China State Construction Engineering (Hong Kong) Ltd.

Contract No. CV/2007/03

Development at Anderson Road – Site Formation and Associated Infrastructure Works

Quarterly EM&A Summary Report for September 2018 to December 2018

January 2019

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Version: 0	Date: 11 January 2019

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RAMBOLL

Ref.: OAPANDSNEM00_0_2093L.19

11 January 2019

By Post and Fax: 2407 8382

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

Attention: Mr. YK Cheung

Dear Sir,

Re: Contract No. CV/2007/03 (Environmental Permit No. EP-140/2002)
Development at Anderson Road
Site Formation and Associated Infrastructure Works
Quarterly EM&A Report for September 2018 to December 2018

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report for September 2018 to December 2018 received by e-mail on 10 January 2019.

Please be informed that we have no adverse comment on the captioned submission and thereby write to verify the captioned submission.

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

Yours faithfully,

David Yeung
Independent Environmental Checker

c.c.	AECOM	Attn.: Mr. Y.W. Fung	By Fax: 3922 9797
	CSCEC	Attn.: Mr. Holmes Wong	By Email

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EXECUTIVE SUMMARY

The Project "Development at Anderson Road – Site Formation and Associated Infrastructure Works" (hereafter called "the Project") is proposed to form platforms for housing development and associated uses in area of about 20 hectares, and to carry out necessary infrastructural upgrading or improvement works to cater for the proposed development.

China State Construction Engineering (Hong Kong) Limited (CSCE) was commissioned as the Contractor of the Project. AECOM Asia Co. Ltd. (AECOM) was employed by CSCE as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project.

The impact EM&A for the Project includes air quality and noise monitoring. The EM&A programme for Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) commenced on 1 May 2008, while for Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2) and Sau Nga House (ID 3) commenced on 1 June 2008.

The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

The construction for the Widening of Po Lam Road (Schedule 2 DP) project was commenced on 21 September 2011.

This report documents the findings of EM&A works for ID 1A, ID 2, ID 3, ID 4 and ID 5 conducted in the period from 1 September 2018 to 31 December 2018. As informed by the Contractor, construction activities in the reporting period were:

- Site clearance works
- Defect rectification works
- Construction of planter
- Construction of handrail
- Sprayed concrete for slope
- Rock mesh installation
- Construction of surface channel

Environmental Monitoring Works

EM&A Programme

A summary of monitoring and audit activities conducted in the reporting period is listed below:

24-hour TSP monitoring	21 sessions
1-hour TSP monitoring	63 sessions
Daytime Noise monitoring	17 sessions
Environmental Site Inspection	17 sessions

Breaches of Action and Limit Levels

All 1-hour TSP and 24-hour TSP results were below the Action and Limit Levels in the reporting period.

According to the information provided by the Contractor, no Action Level exceedance of noise was recorded since no noise related complaint was received in the reporting period.

No exceedance of Limit Level of noise was recorded in the reporting period.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons or successful prosecution was received in the reporting period. The cumulative statistics on complaints has been updated in Appendix F.

1 INTRODUCTION

1.1 Scope of Report

1.1.1 This is the quarterly Environmental Monitoring and Audit (EM&A) Report for the reporting period from 1 September 2018 to 31 December 2018 under the Project "Contract CV/2007/03 - Development at Anderson Road – Site Formation and Associated Infrastructure Works" (hereafter called "the Project"), which serving for both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project (which was commenced on 21 September 2011).

1.1.2 This report presents a summary of the EM&A works, list of activities and mitigation measures proposed by the Environmental Team (ET) for the Project during the reporting period.

1.2 Project Organization

1.2.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER (Ove Arup)	Resident Engineer	Yu Kit CHEUNG	2407 0300	2407 8382
	Assistant Resident Engineer	Brendon LEE	2407 0300	2407 8382
IEC (Ramboll)	Independent Environmental Checker	David Yeung	3465 2888	3465 2899
Contractor (CSCE)	Site Agent	Holmes Wong	2704 2095	2702 6553
	Environmental Officer	Raymond Ma	2704 2095	2702 6553
ET (AECOM)	ET Leader	Yiu Wah Fung	3922 9366	3922 9797

1.3 Summary of Construction Works

1.3.1 The Contactor has carried out major activities in the reporting period. Details of the works undertaken in this reporting period are listed below:

- Site clearance works
- Defect rectification works
- Construction of planter
- Construction of handrail
- Sprayed concrete for slope
- Rock mesh installation
- Construction of surface channel

1.3.2 The general layout plan of the Project site showing the contract area is shown in Figure 1.1.

1.3.3 The environmental mitigation measures implementation schedule (EMIS) are presented in Appendix B.

2 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

2.1 Monitoring Parameters

2.1.1 The EM&A Manual designated five monitoring stations to monitor environmental impacts on air quality and noise due to the Project. The monitoring locations are depicted in Figure 2.1.

2.1.2 The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

2.2 Environmental Quality Performance Limits (Action/Limit Levels)

2.2.1 The environmental quality performance limits (i.e. Action/Limit Levels) were derived from the baseline air quality and noise monitoring results of Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2), Sau Nga House (ID 3), Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) and / or as defined in the EM&A Manual for air quality and noise impacts.

2.2.2 The baseline condition of air quality (for ID 1A, ID 2 & ID 3) in the Project site was reviewed in August 2008 upon agreed by ER and IEC. Reviewed Action Levels for air quality at ID 1A, ID 2 and ID 3 were established in September 2008. The latest Action and Limit Levels (established in September 2008) for all monitoring parameters are summarized in Appendix C.

2.3 Environmental Mitigation Measures

2.3.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EP (No.: EP-140/2002) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix B.

3 MONITORING RESULTS

3.1 Air Quality

3.1.1 Air quality monitoring, including 1-hr and 24-hr TSP, was conducted for at least three times every 6 days and for at least once every 6 days respectively at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5), in accordance with the EM&A Manual.

3.1.2 Sixty-three (63) sessions of 1-hr TSP monitoring and twenty one (21) sessions of 24-hr TSP monitoring were conducted for the 5 monitoring stations (ID 1A, ID 2, ID 3, ID4 & ID5) in the reporting period.

3.1.3 The weather was mostly sunny, occasionally cloudy, fine and rainy in the reporting period. The trend of impact air quality monitoring results for the reporting period is given in Appendix D. Major dust source included construction activities of the Project (i.e. construction of rock dowels and site clearance works), concurrent construction activities of another project carried out in the vicinity and nearby traffic emissions.

3.1.4 All 1-hour TSP and 24-hour TSP results were below the Action and Limit Levels in the reporting period.

3.1.5 Table 3.1 presents the number of exceedances recorded in each month of the reporting period. The number of monitoring events included regular impact monitoring events and additional ones, if any.

Table 3.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Concentration

Monitoring Parameter	Location	Level of Exceedance	Month			
			Sep 18	**Oct 18**	**Nov 18**	**Dec 18**
1-hr TSP	ID 1A	No. of monitoring events	15	15	15	18
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	ID 2	No. of monitoring events	15	15	15	18
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	ID 3	No. of monitoring events	15	15	15	18
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	ID 4	No. of monitoring events	15	15	15	18
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**

	ID 5	No. of monitoring events	15	15	15	18
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	Total number of exceedance		**0**	**0**	**0**	**0**
24-hr TSP	ID 1A	No. of monitoring events	5	5	5	6
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	ID 2	No. of monitoring events	5	5	5	6
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	ID 3	No. of monitoring events	5	5	5	6
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	0
	ID 4	No. of monitoring events	5	5	5	6
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	ID 5	No. of monitoring events	5	5	5	6
		Action	**0**	**0**	**0**	**0**
		Limit	**0**	**0**	**0**	**0**
	Total number of exceedance		**0**	**0**	**0**	**0**

3.2 Construction Noise

3.2.1 Noise was conducted at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5) for at least once per week during the construction phase (0700 – 1900) of the Project.

3.2.2 Seventeen (17) noise monitoring events were carried out for all monitoring stations in the reporting period.

3.2.3 According to the information provided by the Contractor, no exceedance of Action Level of noise was recorded since no noise related complaint was received in the reporting period.

3.2.4 No Limit Level exceedance of noise was recorded in the reporting period.

3.2.5 The graphical plots of trends of the noise monitoring results in the reporting period are provided in Appendix E. Major noise source included construction activities of the Project (i.e. construction of rock dowels), concurrent construction activities of another project carried out in the vicinity, nearby traffic emissions and noise from school activities and community noise.

3.2.6 Table 3.2 presents the number of exceedances recorded in each month of the reporting period. The number of monitoring events included regular monitoring events and additional ones, if any.

Table 3.2 Summary of Number of Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance		Month		
			Sep 18	**Oct 18**	**Nov 18**	**Dec 18**
Construction Noise	ID 1A	No. of monitoring events	4	4	5	4
		Limit	0	0	0	0
	ID 2	No. of monitoring events	4	4	5	4
		Limit	0	0	0	0
	ID 3	No. of monitoring events	4	4	5	4
		Limit	0	0	0	0
	ID 4	No. of monitoring events	4	4	5	4
		Limit	0	0	0	0
	ID 5	No. of monitoring events	4	4	5	4
		Limit	0	0	0	0
	Total Action Level*		**0**	**0**	**0**	**0**
	Total Limit Level		**0**	**0**	**0**	**0**

Remarks: * Number of Action Level exceedance for construction noise is the number of documented noise related complaint received in the reporting period from any one of the sensitive receivers.

3.3 Environmental Site Inspection

3.3.1 17 site inspections were conducted in the reporting period to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The major concerns for the Project are air quality, noise, water quality and chemical and waste management. Particular observations and non-compliances, and their statuses are described below.

3.3.2 The Contractor rectified most of the observations as identified during the environmental site inspections in the reporting period within the agreed time frame. Rectification of the remaining identified items are being carried out by the Contractor. Most of identified items were rectified within one week, except for three outstanding observations recorded 25 October 2018 and 23 November 2018. Follow-up inspections on the status of implementation of mitigation measures were conducted to ensure all the identified items were mitigated properly.

3.3.3 Improper storage of general refuse was observed on 19 October 2018. The Contractor was advised to remove the general refuse. The general refuse was observed on 25 October 2018, so outstanding was defined. This item was rectified on 30 October 2018.

3.3.4 U-channel blocked by soil was observed on 19 October 2018. The Contractor was advised to remove the soil. The Soil was observed on 25 October 2018, so outstanding was defined. This item was rectified on 30 October 2018.

3.3.5 U-channel blocked by soil and general refuse was observed in Lee On Road on 16 November 2018. The Contractor was advised to keep the U-channel clear of waste. The blockage of U-channel was observed on 23 November 2018, so outstanding was defined. This item was rectified on 30 November 2018.

3.3.6 Air Quality Impact

- Stockpile stored without proper cover was observed. The Contractor was advised to cover the stockpile properly.
- Excavator operated without NRMM label was observed. The Contractor was advised to provide NRMM label to excavator.
- Dusty work implemented without dust control measure was observed. The Contractor was advised to implement water spray during dusty work.
- Silt was observed in the road near construction site. The Contractor was advised to spray water to prevent dust spread.

3.3.7 Construction Noise Impact

- No specific observation was identified in the reporting month.

3.3.8 Water Quality Impact

- Drainage system blocked by general waste and construction waste was observed. The Contractor was advised to keep the drainage system clear of waste.

3.3.9 Chemical and Waste Management

- Chemical container stored without drip tray was observed. The Contractor was advised to store the chemical container in drip tray.
- Drainage system blocked by general waste and soil was observed. The Contractor was advised to keep the drainage system clear of waste.
- Improper storage of general refuse was observed. The Contractor was advised to remove the general refuse.
- General refuse and construction waste were spread in the construction site. The Contractor was advised to improve the housekeeping.
- Improper storage of construction material was observed. The Contractor was advised to remove the construction material.

3.3.10 Landscape and Visual Impact

- No specific observation was identified in the reporting month.

3.3.11 Miscellaneous

- Different types of waste were spread in the construction site. The Contractor was advised to improve the housekeeping.
- Poor housekeeping was observed in the construction site. The Contractor was advised to improve the housekeeping.
- To enhance the anti-mosquito works, the Contractor was advised to seal the openings of water barrier and remove the weed and stagnant water.

Advice on solid and liquid waste management status

3.4 Summary of Solid and Liquid Waste Management

3.4.1 The Contractor is registered as a chemical waste producer for this Project. C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

3.4.2 As advised by the Contractor, quantity of waste for disposal in the reporting period is summarized in the Table 4.1.

Table 4.1 Summary of Quantity of Waste for Disposal

Type of waste	Month			
	Sep 18	**Oct 18**	**Nov 18**	**Dec 18**
Total C&D materials (m^3)	0 m^3	0 m^3	0 m^3	0 m^3
Hard Rocks and Large Broken Concrete	0 m^3	0 m^3	0 m^3	0 m^3
Amount Reused in the Project	0 m^3	0 m^3	0 m^3	0 m^3
Amount Reused in other Projects	0 m^3	0 m^3	0 m^3	0 m^3
Disposed of to TKO 137	0 m^3	0 m^3	0 m^3	0 m^3
Metals	0 kg	0 kg	0 kg	0 kg
Paper cardboard packing	0 kg	0 kg	0 kg	0 kg
Plastics	0 kg	0 kg	0 kg	0 kg
Chemical waste	0 L	0 L	0 L	0 L
General refuse	0.00 tonnes	0.00 tonnes	0.00 tonnes	128.59 tonnes

3.4.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

3.4.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

4 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF ENVIRONMENTAL QUALITY

4.1 Summary of Exceedances and Review of the Reasons for Non-compliance

4.1.1 All 1-hour TSP and 24-hour TSP results were below the Action and Limit Levels in the reporting period.

4.1.2 According to the information provided by the Contractor, no exceedance of Action Level of noise was recorded since no noise related complaint was received in the reporting period.

4.1.3 No exceedance of Limit Level of noise was recorded in the reporting period.

5 COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

5.1 Summary of Environmental complaints, notification of summons and successful prosecutions

5.1.1 No environmental complaint and no notification of summons and successful prosecution were received in the reporting period. The cumulative statistics on complaints has been updated in Appendix F.

Table 6.1 Summary of Environmental Complaints, Summons and Prosecutions

	Sep 18	Oct 18	Nov 18	Dec 18	Total
Complaint Logged	0	0	0	0	**0**
Summons Served	0	0	0	0	**0**
Successful Prosecution	0	0	0	0	**0**

5.1.2 Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions recorded since the commencement of the Project are given in Appendix F.

6 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

6.1 Comments on Mitigation Measures

6.1.1 According to the environmental site inspections performed in the reporting period, the following comments are provided:

6.1.2 Air Quality Impact

- The Contractor was advised to cover the stockpile properly.
- The Contractor was advised to provide NRMM label to excavator.
- The Contractor was advised to implement water spray during dusty work.
- The Contractor was advised to spray water on the road near to the construction site to prevent dust spread.

6.1.3 Construction Noise Impact

- No specific observation was identified in the reporting month.

6.1.4 Water Quality Impact

- The Contractor was advised to keep the drainage system clear of waste.

6.1.5 Chemical and Waste Management

- The Contractor was advised to store the chemical container in drip tray.
- The Contractor was advised to keep the drainage system clear of waste.
- The Contractor was advised to remove the general refuse.
- The Contractor was advised to improve the housekeeping.
- The Contractor was advised to remove the improper stored construction material.

6.1.6 Landscape and Visual Impact

- No specific observation was identified in the reporting month.

6.1.7 Miscellaneous

- The Contractor was advised to improve the housekeeping.
- To enhance the anti-mosquito works, the Contractor was advised to seal the openings of water barrier and remove the weed and stagnant water.

6.2 Recommendations on EM&A Programme

6.2.1 The impact air quality and noise monitoring programme ensured that any environmental impact to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The weekly site inspection ensured that all the environmental mitigation measures recommended in the EIA report were effectively implemented.

6.2.2 The EM&A programme effectively monitored the environmental impacts from the construction activities and no particular recommendation was advised for the improvement of the programme.

6.3 Conclusions

6.3.1 Air quality and noise monitoring and weekly site inspection were carried out from September 2018 to December 2018, in accordance with the EM&A Manual.

6.3.2 All 1-hour TSP and 24-hour TSP results were below the Action and Limit Levels in the reporting period.

6.3.3 According to the information provided by the Contractor, no exceedance of Action Level of noise was recorded since no noise related complaint was received in the reporting period.

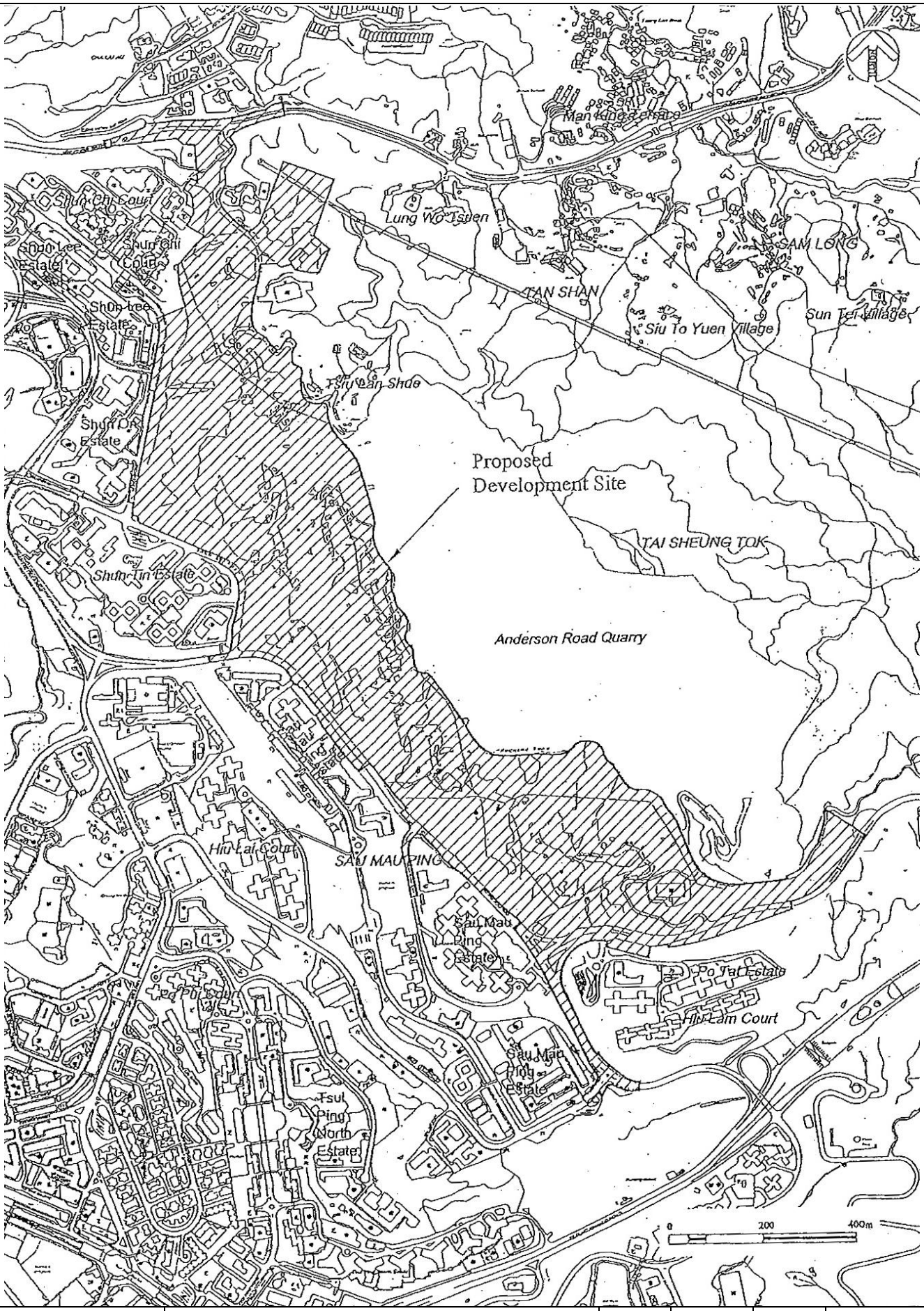
6.3.4 No exceedance of Limit Level of noise was recorded in the reporting period.

6.3.5 No complaint, notification of summons and successful prosecution were received in the reporting period.

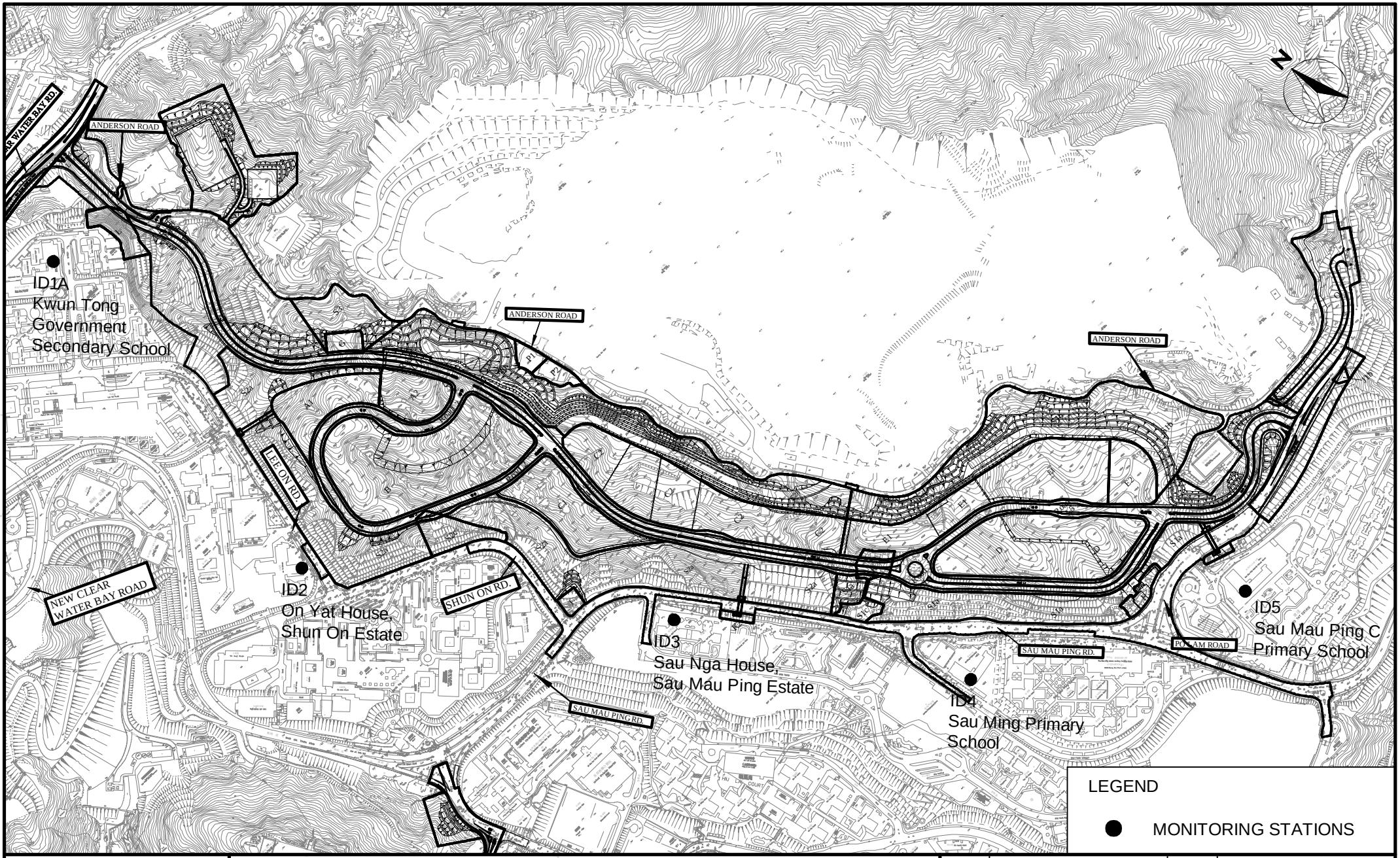
6.3.6 Environmental site inspections were carried out 17 times in the reporting period.

6.3.7 Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit. Most of the identified items were rectified within the agreed time frame, except three outstanding observations recorded 25 October 2018 and 23 November 2018.

FIGURES



AECOM	**Development at Anderson Road - Site Formation and Associated Infrastructure Works**	SCALE	N.T.S.	DATE	Nov-09
		CHECK	ENFL	DRAWN	LCHC
	GENERAL LAYOUT PLAN	JOB NO.	60043155	**DRAWING No.** FIG 1.1	**Rev.** -



AECOM

DEVELOPMENT AT ANDERSON ROAD
SITE FORMATION AND ASSOCIATED INFRASTRUCTURE WORKS

MONITORING LOCATIONS

SCALE	N.T.S.	DATE	APR 08
CHECK	CWHY	DRAWN	RWHW
JOB No.	60043155	DRAWING No. FIG 2.1	REV –

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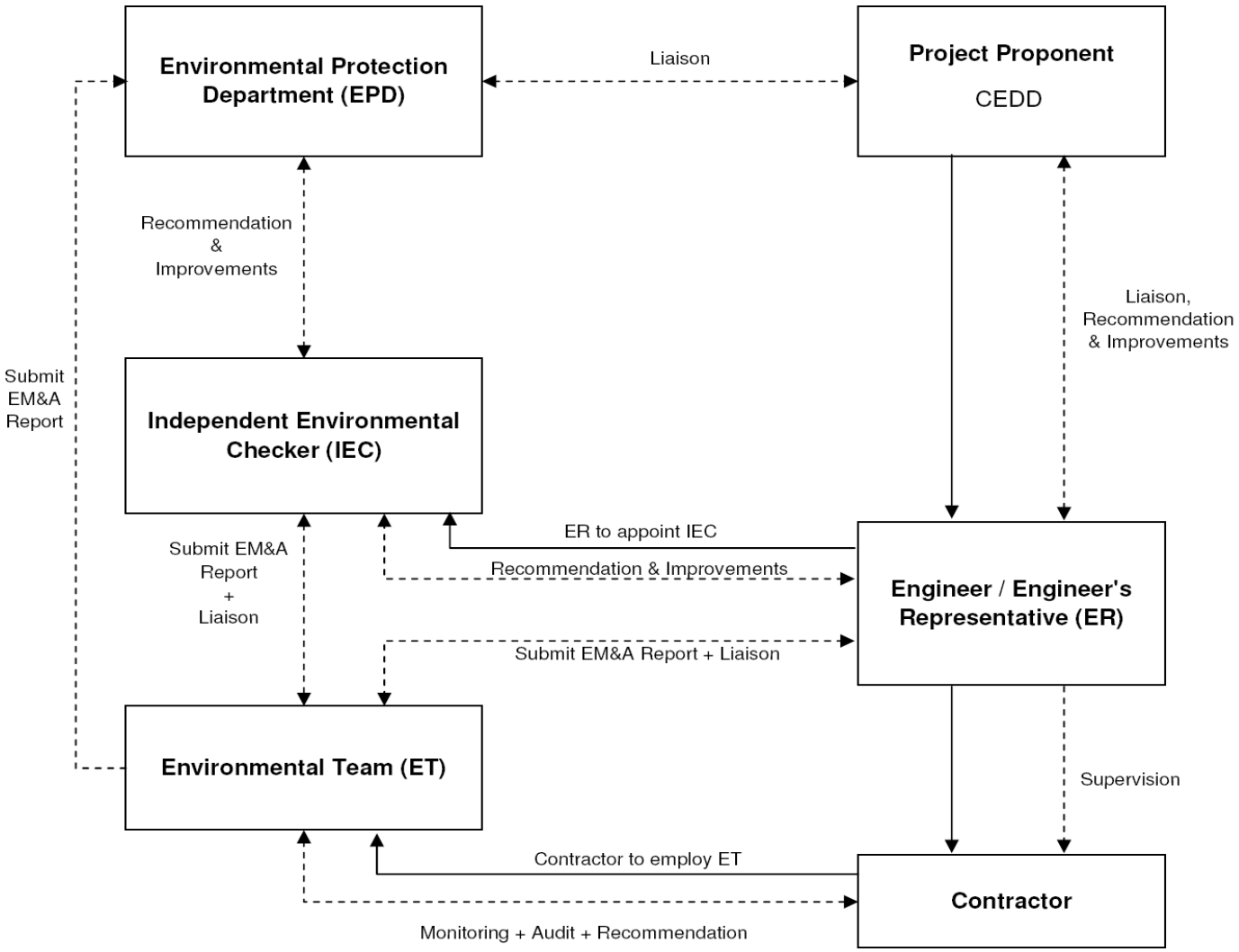
APPENDIX A

Project Organization Structure



Employment Relationship

Working Relationship

AECOM	Contract No. CV/2007/03 Development at Anderson Road – Site Formation and Associated Infrastructure Works **Project Organization Structure**	SCALE	N.T.S.	DATE	2018
		CHECK	ENFL	DRAWN	LCHC
		JOB NO.	60043155	APPENDIX A	Rev -

APPENDIX B

Implementation Schedule of Environmental Mitigation Measures (EMIS)

Appendix B - Implementation Schedule of Environmental Mitigation Measures (EMIS)

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
Construction Noise Impact						
Site Formation	Silenced powered mechanical equipment (PME) for most equipment (including drill rig, backhoe, dump truck, breaker and crane) and the decrease of percentage on time usage of drill rig among the Central Area from 50% to 40% is proposed.	All construction sites	V	V	V	V
	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	V	V	V	V
Construction Air Quality Impact						
General Site Practice	Mean vehicle speed of haulage trucks at 10km/hr.	All construction sites	V	V	V	V
	Twice daily watering of all open site areas.	All construction sites	V	V	V	V
	Regular watering (once every 1 hour) of all site roads and access roads with frequent truck movement.	All construction sites	V	V	V	V
	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 watering of the site access roads.	All construction sites	V	V	V	V
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	All construction sites	V	V	V	V
	Establishment and use of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads were necessary.	Site exits	V	V	@	V
General Site	Suitable side and tailboards on haulage vehicles.		V	V	V	V

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
Practice	Watering of temporary stockpiles.	All construction sites	@	V	V	V
Blasting	Use of select aggregate and fines to stem the charge with drill holes and watering of blast face.	All construction sites	N/A	N/A	N/A	N/A
	Use of vacuum extraction drilling methods.	All construction sites	N/A	N/A	N/A	N/A
	Carefully sequenced blasting.	All construction sites	N/A	N/A	N/A	N/A
Crushing	Fabric filters installed for the crushing plant.	All construction sites	N/A	N/A	N/A	N/A
	Water sprays on the crusher.	All construction sites	N/A	N/A	N/A	N/A
Loading and Unloading Points, and conveyor Belt System	Water sprays at all fixed loading and unloading points (at the crusher and conveyor belts).	All construction sites	N/A	N/A	N/A	N/A
	The loading point at the crusher is enclosed with dust collection system installed.	All construction sites	N/A	N/A	N/A	N/A
	When transferring materials from conveyor belt or crusher to the dump trucks, chutes or dust curtains are used for controlling dust.	All construction sites	N/A	N/A	N/A	N/A
	Cover the conveyor belts with steel roof and canvas sides.	All construction sites	N/A	N/A	N/A	N/A
Construction Water Quality Impact						
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 Victoria Harbour (Phase I) WCZ. All fuel storage areas should be bounded with drainage directed to an oil interceptor.	Site drainage system	@	@	@	V
	Separate treatment facilities may be required for effluent from site offices, toilets (unless chemical toilets are used) and	Site drainage system	V	V	V	V

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
	canteens.					
Construction Phase	Discharged wastewater from the construction sites to surface water and/or public drainage systems should be controlled through licensing. Discharge should follow fully the terms and conditions in the licenses.	All works area	V	V	V	V
	Relevant practice for dealing with various type of construction discharges provided in EPD's ProPECC Note PN 1/94 should be adopted.	All works area	V	V	V	V
Waste Management						
Waste Disposal	Difference types of wastes should be segregated, stored, transported and disposed of separately in accordance with the relevant legislative requirements and guidelines as proper practice of waste management.	All construction sites	X	@	@	V
	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 spoil.	All construction sites	V	V	V	V
	Excavated spoil should be used as much as possible to minimize off-side fill material requirements and disposal of spoil.	All construction sites	V	V	V	V
	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	All construction sites	V	V	V	V

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
	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	V	V	V	V
Waste Storage	Chemical material storage areas should be bounded and 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.	All construction sites	@	@	V	V
	Dangerous materials as defined under the DGO, including fuel, oil and lubricants, should be stored and properly labelled 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.	All construction sites	V	V	V	V
	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	All construction sites	@	V	V	V

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
	refuse collection points must also be provided.					
Landscape and Visual						
Additional Measures	Planting and vegetation restoration (including transplanted trees) on soil slopes including restoration of grassland, scrub and woodland on slopes around the development platforms and access road. Restoration would be undertaken using predominantly native species.	Whole development	V	V	V	V
Additional Measures	Screen planting along the access roads, to limit impacts of elevated structures and rock slopes.	Whole development	V	V	V	V
	Colouring of shotcrete slopes.	Whole development	V	V	V	V
	Limited planting on shotcrete slopes.	Whole development	V	V	V	V
	Landscape buffers and planting in and around the development itself to screen partially close views of the site.	Whole development	V	V	V	V
	Screen planting in front of retaining walls / granite cladding to those walls to reduce glare and visual impacts.	Whole development	V	V	V	V
	Careful design of road elevated structure and abutments, to limit visual impacts.	Whole development	V	V	V	V
	Roadside landscape features / hardworks to limit visual impacts.	Whole development	V	V	V	V
	Conservation of CDG or CDV recovered from the site for re-use in the landscape restoration.	Whole development	V	V	V	V
	Preservation (by transplanting if necessary) of any trees identified as being of particular landscape value.	Whole development	V	V	V	V

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
Ecology						
	Woodland planting on soft cut slopes available (about 13.4ha) within the development site. Native species, preferably with documented ecological utility, should be used.	Soft cut slopes	V	V	V	V
	Seeds of the native species when possible should be added into the hydroseeding mix. Seedings should be pit planted with placement of slow release fertilizer.	Soft cut slopes	N/A	N/A	N/A	N/A
	Maintenance and service, including weeding, fertilizing, replacement of dead plants, etc. should be performed during the first 1 years of planting to enhance the survival rate of the plants.	Soft cut slopes	N/A	N/A	N/A	N/A
Contaminated Land						
	In accordance with the approved Contamination Assessment Report (CAR) and Remediation Action Plan (RAP) in Nov 2006, it is recommended that cement solidification / stabilization prior to on-site backfill for heavy metal contaminated soil and excavation followed by disposal at designated landfill for organic contaminated soil. Upon the completion of the proposed remediation exercise as outlined in CAR & RAP, a Remediation Report will be complied for submission to EPD to demonstrate that the proposed soil remediation has been carried out properly and satisfactorily. Results from the confirmation tests will also be included in the Remediation Report. Photos showing the area of excavation, the solidification process, and remediated soil and site shall	Locations specified in CAR	V	V	V	V

Environmental Mitigation Measures		Location	Implementation Status			
			Sep 18	**Oct 18**	**Sep 18**	**Dec 18**
	also be included in the report for reference.					
Landfill Gas Hazard						
	Further site investigation should be carried out during the detailed design stage in order to measure landfill gas around the perimeter of the site, to re-confirm that there is no preferential pathway for landfill gas migration and to assess the potential for landfill gas hazards on the future development. If a landfill gas hazard is identified, mitigation measures should be proposed and implemented to address the hazard.	The whole development site	V	V	V	V

Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX C

Summary of Action and Limit Levels

Appendix C - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
ID 1A	201.5	500
ID 2	197.0	500
ID 3	203.7	500
ID 4	264.6	500
ID 5	267.4	500

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
ID 1A	170.2	260
ID 2	200.0	260
ID 3	200.0	260
ID 4	181.3	260
ID 5	180.8	260

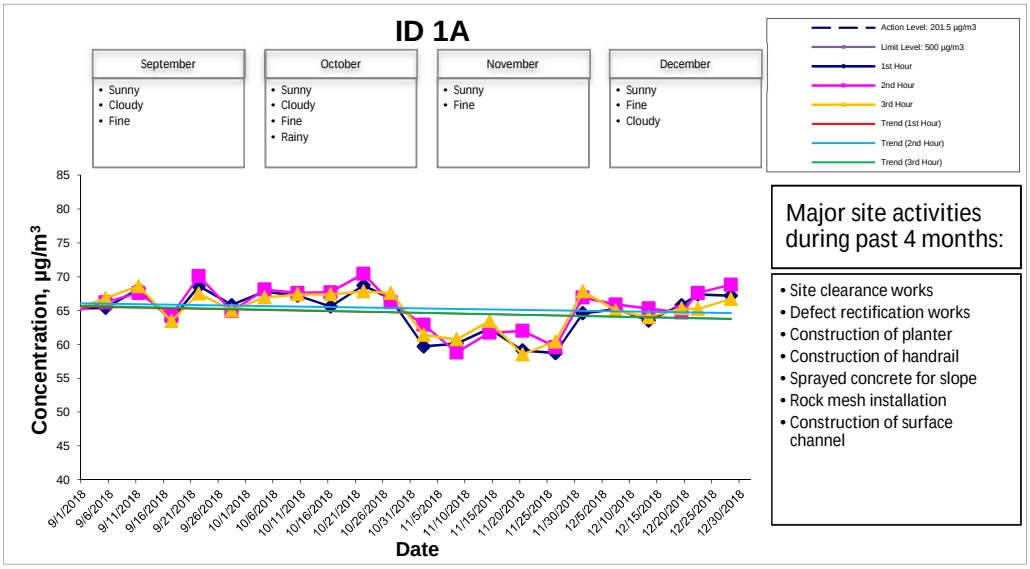
Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

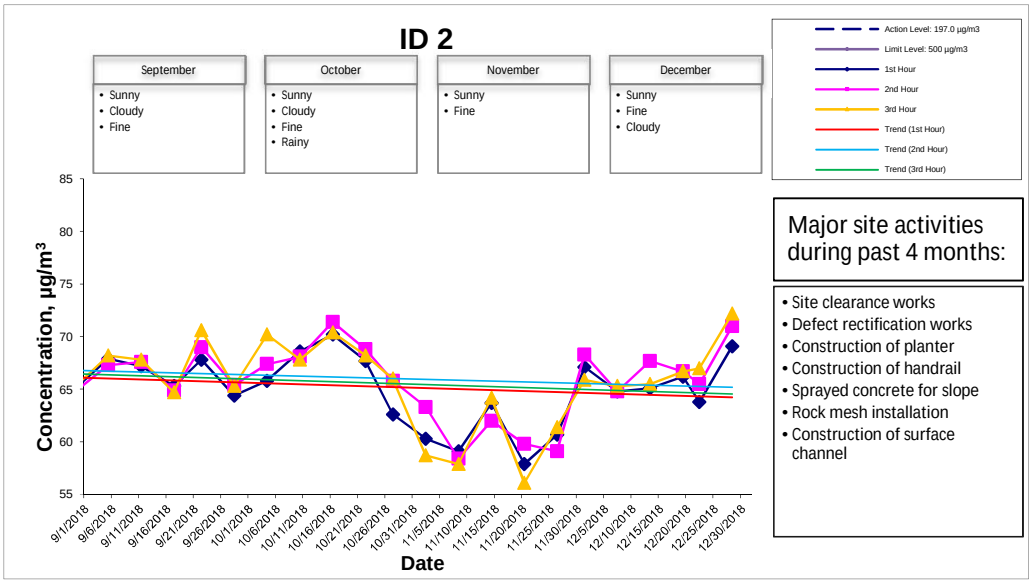
Location	Action Level	Limit Level
ID 1A	When one documented complaint is received from any one of the sensitive receivers	*65 / 70 dB(A)
ID 2		75 dB(A)
ID 3		75 dB(A)
ID 4		*65 / 70 dB(A)
ID 5		*65 / 70 dB(A)

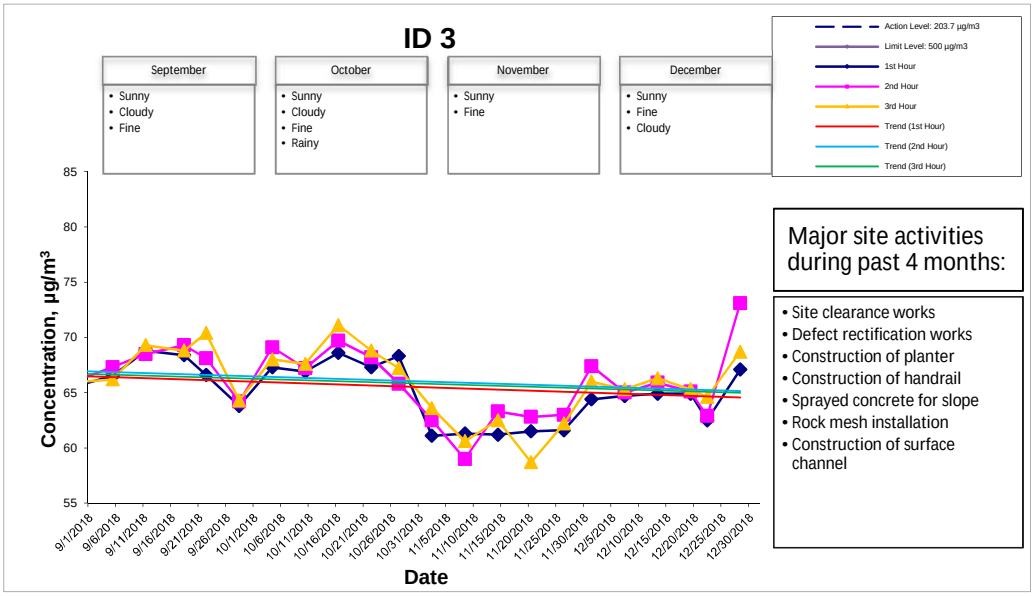
*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period

APPENDIX D

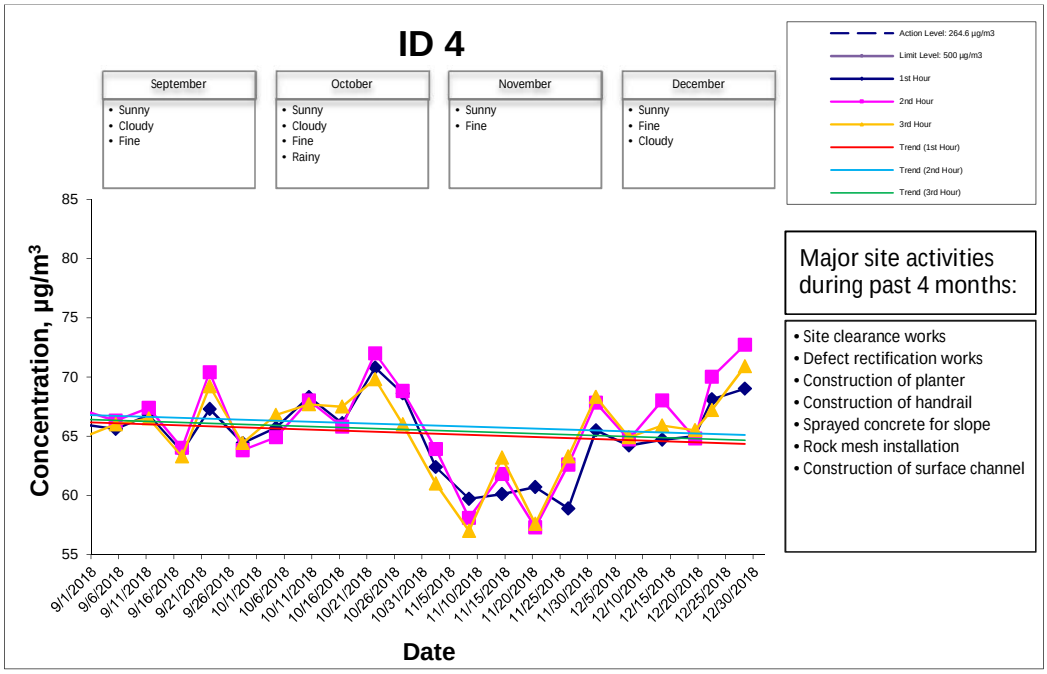
Graphical Presentation of Impact Air Quality Monitoring Results over the Past Four Months

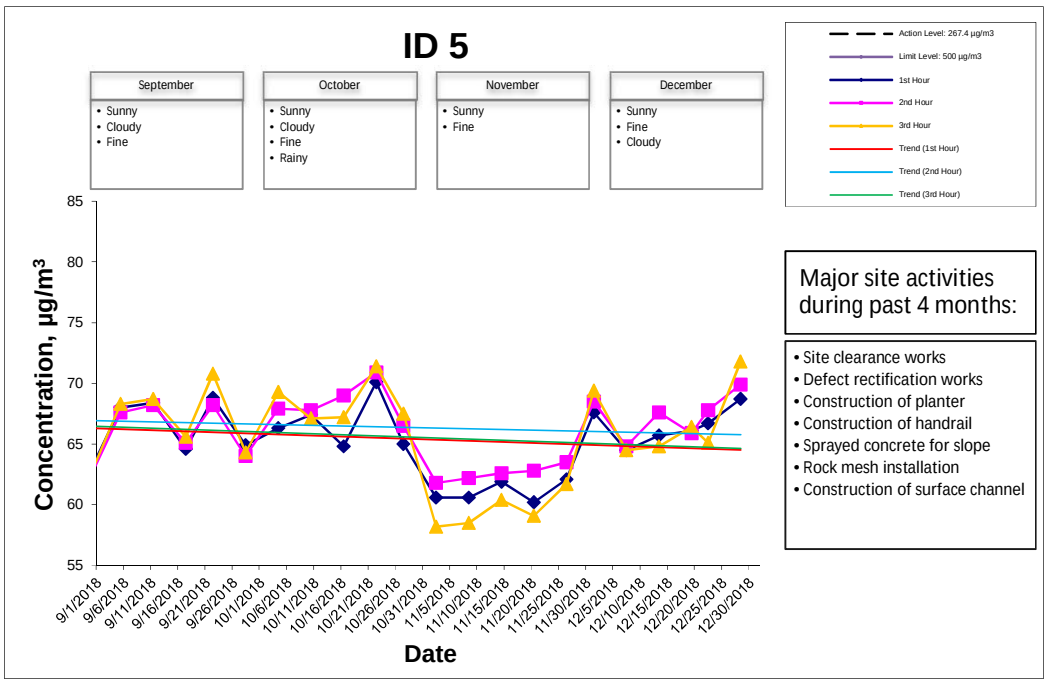




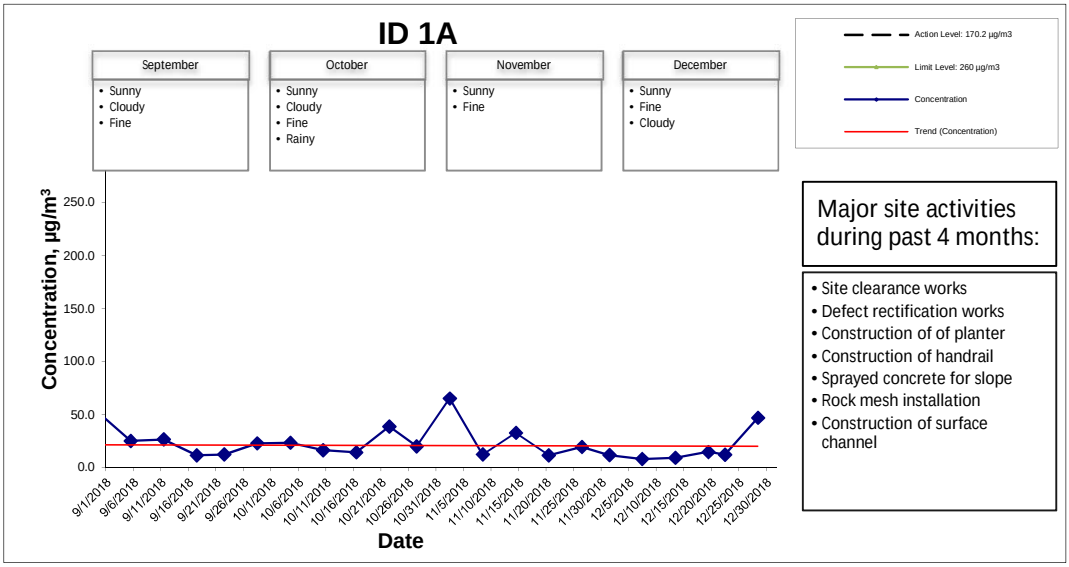


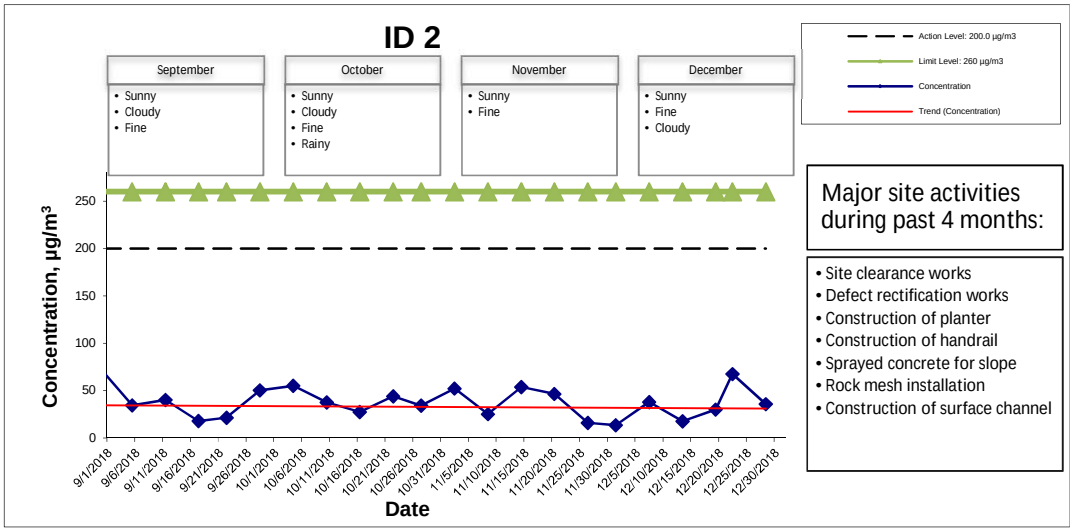
AECOM	**Development at Anderson Road - Site Formation and Associated Infrastructure Works**	SCALE	N.T.S.	DATE	Jan-19
		CHECK	FYW	DRAWN	DTTW
	Graphical Presentations of Impact 1-hour TSP Monitoring Results	JOB NO.	60043155	**APPENDIX No.** F	**Rev.** -

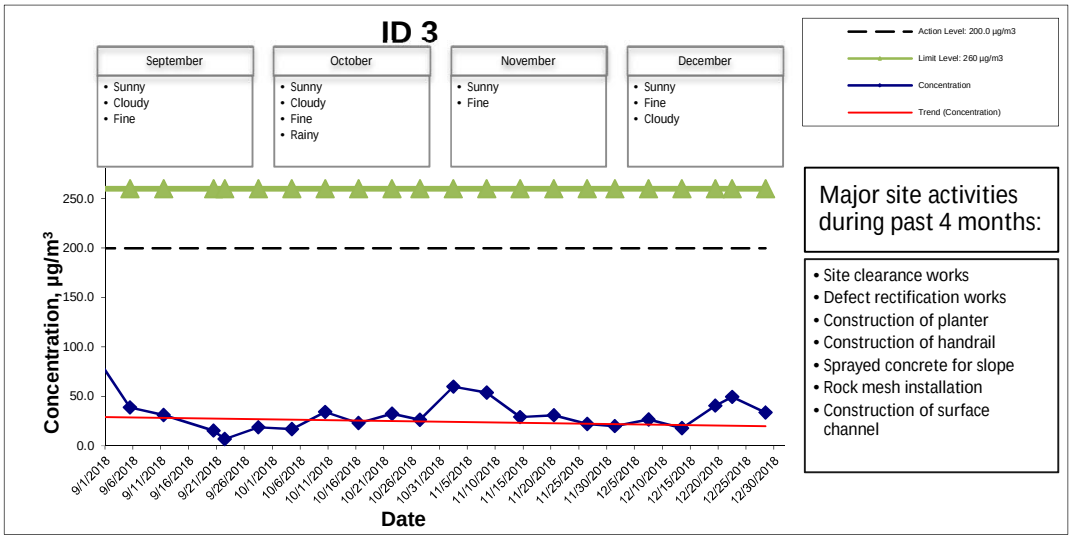




AECOM	**Development at Anderson Road - Site Formation and Associated Infrastructure Works** **Graphical Presentations of Impact 1-hour TSP Monitoring Results**	SCALE	N.T.S.	DATE	Jan-19
		CHECK	FYW	DRAWN	DTTW
		JOB NO.	60043155	**APPENDIX No.** F	**Rev.** -







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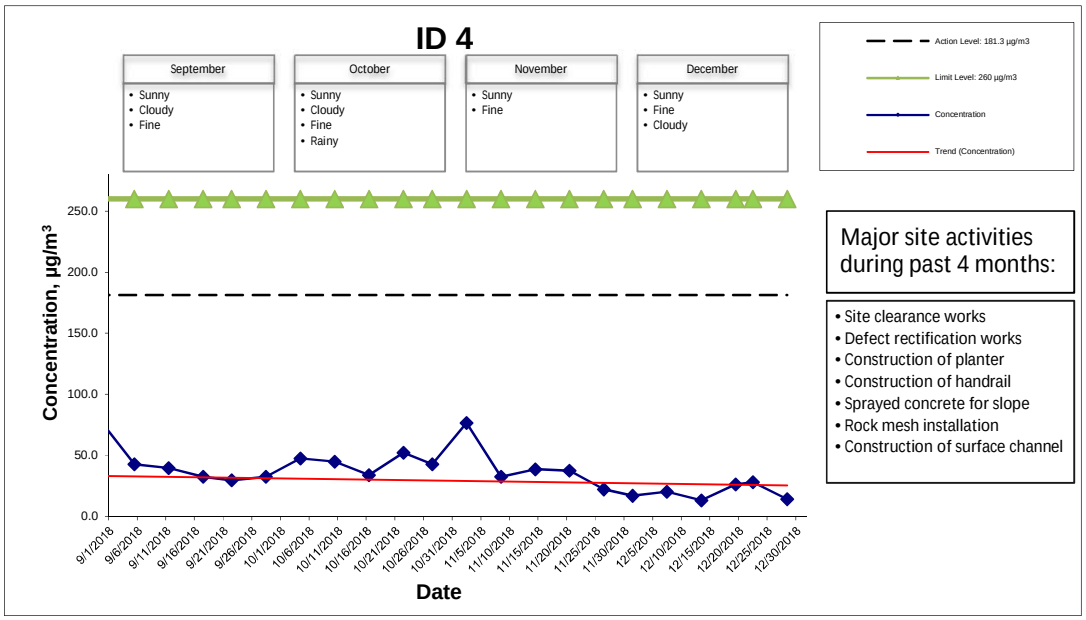
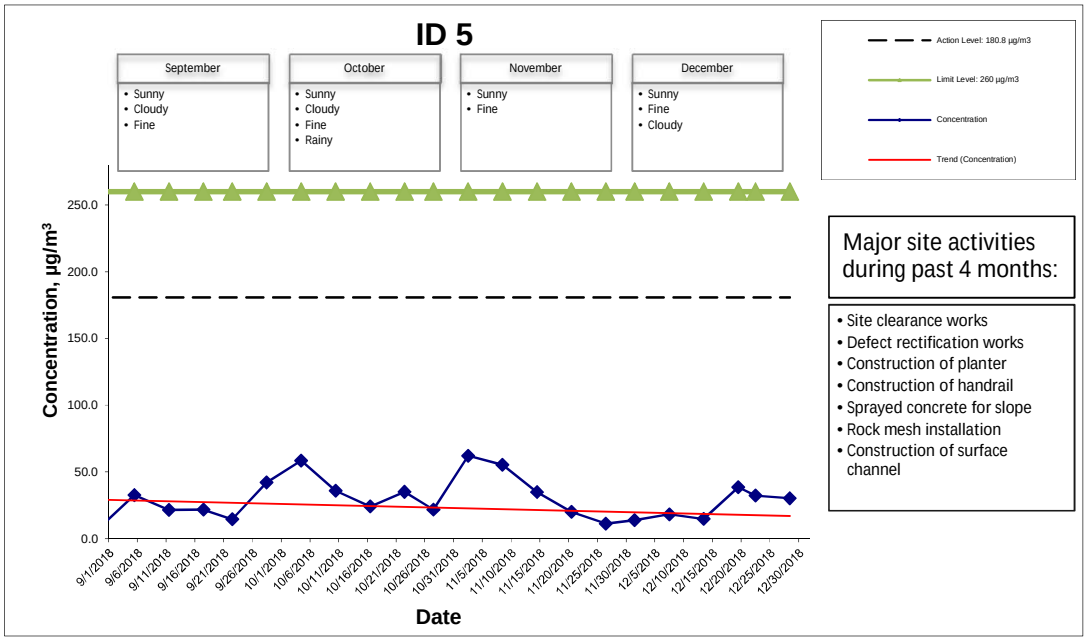
		JOB NO.	60043155	**APPENDIX No.** F	**Rev.** -





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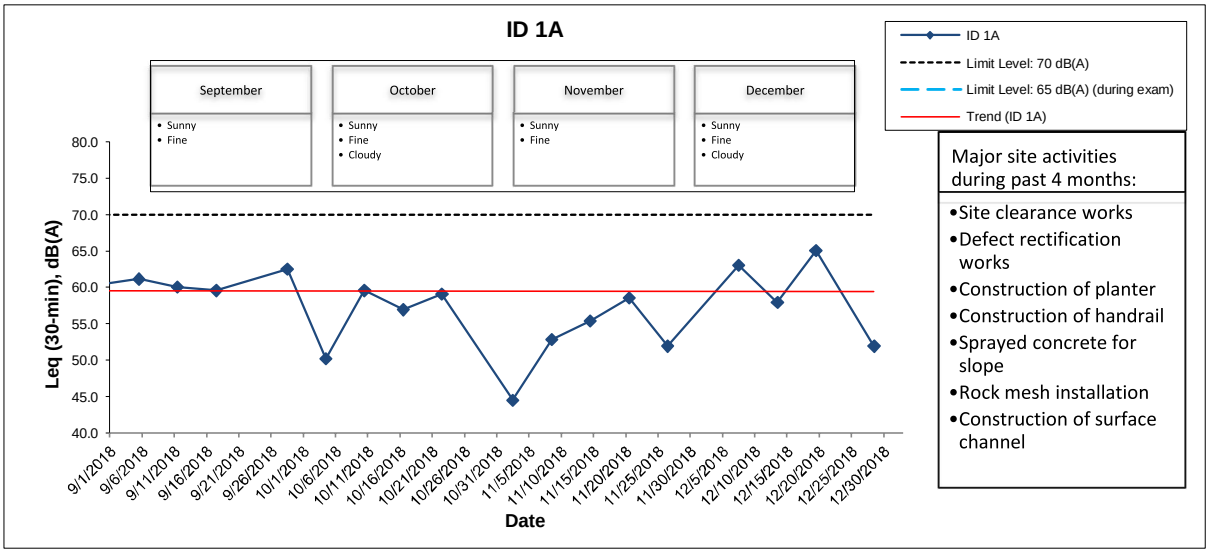
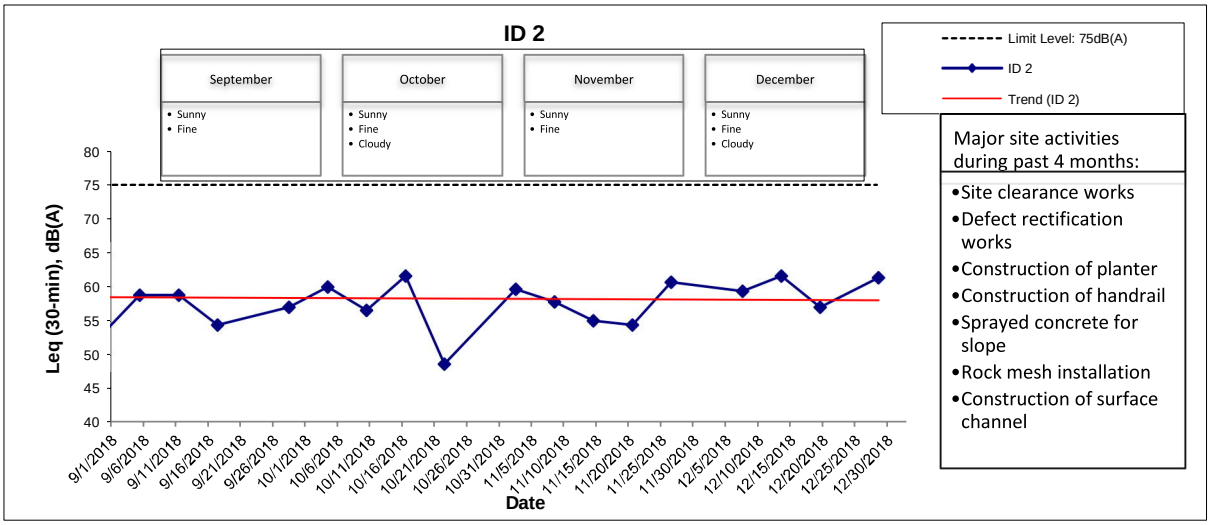
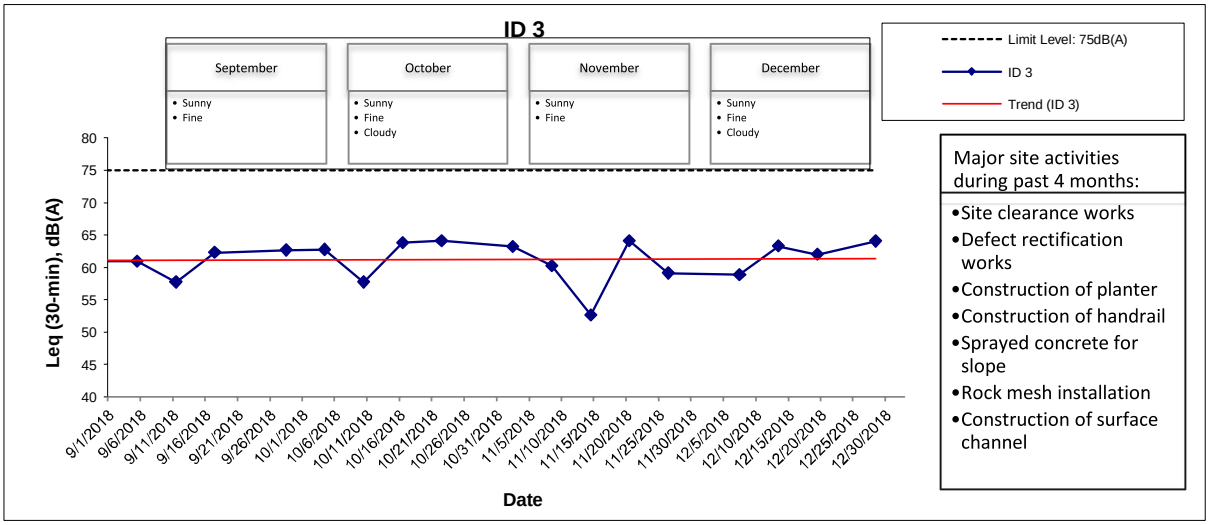
		CHECK	FYW	DRAWN	DTTW
	Graphical Presentations of Impact 24-hour TSP Monitoring Results	JOB NO.	60043155	**APPENDIX No.** F	**Rev.** -

APPENDIX E

Graphical Presentation of Noise Monitoring Results over the Past Four Months







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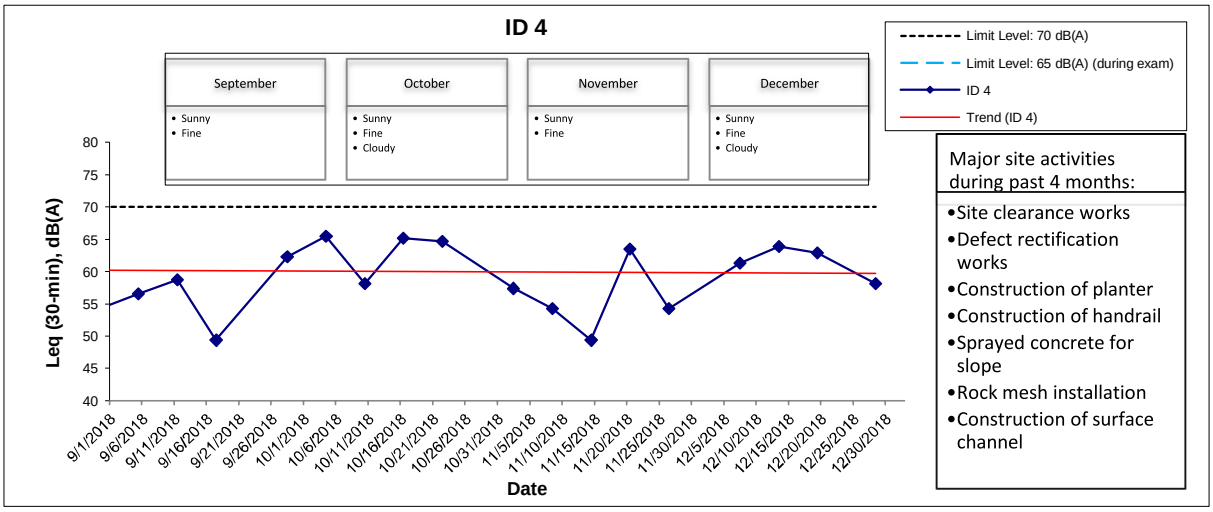

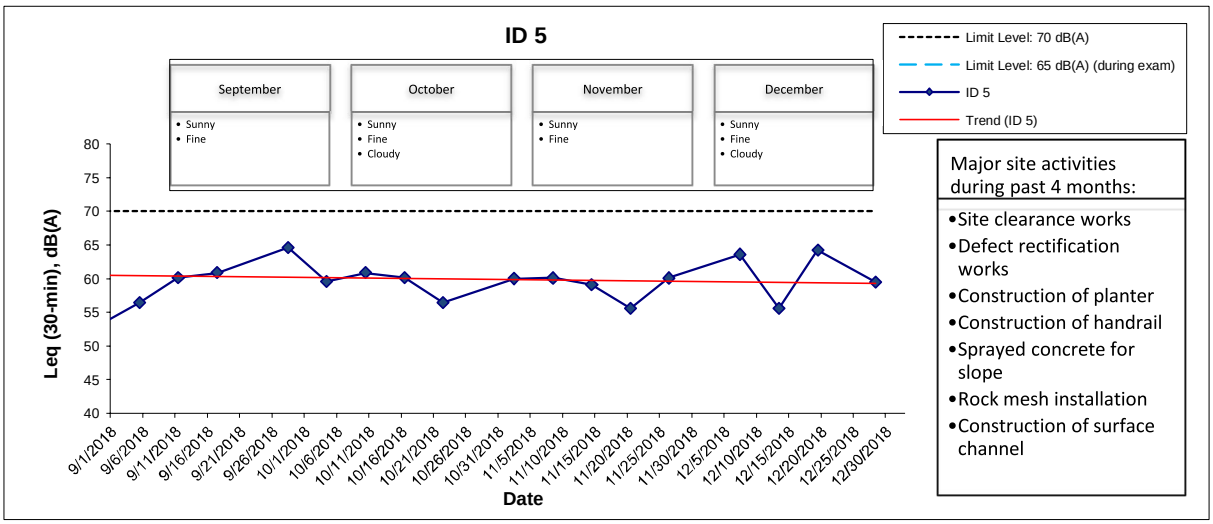

AECOM	Development at Anderson Road - Site Formation and Associated Infrastructure Works	SCALE	N.T.S.	DATE	Jan-19
		CHECK	FYW	DRAWN	DTTW
	Graphical Presentations of Noise Monitoring Results	JOB NO.	60043155	APPENDIX G	Rev -

APPENDIX F

Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions

Appendix F - Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions

Cumulative statistics on Exceedances

		Total no. recorded in this month	Total no. recorded since project commencement
1-Hour TSP	Action	-	-
	Limit	-	-
24-Hour TSP	Action	-	17
	Limit	-	1
Noise	Action	-	32
	Limit	-	1

Cumulative statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. recorded in this month	Total no. recorded since project commencement
Environmental complaints	-	-	-	-	75
Notification of summons	-	-	-	-	6
Successful Prosecutions	-	-	-	-	2