actual level	Tolerance	Deviation
dB	dB	dB	+/- dB	dB
30-130	94.0	94.0	0.7	0.0

Measurements on all level ranges for indications 2 dB below the upper limit and 2 dB above the lower limit

Ranges	Reference/Expected level	Actual level	Tolerance	Deviation
dB	dB	dB	+/- dB	dB
30-130	32.0	32.1	0.7	0.1
	128.0	127.9	0.7	-0.1

FREQUENCY WEIGHTING TEST

The frequency response of the weighting netwoks are tested at octave intervals over the frequency ranges 31.5 Hz to 12500 Hz. The signal level at 1000 Hz is set to give an indication of the reference SPL.

Frequency weighting A:

Frequency	Ref. level	Expected level	Actual level	Tolerance(dB)		Deviation
Hz	dB	dB	dB	+	-	dB
1000.0	94.0	94.0	94.0	0.0	0.0	0.0
31.6	94.0	54.6	54.4	1.5	1.5	-0.2
63.1	94.0	67.8	67.7	1.5	1.5	-0.1
125.9	94.0	77.9	77.8	1.0	1.0	-0.1
251.2	94.0	85.4	85.3	1.0	1.0	-0.1
501.2	94.0	90.8	90.7	1.0	1.0	-0.1
1995.0	94.0	95.2	95.2	1.0	1.0	0.0
3981.0	94.0	95.0	95.0	1.0	1.0	0.0
7943.0	94.0	92.9	92.8	1.5	3.0	-0.1
12590.0	94.0	89.7	87.8	3.0	6.0	-1.9

Frequency weighting C:

Frequency	Ref. level	Expected level	Actual level	Tolerance(dB)		Deviation
Hz	dB	dB	dB	+	-	dB
1000.0	94.0	94.0	94.0	0.0	0.0	0.0
31.6	94.0	91.0	90.9	1.5	1.5	-0.1
63.1	94.0	93.2	93.0	1.5	1.5	-0.2
125.9	94.0	93.8	93.7	1.0	1.0	-0.1
251.2	94.0	94.0	93.9	1.0	1.0	-0.1

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Sound level meter type: SC-20e Serial No. T217501 Date 13-Mar-2015
Microphone type: C-130 Serial No. 12624
Report: 15CA0312 03

501.2	94.0	94.0	94.0	1.0	1.0	0.0
1995.0	94.0	93.8	93.8	1.0	1.0	0.0
3981.0	94.0	93.2	93.2	1.0	1.0	0.0
7943.0	94.0	91.0	90.9	1.5	3.0	-0.1
12590.0	94.0	87.8	85.8	3.0	6.0	-2.0

TIME WEIGHTING FAST TEST

Time weighting F is tested on the reference range with a single sinusoidal burst of duration 200 ms at a frequency 2000 Hz and an amplitude which produces an indication 4 dB below the upper limit of the primary indicator range when the signal is continuous. (Weight A, Maximum hold)

Ref. level	Expected level	Actual level	Tolerance(dB)		Deviation
dB	dB	dB	+	-	dB
86.0	85.0	85.0	1.0	1.0	0.0

TIME WEIGHTING SLOW TEST

Time weighting S is tested on the reference range with a single sinusoidal burst of duration 500 ms at a frequency 2000 Hz and an amplitude which produces an indication 4 dB below the upper limit of the primary indicator range when the signal is continuous. (Weight A, Maximum hold)

Ref. level	Expected level	Actual level	Tolerance(dB)		Deviation
dB	dB	dB	+	-	dB
86.0	81.9	81.9	1.0	1.0	0.0

PEAK RESPONSE TEST

The onset time of the peak detector is tested on the reference range by comparing the response to a 100 us rectangular test pulse with the response to a 10 ms reference pulse of the same amplitude. The amplitude of the 10 ms reference pulse is such as to produce an indication 1 dB below the upper limit of the primary indicator range.

Positive polarities: (Weighting C, set the generator signal to single, Lcpmax)

Ref. level	Response to 10 ms	Response to 100 us	Tolerance	Deviation
dB	dB	dB	+/- dB	dB
89.0	89.0	88.5	2.0	-0.5

Negative polarities:

Ref. level	Response to 10 ms	Response to 100 us	Tolerance	Deviation
dB	dB	dB	+/- dB	dB
89.0	89.0	88.5	2.0	-0.5

RMS ACCURACY TEST

The RMS detector accuracy is tested on the reference range for a crest factor of 3.

Test frequency: 2000 Hz
Amplitude: 2 dB below the upper limit of the primary indicator range.
Burst repetition frequency: 40 Hz
Tone burst signal: 11 cycles of a sine wave of frequency 2000 Hz. (Set to INT)

	Ref. Level	Expected level	Tone burst signal	Tolerance	Deviation
Time wighting	dB	dB	indication(dB)	+/- dB	dB
Slow	88.0+6.6	88.0	88.0	0.5	0.0

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Sound level meter type: SC-20e Serial No. T217501 Date 13-Mar-2015
Microphone type: C-130 Serial No. 12624
Report: 15CA0312 03

TIME AVERAGING TEST

This test compares the SLM reading for continuous sine signals with readings obtained from a sine tone burst sequence having the same RMS level. The test level is 30 dB below the upper limit of the linearity range and repeated for Type 1 SLM with 40 dB below the upper limit of the linearity.

Frequency of tone burst: 4000 Hz

Duration of tone burst: 1 ms

Repetition Time	Level of tone burst	Expected Leq	Actual Leq	Tolerance	Deviation	Remarks
msec	dB	dB	dB	+/- dB	dB	
1000	100.0	100.0	99.9	1.0	-0.1	60s integ.
10000	90.0	90.0	89.9	1.0	-0.1	6min. integ.

PULSE RANGE AND SOUND EXPOSURE LEVEL TEST

The test tone burst signal is superimposed on a baseline signal corresponding to the lower limit of reference rar

Test frequency: 4000 Hz

Integration time: 10 sec

The integrating sound level meter set to Leq:

Duration	Rms level of	Expected	Actual	Tolerance	Deviation
msec	tone burst (dB)	dB	dB	+/- dB	dB
10	88.0	58.0	58.0	1.7	0.0

The integrating sound level meter set to SEL:

Duration	Rms level of	Expected	Actual	Tolerance	Deviation
msec	tone burst (dB)	dB	dB	+/- dB	dB
10.0	88.0	68.0	68.0	1.7	0.0

OVERLOAD INDICATION TEST

For SLM capable of operating in a non-integrating mode.

Test frequency: 2000 Hz
Amplitude: 2 dB below the upper limit of the primary indicator range.
Burst repetition frequency: 40 Hz
Tone burst signal: 11 cycles of a sine wave of frequency 2000 Hz.

Level	Level reduced by	Further reduced	Difference	Tolerance	Deviation
at overload (dB)	1 dB	3 dB	dB	dB	dB
132.3	131.3	128.3	3.0	1.0	0.0

For integrating SLM, with the instrument indicating Leq.

For integrating SLM, with the instrument indicating Leq and set to the reference range. The test signal as follow
The test tone burst signal is superimposed on a baseline signal corresponding to the lower limit of reference rar

Test frequency: 4000 Hz
Integration time: 10 sec
Single burst duration: 1 msec

Rms level	Level reduced by	Expected level	Actual level	Tolerance	Deviation
at overload (dB)	1 dB	dB	dB	dB	dB

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Sound level meter type:	SC-20e	Serial No.	T217501	Date	13-Mar-2015
Microphone type:	C-130	Serial No.	12624	Report:	15CA0312 03

137.1	136.1	96.1	96.1	2.2	0.0

ACOUSTIC TEST

The acoustic test of the complete SLM is tested at the frequency 125 Hz and 8000 Hz using a B&K type 4226 Multifunction Acoustic Calibrator. The test is performed in A weighting.

Frequency	Expected level	Actual level	Tolerance (dB)		Deviation
Hz	dB	Measured (dB)	+	-	dB
1000	94.0	94.0	0.0	0.0	0.0
125	77.9	77.9	1.0	1.0	0.0
8000	92.9	91.6	1.5	3.0	-1.3

----------END---------

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Fax : (852) 2555 7533

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1201 04 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10707358
Adaptors used:	-

Item submitted by

Curstomer:	Lam Geotechnics Ltd.
Address of Customer:	-
Request No.:	-
Date of receipt:	01-Dec-2014

Date of test: 10-Dec-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	13-May-2015	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	01-Dec-2015	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1010 ± 5 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 11-Dec-2014 **Company Chop:**

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
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CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1201 04 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown	Output Sound Pressure Level Setting	Measured Output Sound Pressure Level	(Output level in dB re 20 μPa) Estimated Expanded Uncertainty
Hz	dB	dB	dB
1000	94.00	94.09	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.001 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 993.19 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 0.9 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 10-Dec-2014

Checked by: Lam Tze Wai **Date:** 11-Dec-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

Lam Environmental Services Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	Ning Po No.2 College	**Calbration Date**	:	10-Apr-15
ID	:	AQM1	**Calbration Due Date**	:	10-Jun-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	291	Kelvin	**Pressure, P_a**	1018	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)**			**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$ **Y-axis**
	(up)	(down)	(difference)			
1	6.4	6.4	12.8	1.8222	53	53.7579
2	5.1	5.1	10.2	1.6266	46	46.6578
3	3.9	3.9	7.8	1.4225	40	40.5720
4	2.6	2.6	5.2	1.1615	29	29.4147
5	1.5	1.5	3.0	0.8823	20	20.2860

By Linear Regression of Y on X

Slope, m = 35.9528 Intercept, b = -11.5848

Correlation Coefficient* = 0.9988

Calibration Accepted = Yes/~~No~~**

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

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Apr-15	**Date**	:	10-Apr-15

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jul 14, 2014 Rootsmeter S/N 0438320 Ta (K) - 298
Operator Tisch Orifice I.D. - 0005 Pa (mm) - 749.3

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3870	3.2	2.00
2	NA	NA	1.00	0.9830	6.4	4.00
3	NA	NA	1.00	0.8760	7.9	5.00
4	NA	NA	1.00	0.8340	8.8	5.50
5	NA	NA	1.00	0.6860	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9817	0.7078	1.4042		0.9957	0.7179	0.8919
0.9775	0.9944	1.9859		0.9915	1.0086	1.2613
0.9754	1.1135	2.2203		0.9894	1.1294	1.4101
0.9743	1.1683	2.3286		0.9882	1.1849	1.4790
0.9692	1.4128	2.8084		0.9830	1.4330	1.7837
Qstd slope (m) =		1.99175		Qa slope (m) =		1.24720
intercept (b) =		-0.00041		intercept (b) =		-0.00026
coefficient (r) =		0.99991		coefficient (r) =		0.99991
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

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

Appendix 5.1

Monitoring Schedules for Reporting Month and Coming Reporting Month

Contract No. CV/2012/07
Development at Anderson Road - Footbridge D and Associated Works Area
Tentative Environmental Monitoring Schedule
May 2015

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

Noise Monitoring Station
NM1: Tin Wan House
NM2: Ning Po No. 2 College

Air Monitoring Station
AQM1: Ning Po No.2 College

Contract No. CV/2012/07
Development at Anderson Road - Footbridge D and Associated Works Area
Tentative Environmental Monitoring Schedule
June 2015

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

Noise Monitoring Station
NM1: Tin Wan House
NM2: Ning Po No. 2 College

Air Monitoring Station
AQM1: Ning Po No.2 College

Appendix 5.2

Noise Monitoring Results and Graphical Presentations

Contract No. CV/2012/07
Development at Anderson Road -
Footbridge D and Associated Works Area

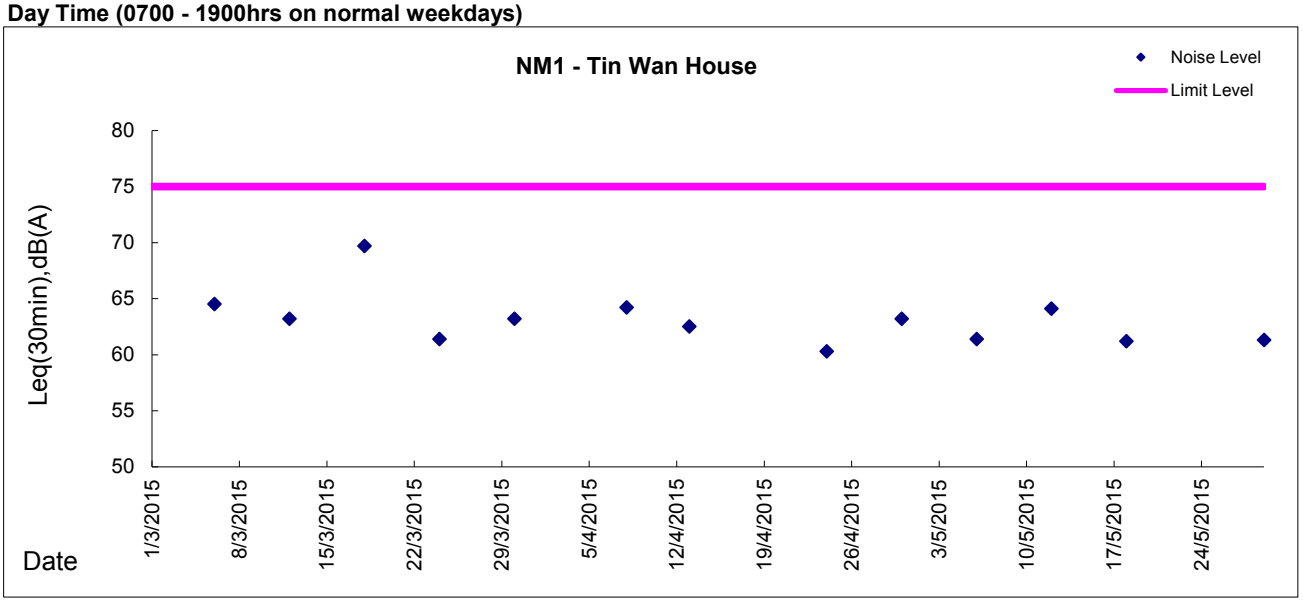
JOB NO : CS_J2013-02_CV201207
CLIENT : LPWJV

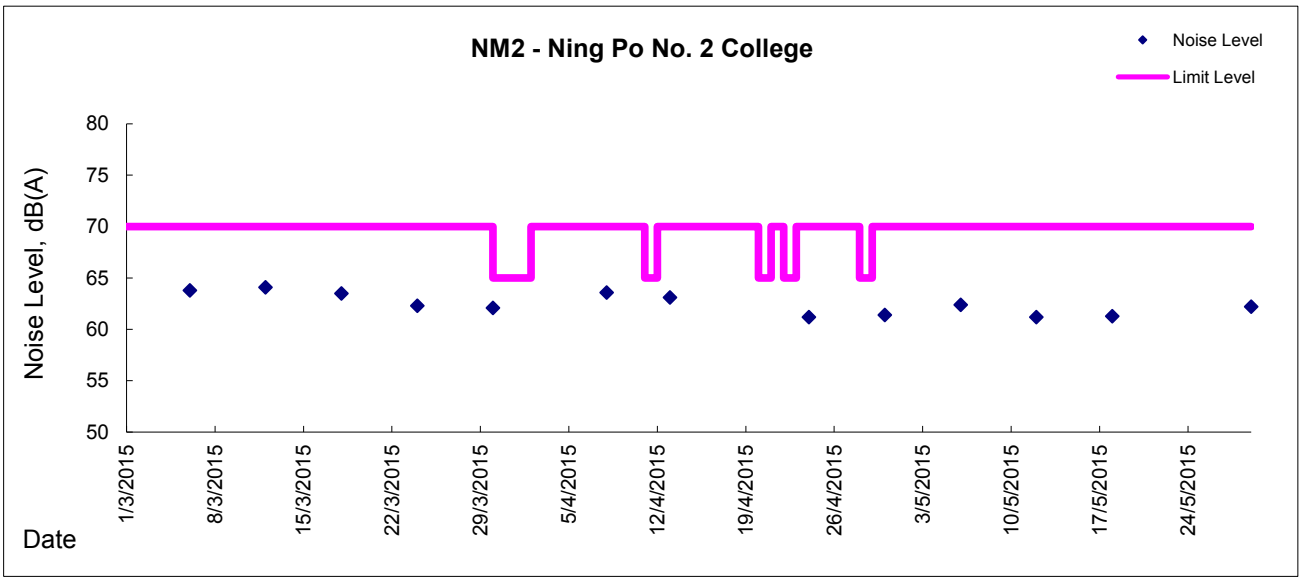
Daytime(07:00-19:00)					
Date	Time	Location	Leq (dB)	L10 (dB)	L90 (dB)
6-May-15	9:10	NM1	61.4	63.3	60.0
	10:00	NM2	62.4	63.3	59.4
12-May-15	13:50	NM1	64.1	66.6	58.0
	15:00	NM2	61.2	64.2	53.9
18-May-15	13:40	NM1	61.2	63.4	58.7
	14:45	NM2	61.3	63.3	59.7
29-May-15	9:00	NM1	61.3	63.9	59.2
	10:12	NM2	62.2	65.1	58.2

NM1 - Tin Wan House
NM2 - Ning Po No. 2 College

Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)





Appendix 5.3

Air Quality Monitoring Results and Graphical Presentations

Location: AQM1-Ning Po No.2 College

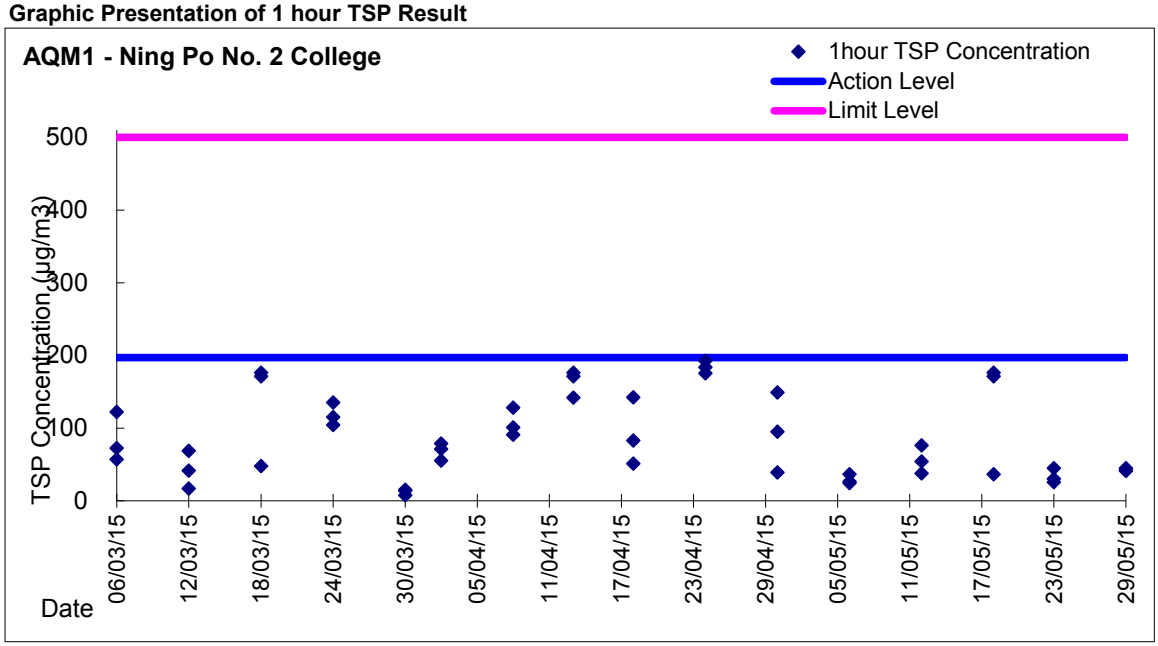
Report on 24-hour TSP monitoring
Action Level (μg/m3) - 200
Limit Level (μg/m3) - 260

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, mg/m^3
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
5-May-15	8:00	Fine	011791	2.8159	2.8750	3123.32	3147.32	24.00	1.33	1.33	1.33	1918	31
11-May-15	8:00	Cloudy	011794	2.8129	2.8796	3150.33	3174.33	24.00	1.39	1.39	1.39	1999	33
16-May-15	8:00	Fine	011797	2.8093	2.8816	3177.34	3201.34	24.00	1.33	1.33	1.33	1917	38
22-May-15	8:00	Rainy	011798	2.8182	2.8915	3204.34	3228.34	24.00	1.44	1.44	1.44	2076	35
28-May-15	8:00	Fine	012087	2.8385	2.9238	3231.34	3255.34	24.00	1.43	1.43	1.43	2061	41

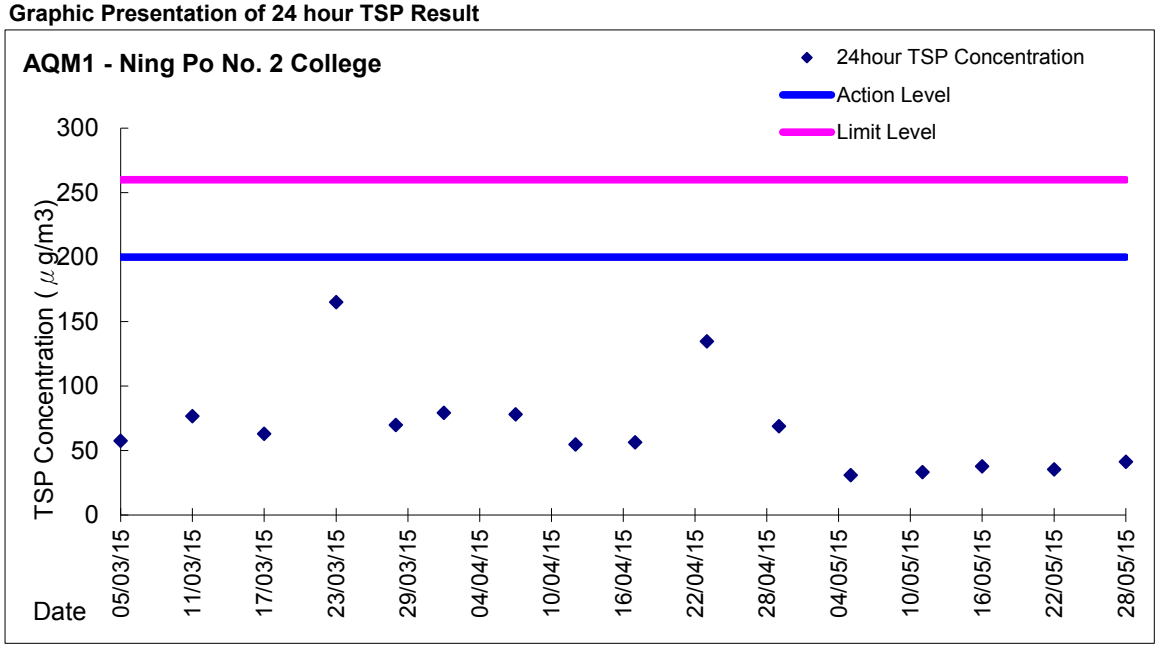
Report on 1-hour TSP monitoring
Action Level (μg/m3) - 197
Limit Level (μg/m3) - 500

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m^3/min			Total Volume, m^3	TSP Level, mg/m^3
				Initial	Final	Initial	Final		Initial, Q_{si}	Final, Q_{sf}	Average		
6-May-15	8:31	Fine	011127	2.7339	2.7368	3147.33	3148.33	1.00	1.33	1.33	1.33	80	36
6-May-15	9:40	Fine	011792	2.8138	2.8159	3148.33	3149.33	1.00	1.33	1.33	1.33	80	26
6-May-15	10:50	Fine	011793	2.8167	2.8188	3149.33	3150.33	1.00	1.44	1.44	1.44	86	24
12-May-15	8:15	Cloudy	011799	2.8208	2.8238	3174.34	3175.34	1.00	1.34	1.34	1.34	80	37
12-May-15	9:25	Cloudy	011795	2.8068	2.8111	3175.34	3176.34	1.00	1.34	1.34	1.34	80	54
12-May-15	10:35	Cloudy	011796	2.8020	2.8081	3176.34	3177.34	1.00	1.34	1.34	1.34	80	76
18-May-15	8:20	Fine	012089	2.8276	2.8305	3201.34	3202.34	1.00	1.33	1.33	1.33	80	36
18-May-15	9:30	Fine	012083	2.8492	2.8531	3202.34	3203.34	1.00	1.33	1.33	1.33	80	171
18-May-15	10:40	Fine	012082	2.8305	2.8342	3203.34	3204.34	1.00	1.33	1.33	1.33	80	176
23-May-15	9:00	Rainy	012084	2.8255	2.8281	3228.34	3229.34	1.00	1.44	1.44	1.44	86	30
23-May-15	10:14	Rainy	012085	2.8266	2.8304	3229.34	3230.34	1.00	1.41	1.41	1.41	85	45
23-May-15	13:00	Rainy	012086	2.8078	2.8100	3230.34	3231.34	1.00	1.44	1.44	1.44	86	25
29-May-15	8:40	Fine	012088	2.8153	2.8187	3255.34	3256.34	1.00	1.38	1.38	1.38	83	41
29-May-15	9:50	Fine	012072	2.8321	2.8357	3256.34	3257.34	1.00	1.43	1.43	1.43	86	42
29-May-15	11:00	Fine	012071	2.8137	2.8164	3257.64	3258.34	0.70	1.43	1.43	1.43	60	45

Graphic Presentation of 1 hour TSP Result



Graphic Presentation of 24 hour TSP Result



Appendix 6.1

Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Exceedance for Action Level	1. Notify IC(E) and Contractor; 2. Carry out investigation; 3. Report the results of investigation to IC(E) and Contractor; 4. Discuss with Contractor and formulate remedial measures;; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by ET; 2. Review the proposed remedial measures by the Contractor and advise 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 IC(E); 2. Implement noise mitigation proposals.
Exceedance for Limited Level	1. Notify IC(E), ER, EPD and Contractor; 2. Identify sources; 3. Repeat measurements to confirm finding; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IC(E), ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), 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 ER accordingly.	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 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 IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Air Quality

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source; 2. Inform IC(E) 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 IC(E) and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IC(E) and Contractor for remedial actions required; 6. If exceedance continues, arrange meeting with IC(E) and ER; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
LIMITED LEVEL				
1. Exceedance for one sample	1. Identify source; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. 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. In consolidation with the IC(E), 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 IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix 6.2

Summary for Notification of Exceedance_Air and Noise

Ref. No.	Date	Time	Location	Measured TSP Level	Unit	Action Level	Limit Level	Follow-up action
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A

Appendix 8.1

Complaint Log

Environmental Complaints Log

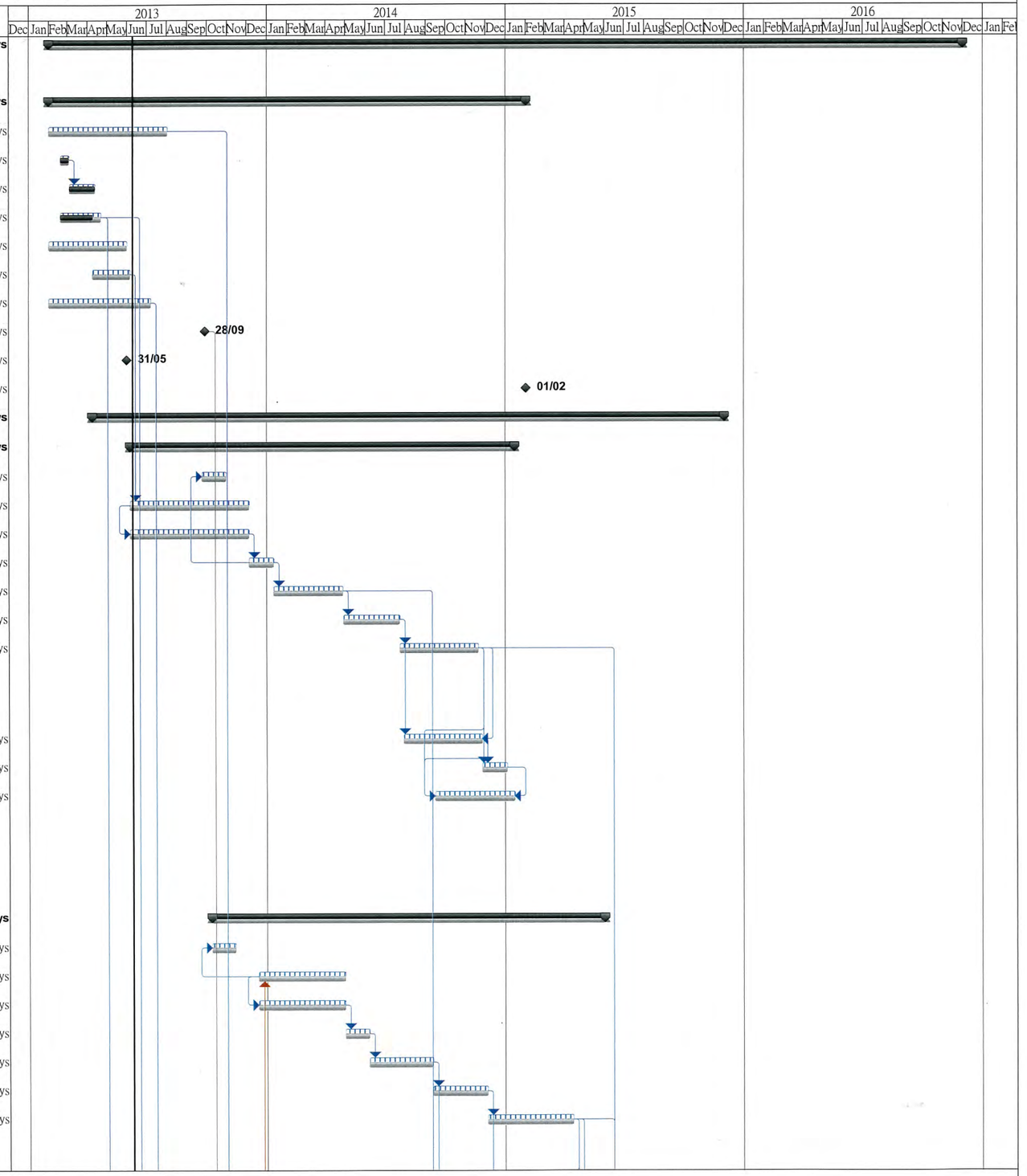
Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
140813	13 Aug 2014	Resident complained via hotline by RE	The slope opposite to Tin Wan House, Shun Tin Estate, Kowloon	Noise was emanated from the construction site at the slope opposite to Tin Wan House, Shun Tin Estate, Kowloon at around 1620 hrs on 13 Aug 2014 and requested follow up action by relevant department.	1) RSS notified ET on 15 Aug 2014 2) ET confirmed with site staff the major noise generating construction activities undertaken at works area at the slope opposite to Tin Wan House including slope works 3) After reviewing the noise monitoring data at monitoring stations (NM1 - Tin Wan House and NM2 - Ning Po No.2 College), no limit level exceedances were recorded during routine noise monitoring event on 14 Aug 2014. As similar construction works activities conducted on 13 Aug 2014 was continued across the above monitoring period, the noise emanated from the construction activities under Contract CV/2012/07 was considered to comply with the statutory requirement. 4) In addition, weekly environmental site inspection was conducted on 12 Aug 2014 at around 10:00. According to the inspection record, no particular observation regarding noise impact was recorded and the mitigation measures including erection of temporary noise barrier was observed in place.	Closed

Appendix 9.1

Construction Programme

Master Programme For Contract No. CV/2012/07
Development at Anderson Road - Footbridge D and Associated Works
(Rev. 2)

ID	WBS	Task Name	Duration	Start	Finish	Predecessors	Successors	Total Slack
1	**1**	**Development at Anderson Road - Footbridge D and Associated Works**	**1119 days**	**Thu 31/01/13**	**Wed 30/11/16**			**0 days**
2	**1.1**	PRELIMINARY WORK	**578 days**	**Thu 31/01/13**	**Sun 01/02/15**			**541 days**
3	1.1.1	Application of XP, Site Access from Highways	140 days	Thu 31/01/13	Wed 31/07/13		88	889 days
4	1.1.2	Tree Survey	12 days	Mon 18/02/13	Sat 02/03/13		5	0 days
5	1.1.3	Transplant	30 days	Mon 04/03/13	Thu 11/04/13	4		0 days
6	1.1.4	Air & noise baseline monitoring	50 days	Mon 18/02/13	Sat 20/04/13		46,47	8 days
7	1.1.5	Record Survey, Condition Survey and Setting Out	90 days	Thu 31/01/13	Thu 30/05/13			1029 days
8	1.1.6	Erect Fencing and Hoarding As Directed	48 days	Mon 08/04/13	Tue 04/06/13		16	491 days
9	1.1.7	Design and material submission	120 days	Thu 31/01/13	Sat 06/07/13		38,79	128 days
10	1.1.8	Handover of Portion A, B & C1	0 days	Sat 28/09/13	Sat 28/09/13		61	109 days
11	1.1.9	Handover of Portion E1	0 days	Fri 31/05/13	Fri 31/05/13			1029 days
12	1.1.10	Handover of Portion E2	0 days	Sun 01/02/15	Sun 01/02/15			541 days
13	**1.2**	**Section 1**	**781 days**	**Mon 08/04/13**	**Tue 01/12/15**			**20 days**
14	**1.2.1**	**Lift Tower D-A**	**475 days**	**Wed 05/06/13**	**Wed 14/01/15**			**491 days**
15	1.2.1.1	Method statement and material submission	30 days	Mon 23/09/13	Tue 29/10/13	18SS-60 days		905 days
16	1.2.1.2	Excavation for Raft footing	150 days	Wed 05/06/13	Tue 03/12/13	8	17SS	491 days
17	1.2.1.3	Rock Joint Mapping for founding material of raft footing	150 days	Wed 05/06/13	Tue 03/12/13	16SS	18	491 days
18	1.2.1.4	Construct Raft footing	30 days	Wed 04/12/13	Fri 10/01/14	17	19,15SS-60 days	491 days
19	1.2.1.5	Construct RC Lift Tower and Retaining Wall	80 days	Sat 11/01/14	Sat 26/04/14	18	20,41	491 days
20	1.2.1.6	Erect Steelwork for Lift Shaft	70 days	Mon 28/04/14	Tue 22/07/14	19	21,22	491 days
21	1.2.1.7	Installation of Lift	100 days	Wed 23/07/14	Wed 19/11/14	20	22FF+5 days,23,24FS-60 days,54	491 days
22	1.2.1.8	M&E Installation	100 days	Tue 29/07/14	Tue 25/11/14	20,21FF+5 days	23,24FS-60 days	550 days
23	1.2.1.9	T & C of M&E Equipment	30 days	Wed 26/11/14	Fri 02/01/15	21,22	24FF+7 days	553 days
24	1.2.1.10	Finishing and Metal Works	100 days	Mon 15/09/14	Wed 14/01/15	21FS-60 days,22FS-60 days,23FF+7 days		550 days
25	**1.2.2**	**Lift Tower D-B**	**480 days**	**Tue 08/10/13**	**Mon 01/06/15**			**439 days**
26	1.2.2.1	Method statement and material submission	30 days	Tue 08/10/13	Tue 12/11/13	27SS-60 days		893 days
27	1.2.2.2	Excavation for Raft footing	100 days	Wed 18/12/13	Tue 29/04/14	74	28SS,26SS-60 days	379 days
28	1.2.2.3	Rock Joint Mapping for founding material of raft footing	100 days	Wed 18/12/13	Tue 29/04/14	27SS	29	379 days
29	1.2.2.4	Construct Raft footing	30 days	Wed 30/04/14	Thu 05/06/14	28	30	379 days
30	1.2.2.5	Construct RC Lift Tower and Retaining Wall	80 days	Fri 06/06/14	Wed 10/09/14	29	31,41	379 days
31	1.2.2.6	Erect Steelwork for Lift Shaft	70 days	Thu 11/09/14	Wed 03/12/14	30	32,33	379 days
32	1.2.2.7	Installation of Lift	100 days	Thu 04/12/14	Mon 13/04/15	31	33FF,34,35FS-60 days,54	379 days



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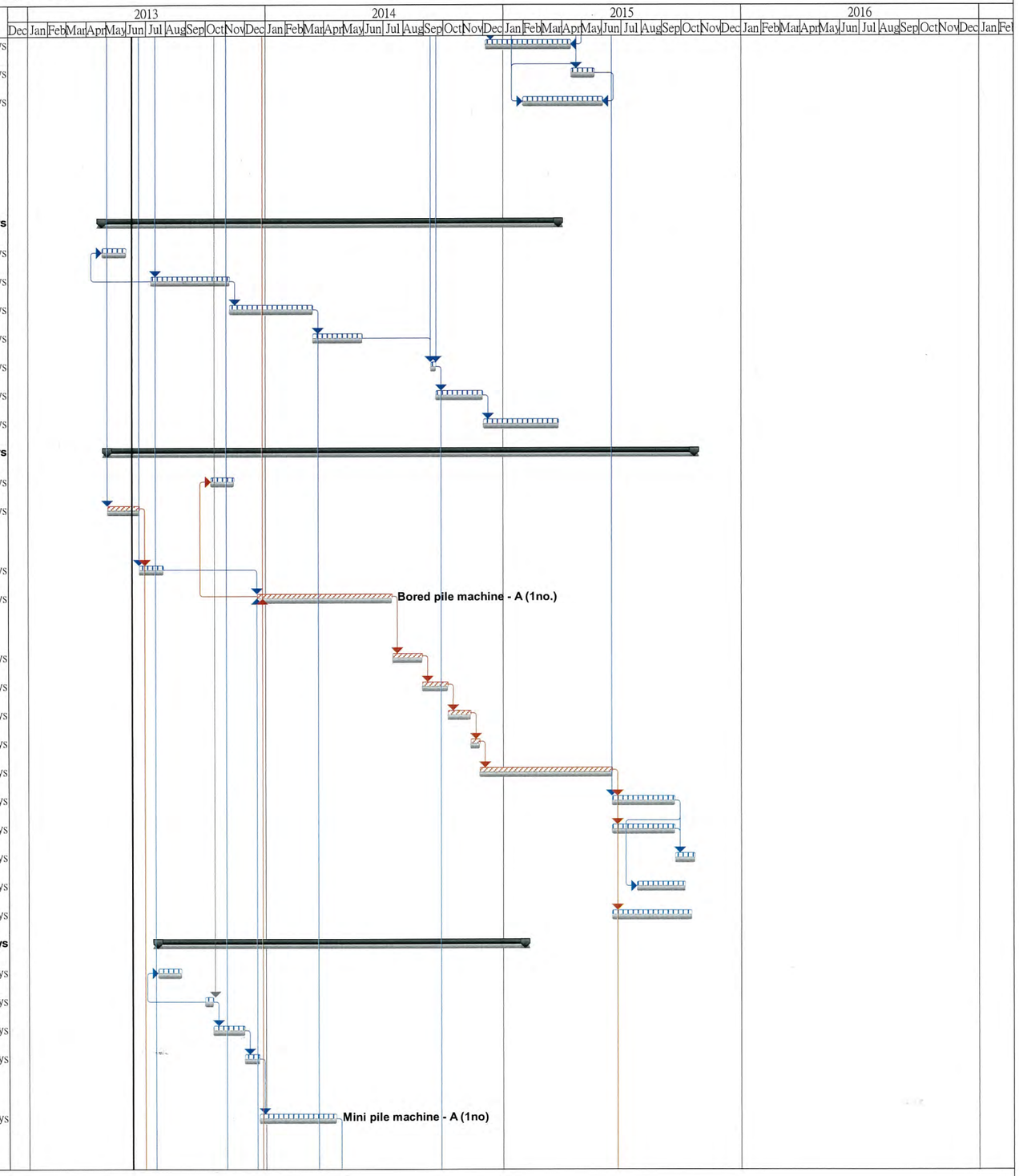
33	1.2.2.8	M&E Installation	100 days	Thu 04/12/14	Mon 13/04/15	32FF,31	34,35FS-60 days	443 days
34	1.2.2.9	T & C of M&E Equipment	30 days	Tue 14/04/15	Tue 19/05/15	32,33	35FF+7 days	446 days
35	1.2.2.10	Finishing and Metal Works	100 days	Fri 30/01/15	Mon 01/06/15	32FS-60 days,33FS-60 days,34FF+7 days		443 days
36	**1.2.3**	**Bridge Deck D-AB**	**563 days**	**Wed 24/04/13**	**Wed 25/03/15**			**188 days**
37	1.2.3.1	Method statement and material submission	30 days	Wed 24/04/13	Thu 30/05/13	38SS-60 days		1029 days
38	1.2.3.2	Ordering of Material	100 days	Mon 08/07/13	Tue 05/11/13	9	39,37SS-60 days	128 days
39	1.2.3.3	Fabrication of Steel work off site	100 days	Wed 06/11/13	Thu 13/03/14	38	40,80	128 days
40	1.2.3.4	Connecting the Bridge on site	60 days	Fri 14/03/14	Wed 28/05/14	39	41	582 days
41	1.2.3.5	Erecting Steel bridge frame	7 days	Thu 11/09/14	Thu 18/09/14	40,30,19	89,42	496 days
42	1.2.3.6	Irrigation system installation	60 days	Fri 19/09/14	Sat 29/11/14	41	43	496 days
43	1.2.3.7	Roofing and finishing works on bridge	90 days	Mon 01/12/14	Wed 25/03/15	42		496 days
44	**1.2.4**	**Lift Tower D-C**	**726 days**	**Thu 02/05/13**	**Tue 20/10/15**			**0 days**
45	1.2.4.1	Method statement and material submission	30 days	Tue 08/10/13	Tue 12/11/13	48SS-60 days		893 days
46	1.2.4.2	Predrill & determine F/L (included all necessary preparation and test)	40 days	Thu 02/05/13	Wed 19/06/13	6	47,70,73	0 days
47	1.2.4.3	Demolish the exixting structure	30 days	Thu 20/06/13	Fri 26/07/13	46,6	48	120 days
48	1.2.4.4	Construct Pre-bored H pile (60 no) (included all necessary preparation and test)	160 days	Wed 18/12/13	Sat 12/07/14	47,72,74	49,45SS-60 days	0 days
49	1.2.4.5	Pile Testing	40 days	Mon 14/07/14	Thu 28/08/14	48	50	0 days
50	1.2.4.6	Construct pile cap	30 days	Fri 29/08/14	Mon 06/10/14	49	51	0 days
51	1.2.4.7	Construct superstructure to level 103.8	30 days	Tue 07/10/14	Mon 10/11/14	50	52	0 days
52	1.2.4.8	Backfilling above pile cap	12 days	Tue 11/11/14	Mon 24/11/14	51	53	0 days
53	1.2.4.9	Construct superstructure level 103.8~158.05	160 days	Tue 25/11/14	Mon 15/06/15	52	54,58,55,82	0 days
54	1.2.4.10	Installation of Lift	80 days	Tue 16/06/15	Sat 19/09/15	53,21,32	56,57FS-49 days	327 days
55	1.2.4.11	M&E Installation	80 days	Tue 16/06/15	Sat 19/09/15	53	56	327 days
56	1.2.4.12	T & C of M&E Equipment	24 days	Mon 21/09/15	Tue 20/10/15	54,55		327 days
57	1.2.4.13	Roofing Connection Tower D-B & D-C	60 days	Fri 24/07/15	Mon 05/10/15	54FS-49 days		340 days
58	1.2.4.14	Finishing and Metal Works	100 days	Tue 16/06/15	Thu 15/10/15	53		331 days
59	**1.2.5**	**Pier D-D**	**450 days**	**Thu 18/07/13**	**Mon 02/02/15**			**169 days**
60	1.2.5.1	Method statement and material submission	30 days	Thu 18/07/13	Thu 22/08/13	61SS-60 days		960 days
61	1.2.5.2	Slope Cutting	10 days	Sat 28/09/13	Thu 10/10/13	10	62,60SS-60 days	109 days
62	1.2.5.3	Working platform for mini pile	40 days	Fri 11/10/13	Wed 27/11/13	61	63	109 days
63	1.2.5.4	Predrill & determine F/L (included all necessary preparation and test)	20 days	Thu 28/11/13	Fri 20/12/13	62	64	109 days
64	1.2.5.5	Construct mini pile (30 nos) (included all necessary preparation and test)	90 days	Sat 21/12/13	Thu 17/04/14	63	65	109 days



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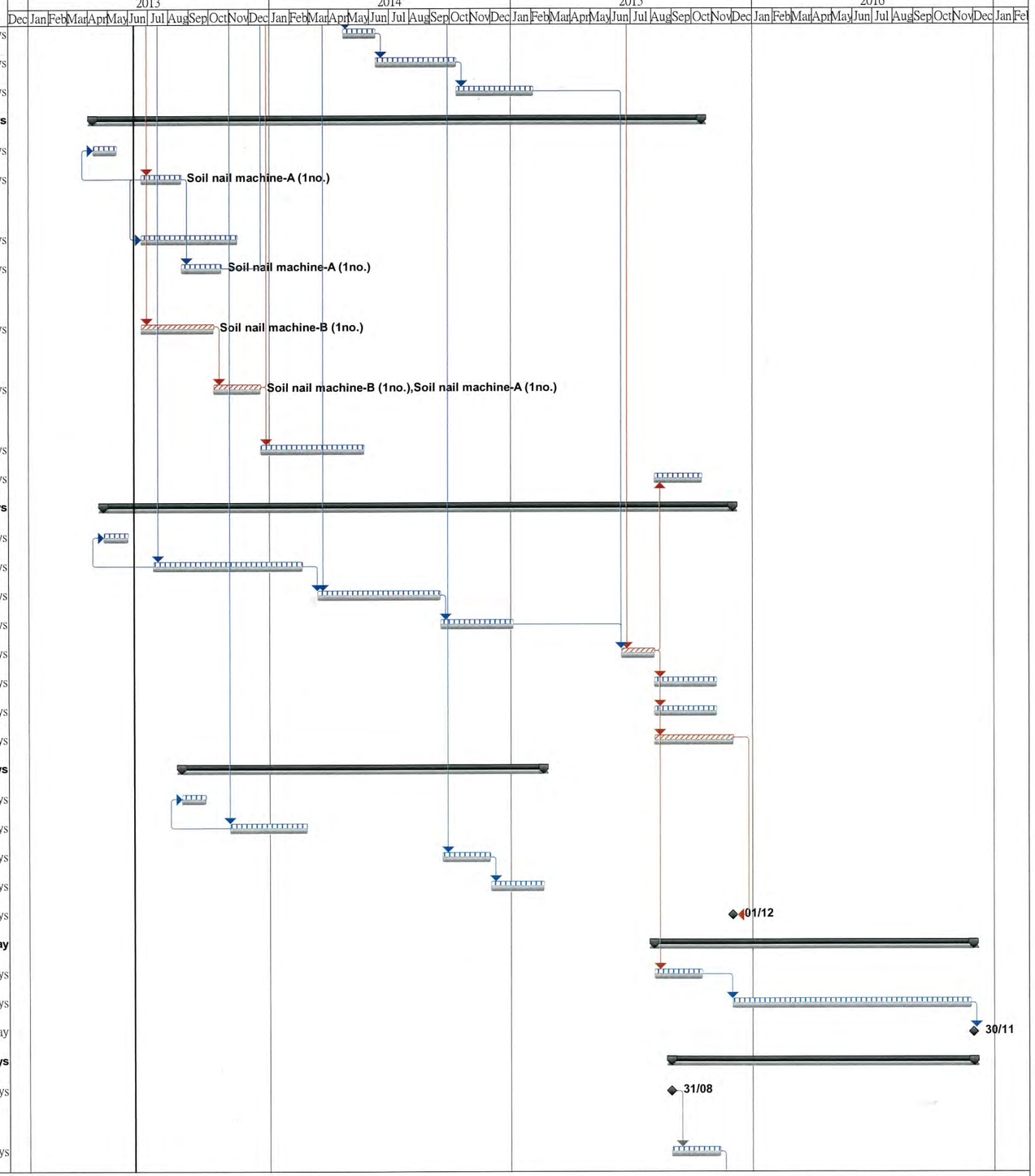
65	1.2.5.6	Pile Testing	40 days	Tue 22/04/14	Mon 09/06/14	64	66	109 days
66	1.2.5.7	Construct pile cap	100 days	Tue 10/06/14	Thu 09/10/14	65	67	109 days
67	1.2.5.8	Construct pier to level 152.1	90 days	Fri 10/10/14	Mon 02/02/15	66	82	109 days
68	**1.2.6**	**Slope Works**	**742 days**	**Mon 08/04/13**	**Thu 15/10/15**			**60 days**
69	1.2.6.1	Method statement and material submission	30 days	Mon 08/04/13	Mon 13/05/13	70SS-60 days		1043 days
70	1.2.6.2	Slope Cutting, Soil Nail and Raking Drain (Row D-F) (included all necessary preparation and test) 31nos	50 days	Thu 20/06/13	Mon 19/08/13	46	71SS,72,69SS-60 days	50 days
71	1.2.6.3	Construct Cascade and down pipe	120 days	Thu 20/06/13	Tue 12/11/13	70SS		893 days
72	1.2.6.4	Slope Cutting, Soil Nail and Raking Drain (Row C-A) (included all necessary preparation and test) 40nos	50 days	Tue 20/08/13	Sat 19/10/13	70	48	50 days
73	1.2.6.5	Slope Cutting, Soil Nail and Raking Drain (Row S-L) (included all necessary preparation and test) 103nos	90 days	Thu 20/06/13	Mon 07/10/13	46	74	0 days
74	1.2.6.6	Slope Cutting, Soil Nail and Raking Drain (Row K-G) (included all necessary preparation and test) 102nos	60 days	Tue 08/10/13	Tue 17/12/13	73	75,27,48	0 days
75	1.2.6.7	Construction of Inspection Access to Slope	120 days	Wed 18/12/13	Fri 23/05/14	74		743 days
76	1.2.6.8	Constructio of Footpath (Portion B)	60 days	Wed 05/08/15	Thu 15/10/15	82		331 days
77	**1.2.7**	**Bridge Deck D-CE**	**767 days**	**Wed 24/04/13**	**Tue 01/12/15**			**208 days**
78	1.2.7.1	Method statement and material submission	30 days	Wed 24/04/13	Thu 30/05/13	79SS-60 days		1029 days
79	1.2.7.2	Ordering of Material	180 days	Mon 08/07/13	Tue 18/02/14	9	80,78SS-60 days	148 days
80	1.2.7.3	Fabrication of Steel work off site	150 days	Fri 14/03/14	Mon 15/09/14	79,39	81	128 days
81	1.2.7.4	Connecting the Bridge on site	90 days	Tue 16/09/14	Sat 03/01/15	80	82	128 days
82	1.2.7.5	Erecting Steel bridge frame	40 days	Tue 16/06/15	Tue 04/08/15	81,67,53	83,85,93,76,84	0 days
83	1.2.7.6	M&E Installation	78 days	Wed 05/08/15	Fri 06/11/15	82		313 days
84	1.2.7.7	Irrigation system installation	78 days	Wed 05/08/15	Fri 06/11/15	82		313 days
85	1.2.7.8	Roofing and finishing works on bridge	99 days	Wed 05/08/15	Tue 01/12/15	82	91FF	0 days
86	**1.2.8**	**Drainage Works at Shun On Road**	**437 days**	**Tue 20/08/13**	**Wed 18/02/15**			**526 days**
87	1.2.8.1	Method statement and material submission	30 days	Tue 20/08/13	Tue 24/09/13	88SS-60 days		933 days
88	1.2.8.2	DN1500 drainage construction	90 days	Fri 01/11/13	Tue 25/02/14	3	87SS-60 days	813 days
89	1.2.8.3	DN375 and DN225 Drainage construction	60 days	Fri 19/09/14	Sat 29/11/14	41	90	526 days
90	1.2.8.4	Road Works and Reinstatement Works	60 days	Mon 01/12/14	Wed 18/02/15	89		526 days
91	1.2.9	Completion of Section 1	0 days	Tue 01/12/15	Tue 01/12/15	85FF		0 days
92	**1.3**	**Section 2**	**390 days**	**Wed 05/08/15**	**Wed 30/11/16**			**1 day**
93	1.3.1	Landscape Softworks for Footbridge D	60 days	Wed 05/08/15	Thu 15/10/15	82	94	42 days
94	1.3.2	Establishment Works for Footbridge D	289 days	Tue 01/12/15	Fri 25/11/16	93	95	4 days
95	1.3.3	Completion of Section 2	0 days	Wed 30/11/16	Wed 30/11/16	94		1 day
96	**1.4**	**Section 3**	**369 days**	**Mon 31/08/15**	**Wed 30/11/16**			**0 days**
97	1.4.1	Notified by The Engineer for commencing (Subject to Excision)	0 days	Mon 31/08/15	Mon 31/08/15		98	0 days
98	1.4.2	Landscape Softworks for Footbridge D	60 days	Mon 31/08/15	Wed 11/11/15	97	99	20 days



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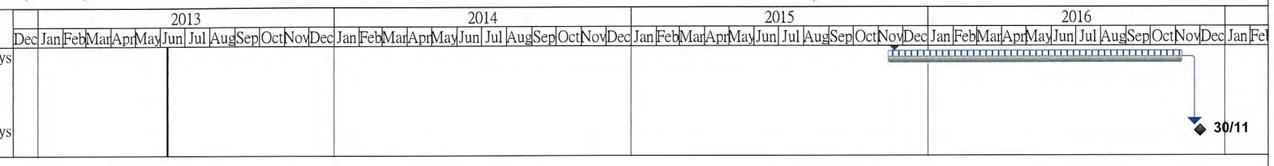
99	1.4.3	Landscape Softworks and Establishment Works for Footbridge A, B and C	289 days	Thu 12/11/15	Mon 07/11/16	98	100	20 days
100	1.4.4	Completion of Section 3	0 days	Wed 30/11/16	Wed 30/11/16	99		0 days



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