

JOB NO.: TCS00881/18 & TCS00944/18

SITE FORMATION AND ASSOCIATED INFRASTRUCTURAL WORKS FOR DEVELOPMENT OF COLUMBARIUM, CREMATORIUM AND RELATED FACILITIES AT SANDY RIDGE CEMETERY

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (No.24) – JULY 2020

PREPARED FOR HSIN CHONG TSUN YIP JOINT VENTURE & SANG HING CIVIL CONTRACTORS CO., LTD

Date Reference No. Prepared By Certified By

12 August 2020 TCS00881/18/600/R0449v2

Nicola Hon Tam Tak Wing (Environmental Consultant) (Environmental Team Leader)

Version	Date	Remarks	
1	7 August 2020	First Submission	
2	12 August 2020	Amended according to the IEC's comments on 11 August 2020	



Our Ref: TCS00881/18/300/L0453

Civil Engineering and Development Department

2/F, Civil Engineering and Development Building, 101 Princess Margaret Rd, Homantin, Kowloon

Attn: Mr. SHUM Ngai Hung, Steven

13 August 2020 By e-mail

Dear Sirs,

Re: Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.24) – July 2020

We confirmed that the captioned report has complied with the requirement set out in the EM&A Manual, we hereby certify the captioned report pursuant to Specific Condition 3.4 of the Environmental Permit No. FEP-01/534/2017/A and EP-534/2017/A.

Should you have any queries, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or Email: twtam@fordbusiness.com.

Yours sincerely, For and on Behalf of

Action-United Environmental Services & Consulting (AUES)

T. W. Tam Environmental Team Leader TW/nh

сс	ARUP (RE of Contract 1)	Mr. Steven Tang	by e-mail
	ARUP (RE of Contract 2)	Mr. Anthony Lau	by e-mail
	HCTY-JV (Contractor of Contract 1)	Mr. Ho Man To	by e-mail
	Sang Hing (Contractor of Contract 2)	Mr. Elvin Lam	by e-mail
	Acuity (IEC)	Mr. Jacky Leung	by e-mail







0

Unit C, 11/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon Hong Kong.



Tel. : (852) 2698 6833 Fax.: (852) 2698 9383

Our ref: CJO4068

Hsin Chong Tsun Yip Joint Venture (CV/2016/10)
Hsin Chong Centre
107-109 Wai Yip Street
Kwun Tong, Kowloon
Hong Kong

Attention: Mr. HO Man-to

13 August 2020

Dear Sir,

Site formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

Monthly Environmental Monitoring and Audit Report (No. 24) July 2020

I refer to the email of the ET regarding the captioned Monthly Report. We have no adverse comment on the Monthly Environmental Monitoring and Audit Report (No. 24) July 2020 (Version 2) dated 12 August 2020 with reference No. TCS00881/18/600/R0449v1 after verification.

Yours faithfully,

CH Leang

Ir Leung CH Jacky
Independent Environmental Checker

cc. CEDD-DPTL/Land Works – Mr. SHUM Steven
ARUP – Mr. LEE Davis
ET Leader – Mr. TAM



EXECUTIVE SUMMARY

ES.01. This is the 24th Monthly Environmental Monitoring and Audit (EM&A) Report summarizing the monitoring results and inspection findings under the Project for the period from 1st to 31st July 2020 (the Reporting Month).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.02. In the Reporting Month, the major construction works under the Project included Contract CV/2016/10 (hereinafter named "Contract 1") and Contract CV/2017/02 (hereinafter named "Contract 2"). Environmental monitoring activities under the EM&A programme in this Reporting Month are summarized in the following table.

Table ES-1 Summary of EM&A Programme in the Reporting Month

Issues	Environmental Monitoring	Monitorin	Total		
issues	Parameters / Inspection	CV/2016/10	CV/2017/02	Occasions	
Aim Ovolity	1-hour TSP	ACD 1	ASR-2	45	
Air Quality	24-hour TSP	ASR-1	ASR-3	15	
Construction	L _{eq (30min)} Daytime	CN-1	CN-3	16	
Noise	Leq (30min) Daytine	CN-2	CN-4	10	
Water	In-situ measurement and	M3	M1, M2 and M4	14	
Quality	Water sampling	1415	1111, 1112 and 1114	17	
Ecology	Sensitive Habitat	Transect within site		1	
Beology	Sonsitive Habitat	area of CV/2016/10	area of CV/2017/02	1	
Landscape	Site Inspection	Site area of	Site area of	1	
& Visual	Site inspection	CV/2016/10	CV/2017/02	1	
	Environmental Team (ET)				
	Regular Environmental Site			5	
Inspection	Inspection	Site area of	Site area of		
& Audit	Independent Environmental	CV/2016/10	CV/2017/02		
	Checker (IEC) Monthly			1	
	Environmental Site Audit				

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.03. In the Reporting Month, no exceedance of air quality, noise monitoring was recorded. However, for water quality monitoring, 7 Limit Level non-project related exceedances were recorded. The statistics of environmental exceedance, Notification of Exceedance (NOE) issued and investigation of exceedance are summarized in the following table.

Table ES-2 Breach of Action and Limit (A/L) Levels in the Reporting Month

Environmental	Monitoring	Action Limit		Event & Action		
Issues	Parameters	Level	Level	Investigation Findings	Corrective Actions	
Air Quality	1-hour TSP	0	0	-	-	
Air Quality	24-hour TSP	0	0	-	-	
Construction Noise	Leq _{30min} Daytime	0	0	-	-	
	DO	0	0	Not project related	-	
Water Quality	Turbidity	0	3	Not project related		
	SS	0	4	Not project related		

Note: NOE – Notification of Exceedance

ES.04. Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 7th July 2020. As advised by both Contractors, there were no vegetation clearance conducted within the site in the Reporting Month and therefore precautionary check for the presence of nesting birds was not required.



ES.05. Landscape and visual inspection at both Contracts were undertaken on 21st July 2020. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone (TPZ) and ensure no works is allowed within the TPZ.

ENVIRONMENTAL COMPLAINT

ES.06. No environmental complaint was recorded or received in this Reporting Month. The statistics of environmental complaint are summarized in the following table.

Table ES-3 Environmental Complaint Summaries in the Reporting Month

Reporting Month		Environmental Complaint Statistics			
		Frequency	Cumulative	Complaint Nature	
1 21 July 2020	Contract 1	0	0	NA	
1 – 31 July 2020	Contract 2	0	0	NA	

ES.07. In addition, no complaint and emergency event relating to violation of environmental legislation for illegal dumping and landfilling was received.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.08. No environmental summons or successful prosecution was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

Table ES-4 Environmental Summons Summaries in the Reporting Month

Reporting Month		Environmental Summons Statistics			
		Frequency	Cumulative	Summons Nature	
1 – 31 July 2020	Contract 1	0	0	NA	
1 – 31 July 2020	Contract 2	0	0	NA	

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Reporting Month		Environmental Prosecution Statistics			
		Frequency	Cumulative	Prosecution Nature	
1 21 July 2020	Contract 1	0	0	NA	
1 – 31 July 2020	Contract 2	0	0	NA	

REPORTING CHANGE

ES.09. No reporting change was made in the Reporting Month.

SITE INSPECTION

ES.010. In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the Resident Engineer (RE), ET and the Contractor of the Contract 1 on 2nd, 9th, 16th, 23rd and 30th July 2020. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 2nd, 9th, 16th, 23rd and 30th July 2020. IEC attended the both Contract joint site inspection on 16th July 2020. No non-compliance was noted during the site inspections.

FUTURE KEY ISSUES

- ES.011. During wet season, the Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- ES.012. Air quality mitigation measures such as wheel wash facilities, watering of haul roads, loose soil construction surface and covering of dusty materials with tarpaulin sheet should be implemented as far as practicable.



- ES.013. Construction noise mitigation measures such as use of movable noise barriers and Quality Powered Mechanical Equipment should be properly provided to reduce construction noise impact, where appropriate.
- ES.014. The Contractors should properly maintain the cleanliness and tidiness of the site. In addition, mosquito control should be performed to prevent mosquito breeding on site.



Table of Contents

1.	INTROD		1
	1.1 1.2	PROJECT BACKGROUND REPORT STRUCTURE	1 2
2.		T ORGANIZATION AND CONSTRUCTION PROGRESS	4
	2.1	CONSTRUCTION CONTRACT PACKAGING	4
	2.2 2.3	CONSTRUCTION PROGRESS SUMMARY OF ENVIRONMENTAL SUBMISSIONS	4 4
	2.4	SUMMARY OF SUBMISSION UNDER THE ENVIRONMENTAL PERMIT REQUIREMENTS	5
3.		RY OF IMPACT MONITORING REQUIREMENT	7
J.	3.1	GENERAL	7
	3.2	MONITORING PARAMETERS	7
	3.3	MONITORING LOCATIONS	7
	3.4	MONITORING FREQUENCY AND PERIOD	9
	3.5 3.6	MONITORING EQUIPMENT	9 12
	3.7	EQUIPMENT CALIBRATION DATA MANAGEMENT AND DATA QA/QC CONTROL	12
	3.8	DETERMINATION OF ACTION/LIMIT (A/L) LEVELS	12
4.	AIR QUA	LITY	14
••	4.1	MONITORING RESULTS	14
	4.2	AIR MONITORING EXCEEDANCE	14
5.	CONSTR	UCTION NOISE	15
	5.1	MONITORING RESULTS	15
	5.2	NOISE MONITORING EXCEEDANCE	15
6.		QUALITY	16
	6.1	MONITORING RESULTS	16
	6.2	WATER QUALITY MONITORING EXCEEDANCE	17
7.		SY MONITORING Province of the control of the contr	18
	7.1 7.2	REQUIREMENT METHODOLOGY	18 18
	7.3	ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 1)	19
	7.4	ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 2)	21
	7.5	MEASURE FOR PROTECTION OF NESTING BIRD	22
8.	LANDSC	APE AND VISUAL	23
	8.1	REQUIREMENT	23
	8.2	FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH	23
9.		MANAGEMENT	24
	9.1	GENERAL WASTE MANAGEMENT	24
	9.2	RECORDS OF WASTE QUANTITIES	24
10.		PECTION	25
	10.1 10.2	REQUIREMENT FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH	25 25
11.	ENVIROR	NMENTAL COMPLAINT AND NON-COMPLIANCE ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION	27 27
12.	IMPLEM 12.1	ENTATION STATUS OF MITIGATION MEASURES CENTER AL PEROLUPISMENTS	28 28
	12.1	GENERAL REQUIREMENTS TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH	28
	12.3	KEY ISSUES FOR THE COMING MONTH	29
13		ISIONS AND RECOMMENTATIONS	30
	13.1	Conclusions	30
	13.2	RECOMMENDATIONS	30



LIST OF TABLES

TABLE 2-1	STATUS OF ENVIRONMENTAL LICENSES AND PERMITS FOR CONTRACT 1
TABLE 2-2	STATUS OF ENVIRONMENTAL LICENSES AND PERMITS FOR CONTRACT 2
TABLE 2-3	STATUS OF SUBMISSION AS UNDER FEP FOR CONTRACT 1
TABLE 2-4	STATUS OF SUBMISSION AS UNDER FEP FOR CONTRACT 2
TABLE 3-1	SUMMARY OF EM&A REQUIREMENTS
TABLE 3-2	DESIGNATED AIR QUALITY MONITORING LOCATION UNDER THE PROJECT
TABLE 3-3	DESIGNATED CONSTRUCTION NOISE MONITORING LOCATION UNDER THE PROJECT
TABLE 3-4	DESIGNATED WATER QUALITY MONITORING STATIONS UNDER THE PROJECT
TABLE 3-5	AIR QUALITY MONITORING EQUIPMENT
TABLE 3-6	NOISE MONITORING EQUIPMENT
TABLE 3-7	WATER QUALITY MONITORING EQUIPMENT
TABLE 3-8	ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING
TABLE 3-9	ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
TABLE 3-10	ACTION AND LIMIT LEVELS FOR WATER QUALITY
TABLE 4-1	SUMMARY OF AIR QUALITY MONITORING RESULTS AT ASR-1 UNDER CONTRACT 1
TABLE 4-2	SUMMARY OF AIR QUALITY MONITORING RESULTS AT ASR-2 UNDER CONTRACT 2
TABLE 4-3	SUMMARY OF AIR QUALITY MONITORING RESULTS AT ASR-3A UNDER CONTRACT 2
TABLE 5-1	SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS UNDER CONTRACT 1
TABLE 5-2	SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS UNDER CONTRACT 2
TABLE 6-1	SUMMARY OF WATER QUALITY MONITORING RESULTS – M3 UNDER CONTRACT 1
TABLE 6-2	Summary of Water Quality Monitoring Results (M1, M2 and M4) under Contract 2 $$
TABLE 6-3	SUMMARY OF FIELD MEASUREMENTS FOR WATER QUALITY
TABLE 6-4	ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE RECORD
TABLE 6-5	SUMMARY OF INVESTIGATION OF WATER QUALITY EXCEEDANCE IN THE REPORTING MONTH
TABLE 7-1	ACTION AND LIMIT LEVELS FOR WET WOODLAND HABITATS MONITORING
TABLE 7-2	ACTION AND LIMIT LEVELS FOR NON-WET WOODLAND HABITATS MONITORING
Table 7-3	SCHEDULE OF FAUNAL SURVEYS IN EACH YEAR DURING CONSTRUCTION PHASE
Table 7-4	RESULT OF FAUNAL SURVEY UNDER CONTRACT 1
Table 7-5	RESULT OF FRESHWATER COMMUNITIES SURVEY UNDER CONTRACT 1
Table 7-6	RESULT OF FAUNAL SURVEY UNDER CONTRACT 2
Table 7-7	RESULT OF FRESHWATER COMMUNITIES SURVEY UNDER CONTRACT 2
TABLE 8-1	LANDSCAPE & VISUAL INSPECTION FINDING FOR CONTRACT 1
TABLE 8-2	LANDSCAPE & VISUAL INSPECTION FINDING FOR CONTRACT 2
Table 9-1	SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
TABLE 9-2	SUMMARY OF QUANTITIES OF C&D WASTES
TABLE 10-1	SITE OBSERVATIONS FOR THE WORKS OF CONTRACT 1
TABLE 10-2	SITE OBSERVATIONS FOR THE WORKS OF CONTRACT 2
TABLE 11-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 11-2	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 11-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 12-1	ENVIRONMENTAL MITIGATION MEASURES



LIST OF APPENDICES

APPENDIX A	LAYOUT PLAN OF THE PROJECT
APPENDIX B	ORGANIZATION STRUCTURE AND CONTACT DETAILS OF RELEVANT PARTIES
APPENDIX C	THREE MONTHS ROLLING PROGRAMME
APPENDIX D	DESIGNATED MONITORING LOCATIONS
APPENDIX E	CALIBRATION CERTIFICATES OF MONITORING EQUIPMENT AND LABORATORY CERTIFICATE
APPENDIX F	EVENT AND ACTION PLAN OF AIR QUALITY, NOISE AND WATER QUALITY
APPENDIX G	MONITORING SCHEDULES OF THE REPORTING MONTH AND COMING MONTH
APPENDIX H	MONITORING DATA OF 24-HOUR TSP AIR QUALITY, NOISE AND WATER QUALITY
APPENDIX I	GRAPHICAL PLOTS OF AIR QUALITY, NOISE AND WATER QUALITY
APPENDIX J	METEOROLOGICAL DATA OF THE REPORTING MONTH
APPENDIX K	ECOLOGICAL SURVEY REPORT
APPENDIX L	LANDSCAPE & VISUAL INSPECTION CHECKLIST
APPENDIX M	MONTHLY SUMMARY WASTE FLOW TABLE
APPENDIX N	IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)
APPENDIX O	IMPLEMENTATION OF WATER QUALITY MITIGATION MEASURES



1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (CEDD) is the Project Proponent for the Project "Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery". The Project is a Designated Project to be implemented under Environmental Permit No. EP-534/2017/A and FEP-01/534/2017/A. The layout plan of the Project is shown in Appendix A. Major works to be executed under the Project shall include to the following:

A Designated Works under EP-534/2017/A

- (i) Site formation of about 8 hectares of land and associated drainage, sewerage and landscape works for development of Columbarium and Crematorium facilities at the Sandy Ridge Cemetery;
- (ii) Construction of a new road (about 600m) including a section of viaduct connecting the platform for Crematorium and Man Kam To Road and the pick-up/drop-off point at Man Kam To Road;
- (iii) Widening of about 900m of the existing Sha Ling Road;
- (iv) Widening of about 1.4km of the existing Lin Ma Hang Road; and
- (v) Improvement works to the existing barging point at Siu Lam

Non-Designated Works

- (i) Construction of a sewage detention tank complete with odour and septicity control mechanism;
- (ii) Construction of noise barriers along Sha Ling Road;
- (iii) Construction of a new Refuse Collection Point (RCP) near the junction between Man Kam To Road and Sha Ling Road;
- (iv) Landscaping works (including both hard and soft landscape works);
- (v) Associated tree felling, transplanting and compensatory planting works;
- (vi) Associated street lighting, street furniture and road marking, etc.; and
- (vii) Other works which are specified in PS of the Contract.
- 1.1.2 To facilitate the Project management, the Project works were separated into three Contracts to be executed which are described in below sub-sections.
- 1.1.3 Contract No. CV/2016/10 Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery (hereinafter named "Contract 1"):-
 - Site formation of about 1.77 ha of land for the proposed pick-up and drop-off area for shuttle bus operation;
 - Upgrading of a section of 900m existing Sha Ling Road from 3m wide carriageway to 7.3m wide carriageway with footpath at both sides;
 - Construction of one EVA with a total length of about 160m;
 - Construction of noise barriers along Sha Ling Road;
 - Modification of junction between Man Kam To Road and Sha Ling Road;
 - Construction of a new pick up / drop off point at Man Kam To Road;
 - Relocation and construction of a new refuse collection point near junction between Man Kam To Road and Sha Ling Road;
 - Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures;
 - Associated drainage, sewerage and waterworks along Sha Ling Road; and
 - Associated landscaping works.
- 1.1.4 Contract No. CV/2017/02 Infrastructural Works at Man Kam To Road and Lin Ma Hang Road for Development of Columbarium at Sandy Ridge Cemetery (hereinafter named "Contract 2"):-
 - Construction of a new road connecting Columbarium site to Crematorium site;
 - Construction of one EVA with a total length of about 300m;
 - Widening of a section of 1.4 km long Lin Ma Hang Road (between Man Kam To Road and Ping Yuen River) from 6m wide carriageway to 7.3m with 2m width footpath on both sides;
 - Provision of a pair of lay-by at Lin Ma Hang Road;
 - Construction of a new vehicular access connecting the Sheung Shui Landmark North PTI and Lung Sum Avenue;



- Construction of covered walkway along Fanling Station Road;
- Removal of planters and central divider along Fanling Station Road and San Wan Road;
- Associated drainage, sewerage, waterworks and utility works along Man Kam To Road and Lin Ma Hang Road;
- Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures; and
- Associated landscaping works.
- 1.1.5 CEDD Contract No. (to be confirmed):-
 - Site Formation for the platform of the columbarium site;
 - Construction of two 2 at-grade access roads;
 - Construction of road junction between Man Kam To Road and the new access road;
 - Associated drainage, sewerage and waterworks along the two new access roads;
 - Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures; and
 - Associated landscaping works
- 1.1.6 Hsin Chong Tsun Yip Joint Venture (hereafter referred as "HCTYJV") has been awarded Contract 1 on 5 December 2017. According to the Contract requirement, HCTYJV shall take over the responsibility for part of the Environmental Permit No. EP-534/2017 for ease of management, therefore application for Further Environmental Permit was submitted by HCTYJV to EPD on 26 January 2018 and Further Environmental Permit No. FEP-01/534/2017 was granted to HCTYJV by EPD on 23 February 2018. Furthermore, EPD issued Environmental Permit No. FEP-01/534/2017/A on 24 December 2018.
- 1.1.7 Sang Hing Civil Contractors Company Limited (hereinafter referred as "Sang Hing") was awarded Contract 2 on 23 May 2018. The Contract Works is a Designated Project as under Environmental Permit (EP) No. EP-534/2017. Furthermore, EPD issued Environmental Permit No. EP-534/2017/A on 24 December 2018.
- 1.1.8 Action-United Environmental Services & Consulting (AUES) has been commissioned by the Contractors as an Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme in accordance with the approved EM&A Manual as well as the associated duties. As part of the EM&A programme, baseline monitoring to determine the ambient environmental conditions was completed before construction work commencement. The Baseline Monitoring Report (air, noise and water) certified by ET Leader (ETL) and verified by Independent Environmental Checker (IEC) was submitted to Environmental Protection Department (EPD) and it was approved by EPD on 25 October 2018.
- 1.1.9 Major construction work of Contract 1 and Contract 2 was commenced on 16 August 2018 and 5 November 2018 respectively.
- 1.1.10 This is the 24th Monthly EM&A Report summarizing the monitoring results and inspection findings for the period from 1st to 31st July 2020.

1.2 REPORT STRUCTURE

1.2.1 The Monthly EM&A Report is structured into the following sections:-

- **Section 1** *Introduction*
- **Section 2** *Project Organization and Construction Progress*
- **Section 3** *Summary of Monitoring Requirements*
- **Section 4** *Air Quality Monitoring Results*
- **Section 5** *Noise Monitoring Results*
- **Section 6** Water Quality Monitoring Results
- **Section 7** *Ecology Monitoring Results*
- **Section 8** *Landscape & Visual*
- **Section 9** *Waste Management*
- **Section 10** *Site Inspections*



Section 11 Environmental Complaints and Non-Compliance
 Section 12 Implementation Status of Mitigation Measures
 Section 13 Conclusions and Recommendation



2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 CONSTRUCTION CONTRACT PACKAGING

- 2.1.1 To facilitate the project management and implementation, the Project was divided by the following contracts:
 - Contract 1 (Contract No. CV/2016/10)
 - Contract 2 (Contract No. CV/2017/02)
 - Contract 3 (Contract No. TBA)
- 2.1.2 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Appendix B*.

2.2 CONSTRUCTION PROGRESS

2.2.1 The three-month rolling construction programme for Contract 1 and Contract 2 are enclosed in *Appendix C*. Construction activities of the Contract 1 and Contract 2 undertaken in the Reporting Month are presented below.

Contract 1 (CV/2016/10)

- General site housekeeping
- Bulk Excavation
- Construction of Cut Slope, installation of soil nailing and construction of surface channel and planter wall
- Construction of Fill Slope and surface channel
- Construction of Pick-up and Drop-off Point near Man Kam To Road
- Construction of storm/ sewer drain

Contract 2 (CV/2017/02)

- Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road between CH480-505 Southbound & CH1265-1265 Northbound.
- Man Kam To Road DN800 DI Sewerage Pipe FM4.19-FM4.22(100m)
- Filling Works and drainage works for slope FS18 (Part A1)
- Soil Nail Works at Lin Ma Hang Road Slope C225 & C231
- Backfilling of Retaining Wall 13
- Piling Works for Retaining Wall 14

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project in this Reporting Month is presented in *Tables 2-1 and 2-2*.

Table 2-1 Status of Environmental Licenses and Permits for Contract 1

Item	Description	License/ Permit ref no.	License/ Permit Status
1	Air Pollution Control	Ref. no. 428909	Valid
	(Construction Dust) Regulation	Acknowledged by EPD on 20/12/2017	
2	Chemical waste Producer	WPN: 5231-641-H3937-01	Valid
	Registration	Issued by EPD on 27/03/2018	
3	Water Pollution Control	License no. WT00030795-2018	Valid
	Ordinance	Issued date: 9/5/2018	
		Expire Date: 31/5/2023	
4	Billing Account for Disposal of	Account no.: 7029769	Valid
	Construction Waste		
5	Construction Noise Permit	GW-RN0222-20 (expired on 30 Sep	Valid
		2020)	



Table 2-2 Status of Environmental Licenses and Permits for Contract 2

Item	Description	License/ Peri	License/ Permit Status	
1	Air Pollution Control (Construction Dust) Regulation	Ref. no. 440406 Acknowledged by EPD on 14/12/2018	Man Kam To Road (near Sha Ling Road to Kong Nga Po Road	Valid
		Ref. no. 440405 Acknowledged by EPD on 14/12/2018		Valid
		Ref. no. 440404 Acknowledged by EPD on 14/12/2018	Sa Ling Road (Sandy Ridge Cemetery)	Valid
		Ref. no. 440401 Acknowledged by EPD on 14/12/2018	Lin Ma Hang Road (San Uk Ling – Muk Wu Nga Yiu)	Valid
		Ref. no. 440402 Acknowledged by EPD on 14/12/2018	Lung Sum Avenue (near Landmark North)	Valid
2	Chemical waste Producer Registration	WPN: 5213-641-S4151-01 Issued by EPD on 04/02/20		Valid
3	Water Pollution Control Ordinance	License no: WT00032936-2018 Issued date: 16/01/2019 Expire Date: 31/01/2024	Man Kam To Road & Lin Ma Hang Road, Man Kam To	Valid
		License no: WT00033335-2019 Issued date: 29/03/2019 Expire Date: 31/03/2024	Columbarium at Sandy Ridge Cemetery	Valid
		License no: WT00034717-2019 Issued date: 9/10/2019 Expire Date: 31/10/2024	Fanling Station Road	Valid
4	Billing Account for Disposal of Construction Waste	Account no.: 7031098	•	Valid

2.4 SUMMARY OF SUBMISSION UNDER THE ENVIRONMENTAL PERMIT REQUIREMENTS

2.4.1 *Tables 2-3 to 2-4* summarized the submission status under the EP and/or FEP stipulation in the Reporting Month.

Table 2-3 Status of Submission as under FEP

Item	EP and / or FEP Stipulation	Description	Status
1	Condition 2.10 of FEP	Management organization of : i) the main	Submitted on 11 April 2018
		construction companies; ii) ET; and iii)	
		IEC and the supporting team	
2	Condition 2.11 of FEP	i) Detailed phasing programme of all	Submitted on 12 April 2018
		construction works; and ii) Location plan	
		of all construction works	
3	Condition 2.12 of FEP	Contamination Assessment Plan (CAP)	Approved by EPD on 27 May
			2019
4	Condition 2.13 of FEP	Grassland Reinstatement Plan	Re-submitted on 31 May 2019
5	Condition 2.14 of FEP	Vegetation Survey Report for Contract 1	Approved by EPD on 12
			October 2018
6	Condition 2.15 of FEP	Vegetation Transplantation Proposal	Approved by EPD on 12
		Contract 1	October 2018
7	Condition 2.17 of FEP	Woodland Compensation Plan (Rev.05)	Approved by EPD on 30 Jun
			2020



Item	EP and / or FEP Stipulation	Description	Status
8	Condition 2.18 of FEP	Monitoring and Survey Plan for	Approved by EPD on 22 Oct
		Golden-headed Cisticola for Contract 1	2019
		(Rev.02)	
9	Condition 2.20 of FEP	Landscape & Visual Mitigation and Tree	Re-submitted on 17 Apr 2020
		Preservation Plan(s) Contract 1 (Rev.04)	
10	Condition 2.22 of FEP	Traffic Noise Mitigation Plan Contract 1	Re-submitted on 10 Nov 2019
		(Rev. 4)	
11	Condition 3.3 of the FEP	Baseline Monitoring Report (Air, Noise	Approved by EPD on 25
		and Water)	October 2018
12	Condition 4.2 of the FEP	The Contract Internet website	Internet website address has
			notified EPD on 15 Jun 2018

Table 2-4 Status of Submission as under EP

Item	EP and / or FEP Stipulation	Description	Status
1a	Condition 2.10 of EP	Management organization of: i) the	Submitted on 24 September 2018
		main construction companies; ii) ET;	_
		and iii) IEC and the supporting team	
2a	Condition 2.11 of EP	i) Detailed phasing programme of all	Submitted on 26 September 2018
		construction works; and ii) Location	
		plan of all construction works	
3	Condition 2.13 of EP	Contamination Assessment Plan (CAP)	Approved by EPD on 27 May 2019
4	Condition 2.14 of EP	Grassland Reinstatement Plan	Re-submitted on 31 May 2019
5	Condition 2.15 of EP and	Vegetation Survey Report Contract 2	Re-submitted on 30 Oct 2019
6	Condition 2.16 of EP	Vegetation Transplantation Proposal	Re-submitted on 30 Oct 2019
		Contract 2	
7	Condition 2.18 of EP	Woodland Compensation Plan (Rev.05)	Approved by EPD on 30 Jun 2020
8	Condition 2.19 of EP	Monitoring and Survey Plan for	Re-submitted on 30 Oct 2019
		Golden-headed Cisticola Contract 2	
9	Condition 2.22 of EP	Landscape & Visual Mitigation and	Re-submitted on 25 Mar 2019
		Tree Preservation Plan(s) Contract 2	
10	Condition 2.24 of EP	Traffic Noise Mitigation Plan Contract	Re-submitted on 12 Aug 2019
		2	
11	Condition 3.3 of the EP	Baseline Monitoring Report (Air, Noise	Approved by EPD on 25 October
		and Water)	2018
12	Condition 4.2 of the EP	The Contract Internet website	Internet website address has
			notified EPD on 15 June 2018



3. SUMMARY OF IMPACT MONITORING REQUIREMENT

3.1 GENERAL

- 3.1.1 The EM&A requirements are set out in the Approved EM&A Manual. Environmental issues such as air quality, construction noise, water quality and ecology were identified as the key issues during the construction phase of the Project.
- 3.1.2 A summary of construction phase EM&A requirements are presented in the sub-sections below.

3.2 MONITORING PARAMETERS

- 3.2.1 The EM&A impact monitoring shall cover the following environmental aspect:
 - Air quality;
 - Construction noise;
 - Water quality;
 - Ecology; and
 - Landscape and visual
- 3.2.2 A summary of the monitoring parameters is presented in *Table 3-1* below

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters	
Air Quality	1-hour TSP;24-hour TSP	
Noise • Leq _(30min) during normal working hours.; and • Leq _(15min) during the construction works undertaken in Restricted Hours		
Water Quality	In-situ Measurements Dissolved Oxygen Concentration (mg/L) & Saturation (%); Temperature (°C); Turbidity (NTU); Salinity (ppm) pH unit; Water depth (m); and Stream Flow Velocity (m/sec). Laboratory Analysis Suspended Solids (mg/L)	
Ecology	Ecologically sensitive habitats (wetland habitats and non-wetland habitats)	

3.3 MONITORING LOCATIONS

- 3.3.1 According to the Approved EM&A Manual of the Project *Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery*, the designated monitoring locations for air quality, noise, water quality and ecology under the monitoring programme, is shown in *Appendix D*.
- 3.3.2 Since the Project was divided into three Works Contracts and all Contracts will be commenced at different time, the construction phase impact monitoring will only be performed at the Contract-related monitoring stations upon commencement of each Contract Works.

Air Quality

3.3.3 There were three (3) designated air quality monitoring stations recommended in the Approved EM&A Manual Section 5.6.1.1. There was proposed relocation of air quality monitoring location ASR-3 in October 2018 since the landlord refused to set up the HVS at his premises and nearby Conservation Area due to noise nuisance and Muk Wu Nga Yiu House No. 2A was proposed as alternative location ASR-3a. The proposal dated on 9 November 2018 which verified by IEC was submitted to EPD for approval. Based on rationale in Section 3.3.2, the Contract-related air quality monitoring location for construction phase were summarized in *Table 3-2* and illustrated in *Appendix D*.



Table 3-2 Designated Air Quality Monitoring Location under the Project

Location ID	Description in EM&A Manual	Location	Related Work Contract
ASR-1	Village House along Man Kam To	Sha Ling Village House No.6	Contract 1
	Road		
ASR-2	Village House at San Uk Ling	San Uk Ling Village House No.1	Contract 2
ASR-3	Village House at Muk Wu Nga Yiu	Muk Wu Nga Yiu House No.28	Contract 2
ASR-3a (#)	Village House at Muk Wu Nga Yiu	Muk Wu Nga Yiu House No.2A	Contract 2

Remark: (#)

There was proposed relocation of air quality monitoring location ASR-3 in October 2018. The proposal dated on 9 November 2018 after verified by IEC was submitted to EPD for approval.

- 3.3.4 If the designated monitoring location is required to relocate, alternative monitoring location shall agree with IEC and seek for EPD approval which shall meet the following criteria:
 - i) Be at the site boundary or such locations close to the major dust emission source;
 - ii) Close to the sensitive receptors;
 - iii) Take into account the prevailing meteorological conditions;
 - iv) For monitoring location located in the vicinity of the ASRs, care shall be taken to cause minimal disturbance to the occupants during monitoring.
 - v) When positioning the HVS, the following points shall be noted:
 - a. a horizontal platform with appropriate support to secure the samples against gusty wind shall be provided;
 - b. no two samplers shall be placed less than 2m apart;
 - c. the distance between the HVS and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the HVS;
 - d. a minimum of 2 m separation from walls, parapets and penthouses is required for HVS at the rooftop;
 - e. a minimum of 2 m separation from any supporting structure, measures horizontally is required;
 - f. no furnace or incinerator flue is nearby;
 - g. airflow around the sampler is unrestricted;
 - h. the HVS is more than 20 m from the dripline;
 - i. any wire fence and gate to protect the HVS, shall not cause any obstruction during monitoring;
 - j. permission must be obtained to set up the HVS and to obtain access to the monitoring stations; and
 - k. a secured supply of electricity is needed to operate the HVS.

Construction Noise

3.3.5 There were four (4) designated noise monitoring locations recommended in the Approved EM&A Manual Section 6.5.1.1. Based on rationale in Section 3.3.2, the Contract-related noise quality monitoring location for construction phase were summarized in *Table 3-3* and illustrated in *Appendix D*.

Table 3-3 Designated Construction Noise Monitoring Location under the Project

Locatio n ID	Description in EM&A Manual	Location	Related Work Contract
CN-1	Village house to the west of	Village house to the west of Sha Ling	Contract 1
	Sha Ling Road	Road (free field condition)	
CN-2	Village house to the north of	Sha Ling Village House No. 25 (free	Contract 1
	Man Kam To Road	field condition)	& 3
CN-3	Village house near San Uk	San Uk Ling Village House No. 18 (free	Contract 2
	Ling	field condition)	
CN-4	Village house of Muk Wu	Muk Wu Village House No. 267 (1m	Contract 2
		façade from the building)	



Water Quality

3.3.6 There were four (4) water quality monitoring locations recommended in the Approved EM&A Manual Section 7.6.1.2. The locations and coordinates of water quality monitoring were listed in *Table 3-4*. Based on rationale in Section 3.3.2, the Contract-related water quality monitoring location for construction phase were summarized in *Table 3-4* and illustrated in *Appendix D*.

Table 3-4 Designated Water Quality Monitoring Stations under the Project

Proposed	Co-ordinates		Deganintien	Related Work
Location ID	North	East	Description	Contract
M1	843 431	831 308	Midstream of Nam Hang Stream	Contract 2
M2	843 840	831 101	Downstream of Nam Hang Stream	Contract 2
M3	843 509	830 040	Wetland in the Conservation Area near Yuen Leng Chai	Contract 1
M4	843 997	831 783	Watercourse across Lin Ma Hang Road, running from east of San Uk Ling to Man Kam To Boundary Control Point	Contract 2

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 The requirements of impact monitoring were stipulated in *Sections 5.8.1.1*, *6.7.1.1* and *7.8.1.4* of the approved *EM&A Manual* and presented as follows.

Air Quality Monitoring

- 3.4.2 Monitoring frequency for air quality impact monitoring is as follows:
 - 1-Hour TSP 3 sets of 1-hour TSP monitoring shall be carried out once every six days during construction periods
 - 24-Hour TSP 24-hour TSP monitoring shall be carried out every six days during construction periods

Noise Monitoring

3.4.3 Noise impact monitoring shall be carried out once per week during construction periods. The noise measurement for the time period between 0700 and 1900 hours shall be measured in terms of L_{eq} (30 minutes) or 6 sets of L_{eq} (5mins).

Water Quality Monitoring

3.4.4 The monitoring frequency shall be 3 days per week during construction phase and the interval between two sets of monitoring shall not be less than 36 hours.

3.5 MONITORING EQUIPMENT

3.5.1 The monitoring equipment using for the EM&A program as proposed by the ET shall be verified by the IEC.

Air Quality Monitoring

- 3.5.2 The 24-hour and 1-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.* If ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to IEC for approval.
- 3.5.3 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.
- 3.5.4 All equipment used by ET for air quality monitoring is listed in *Table 3-5*.

Table 3-5 Air Quality Monitoring Equipment

Equipment	Model	
24-hour TSP		
High Volume Air Sampler (HVAS)	TISCH High Volume Air Sampler, HVS Model TE-5170	
Calibration Kit	TISCH Model TE-5025A	
1-Hour TSP		
Portable Dust Meter	Sibata LD-3 Laser Dust monitor Particle Mass Profiler &	



Equipment	Model
	Counter

Wind Data Monitoring Equipment

- 3.5.5 According to the approved EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET and agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:
 - 1) The wind sensors should be installed 10 m above ground so that they are clear of obstructions or turbulence caused by buildings.
 - 2) The wind data should be captured by a data logger. The data shall be downloaded for analysis at least once a month.
 - 3) The wind data monitoring equipment should be re-calibrated at least once every six months.
 - 4) Wind direction should be divided into 16 sectors of 22.5 degrees each.
- 3.5.6 ET has liaised with the premises owners/ landlords to grant the permission for the HVS installation. However, they rejected to set up wind data monitoring equipment installation in their premises.
- 3.5.7 Under this situation, the ET proposed to obtain representative wind data from the Hong Kong Observatory Ta Kwu Ling Weather Station. Ta Kwu Ling Station is located near the Project site which situated at the sea level above 15mPD and the wind data monitoring equipment is installed 10 m above the existing ground.

Noise Monitoring

- 3.5.8 Sound level meter 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. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms⁻¹ before each noise monitoring event. Noise measurements should not be made in fog, rain, wind with a steady speed exceeding 5 m s⁻¹ or wind with gusts exceeding 10 m s⁻¹.
- 3.5.9 Noise monitoring equipment used for impact monitoring is listed in *Table 3-6*.

Table 3-6 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-52 Sound Level Meter
Calibrator	Rion NC-73 Acoustical Calibrator
Portable Wind Speed Indicator	Testo Anemometer

3.5.10 Sound level meters listed above comply with the *International Electrotechnical Commission Publications 651: 1979 (Type 1)* and *804: 1985 (Type 1)* specifications, as recommended in TM issued under the NCO.

Water Quality Monitoring

3.5.11 Water quality parameters include dissolved oxygen, water temperature & depth, turbidity, salinity, pH and stream flow velocity shall be measured *in-situ*, and suspended solids shall be analyzed by a HOKLAS-accredited testing laboratory.

Dissolved Oxygen and Temperature Measurement

- 3.5.12 The dissolved oxygen (DO) measuring instruments should be portable and weatherproof. The equipment should also complete with cable and sensor, and DC power source. It should be capable of measuring:
 - A DO level in the range of 0 20 mg/L and 0 200% saturation; and
 - A temperature of 0 45 degree Celsius.



- 3.5.13 The equipment should have a membrane electrode with automatic temperature compensation complete with a cable.
- 3.5.14 Should salinity compensation not be built-in to the DO equipment, in-situ salinity should be measured to calibrate the DO measuring instruments prior to each measurement.

Turbidity Measurement

3.5.15 The turbidity measuring instruments should be a portable and weatherproof with DC power source. It should have a photoelectric sensor capable of measuring turbidity level between 0–1000 NTU (for example, Hach model 2100Q or an approved similar instrument).

Salinity Measurement

3.5.16 A portable salinometer capable of measuring salinity in the range of 0–40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

pH Measurement

3.5.17 A portable pH meter capable of measuring a range between 0.0 and 14.0 should be provided to measure pH under the specified conditions accordingly to the APHA Standard Methods.

Water Depth Measurement

3.5.18 A portable, battery-operated echo sounder or an approved similar instrument should be used for water depths determination at each designated monitoring station.

Stream Flow Velocity Equipment

3.5.19 Since the EM&A Manuals do not specified instrument to use stream flow velocity measurement, the monitoring of stream flow velocity is therefore proposed to be conducted by using a flow probe which is a digital water velocity meter.

Water Sampling Equipment

- 3.5.20 A water sampler is required for suspended solid (SS) monitoring. A water sampler e.g. Kahlsico Water Sampler, which is a transparent PVC cylinder with capacity not less than 2 litres, will be used for water sampling if water depth over than 0.5m.
- 3.5.21 For sampling from very shallow water depths e.g. <0.5 m, water sample will be collected from water surface below 100mm using plastic bottle to avoid inclusion of bottom sediment or humus. Moreover, Teflon/stainless steel bailer or self-made sampling buckets maybe used for water sampling. The equipment used for sampling will be depended the sampling location and depth situations.

Sample Containers and Storage

- 3.5.22 Water samples for suspended solid should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and delivered to the laboratory within 24 hours of collection and be analyzed as soon as possible after collection.
- 3.5.23 Analysis of suspended solids should be carried out in a HOKLAS or other accredited laboratory. Water samples of about 1L should be collected at the monitoring stations for carrying out the laboratory suspended solids determination. The SS determination work should start within 24 hours after collection of the water samples. The SS analyses should follow the *APHA Standard Methods* 2540D with Limit of Reporting of 2 mg/L.
- 3.5.24 Details of the equipment used for water quality monitoring are listed in *Table 3-7* below.

Table 3-7 Water Quality Monitoring Equipment

Equipment	Model
Water Depth Detector	Tape measures
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends or Teflon/stainless steel bailer or self-made sampling bucket



Equipment	Model
Thermometer & DO meter	YSI Professional DSS/ YSI 550A
pH meter	AZ8685 pH meter / YSI Professional DSS
Turbidimeter	Hach 2100Q/ YSI Professional DSS
Salinometer	Atago refractometer Atago S Salinity Meter / YSI Professional DSS
Stream Flow Velocity	FP211 Global Flow Probe
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box with Ice pad

3.5.25 Furthermore, Suspended solids (SS) analysis was carried out by *ALS Technichem (HK) Pty Ltd*. Which is one a local HOKLAS-accredited laboratory

3.6 EQUIPMENT CALIBRATION

- 3.6.1 The HVAS is operated and calibrated on a regular basis in accordance with the manufacturer's instruction using Tisch Calibration Kit Model TE-5025A. Calibration would carry out at fortnightly interval. The calibration data are properly documented and the records are maintained by ET for future reference. Furthermore, Tisch Calibration Kit will be calibrated by the manufacturer in yearly basis.
- 3.6.2 The 1-hour TSP meter calibrated by a local HOKLAS-accredited laboratory would be undertaken in yearly basis. Zero response of the equipment was checked before and after each monitoring event.
- 3.6.3 The sound level meter and acoustic calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.
- 3.6.4 The multi-parameter Water Quality Monitoring System is calibrated by HOKLAS accredited laboratory of three month intervals.
- 3.6.5 All updated calibration certificates of the monitoring equipment used for the impact monitoring program in this Reporting Month are attached in *Appendix E*.

3.7 DATA MANAGEMENT AND DATA QA/QC CONTROL

- 3.7.1 The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring program.
- 3.7.2 The monitoring data recorded in the equipment e.g. 1-hour TSP meter, noise meter and Multi-parameter Water Quality Monitoring System are downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data. For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

3.8 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.8.1 The baseline monitoring results form the basis for determining the environmental acceptance criteria for the impact monitoring. The air quality, construction noise and water quality criteria, namely Action and Limit levels were established according to Approved EM&A Manual, and they are listed in *Tables 3-8*, *3-9* and *3-10* below.

Table 3-8 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action 1	Level (μg /m³)	Limit I	Level (µg/m³)
Womtoring Station	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
ASR-1	331	181	500	260
ASR-2	316	165	500	260
ASR-3	307	160	500	260



Table 3-9 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level Limit Level in dB(A)				
Monitoring Location	Time Period: 0700-1900 ho	ours on normal weekdays			
CN-1,CN-2, CN-3, CN-4	When one or more documented complaints are received	75 dB(A)			

Note: * Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.

Table 3-10 Action and Limit Levels for Water Quality

Donomotor	Performance	Monitoring Location							
Parameter	criteria	M1	M2	M3	M4				
DO (mg/I)	Action Level	3.03	4.99	4.58	3.62				
DO (mg/L)	Limit Level	2.97	4.90	4.49	3.52				
Turbidity	Action Level	7.1	39.7	5.6	5.4				
(NTU)	Limit Level	7.6	42.2	5.9	5.9				
SS (/II)	Action Level	8.5	29.0	9.3	4.8				
SS (mg/L)	Limit Level	10.1	31.0	9.5	5.0				

Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits
- For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- 3.8.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in Appendix F.



4. AIR QUALITY

4.1 MONITORING RESULTS

- 4.1.1 In the Reporting Month, air quality monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in Appendix G.
- 4.1.2 In this Reporting Month, there were 5 sessions of 24-hour TSP and 15 sessions of 1-hour TSP undertaken at each designated station for air quality monitoring. The air quality monitoring results are summarized in *Tables 4-1* to 4-3. The database of 24-hour TSP is shown in *Appendix H* and the graphical plots of monitoring result are shown in *Appendix I*.

Table 4-1 Summary of Air Quality Monitoring Results at ASR-1 under Contract 1

	24-hour			1-hour TSP (µ	g/m ³)		
Date	$TSP (\mu g/m^3)$	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
4-Jul-20	9	6-Jul-20	9:56	79	74	78	
10-Jul-20	7	11-Jul-20	9:27	76	81	71	
16-Jul-20	38	17-Jul-20	9:38	78	85	80	
22-Jul-20	27	23-Jul-20	9:23	82	79	78	
28-Jul-20	24	29-Jul-20	9:25	76	73	71	
Average	21	Avera	ge	77			
(Range)	(7 - 38)	(Rang	ge)		(71 - 85)		

Table 4-2 Summary of Air Quality Monitoring Results at ASR-2 under Contract 2

	24-hour			1-hour TSP (µ	g/m ³)	
Date	TSP (µg/m³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Jul-20	17	6-Jul-20	10:09	76	75	69
10-Jul-20	18	11-Jul-20	9:53	82	78	74
16-Jul-20	36	17-Jul-20	9:45	82	80	81
22-Jul-20	13	23-Jul-20	9:55	79	77	76
28-Jul-20	24	29-Jul-20 9:35		72 74		80
Average	22	Average		77		
(Range)	(13 - 36)	(Rang	ge)		(69 - 82)	

Table 4-3 Summary of Air Quality Monitoring Results at ASR-3a under Contract 2

	24-hour			1-hour TSP (µ	g/m ³)		
Date	$TSP \\ (\mu g/m^3)$	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
4-Jul-20	19	6-Jul-20	10:15	66	71	69	
10-Jul-20	15	11-Jul-20	13:21	76	75	70	
16-Jul-20	41	17-Jul-20	10:01	74	78	75	
22-Jul-20	20	23-Jul-20	12:53	76	72	71	
28-Jul-20	16	29-Jul-20	10:48	70	67	64	
Average	22	Average		72			
(Range)	(15 - 41)	(Rang	ge)	(64 - 78)			

4.2 AIR MONITORING EXCEEDANCE

4.2.1 As shown in *Tables 4-1 to 4-3*, the monitoring results of 24-hour and 1-hour TSP monitoring in the Reporting Month were below the Action/Limit Level. No Notification of Exceedance (NOE) of air quality monitoring criteria was issued and therefore corrective action was not required. The meteorological data during the impact monitoring days are summarized in *Appendix J*.



5. CONSTRUCTION NOISE

5.1 MONITORING RESULTS

- 5.1.1 In the Reporting Month, noise monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in Appendix G.
- 5.1.2 In this Reporting Month, 4 sessions of noise monitoring were undertaken at each designated noise monitoring location. The sound level were set in a free field situation for CN1, CN2 and CN3 and therefore a façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines. The monitoring result of noise monitoring is show in *Tables 5-1 and 5-2* and the graphical plots are shown in *Appendix I*.

Table 5-1 Summary of Construction Noise Monitoring Results under Contract 1

	Construction Noise Level (L _{eq30min}), dB(A)								
Date	Start Time CN1(*) Start Time CN2(*)								
6-Jul-20	13:33	66	14:18	66					
17-Jul-20	13:36	67	14:27	67					
23-Jul-20	10:18	66	11:03	68					
29-Jul-20	9:25	66	10:02	67					
Limit Level		7:	5 dB(A)						

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-2 Summary of Construction Noise Monitoring Results under Contract 2

	Construction Noise Level (L _{eq30min}), dB(A)								
Date	Start Time	Start Time CN3 (*) Start Time CN4							
6-Jul-20	15:07	57	15:58	59					
17-Jul-20	15:15	58	16:10	59					
23-Jul-20	14:41	61	15:31	60					
29-Jul-20	10:40	10:40 59 11:38 56							
Limit Level	75 dB(A)								

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

5.1.3 Prior and after noise monitoring, the accuracy of the sound level meter has been checked by an acoustic calibrator to ensure the measurement within acceptance range of ±0.5dB. Moreover, wind speed checked by portable wind speed meter has been performed before noise monitoring. No noise measurement was performed in fog, rain, wind with a steady speed exceeding 5 m s⁻¹ or wind with gusts exceeding 10 m s⁻¹.

5.2 NOISE MONITORING EXCEEDANCE

5.2.1 As shown in *Tables 5-1 and 5-2*, no Limit Level exceedance for noise monitoring exceedance was recorded in the Reporting Month. Moreover, no noise complaint (which triggered Action Level) was received. No Notification of Exceedance (NOE) of construction noise criterion was issued and no corrective action was therefore required.



6. WATER QUALITY

6.1 MONITORING RESULTS

- 6.1.1 In the Reporting Month, water quality monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in Appendix G.
- 6.1.2 In the Reporting Month, a total of *14* monitoring days were carried out for water quality impact monitoring. The monitoring result of key parameters including Dissolved Oxygen, Turbidity and Suspended Solids are summarized in *Tables 6-1* and *6-2*. Detailed monitoring results including in-situ measurements and laboratory analysis data are shown in *Appendix H* and graphical plots for monitoring result are shown in *Appendix I*.

Table 6-1 Summary of Water Quality Monitoring Results – M3 under Contract 1

		Parameters	
Date	DO (Averaged)	Turbidity (Averaged)	Suspended Solids (Averaged)
	(mg/L)	(NTU)	(mg/L)
2-Jul-20	5.06	2.7	8.0
4-Jul-20	5.66	3.5	6.0
6-Jul-20	5.38	4.7	4.0
8-Jul-20	4.68	4.6	5.0
10-Jul-20	5.96	4.7	5.0
13-Jul-20	5.87	5.4	5.5
15-Jul-20	5.61	4.9	4.5
17-Jul-20	5.70	4.1	4.5
20-Jul-20	6.12	5.4	5.0
22-Jul-20	5.77	4.6	3.5
24-Jul-20	5.91	4.4	4.0
27-Jul-20	5.80	4.8	4.0
29-Jul-20	6.11	5.3	4.0
31-Jul-20	6.54	5.1	7.5

Table 6-2 Summary of Water Quality Monitoring Results (M1, M2 and M4) under Contract 2

	minary or	Parameters								
Date		(Average (mg/L)	d)					ended Solids raged) (mg/L)		
	M1	M2	M4	M1	M2	M4	M1	M2	M4	
2-Jul-20	5.62	#	5.32	4.4	#	1.8	6.5	#	2.0	
4-Jul-20	6.51	#	6.05	3.3	#	3.4	3.5	#	2.0	
6-Jul-20	5.83	#	6.17	2.2	#	2.7	4.0	#	<2	
8-Jul-20	4.19	#	4.58	6.4	#	3.7	7.0	#	4.0	
10-Jul-20	6.41	#	6.57	5.9	#	3.2	3.5	#	2.0	
13-Jul-20	7.41	#	6.53	6.7	#	2.7	6.5	#	2.5	
15-Jul-20	6.05	#	6.17	1.5	#	1.9	6.5	#	3.0	
17-Jul-20	5.81	#	6.95	5.3	#	1.1	8.0	#	<2	
20-Jul-20	6.28	#	6.75	<u>10.1</u>	#	1.3	29.0	#	<2	
22-Jul-20	6.35	#	6.50	5.4	#	5.2	8.0	#	<2	
24-Jul-20	6.45	#	6.78	6.2	#	1.0	21.0	#	<2	
27-Jul-20	6.16	#	5.36	4.4	#	<u>23.1</u>	3.5	#	<u>15.5</u>	
29-Jul-20	6.16	#	6.28	4.5	#	2.1	4.5	#	<2	
31-Jul-20	5.37	#	4.86	4.8	#	10.8	5.0	#	<u>17.0</u>	

Remarks: (#) During the water monitoring, the channel of M2 was observed dried up and water sampling was unable be carried out;

Note: Bold and underlined indicated Limit Level exceedance



6.1.3 During the Reporting Month, field measurements including temperature of stream water, salinity concentrations, pH values and the stream flow velocity for all monitoring locations are summarized in *Table 6-3*.

Table 6-3 Summary of Field Measurements for Water Quality

			Parame	ters of fie	ld measuren	nents			
Monitoring	pH (Ave	0 /			Temp (Ave	raged)	Water Flow		
Location	(ur	nit)	(ppt)		(°C)		(Averaged) (m/s)		
	min	max	min	min max		max	min	max	
M1	6.8	8.7	0.04	0.06	26.6	29.8	< 0.1	< 0.1	
M2	#	#	#	#	#	#	#	#	
M3	6.2	8.6	0.02	0.03	27.6	31.5	< 0.1	< 0.1	
M4	6.4	7.9	0.04	0.07	27.8	31.7	< 0.1	< 0.1	

Remarks: (#) During the water monitoring, the channel of M2 was observed dried up and water sampling was unable be carried out;

6.2 WATER QUALITY MONITORING EXCEEDANCE

6.2.1 In this Reporting Month, 7 Limit Level and no Action Level water quality exceedances were recorded. The non-compliance of water quality performance is summarized in *Table 6-4*.

Table 6-4 Action and Limit (A/L) Levels Exceedance Record

Station	D	0	Turb	idity	S	S	Total Exceedance		Project Related exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
M1	0	0	0	1	0	2	0	3	0	0
M2	0	0	0	0	0	0	0	0	0	0
M3	0	0	0	0	0	0	0	0	0	0
M4	0	0	0	2	0	2	0	4	0	0

6.2.2 Notification of Exceedance (NOE) and the investigation for exceedance in the Reporting Month is summarized in *Table 6-5*.

Table 6-5 Summary of Investigation of Water Quality Exceedance in the Reporting Month

Date of Exceedance	Exceeded Location	Exceeded Parameter	Cause of Water Quality Exceedance
20 July 2020	M1	Turbidity & SS	According to the work programme and as observed during water quality monitoring, no construction activities were carried out near location M1 and no discharge made into stream. Water quality mitigation measures have been implemented to minimize the water quality impact arising from contract works. In view of the implementation of water quality mitigation measures, the site was generally in good order and no water quality impact was observed, it is considered that the exceedances were not related to the works under the Project.
24, 27 & 31 July 2020	M1 & M4	Turbidity & SS	According to the work programme and site observation during water quality monitoring on 24, 27 and 31 July 2020, no construction activities were carried out near location M1 & M4 and no discharge made into stream. According to the weather data from HKO, there was heavy rainstorm on 31 July. Under the impact of rainstorm, the water quality of the watercourse was highly affected by the stirred up sediment and runoff from the surrounding environment. Based on our investigation, it was concluded that the exceedances were unlikely caused by the works under the project.



7. ECOLOGY MONITORING

7.1 REQUIREMENT

- 7.1.1 According to approved EIA report (AEIAR-198/2016), habitat types within project boundary comprise of watercourse, grassland, upland grassland, plantation, woodland and developed area. Natural habitats were of moderate ecological value in terms of species diversity, species rarity, species abundance, ecological linkage as well as nursery. Moreover, 0.3ha of wet woodland on the northern side of Sandy Ridge was deemed habitat with high ecological value. Four types of habitats were regarded as ecologically sensitive habitats, namely wet woodland, watercourses, upland grassland and woodland. Considering human disturbance in upcoming construction and operation phases, ecologically sensitive habitats shall be monitored in accordance with EM&A Manual.
- 7.1.2 The objective of ecologically sensitive habitats monitoring is to evaluate the effectiveness of measures to minimize impacts on concerned habitats from disturbance and pollution. In order to monitor the effectiveness of the measures to the minimize impact on ecologically sensitive habitats from disturbance and pollution, monthly monitoring during construction and operation phases is required as specified in EM&A Manual. Standard faunal transect and sampling surveys cover both wetland habitats (wet woodland and watercourse) and non-wetland habitats (upland grassland and woodland).

7.2 METHODOLOGY

7.2.1 Wetland habitats include wet woodland and watercourses. Monitoring surveys using standardized quantitative methodology will conduct at fixed points. For seasonal watercourse, the survey will be conducted whenever the habitat appears. Measures to respond to decreases in numbers of aquatic fauna using the wetland habitats and Action/Limit levels to trigger these measures are detailed in *Table 7-1*.

Table 7-1 Action and Limit Levels for Wet Woodland Habitats Monitoring

Action Level	Response	Limit Level	Response
	C	taxa diversity by	Investigate cause and if cause identified as related to the project instigate remedial action.

Remarks: Action and Limit Levels and Responses to Evidence of Declines in Aquatic Fauna

7.2.2 Non-wetland habitats consist of upland grassland and woodland. Monthly quantitative surveys of non-aquatic fauna will be conducted using standard route transect counts. Measures to respond to decreases in numbers of non-aquatic fauna using the non-wetland habitats and Action/Limit levels to trigger these measures are detailed in *Table 7-2*.

Table 7-2 Action and Limit Levels for Non-Wet Woodland Habitats Monitoring

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction in	Investigate cause and if cause
species diversity	cause identified as related	species diversity	identified as related to the
by 30%	to the project instigate	by 50%	project instigate remedial
	remedial action to remove		action.
	or reduce source of		
	disturbance.		

Remarks: Action and Limit Levels and Responses to Evidence of Declines in Non-Aquatic Fauna

7.2.3 The ecological survey includes all taxa being investigated in accordance with EIA report. Schedule of faunal surveys in each year during construction phase is presented in *Table 7-3*.

Table 7-3 Schedule of Faunal Surveys in each year During Construction Phase

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals	$\sqrt{}$							$\sqrt{}$				$\sqrt{}$



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Birds (day)						V				V		$\sqrt{}$
Birds (night)												
Herpetofauna												
Dragonflies												
Butterflies												
Aquatic fauna	$\sqrt{}$	V					$\sqrt{}$					

Mammal Survey

7.2.4 Mammal surveys will be conducted along the proposed transects (shown in Appendix D of the survey report) during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

Bird Survey

7.2.5 Bird surveys will be conducted along the transects (shown in Appendix D of the survey report) during the surveys, species and their vocalizing individuals recorded will be enumerated and recorded according to the habitat(s) they are utilizing.

Herpetofauna Survey

7.2.6 Reptile and amphibian surveys will be conducted along transects (shown in Appendix D of the survey report) during surveys careful searches of appropriate microhabitats and refugia for reptiles and their vocalizing individuals will be undertaken and all reptiles observed will be identified and counted.

Dragonfly and Butterfly Survey

7.2.7 Dragonfly and Butterfly surveys will be conducted along transects (shown in Appendix D of the survey report) during surveys all dragonflies and Butterflies seen will be identified and counted as accurately as possible.

Aquatic Fauna Survey

- 7.2.8 Freshwater fishes and macro-invertebrates will be recorded by direct observation. All species trapped/recorded will be enumerated and identified (to the lowest taxonomic level possible), and the species of conservation importance photographed.
- 7.2.9 After each ecological monitoring survey, a monthly report of the survey result and data collected will be provided with reference to EM&A Manual. An annual analysis of data will be carried out in order to study if there is any significant reduction in taxa diversity and abundance.

7.3 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 1)

7.3.1 In the Reporting Month, ecological monitoring was undertaken on 7th July 2020 at work area of Contract 1. A sunny day. The day and night survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed points. All species seen will be identified and counted as accurately as possible. Results of the monitoring survey are presented below:

Monitoring Result for Contract 1

Mammal

7.3.2 There was no mammal recorded in the monitoring area

Birds

7.3.3 There were total of 16 bird individuals from 8 species recorded in the monitoring area. Three species of conservation interests were recorded in the monitoring area: Tachybaptus ruficollis, Little Grebe(小鸊鷉), Nycticorax nycticorax, Black-crowned Night Heron (夜鷺), and Centropus bengalensis, Lesser Coucal (小鴉鵑).



Herpetofauna

7.3.4 There was no reptile recorded in the monitoring area. There was two amphibian species recorded in the monitoring area.

Butterfly

7.3.5 There were a total of 7 butterfly individuals from 3 species recorded in the monitoring area.

Dragonfly

7.3.6 There were a total of 15 odonate individual from 8 species recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

- 7.3.7 There was no freshwater community recorded in the monitoring area.
- 7.3.8 The summaries of faunal survey result are shown in *Tables 7-4 a*nd *7-5*.

Table 7-4 Result of Faunal Survey under Contract 1

Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	Non- wetland	Wetland
Mammal Survey					
Avifauna Survey	X : 1 G 1	1 Harte of the	T 11 (2002)	l	
Tachybaptus	Little Grebe	小鸊鷉	Fellowes et al. (2002): LC		1
ruficollis Nycticorax	Black-crowned	夜鷺	Fellowes et al.		
nycticorax	Night	1文鳥	(2002):(LC)		2
nyencoran	Heron		(2002).(20)		_
Centropus	Lesser Coucal	小鴉鵑	Class 2 Protected		
bengalensis			Animal of China;China		1
			Red Data Book Status:		1
·	Y 101 11	12-15-11-166	(Vulnerable)		
Lanius schach	Long-tailed Shrike	棕背伯勞			1
Dicrurus	Black Drongo	黑卷尾			2
macrocercus Pycnonotus jocosus	Red-whiskered	紅耳鵯			
1 yenonoius jocosus	Bulbul	紅牛特		3	
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		2	
Hirundo rustica	Barn Swallow	家燕			4
Reptile Survey					
Amphibian Survey					
Polypedates	Brown Tree Frog	斑腿泛樹蛙			+
megacephalus		7年/2012年1月14日			
Bufo melanostictus	Asian Common	黑眶蟾蜍			+
	Toad				
Butterfly Survey Abisara echerius	Plum Judy	蛇目褐蜆蝶		4	
Chilasa clytia	Common Mime	斑鳳蝶		1	
•	Lemon Emigrant	遷粉蝶		1	2
Catopsilia pomona Odonate Survey	Lemon Emigrant	地 切珠			2
Brachydiplax					
chalybea	Blue Dasher	藍額疏脈蜻			2
Lyriothemis	E (CI	士士 nini rin rite 4. 丰			4
elegantissima	Forest Chaser	華麗寬腹蜻			1
Neurothemis tullia	Pied Percher	截斑脈蜻			1
Pantala flavescens	Wandering Glider	黄蜻			2
Rhyothemis	Sapphire Flutterer	三角麗翅蜻	Fellowes et al.	4	
triangularis			(2002): LC	4	
Rhyothemis	Variegated Flutterer	斑麗翅蜻			2



Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	Non- wetland	Wetland
variegata					
Urothemis signata	Scarlet Basker	赤斑曲鈎脈 蜻	Fellowes et al. (2002): LC	2	
Zyxomma petiolatum	Dingy Dusk-darter	細腹綠眼蜻			1

^{+:} Species appeared but uncountable.

Table 7-5 Result of Freshwater Communities Survey under Contract 1

	Chinese			7-Jul-20	
Scientific Name	Common Name	Name	Conservation Status	Non- wetland	Wetland

7.4 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 2)

7.4.1 In the Reporting Month, ecological monitoring was undertaken on 7th July 2020 at work area of Contract 2. A sunny day. The day and night survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed point. All species seen will be identified and counted as accurately as possible. Results of the monitoring survey are presented below:

Monitoring Result for Contract 2

Mammal

7.4.2 There was no mammal recorded in the monitoring area

<u>Birds</u>

7.4.3 There were a total of 19 bird individuals from 8 species recorded in the monitoring area.

<u>Herpetofauna</u>

7.4.4 There was no reptile recorded in the monitoring area. There were two amphibian recorded in the monitoring area.

Butterfly

7.4.5 There were total 3 butterfly individuals from 2 species recorded in the monitoring area.

Dragonfly

7.4.6 There were total 3 odonate individuals from 2 species recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

- 7.4.7 There were two species of freshwater fish were recorded in the monitoring area.
- 7.4.8 The summaries of faunal survey result are shown in *Tables 7-6* and *7-7*.

Table 7-6 Result of Faunal Survey under Contract 2

Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	Non- wetland	Wetland
Mammal Survey					
Avifauna Survey					
Spilopelia chinensis	Spotted Dove	珠頸斑鳩		1	2
Lanius schach	Long-tailed Shrike	棕背伯勞			1
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		2	
Hirundo rustica	Barn Swallow	家燕		4	
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯			1
Orthotomus sutorius	Common	長尾縫葉鶯		2	2



Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	Non- wetland	Wetland
	Tailorbird				
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		2	
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥		2	
Reptile Survey					
Amphibian Survey					
Bufo melanostictus	Asian Common Toad	黑眶蟾蜍			+
Polypedates megacephalus	Brown Tree Frog	斑腿泛樹蛙			+
Butterfly Survey					
Papilio polytes polytes	Common Mormon	玉帶鳳蝶		1	
Pieris canidia	Indian Cabbage White	東方菜粉蝶			2
Odonate Survey					
Prodasineura autumnalis	Black Threadtail	烏齒原蟌			2
Tholymis tillarga	Evening Skimmer	雲斑蜻			1

Table 7-7 Result of Freshwater Communities Survey under Contract 2

Scientific Name	Common Name	Chinese Name	Conservation Status	7-Jul-20
Gambusia affinis	Mosquito fish	食蚊魚		+
Puntius semifasciolatus	Chinese Barb	五線無鬚舥		+

^{+:} Species appeared but uncountable.

- 7.4.9 The detailed survey reports of Contract 1 and Contract 2 are attached in *Appendix K*.
- 7.4.10 The tentative ecology inspection and monitoring in the next Reporting Month (August 2020) is scheduled on 6th August 2020.

7.5 MEASURE FOR PROTECTION OF NESTING BIRD

- 7.5.1 Pursuant to FEP-01/534/2017/A condition 2.19 and EP-534/2017/A condition 2.20, precautionary checks for the presence of nesting birds shall be carried out in the breeding season (February to July) before vegetation clearance.
- 7.5.2 As advised by both Contractors, there were no vegetation clearance conducted within the site in the Reporting Month and therefore precautionary check for the presence of nesting birds was not required.



8. LANDSCAPE AND VISUAL

8.1 REQUIREMENT

- 8.1.1 The EIA has recommended EM&A for landscape and visual resources to be undertaken during the design, construction and operational stages of the project. The design, implementation and maintenance of landscape mitigation measures is a key aspect of this and should be checked to ensure that they are fully realized and that potential conflicts between the proposed landscape measures and any other project works let its are resolved at the earliest possible date and without compromise to the intention of the mitigation measures. In addition, implementation of the mitigation measures recommended by the EIA will be monitored through the site audit programme.
- 8.1.2 A number of mitigation measures to ameliorate the landscape and visual impacts of the Project implementation is summarized in the EMIS of *Appendix 13.1* of the EIA Report.
- 8.1.3 The landscape and visual mitigation measures proposed should be incorporated in the landscape and engineering design. Mitigation measures to be implemented during construction should be adopted from the start of construction and be in place throughout the entire construction period. Mitigation measures to be implemented during operation should be integrated into the detailed design and built as part of the construction works so that they are in place on commissioning of the Project. Tree transplantation and compensatory planting should be carried out as early as possible in the Project with transplantation carried out prior to construction starting in any particular area.
- 8.1.4 During construction phase, Landscape & Visual Monitoring of the contractor's operations should be conducted monthly and reported by ET, and countersigned by IEC.

8.2 FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH

8.2.1 In the Reporting Month, landscape & Visual inspection was carried out by the Registered Landscape Architect (RLA) for works area of Contract 1 and Contract 2 on 21st July 2020. The findings / reminders recorded during the inspection are presented in *Tables 8-1 and 8-2.3*

Table 8-1 Landscape & Visual Inspection Finding for Contract 1

Date	Findings and Reminder	Follow-Up Status
21 st July 2020	1. The Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.	Reminder was noted by the Contractor.
	2. Transplanted trees T2465, T2468 and T2928 were in fair health condition with normal foliage color and density. Contractor is reminded to provide proper maintenance according to approved method statement.	Reminder was noted by the Contractor.

Table 8-2 Landscape & Visual Inspection Finding for Contract 2

Date	Findings and Reminder	Follow-Up Status			
21st July	1. The Contractor is reminded to prevent the	1			
2020	construction material pile within TPZ and ensure no works is allowed within the TPZ	Contractor.			
	2. Proper TPZ should be set up according to approved method statement.	Reminder was noted by the Contractor.			

8.2.2 Inspection checklist of Landscape & Visual signed by RLA is attached in *Appendix L*.



9. WASTE MANAGEMENT

9.1 GENERAL WASTE MANAGEMENT

9.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time in accordance with the Waste Management Plan (WMP).

9.2 RECORDS OF WASTE QUANTITIES

- 9.2.1 All types of waste arising from the construction work are classified into the following:
 - Construction & Demolition (C&D) Material;
 - Chemical Waste;
 - General Refuse; and
 - Excavated Soil.
- 9.2.2 The quantities of waste for disposal in this Reporting Month are summarized in *Table 9-1* and *9-2* and the Monthly Summary Waste Flow Table is shown in *Appendix M*. Whenever possible, materials were reused on-site as far as practicable.

Table 9-1 Summary of Quantities of Inert C&D Materials

	Cont	ract 1	Contract 2	
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
C&D Materials (Inert) ('000m³)	0		916.390 (#)	
Reused in this Contract (Inert) ('000m ³)	8.523	Within Contract area	0	
Reused in other Projects (Inert) ('000m³)	0		0	1
Disposal as Public Fill (Inert) ('000m³)	0.678	Tuen Mun Area 38	916.390 (#)	Tuen Mun Area 38

Remark: the unit is '000kg

Table 9-2 Summary of Quantities of C&D Wastes

	Contract 1		Contract 2	
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal ('000kg)	0		0	
Recycled Paper / Cardboard Packing ('000kg)	0		0	
Recycled Plastic ('000kg)	0		0	
Chemical Wastes ('000kg)	0		0	
General Refuses (*000m³)	0.188	NENT Landfill	15.720 (#)	NENT Landfill

Remark: the unit is '000kg

9.2.3 Since canteen and/or kitchen are not allowed setting on the Project site, no domestic wastewater was generated from the Project.



10. SITE INSPECTION

10.1 REQUIREMENT

10.1.1 According to the approved EM&A Manual, environmental site inspection should be led by RE and attended by the Contractor and ET at least once per week. Regular environmental site inspections shall be carried out to assess the environmental performance.

10.2 FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH Contract 1

- 10.2.1 In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the RE, ET and the Contractor on 2^{nd} , 9^{th} , 16^{th} , 23^{rd} and 30^{th} July 2020 and IEC attended joint site inspection on 16^{th} July 2020. No non-compliance was noted.
- 10.2.2 The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-1*.

Table 10-1 Site Observations for the Works of Contract 1

Date	Findings / Deficiencies	Follow-Up Status
2 nd July 2020	 Front head of hydraulic breaker should be properly stored to avoid leakage of lube oil and cause land contamination. The Contractor was reminded to remove stagnant water accumulated on site after rainy days. 	 Front head of hydraulic breaker was removed, Reminder only
9 th July 2020	• The Contractor was reminded to dispose waste regularly at FS1.	Reminder only
16 th July 2020	Chemical containers should be placed inside drip tray. (Bending Area)	• Chemical containers were removed.
	Chemical containers should be placed inside drip tray. (Storage area near site entrance)	The Chemical container was removed.
	Drip tray under the generator should be repaired to avoid leaking of any spillied chemical.	Drip tray was replaced.
	The Contractor was reminded to provide water spraying on site regularly.	Reminder only
	• The Contractor was reminded to provide drip tray and display NRMM label for the generator properly at CS15.	Reminder only
23 rd July 2020		Reminded only.
30 th July 2020	• The Contractor was reminded to provide water spraying to reduce dust impact. (General)	Reminded only.

Contract 2

- 10.2.3 In the Reporting Month, joint site inspections for Contract 2 to evaluate the site environmental performance carried out by the RE, ET and the Contractor was on 2^{nd} , 9^{th} , 16^{th} , 23^{rd} and 30^{th} July 2020 and IEC attended joint site inspection on 16^{th} July 2020. No non-compliance was noted.
- 10.2.4 The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-2*.



Table 10-2 Site Observations for the Works of Contract 2

Date	Findings / Deficiencies	Follow-Up Status
2 nd July 2020	• The Contractor was reminded to remove any stagnant water accumulated on site after rainy day.	Reminder only.
9 th July 2020	The Contractor was reminded to clear muddy trail at site entrance. (Man Kam To Road)	Reminder only.
16 th July 2020 23 rd July 2020	 Scattered general at CS20 should be disposed properly. The Contractor was reminded to store the equipment within site boundary at C231. NRMM label should be displayed on the generator 	 The scattered general was disposed properly. Reminder only. NRMM label was
	used on site.The Contractor was reminded to provide drip tray for any chemical containers.	provided for the generator. • Reminder only.
30 th July 2020	• Improper color of NRMM label of air compressor was observed at CS20. The Contractor was advised to replace the NRMM label.	NRMM label with proper color was displayed on the air compressor.



11. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 Environmental Complaint, Summons and Prosecution

11.1.1 In the Reporting Month, no environmental complaint was received for the Project. No summons and prosecution was lodged for the Contract. The statistical summary table of the environmental complaint, summons and prosecution are presented in *Tables 11-1*, *11-2* and *11-3*.

Table 11-1 Statistical Summary of Environmental Complaints

Donouting Month		Environmental Complaint Statistics		
Reporting Month		Frequency	Cumulative	Complaint Nature
1 – 31 July 2020	Contract 1	0	0	NA
1 – 31 July 2020	Contract 2	0	0	NA

Table 11-2 Statistical Summary of Environmental Summons

Donouting Me	m t la	Environmental Summons Statistics		
Reporting Month		Frequency	Cumulative	Complaint Nature
1 – 31 July 2020	Contract 1	0	0	NA
1 – 31 July 2020	Contract 2	0	0	NA

Table 11-3 Statistical Summary of Environmental Prosecution

Reporting Month		Environmental Prosecution Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 July 2020	Contract 1	0	0	NA
1 – 31 July 2020	Contract 2	0	0	NA

11.1.2 In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.



12. IMPLEMENTATION STATUS OF MITIGATION MEASURES

12.1 GENERAL REQUIREMENTS

- 12.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in *Appendix N*.
- 12.1.2 The Works of Contract 1 and Contract 2 under the Project shall be implementing the required environmental mitigation measures according to the approved EM&A Manual subject to the site condition. Environmental mitigation measures implemented in this Reporting Month is summarized in *Table 12-1*.

Table 12-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water	• Provided efficient silt removal facilities to reduce SS level before effluent
Quality	discharge.
	• Provided ditches, earth bunds or sand bag barriers to minimize polluted runoff.
	• Temporary drainage was provided to prevent runoff going through site surface and
	minimize polluted runoff.
	• Provided perimeter cut-off drains at site boundaries to intercept storm runoff from
	crossing the site.
	 Exposed slopes surface were compacted and covered with tarpaulin or similar means.
	 Provided portable chemical toilets on site.
Air Quality	Maintain damp / wet surface on access road.
	 Maintain low vehicular speed within the works areas.
	 Provided vehicle wheel washing facilities at each construction site exit;
	 Provided water spraying for all active works area.
	 Stockpiles of dusty material were covered with impervious sheeting.
	• Provided workers to clear dusty materials at the vehicle entrance or exit regularly.
	• Stockpile more than 20 bags of cement or dry pulverized fuel ash (PFA) has been
	covered entirely by impervious sheeting or placed in an area sheltered on the top
	and the 3 sides.
Noise	• Restricted operation time of plants from 07:00 to 19:00 on any working day
	except for Public Holiday and Sunday.
	Keep good maintenance of plants
	Placed noisy plants away from residence and school
	Provided noise barriers or hoarding to enclose the noisy plants or works Short down the advantage of the part in the desired of the plantage of the part in the desired of the desired of the part in the desired of the de
XX741	Shut down the plants when not in used. Provided a price of the plants when not in used.
Waste and	Provided on-site sorting prior to disposal Followed an environments and are and those of the "Tring tighted Strategy"
Chemical Management	Followed requirements and procedures of the "Trip-ticket System" Producted required quantity of congrete accurately.
Management	Predicted required quantity of concrete accurately Collected the unused fresh concrete at designated legations in the sites for
	Collected the unused fresh concrete at designated locations in the sites for subsequent disposal.
General	subsequent disposalThe site was generally kept tidy and clean.
Geliciai	• The site was generally kept duy and clean.

12.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 12.2.1 According to the information provided by HCTYJV, the forthcoming construction activities for Contract 1 are listed below:
 - (i) General Site Housekeeping
 - (ii) Bulk Excavation
 - (iii) Construction of Cut Slope, installation of soil nailing and construction of surface channel and planter wall.
 - (iv) Construction of Fill Slope and surface channel
 - (v) Construction of Pick-up and Drop-off Point near Man Kam To Road
 - (vi) Construction of sewer and storm drain



(vii) Construction of noise barrier

- 12.2.2 According to the information provided by Sang Hing, the forthcoming construction activities for Contract 2 are listed below:
 - Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road between CH565-675 Northbound & CH1265-1345 Southbound.
 - Man Kam To Road DN800 DI Sewerage Pipe FM4.18-FM4.21 (50m)
 - Filling works for slope FS18 (Part A1) & backfilling of Retaining Wall 13
 - Piling Works for Retaining Wall 14
 - Soil Nail Works at Lin Ma Hang Road Slope C225 & C231
 - Fanling Station Road covered walkway

12.3 KEY ISSUES FOR THE COMING MONTH

- 12.3.1 Key issues to be considered in the coming month for the works of Contract 1 include:
 - Implementation of control measures for rainstorm;
 - Regular clearance of stagnant water during wet season;
 - Implementation of dust suppression measures at all times;
 - Potential wastewater quality impact due to surface runoff;
 - Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
 - Ensure dust suppression measures are implemented properly;
 - Sediment catch-pits and silt removal facilities should be regularly maintained;
 - Discharge of site effluent to the nearby wetland is prohibited;
 - Nearby wetland prohibited stockpiling and/or disposal of materials;
 - Follow-up of improvement on general waste management issues; and
 - Implementation of construction noise preventative control measures.
- 12.3.2 The Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area. The implementation of water quality mitigation measures conducted by the Contractors is shown in *Appendix O*.



13. CONCLUSIONS AND RECOMMENTATIONS

13.1 CONCLUSIONS

- 13.1.1 This is the 24th Monthly EM&A Report presenting the monitoring results and inspection findings for the period of 1st to 31st July 2020.
- 13.1.2 No 24-hour or 1-hour TSP monitoring result that triggered the Action or Limit Levels was recorded. No NOEs or the associated corrective action was therefore required.
- 13.1.3 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement result that exceeded the Limit Level was recorded in this Reporting Month. No NOEs or the associated corrective actions were therefore issued.
- 13.1.4 For water quality monitoring, a total of **7** Limit Level exceedances and no Action Level were recorded In the Reporting Period. NOE were issued to relevant parties and the investigation has been conducted by ET. Investigation revealed that the Contractor had implemented water quality mitigation measures and the exceedances were related the rainstorm and not caused by the work under the project.
- 13.1.5 Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 7th July 2020. As advised by both Contractors, there were no vegetation clearance conducted within the site in the Reporting Month and therefore precautionary check for the presence of nesting birds was not required.
- 13.1.6 Landscape and visual inspection at both Contracts were undertaken by the RLA on 21st July 2020. The Contractor was reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 13.1.7 In the Reporting Month, no environmental complaint, summons and prosecution was received. In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.
- 13.1.8 In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the RE, ET and the Contractor on 2^{nd} , 9^{th} , 16^{th} , 23^{rd} and 30^{th} July 2020 and IEC attended joint site inspection on 16^{th} July 2020. No non-compliance was noted.
- 13.1.9 Joint site inspections for Contract 2 to evaluate the site environmental performance carried out by the RE, ET and the Contractor was on 2nd, 9th, 16th, 23rd and 30th July 2020 and IEC attended joint site inspection on 16th July 2020. No non-compliance was noted.

13.2 RECOMMENDATIONS

- 13.2.1 The Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- 13.2.2 Air quality mitigation measures such as wheel wash facilities, watering of haul roads, loose soil construction surface and covering of dusty materials with tarpaulin sheet should be implemented as far as practicable.
- 13.2.3 Construction noise would be a key environmental issue during construction phase of the Project. Noise mitigation measures such as using quiet plants and mobile noise barriers should be implemented in accordance with the EM&A requirement.
- 13.2.4 Since some of the construction site under the Project is located near villages, both Contractors should fully implement air quality mitigation measures to reduce construction dust emission.
- 13.2.5 Furthermore, daily cleaning and weekly tidiness shall be properly performed and maintained. In addition, mosquito control should be performed to prevent mosquito breeding on site.



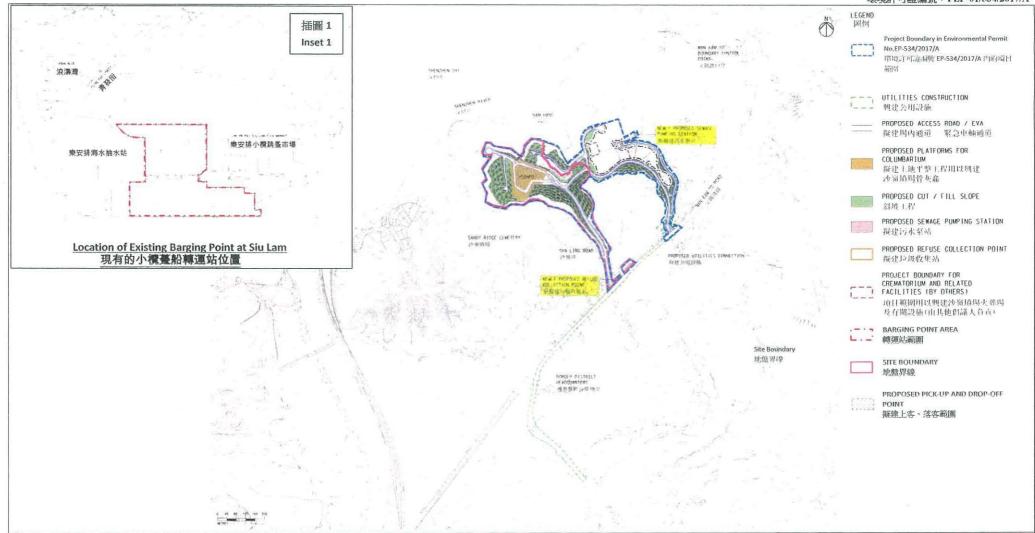
Appendix A

Layout Plan of the Project



Layout Plan of Contract CV/2016/10

Environmental Permit No.: FEP-01/534/2017/A 環境許可證編號: FEP-01/534/2017/A



Project Title: Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery 工程名稱:沙嶺墳場興建骨灰龕的工地平整及相關基建工程

Figure 1: Project Location Plan

圖 1:項目位置圖

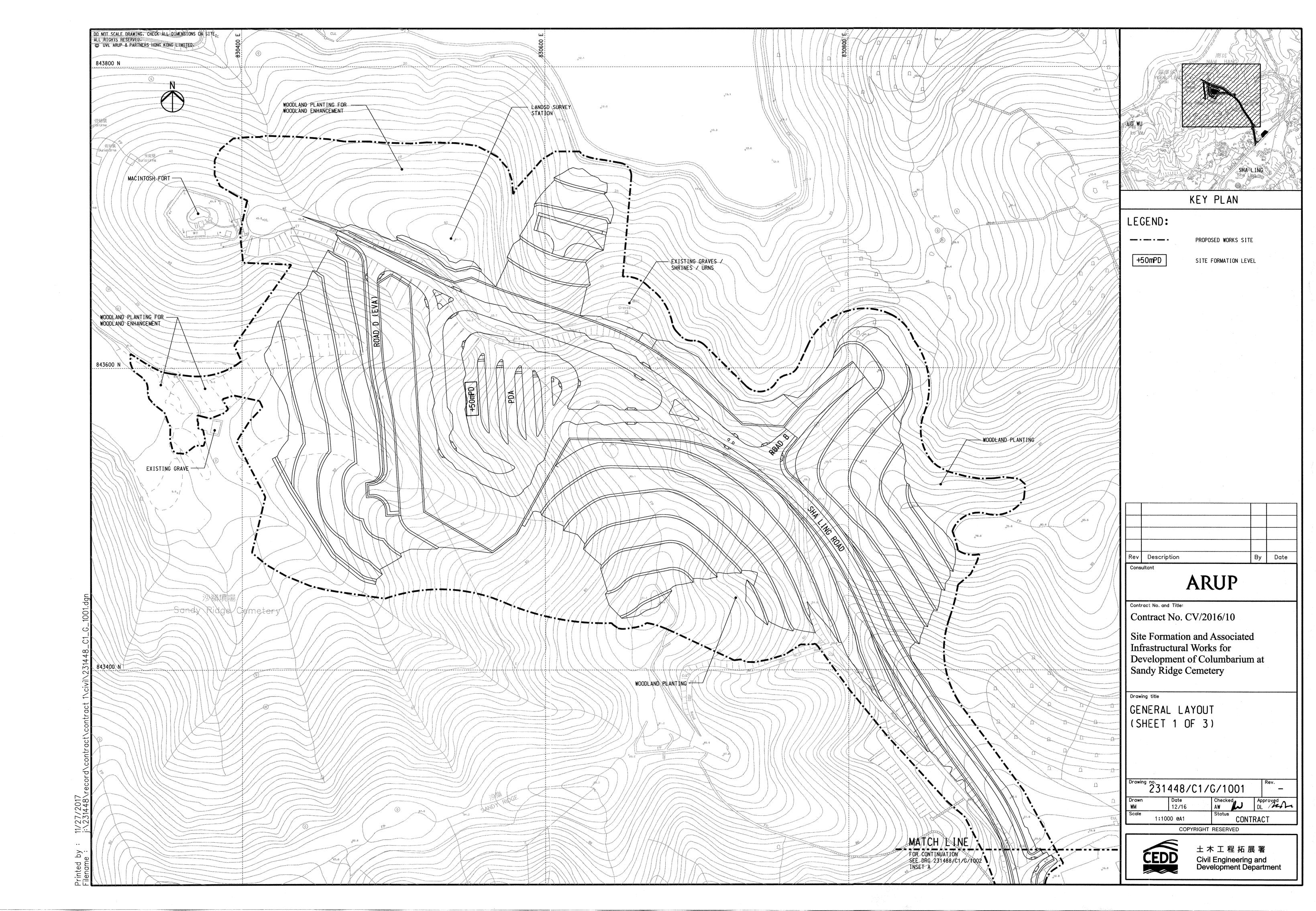
(This figure was prepared based on Figure 1 attached to the VEP Application No. VEP-555/2018 and Figures 1.3 of the Approved EIA Report No. AEIAR-198/2016)

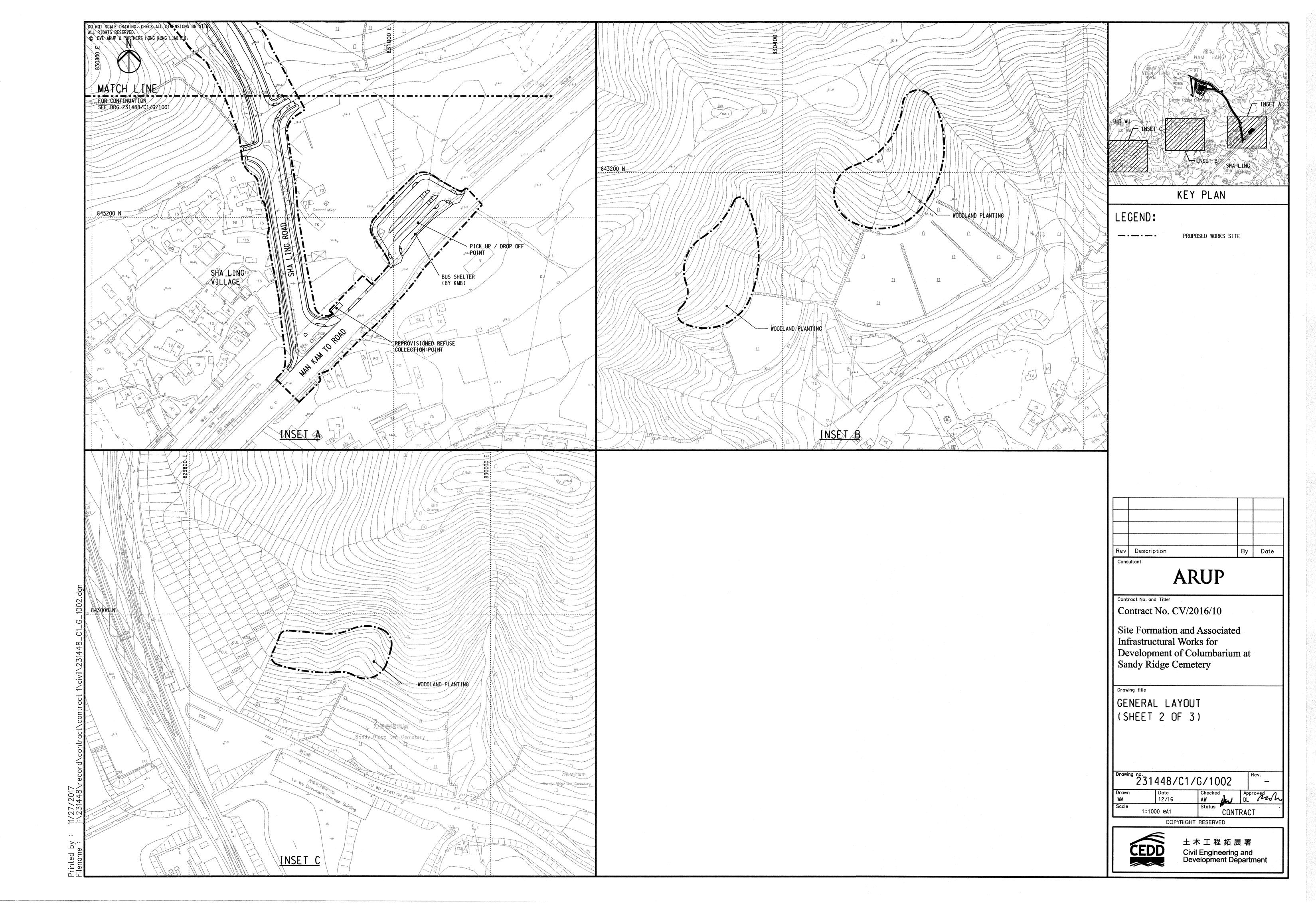
(本圖是根據更改環境許可証申請文件編號: VEP-555/2018 所隨附的圖 1 和環境影響評估報告編號 AEIAR-198/2016 圖 1.3 編制)

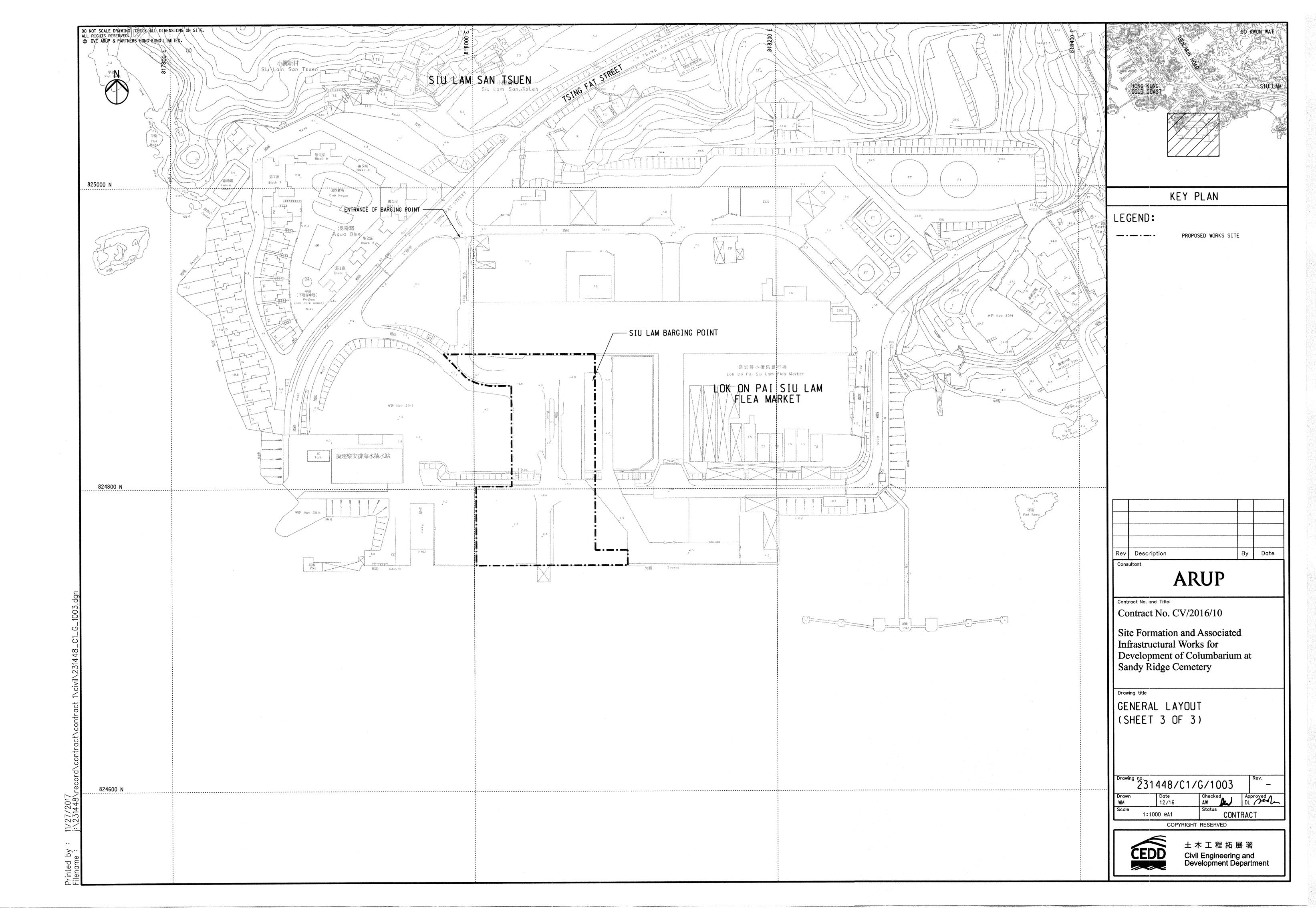
Environmental Permit No.: FEP-01/534/2017/A 環境許可證編號:FEP-01/534/2017/A



FIAO

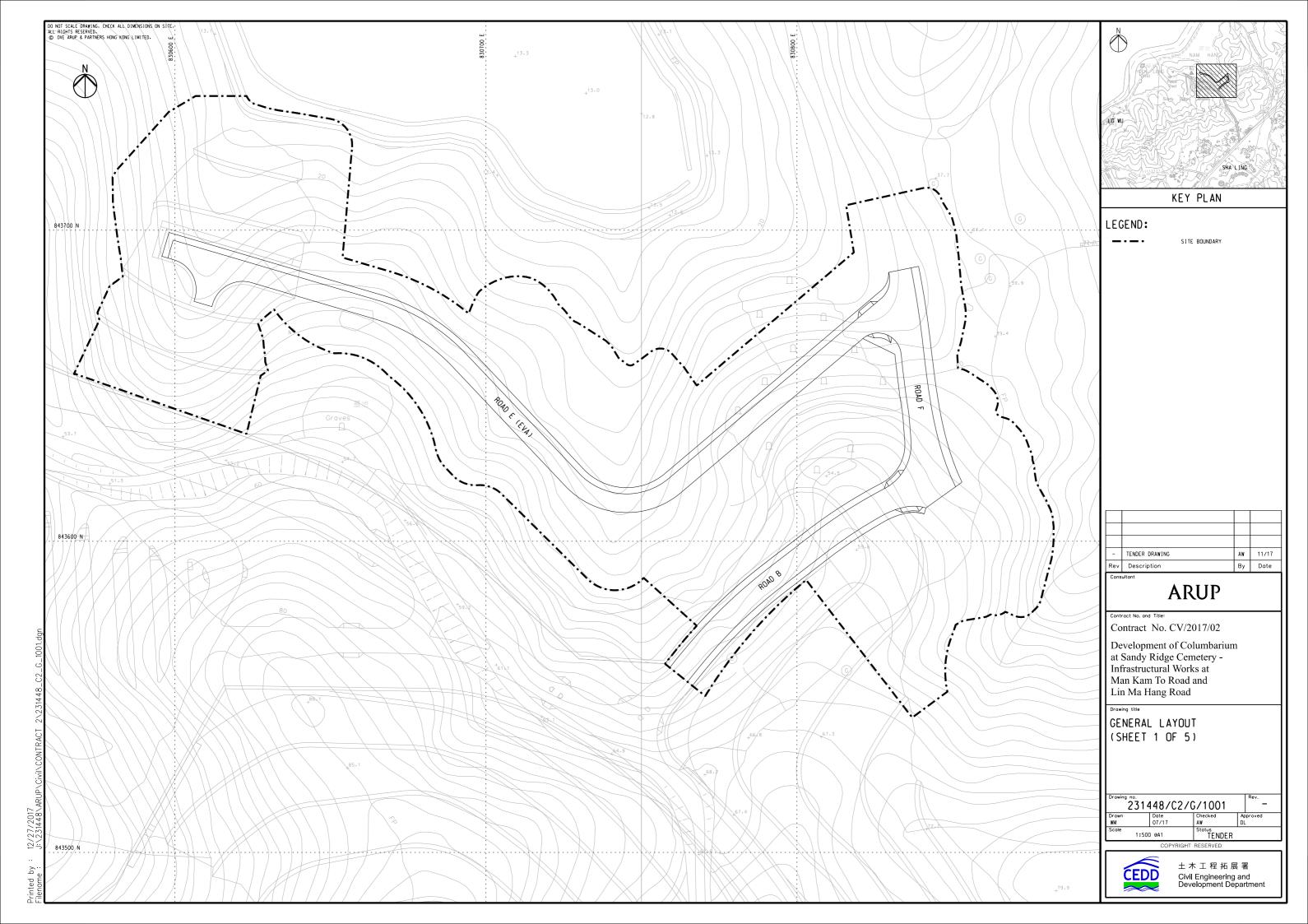




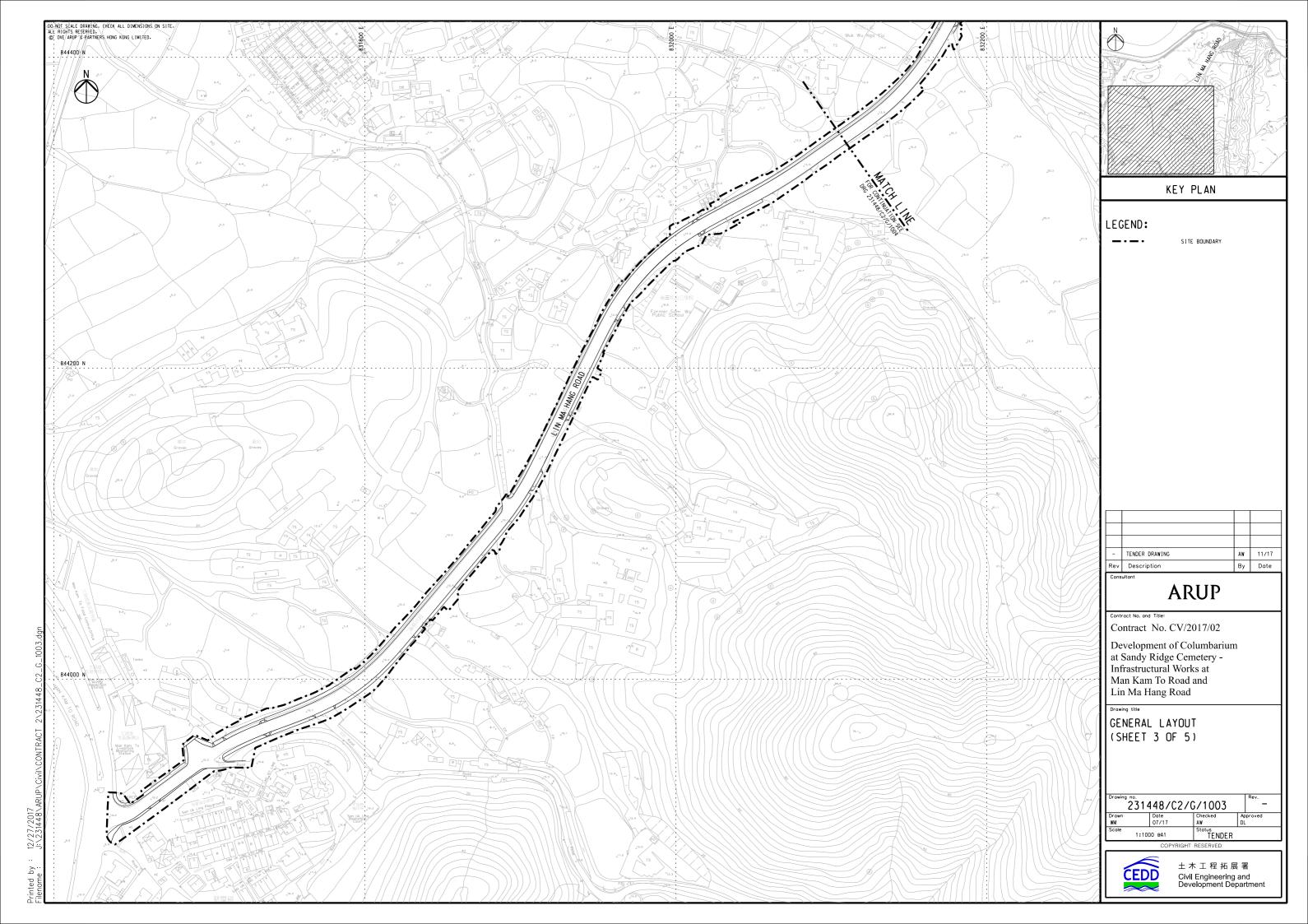


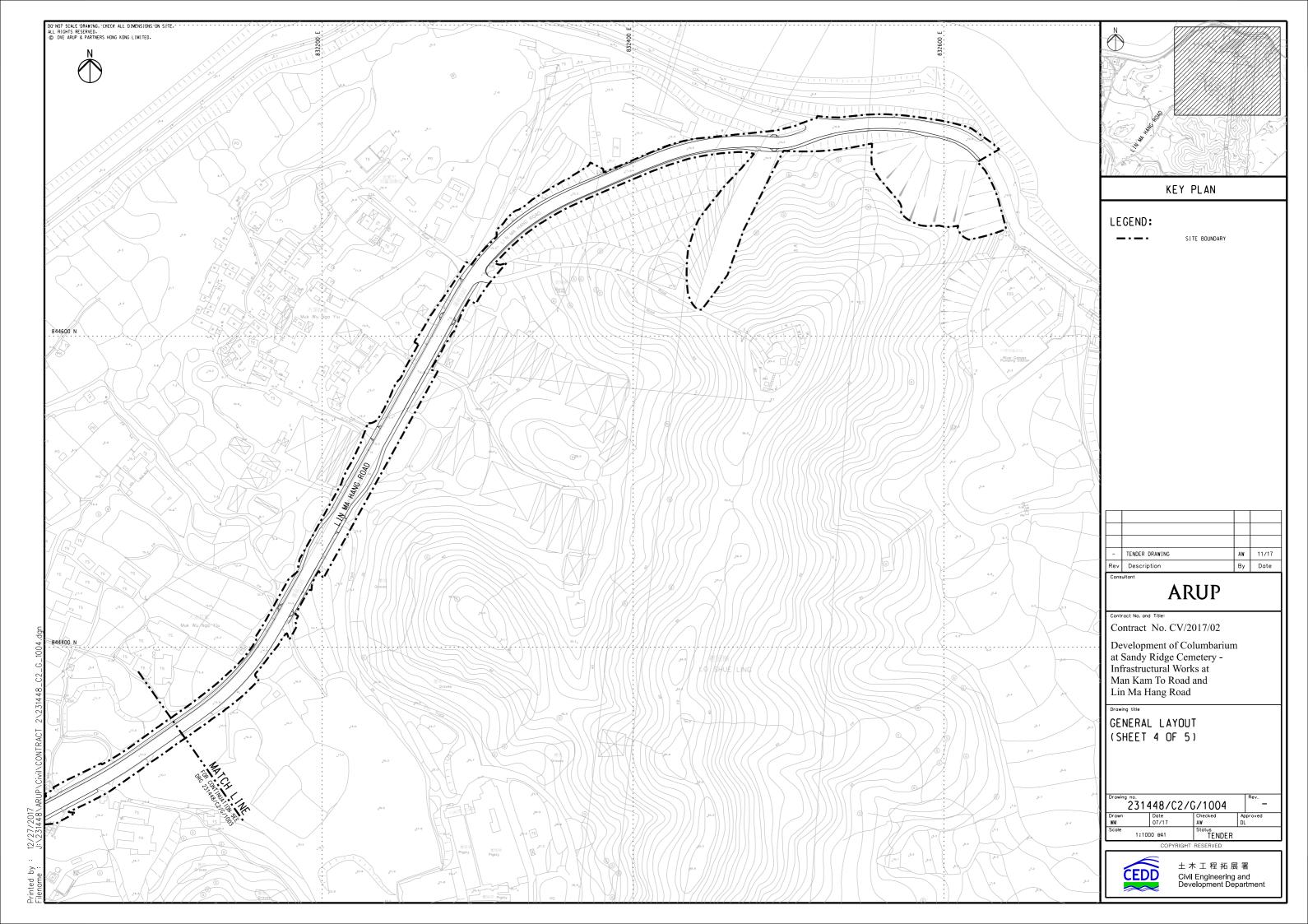


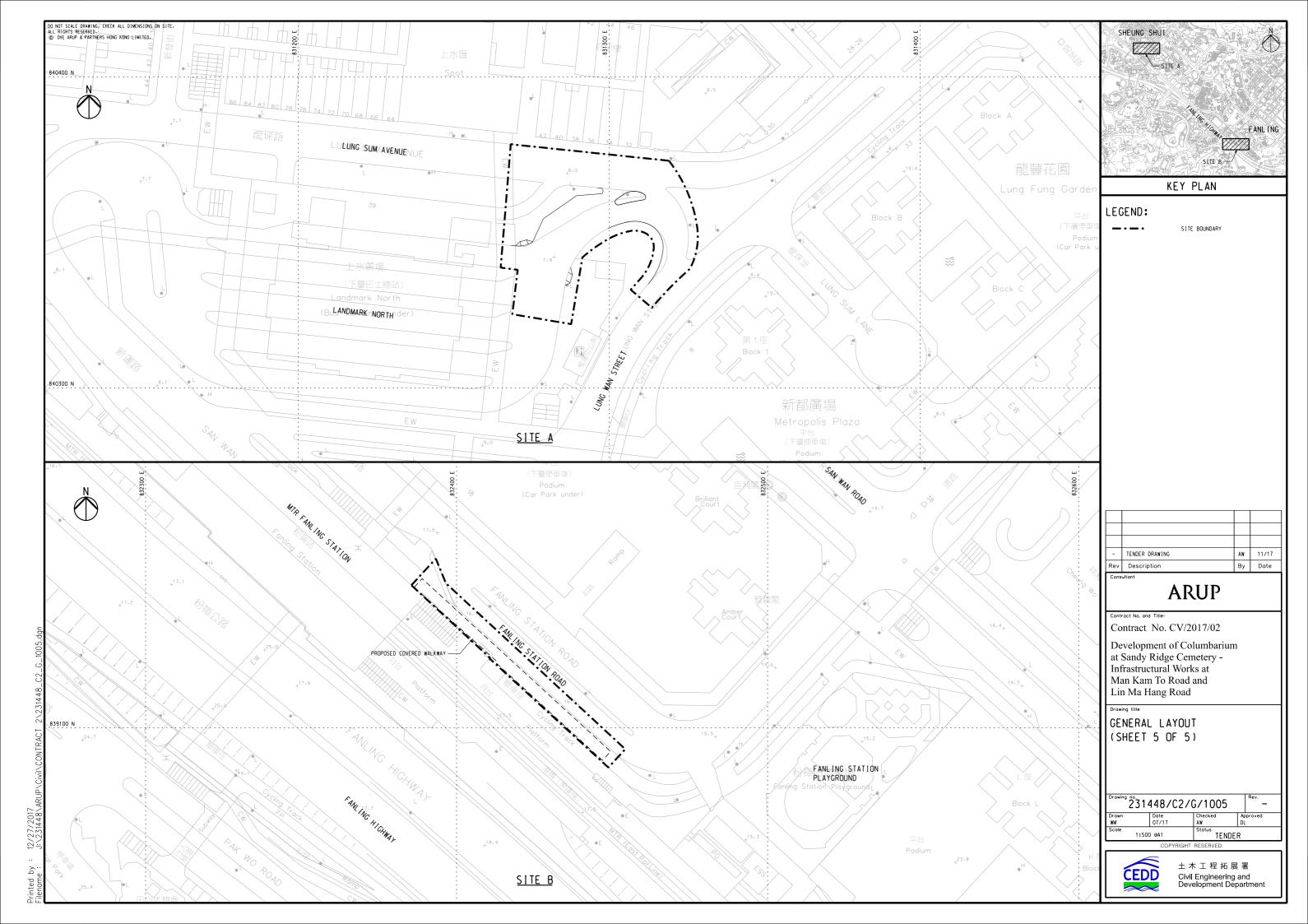
Layout Plan of Contract CV/2017/02











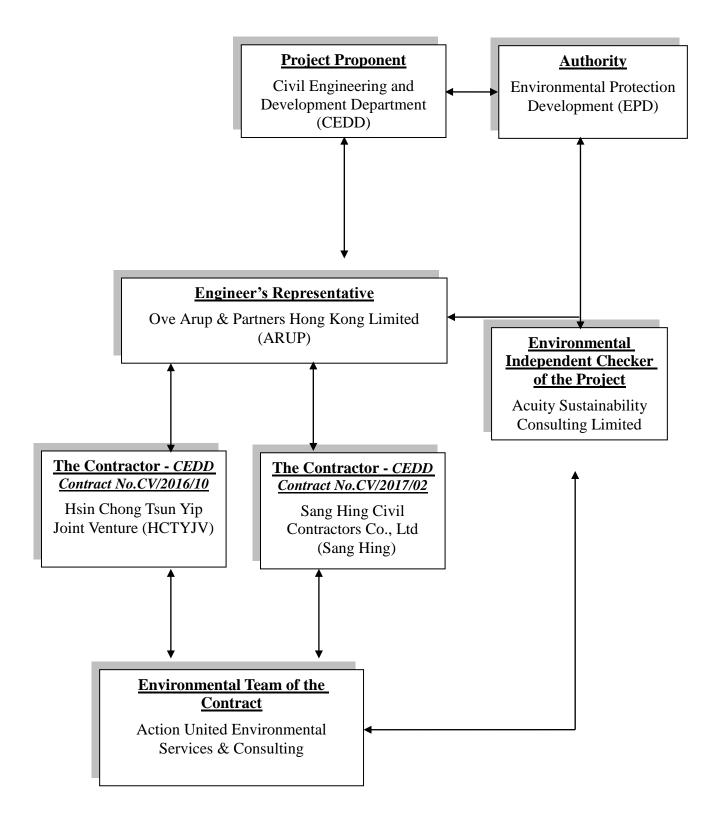


Appendix B

Organization Structure and Contact Details of Relevant Parties



The Contract's Environmental Management Organization





Contact Details of Key Personnel for CV/2016/10 (Contract 1)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	CHOI Wing-hing	2762-5620	2714-0695
ARUP	Engineer's Representative	Steve Tang	6190-1513	2268-3950
ACUITY	Independent Environmental Checker	Ir. Leung CH Jacky	2698-6833	2698-9383
HCTYJV	Project Director	Mr. Kan Kwok Cheung	9495-2408	2633-4691
HCTYJV	Construction Manager	Mr. Keniel Kwong	9863-0020	2633-4691
HCTYJV	Site Agent	Mr. Ho Man To	9507-9634	2633-4691
HCTYJV	Environmental Officer	Mr. Chan Ming Tai	9358-7007	2633-4691
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ben Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959-6059	2959-6079
AUES	Environmental Site Inspector	Mr. Martin Li	2959-6059	2959-6079

Legend:

CEDD (Employer) – Civil Engineering and Development Department

ARUP (Engineer) - Ove Arup & Partners Hong Kong Limited

HCTYJV (Main Contractor) – Hsin Chong Tsun Yip Joint Venture

ACUITY (IEC) – Acuity Sustainability Consulting Limited

AUES (ET) – Action-United Environmental Services & Consulting



Contact Details of Key Personnel for CV/2017/02 (Contract 2)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	CHOI Wing-hing	2762-5620	2714-0695
ARUP	Engineer's Representative	Anthony Lau	6190-1513	2268-3950
ACUITY	Independent Environmental Checker	Ir. Leung CH Jacky	2698-6833	2698-9383
SANG HING	Project Director	Edwin Au	9208-7329	2403-1162
SANG HING	Construction Manager	Raymond Wong	9272-1831	2403-1162
SANG HING	Site Agent	Elvin Lam	6285-0803	2403-1162
SANG HING	Environmental Officer	Chan Ng jhon-keibi	6090-0183	2403-1162
SANG HING	Environmental Supervisor	Kenny Chan	6115-0120	2403-1162
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ben Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959-6059	2959-6079
AUES	Environmental Site Inspector	Mr. Martin Li	2959-6059	2959-6079

Legend:

CEDD (Employer) - Civil Engineering and Development Department

ARUP (Engineer) - Ove Arup & Partners Hong Kong Limited

Sang Hing (Main Contractor) – Sang Hing Civil Contractors Co., Ltd

ACUITY (IEC) – Acuity Sustainability Consulting Limited

AUES (ET) – Action-United Environmental Services & Consulting



Appendix C

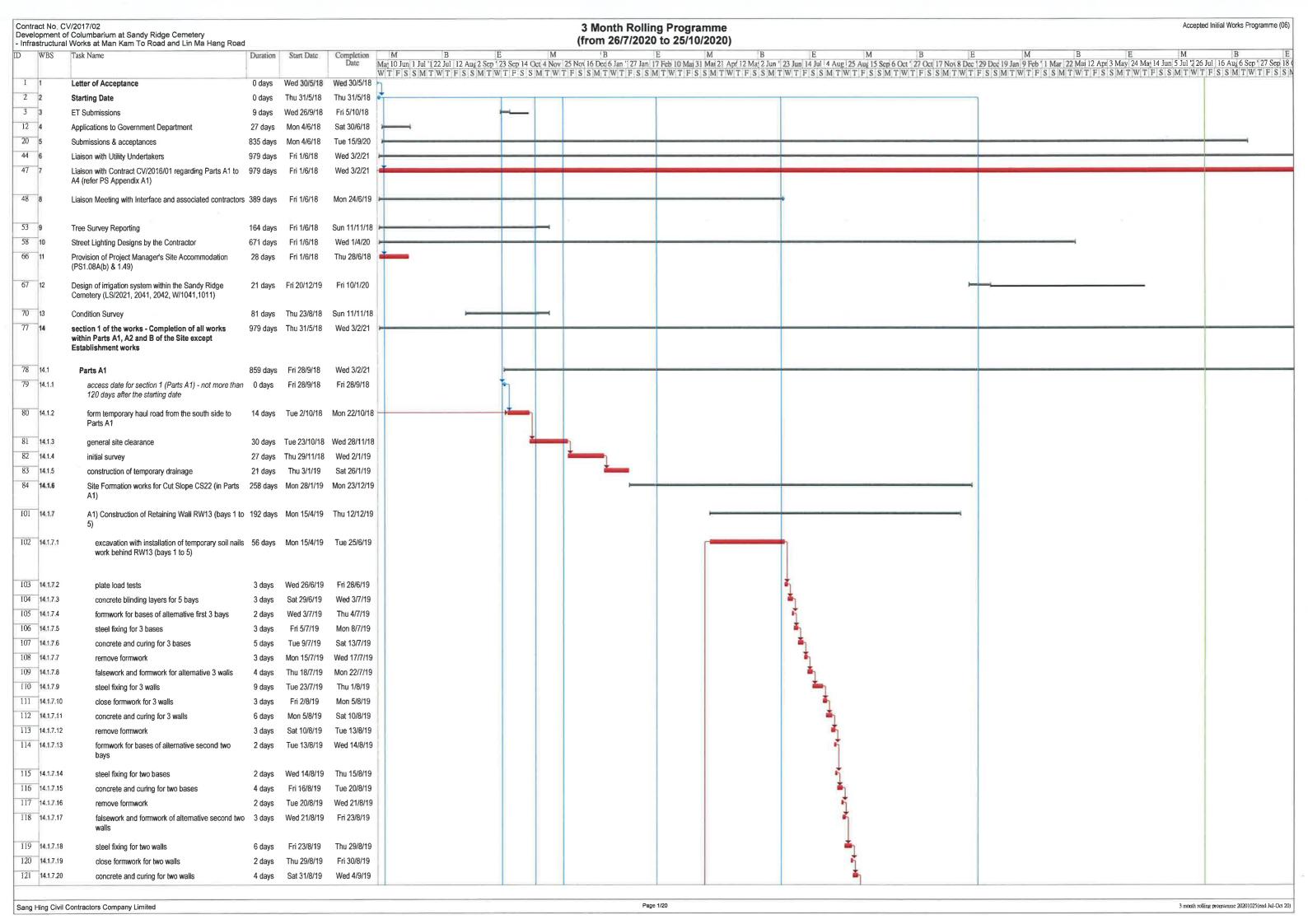
Three Months rolling Programme



Three Months rolling Programme of Contract CV/2016/10

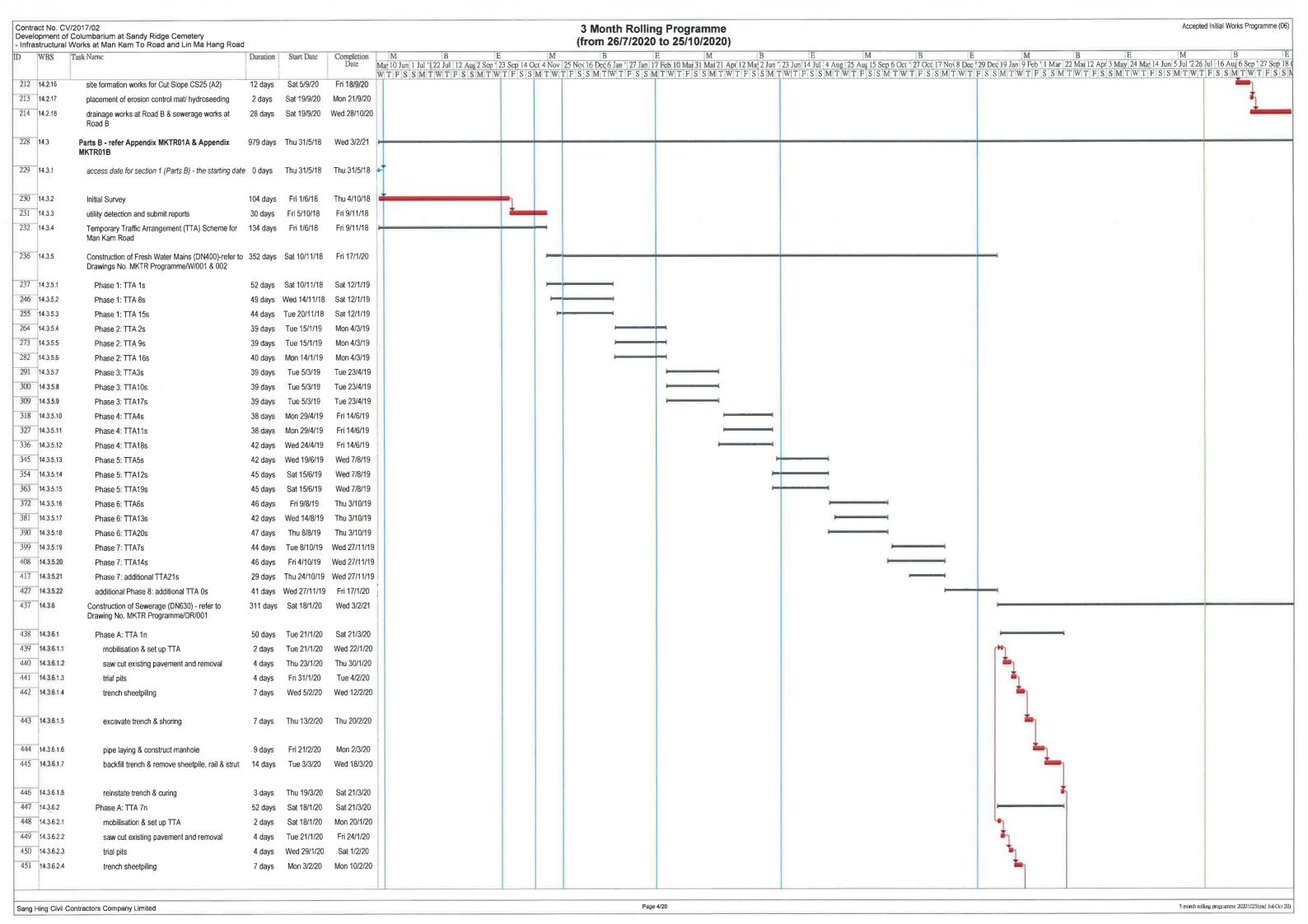


Three Months rolling Programme of Contract CV/2017/02



evelopme Infrastruc	lo. CV/2017 ent of Colui ctural Work	mbarium at Sandy Ridge Cemetery s at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/7/2020 to 25/10/2020)
WBS			Duration	Start Date	Completion Date	
22 14.1.7	7.21	remove falsework & formwork	2 days	Wed 4/9/19	Thu 5/9/19	
123 14.1.7		after completion of RW13 (bay 1 to 5), backfilling	•		Mon 2/12/19	
		& compaction behind wall to formation (A1) (Drg GE/1101)	oo uayo	111 0/0/10	WOT 2 TETO	
124 14.1.7	7.23	install instrument for RW13 (bay 1 to bay 5)	9 days	Tue 3/12/19	Thu 12/12/19	
125 14.1.8	8	Site Formation works for Fill Slope FS18	231 days	Mon 15/4/19	Mon 3/2/20	
126 14,1,8	8,1	excavate top 3.5m from the existing slope profile (extent to be directed by PM)(Drg.GE/2305)	15 days	Mon 15/4/19	Mon 6/5/19	
127 14.1.8	0.2	areas formation for filter bioriest	2 days	Tuo 7/5/10	Mod 9/E/10	
128 14.1.8		prepare formation for filter blanket slope backfill FS18 with 2.1m filter blanket	•	Tue 7/5/19 Wed 8/5/19	Wed 8/5/19 Sat 18/5/19	
	.	(GE/2601)	Juays	**60 UUI 13	Gat 1010/113	
129 14,1.8	8.4	backilling from top of filter blanket to formation level (including SRT tests)	126 days	Thu 16/5/19	Mon 21/10/19	
30 14.1.8	8.5	construction of 1.5m width maintenance berm	2 days	Fri 18/10/19	Mon 21/10/19	
14.1.8	8.6	construction of U channel/ stepped channel and catchpits	37 days	Fri 18/10/19	Mon 2/12/19	
132 14.1.8		construction of U channel in front of RW13	4 days	Tue 3/12/19	Fri 6/12/19	
133 14.1.8	8.8	600mm width concrete maintenance staircase with handrailing boxing out	11 days	Sat 7/12/19	Thu 19/12/19	
134 14.1.0		landscaping (hydroseeding)	27 days	Fri 20/12/19	Thu 23/1/20	
35 14.1.8		install instrument for FS18	6 days	Fri 24/1/20	Mon 3/2/20	
36 14.1.9		CS21 - slope cutting		Fri 20/12/19		
37 14.1.		install instrument for CS21	5 days	Tue 31/12/19		
38 14.1.		placement of erosion control mat/ hydroseeding	2 days	Tue 7/1/20	Wed 8/1/20	
139 14.1.		minor cutting CS26 (Parts A1) (for Road E)	7 days	Thu 9/1/20	Thu 16/1/20	
40 14.1.		Drainage works at Road E	43 days	Fri 17/1/20	Tue 10/3/20	
41 14.1.	.13,1	main pipe laying	31 days	Fri 17/1/20	Tue 25/2/20	
142 14.1.	13.2	gully pipe and pots	14 days	Mon 24/2/20	Tue 10/3/20	· · · · · · · · · · · · · · · · · · ·
43 14.1.	.14	Waterworks at Road E	24 days	Wed 11/3/20	Tue 14/4/20	
44 14.1.	.15	CS23 - slope cutting & 300U channel	17 days	Wed 11/3/20	Wed 1/4/20	
45 14.1.		install instrument for CS23	5 days	Thu 2/4/20	Wed 8/4/20	<u>*</u>
46 14.1		placement of erosion control mat/ hydroseeding	2 days		Tue 14/4/20	
47 14.1.		backfilling of pipe trench to formation (including SRT test)	9 days	Wed 15/4/20	Sat 25/4/20	
148 14.1.		300U channel behind RW13	•	Mon 27/4/20		↓
149 14.1.	20	300U channel and planter wall at south side of Road E	30 days	Mon 4/5/20	Sat 6/6/20	
150 14.1.	21	Roadworks of Road E (A1-ch66-243)	164 days	Mon 8/6/20	Wed 30/12/20	
151 14.1.		ducting for road lighting (RD/2091) & construction of irrigation system				
152 14.1.	21.2	kerbing, sub-base (include subbase SRT test) & cross road duct (RD/2061, 2081)	24 days	Fri 3/7/20	Thu 30/7/20	
153 14.1.	.21.3	concrete pavement	45 days	Fri 31/7/20	Mon 21/9/20	
154 14.1.	21.4	traffic signs, directional signs, type 2 railing,			Thu 26/11/20	
		emergency crash gate, beam barriers				
159 14.2	Pa	arts A2	400 days	Tue 31/12/19	Wed 3/2/21	
160 14.2.		access date for section 1 (Parts A2) - not more than 580 days after the starting date	0 days	Tue 31/12/19	Tue 31/12/19	
61 14,2	.2	form temporary haul road to Parts A2	6 days	Thu 2/1/20	Wed 8/1/20	
162 14.2		general site clearance	18 days	Thu 9/1/20	Sat 1/2/20	
163 14.2		initial survey	12 days	Mon 3/2/20	Sat 15/2/20	
	.5	construction of temporary drainage	00.1	Man 47/0/00	Tue 10/3/20	

Contract No. CV/2017/02 Accepted Initial Works Programme (06) 3 Month Rolling Programme Development of Columbarium at Sandy Ridge Cemeters (from 26/7/2020 to 25/10/2020) - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road Task Name Start Date Duration Completion Mai 10 Jun 1 Jul '1 22 Jul 12 Au; 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Jun '23 Jun '4 Jul '4 Aug 25 Au; 15 Sep 6 Oct '27 Oct 17 Nov 8 Dec '29 Dec 19 Jan 9 Feb '1 Mai 22 Mai 12 Apr 3 May 24 Mai 14 Jun 5 Jul '2 26 Jul 16 Au; 6 Sep '27 Sep 18 W T F S S M T W T F S 165 14.2.6 Site Formation works for Cut Slope CS22 (in Parts 15 days Wed 11/3/20 Mon 30/3/20 166 14.2.6.1 Wed 11/3/20 Wed 11/3/20 slope excavation works 1 day 167 14.2.6.2 drill, install steel bars and grout soil nails Thu 12/3/20 Mon 16/3/20 4 days (TB01-06, TA01-07) & 3nrs. raking drain 168 14.2.6.3 TDR test allowance 4 days Tue 17/3/20 Fri 20/3/20 169 14.2.6.4 soil nail head works Fri 20/3/20 Mon 23/3/20 170 14.2.6.5 Tue 24/3/20 install rest of instrument for CS22 2 days Mon 23/3/20 171 14.2.6.6 300U channel, 300 stepped channel & catchpits Mon 16/3/20 Tue 24/3/20 7 days with planter walls 172 14.26.7 600mm width concrete maintenance staircase 2 days Wed 25/3/20 Thu 26/3/20 with handrailing 173 14.26.8 placement of erosion control mat/ hydroseeding 2 days Fri 27/3/20 Mon 30/3/20 174 14.2.7 Construction of Retaining Wall RW13 Bay 6 to Bay 8 107 days Fri 27/3/20 Mon 10/8/20 175 14.2.7.1 temporary cutting for retaining wall RW13 Bay 6 2 days Fri 27/3/20 Mon 30/3/20 176 14.2.7.2 temporary soil nails works for retaining wall RW13 15 days Mon 30/3/20 Tue 21/4/20 Bay 6-8 177 14.2.7.3 Wed 22/4/20 Fri 24/4/20 plate load tests 3 days 178 14.2.7.4 blinding concrete for bay 6 to 8 Sat 25/4/20 Mon 27/4/20 2 days 179 14.27.5 base formwork for bay 6 and 8 2 days Tue 28/4/20 Wed 29/4/20 180 14.2.7.6 base steel fixing for bay 6 and 8 3 days Sat 2/5/20 Tue 5/5/20 181 14.2.7.7 base concreting & curing for bay 6 & 8 4 days Wed 6/5/20 Sat 9/5/20 182 14.2.7.8 remove base formwork Sat 9/5/20 Mon 11/5/20 2 days 183 14.2.7.9 Fri 15/5/20 falsework and formwork for walls bay 6&8 4 days Tue 12/5/20 184 14.2.7.10 Sat 16/5/20 steel fixing for walls of bay 6 & 8 7 days Sat 23/5/20 185 14.2.7.11 close formwork for walls of bay 6 & 8 2 days Mon 25/5/20 Tue 26/5/20 186 14.2.7.12 concreting and curing for walls of bay 6&8 5 days Wed 27/5/20 Mon 1/6/20 187 14.2.7.13 remove falsework and formwork for walls 2 days Mon 1/6/20 Tue 2/6/20 188 14.2.7.14 base formwork for bay 7 Wed 3/6/20 Thu 4/6/20 2 days 189 14.2.7.15 Sat 6/6/20 base steel fixing for bay 7 2 days Fri 5/6/20 190 14.2.7.16 base concreting & curing for bay 7 2 days Mon 8/6/20 Tue 9/6/20 191 14.2.7.17 Wed 10/6/20 Wed 10/6/20 remove base formwork 1 day 192 14.2.7.18 Fri 12/6/20 falsework and formwork for walls of bay 7 Thu 11/6/20 2 days 193 14.2.7.19 Sat 13/6/20 Thu 18/6/20 steel fixing for walls of bay 7 5 days I94 14.2.7.20 close formwork for walls of bay 7 1 day Fri 19/6/20 Fri 19/6/20 195 14.2.7.21 concreting and curing for walls of bay 7 3 days Sat 20/6/20 Tue 23/6/20 196 14.2.7.22 remove falsework and formwork for walls Wed 24/6/20 Wed 24/6/20 1 day 197 14.2.7.23 after completion of structural RW13 (bay 6 to 8), 36 days Fri 26/6/20 Fri 7/8/20 backfill behind wall to formation (A2) (Drg 198 14.2.7.24 install instrument for RW13 (bay 6 to bay 8) Sat 8/8/20 Mon 10/8/20 2 days 199 14.2.8 Sat 8/8/20 Wed 26/8/20 (west) drainage works at Road E (ch250 to 300) 16 days 200 14.2.9 Sat 12/9/20 15 days Thu 27/8/20 (west) waterworks at Road E (ch250 to 300) 201 14.2.10 construction of Irrigation System Sat 12/9/20 Thu 17/9/20 202 14.2.11 U channel for Road E Thu 17/9/20 Sat 19/9/20 3 days 203 14.2.12 Roadworks of Road E (A2-ch243-300) 42 days Tue 17/11/20 Sat 19/9/20 204 14.2.12.1 Sat 26/9/20 kerbing & sub-base (include sub-base SRT test) 7 days Sat 19/9/20 205 14.2.12.2 ducting for road lighting & water point 4 days Sat 26/9/20 Wed 30/9/20 206 14.2.12.3 concrete pavement 15 days Sat 3/10/20 Thu 22/10/20 207 14.2.12.4 Fri 30/10/20 traffic signs, beam barriers 7 days Wed 21/10/20 211 14.2.15 site formation works for Cut Slope CS26 (A2) 24 days Sat 8/8/20 Fri 4/9/20 3 month rolling programme 20201025(end Jul-Oct 20) Sang Hing Civil Contractors Company Limited



Develo	pment of	V/2017/02 f Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/7/2020 to 25/10/2020)	Accepted Initial Works Programme (06)
	201200000000000000000000000000000000000	Task Name	Duration	Start Date	Completion	M B E M B E M B E M B	E M B E
					Date	Ma; 10 Jun 1 Jul 1 22 Jul 12 Aug 2 Sep 1 23 Sep 1 4 Oct 4 Nov 25 Nov 16 Dec 6 Jan 27 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun 2 Jun 3 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 12 Apr 3 Ma; 21 Apr 12 Ma; 23 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 12 Apr 3 Ma; 21 Apr 3 Ma; 21 Apr 3 Ma; 21 Apr 12 Ma; 22 Ma; 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 12 Apr 3 Ma; 21 Apr 3 Ma; 22 Ma; 23 Apr 10 Ma; 23 Ma; 24 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 12 Apr 3 Ma; 24 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 12 Apr 3 Ma; 24 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec	' 24 Ma; 14 Jun 5 Jul '2 26 Jul 16 Au; 6 Sep ' 27 Sep 18 (T W T F S S M T W T F S S M T W T F S S N
452	14.3.6.2.5	excavate trench & shoring	9 days	Tue 11/2/20	Thu 20/2/20		
460	440000		0.1	E : 04 10100			
20000	143626 143627	pipe laying & construct manhole	9 days	Fri 21/2/20	Mon 2/3/20 Wed 18/3/20		
434	14.3.0.2.1	backfill trench & remove sheetpile, rail & strut	14 days	Tue 3/3/20	Weu 10/3/20		
455	14.3.6.2.8	reinstate trench & curing	3 days	Thu 19/3/20	Sat 21/3/20		
456		Phase B: TTA 2n	-		Thu 28/5/20		→
457	14.3.6.3.1	mobilisation & set up TTA	2 days				
458	14.3.6.3.2	saw cut existing pavement and removal	4 days	Wed 25/3/20	Sat 28/3/20		
459	14.3.6.3.3	trial pits	4 days	Mon 30/3/20	Thu 2/4/20		
460	14.3.6.3.4	trench sheetpiling	7 days	Fri 3/4/20	Wed 15/4/20		
461	14.3.6.3.5	excavate trench & shoring	9 days	Thu 16/4/20	Sat 25/4/20		
462	14.3.6.3.6	nice leving 9 construct months le	O dovo	Mon 27/4/20	Fri 8/5/20		
	14.3.6.3.7	pipe laying & construct manhole backfill trench & remove sheetpile, rail & strut	9 days		Mon 25/5/20		
		baskiii a situt a remove sheetpiie, raii a situt	i i daya	GUL OIOIZU	111011 2010120		
464	14.3.6.3.8	reinstate trench & curing	3 days	Tue 26/5/20	Thu 28/5/20		*
465	14.3.6.4	Phase B: TTA 8n			Thu 28/5/20		⊣
466	14.3.6.4.1	mobilisation & set up TTA	2 days	Mon 23/3/20	Tue 24/3/20	_ ֈալ	
	14.3.6.4.2	saw cut existing pavement and removal	4 days	Wed 25/3/20	Sat 28/3/20		
	14.3.6.4.3	trial pits	4 days	Mon 30/3/20	Thu 2/4/20	<u> </u>	
469	14.3.6.4.4	trench sheetpiling	7 days	Fri 3/4/20	Wed 15/4/20		
470	14,3.6.4.5	excavate trench & shoring	9 days	Thu 16/4/20	Sat 25/4/20		
471	14.3.6.4.6	pipe laying & construct manhole	9 days	Mon 27/4/20	Fri 8/5/20		
III CAC	14.3.6.4.7	backfill trench & remove sheetpile, rail & strut			Mon 25/5/20	<u></u>	- 1
	14.3.6.4.8	reinstate trench & curing	3 days	Tue 26/5/20	Thu 28/5/20		*
	14.3.6.5	Phase C: TTA 3n	52 days		Thu 30/7/20		1
	14.3.6.5.1	mobilisation & set up TTA	2 days	Fri 29/5/20	Sat 30/5/20		T
	14.3.6.5.2 14.3.6.5.3	saw cut existing pavement and removal	4 days	Mon 1/6/20	Thu 4/6/20		1
	14.3.6.5.4	trial pits	4 days 7 days	Fri 5/6/20 Wed 10/6/20	Tue 9/6/20		
470	14.0.0.0.4	trench sheetpiling	r uays	Wed 10/0/20	Weu 17/0/20		_
479	14.3.6.5.5	excavate trench & shoring	9 days	Thu 18/6/20	Mon 29/6/20		<u> </u>
	14,3.6.5.6	pipe laying & construct manhole	9 days	Tue 30/6/20	Fri 10/7/20		<u> </u>
481	14.3.6.5.7	backfill trench & remove sheetpile, rail & strut	14 days	Sat 11/7/20	Mon 27/7/20		-
	ara jero		_				<u> </u>
	14.3.6.5.8	reinstate trench & curing		Tue 28/7/20			
	14.3.6.6 14.3.6.6.1	Phase C: TTA 9n mobilisation & set up TTA		Fri 29/5/20 Fri 29/5/20	Thu 30/7/20 Sat 30/5/20		
	14.3.6.6.2	saw cut existing pavement and removal	2 days 4 days	Mon 1/6/20	Thu 4/6/20		*
	14.3.6.6.3	trial pits	4 days	Fri 5/6/20	Tue 9/6/20		<u>±</u> ,
	14 3.6.6 4	trench sheetpiling	7 days				± ,
			•				
488	14.3.6.6.5	excavate trench & shoring	9 days	Thu 18/6/20	Mon 29/6/20		-
							↓ ∥
	14.3.6.6.6	pipe laying & construct manhole		Tue 30/6/20			-
490	14.3.6.6.7	backfill trench & remove sheetpile, rail & strut	14 days	Sat 11/7/20	Mon 2////20		
491	14.3.6.6.8	reinstate trench & curing	3 days	Tue 28/7/20	Thu 30/7/20		*
492	14.3.6.7	Phase D: TTA 4n	52 days		Tue 29/9/20		1
493	14.3.6.7.1	mobilisation & set up TTA	2 days	Fri 31/7/20	Sat 1/8/20		
Sang H	ing Civil (Contractors Company Limited				Page 5/20	3 month rolling programme 20201025(end Jul-Oct 20)

		V/2017/02 of Columbarium at Sandy Ridge Cemetery						3 Month Rollin				Accepted Initial Works Programme (06)
- Infra	structura	I Works at Man Kam To Road and Lin Ma Hang Road						•) to 25/10/2020)		1	
ID	WBS	Task Name	Duration	Start Date	Completion Date	Ma; 10 Jun 1 Jul 122 Jul 12 Au 2 Sep 23 Sep 14	M Oct 4 Nov	B v 25 Nov 16 Dec 6 Jan ' 27 Jan	E M B 17 Feb 10 Mai 31 Mai 21 Apr. 12 Mai 2 Jun	E M B E 23 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 2 F W T F S S M T W T F S S M T W T F S S M T W T F	M B E 9 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Mai 14 Jun	M B E 5 Jul '2 26 Jul 16 Au 6 Sep ' 27 Sep 18 (
494	14.3.6.7.2	saw cut existing pavement and removal	4 days	Mon 3/8/20	Thu 6/8/20	WTFSSMTWTFSSMTWTFS	SMTW	TFSSMTWTFSS	MTWTFSSMTWTFSSMT	T W T F S S M T W T F S S M T W T F S S M T W T F	S S M T W T F S S M T W T F S S M T W T F S S	MTWTFSSMTWTFSSN
	14.3.6.7.3	0.1	4 days	Fri 7/8/20	Tue 11/8/20							1
496	14.3.6.7.4	trench sheetpiling	7 days	Wed 12/8/20	Wed 19/8/20							
497	14.3.6.7.5	excavate trench & shoring	9 days	Thu 20/8/20	Sat 29/8/20							-
						11						
-	14.3.6.7.6		9 days	Mon 31/8/20	Wed 9/9/20							
499	14.3.6.7.7	backfill trench & remove sheetpile, rail & strut	14 days	Thu 10/9/20	Fri 25/9/20							
500	14.3.6.7.8	reinstate trench & curing	3 days	Sat 26/9/20	Tue 29/9/20							
1777200	14.3.6.8	· · · · · · · · · · · · · · · · · · ·	52 days	Fri 31/7/20	Tue 29/9/20	-				-		-
	14.3.6.8.1		2 days	Fri 31/7/20	Sat 1/8/20							→a -
503	14.3.6.8.2	saw cut existing pavement and removal	4 days	Mon 3/8/20	Thu 6/8/20							5
504	14.3.6.8.3	trial pits	4 days	Fri 7/8/20	Tue 11/8/20							* 1
505	14.3.6.8.4	trench sheetpiling	7 days	Wed 12/8/20	Wed 19/8/20							-
506	14.3.6.8.5	excavate trench & shoring	9 days	Thu 20/8/20	Sat 29/8/20							-
507	14.3.6.8.6	pipe laying & construct manhole	9 days	Mon 31/8/20	Wed 9/9/20							<u></u>
	14.3.6.8.7	11 , 0	14 days		Fri 25/9/20							<u> </u>
509	14.3.6.8.8	reinstate trench & curing	3 days	Sat 26/9/20	Tue 29/9/20							*
510	14.3.6.9	Phase E: TTA 5n	52 days	Wed 30/9/20	Wed 2/12/20							1
511	14.3.6.9.1	mobilisation & set up TTA	2 days	Wed 30/9/20	Sat 3/10/20							
1	14.3.6.9.2	• 1	4 days	Mon 5/10/20	Thu 8/10/20							1 1
	14.3.6.9.3	F	4 days		Tue 13/10/20							1
514	14,3,6,9,4	trench sheetpiling	7 days	Wed 14/10/20	Wed 21/10/20							
515	14.3.6.9.5	excavate trench & shoring	9 days	Thu 22/10/20	Mon 2/11/20							<u> </u>
519	14.3.6.10	Phase E: TTA 11n	52 days	Wed 30/9/20	Wed 2/12/20							
520	14.3.6.10.	mobilisation & set up TTA	2 days	Wed 30/9/20	Sat 3/10/20							L
	14.3.6.10.	•	4 days									1
	14,3.6.10.3		4 days		Tue 13/10/20					<i>3</i>		1
523	14.3.6.10	4 trench sheetpiling	7 days	Wed 14/10/20	Wed 21/10/20							
524	14.3.6.10.	excavate trench & shoring	9 days	Thu 22/10/20	Mon 2/11/20							<u> </u>
557	17	section 2 of the works - Completion of all works within Parts C1 and C2 of the Site except Establishment works	979 days	Thu 31/5/18	Wed 3/2/21	1						
558	17.1	access date for section 2 (Part C1)	0 days	Thu 31/5/18	Thu 31/5/18	Ƞ						
	17.2	Temporary Traffic Arrangement (TTA) Scheme for Lin Ma Hang Road	-		Fri 9/11/18	<u> </u>	-					
565		works at Lin Ma Hang Road (section 2 Part C1) refer Appendice LMHR01a to d					-					
	17.3.1			Sat 10/11/18			-	-				
	17.3.2	Phase I (stage 2)-north lane (chainage 240-283)		Fri 7/12/18								
	17.3.3			Fri 28/12/18								
	17.3.4 17.3.5	Phase I (stage 4)-north lane (chainage 283-335) Phase I (stage 5)-south lane (chainage 335-380)		Tue 29/1/19 Thu 21/2/19								
	17.3.5	Phase I (stage 5)-south lane (chainage 335-380) Phase I (stage 6)-north lane (chainage 335-380)	18 days 16 days	Thu 14/3/19	Mon 1/4/19				-			
	17.3.7		23 days		Fri 3/5/19							
	17.3.8	Phase I (stage 8)-north lane (chainage 380-435)	15 days		Wed 22/5/19				<u> </u>			
648	17.3.9	Phase I (stage 9)-south lane (chainage 190-240)	18 days									
659	17.3.10	Phase I (stage 10)-north lane (chainage 190-240)	16 days	Fri 14/6/19	Wed 3/7/19				⊢	-		
							-0.1					
Sang	Hing Civil	Contractors Company Limited						Pag	e 6/20			3 month rolling programme 20201025(end Jul-Oct 20)

Accepted Initial Works Programme (06) 3 Month Rolling Programme Development of Columbarium at Sandy Ridge Cemeter (from 26/7/2020 to 25/10/2020) - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road Start Date Task Name Duration | Mai 10 Jun 1 Jul '1 22 Jul 12 Au; 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 12 Jun 14 Jul 4 Aug 25 Au; 15 Sep 6 Oct "27 Oct 17 Nov 8 Dec '29 Dec 19 Jan 9 Feb 1 Mai 22 Mai 12 Apr 3 May 24 Mai 14 Jun 5 Jul "226 Jul | 16 Au; 6 Sep '27 Sep 18 W T F S S M T W T T T T T T T T T T 669 17.3.11 Fri 25/10/19 Thu 4/7/19 Phase II (stage 1)-south lane (chainage 95 days 32-85)-Noise Barrier MM6 (bays 1-3) & MM7 (bays 703 17,3,12 Phase II (stage 2)-north lane (chainage Sat 26/10/19 Fri 7/2/20 84 days 32-85)-Noise Barrier MM9 (bays 1-4) 735 17.3.13 Mon 23/3/20 Phase II (stage 3)-south lane (chainage 85-138) 38 days Sat 8/2/20 746 17,3.14 Phase II (stage 4)-north lane (chainage 68 days Tue 24/3/20 Wed 17/6/20 85-138)-Noise Barrier MM10 (bays 1-4) 747 17.3.14.1 Tue 24/3/20 Wed 25/3/20 TTA, UU detection 2 days 748 17.3 14.2 tree felling 2 days Thu 26/3/20 Fri 27/3/20 749 17.3.14.3 Fri 27/3/20 saw cut & remove existing pavement 2 days Thu 26/3/20 750 17.3.14.4 Sat 28/3/20 Thu 2/4/20 install sheetpiles 5 days 751 17.3.14.5 Fri 3/4/20 Thu 9/4/20 excavate and install rails and struts 5 days 752 17.3.14.6 concrete blinding layers for 4 bays 2 days Thu 9/4/20 Tue 14/4/20 753 17.3.14.7 Tue 14/4/20 Wed 15/4/20 formwork for bases of alternative first two bays 2 days 754 17.3.14.8 steel fixing for two bases Wed 15/4/20 Thu 16/4/20 2 days 755 17.3.14.9 concrete and curing for two bases 4 days Thu 16/4/20 Mon 20/4/20 756 17.3.14.10 Mon 20/4/20 Tue 21/4/20 remove formwork 2 days 757 17.3.14.11 Thu 23/4/20 falsework and formwork for two walls 3 days Tue 21/4/20 758 17.3.14.12 Thu 23/4/20 Wed 29/4/20 steel fixing for two walls 6 days 759 17.3.14.13 close formwork for two walls 2 days Wed 29/4/20 Sat 2/5/20 760 17.3.14.14 concrete and curing for two walls 4 days Sat 2/5/20 Wed 6/5/20 761 17.3.14.15 remove formwork Wed 6/5/20 Thu 7/5/20 2 days 762 17.3.14.16 formwork for bases of alternative second two Thu 7/5/20 Fri 8/5/20 2 days 763 17.3.14.17 Fri 8/5/20 Sat 9/5/20 steel fixing for two bases 2 days 764 17.3.14.18 concrete and curing for two bases 4 days Sat 9/5/20 Wed 13/5/20 765 17.3.14.19 remove formwork 2 days Wed 13/5/20 Thu 14/5/20 766 17.3.14.20 Thu 14/5/20 Sat 16/5/20 falsework and formwork for two walls 3 days 767 17.3.14.21 steel fixing for two walls Sat 16/5/20 Fri 22/5/20 6 days 768 17.3.14.22 2 days Fri 22/5/20 Sat 23/5/20 close formwork for two walls 769 17.3.14.23 concrete and curing for two walls 4 days Sat 23/5/20 Wed 27/5/20 770 17.3.14.24 2 days Wed 27/5/20 Thu 28/5/20 remove formwork 771 17.3.14.25 backfill formation & SRT test 9 days Thu 28/5/20 Sat 6/6/20 772 17.3.14.26 Mon 8/6/20 Tue 9/6/20 lay kerb, sub-base 2 days 773 17.3.14.27 Wed 10/6/20 Fri 12/6/20 sub-base SRT test 3 days 774 17.3.14.28 DBM (Roadbase) 2 days Sat 13/6/20 Mon 15/6/20 775 17.3.14.29 Tue 16/6/20 Wed 17/6/20 base course and wearing course 2 days 776 17.3.15 Phase II (stage 5)-south lane (chainage 138-190) 36 days Thu 18/6/20 Fri 31/7/20 777 17.3.15.1 Thu 18/6/20 Fri 19/6/20 TTA & UU detection 2 days 778 17.3.15.2 tree felling 4 days Sat 20/6/20 Wed 24/6/20 779 17.3.15.3 saw cut & remove existing pavement 2 days Tue 23/6/20 Wed 24/6/20 780 17.3.15.4 excavate pipe trench and manhole(s) 2 days Fri 26/6/20 Sat 27/6/20 781 17.3.15.5 Mon 29/6/20 Wed 8/7/20 lay pipes & construct manhole(s) 8 days 782 17.3.15.6 backfill formation & SRT test Wed 8/7/20 Tue 21/7/20 12 days 783 17.3.15.7 lay kerb, sub-base 2 days Wed 22/7/20 Thu 23/7/20 784 17.3.15.8 sub-base SRT test Mon 27/7/20 Fri 24/7/20 3 days 785 17.3.15.9 DBM (Roadbase) 2 days Tue 28/7/20 Wed 29/7/20 3 month rolling programme 20201025(end Jul-Oct 20) Sang Hing Civil Contractors Company Limited

Contract No. CV/2017/02 Accepted Initial Works Programme (06) **3 Month Rolling Programme** Development of Columbarium at Sandy Ridge Cemetery (from 26/7/2020 to 25/10/2020) - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road Start Date Task Name Duration Completion May 10 Jun 1 Jul 1 22 Jul 12 Aug 2 Sep 1 23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan 1 27 Jan 17 Feb 10 May 31 May 21 Jun 1 29 Jul 12 Aug 2 Sep 1 20 Sep 1 4 Oct 4 Nov 2 Sep 1 8 Oct 2 S 786 17.3.15.10 Thu 30/7/20 Fri 31/7/20 base course and wearing course 2 days 787 17.3.16 Phase II (stage 6)-north lane (chainage 85 days Sat 1/8/20 Wed 11/11/20 138-190)-Noise Barrier MM10 (bays 5-9) 788 17.3.16.1 Sat 1/8/20 TTA, UU detection Mon 3/8/20 2 days 789 17.3.16.2 tree felling Tue 4/8/20 Wed 5/8/20 2 days 790 17.3.16.3 Wed 5/8/20 saw cut & remove existing pavement 2 days Tue 4/8/20 791 17.3.16.4 Thu 6/8/20 Wed 12/8/20 install sheetpiles 6 days 792 17.3.16.5 Thu 13/8/20 Wed 19/8/20 excavate and install rails and struts 6 days 793 17.3.16.6 concrete blinding layers for 5 bays Wed 19/8/20 Fri 21/8/20 794 17.3.16.7 Sat 22/8/20 formwork for bases of alternative first 3 bays Fri 21/8/20 2 days 795 17.3.16.8 steel fixing for 3 bases Sat 22/8/20 Tue 25/8/20 3 days 796 17.3.16.9 Tue 25/8/20 concrete and curing for 3 bases Sat 29/8/20 5 days 797 17.3.16.10 remove formwork 3 days Sat 29/8/20 Tue 1/9/20 798 17.3.16.11 Fri 4/9/20 falsework and formwork for 3 walls Tue 1/9/20 4 days 799 17.3.16.12 Mon 14/9/20 steel fixing for 3 walls 9 days Fri 4/9/20 800 17.3.16.13 close formwork for 3 walls 3 days Mon 14/9/20 Wed 16/9/20 801 17.3.16.14 concrete and curing for 3 walls 6 days Wed 16/9/20 Tue 22/9/20 802 17.3.16.15 formwork for bases of alternative second two Tue 22/9/20 Wed 23/9/20 2 days 803 17.3.16.16 steel fixing for two bases 2 days Wed 23/9/20 Thu 24/9/20 804 17.3.16.17 Thu 24/9/20 Mon 28/9/20 concrete and curing for two bases 4 days 805 17.3.16.18 Mon 28/9/20 Tue 29/9/20 remove formwork 2 days 806 17.3.16.19 falsework and formwork for two walls 3 days Tue 29/9/20 Sat 3/10/20 807 17.3.16.20 steel fixing for two walls 6 days Sat 3/10/20 Fri 9/10/20 808 17.3.16.21 close formwork for two walls Fri 9/10/20 Sat 10/10/20 2 days 809 17.3.16.22 concrete and curing for two walls 4 days Sat 10/10/20 Wed 14/10/20 810 17.3.16.23 remove formwork 2 days Wed 14/10/20 Thu 15/10/20 811 17.3.16.24 backfill formation & SRT test Thu 15/10/20 Thu 29/10/20 12 days 862 17.3.19 Noise Barrier MM8 (bays 1-3) 140 days Sat 1/8/20 Mon 18/1/21 863 17.3.19.1 Sat 1/8/20 Fri 4/9/20 construct alternative route to close the existing 30 days 864 17.3.19.2 TTA road closure, UU detection 2 days Sat 5/9/20 Mon 7/9/20 865 17.3.19.3 Tue 8/9/20 Fri 11/9/20 remove existing pavement 4 days 866 17.3.19.4 install sheetpiles 3 days Sat 12/9/20 Tue 15/9/20 867 17.3.19.5 Wed 16/9/20 Thu 17/9/20 excavate and install rails and struts 2 days 868 17.3.19.6 concrete blinding layers for 3 bays 3 days Fri 18/9/20 Mon 21/9/20 869 17.3.19.7 formwork for 2 bases 3 days Tue 22/9/20 Thu 24/9/20 870 17.3.19.8 Tue 29/9/20 steel fixing for 2 bases 4 days 871 17.3.19.9 concrete and curing for 2 bases 5 days Wed 30/9/20 Wed 7/10/20 872 17.3.19.10 remove formwork for 2 bases Thu 8/10/20 Sat 10/10/20 3 days 873 17.3.19.11 falsework and formwork for 2 walls Mon 12/10/20 Thu 15/10/20 4 days 874 17.3.19.12 Wed 28/10/20 steel fixing for 2 walls 10 days 894 17.3.23 Phase Ia (stage 101)-south lane (chainage 633-685) 20 days Sat 10/11/18 Mon 3/12/18 904 17.3.24 Phase Ia (stage 102)-north lane (chainage 633-685) 16 days Fri 21/12/18 Tue 4/12/18 914 17.3.25 Phase Ia (stage 103)-south lane (chainage 685-740) 25 days Sat 22/12/18 Wed 23/1/19 925 17.3.26 Phase Ia (stage 104)-north lane (chainage 685-740) 17 days Fri 15/2/19 934 17.3.27 Phase Ia (stage 105)-south lane (chainage 740-790) 24 days Sat 16/2/19 Fri 15/3/19 945 17.3.28 Thu 4/4/19 Phase Ia (stage 106) north lane (chainage 740-790) 17 days Sat 16/3/19 955 17.3.29 Sat 6/4/19 Sat 4/5/19 Phase la stage 107)-south lane (chainage 790-840) 21 days 966 17.3.30 Phase Ia (stage 108)-north lane (chainage 790-840) 29 days Mon 6/5/19 Mon 10/6/19

Accepted Initial Works Programme (06) 3 Month Rolling Programme Development of Columbarium at Sandy Ridge Cemeter (from 26/7/2020 to 25/10/2020) - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road WBS Task Name Duration Start Date Mai 10 Jun 1 Jul 1 22 Jul 12 Aug 2 Sep 1 23 Sep 1 4 Oct 4 Nov 25 Nov 16 Dec 6 Jan 1 27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Jun 1 2 Jun 1 4 Jul 4 Aug 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 1 29 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Mai 14 Jun 5 Jul 2 26 Jul 16 Aug 6 Sep 27 Sep 1 8 W T F S S M T W T F S 976 17.3.31 Tue 11/6/19 Wed 17/7/19 Phase la (stage 109)-south lane (chainage 840-890) 31 days 988 17.3.32 Wed 7/8/19 Phase Ia (stage 110)-north lane (chainage 840-890) 18 days Thu 18/7/19 998 17.3.33 Phase III (stage 1)-south lane (chainage 435-490) Thu 8/8/19 Fri 30/8/19 1009 17.3.34 Thu 19/9/19 Phase III (stage 2)-north lane (chainage 435-490) 16 days Sat 31/8/19 1019 17.3.35 Fri 20/9/19 Thu 31/10/19 Phase III (stage 3)-south lane (chainage 490-540) 34 days 1030 17,3,36 Wed 27/11/19 Phase III (stage 4)-north lane (chainage 490-540) 17 days 1039 17,3.37 Phase III (stage 5)-south lane (chainage 540-590) 29 days Thu 28/11/19 Fri 3/1/20 1049 17.3.38 Sat 1/2/20 Phase III (stage 6)-north lane (chainage 540-590) 22 days Sat 4/1/20 1059 17.3.39 Phase III (stage 7)-south lane (chainage 590-633) 29 days Tue 4/2/20 Sat 7/3/20 1069 17.3.40 Mon 9/3/20 Tue 7/4/20 Phase III (stage 8)-north lane (chainage 590-633) 25 days 1079 17.3 41 Street lighting (drawpits, abandon existing public 7 days Wed 8/4/20 Sat 18/4/20 lighting & cable, 100uPVC ducts) (ch435-890) 1080 17.3.42 tree planting 5 days Tue 14/4/20 Sat 18/4/20 1081 17.3.43 Mon 20/4/20 Mon 18/5/20 Street furniture & construction of footpath 23 days (ch435-890) 1082 17.3.44 Phase IV (stage 1)-south lane (chainage 890-940) 22 days Fri 20/9/19 Thu 17/10/19 1093 17.3.45 Phase IV (stage 2)-north lane (chainage 890-940) 17 days Fri 18/10/19 Wed 6/11/19 1103 17.3.46 Thu 12/12/19 Phase IV (stage 3)-south lane (chainage 940-983) Thu 7/11/19 31 days 1113 17.3.47 Phase IV (stage 4)-north lane (chainage 940-983) 16 days Fri 3/1/20 1122 17.3.48 Phase V (stage 1)-south lane (chainage 983-1035) 17 days Sat 4/1/20 Thu 23/1/20 1132 17.3.49 Phase V (stage 2)-north lane (chainage 983-1035) Fri 24/1/20 Fri 14/2/20 16 days 1141 17.3.50 Phase V (stage 3)-south lane (chainage 1035-1087) 19 days Sat 15/2/20 Sat 7/3/20 1151 17.3.51 Phase V (stage 4)-north lane (chainage 1035-1087) 12 days Mon 9/3/20 Sat 21/3/20 1160 17.3.52 Phase V (stage 5)-south lane (chainage 1087-1139) 20 days Mon 23/3/20 Sat 18/4/20 1170 17.3.53 Phase V (stage 6)-north lane (chainage 1087-1139) 15 days Mon 20/4/20 Fri 8/5/20 1171 17.3.53.1 TTA & UU detection 1 day Mon 20/4/20 Mon 20/4/20 1172 17.3.53.2 Tue 21/4/20 Wed 22/4/20 saw cut & remove existing pavement 2 days 1173 17.3.53.3 excavate gully trench and gully pot(s) 1 day Thu 23/4/20 Thu 23/4/20 1174 17.3.53.4 Fri 24/4/20 Sat 25/4/20 2 days lay& connect gully pipes& construct gully pot(s) 1175 17.3.53.5 lay kerb, sub-base 2 days Mon 27/4/20 Tue 28/4/20 1176 17.3.53.6 sub-base SRT test 3 days Wed 29/4/20 Mon 4/5/20 1177 17.3.53.7 Wed 6/5/20 DBM (Roadbase) 2 days Tue 5/5/20 1178 17.3.53.8 Thu 7/5/20 Fri 8/5/20 base course and wearing course 2 days 1179 17.3.54 Phase V (stage 7)-south lane (chainage 1139-1190) 20 days Sat 9/5/20 Mon 1/6/20 1180 17.3.54.1 TTA & UU detection 1 day Sat 9/5/20 Sat 9/5/20 1181 17.3.54.2 Mon 11/5/20 Tue 12/5/20 saw cut & remove existing pavement 2 days 1182 17.3.54.3 Wed 13/5/20 Thu 14/5/20 excavate pipe trench and manhole(s) 2 days 1183 17.3.54.4 Fri 15/5/20 Thu 21/5/20 lay pipes & construct manhole(s) 6 days 1184 17.3.54.5 backfill formation & SRT test 0 days Thu 21/5/20 Thu 21/5/20 1185 17.3.54.6 lav kerb, sub-base Fri 22/5/20 Sat 23/5/20 2 days 1186 17.3.54.7 sub-base SRT test Mon 25/5/20 Wed 27/5/20 3 days 1187 17.3.54.8 DBM (Roadbase) Thu 28/5/20 Fri 29/5/20 2 days 1188 17.3.54.9 Sat 30/5/20 Mon 1/6/20 base course and wearing course 2 days 1189 17.3.55 Phase V (stage 8)-north lane (chainage 1139-1190) 15 days Tue 2/6/20 Thu 18/6/20 1190 17.3.55.1 TTA & UU detection 1 day Tue 2/6/20 Tue 2/6/20 1191 17.3.55.2 saw cut & remove existing pavement 2 days Wed 3/6/20 Thu 4/6/20 1192 17.3.55.3 Fri 5/6/20 excavate gully trench and gully pot(s) 1 day Fri 5/6/20 1193 17.3.55.4 Sat 6/6/20 Mon 8/6/20 lay& connect gully pipes& construct gully pot(s) 2 days 1194 17.3.55.5 lay kerb, sub-base 2 days Tue 9/6/20 Wed 10/6/20 1195 17.3.55.6 sub-base SRT test Thu 11/6/20 Sat 13/6/20 1196 17.3.55.7 Tue 16/6/20 DBM (Roadbase) 2 days Mon 15/6/20 1197 17.3.55.8 2 days Thu 18/6/20 base course and wearing course Wed 17/6/20 1198 17.3.56 Phase VI (stage 1)-south lane (chainage 1190-1240) 21 days Fri 19/6/20 Wed 15/7/20 3 month rolling programme 20201025(end Jul-Oct 20) Sang Hing Civil Contractors Company Limited

Accepted Initial Works Programme (06) Contract No. CV/2017/02 3 Month Rolling Programme Development of Columbarium at Sandy Ridge Cemetery (from 26/7/2020 to 25/10/2020) - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road WRS Task Name Start Date Duration Completion Ma; 10 Jun 1 Jul 1 22 Jul 12 Au; 2 Sep 123 Sep 14 Oct 4 Nov 2 Sep 123 Sep 14 Oct 4 Nov 2 Sep 12 May 2 4 Ma; 14 Jun 5 Jul 12 Jul 12 Au; 2 Sep 12 May 2 4 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 Oct 1 Nov 8 Dec 129 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 12 May 24 Ma; 14 Jun 5 Ju 1199 17,3,56,1 Fri 19/6/20 Fri 19/6/20 TTA & UU detection 1 day 1200 17.3.56.2 saw cut & remove existing pavement Mon 22/6/20 2 days Sat 20/6/20 1201 17,3,56,3 excavate pipe trench and manhole(s) Tue 23/6/20 Wed 24/6/20 2 days 1202 17.3.56.4 Sat 4/7/20 Fri 26/6/20 lay pipes & construct manhole(s) 7 days 1203 17.3.56.5 Sat 4/7/20 Sat 4/7/20 backfill formation & SRT test 0 days 1204 17.3.56.6 lay kerb, sub-base Mon 6/7/20 Tue 7/7/20 2 days 1205 17.3.56.7 sub-base SRT test Wed 8/7/20 Fri 10/7/20 3 days 1206 17.3.56.8 Mon 13/7/20 DBM (Roadbase) 2 days Sat 11/7/20 1207 17.3.56.9 Wed 15/7/20 base course and wearing course 2 days Tue 14/7/20 1208 17,3,57 Phase VI (stage 2)-north lane (chainage 1190-1240) 15 days Thu 16/7/20 Sat 1/8/20 1209 17.3.57.1 Thu 16/7/20 Thu 16/7/20 TTA & UU detection 1 day 1210 17.3.57.2 Fri 17/7/20 Sat 18/7/20 saw cut & remove existing pavement 2 days 1211 17.3.57.3 excavate gully trench and gully pot(s) 1 day Mon 20/7/20 Mon 20/7/20 1212 17.3.57.4 lay& connect gully pipes& construct gully pot(s) Tue 21/7/20 Wed 22/7/20 2 days 1213 17.3.57.5 Fri 24/7/20 2 days Thu 23/7/20 lay kerb, sub-base 1214 17.3.57.6 sub-base SRT test 3 days Sat 25/7/20 Tue 28/7/20 1215 17.3.57.7 DBM (Roadbase) 2 days Wed 29/7/20 Thu 30/7/20 1216 17.3.57.8 Sat 1/8/20 base course and wearing course 2 days Fri 31/7/20 1217 17.3.58 Phase VI (stage 3)-south lane (chainage 1240-1286) 34 days Mon 3/8/20 Thu 10/9/20 1218 17.3.58.1 Mon 3/8/20 TTA & UU detection Mon 3/8/20 1 day 1219 17.3.58.2 Tue 4/8/20 Fri 14/8/20 tree felling 10 days 1220 17.3.58.3 Thu 13/8/20 Fri 14/8/20 saw cut & remove existing pavement 2 days 1221 17.3.58.4 Sat 15/8/20 Mon 17/8/20 excavate pipe trench and manhole(s) 2 days 1222 17.3.58.5 Tue 18/8/20 Mon 24/8/20 lay pipes & construct manhole(s) 6 days 1223 17.3.58.6 backfill formation & SRT test Mon 31/8/20 6 days Tue 25/8/20 1224 17.3.58.7 Wed 2/9/20 lav kerb, sub-base 2 days Tue 1/9/20 1225 17.3.58.8 Thu 3/9/20 Sat 5/9/20 sub-base SRT test 3 days 1226 17.3.58.9 DBM (Roadbase) 2 days Mon 7/9/20 Tue 8/9/20 1227 17.3.58.10 Wed 9/9/20 Thu 10/9/20 base course and wearing course 2 days 1228 17.3.59 Phase VI (stage 4)-north lane (chainage 1240-1286) 15 days Fri 11/9/20 Mon 28/9/20 1229 17.3.59.1 Fri 11/9/20 Fri 11/9/20 TTA & UU detection 1 day 1230 17.3.59.2 saw cut & remove existing pavement 2 days Sat 12/9/20 Mon 14/9/20 1231 17.3.59.3 Tue 15/9/20 Tue 15/9/20 excavate gully trench and gully pot(s) 1 day 1232 17.3.59.4 lay& connect gully pipes& construct gully pot(s) 2 days Wed 16/9/20 Thu 17/9/20 1233 17.3.59.5 2 days Fri 18/9/20 Sat 19/9/20 lay kerb, sub-base 1234 17.3.59.6 sub-base SRT test Mon 21/9/20 Wed 23/9/20 3 days 1235 17.3.59.7 Fri 25/9/20 DBM (Roadbase) 2 days Thu 24/9/20 1236 17.3.59.8 Sat 26/9/20 Mon 28/9/20 base course and wearing course 2 days 1237 17.3.60 Phase VI (stage 5)-south lane (chainage 1286-1332) 20 days Tue 29/9/20 Fri 23/10/20 1238 17.3.60.1 Tue 29/9/20 Tue 29/9/20 TTA & UU detection 1 day 1239 17.3.60.2 saw cut & remove existing pavement 2 days Wed 30/9/20 Sat 3/10/20 1240 17.3.60.3 excavate pipe trench and manhole(s) 2 days Mon 5/10/20 Tue 6/10/20 1241 17.3.60.4 lay pipes & construct manhole(s) 6 days Wed 7/10/20 Tue 13/10/20 1242 17.3.60.5 backfill formation & SRT test Tue 13/10/20 Tue 13/10/20 0 days 1243 17.3.60.6 Wed 14/10/20 Thu 15/10/20 lay kerb, sub-base 1244 17.3.60.7 sub-base SRT test 3 days Fri 16/10/20 Mon 19/10/20 3 month rolling programme 20201025(end Jul-Oct 20) Sang Hing Civil Contractors Company Limited

Develor	ment of	V/2017/02 f Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/7/2020 to 25/10/2020) Accepted Initial Works Programme (06
100000000000000000000000000000000000000		1500 000000	Duration	Start Date	Completion	M B E M B E M B E M B E M B I
1	7.1452S	Page 1275 2075 Page 1			Date	Ma; 10 Jun 1 Jul 1 Jul 1 2 Jul 1 2 Aug 2 Sep 2 3 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan 2 7 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun 2 3 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov 8 Dec 29 Dec 19 Jan 9 Feb 1 Mar 22 Ma; 12 Apr 3 May 24 Ma; 14 Jun 5 Jul 2 26 Jul 16 Aug 6 Sep 27 Sep 18 W T F S S M T W
1245		DBM (Roadbase)	2 days	Tue 20/10/20		
1246		base course and wearing course	2 days	Thu 22/10/20	Fri 23/10/20	
1247	7,3,61	Phase VI (stage 6) - north lane (chainage 1286 -1332)	12 days	Sat 24/10/20	Sat 7/11/20	
1248	7.3.61.1	TTA & UU detection	1 day	Sat 24/10/20	Sat 24/10/20	
1278 1	7.4	Noise Barrier works above the concrete substructure of the noise barrier (section 2 Part C1)	674 days	Mon 29/10/18	Wed 3/2/21	
1279	7.4.1	seek specialist subcontractor to design and build	210 days	Mon 29/10/18	Sun 26/5/19	
1280	7.4.2	propose specialist subcontractor to PM for acceptance	0 days	Sun 26/5/19	Sun 26/5/19	
1281	7.4.3	acceptance of propose specialist subcontractor by Project Manager	0 days	Sun 16/6/19	Sun 16/6/19	
1282	7.4.4	prepare design & liaise with designer & PM	120 days	Mon 17/6/19	Mon 14/10/19	9
1283		F - F	,	Tue 15/10/19		
1284	7.4.6	submit 1st design for PM's comment	0 days	Mon 28/10/19	Mon 28/10/19	9
1285				Tue 29/10/19		
1286				Tue 19/11/19		
1287		re-submit design for PM's acceptance	•	Mon 16/12/19		
1288	7.4.10		7 days	Tue 17/12/19	Mon 23/12/19	
1289	7.4.11	PM's & relevant authorities' acceptance	0 days	Mon 13/1/20	Mon 13/1/20	
1290	7.4.12	ordering of noise barrier panel	•	Wed 15/1/20		
1291	7.4.13	fabricating of panel and steelworks	180 days	Thu 16/1/20	Mon 13/7/20	
1292		delivery of panel and steelworks on site	76 days	Tue 14/7/20	Sun 27/9/20	
1293	7.4.15	completion of concrete curing of substructure of Nosie Barriers	463 days	Mon 14/10/19	Tue 19/1/21	
1295		MM6	0 days	Mon 14/10/19	Mon 14/10/19	
1296		MM7		Mon 14/10/19		
	7.4.15.5	MM9		Mon 10/2/20		
1299		MM10 (Bay 1-4)	-	Sun 21/6/20		
1301	7.4.16	construction works above the concrete substructure of the noise barrier MM6, MM7 & MM9 (app., 77m)	48 days	Mon 28/9/20	Wed 25/11/20	
1302	7.4.16.1	fix posts with base plates to copings	11 davs	Mon 28/9/20	Mon 12/10/20	
1303		install structural frames		Tue 13/10/20		
1304		fix AI. absorption noise barrier panels	•			
1323	7.5	access date for section 2 (Part C2)	0 days	Sun 24/2/19	Sun 24/2/19	9
1324	7.6	additional site possession for areas outside site boundary (for 3NW-C/C470 (existing D-DH7), C224 (existing D-DH11) & C225 new drillholes DHA1,A2 & A3 }		Sun 24/2/19	Sun 24/2/19	
1325	7.7	Slope Upgrading works (section 2 Part C2)	578 dave	Mon 25/2/19	Wed 3/2/21	
1326				Mon 25/2/19		
1327		·	•	Thu 11/4/19		
1328				Wed 22/5/19		
1329		·	•	Mon 17/6/19		
1330	7.7.5	baseline monitoring for 3NW-C/C230 (DH15 & 16) & C225 (DH3 & 17) on existing drillholes & 3NW-C/C470 (existing D-DH7), C224 (existing D-DH11) & C225 proposed verification drillholes DHA1,A2 & A3	30 days	Fri 12/7/19	Thu 15/8/19	
1331	7.7.6	submit 4 sets of initial readings of baseline monitoring and preliminary logs to the Project Manager to the Project Manager	0 days	Thu 15/8/19	Thu 15/8/19	
1332	7.7.7	Slopeworks: 3NW-C/C470 (ch490-540S/B)	59 days	Fri 16/8/19	Sat 26/10/19	9
		Contractors Company Limited				Page 11/20 3 month rolling programme 2020/025(end Jul-Oct 2
Sang Hi	ig CIVII (Some actions Company Limited				S HANKEL TOLLING PROGRAMME 2020/1022/GRM 104-OCI 20

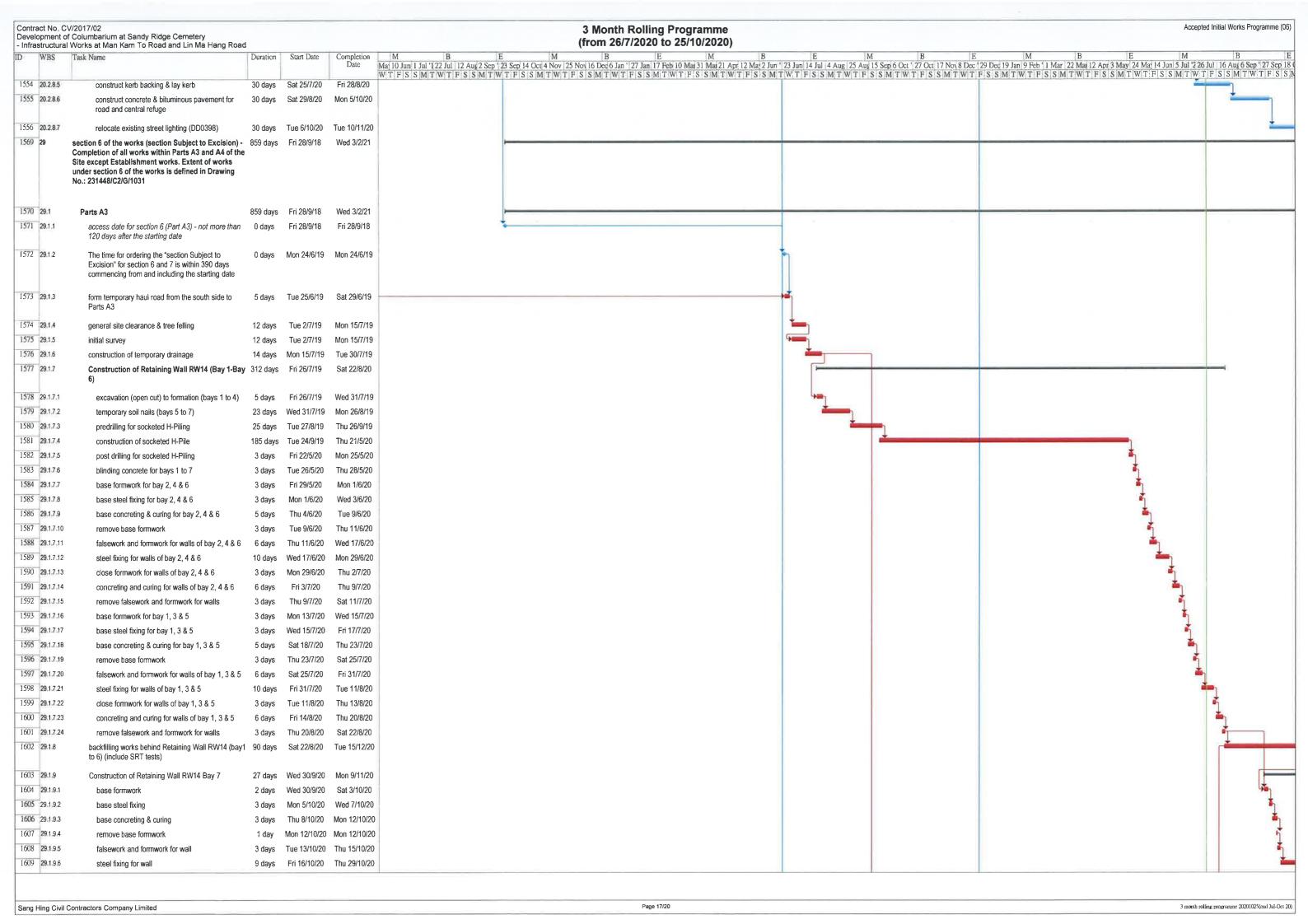
Developn	No. CV/20 nent of Col actural Wo	lumbarium at Sandy Ridge Cemetery rks at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/7/2020 to 25/10/2020)
W		· · · · · · · · · · · · · · · · · · ·	Duration	Start Date	Completion Date	M B E M B E M B E M B E M B E M B E M B E M B E M B B E M B B E M B B E M B B E M B B E M B B B B
333 17.	7.7.1	removal of existing trees	10 days	Fri 16/8/19	Tue 27/8/19	WITTSSWIW TWITTSSWITG
334 17.	7.7.2	hoarding & fencing	6 days	Wed 28/8/19	Tue 3/9/19	
35 17.	7.7.3	slope excavation works	1 day	Wed 4/9/19	Wed 4/9/19	4
336 17.	774	tomporon, gooffolding	5 days	Thu 5/9/19	Tue 10/9/19	
337 17.		temporary scaffolding proposed slope stripping for mapping or rock and	5 days 8 days		Fri 20/9/19	
550 1115	9/8	relict discontinuities (AS5-A,B, AS6-A,B)	o dayo	1100 1110/10	111 2010110	
338 17.	7.7.6	Phase I	8 days	Sat 21/9/19	Mon 30/9/19	
339 17.	7.7.6.1	install test nail PN02 & pull out test	6 days	Sat 21/9/19	Fri 27/9/19	
340 17.	7.7.6.2	drill, install steel bars and grout soil nails (B01-12)	2 days	Sat 28/9/19	Mon 30/9/19	
1341 17.	777	Phase II	R dave	Wed 2/10/19	Fri 11/10/10	
1342 17.		install test nail PN01 & pull out test	•	Wed 2/10/19 Wed 2/10/19		
	10 mm		/-			
1343 17.	7.7.7.2	drill, install steel bars and grout soil nails (A01-17)	2 days	Thu 10/10/19	Fri 11/10/19	
1344 17.		raking drains	1 day	Sat 12/10/19	Sat 12/10/19	
1345 17.		TDR Test (including test & wait issue result)		Mon 14/10/19		
1346 17.		soil nail head works	-	Wed 16/10/19		
1347 17.		UC & catchpit (38m & 1 nr)	5 days			
1348 17.	1.12	biodegradable erosion control mat with hydroseeding	2 days	Fri 25/10/19	Sat 26/10/19	
1349 17.	7.8	Slopeworks: - 3NW-C/C230 (ch1240-1330S/B)	130 days	Mon 28/10/19	Thu 2/4/20	
1350 17.	7.8.1	removal of existing trees	10 days	Mon 28/10/19	Thu 7/11/19	
1351 17.	7.8.2	hoarding & fencing	9 days	Fri 8/11/19	Mon 18/11/19	
1352 17.	7.8.3	temporary scaffolding	7 days	Tue 19/11/19	Tue 26/11/19	
1353 17.	7.8.4	proposed slope stripping for mapping or rock and relict discontinuities (AS3-A,B, AS4-A,B)	8 days	Wed 27/11/19	Thu 5/12/19	
1354 17.	7.8.5	slope excavation works	1 day	Fri 6/12/19	Fri 6/12/19	
1355 17.	7.8.6	Phase I	25 days	Sat 7/12/19	Wed 8/1/20	
1356 17.	7.8.6.1	install test nail PN22 & pull out test		Sat 7/12/19	Fri 13/12/19	
1357 17.	7.8.6.2	drill, install steel bars and grout soil nails (K01-22, N01-05, M01-11, J01-25)	10 days	Sat 14/12/19	Fri 27/12/19	
1358 17.	7.8.6.3	TDR Test (including test & wait issue result)	2 days	Sat 28/12/19	Mon 30/12/19	
1359 17.		soil nail head works	7 days	Tue 31/12/19	Wed 8/1/20	
1360 17.			22 days		Thu 6/2/20	
1361 17.	7.8.7.1	install test nail PN21 & pull out test	6 days	Thu 9/1/20	Wed 15/1/20	
1362 17.	7.8.7.2	drill, install steel bars and grout soil nails (H01-25, L01-16)	8 days	Thu 16/1/20	Fri 24/1/20	
1363 17	7.8.7.3	raking drains	2 days	Wed 29/1/20	Thu 30/1/20	
1364 17		TDR Test (including test & wait issue result)	2 days	Fri 31/1/20	Sat 1/2/20	
1365 17.		soil nail head works	4 days		Thu 6/2/20	
1366 17	7.8.8	225UC, 300SC & catchpits	21 days	Fri 7/2/20	Mon 2/3/20	
1367 17	7.8.9	600mm width concrete maintenance staircase with handrailing	9 days	Tue 3/3/20	Thu 12/3/20	
1368 17	7.8.10	soil replacement by no-fines concrete	6 days	Fri 13/3/20	Thu 19/3/20	*
1369 17		stage 1	2 days		Sat 14/3/20	
5000	7.8.10.1.1	temporary cut & excavation of soil			Fri 13/3/20	

Accepted Initial Works Programme (06) Contract No. CV/2017/02 3 Month Rolling Programme Development of Columbarium at Sandy Ridge Cemetery - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road (from 26/7/2020 to 25/10/2020) WBS Task Name Start Date Duration Completion Date Ma; 10 Jun 1 Jul "122 Jul 12 Au; 2 Sep "23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan "27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 12 Jun 14 Jul 4 Aug 25 Au; 15 Sep 6 Oct "27 Oct 17 Nov 8 Dec "29 Dec 19 Jan 9 Feb "1 Mar 22 Mai 12 Apr 3 May 24 Ma; 14 Jun 5 Jul "26 Jul 16 Au; 6 Sep "27 Sep 18 W T F S S M T W T F S S M 1371 17.7.8.10.1.2 Sat 14/3/20 Sat 14/3/20 placement of no-fine concrete 1 day 1372 17.7.8.10.2 Mon 16/3/20 Tue 17/3/20 2 days 1373 17.7.8.10.2. temporary cut & excavation of soil 1 day Mon 16/3/20 Mon 16/3/20 1374 17.7.8.10.2.2 Tue 17/3/20 Tue 17/3/20 placement of no-fine concrete 1 day 1375 17.7.8.10.3 Wed 18/3/20 Thu 19/3/20 stage 3 2 days 1376 17.7.8.10.3.1 Wed 18/3/20 Wed 18/3/20 temporary cut & excavation of soil 1 day 1377 17.7.8.10.3.2 placement of no-fine concrete 1 day Thu 19/3/20 Thu 19/3/20 1378 17.7.8.11 Thu 2/4/20 biodegradable erosion control mat with 12 days Fri 20/3/20 hydroseeding & shrub planting 1379 17.7.9 Slopeworks: - 3NW-C/C224 (ch1040-1120N/B) 117 days Tue 31/3/20 Sat 22/8/20 1380 17.7.9.1 Tue 31/3/20 Wed 15/4/20 hoarding & fencing 10 days 1381 17.7.9.2 Thu 16/4/20 temporary scaffolding 10 days Mon 27/4/20 1382 17.7.9.3 Tue 28/4/20 Tue 28/4/20 slope excavation works 1 day 1383 17.7.9.4 Wed 29/4/20 Tue 26/5/20 Phase I 22 days 1384 17.7.9.4.1 install test nail PN14 & pull out test Wed 29/4/20 Thu 7/5/20 6 days 1385 17.7.9.4.2 drill, install steel bars and grout soil nails Fri 8/5/20 Sat 16/5/20 8 days (G01-21, F01-31) 1386 17.7.9.4.3 TDR Test (including test & wait issue result) 2 days Mon 18/5/20 Tue 19/5/20 1387 17.7.9.4.4 soil nail head works Wed 20/5/20 Tue 26/5/20 6 days 1388 17.7.9.5 Wed 27/5/20 Tue 9/6/20 Phase II 12 days 1389 17.7.9.5.1 install test nail PN13 & pull out test Wed 27/5/20 Tue 2/6/20 6 days 1390 17.7.9.5.2 drill, install steel bars and grout soil nails Wed 3/6/20 Tue 9/6/20 6 days (F01-46) 1391 17.7.9.6 Wed 10/6/20 Tue 14/7/20 Phase III 28 days 1392 17.7.9.6.1 install test nail PN12 & pull out test Wed 10/6/20 Tue 16/6/20 6 days 1393 17.7.9.6.2 Wed 17/6/20 drill, install steel bars and grout soil nails 10 days Mon 29/6/20 (D01-D51) 1394 17.7.9.6.3 TDR Test (including test & wait issue result) 2 days Tue 30/6/20 Thu 2/7/20 1395 17.7.9.6.4 soil nail head works 10 days Fri 3/7/20 Tue 14/7/20 1396 17.7.9.7 Phase IV Wed 15/7/20 Wed 5/8/20 19 days 1397 17.7.9.7.1 install test nail PN11 & pull out test 6 days Wed 15/7/20 Tue 21/7/20 1398 17.7.9.7.2 drill, install steel bars and grout soil nails 6 days Wed 22/7/20 Tue 28/7/20 (C01-26)1399 17.7.9.7.3 Wed 29/7/20 Thu 30/7/20 raking drains 2 days 1400 17.7.9.7.4 TDR Test (including test & wait issue result) Fri 31/7/20 Sat 1/8/20 2 days 1401 17.7.9.7.5 soil nail head works 3 days Wed 5/8/20 1402 17.7.9.8 Fri 14/8/20 UC & catchpit 8 days Thu 6/8/20 1403 17.7.9.9 75mm thick shotcrete with a layer of A252 wire 7 days Sat 15/8/20 Sat 22/8/20 mesh (380m2) 1404 17.7.10 Slopeworks: - 3NW-C/C225 (ch1300-1376N/B) 348 days Tue 3/12/19 Wed 3/2/21 1405 17.7.10.1 Tue 3/12/19 Wed 4/12/19 tree transplant 2 days 1406 17.7.10.2 Thu 5/12/19 Tue 10/12/19 removal of existing trees 5 days 1407 17.7.10.3 hoarding & fencing 12 days Wed 11/12/19 Tue 24/12/19 1408 17.7.10.4 Fri 27/12/19 Fri 27/12/19 slope excavation works 1 day 1409 17.7.10.5 10 days Sat 28/12/19 Thu 9/1/20 temporary scaffolding 1410 17.7.10.6 install test nail PN31-PN33, grout & pull out tests 6 days Fri 10/1/20 Thu 16/1/20 3 month rolling programme 20201025(end Jul-Oct 20) Sang Hing Civil Contractors Company Limited

Develo	ct No. CV/2	2017/02 Columbarium at Sandy Ridge Cemetery Jorks at Man Kam To Road and Lin Ma Hang Road					th Rolling Programme 6/7/2020 to 25/10/2020)		Accepted Initial Works P	Programme (06)
			Duration	Start Date	Completion	M B E M B	E M B	E M B E	M B E M B	E
					Date	fa; 10 Jun 1 Jul '1 22 Jul '12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6. V T F S S M T W T F S S M T W T F S S M T W T F S S M T W	an '27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 2 Jun ' 'T F S S M T W T F S S M T W T F S S M T	23 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6 Oct 127 Oct 17 Nov 8 Dec	29 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apri 3 May 24 Mai 14 Jun 5 Jul 2 25 Jul 16 Au, 6 S F S S M T W T T F S S M T W T T F S S M T T W T T T T T T T T T T T T T T T T	Sep 27 Sep 18 (
1411	17,7,10,7	install test nail PN34-PN36, grout & pull out tests	6 days	Fri 17/1/20	Thu 23/1/20				•	
1412	17.7.10.8	install test nail PN37-PN39, grout & pull out tests	6 days	Fri 24/1/20	Mon 3/2/20		,		-	
1413	17.7.10.9	Phase I	15 days	Tue 4/2/20	Thu 20/2/20				<u> </u>	
1414	17.7.10.9.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	8 days	Tue 4/2/20	Wed 12/2/20				*	
1415	17.7.10.9.2	TDR Test (including test & wait issue result)	2 days	Thu 13/2/20	Fri 14/2/20				4	
1416	17.7.10.9.3	soil nail head works	5 days	Sat 15/2/20	Thu 20/2/20				*	
1417	17.7.10.10	Phase II	43 days	Fri 21/2/20	Wed 15/4/20				· · · · · · · · · · · · · · · · · · ·	
1418	17.7.10.10.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	32 days	Fri 21/2/20	Sat 28/3/20					
1419	17.7.10.10.2	TDR Test (including test & wait issue result)	2 days	Mon 30/3/20	Tue 31/3/20				*	
1420	17.7.10.10.3	soil nail head works	9 days	Wed 1/4/20	Wed 15/4/20				-	
[[0.05200]]	17.7.10.11		•		Mon 8/6/20				1	
	17,7.10.11.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	32 days							
	17,7.10.11.2	TDR Test (including test & wait issue result)	2 days		Wed 27/5/20				Ŋ	
	17.7.10.11.3	soil nail head works	10 days		Mon 8/6/20					
	17.7.10.12 17.7.10.12.1	Phase IV drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	44 days 32 days	Tue 9/6/20 Tue 9/6/20	Fri 31/7/20 Fri 17/7/20					
1/127	17.7.10.12.2	TDR Test (including test & wait issue result)	2 days	Sat 18/7/20	Mon 20/7/20				*	
	17.7.10.12.3	soil nail head works	2 days 10 days		Fri 31/7/20					
	17.7.10.13	Phase V	44 days		Mon 21/9/20				<u> </u>	-
111111111111111111111111111111111111111	17.7.10.13.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	32 days		Mon 7/9/20					
1431	17.7.10.13.2	raking drains	2 days	Tue 8/9/20	Wed 9/9/20				<u> </u>	1
1432	17.7.10.13.3	TDR Test (including test & wait issue result)	2 days	Thu 10/9/20	Fri 11/9/20				<u> </u>	4
1433	17.7.10.13.4	soil nail head works	8 days	Sat 12/9/20	Mon 21/9/20			1		-
1434	17.7.10.14	300UC (192m), 300SC (135m) & 2 catchpit	34 days	Tue 22/9/20	Tue 3/11/20					*
1438	17.7.11	Slopeworks: - 3NW-C/C231 (ch1220-1240N/B)	415 days	Thu 12/9/19	Wed 3/2/21					
1439	17,7.11,1	hoarding & fencing	12 days	Thu 12/9/19	Thu 26/9/19			_		
1440	17.7.11.2	temporary scaffolding	14 days	Fri 27/9/19	Tue 15/10/19			—		
1441	17.7.11.3	proposed slope stripping for mapping or rock and relict discontinuities (AS1-A,B, AS2-A,B)	10 days	Wed 16/10/19	Sat 26/10/19			-		
	17.7.11.4	trial pits (A1, A2, A3)		Mon 28/10/19				<u> </u>		
	17.7.11.5	slope excavation works		Wed 6/11/19						
	17.7.11.6			Thu 7/11/19						
	17.7.11.6.1	install test nails PN41-42 & pull out tests		Thu 7/11/19						
	17.7.11.6.2	drill, install steel bars and grout soil nails (BP01-08, BT01-05, BN01-08, BS01-08))	8 days	Fri 15/11/19	Sat 23/11/19			-		
	17.7.11.6.3	TDR Test (including test & wait issue result)		Mon 25/11/19				*1		
	17.7.11.6.4	soil nail head works		Wed 27/11/19				1		
	17.7.11.7			Sat 30/11/19				<u></u>		
	17.7.11.7.1	install test nails PN43-44 & pull out tests		Sat 30/11/19				1		
	17.7.11.7.2	drill, install steel bars and grout soil nails (BM01-09, BR01-13, BL01-09, BQ01-22)	14 days	Sat 7/12/19	Mon 23/12/19			_		
	17.7.11.7.3	TDR Test (including test & wait issue result)		Tue 24/12/19						
	17.7.11.7.4	soil nail head works	-	Sat 28/12/19						
1454	17.7.11.8	Phase III	29 days	Mon 6/1/20	Tue 11/2/20					
Sang H	ing Civil Cor	ntractors Company Limited					Page 14/20		3 month rolling programme 2020	201025(end Jul-Oct 20)

Contract No. CV/20 Development of Col - Infrastructural Wor	17/02 umbarium at Sandy Ridge Cemetery rks at Man Kam To Road and Lin Ma Hang Roac						3 Month Rolling Programme (from 26/7/2020 to 25/10/2020)		Accep	eted Initial Works Programme (06)
	k Name	Duration	Start Date	Completion	M B E	M	B E M B	E M B E	M B E M	B E
					Ma; 10 Jun 1 Jul 122 Jul 12 Aug 2 Sep 1 W T F S S M T W T F S S M T W	T F S S M T W	TFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMT	Z3 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6 Oct 27 Oct 17 Nov8 Dec WTFSSMTWTFSSMTWT	29 Dec 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Mai 14 Jun 5 Jul 2 7 F S S M T W T F S S M T W T F S S M T W T F S S M T W	TFSSMTWTFSSN
I455 17.7.11.8.1	install test nails PN45-46 & pull out tests	6 days	Mon 6/1/20	Sat 11/1/20						
1456 17.7.11.8.2	drill, install steel bars and grout soil nails (BJ01-09, BK01-27, BG01-12, BH01-20)	14 days	Mon 13/1/20	Fri 31/1/20						
1457 17.7.11.8.3	TDR Test (including test & wait issue result)	2 days	Sat 1/2/20	Mon 3/2/20					<u>*</u>	
I458 17.7.11.8.4	soil nail head works	7 days	Tue 4/2/20	Tue 11/2/20					*	
1459 17.7.11.9	Phase IV	-								
1460 17.7.11.9.1	install test nails PN47-48 & pull out tests	6 days	Wed 12/2/20	Tue 18/2/20					1	
1461 17.7.11.9.2	drill, install steel bars and grout soil nails (BE01-13, BF01-19, BC01-11, BD01-20)	26 days	Wed 19/2/20	Thu 19/3/20	-	- >				
1462 17.7.11.9.3	TDR Test (including test & wait issue result)	2 days		Sat 21/3/20					1	
1463 17.7.11.9.4	soil nail head works	-	Mon 23/3/20						-	
1464 17.7.11.10	Phase V	•		Mon 18/5/20					 	
1465 17.7.11.10.1	install test nails PN49-50 & pull out tests	6 days	Tue 31/3/20	Tue 7/4/20					•	
1466 17.7.11.10.2	drill, install steel bars and grout soil nails (BA01-24, BB01-06, AY01-24, AZ01-06)	22 days	Wed 8/4/20	Fri 8/5/20					*	
I467 17.7.11.10.3	TDR Test (including test & wait issue result)	2 days	Sat 9/5/20	Mon 11/5/20					*	
1468 17.7 11.10 4	soil nail head works	6 days	Tue 12/5/20	Mon 18/5/20					<u>*</u>	
1469 17.7.11.11	Phase VI	28 days	Tue 19/5/20	Fri 19/6/20						
1470 17.7.11.11.1	drill, install steel bars and grout soil nails (AW01-24, AX01-05, AU01-21, AV01-08)	20 days	Tue 19/5/20	Wed 10/6/20						
1471 17.7.11.11.2	TDR Test (including test & wait issue result)	2 days	Thu 11/6/20	Fri 12/6/20					Ž	
1472 17.7.11.11.3	soil nail head works	6 days	Sat 13/6/20	Fri 19/6/20					•	
1473 17.7.11.12	Phase VII	23 days		Sat 18/7/20						
1474 17.7.11.12.1	drill, install steel bars and grout soil nails (AS01-18, AT01-11, AQ01-19, AR01-07)	14 days	Sat 20/6/20	Wed 8/7/20						
1475 17.7.11.12.2	raking drains	1 day	Thu 9/7/20	Thu 9/7/20					Ť	
1476 17.7.11.12.3	TDR Test (including test & wait issue result)		Fri 10/7/20						1	
1477 17.7.11.12.4	soil nail head works	-	Mon 13/7/20						•	
1478 17.7.11.13	Phase VIII		Mon 20/7/20						T .	
1479 17.7.11.13.1	drill, install steel bars and grout soil nails (AN01-15, AP01-08, AL01-15, AM01-08, AK01-18)	18 days	Mon 20/7/20	Sat 8/8/20					_	
1480 17.7.11.13.2	raking drains	1 day	Mon 10/8/20	Mon 10/8/20						4
1481 17.7.11.13.3	TDR Test (including test & wait issue result)		Tue 11/8/20							1
1482 17.7.11.13.4	soil nail head works		Thu 13/8/20							
1483 17.7.11.14	300UC (240m) (with upstand (C2509A)), 300SC (160m) & catchpit 9 nos.	50 days	Fri 21/8/20	Tue 20/10/20						
1484 17.7.11.15	berm with handrailing C2409H		Wed 21/10/20							-
1507 20 sec wit	tion 3 of the works - Completion of all works hin Parts D and E of the Site	797 days	Thu 31/5/18	Wed 3/2/21						
120	Parts D	800 days	Mon 26/11/18	Wed 3/2/21			<u> </u>			-
1509 20.1.1	access date for section 3 (Parts D) - not more than 180 days after the starting date	0 days	Mon 26/11/18	Mon 26/11/18			*			
1510 20.1.2	seek specialist for design, supply and installation of the covered walkway	59 days	Tue 27/11/18	Thu 24/1/19						
1511 20.1.3	acceptance of specialist	0 days	Thu 14/2/19	Thu 14/2/19			₩η			
1512 20.1.4	design for approval for lighting system for the covered walkway	150 days	Fri 15/2/19	Sun 14/7/19						
1513 20.1.5	submit for approval for lighting system for the covered walkway	0 days	Sun 14/7/19	Sun 14/7/19				<u>+</u>		
1514 20.1.6	acceptance of lighting system for the covered walkway	0 days	Sun 4/8/19	Sun 4/8/19				*		
Sang Hing Civil Control	actors Company Limited						Page 15/20		3 mouth 1	olling programme 20201025(end Jul-Oct 20)

Contract No. CV/20	017/02			3 Month Rolling Programme Accepted Initial Works Program	ımme (06)
Development of Co	or 1702 Olumbarium at Sandy Ridge Cernetery Orks at Man Kam To Road and Lin Ma Hang Road			(from 26/7/2020 to 25/10/2020)	(-5)
11000		Duration Star	t Date Completion Date	M B E M B E M B E M B E M B E M B E M B E M B E M B E M B E M B B E M B B E M B B E M B B E M B B B B	E 27 Sep 18 0
1515 20.1.7	Coordination with CLP to obtain the electricity supply for the street lighting system (Design for Road B, Road E, Road F(part), Lin Ma Hang Road and Sheung Shui Landmark PTI & Lighting system for the covered walkway)	168 days Mon		May 10 Jun; 1 Jul; 2 Jul; 1 2 Aug; 2 Sep; 23 Sep; 14 Oct; 4 Nov; 25 Nov; 16 Dec; 6 Jan; 27 Jan; 17 Feb; 10 Ma; 31 Ma; 21 Apr; 12 Ma; 2 Jun; 2	FSSN
1516 20.1. 8	design for glazing system of the proposed covered walkway at Fanling Station Road	150 days Fri 1	5/2/19 Sun 14/7/19		
1517 20.1.9	submission of glazing system	0 days Sun	14/7/19 Sun 14/7/19		
1518 20.1.10	acceptance of glazing system and fall arrest system by Project Manager	0 days Sun	4/8/19 Sun 4/8/19		
1519 20.1.11	design for fall arrest system of the proposed covered walkway at Fanling Station Road	150 days Fri 1	5/2/19 Sun 14/7/19		
1520 20.1.12	submission of fall arrest system	0 days Sun	14/7/19 Sun 14/7/19		
1521 20.1.13	acceptance of fall arrest system by Project Manager	0 days Sun	4/8/19 Sun 4/8/19		
1522 20.1.14	· ·	30 days Mon			
1523 20.1.15		-	14/9/19 Wed 18/9/19		
1524 20.1.16	,	•	19/9/19 Thu 3/10/19		
1525 20.1.17	utility detection and submit reports	•	1/10/19 Mon 14/10/1		
1526 20.1.18		•	5/8/19 Mon 2/12/19		
1527 20.1.19 1528 20.1.20	,	•	3/12/19 Sat 18/1/20		
	application of XP (for Parts D)	•	29/11/18 Thu 29/11/18	↓	
1529 20.1.21 1530 20.1.22	acceptance of XP (for Parts D) Construction of Covered Walkway at Fanling Station	•	30/5/19 Thu 30/5/19 15/10/19 Wed 3/2/21		
1531 20.1.22.1	construct the concrete foundation of covered walkway (first 20m)	20 days Tue 1	15/10/19 Wed 6/11/19		
1532 20.1.22.2	construct the concrete foundation of covered walkway (2nd 20m)	20 days Thu	7/11/19 Fri 29/11/19		
1533 20.1 22.3	construct the concrete foundation of covered walkway (3rd 20m)	20 days Sat 3	30/11/19 Mon 23/12/1		
1534 20 1 22 4			30/11/19 Mon 23/12/1		
1535 20.1.22.5	construct the concrete foundation of covered walkway (4th 20m)	20 days Tue 2	24/12/19 Sat 18/1/20		
1536 20.1.22.6	steelworks, glass panel and electrical works		20/1/20 Wed 9/12/20		
			31/5/18 Sat 16/1/21		
1539 20.2.1			31/5/18 Thu 31/5/18	41	
1540 20.2.2	application of XP (for Parts E)		30/5/19 Thu 30/5/19		
1541 20.2.3	•	-	28/11/19 Thu 28/11/19		
1542 20.2.4	Temporary Traffic Arrangement (TTA) Scheme for Sheung Shui Landmark North PTI and Fanling Station Road	242 days Fri 3	37/5/19 Mon 27/1/20		
1543 20.2.4.1	Preparation of TTA for TMLG and acceptance from TD and RMO	120 days Fri 3	31/5/19 Fri 27/9/19	++	
1544 20.2.4.2	Comment & acceptance of TTA scheme by TD & RMO	60 days Sat 2	28/9/19 Tue 26/11/1		
1545 20.2.4.3	Obtain roadwork advice from RMO	60 days Fri 2	9/11/19 Mon 27/1/20	**	
1546 20.2.5	general site clearance	12 days Wed	29/1/20 Tue 11/2/20	—	
1547 20.2.6	•	-	12/2/20 Thu 27/2/20		
1548 20.2.7			28/2/20 Sat 14/3/20		
1549 20.2.8	Road Improvement works at Sheung Shui Landmark North PTI	250 days Mon	16/3/20 Sat 16/1/21		
1550 20.2.8.1	saw cut and remove existing pavement	10 days Mon	16/3/20 Thu 26/3/20		
1551 20.282			27/3/20 Thu 16/4/20		
1552 20.2.8.3	demolish existing slope planter wall	21 days Fri 1	17/4/20 Wed 13/5/20		
1553 20.2.8.4	construct slope planter wall	60 days Thu	14/5/20 Fri 24/7/20		
Sang Hing Civil Con	tractors Company Limited			Page 16/20 3 month rolling programme 20201025(cr	nd Jul-Oct 20)



Contract No. CV Development of - Infrastructural V	2017/02 Columbarium at Sandy Ridge Cemetery Vorks at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/7/2020 to 25/10/2020)	Accepted Initial Works Programme (06)
ID WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E	M B E M B E Cc 19 Jan 9 Feb 1 Mar 22 Mai 12 Apr 3 May 24 Mai 14 Jun 5 Jul 2 26 Jul 16 Au 6 Sep 27 Sep 18 0
1616 29.1.13	site formation works for fill slope FS19 and FS20 (including in "backfilling works behind Retaining Wall RW14 (bay1 to 6)")	90 days	Sat 22/8/20		WTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSS	S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M
1631 29.1.23	Site Formation works for Cut Slope CS24 (include temporary cutting from top of RW12 to toe of CS24) (for RW12 bays 1-3)	4 days	Tue 17/9/19	Fri 20/9/19		er e
1632 29.1.24	install instrument for CS24	5 days	Mon 23/9/19	Fri 27/9/19	1	
1633 29.1.25	temporary soil nails between CS20 & RW12 (for RW12 bays 1-3)	30 days	Mon 23/9/19	Mon 4/11/19		
1634 29.1.26	Construction of Retaining Wall RW12 CH 0-20	67 days	Tue 5/11/19	Fri 24/1/20		-
1635 29,1,26,1	plate load tests	3 days	Tue 5/11/19			
1636 29.1.26.2	blinding concrete for bay 1 to 3	2 days		Sat 9/11/19		
1637 29,1,26,3	base formwork for bay 1 & 3		Mon 11/11/19		į į	
1638 29.1 26.4	base steel fixing for bay 1 & 3		Wed 13/11/19			
1639 29.1.26.5	base concreting & curing for bay 1 & 3	4 days	Mon 18/11/19			
1641 29,1.26,6	remove base formwork	1 day	Fri 22/11/19		1	
1641 29.1,26.7 1642 29.1,26.8	falsework and formwork for walls of bay 1 & 3	4 days		Wed 27/11/19 Mon 9/12/19		
1643 29.1.26.9	steel fixing for walls of bay 1 & 3 close formwork for walls of bay 1 & 3	2 days	Thu 28/11/19 Tue 10/12/19			
1644 29.1.26.10	concreting & curing for walls of bay 1 & 3	2 days 4 days			1	
1645 29.1.26.11	remove falsework and formwork for walls	2 days	Mon 16/12/19			
I646 29.1.26.12	blinding concrete for bay 2		Wed 18/12/19			
1647 29.1.26.13	base formwork for bay 2	1 day	Thu 19/12/19		<u></u>	
1648 29.1.26.14	base steel fixing for bay 2	2 days	Fri 20/12/19		<u> </u>	
1649 29.1.26.15	base concreting & curing for bay 2	3 days	Mon 23/12/19	Fri 27/12/19	The state of the s	
1650 29.1.26.16	remove base formwork	1 day	Sat 28/12/19	Sat 28/12/19	The state of the s	
1651 29.1.26.17	falsework & formwork for walls of bay 2	2 days	Mon 30/12/19	Tue 31/12/19	ħ	
1652 29.1.26.18	steel fixing for walls of bay 2	7 days	Thu 2/1/20	Thu 9/1/20	 	
1653 29.1.26.19	close formwork for walls of bay 2	2 days	Fri 10/1/20	Sat 11/1/20		
1654 29.1.26.20	concreting & curing for walls of bay 2	4 days				1
1655 29.1.26.21	remove falsework and formwork for walls	2 days				1
1656 29.1.26.22	install instrument for RW12		Mon 20/1/20			
1657 29.1.27	backfilling along Retaining Wall RW12		Thu 4/6/20			
1658 29.1.28 1659 29.1.29	Completion of Site Formation works for Cut Slope 25					
10.39 29.1.29	Waterworks at Road F	24 uays	Thu 23/7/20	Wed 19/0/20		
1660 29,1.30	Drainage works at Road F	25 days	Thu 20/8/20	Thu 17/9/20		
1661 29.1.31	planter wall for Road E and Road F in Parts A3	12 days	Fri 18/9/20	Sat 3/10/20		
1662 29.1.32	UU-Arrange Town Gas & PCCW to lay across Road F (not yet agree)	14 days	Mon 5/10/20	Thu 22/10/20		
1663 29.1.33	Roadworks of Road F (60m)	55 days	Fri 23/10/20	Mon 4/1/21		
1664 29.1.33.1	kerbing and cross road duct (RD/2061, 2081)	10 days	Fri 23/10/20	Fri 6/11/20		
1671 29.2			Mon 24/6/19			
I 672 29.2.1	access date for section 6 (Parts A4) - not more than 580 days after the starting date					
1673 29.2.2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days commencing from and including the starting date	0 days	Mon 24/6/19	Mon 24/6/19		
1674 29.2.3	general site clearance	15 days	Thu 2/1/20	Sat 18/1/20		<u> </u>
1675 29.2.4	initial survey	11 days	Sat 11/1/20	Thu 23/1/20	See	<u> </u>
1676 29.2.5	construction of temporary drainage	15 days	Thu 16/1/20	Wed 5/2/20	<u> </u>	
Sang Hing Civil Co	ontractors Company Limited				Page 18/20	3 month rolling programme 20201025(end Jul-Oct 20)

Contract No. CV/2	Contract No. CV/2017/02 Accepted Initial Works Programme (06)								
Development of Co	olumbarium at Sandy Ridge Cemetery orks at Man Kam To Road and Lin Ma Hang Road				(from 26/7/2020 to 25/10/2020)	(/			
	sk Name	Duration	Start Date	Completion Date		B E LUL 6 Sep 27 Sep 18 C			
1677 29.2.6	Site Formation works for Cut Slope CS24 (include temporary cutting from top of RW12 to toe of CS24) (for RW12 bays 4-6)	7 days	Wed 29/1/20	Wed 5/2/20		M 1 W 1 1 S S B			
1678 29.2.7 1679 29.2.8	install instrument for CS24 temporary soil nails between CS20 & RW12 (for RW12 bays 4-6)	3 days 35 days	Thu 6/2/20 Thu 6/2/20	Sat 8/2/20 Tue 17/3/20					
1680 29.2.9	Construction of Retaining Wall RW12 CH 21-40	58 days	Wed 18/3/20		ш —				
1681 29.2.9.1	plate load tests	3 days	Wed 18/3/20						
1682 29.2.9.2	blinding concrete for bay 4 to 6	2 days	Mon 23/3/20		<u> </u>				
1683 29.2.9.3	base formwork for bay 4 & 6	2 days	Wed 25/3/20						
1684 29.2.9.4 1685 29.2.9.5	base steel fixing for bay 4 & 6	4 days	Fri 27/3/20	Wed 1/4/20	1				
1686 29.2.9.6	base concreting & curing for bay 4 & 6	3 days	Thu 2/4/20	Mon 6/4/20					
1687 29.2.9.7	remove base formwork for walls of bay 4 & 6	1 day 3 days	Tue 7/4/20 Wed 8/4/20	Tue 7/4/20 Tue 14/4/20	↓ I				
1688 29.2.9.8	steel fixing for walls of bay 4 & 6	8 days	Wed 15/4/20						
1689 29.2.9.9	close formwork for walls of bay 4 & 6	2 days	Sat 25/4/20	Mon 27/4/20					
1690 29.2.9.10	concreting & curing for walls of bay 4 & 6	4 days	Tue 28/4/20		1				
1691 29.2.9.11	remove falsework and formwork for walls	2 days	Mon 4/5/20	Tue 5/5/20					
I692 29.2.9.12	blinding concrete for bay 5	1 day	Wed 6/5/20	Wed 6/5/20	1				
1693 29.2.9.13	base formwork for bay 5	1 day	Thu 7/5/20	Thu 7/5/20	4				
1694 29.2.9.14	base steel fixing for bay 5	2 days	Fri 8/5/20	Sat 9/5/20	i i i i i i i i i i i i i i i i i i i				
1695 29.2.9.15	base concreting & curing for bay 5	3 days	Mon 11/5/20	Wed 13/5/20	o · · · · · · · · · · · · · · · · · ·				
1696 29.2.9.16	remove base formwork	1 day	Thu 14/5/20	Thu 14/5/20	t l				
1697 29.2.9.17	falsework & formwork for walls of bay 5	2 days	Fri 15/5/20	Sat 16/5/20					
I 698 29.2.9.18	steel fixing for walls of bay 5	7 days	Mon 18/5/20	Mon 25/5/20					
1699 29.2.9.19	close formwork for walls of bay 5	1 day	Tue 26/5/20	Tue 26/5/20	 「「「」」 「「」 「」 「」 「」 「」 「」 「」 「」 「」 「」 「」 「」 「」				
1700 29.2.9.20	concreting & curing for walls of bay 5	3 days	Wed 27/5/20	Fri 29/5/20	in the second of	1			
1701 29.2.9.21	remove falsework and formwork for walls	1 day	Sat 30/5/20	Sat 30/5/20	†				
1702 29.2.9.22	install instrument for RW12	3 days	Mon 1/6/20	Wed 3/6/20	· National Control of the Control of				
1703 29.2.10	Site Formation works for Cut Slope CS20	125 days	Mon 1/6/20	Tue 3/11/20					
1704 29.2.10.1	slope excavation work	19 days	Mon 1/6/20	Mon 22/6/20					
1705 29.2.10.2	temporary scaffolding	5 days	Tue 23/6/20						
1706 29.2.10.3	trial pit TP11	2 days	Tue 30/6/20						
1707 29.2.10.4	Phase I	17 days		Wed 22/7/20					
1708 29.2.10.4.1	install test nail PN03 & pull out test	6 days	Fri 3/7/20	Thu 9/7/20					
1709 29.210.4.2	drill, install steel bars and grout soil nails (RL01, RK01-06, RJ01-10)	6 days	Fri 10/7/20	Thu 16/7/20					
1710 29.2.10.4.3	raking drains	1 day	Fri 17/7/20	Fri 17/7/20					
1711 29.2.10.4.4	TDR Test (including test & wait issue result)	2 days		Mon 20/7/20	4				
1712 29.2.10.4.5	soil nail head works			Wed 22/7/20					
1713 29.210.5 1714 29.210.5.1	Phase II install test nail PN05 & pull out test	17 days 6 days		Tue 11/8/20 Wed 29/7/20					
1715 29.2.10.5.2	drill, install steel bars and grout soil nails (RH01-12, RG01-12, SF01-04)	5 days	Thu 30/7/20	Tue 4/8/20					
1716 29.2.10.5.3	raking drains	1 day	Wed 5/8/20	Wed 5/8/20	†				
1717 29.2.10.5.4	TDR Test (including test & wait issue result)	2 days	Thu 6/8/20	Fri 7/8/20	k				
1718 29.2.10.5.5	soil nail head works	3 days	Sat 8/8/20	Tue 11/8/20	· National Control of the Control of				
1719 29.2.10.6	Phase III	9 days	Wed 12/8/20						
1720 29.2.10.6.1	install test nail PN02 & pull out test								
1721 29.2.10.6.2	drill, install steel bars and grout soil nails (RF01-13, SE01-07)		Wed 19/8/20						
1722 29.2.10.7	Phase IV	21 days	Sat 22/8/20	rue 15/9/20					
Sang Hing Civil Cont	ractors Company Limited				Page 19/20 3 month rolling programme	ne 20201025(end Jul-Oct 20)			

Accepted Initial Works Programme (06) Contract No. CV/2017/02 3 Month Rolling Programme Development of Columbarium at Sandy Ridge Cernetery
- Infrastructural Works at Man Kam To Road and Lin Ma Hang Road (from 26/7/2020 to 25/10/2020) WBS Task Name Duration Start Date Completion M B E 1723 29.2.10,7.1 install test nail PN04 & pull out test Sat 22/8/20 Fri 28/8/20 6 days

Sang Hing Civil Contractors Company Limited

1724 29.2.10.7.2

1725 29.2.10.7.3

1726 29.2.10.7.4

1727 29.2.10.7.5

1728 29.2.10.8

1729 29.2.10.8.1

1730 29.2.10.8.2

1731 29.2.10.8.3

1732 29.2.10.8.4

1733 29.2.10.8.5

1734 29.2.10.9

1737 29.2.11

1738 29.2.12

drilt, install steel bars and grout soil nails

(RE01-14, SD01-08, RC01-15, SC01-03)

TDR Test (including test & wait issue result)

install test nail PN01 & pull out test

drill, install steel bars and grout soil nails (RB01-16, SB01-02, RA01-18)

TDR Test (including test & wait issue result)

Site Formation works for Cut Slope CS26 (A4)

Site Formation works for Cut Slope CS25 (A4)

raking drains

soil nail head works

soil nail head works

Sat 29/8/20

Mon 7/9/20

Tue 8/9/20

Thu 10/9/20

6 days Wed 16/9/20 Tue 22/9/20

7 days Wed 23/9/20 Wed 30/9/20

4 days Wed 7/10/20 Mon 12/10/20

8 days Tue 13/10/20 Thu 22/10/20

9 days Fri 23/10/20 Thu 5/11/20

7 days

1 day

2 days

5 days

2 days

Sat 5/9/20

Mon 7/9/20

Wed 9/9/20

Tue 15/9/20

Wed 16/9/20 Mon 12/10/20

Sat 3/10/20 Sat 3/10/20

Mon 5/10/20 Tue 6/10/20

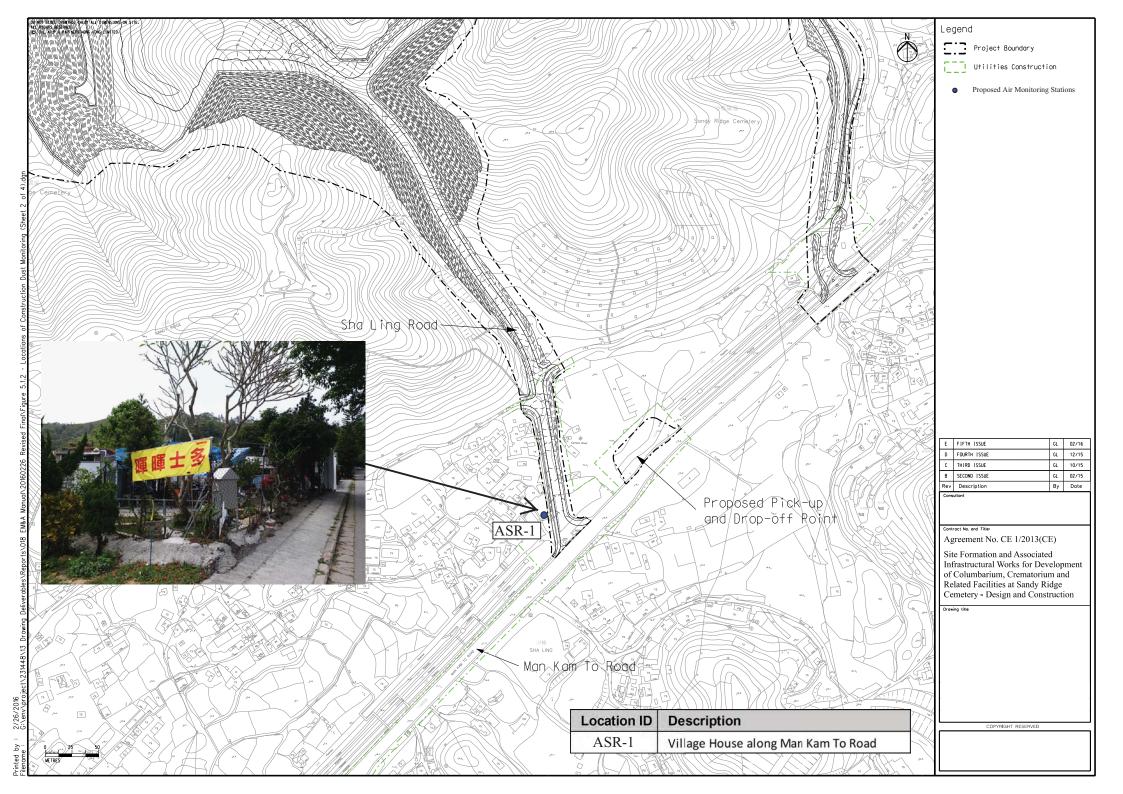


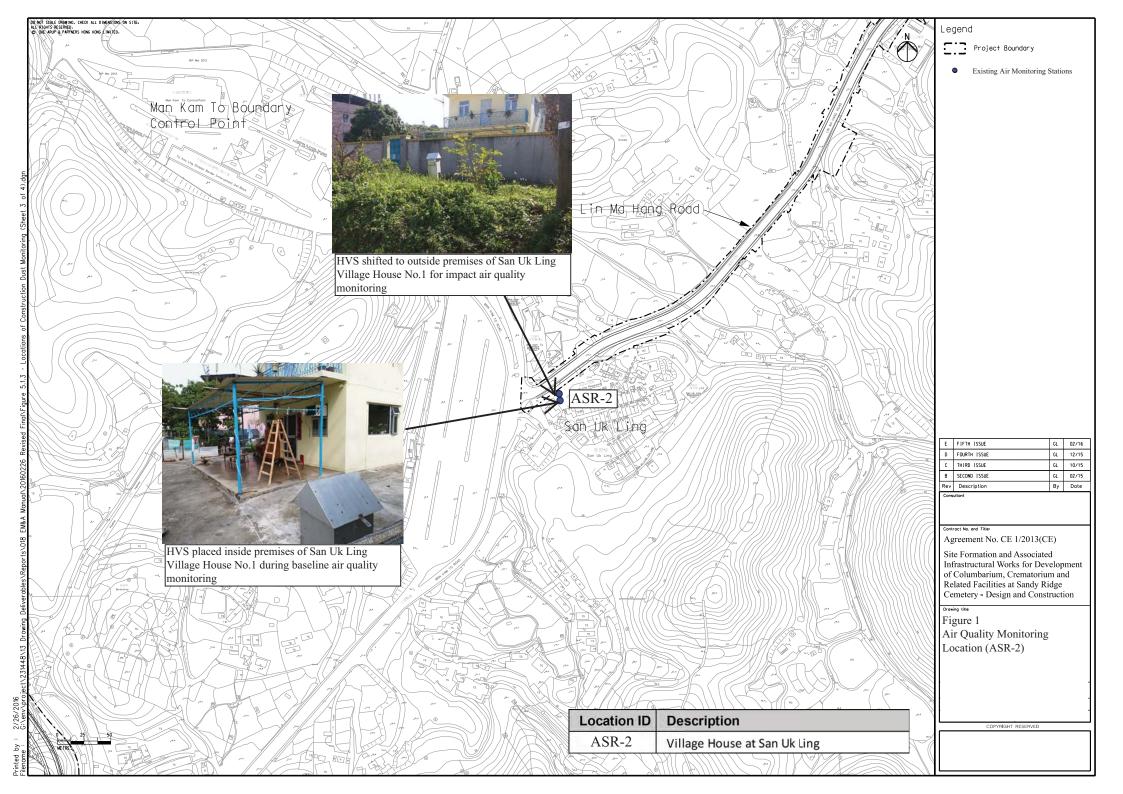
Appendix D

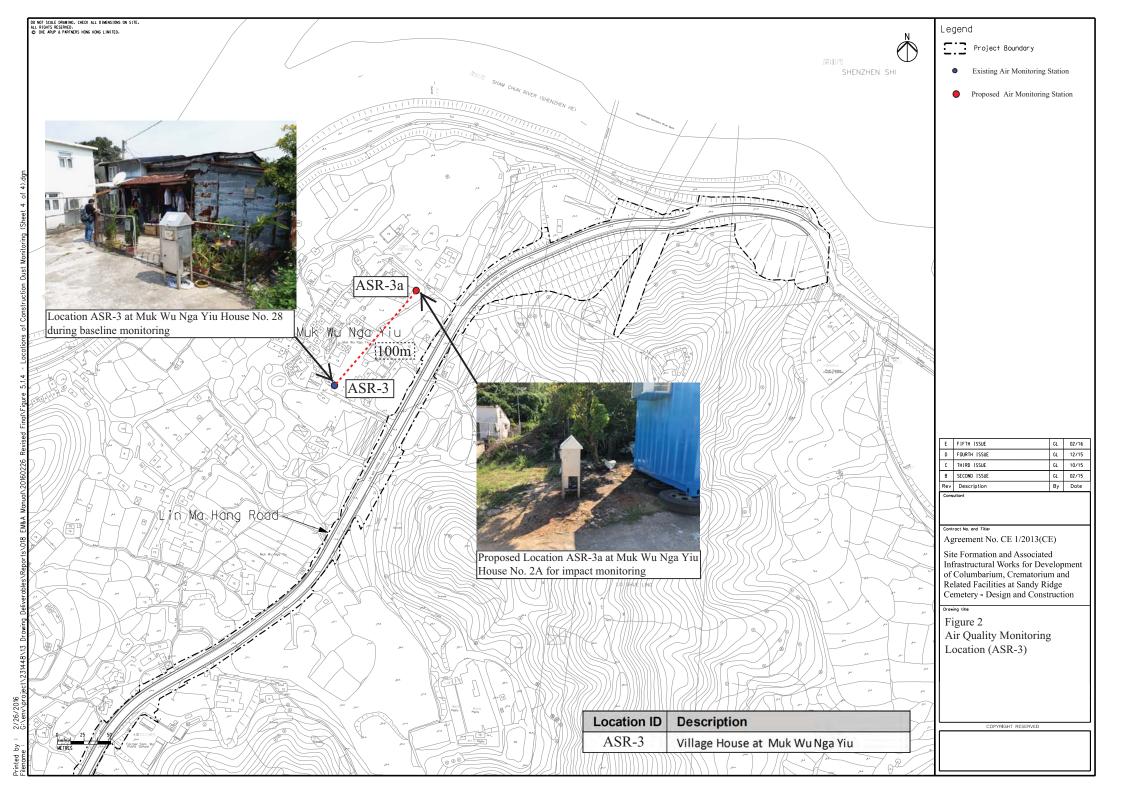
Monitoring Locations



Air Quality Monitoring Location





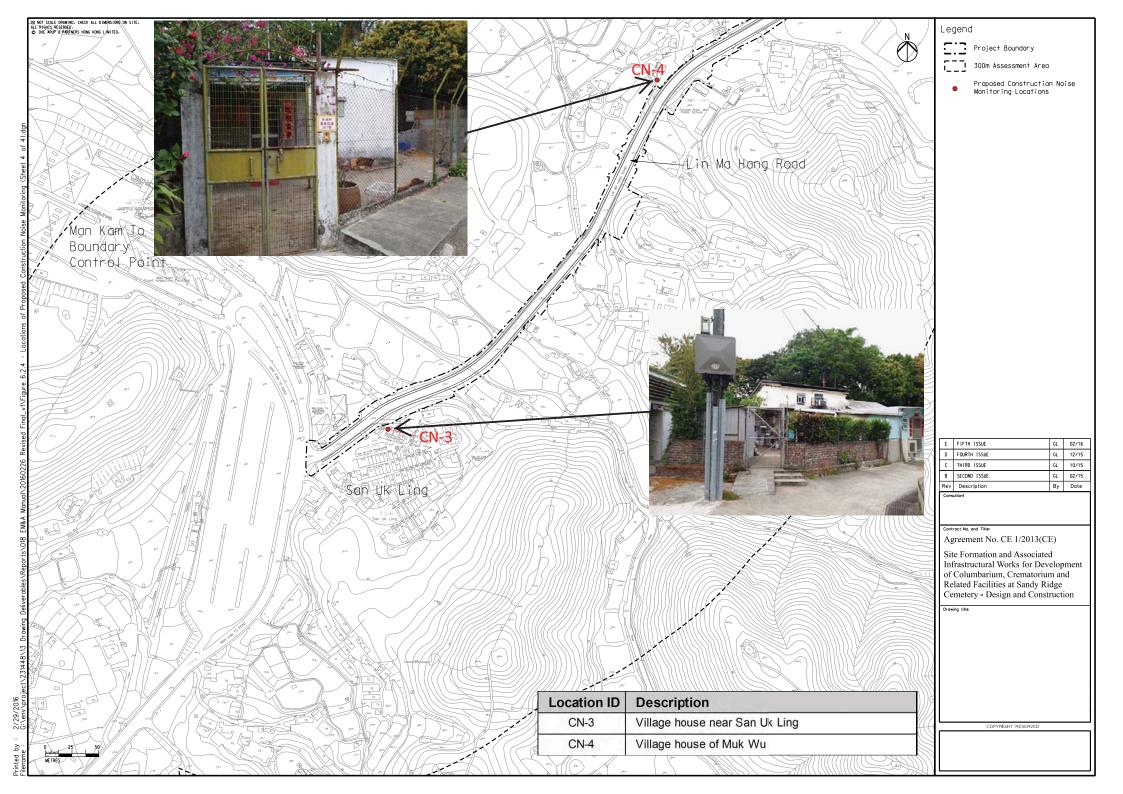




Noise Monitoring Location

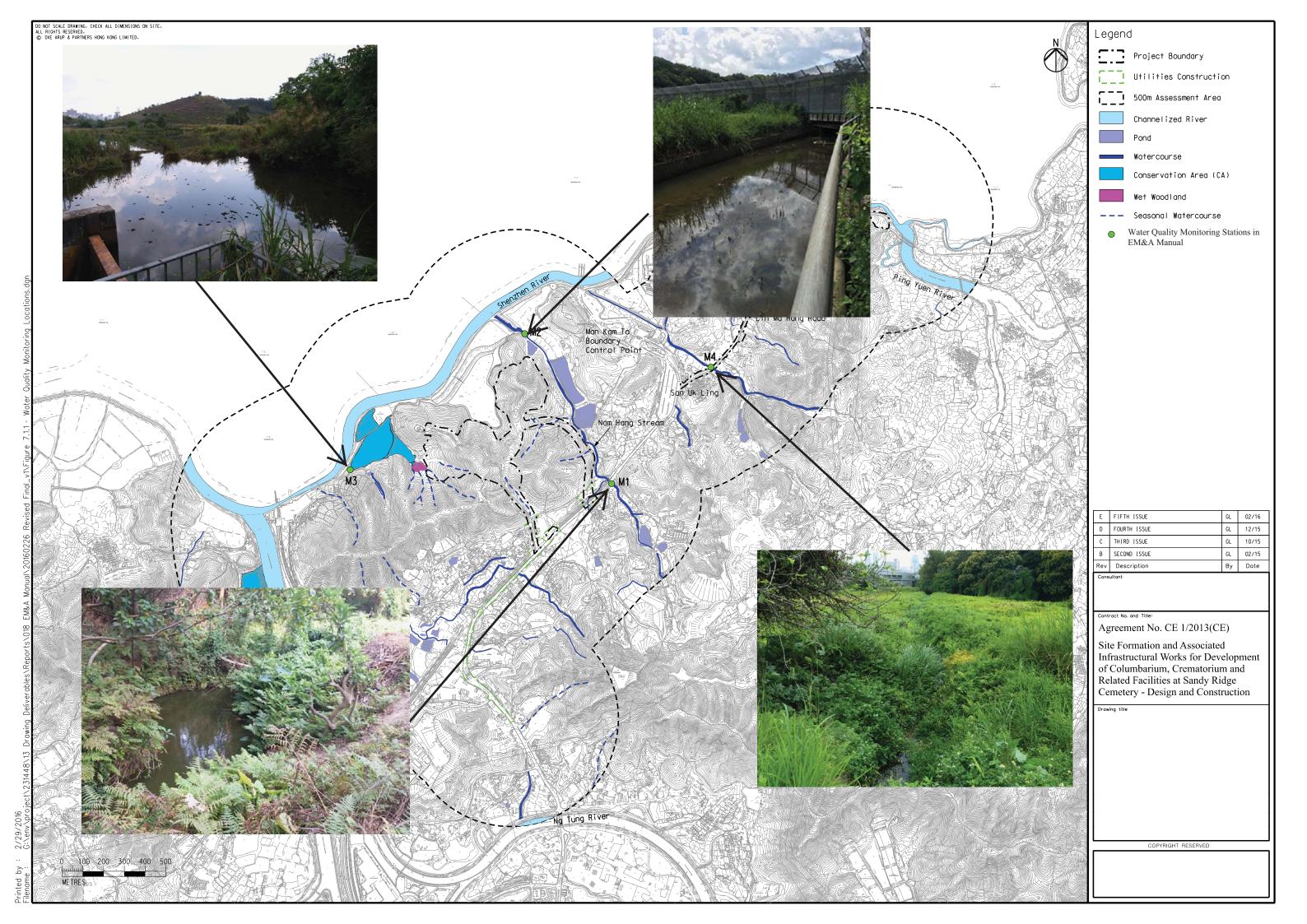








Water Quality Monitoring Station





Appendix E

Calibration Certificate of Monitoring Equipment and Laboratory Certificate



CALIBRATION CERTIFICATES FOR MONITORING EQUIPMENT USED IN THE REPORTING MONTH

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	24 Jun 20	8 Jul 20
1a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	8 Jul 20	22 Jul 20
1b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	21 Jul 20	4 Aug 20
2		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	24 Jun 20	8 Jul 20
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	8 Jul 20	22 Jul 20
2b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	21 Jul 20	4 Aug 20
3		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	24 Jun 20	8 Jul 20
3a	Air	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	8 Jul 20	22 Jul 20
3b	All	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	21 Jul 20	4 Aug 20
4		Calibration Kit TISCH Model TE-5025A Orifice ID 1941 and Rootsmeter S/N 438320	7 Feb 20	7 Feb 21
6		Laser Dust Monitor, Model LD-3B (Serial No. 366410) – EQ110	6 Jan 20	6 Jan 21
7		Laser Dust Monitor, Model LD-3B (Serial No. 366410) – EQ110	6 Jan 20	6 Jan 21
8		Laser Dust Monitor, Model AM510 (Serial No. 11008017) – EQ102	6 Jan 20	6 Jan 21
9		Laser Dust Monitor, Model LD-3B (Serial No. 2X6145) – EQ105	6 Jan 20	6 Jan 21
10		Laser Dust Monitor, Model LD-3B (Serial No. 3Y6503) – EQ112	6 Jan 20	6 Jan 21
11		Rion NL- 52 Sound Level Meter (Serial No. 00142581) – EQ015	27 Aug 19	27 Aug 20
12	Noise	Rion NL- 52 Sound Level Meter (Serial No. 01121362) – EQ011	7 Jan 20	7 Jan 21
13		Rion NC - 73 Acoustical Calibrator (Serial No. 10655561) – EQ085	27 Feb 20	27 Feb 21
14	***	YSI Pro DSS (Serial No.17B102764)	12 May 20	12 Aug 20
15	Water	Global Water FP211 Flow Meter (Serial No. 1449006330)	9 Oct 19	9 Oct 20

Location: Sha Ling Village House No.6 Date of Calibration: 24-Jun-20 Location ID: ASR-1 Next Calibration Date: 8-Jul-20

Location ID: ASR-1 Next Calibration Date: 8-Jul-20 Name and Model: TISCH HVS Model TE-5170 Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa)
Temperature (°C)

1006.5 30.4 Corrected Pressure (mm Hg)
Temperature (K)

303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

2.03014 -0.04616

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	5.80	5.80	11.6	1.680	54	52.86	Slope = 35.5117
13	4.50	4.50	9.0	1.482	50	48.94	Intercept = -5.3727
10	3.50	3.50	7.0	1.310	42	41.11	Corr. coeff. = 0.9948
7	2.20	2.20	4.4	1.043	33	32.30	
5	1.40	1.40	2.8	0.837	24	23.49	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

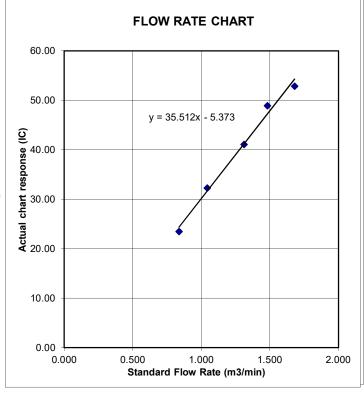
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: Sha Ling Village House No.6

Location ID: ASR-1

Next Calibration Date: 22-Jul-20

Date of Calibration: 8-Jul-20

Name and Model: TISCH HVS Model TE-5170

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1007.1 30.0

Corrected Pressure (mm Hg)
Temperature (K)

755.325 303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

2.03014

CALIBRATION

L								
	Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
L	No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
	18	5.70	5.70	11.4	1.667	54	52.95	Slope = 36.5043
	13	4.50	4.50	9.0	1.484	50	49.02	Intercept = -6.5405
	10	3.40	3.40	6.8	1.293	42	41.18	Corr. coeff. = 0.9962
	7	2.30	2.30	4.6	1.067	33	32.36	
	5	1.40	1.40	2.8	0.838	24	23.53	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

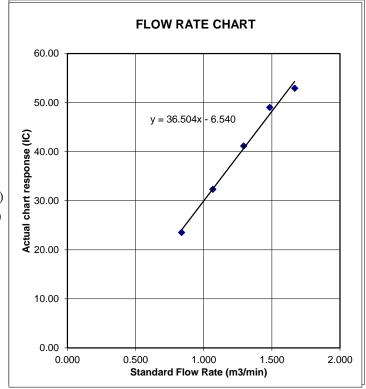
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: Sha Ling Village House No.6 Date of Calibration: 21-Jul-20

Location ID: ASR-1 Next Calibration Date: 4-Aug-20 Name and Model: TISCH HVS Model TE-5170 Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1010.5 30.4 Corrected Pressure (mm Hg)
Temperature (K)

757.875 303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

2.03014

CALIBRATION

ı								
	Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
I	No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
	18	6.30	6.30	12.6	1.753	54	52.96	Slope = 34.3393
	13	5.10	5.10	10.2	1.580	45	44.14	Intercept = -8.4959
	10	4.00	4.00	8.0	1.402	40	39.23	Corr. coeff. = 0.9908
	7	2.50	2.50	5.0	1.113	32	31.39	
	5	2.20	2.20	4.4	1.045	27	26.48	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

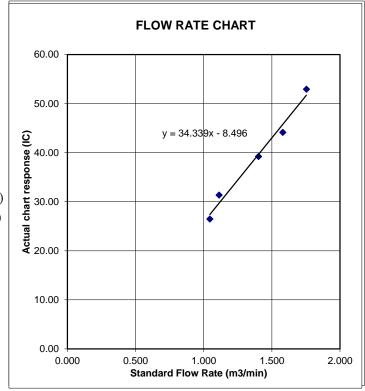
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: San Uk Ling Village House No.1

Location ID: ASR-2 Date of Calibration: 24-Jun-20

Next Calibration Date: 8-Jul-20

Name and Model: TISCH HVS Model TE-5170

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C)

1006.5 30.4

Corrected Pressure (mm Hg) Temperature (K)

754.875

CALIBRATION ORIFICE

Make-> TISCH Model-> 5025A Serial # -> 1612

Qstd Slope -> Qstd Intercept -> 2.03014 -0.04616

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	5.70	5.70	11.4	1.665	52	50.90	Slope = 34.8295
13	4.70	4.70	9.4	1.514	45	44.05	Intercept = -7.6574
10	3.60	3.60	7.2	1.328	40	39.16	Corr. coeff. = 0.9984
7	2.30	2.30	4.6	1.066	30	29.37	
5	1.40	1.40	2.8	0.837	22	21.54	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

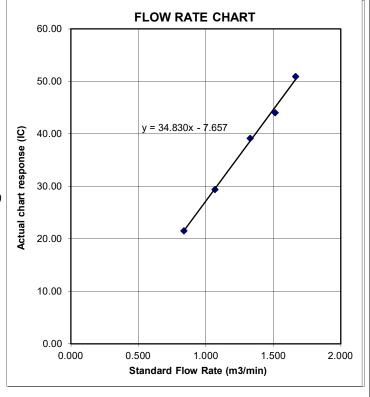
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: San Uk Ling Village House No.1

Location ID: ASR-2

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 8-Jul-20

Next Calibration Date: 22-Jul-20 Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C)

1007.1
30.0

Corrected Pressure (mm Hg)

Temperature (K) 303

CALIBRATION ORIFICE

Make->	TISCH
Model->	5025A
Serial # ->	1612

Qstd Slope -> Qstd Intercept ->

2.03014 -0.04616

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	5.70	5.70	11.4	1.667	52	50.98	Slope = 35.7094
13	4.60	4.60	9.2	1.500	45	44.12	Intercept = -8.6951
10	3.60	3.60	7.2	1.329	40	39.22	Corr. coeff. = 0.9983
7	2.20	2.20	4.4	1.044	30	29.41	
5	1.50	1.50	3.0	0.866	22	21.57	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

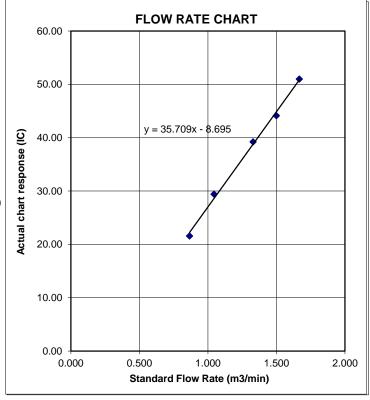
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: San Uk Ling Village House No.1

Location ID: ASR-2

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 21-Jul-20 Next Calibration Date: 4-Aug-20

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1010.5 30.4

Corrected Pressure (mm Hg)
Temperature (K)

757.875 303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

2.03014 -0.04616

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.30	6.30	12.6	1.753	53	51.98	Slope = 36.5445
13	5.20	5.20	10.4	1.595	45	44.14	Intercept = -12.8410
10	4.10	4.10	8.2	1.419	40	39.23	Corr. coeff. = 0.9957
7	2.70	2.70	5.4	1.156	31	30.41	
5	2.30	2.30	4.6	1.068	26	25.50	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

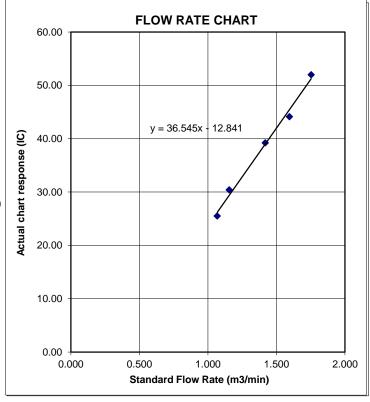
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: Muk Wu Nga Yiu House No.2A

Location ID: ASR-3a

Next Calibration: 24-Jun-20

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 24-Jun-20

Next Calibration Date: 8-Jul-20

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1006.5 30.4

Corrected Pressure (mm Hg)
Temperature (K)

754.875 303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

2.03014

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	5.70	5.70	11.4	1.665	56	54.82	Slope = 37.0120
13	4.70	4.70	9.4	1.514	48	46.99	Intercept = -7.9107
10	3.60	3.60	7.2	1.328	42	41.11	Corr. coeff. = 0.9978
7	2.30	2.30	4.6	1.066	32	31.32	
5	1.40	1.40	2.8	0.837	24	23.49	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

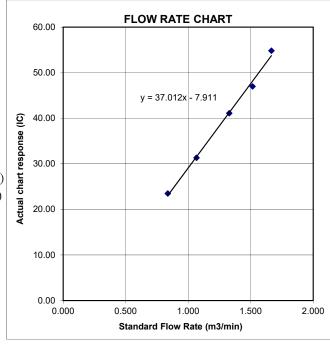
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: Muk Wu Nga Yiu House No.2A

Location ID: ASR-3a

Next Calibration: 8-Jul-20

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 8-Jul-20

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1007.1 30.0

Corrected Pressure (mm Hg)
Temperature (K)

755.325 303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept -> 2.03014 -0.04616

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	5.80	5.80	11.6	1.681	56	54.91	Slope = 35.9791
13	4.70	4.70	9.4	1.516	48	47.06	Intercept = -6.7615
10	3.80	3.80	7.6	1.365	42	41.18	Corr. coeff. = 0.9971
7	2.20	2.20	4.4	1.044	32	31.38	
5	1.40	1.40	2.8	0.838	24	23.53	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

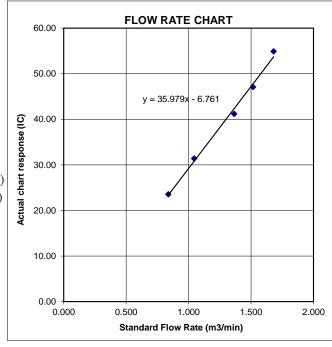
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: Muk Wu Nga Yiu House No.2A

Location ID: ASR-3a

Next Calibration: 21-Jul-20

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 21-Jul-20

Next Calibration Date: 4-Aug-20

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1010.5 30.4

Corrected Pressure (mm Hg)
Temperature (K)

757.875 303

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

2.03014 -0.04616

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.30	6.30	12.6	1.753	51	50.02	Slope = 33.9849
13	5.20	5.20	10.4	1.595	44	43.16	Intercept = -9.7867
10	4.00	4.00	8.0	1.402	40	39.23	Corr. coeff. = 0.9937
7	2.60	2.60	5.2	1.134	30	29.42	
5	2.30	2.30	4.6	1.068	26	25.50	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

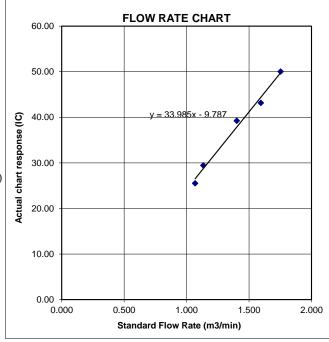
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature





RECALIBRATION DUE DATE:

February 7, 2021

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 7, 2020 Rootsmeter S/N: 438320

Ta: 295 °K

Operator: Jim Tisch **Pa:** 745.5 mm Hg

Calibration Model #: TE-5025A Calibrator S/N: 1612

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3730	3.2	2.00
2	3	4	1	0.9820	6.4	4.00
3	5	6	1	0.8780	8.0	5.00
4	7	8	1	0.8340	8.8	5.50
5	9	10	1	0.6900	12.8	8.00

Data Tabulation								
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	√∆H(Ta/Pa)			
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)			
0.9866	0.7186	1.4078	0.9957	0.7252	0.8896			
0.9824	1.0004	1.9909	0.9914	1.0096	1.2581			
0.9802	1.1165	2.2259	0.9893	1.1267	1.4066			
0.9792	1.1741	2.3345	0.9882	1.1849	1.4753			
0.9739	1.4114	2.8155	0.9828	1.4244	1.7792			
	m=	2.03014		m=	1.27124			
QSTD	b=	-0.04616	QA	b=	-0.02917			
	r=	0.99995		r=	0.99995			

Calculations								
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)					
Qstd=	Vstd/∆Time	Qa=	Va/ΔTime					
	For subsequent flow ra	te calculatio	ns:					
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$					

Standard Conditions							
Tstd:	298.15 °K						
Pstd:	760 mm Hg						
	Key						
ΔH: calibrator manometer reading (in H2O)							
ΔP: rootsmeter manometer reading (mm Hg)							
Ta: actual ab	solute temperature (°K)						
Pa: actual barometric pressure (mm Hg)							
b: intercept							
m: slope							

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610 FAX: (513)467-9009

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT

HK2001299 WORK ORDER CONTACT : MR BEN TAM

CLIENT : ACTION UNITED ENVIRONMENT

SERVICES AND CONSULTING

: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 **ADDRESS** SUB-BATCH

> DATE RECEIVED : 6-JAN-2020 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG DATE OF ISSUE : 10-JAN-2020

KONG

PROJECT NO. OF SAMPLES: 1

CLIENT ORDER

General Comments

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.

Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Sianatories Position

Richard Fung Managing Director

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

: HK2001299 WORK ORDER

SUB-BATCH

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING CLIENT

PROJECT



ALS Lab	Client's Sample ID		Sample Date	External Lab Report No.
ID		Туре		
HK2001299-001	S/N: 11008017	AIR	06-Jan-2020	S/N: 11008017

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor

Manufacturer: TSI AM510

Serial No. 11008017

Equipment Ref: EQ102

Work Order: HK2001299

Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)

Location & Location ID: AUES Office (Calibration Room)

Equipment Ref: HVS 018

Last Calibration Date: 3 December 2019

Equipment Verification Results:

Verification Date: 27 & 31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Concentration in mg/m³ (Calibrated Equipment)	Tolerance (mg/m³)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	0.076	+0.036
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	0.087	+0.039
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	0.066	+0.032

Linear Regression of Y or X

Slope (factor): 0.5354

Correlation Coefficient (R) 0.9984

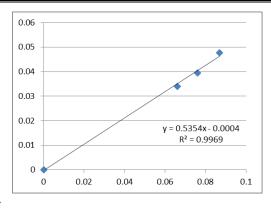
Date of Issue 6 January 2020

Remarks:

1. **Strong** Correlation (R>0.8)

2. Factor 0.5354 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment



Operator : Fai So Signature : Date : 6 January 2020

QC Reviewer: Ben Tam Signature: Date: 6 January 2020

Location: Gold King Industrial Building, Kwai Chung Date of Calibration: 3-Dec-19
Location ID: Calibration Room Next Calibration Date: 3-Mar-20

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1023.1 16.4 Corrected Pressure (mm Hg)
Temperature (K)

767.325 289

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Calibration Date-> 5-Feb-19

Qstd Slope -> Qstd Intercept -> Expiry Date-> 2.0968 -0.00065 5-Feb-20

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.5	6.5	13.0	1.754	53	54.04	Slope = 36.7338
13	5.2	5.2	10.4	1.569	48	48.94	Intercept = -9.6198
10	4.1	4.1	8.2	1.393	41	41.80	Corr. coeff. = 0.9986
8	2.6	2.6	5.2	1.109	30	30.59	
5	1.6	1.6	3.2	0.870	22	22.43	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

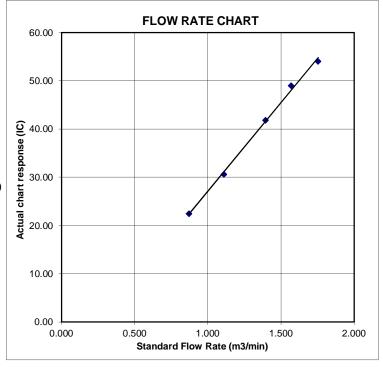
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature





RECALIBRATION DUE DATE:

February 5, 2020

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 5, 2019

Rootsmeter S/N: 438320

Ta: 293
Pa: 753.1

°K

Operator: Jim Tisch

......

mm Hg

Calibration Model #:

TE-5025A

Calibrator S/N: 1941

1	Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
	1	1	2	1	1.4830	3.2	2.00
	2	3	4	1	1.0430	6.4	4.00
Γ	3	5	6	1	0.9300	7.9	5.00
	4	7	8	1	0.8870	8.7	5.50
	5	9	10	1	0.7320	12.7	8.00

Data Tabulation					
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H (Ta/Pa)}$
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)
1.0036	0.6767	1.4197	0.9958	0.6714	0.8821
0.9993	0.9581	2.0078	0.9915	0.9506	1.2475
0.9973	1.0723	2.2448	0.9895	1.0640	1.3947
0.9962	1.1231	2.3544	0.9884	1.1144	1.4628
0.9908	1.3536	2.8395	0.9831	1.3431	1.7642
	m=	2.09680		m=	1.31298
QSTD	b=	-0.00065	QA	b=	-0.00040
	r=	0.99999		e r=	0.99999

Calculations					
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)		
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime		
For subsequent flow rate calculations:					
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$		

Standard Conditions				
Tstd:	1			
Pstd:	760 mm Hg			
Key				
ΔH: calibrator manometer reading (in H2O)				
ΔP: rootsmeter manometer reading (mm Hg)				
Ta: actual absolute temperature (°K)				
Pa: actual barometric pressure (mm Hg)				
b: intercept				
m: slope				

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610

FAX: (513)467-9009

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT

HK2001293 WORK ORDER CONTACT : MR BEN TAM

CLIENT : ACTION UNITED ENVIRONMENT

SERVICES AND CONSULTING

: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 **ADDRESS** SUB-BATCH

> DATE RECEIVED : 6-JAN-2020 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG DATE OF ISSUE : 10-JAN-2020

KONG

PROJECT NO. OF SAMPLES: 1

CLIENT ORDER

General Comments

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.

Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Sianatories Position

Richard Fung Managing Director

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

: HK2001293 WORK ORDER

SUB-BATCH

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING CLIENT

PROJECT



ALS Lab	ALS Lab Client's Sample ID		Sample Date	External Lab Report No.
ID		Туре		
HK2001293-0	S/N: 3Y6503	AIR	06-Jan-2020	S/N: 3Y6503

Equipment Verification Report (TSP)

Equipment Calibrated:

Laser Dust monitor Type:

Manufacturer: Sibata LD-3B

3Y6503 Serial No.

Equipment Ref: EQ112

Job Order HK2001293

Standard Equipment:

Standard Equipment: Higher Volume Sampler

Location & Location ID: AUES office (calibration room)

Equipment Ref: HVS 018

Last Calibration Date: 3 December 2019

Equipment Verification Results:

Testing Date: 27&31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	2371	19.8
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	2479	20.7
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	1899	14.1

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)

(CPM) 655 (CPM)

655

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9889

Date of Issue 6 January 2020

Remarks:

- 1. Strong Correlation (R>0.8)
- 2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

0.06 0.05 0.04 0.03 0.02 y = 0.0022x + 0.0007 $R^2 = 0.9779$ 0.01 0 10 15 25

Fai So

Signature:

Date:

6 January 2020

Ben Tam

Signature:

Date : __

6 January 2020

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location: Gold King Industrial Building, Kwai Chung Date of Calibration: 3-Dec-19
Location ID: Calibration Room Next Calibration Date: 3-Mar-20

CONDITIONS

Sea Level Pressure (hPa)
Temperature (°C)

1023.1 16.4

Corrected Pressure (mm Hg)
Temperature (K)

767.325

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Calibration Date-> 5-Feb-19

Qstd Slope ->
Qstd Intercept ->
Expiry Date->

2.0968 -0.00065 5-Feb-20

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.5	6.5	13.0	1.754	53	54.04	Slope = 36.7338
13	5.2	5.2	10.4	1.569	48	48.94	Intercept = -9.6198
10	4.1	4.1	8.2	1.393	41	41.80	Corr. coeff. = 0.9986
8	2.6	2.6	5.2	1.109	30	30.59	
5	1.6	1.6	3.2	0.870	22	22.43	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

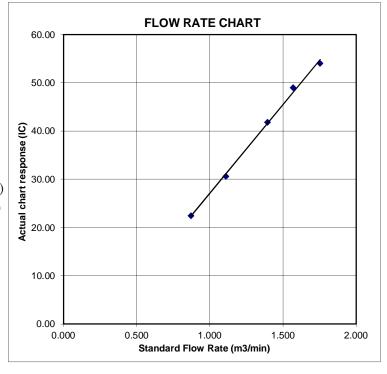
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





RECALIBRATION DUE DATE:

February 5, 2020

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 5, 2019

Rootsmeter S/N: 438320

Ta: 293
Pa: 753.1

°K

Operator: Jim Tisch

......

mm Hg

Calibration Model #:

TE-5025A

Calibrator S/N: 1941

1	Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
	1	1	2	1	1.4830	3.2	2.00
	2	3	4	1	1.0430	6.4	4.00
Γ	3	5	6	1	0.9300	7.9	5.00
	4	7	8	1	0.8870	8.7	5.50
	5	9	10	1	0.7320	12.7	8.00

	Data Tabulation									
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H (Ta/Pa)}$					
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)					
1.0036	0.6767	1.4197	0.9958	0.6714	0.8821					
0.9993	0.9581	2.0078	0.9915	0.9506	1.2475					
0.9973	1.0723	2.2448	0.9895	1.0640	1.3947					
0.9962	1.1231	2.3544	0.9884	1.1144	1.4628					
0.9908	1.3536	2.8395	0.9831	1.3431	1.7642					
	m=	2.09680		m=	1.31298					
QSTD	b=	-0.00065	QA	b=	-0.00040					
	r=	0.99999		6 r=	0.99999					

	Calculations						
Vstd=	Vstd= ΔVoI((Pa-ΔP)/Pstd)(Tstd/Ta) Va= ΔVoI((Pa-ΔP)/Pa)						
Qstd=	Qstd= Vstd/ΔTime Qa= Va/ΔTime						
	For subsequent flow ra	te calculatio	ns:				
Qstd=	Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$ Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$						

Standard Conditions						
Tstd:	1					
Pstd:	760 mm Hg					
	Key					
ΔH: calibrate	or manometer reading (in H2O)					
	ter manometer reading (mm Hg)					
	osolute temperature (°K)	-				
Pa: actual ba	Pa: actual barometric pressure (mm Hg)					
b: intercept						
m: slope	m: slope					

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610

FAX: (513)467-9009

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT

HK2001300 WORK ORDER CONTACT : MR BEN TAM

CLIENT : ACTION UNITED ENVIRONMENT

SERVICES AND CONSULTING

: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 **ADDRESS** SUB-BATCH

> DATE RECEIVED : 6-JAN-2020 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG DATE OF ISSUE : 10-JAN-2020

KONG

PROJECT NO. OF SAMPLES: 1

CLIENT ORDER

General Comments

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.

Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Sianatories Position

Richard Fung Managing Director

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

: HK2001300 WORK ORDER

SUB-BATCH

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING CLIENT

PROJECT



ALS Lab	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2001300-001	S/N: 366410	AIR	06-Jan-2020	S/N: 366410

Equipment Verification Report (TSP)

Equipment Calibrated:

Laser Dust monitor Type:

Manufacturer: Sibata LD-3B

366410 Serial No.

Equipment Ref: EQ110

Job Order HK2001300

Standard Equipment:

Standard Equipment: Higher Volume Sampler

Location & Location ID: AUES office (calibration room)

Equipment Ref: HVS 018

Last Calibration Date: 3 December 2019

Equipment Verification Results:

Testing Date: 27&31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	2298	19.2
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	2477	20.6
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	1941	14.4

Sensitivity Adjustment Scale Setting (Before Calibration)

Sensitivity Adjustment Scale Setting (After Calibration)

674 (CPM) 674 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9937

Date of Issue 6 January 2020

Remarks:

1. Strong Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

0.06 0.05 0.04 0.03 0.02 y = 0.0022x + 0.0003 $R^2 = 0.9875$ 0.01 0 10 15 25

Fai So

Signature:

Date:

6 January 2020

Ben Tam

Signature:

Date : __ 6 January 2020

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location: Gold King Industrial Building, Kwai Chung Date of Calibration: 3-Dec-19
Location ID: Calibration Room Next Calibration Date: 3-Mar-20

CONDITIONS

Sea Level Pressure (hPa)
Temperature (°C)

1023.1 16.4

Corrected Pressure (mm Hg)
Temperature (K)

767.325

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Calibration Date-> 5-Feb-19

Qstd Slope ->
Qstd Intercept ->
Expiry Date->

2.0968 -0.00065 5-Feb-20

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.5	6.5	13.0	1.754	53	54.04	Slope = 36.7338
13	5.2	5.2	10.4	1.569	48	48.94	Intercept = -9.6198
10	4.1	4.1	8.2	1.393	41	41.80	Corr. coeff. = 0.9986
8	2.6	2.6	5.2	1.109	30	30.59	
5	1.6	1.6	3.2	0.870	22	22.43	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

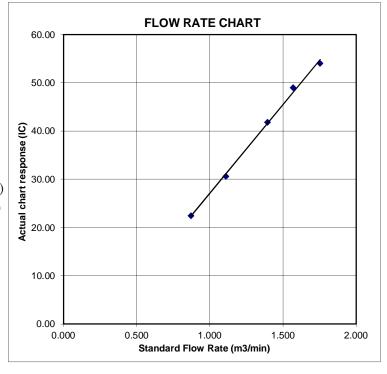
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





RECALIBRATION DUE DATE:

February 5, 2020

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 5, 2019

Rootsmeter S/N: 438320

Ta: 293
Pa: 753.1

°K

Operator: Jim Tisch

......

mm Hg

Calibration Model #:

TE-5025A

Calibrator S/N: 1941

1	Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
	1	1	2	1	1.4830	3.2	2.00
	2	3	4	1	1.0430	6.4	4.00
Γ	3	5	6	1	0.9300	7.9	5.00
	4	7	8	1	0.8870	8.7	5.50
	5	9	10	1	0.7320	12.7	8.00

	Data Tabulation									
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H (Ta/Pa)}$					
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)					
1.0036	0.6767	1.4197	0.9958	0.6714	0.8821					
0.9993	0.9581	2.0078	0.9915	0.9506	1.2475					
0.9973	1.0723	2.2448	0.9895	1.0640	1.3947					
0.9962	1.1231	2.3544	0.9884	1.1144	1.4628					
0.9908	1.3536	2.8395	0.9831	1.3431	1.7642					
	m=	2.09680		m=	1.31298					
QSTD	b=	-0.00065	QA	b=	-0.00040					
	r=	0.99999		6 r=	0.99999					

	Calculations								
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)						
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime						
	For subsequent flow rate calculations:								
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right)-b\right)$						

Standard Conditions								
Tstd:	1							
Pstd:	760 mm Hg							
	Key							
ΔH: calibrate	ΔH: calibrator manometer reading (in H2O)							
	ΔP: rootsmeter manometer reading (mm Hg)							
	osolute temperature (°K)	-						
Pa: actual ba	arometric pressure (mm Hg)	-						
b: intercept	b: intercept							
m: slope								

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610

FAX: (513)467-9009

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT

HK2001298 WORK ORDER CONTACT : MR BEN TAM

CLIENT : ACTION UNITED ENVIRONMENT

SERVICES AND CONSULTING

: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 **ADDRESS** SUB-BATCH

> DATE RECEIVED : 6-JAN-2020 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG DATE OF ISSUE : 10-JAN-2020

KONG

PROJECT NO. OF SAMPLES: 1

CLIENT ORDER

General Comments

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

- Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Sianatories Position

Richard Fung Managing Director

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

: HK2001298 WORK ORDER

SUB-BATCH

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING CLIENT

PROJECT



ALS Lab	Client's Sample ID		Sample Date	External Lab Report No.	
ID		Туре			
HK2001298-001	S/N: 2X6145	AIR	06-Jan-2020	S/N: 2X6145	

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor

Manufacturer: Sibata LD-3B

Serial No. 2X6145

Equipment Ref: EQ105

Job Order HK2001298

Standard Equipment:

Standard Equipment: Higher Volume Sampler

Location & Location ID: AUES office (calibration room)

Equipment Ref: HVS 018

Last Calibration Date: 3 December 2019

Equipment Verification Results:

Testing Date: 27&31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	2254	18.8
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	2561	21.3
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	1841	13.6

Sensitivity Adjustment Scale Setting (Before Calibration) 586 (CPM)

Sensitivity Adjustment Scale Setting (After Calibration) 586 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9935

Date of Issue 6 January 2020

Remarks:

- 1. **Strong** Correlation (R>0.8)
- 2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

0.06						
0.05 -					*	
0.04					/	
0.03 -				•/		
0.02			/		0.00 + 0.00	009
0.01				R ²	= 0.987	
0			1			
()	5	10	15	20	25

Operator : Fai So Signature : Date : 6 January 2020

QC Reviewer : Ben Tam Signature : Date : 6 January 2020

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location: Gold King Industrial Building, Kwai Chung Date of Calibration: 3-Dec-19
Location ID: Calibration Room Next Calibration Date: 3-Mar-20

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1023.1 16.4 Corrected Pressure (mm Hg)
Temperature (K)

767.325 289

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Calibration Date-> 5-Feb-19

Qstd Slope -> Qstd Intercept -> Expiry Date-> 2.0968 -0.00065 5-Feb-20

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.5	6.5	13.0	1.754	53	54.04	Slope = 36.7338
13	5.2	5.2	10.4	1.569	48	48.94	Intercept = -9.6198
10	4.1	4.1	8.2	1.393	41	41.80	Corr. coeff. = 0.9986
8	2.6	2.6	5.2	1.109	30	30.59	
5	1.6	1.6	3.2	0.870	22	22.43	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

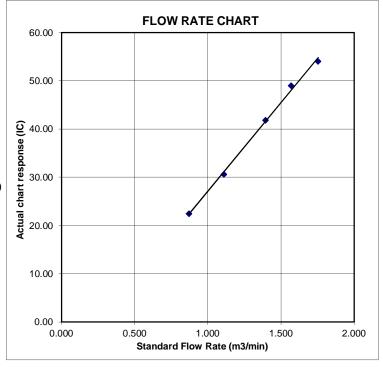
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





RECALIBRATION DUE DATE:

February 5, 2020

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 5, 2019

Rootsmeter S/N: 438320

Ta: 293
Pa: 753.1

°K

Operator: Jim Tisch

......

mm Hg

Calibration Model #:

TE-5025A

Calibrator S/N: 1941

1	Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
	1	1	2	1	1.4830	3.2	2.00
	2	3	4	1	1.0430	6.4	4.00
Γ	3	5	6	1	0.9300	7.9	5.00
	4	7	8	1	0.8870	8.7	5.50
	5	9	10	1	0.7320	12.7	8.00

	Data Tabulation								
Vstd	Qstd	Qstd $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H (Ta/Pa)}$				
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)				
1.0036	0.6767	1.4197	0.9958	0.6714	0.8821				
0.9993	0.9581	2.0078	0.9915	0.9506	1.2475				
0.9973	1.0723	2.2448	0.9895	1.0640	1.3947				
0.9962	1.1231	2.3544	0.9884	1.1144	1.4628				
0.9908	1.3536	2.8395	0.9831	1.3431	1.7642				
	m=	2.09680		m=	1.31298				
QSTD	b=	-0.00065	QA	b=	-0.00040				
	r=	0.99999		6 r=	0.99999				

	Calculations								
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)						
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime						
	For subsequent flow rate calculations:								
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right)-b\right)$						

Standard Conditions								
Tstd:	1							
Pstd:	760 mm Hg							
	Key							
ΔH: calibrate	ΔH: calibrator manometer reading (in H2O)							
	ΔP: rootsmeter manometer reading (mm Hg)							
	osolute temperature (°K)	-						
Pa: actual ba	arometric pressure (mm Hg)	-						
b: intercept	b: intercept							
m: slope								

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610

FAX: (513)467-9009



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C200488

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC19-1098)

Date of Receipt / 收件日期: 7 January 2020

Description / 儀器名稱

Sound Level Meter (EQ011)

Manufacturer / 製造商

Rion NL-52

Model No. / 型號 Serial No. / 編號

01121362

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}$ C Relative Humidity / 相對濕度 : $(50 \pm 25)\%$

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期

22 January 2020

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

K P Cheuk

Assistant Engineer

Certified By 核證

K C Lee Engineer Date of Issue 簽發日期

24 January 2020

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing, Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所

c/o 香港新界屯門興安里一號四樓 Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Page 1 of 4



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C200488

證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment:

Equipment ID

Description

Certificate No.

CL280

40 MHz Arbitrary Waveform Generator

C200258

CL281

Multifunction Acoustic Calibrator

CDK1806821

- 5. Test procedure: MA101N.
- 6. Results:
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

	UUT Setting					UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	* 91.3	± 1.1

^{*} Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

		Applied Value		UUT	IEC 61672		
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

	UUT Setting				d Value	UUT
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing, Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C200488

證書編號

6.2 Time Weighting

	UUT Setting				Applied Value		IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

Tr Weighting		Setting		Appl	ied Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	$+1.2 \pm 1.6$
					4 kHz	95.0	$+1.0 \pm 1.6$
					8 kHz	92.9	-1.1 (+2.1; -3.1)
					12.5 kHz	89.6	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

	UUT Setting			Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_{C}	С	Fast	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.0	-3.0 (+2.1; -3.1)
					12.5 kHz	87.6	-6.2 (+3.0 ; -6.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C200488

證書編號

Remarks: - UUT Microphone Model No.: UC-59 & S/N: 12912

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB : 63 Hz - 125 Hz : \pm 0.35 dB

104 dB : 1 kHz : \pm 0.10 dB (Ref. 94 dB) 114 dB : 1 kHz : \pm 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note:

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C194820

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC19-1098)

Description / 儀器名稱

Sound Level Meter (EQ015)

Date of Receipt / 收件日期: 27 August 2019

Manufacturer / 製造商

Rion

Model No. / 型號

NL-52 00142581

Serial No. / 編號 Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration

7 September 2019

TEST RESULTS / 測試結果

DATE OF TEST / 測試日期

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

HT Wong

Technical Officer

Certified By

核證

Date of Issue

簽發日期

10 September 2019

K Lee

Engineer

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior

Website/網址: www.suncreation.com

written approval of this laboratory. 本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Certificate of Calibration 校正證書

Certificate No.: C194820

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

- 2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment:

Equipment ID

Description

Certificate No.

CL280 CL281 40 MHz Arbitrary Waveform Generator Multifunction Acoustic Calibrator C190176

CDK1806821

5. Test procedure: MA101N.

- 6. Results:
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

	UUT Setting			Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_A	A	Fast	94.00	1	* 92.9	± 1.1

^{*} Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

UUT Setting			Applied Value		UUT	IEC 61672	
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

•	UUT Setting			Applied	d Value	UUT
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。 局部複印本證書需先獲本實驗所書面批准。



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C

C194820

證書編號

6.2 Time Weighting

UUT Setting			Applied Value		UUT	IEC 61672	
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

71- Weighting							
	UUT	Setting		Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_A	. A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
			-		500 Hz	90.8	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	$+1.2 \pm 1.6$
					4 kHz	95.0	$+1.0 \pm 1.6$
					8 kHz	93.0	-1.1 (+2.1; -3.1)
					12.5 kHz	89.6	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

	UUT Setting			Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_{C}	С	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1; -3.1)
					12.5 kHz	87.7	-6.2 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Certificate of Calibration 校正證書

Certificate No.: C194820

證書編號

Remarks: - UUT Microphone Model No.: UC-59 & S/N: 15585

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB : 63 Hz - 125 Hz : \pm 0.35 dB

250 Hz - 500 Hz : $\pm 0.30 \text{ dB}$ 1 kHz : $\pm 0.20 \text{ dB}$ 2 kHz - 4 kHz : $\pm 0.35 \text{ dB}$ 8 kHz : $\pm 0.45 \text{ dB}$ 12.5 kHz : $\pm 0.70 \text{ dB}$

104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB) 114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)

114 dB : 1 kHz : \pm 0.10 dB (Ref. 9)

- The uncertainties are for a confidence probability of not less than 95 %.

Note:

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C201348

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC19-1098)

Date of Receipt / 收件日期: 27 February 2020

Description / 儀器名稱

Sound Level Calibrator (EQ085)

Manufacturer / 製造商 Model No. / 型號

Rion NC-73

Serial No. / 編號

10655561

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規節

Calibration check

DATE OF TEST / 測試日期

7 March 2020

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification & user's specified acceptance criteria.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

Certified By 核證

K C Lee Engineer Date of Issue 簽發日期

10 March 2020

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laborator

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C201348

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment:

> Equipment ID CL130 CL281 TST150A

Description

Universal Counter

Measuring Amplifier

Multifunction Acoustic Calibrator

Certificate No. C193756 CDK1806821

C201309

4. Test procedure: MA100N.

5. Results:

5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.2	± 0.5	± 0.2

Frequency Accuracy

UUT Nominal Value	Measured Value	User's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	0.958	1 kHz ± 6 %	± 1

Remarks: - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- The uncertainties are for a confidence probability of not less than 95 %.

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

Website/網址: www.suncreation.com

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com



ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR BEN TAM WORK ORDER: HK2016290

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND

CONSULTING

ADDRESS: RM A, 20/F., GOLD KING IND BLDG, SUB-BATCH: C

NO. 35-41 TAI LIN PAI ROAD, LABORATORY: HONG KONG KWAI CHUNG, N.T. HONG KONG DATE RECEIVED: 05-May-2020

DATE OF ISSUE: 12-May-2020

SPECIFIC COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

Equipment Type: Multifunctional Meter Service Nature: Performance Check

Scope: Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature

Brand Name/ Model No.: YSI Professional DSS

Serial No./ Equipment No.: 17B102764/17B100758 (EQW019)

Date of Calibration: 12-May-2020

GENERAL COMMENTS

This is the Final Report and supersedes any preliminary report with this batch number. All pages of this report have been checked and approved for release.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Sig

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

WORK ORDER: HK2016290

SUB-BATCH: 0

DATE OF ISSUE: 12-May-2020

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Equipment Type: Multifunctional Meter Brand Name/

Model No.:

YSI Professional DSS

Serial No./
Equipment No.:

17B102764/17B100758 (EQW019)

Date of Calibration: 12-May-2020 Date of Next Calibration: 12-August-2020

PARAMETERS:

Conductivity Method Ref: APHA (21st edition), 2510B

	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)
ĺ	146.9	160.3	+9.1
	6667	6794	+1.9
	12890	12778	-0.9
	58670	61479	+4.8
		Tolerance Limit (%)	±10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 45000: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.75	2.67	-0.08
5.26	5.15	-0.11
7.15	6.99	-0.16
	Tolerance Limit (mg/L)	±0.20

pH Value Method Ref: APHA (21st edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)	
4.0	4.15	+0.15	
7.0	7.18	+0.18	
10.0	9.95	-0.05	
	Tolerance Limit (pH unit)	±0.20	

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless

of equipment precision or significant figures.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Sig

WORK ORDER: HK2016290

SUB-BATCH: 0

DATE OF ISSUE: 12-May-2020

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Equipment Type: Multifunctional Meter Brand Name/

Model No.:

YSI Professional DSS

Serial No./
Equipment No.:

17B102764/17B100758 (EQW019)

Date of Calibration: 12-May-2020 Date of Next Calibration: 12-August-2020

PARAMETERS:

Turbidity Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)		
0	0.37	-		
4	4.08	+2.0		
40	43.45	+8.6		
80	77.65	-2.9		
400	411.61	+2.9		
800	819.08	+2.4		
	Tolerance Limit (%)	±10.0		

Salinity Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	
10	10.98	+9.8
20	20.23	+1.2
30	32.03	+6.8
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Ship

WORK ORDER: HK2016290

SUB-BATCH: 0

DATE OF ISSUE: 12-May-2020

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Equipment Type: Multifunctional Meter

Brand Name/ Model No.:

YSI Professional DSS

Serial No./
Equipment No.:

17B102764/17B100758 (EQW019)

Date of Calibration: 12-May-2020 Date of Next Calibration: 12-August-2020

PARAMETERS:

Temperature Method Ref: Section 6 of International Accreditation New Zealand Technical

Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.5	10.3	-0.2
20.0	20.6	+0.6
39.5	40.2	+O.7
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless

of equipment precision or significant figures.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Si



ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong

T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR BEN TAM WORK ORDER: HK1946056

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTIN SUB-BATCH: 0

ADDRESS: RM A 20/F., GOLD KING IND BLDG, LABORATORY: HONG KONG

NO. 35-41 TAI LIN PAI ROAD,

KWAI CHUNG, N.T. HONG KONG

DATE RECEIVED: 11-Oct-2019
28-Oct-2019

COMMENTS

The calibration of flow rate performed by AUES staff on 09 October 2019.

Scope of Test:

Flow rate

Equipment Type:

Flow Meter

Brand Name:

Global Water

Model No.:

FP211

Serial No.:

1449006330

Equipment No.:

--

314

Calibration Factor:

Date of Calibration: 09 October, 2019

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Fung Lim Chee, Richard Managing Director, Life Sciences

Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

Work Order:

HK1946056

Sub-batch:

0

Date of Issue:

28-Oct-2019

Client:

ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Reference Equipment:

Model:

SonTek IQ Standard

Serial Number:

IQ1217004

Equipment to be calibrated:

Equipment Type:

Flow Meter

Brand Name:

Global Water

Model No.:

FP211

Serial No.:

1449006330

Equipment No.:

Calibration Factor:

314

Date of Calibration: 09 October, 2019

Parameters:

The calibration of flow meter is verified with standard flow meter on site by AUES Staff.

Flow rate

Total	Reading of Reference Equipment (m/s)	Reading of Equipment to be calibrated (m/s)
Trial	SonTek IQ Standard Serial No: IQ1217004	Global Water FP211 Serial No. 1449006330
		al al
1	0.11	0.1
2	0.19	0.2
3	0.46	0.4
4	0.77	0.8
5	1.02	1.0
6	1.17	1.1

Mr. Fung Lim Chee, Richard Managing Director, Life Sciences

Hong Kong



Hong Kong Accreditation Service 香港認可處

Certificate of Accreditation

認可證書

This is to certify that 特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong 香港新界葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a 為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory

「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025: 2005 - General requirements for the competence 此實驗所符合ISO / IEC 17025: 2005 -《測試及校正實驗所能力的通用規定》所訂的要求, of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as 獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定 listed in the HOKLAS Directory of Accredited Laboratories within the test category of 測試或校正工作

Environmental Testing

環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025: 2005. 本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。 This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory 這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作 quality management system (see joint IAF-ILAC-ISO Communiqué). (見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive 香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator

執行幹事 陳成城 Issue Date: 5 May 2009

簽發日期:二零零九年五月五日

註冊號碼:

Registration Number : HOKLAS 066

Date of First Registration: 15 September 1995 首次註冊日期:一九九五年九月十五日



Appendix F

Event and Action Plan of Air Quality, Noise and Water Quality



Event and Action Plan for air quality

E4		Actio	n	
Event	ET	IEC	ER	Contractor
Action level exceedance for one sample	I. Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily.	Check monitoring data submitted by ET; Check Contractor's working method.	1. Notify Contractor	Rectify any unacceptable practice; Amend working methods if appropriate.
Action level exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented.	Submit proposals for remedial to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level exceedance for one sample	I. Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented.	Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level 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.	Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note: ET – Environmental Team IEC – Independent Environmental Checker ER – Engineer's Representative



Event and Action Plan for Construction Noise

Event	Action			
Event	ET	IEC	ER	Contractor
Action Level Exceedance	 Notify IEC, ER and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness 	1. Review the analyzed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	3. Require Contractor to propose remedial measures for the analyzed	Submit noise mitigation proposals to IEC and ER; Implement noise mitigation proposals
Limit Level Exceedance	1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1.Confirm receipt of notification of failure in writing; 2.Notify Contractor; 3.Require Contractor to propose remedial measures for the analyzed noise problem; 4.Ensure remedial measures properly	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer's Representative



Event and Action Plan for Water Quality

E4	Action			
Event	ET	IEC	ER	Contractor
Action level exceedance for one sampling day	Inform IEC, Contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; and Discuss remedial measures with IEC and Contractor and ER.	Discuss with ET, ER and Contractor on the implemented mitigation measures; Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with IEC, ET and Contractor on the implemented mitigation measures; Make agreement on the remedial measures to be implemented; Supervise the implementation of agreed remedial measures.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and Implement the agreed mitigation measures.
Action level exceedance for more than one consecutive sampling days	Repeat in-situ measurement on next day of exceedance to confirm findings; Inform IEC, contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss remedial measures with IEC, contractor and ER Ensure remedial measures are implemented	Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with ET, IEC and Contractor on the proposed mitigation measures; Make agreement on the remedial measures to be implemented; and Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and Implement the agreed mitigation measures.
Limit level exceedance for one sampling day	Repeat measurement on next day of exceedance to confirm findings; Inform IEC, contractor and ER; Rectify unacceptable practice; Check monitoring data, all plant, equipment and Contractor's working methods; Consider changes of working methods; Discuss mitigation measures with IEC, ER and Contractor; and Ensure the agreed remedial measures are implemented	Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with ET, IEC and Contractor on the implemented remedial measures; Request Contractor to critically review the working methods; Make agreement on the remedial measures to be implemented; and Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and Implement the agreed remedial measures.
Limit level exceedance for more than one consecutive sampling days	I. Inform IEC, contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; and Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days	Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with ET, IEC and Contractor on the implemented remedial measures; Request Contractor to critically review the working methods; Make agreement on the remedial measures to be implemented; Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and Implement the agreed remedial measures; and As directed by the ER, to slow down or stop all or part of the construction activities until no exceedance of Limit level.

Note: ET – Environmental Team IEC – Independent Environmental Checker ER – Engineer's Representative Each step of actions required shall be implemented within 1 working day unless otherwise specified or agreed with EPD.



Appendix G

Monitoring Schedules of the Reporting Month and Coming Month



Impact Monitoring Schedule of Air Quality, Noise and Water Quality – July 2020

	D-4-	National Management	Air Quality	Monitoring	Water Oraclitan
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Wed	1-Jul-20				
Thu	2-Jul-20				✓
Fri	3-Jul-20				
Sat	4-Jul-20			✓	✓
Sun	5-Jul-20				
Mon	6-Jul-20	✓	✓		✓
Tue	7-Jul-20				
Wed	8-Jul-20				✓
Thu	9-Jul-20				
Fri	10-Jul-20			✓	✓
Sat	11-Jul-20		✓		
Sun	12-Jul-20				
Mon	13-Jul-20				✓
Tue	14-Jul-20				
Wed	15-Jul-20				✓
Thu	16-Jul-20			✓	
Fri	17-Jul-20	✓	✓		✓
Sat	18-Jul-20				
Sun	19-Jul-20				
Mon	20-Jul-20				✓
Tue	21-Jul-20				
Wed	22-Jul-20			✓	✓
Thu	23-Jul-20	✓	✓		
Fri	24-Jul-20				✓
Sat	25-Jul-20				
Sun	26-Jul-20				
Mon	27-Jul-20				✓
Tue	28-Jul-20			✓	
Wed	29-Jul-20	✓	✓		✓
Thu	30-Jul-20				
Fri	31-Jul-20				✓

✓	Monitoring Day
	Sunday or Public Holiday



Impact Monitoring Schedule of Air Quality, Noise and Water Quality – August 2020

	D 4	N . M	Air Quality	y Monitoring	W 4 O P4
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Sat	1-Aug-20				
Sun	2-Aug-20				
Mon	3-Aug-20			✓	✓
Tue	4-Aug-20	✓	✓		
Wed	5-Aug-20				✓
Thu	6-Aug-20				
Fri	7-Aug-20				✓
Sat	8-Aug-20			✓	
Sun	9-Aug-20				
Mon	10-Aug-20	✓	✓		✓
Tue	11-Aug-20				
Wed	12-Aug-20				✓
Thu	13-Aug-20				
Fri	14-Aug-20			✓	✓
Sat	15-Aug-20		✓		
Sun	16-Aug-20				
Mon	17-Aug-20				✓
Tue	18-Aug-20				
Wed	19-Aug-20				✓
Thu	20-Aug-20			✓	
Fri	21-Aug-20	✓	✓		✓
Sat	22-Aug-20				
Sun	23-Aug-20				
Mon	24-Aug-20				✓
Tue	25-Aug-20				-
Wed	26-Aug-20			✓	✓
Thu	27-Aug-20	✓	✓		
Fri	28-Aug-20				✓
Sat	29-Aug-20				
Sun	30-Aug-20				
Mon	31-Aug-20				✓

✓	Monitoring Day
	Sunday or Public Holiday



Appendix H

Monitoring Data

- 24-hour TSP Air Quality
- Noise
- Water Quality



Air Quality (24-hour TSP)



					24	-Hour	TSP N	Monitor	ing Data	for ASR-	-1				
DATE	SAMPLE NUMBER	ELA	APSED TI	ME	СНА	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER W	EIGHT (g)	DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
	NUMBER		FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m ³)	INITIAL	FINAL	(g)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
4-Jul-20	25939	22688.24	22712.24	1440.00	31	32	31.5	28.7	1006.4	1.03	1486	2.7810	2.7950	0.0140	9
10-Jul-20	26013	22712.24	22736.24	1440.00	30	32	31.0	29	1005.7	1.02	1468	2.8437	2.8536	0.0099	7
16-Jul-20	25906	22736.24	22760.24	1440.00	30	32	31.0	28.9	1005.9	1.02	1468	2.7933	2.8485	0.0552	38
22-Jul-20	25951	22760.24	22784.24	1440.00	30	32	31.0	28.8	1006.3	1.14	1644	2.7665	2.8113	0.0448	27
28-Jul-20	25990	22784.24	22808.24	1440.00	31	31	31.0	30.8	1007.5	1.14	1640	2.7399	2.7798	0.0399	24

					24-	Hour	TSP N	Monitor	ing Data	for ASR-	-2				
DATE	SAMPLE NUMBER		APSED TII	ME	CHA	RT REAI	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR	FILTER W	EIGHT (g)	DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
	NUMBER		FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m ³)	INITIAL	FINAL	(g)	
4-Jul-20	25938	20090.10	20114.11	1440.60	32	32	32.0	28.7	1006.4	1.08	1558	2.7906	2.8168	0.0262	17
10-Jul-20	26012	20114.11	20138.11	1440.00	30	32	31.0	29	1005.7	1.10	1588	2.8044	2.8334	0.0290	18
16-Jul-20	25905	20138.11	20162.11	1440.00	30	32	31.0	28.9	1005.9	1.10	1588	2.7808	2.8373	0.0565	36
22-Jul-20	25952	20162.11	20186.11	1440.00	30	32	31.0	28.8	1006.3	1.19	1716	2.8112	2.8330	0.0218	13
28-Jul-20	25991	20186.11	20210.11	1440.00	30	32	31.0	30.8	1007.5	1.19	1712	2.7440	2.7856	0.0416	24

					24-	Hour '	TSP M	Ionitori	ing Data	for ASR-3	3a				
DATE	SAMPLE NUMBER	ELA	APSED TI	ME	СНА	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER W	EIGHT (g)	DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m ³ /min)	(std m ³)	INITIAL	FINAL	(g)	,
4-Jul-20	25937	13890.83	13914.36	1411.80	31	32	31.5	29.8	1007.3	1.08	1531	2.7896	2.8190	0.0294	19
10-Jul-20	26030	13914.36	13938.04	1420.80	30	32	31.0	29	1005.7	1.04	1478	2.8175	2.8396	0.0221	15
16-Jul-20	25907	13938.04	13961.70	1419.60	30	32	31.0	28.9	1005.9	1.04	1478	2.7708	2.8321	0.0613	41
22-Jul-20	25982	13961.70	13985.70	1440.00	30	32	31.0	28.8	1006.3	1.19	1715	2.7942	2.8278	0.0336	20
28-Jul-20	25989	13985.71	14009.47	1425.60	30	31	30.5	30.8	1007.5	1.17	1674	2.7739	2.8007	0.0268	16

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery
Monthly Environmental Monitoring & Audit Report (No.24) – July 2020



Noise



								Noi	se Meası	ırement	Results (dB(A)) o	f CN-1								
Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 nd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq _{30min}	Façade Collection (*)
6-Jul-20	13:33	62.1	65.8	60.4	61.5	63.7	59.4	63.6	66.8	61.2	64.5	66.7	62.2	63.4	65.6	61.1	62.6	64.8	61.5	63	66
17-Jul-20	13:36	64.5	69.2	62.4	63.9	65.5	61.6	62.7	63.9	60.8	64.9	67.2	63.1	62.1	63.2	60.4	62.6	64.1	61.2	64	67
23-Jul-20	10:18	64.3	66.7	61.7	63.2	65.8	60.8	65	66.8	62.8	62.2	63.9	60.1	62.8	64.2	60.9	61.9	62.6	61.1	63	66
29-Jul-20	9:25	61.6	65.4	55.6	62.8	66.8	58.5	63.4	63.5	57.4	64.2	68.2	59.1	63.9	65.8	61.6	62.9	64.2	60.3	63	66

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

								Noi	ise Meas	urement	Results (dB(A)) o	f CN-2								
Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 nd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq _{30min}	Façade Collection (*)
6-Jul-20	14:18	64.5	66.2	56.9	63.9	67.5	55.8	64.3	68.1	56.2	62.4	65.7	53.8	61.8	64.9	53.1	60.9	63.6	52.6	63	66
17-Jul-20	14:27	65.5	68.7	55.8	64.7	67.6	54.5	62.3	66.2	52.4	63.3	66.8	53.8	61.1	64.2	52.6	62.6	65.4	52.9	64	67
23-Jul-20	11:03	64.7	66.8	54.2	63.8	65.6	53.4	65.1	67.8	56.2	66.2	68.6	57.1	63.7	66	54.4	62.6	65.9	52.8	65	68
29-Jul-20	10:02	64.2	68.6	52.5	62.5	65.4	51.8	65.4	68.9	55.8	63.3	66.2	52.6	64.4	67.6	53.2	64.7	68.5	53.6	64	67

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

								Noi	se Measi	urement	Results (dB(A)) o	f CN-3								
Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 nd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq _{30min}	Façade Collection (*)
6-Jul-20	15:07	55.9	58.2	52.4	54.3	57.5	51.6	52.7	55.3	50.4	55.4	57.6	50.3	52.8	56	49.8	52.3	54.8	49.6	54	57
17-Jul-20	15:15	57.3	60.7	53.4	54.5	57.6	50.5	53.8	56.4	49.6	56.3	58.7	52.5	55.5	57.2	51.8	52.7	55.6	48.9	55	58
23-Jul-20	14:41	58.4	60.2	51.2	59.6	61.8	51.8	59	61.4	51	57.6	59.9	50.6	56.8	59.2	50.2	56.5	59	50	58	61
29-Jul-20	10:40	56.4	58.2	52.2	53.5	56.8	50.5	57.2	60.4	53.2	54.7	56.8	51.2	55.5	57.3	52.1	54.8	57	52.6	56	59

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

								Noi	se Meas	urement	Results (dB(A)) o	f CN-4							
Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 nd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq _{30min}
6-Jul-20	15:58	58.5	62.7	46.2	57.3	61.2	44.8	56.8	60.6	42.9	60.2	64.8	45.9	63.2	67.4	48.6	55.6	59.2	43.4	59
17-Jul-20	16:10	57.1	60.3	43.8	58.9	61.8	44.2	60.2	64.3	46.6	58.1	62.1	43.9	57.4	60.6	44.0	59.8	62.5	44.8	59
23-Jul-20	15:31	60.8	62.9	44.4	57.9	61.2	43.5	58.3	62.4	44.6	61.3	65.8	46.2	59.9	61.5	45.3	58.6	62.1	44.8	60
29-Jul-20	11:38	58.1	60.4	44.6	56.2	58.6	42.8	56.5	58.8	43.2	53.6	55.1	41.8	55.5	57.2	43.8	54.8	56.9	44.1	56



Water Quality



Water Quality Impact Monitoring Result for M1

Date	2-Jul-20												
Location	Time	Depth (m)	Temp (oC)	Flow Velo	city (m/s)	DO (r	ng/L)	DO (%)	Turbid	ity (NTU)	pН	Salinity	SS(mg/L)
M1	13:35	0.12	29.4	< 0.1	c0 1	5.61	5 60	76.0 76.1	4.51	4.4	7.20	0.06	6
IVI I	15:55	0.13	29.4	< 0.1	<0.1	5.62	5.62	76.1	4.27	4.4	7.20	0.06	7 6.5

Date	4-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
М1	0.15	0.12	29.8	<0.1	6.5	87.8	3.28	7.90	0.05	3
IVI I	9:15	0.13	29.8	<0.1	6.51	87.9	3.29	7.90	0.05	4 3.3

Date	6-Jul-20													
Location	Time	Depth (m)	Temp (oC)	Flow Veloc	city (m/s)	DO (r	ng/L)	DO (%)	Turbid	ity (NTU)	pН		Salinity	SS(mg/L)
M1	0.30	0.12	28.1	< 0.1	c0 1	5.82	5.83	78.6	2.12	2.2	7.40	7.4	0.04	4 40
IVI I	9:30	0.12	28.1	< 0.1	<0.1	5.83	5.85	78.7	2.35	2.2	7.40	7.4	0.04	4.0

Date	8-Jul-20												
Location	Time	Depth (m)	Temp (oC)	Flow Velo	ocity (m/s)	DO (n	ng/L)	DO (%)	Turbidi	ity (NTU)	pН	Salinity	SS(mg/L)
M1	9:30	0.13	26.8	< 0.1	-O 1	4.18	<i>1</i> 10	57.7	6.49	6.1	7.20	2 0.04 0.04	7 7.0
IVI I	9:30	0.15	26.8	< 0.1	<0.1	4.19	4.19	57.9	6.23	6.4	7.20	0.04	7.0

Date	10-Jul-20													
Location	Time	Depth (m)	Temp (oC)	Flow Velo	ocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	pН	Salinity	SS(mg/L)
M1	0.20	0.12	26.9	< 0.1	-0.1	6.4	C 41	85.5	057	6.05	5.0	6.80	0.04	4 25
IVI I	9:30	0.13	26.9	< 0.1	<0.1	6.42	6.41	85.9	85.7	5.67	5.9	6.80	0.04	3 3.5

Date	13-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M1	0.20	0.12	26.6	<0.1	7.44	94.9	6.77	6.90	0.05	6
MH	9:30	0.13	26.6	<0.1	7.37	94.5	6.55	6.90	0.05	7 6.5

Date	15-Jul-20													
Location	Time	Depth (m)	Temp (oC)	Flow Velo	ocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	pН	Salinity	SS(mg/L)
М1	0.25	0.12	29.8	< 0.1	< 0.1	6.03	6.05	83.4	92.5	1.42	1.5	7.00	0.05	6
M1	9:23	0.12	29.8	< 0.1	<0.1	6.06	0.03	83.5	83.3	1.48	1.3	7.00	0.05	7 6.3

Date	17-Jul-20												
Location	Time	Depth (m)	Temp (oC)	Flow Vel	ocity (m/s)	DO (1	mg/L)	DO (%)	Turbid	ity (NTU)	pН	Salinity	SS(mg/L)
М1	0.50	0.12	27.3	< 0.1	c0.1	5.76	5 01	78.4	5.47	5.2	6.90	0.05	8 80
IVI I	9:50	0.12	27.3	< 0.1	<0.1	5.85	5.81	79.3	5.21	5.3	6.90	0.05	8.0



Date	20-Jul-20													
Location	Time	Depth (m)	Temp (oC)	Flow Velo	ocity (m/s)	DO (r	ng/L)	DO ((%)	Turbidit	ty (NTU)	pН	Salinity	SS(mg/L)
M1	0.20	0.12	26.9	< 0.1	۰0.1	6.27	6 20	84.5	94.6	9.79	10.1	7.20	0.05	30
IVI I	9:30	0.12	26.9	< 0.1	<0.1	6.28	0.28	84.6	84.6	10.5	10.1	7.20	0.05	28 29.0

Date	22-Jul-20													
Location	Time	Depth (m)	Temp (oC)	Flow Velo	ocity (m/s)	DO (n	ng/L)	DO (%	%)	Turbidi	ty (NTU)	pН	Salinity	SS(mg/L)
M1	0.20	0.12	28	< 0.1	ر 0 1	6.28	6.25	85.4	86.1	5.02	5 1	7.30	0.04	8 8.0
IVI I	9:30	0.13	28 28.0	< 0.1	<0.1	6.42	6.33	86.8	00.1	5.7	5.4	7.30	0.04	8 8.0

Date	24-Jul-20																
Location	Time	Depth (m)	Temp ((oC)	Flow Velo	ocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	pН	[Salinity	SS	S(mg/L)
M1	0.20	0.12	28	20.0	< 0.1	ر ۵ 1	6.35	C 15	87.0	99.0	6.11	6.2	6.90	6.0	0.04	22	21.0
IVI I	9:30	0.12	28	28.0	< 0.1	<0.1	6.55	0.45	89.0	88.0	6.27	6.2	6.90		0.04	20	21.0

Date	27-Jul-20												
Location	Time	Depth (m)	Temp (oC)	Flow Velocity	y (m/s)	DO (n	ng/L)	DO (%)	Turbid	ity (NTU)	pН	Salinity	SS(mg/L)
M1	9:20	0.13	28.2 28.2 28.2	<0.1 <0.1	<0.1	6.15 6.17	6.16	83.7 83.8	4.33 4.45	4.4	7.00 7.00	0.05 0.05 0.05	3 3.5

Date	29-Jul-20												
Location	Time	Depth (m)	Temp (oC)	Flow Vel	ocity (m/s)	DO (n	ng/L)	DO (%)	Turbidi	ty (NTU)	pН	Salinity	SS(mg/L)
M1	0.20	0.12	27.7	, <0.1	ر ۵ ۱	6.13	C 1C	85.3	4.83	1.5	7.50	0.05	4
M1	9:30	0.12	27.7	<0.1	<0.1	6.18	6.16	85.6	4.1	4.5	7.50	0.05	5 4.3

Date	31-Jul-20															
Location	Time	Depth (m)	Temp (oC)	Flow Veloc	city (m/s)	DO (r	ng/L)	DO (%	6)	Turbidi	ty (NTU)	pН	[Salinity	SS(mg/I	L)
M1	0.15	0.14	26.7	< 0.1	۰0.1	5.36	F 27	73.2	72.4	4.94	4.0	8.72	0.7	0.06	5	0
M1	9:15	0.14	26.7	< 0.1	<0.1	5.38	5.57	73.5	/3.4	4.56	4.8	8.72	8.7	0.06	5	.0

Action Level exceedance
Limit Level exceedance



Water Quality Impact Monitoring Result for M2

Date 2-Jul-20 Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali M2 9:50 0.00 (#)	nity SS(mg/L)
Date 4-Jul-20 Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali Sali	nity SS(mg/L)
Date 4-Jul-20	nity SS(mg/L)
Date S-Jul-20 Date S-Jul-20 Dote Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	nity SS(mg/L)
Date S-Jul-20 Date S-Jul-20 Dote Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	nity SS(mg/L)
Date 6-Jul-20 Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	
Date 8-Jul-20 Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali Sali	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	
Date 10-Jul-20	nity SS(mg/L)
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali M2 10:10 0.00 (#) — <t< td=""><td></td></t<>	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali M2 10:10 0.00 (#) — <t< td=""><td></td></t<>	
M2 10:10 0.00 (#)	•
	nity SS(mg/L)
Date 13-Jul-20	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	nity SS(mg/L)
M2 10:10 0.00 (#)	
Date 15-Jul-20	
Date 15-Jul-20 Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	nity SS(mg/L)
M2 10:10 0.00 (#)	55(mg, 1)
Date 17-Jul-20	
Location Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali	
M2 10:30 0.00 (#)	nity SS(mg/L)



Date	20-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:15	0.00 (#)								
Date	22-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	11:30	0.00 (#)								
Date	24-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:15	0.00(#)								
Date	27-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:05	0.00 (#)								
Date	29-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:10	0.00 (#)								
Date	31-Jul-20									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	9:50	0.00(#)								

Remarks: (#) During the water monitoring, the channel of M2 was observed dried up and water sampling was unable be carried out;



Water Quality Impact Monitoring Result for M3

Date	2-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	ng/L)
М3	10:00	2.45	30.8	30.8	< 0.1	ر 0 م	5.05	5.06	68.6	69.7	3.02	2.7	6.90	6.0	0.0	0.02	8	8.0
WIS	10:00	2.43	30.8	30.8	< 0.1	<0.1	5.07	3.00	68.8	08.7	2.32	2.1	6.90	0.9	0.0	0.02	8	8.0

Date	4-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Vo	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	p.	H	Sali	nity	SS(mg/L)
M3	9:50	2.45	31.5	31.5	< 0.1	< 0.1	5.65	5 66	76.6	76.7	3.37	3.5	7.80	7 8	0.0	0.02	6	6.0
IVI3	9.30	2.43	31.5	31.3	< 0.1	<0.1	5.67	5.66	76.7	70.7	3.6	3.3	7.80	7.0	0.0	0.02	6	0.0

Date	6-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	inity	SS(1	mg/L)
M3	10.20	2.45	29.2	20.2	< 0.1	c0.1	5.37	5.38	72.3	72.4	4.77	47	7.40	7.4	0.0	0.02	4	4.0
IVIS	10:20	2.45	29.2	29.2	< 0.1	<0.1	5.38	3.36	72.4	12.4	4.65	4.7	7.40	7.4	0.0	0.03	4	4.0

Date	8-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M2	10:10	2.45	29.4	29.4	< 0.1	<0.1	4.68	4.68	65.1	65 1	4.7	16	6.90	6.0	0.0	0.02	5	5.0
MIS	10.10	2.43	29.4	29.4	< 0.1	<0.1	4.68	4.08	65.1	03.1	4.52	4.6	6.90	6.9	0.0	0.02	5	5.0

Date	10-Jul-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	velocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ity (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M2	10.20	2.45	27.6	27.6	< 0.1	ر _د ر 1	5.92	5.00	78.9	70.2	4.48	4.7	6.70	67	0.0	0.02	5	5.0
M3	10:20	2.45	27.6	27.0	< 0.1	< 0.1	5.99	5.96	79.7	19.3	4.99	4.7	6.70	0.7	0.0	0.02	5	5.0

Date	13-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	p.	H	Sali	nity	SS(I	mg/L)
M2	10:20	2.42	28.5	29.5	< 0.1	<0.1	5.82	5.87	77.7	78.2	5.48	5 /	6.90	6.9	0.0	0.02	6	5.5
MIS	10.20	2.43	28.5	26.3	< 0.1	<0.1	5.92	3.67	78.6	70.2	5.28	3.4	6.90	0.9	0.0	0.02	5	3.3

Date	15-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	Velocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ity (NTU)	p]	H	Sali	nity	SS(1	mg/L)
М3	10:20	2.41	30.6 30.6	30.6	<0.1 <0.1	< 0.1	5.61 5.61	5.61	77.6 77.4	77.5	5.08 4.74	4.9	6.30 6.30	6.3	0.0	0.02	4 5	4.5

Date	17-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	p	H	Sali	nity	SS(mg/L)
М3	10:40	2.41	28.7	28.7	< 0.1	<0.1	5.67	5.70	76.9	77.3	4.07	<i>A</i> 1	6.30	6.3	0.0	0.02	5	1.5
N13	10.40	2.41	28.7	20.7	< 0.1	<0.1	5.73	3.70	77.6	11.5	4.11	4.1	6.30	0.5	0.0	0.02	4	4.5



Date	20-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	ng/L)
M2	10.25	2.42	29.8	20.8	< 0.1	ر _د 0 1	6.07	C 12	81.9	92.5	5.11	E 1	7.20	7.0	0.0	0.02	4	. 0
M3	10:25	2.42	29.8	29.8	< 0.1	<0.1	6.17	6.12	83.1	82.5	5.59	5.4	7.20	1.2	0.0	0.03	6	5.0

Date	22-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ity (NTU)	p.	H	Sali	nity	SS(mg/L)
M2	11.40	2.40	29.7	20.7	< 0.1	<0.1	5.71	5 77	77.7	70 5	4.72	16	6.60	6.6	0.0	0.02	4	2.5
M3	11:40	2.40	29.7	29.7	< 0.1	<0.1	5.83	5.77	79.3	/8.5	4.39	4.0	6.60	6.6	0.0	0.02	3	3.3

Date	24-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	Velocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M2	10.25	2.42	29.9	20.0	< 0.1	٠ 1	5.82	5.91	80.7	017	4.59	4.4	6.20	6.2	0.0	0.02	4	4.0
IVI3	10:25	2.43	29.9	29.9	< 0.1	<0.1	6	3.91	82.6	81.7	4.17	4.4	6.20	0.2	0.0	0.02	4	4.0

Date	27-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
М3	10:15	2.43	30.2	30.2	<0.1 <0.1	< 0.1	5.79 5.8	5.80	79.2 79.3	79.3	4.46 5.06	4.8	6.80 6.80	6.8	0.0	0.02	4 4	4.0

Date	29-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	ng/L)
M3	10:20	2.40	31.5	21.5	< 0.1	ر _د ر 1	6.13	C 11	85.4	95.2	5.14	F 2	6.90	60	0.0	0.02	4	4.0
1013	10:20	2.40	31.5	31.3	< 0.1	<0.1	6.09	0.11	84.9	85.2	5.55	5.5	6.90	6.9	0.0	0.02	4	4.0

Date	31-Jul-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	Velocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ity (NTU)	р	H	Sali	nity	SS(mg/L)
M3	10:00	2.45	28.3	28.3	< 0.1	<0.1	6.52	6.54	88.8	89.0	4.96	5.1	8.60	8.6	0.0	0.03	8	7.5
			28.3		< 0.1		6.55		89.1		5.18		8.60		0.0		7	



Water Quality Impact Monitoring Result for M4

Date	2-Jul-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M4	13:55	0.11	31.1 31.1	31.1	<0.1 <0.1	< 0.1	5.3 5.33	5.32	72.0 72.3	72.2	1.8 1.9	1.8	6.80 6.80	6.8	0.05 0.05	0.05	2 2	2.0

Date	4-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(mg/L)
M4	0.25	0.42	31.7	21.7	< 0.1	c0 1	6.04	6.05	81.6	01.7	3.6	2.4	7.40	7.4	0.06	0.06	2	2.0
IVI4	9.23	0.42	31.7	31./	< 0.1	<0.1	6.05	0.03	81.8	81.7	3.2	3.4	7.40	7.4	0.06	0.06	2	2.0

Date	6-Jul-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M4	10.40	0.42	30.8	20.0	< 0.1	ر ۵ ر	6.16	C 17	83.0	02.1	2.8	2.7	7.20	7.0	0.06	0.06	<2	Ç
M4	10:40	0.42	30.8	30.8	< 0.1	< 0.1	6.17	0.17	83.1	83.1	2.6	2.1	7.20	1.2	0.06	0.06	<2	<2

Date	8-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M4	10:30	0.43	29.2 29.2	29.2	<0.1 <0.1	<0.1	4.56 4.59	4.58	63.2 63.3	63.3	3.8	3.7	6.50 6.50	6.5	0.04	0.04	4 4	4.0

Date	10-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	p]	H	Sali	nity	SS(1	mg/L)
N/4	10.40	0.44	27.8	27.0	< 0.1	-0.1	6.54	(57	87.2	97.6	3.4	2.0	6.40	<i>C</i> 1	0.05	0.05	2	2.0
M4	10:40	0.44	27.8	27.8	< 0.1	<0.1	6.6	0.37	87.9	87.6	3.0	3.2	6.40	0.4	0.05	0.05	2	2.0

Date	13-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M4	10:45	0.42	28.9 28.9	28.9	<0.1 <0.1	<0.1	6.47 6.58	6.53	86.3 87.6	87.0	2.5 2.8	2.7	6.50 6.50	6.5	0.06	0.06	3 2	2.5

Date	15-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	ity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ity (NTU)	p	H	Sali	nity	SS(1	mg/L)
M4	10:45	0.41	31.1 31.1	31.1	<0.1 <0.1	< 0.1	6.14 6.19	6.17	85.1 85.5	85.3	2.0	1.9	7.10 7.10	7.1	0.05 0.05	0.05	3 3	3.0

Date	17-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(mg/L)
N/4	10.55	0.42	28.9	28.0	< 0.1	ر ۱ د	6.91	C 05	92.8	03.2	1.1	1.1	6.90	<i>(</i> 0	0.07	0.07	<2	-2
M4	10:55	0.42	28.9	28.9	< 0.1	< 0.1	6.99	6.95	93.6	93.2	1.1	1.1	6.90	6.9	0.07	0.07	<2	<2



Date	20-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ity (NTU)	p]	H	Sali	nity	SS(m	g/L)
M4	10.45	0.42	29.9	20.0	< 0.1	ر 0 1	6.74	(75	91.4	01.5	1.4	1.2	7.50	7.5	0.07	0.07	<2	ò
W14	10:45	0.43	29.9	29.9	< 0.1	<0.1	6.75	0.75	91.5	91.5	1.2	1.5	7.50	7.5	0.07	0.07	<2	<2

Date	22-Jul-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(mg/L)
1 14	10.00	0.42	28.3	20.2	< 0.1	ر <u>۱</u>	6.44	(50	88.7	90.2	5.3	<i>-</i> 2	7.10	7.1	0.05	0.05	<2	-2
M4	10:00	0.42	28.3	28.3	< 0.1	< 0.1	6.55	6.50	89.8	89.3	5.1	5.2	7.10	7.1	0.05	0.05	<2	<2

Date	24-Jul-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	ity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	р	H	Sali	nity	SS(mg/L)
N/4	10.45	0.44	30.2	20.2	< 0.1	ر ۱ د	6.73	<i>(</i> 79	92.1	02.7	1.0	1.0	6.90	6.0	0.05	0.05	<2	-2
M4	10:45	0.44	30.2	30.2	< 0.1	< 0.1	6.82	6.78	93.3	92.7	1.1	1.0	6.90	6.9	0.05	0.05	<2	<2

Date	27-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidit	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M4	10.25	0.44	28.4	20.4	< 0.1	ر <u>۱</u>	5.35	5.20	69.3	co 1	23.5	22.1	7.40	7.4	0.05	0.05	16	155
M4	10:35	0.44	28.4	28.4	< 0.1	<0.1	5.36	5.36	69.4	69.4	22.7	23.1	7.40	7.4	0.05	0.05	15	15.5

Date	29-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(r	mg/L)
M4	10:45	0.41	31.1	21.1	< 0.1	c0.1	6.25	6 20	87.5	97.9	2.1	2.1	7.90	7.9	0.07	0.07	<2	-2
IVI4	10:43	0.41	31.1	31.1	< 0.1	<0.1	6.3	6.28	88.1	87.8	2.2	2.1	7.90	7.9	0.07	0.07	<2	<.2

Date	31-Jul-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(mg/L)
M4	10.20	0.45	28.2	20.2	< 0.1	۰0.1	4.85	4.86	66.2	((2	10.4	10.0	7.73	77	0.06	0.06	16	17.0
IVI4	10:20	0.45	28.2	28.2	< 0.1	<0.1	4.86	4.80	66.3	66.3	11.1	10.8	7.73	7.7	0.06	0.06	18	17.0

Action Level exceedance
Limit Level exceedance

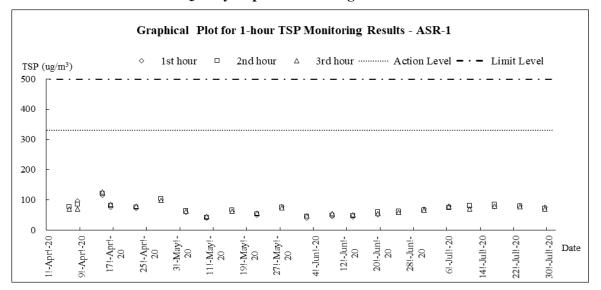


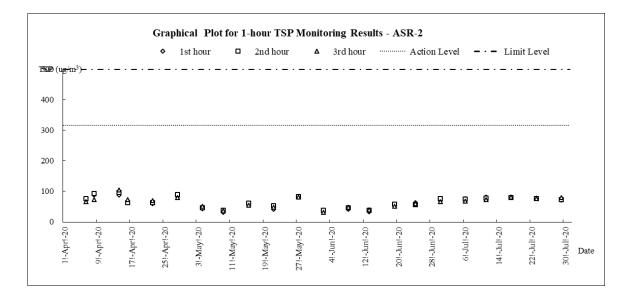
Appendix I

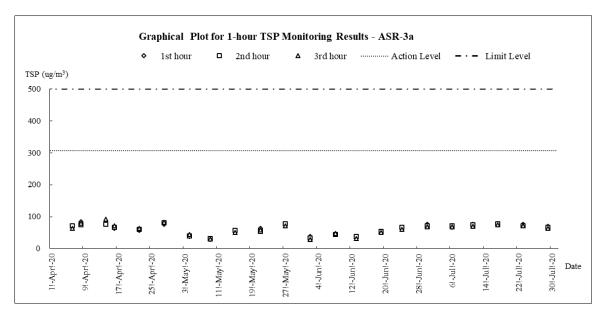
Graphical Plots of Air Quality, Noise and Water Quality



Air Quality Impact Monitoring – 1-hour TSP

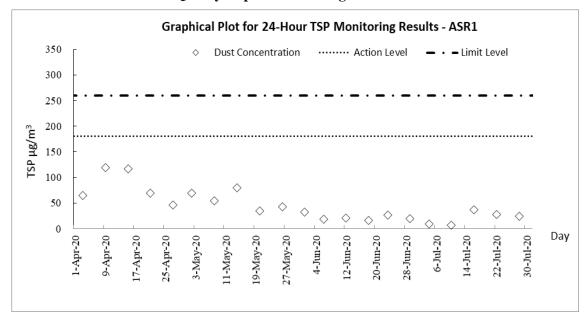


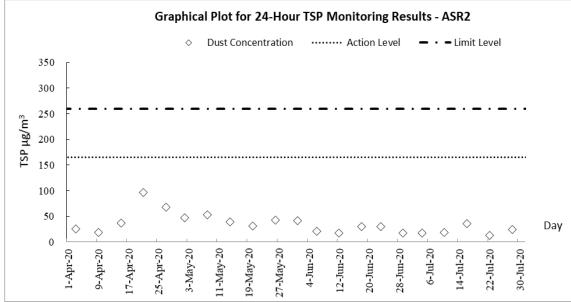


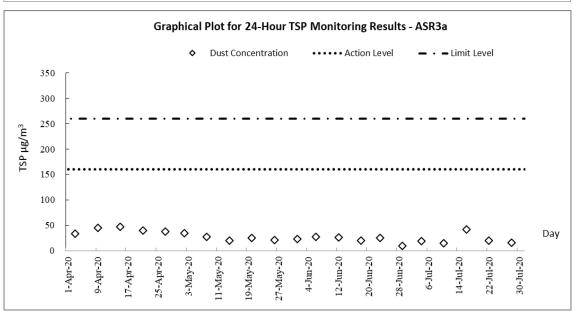




Air Quality Impact Monitoring - 24-hour TSP

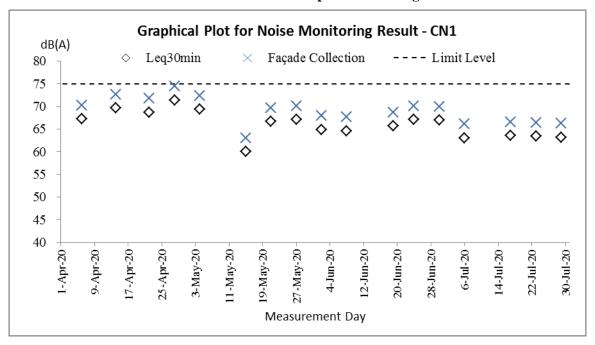


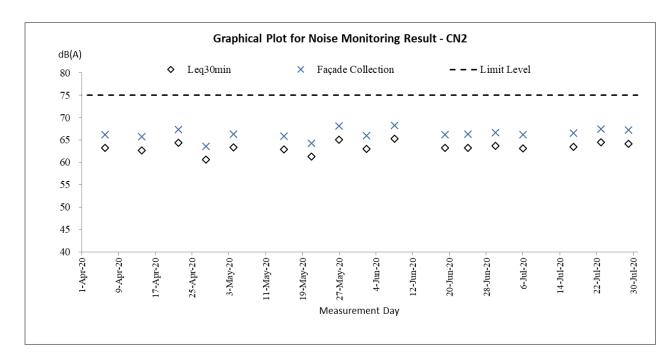




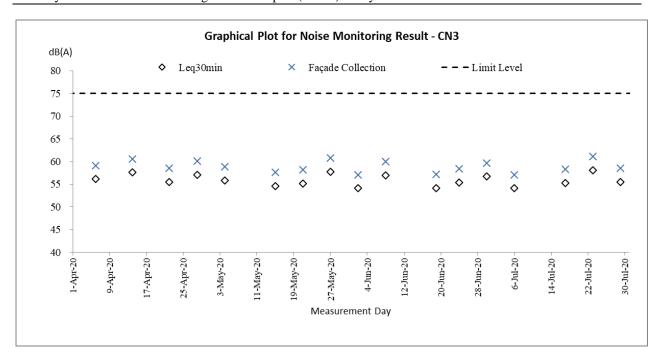


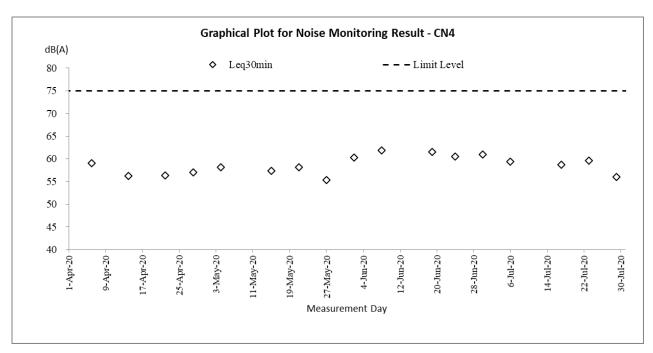
Construction Noise Impact Monitoring





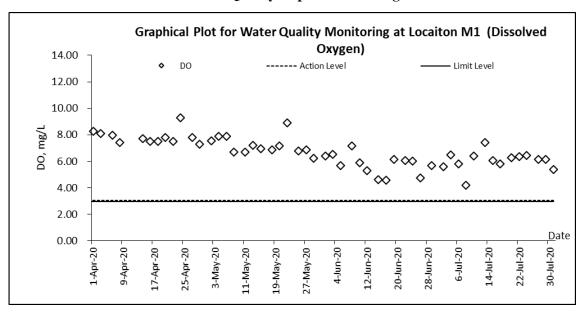


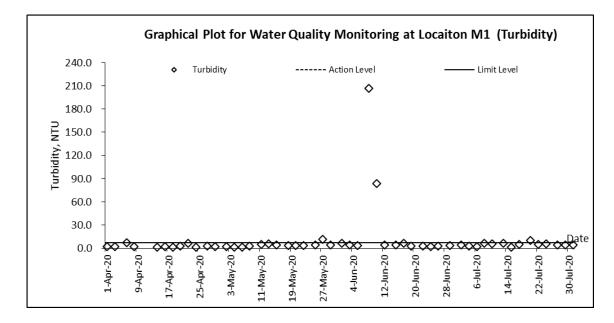


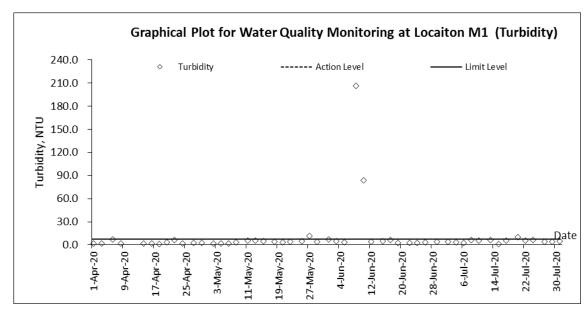




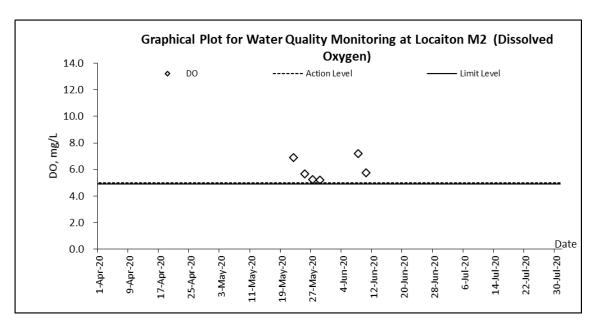
Water Quality Impact Monitoring

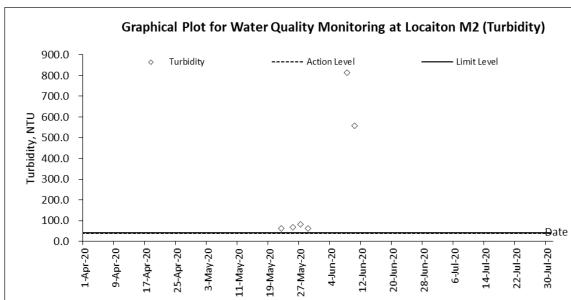


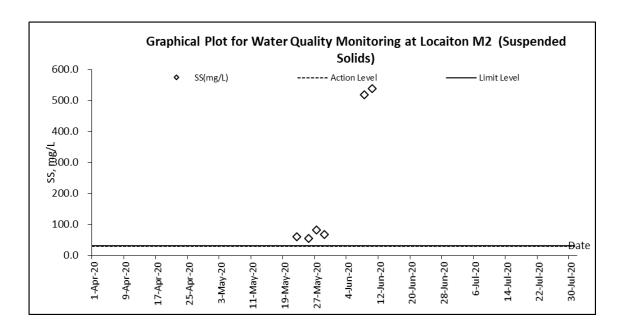




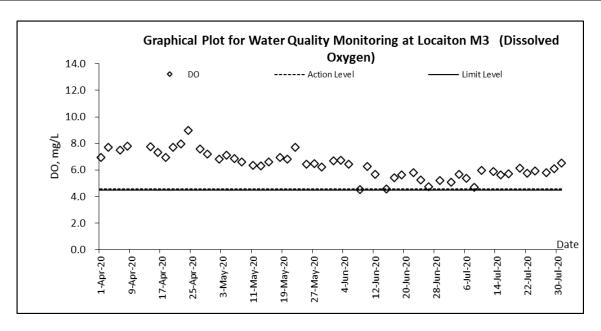


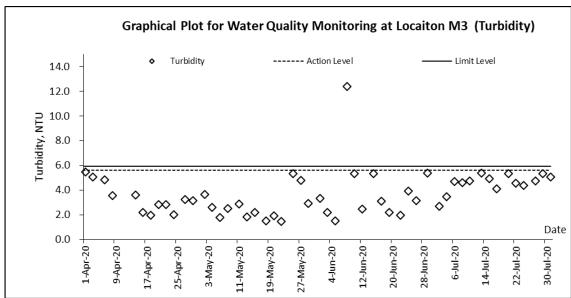


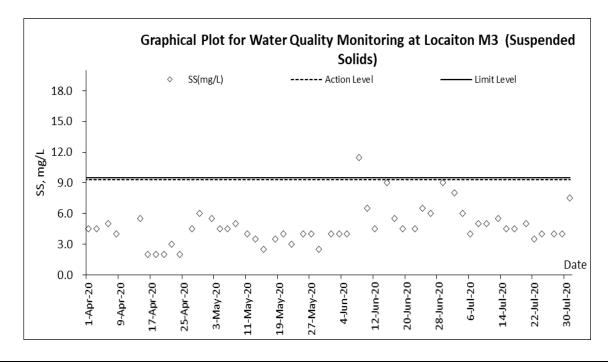




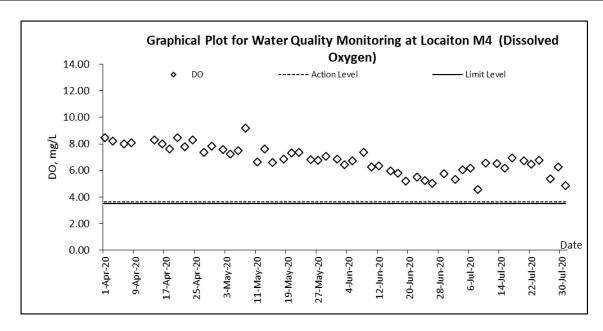


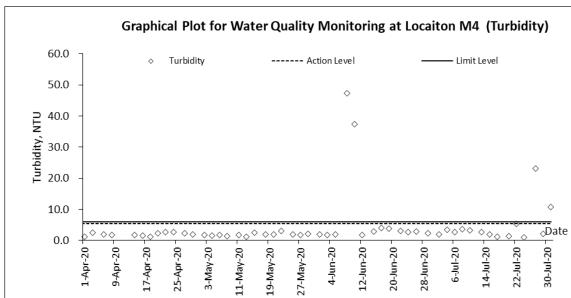


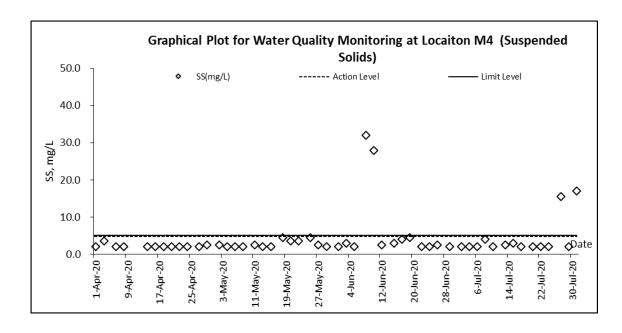














Appendix J

Meteorological Data of the Reporting Month



				,	Ta Kwu	Ling Station	1
Date		Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Jul-20	Wed	Hot. Occasional showers.	1.1	30.1	8.2	75	E/SE
2-Jul-20	Thu	Moderate southerly winds.	9.3	30.3	8.5	76.7	S/SE
3-Jul-20	Fri	Isolated thunderstorms at first. Sunny intervals	29.5	29.5	9.5	80.7	E/SE
4-Jul-20	Sat	Mainly fine. Very hot	8.3	30.2	7.7	81	S/SW
5-Jul-20	Sun	Moderate southerly winds.	1.3	30.1	8.7	73.5	S/SW
6-Jul-20	Mon	Very hot apart from isolated showers in the afternoon.	4.1	29.5	8.7	79.7	S/SW
7-Jul-20	Tue	Mainly fine apart from one or two showers.	0.7	29.1	8.7	82	S/SW
8-Jul-20	Wed	Very hot in the afternoon.	0.6	29.8	9.5	81.0	W/SW
9-Jul-20	Thu	Very hot in the afternoon.	Trace	30.4	10	77.5	S/SW
10-Jul-20	Fri	Mainly cloudy and hot with one or two showers.	0	30.5	13.7	73.7	S/SW
11-Jul-20	Sat	Sunny intervals during the day.	0	30.5	10.5	69.5	S/SW
12-Jul-20	Sun	Moderate southwesterly winds, fresh offshore.	0	30.5	7.5	69.7	SW
13-Jul-20	Mon	Mainly fine. Very hot in the afternoon.	0	30.8	7.5	74.2	W/SW
14-Jul-20	Tue	Cloudy periods tonight. Light to moderate southwesterly winds.	0	31	7.5	74.2	W/SW
15-Jul-20	Wed	Mainly fine apart from one or two isolated showers.	0	31.2	7	68.7	W/SW
16-Jul-20	Thu	Very hot in the afternoon.	2.4	31	9.5	71.5	S/SW
17-Jul-20	Fri	Moderate south to southwesterly winds.	2.5	30.2	8.7	74.5	S/SW
18-Jul-20	Sat	Mainly fine apart from one or two showers	2.2	31	8.7	70.5	S/SW
19-Jul-20	Sun	Very hot during the day.	0	30.4	8.7	73	S/SW
20-Jul-20	Mon	Light to moderate southeasterly winds.	3.1	30.3	7.5	71.2	S/SW
21-Jul-20	Tue	Fine and very hot.	0	30.9	6.2	74	S/SE
22-Jul-20	Wed	Light to moderate south to southwesterly winds.	2.5	30.1	8.7	76.7	E/SE
23-Jul-20	Thu	Mainly fine. Very hot	Trace	30.4	6.2	77	E/SE
24-Jul-20	Fri	Fine and very hot.	0	30.9	6.2	72	W/SW
25-Jul-20	Sat	Light to moderate southerly winds.	0	31.3	5.7	69	SW
26-Jul-20	Sun	isolated showers and thunderstorms.	Trace	31.4	7.5	67	S/SW
27-Jul-20	Mon	Moderate southwesterly winds.	2.3	30.9	8.7	71.5	W/SW
28-Jul-20	Tue	Mainly fine and very hot apart from isolated showers	3	31.2	7.5	71	S/SW
29-Jul-20	Wed	Mainly cloudy with a few showers.	2.6	30.5	17.5	73.0	E/SE
30-Jul-20	Thu	Sunny intervals in the afternoon.	13.3	31.4	8.7	69.2	E/SE
31-Jul-20	Fri	Moderate southeasterly winds.	36.6	27.3	9.5	83.2	Е



Appendix K

Ecological Survey Report

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.24) – July 2020



Ecological Survey Report for Contract CV/2016/10



Contract No. CV/2016/10

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Monthly Report of Ecologically Sensitive Habitats Monitoring – July 2020

Revision Date of issue	0 28 Jul 2020	
Prepared by	Alan Lam	料
Reviewed by	Edwina Yeung	Qui o
Verified by	Mike Leung	A

1



Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction Monthly Report of Ecologically Sensitive Habitats Monitoring

Table of Contents

1	INT	RODUCTION	4
	1.1	BACKGROUND	4
	1.2	OBJECTIVE	4
2	ECC	DLOGICALLY SENSITIVE HABITATS	5
	2.1	DESCRIPTION OF HABITATS	5
	2.2	MONITORING MEASURES OF WETLAND HABITATS	6
	2.3	MONITORING MEASURES OF NON-WETLAND HABITATS	6
3	ME	THODOLOGY	7
	3.1	MAMMAL SURVEY	7
	3.2	BIRD SURVEY	7
	3.3	HERPETOFAUNA SURVEY	7
	3.4	DRAGONFLY SURVEY	7
	3.5	BUTTERFLY SURVEY	8
	3.6	AQUATIC FAUNA SURVEY	8
4	RES	ULT	9
App	endix l	- Transect Routes for Contract CV/2016/10	13



Agreement No. CE1/2013 (CE)
Site Formation and Associated Infrastructural Works for Development of Columbarium,
Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction
Monthly Report of Ecologically Sensitive Habitats Monitoring

LIST OF TABLE	
Table 1	Action and Limit Levels and Responses to Evidence of Declines
	in Aquatic Fauna
Table 2	Action and Limit Levels and Responses to Evidence of Declines
	in Non-Aquatic Fauna
Table 3	Survey Schedule
Table 4	Result of mammal in survey
Table 5	Result of Avifauna in survey
Table 6	Result of reptile in survey
Table 7	Result of amphibian in survey
Table 8	Result of butterfly in survey
Table 9	Result of Odonate in survey
Table 10	Result of freshwater communities in survey

LIST OF APPENDIX		
Appendix I	Transect Routes for Contract CV/2016/10	



1 INTRODUCTION

1.1 **BACKGROUND**

- 1.1.1 The main objective of the proposed site formation and associated infrastructural works for development of columbarium, crematorium (C&C) and related facilities at Sandy Ridge Cemetery is to increase the public cremation services and supply of public niches to meet the future demand.
- 1.1.2 The project includes site formation and associated works for development of C&C facilities at the Sandy Ridge Cemetery, road works within Sandy Ridge Cemetery, widening a section of Lin Ma Hang Road (from 6.5m to 7.3m), provision of off-site pick-up/drop-off points for shuttle buses as well as barging point at Siu Lam, Lok On Pai.
- 1.1.3 The Environmental Impact Assessment (EIA) report, including Environmental Monitoring and Audit Manual (EM&A Manual), was approved with conditions on 8 August 2016 (Register No.: AEIAR-198/2016). EPD issued an Environmental Permit (EP) for the Project (EP-534/2017) on 7 April 2017. A Further Environment Permit (FEP) for the Project (FEP-01/534/2017) was issued on 23 February 2018, variation of EP (EP-534/2017/A) and variation of FEP (FEP-01/534/2017/A) were issued on 24 December 2018.
- 1.1.4 According to Clause 3.1 of the FEP (FEP-01/534/2017/A), "The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual. Any changes to the programme shall be justified by the ET Leader and verified by the IEC as conforming to the information and requirements contained in the EM&A Manual before submission to the Director for approval".
- 1.1.5 This Ecologically Sensitive Habitats Monitoring Methodology articulates the protocol of monitoring the ecology of concerned habitats as specified in EM&A Manual.

1.2 **OBJECTIVE**

- According to approved EIA report (AEIAR-198/2016), habitat types within project boundary 1.2.1 comprise of watercourse, grassland, upland grassland, plantation, woodland and developed area. Natural habitats were of moderate ecological value in terms of species diversity, species rarity, species abundance, ecological linkage as well as nursery. Moreover, 0.3ha of wet woodland on the northern side of Sandy Ridge was deemed habitat with high ecological value. Four types of habitats were regarded as ecologically sensitive habitats, namely wet woodland, watercourses, upland grassland and woodland. Considering human disturbance in upcoming construction and operation phases, ecologically sensitive habitats shall be monitored in accordance with EM&A Manual.
- 1.2.2 The objective of ecologically sensitive habitats monitoring is to evaluate the effectiveness of measures to minimize impacts on concerned habitats from disturbance and pollution.



2 ECOLOGICALLY SENSITIVE HABITATS

2.1 DESCRIPTION OF HABITATS

2.1.1 In order to monitor the effectiveness of the measures to the minimise impact on ecologically sensitive habitats from disturbance and pollution, monthly monitoring during construction and operation phases is required as specified in EM&A Manual. Standard faunal transect and sampling surveys cover both wetland and non-wetland habitats:

Wetland habitats	Non-wetland habitats
Wet Woodland	Upland Grassland
Watercourses	Woodland

- 2.1.2 Wet woodland is small patch present on northwest of the project boundary, and is confined by the marsh area to the north and the secondary woodland to the east, south and south-west parts. A number of mature trees *Cleistocalyx nervosum* and *Acronychia pedunculata* form the tree canopy, with other self-sown shrubs (including *Psychotria asiatica*, *Ligustrum sinense* and *Glochidion lanceolarium*) and trees (*Aporosa dioica* and *Litsea monopetala*). Whilst botanically it comprises of naturally regenerated secondary woodland and ground level are a series of small braided streams and weep points which even during the dry season remain wet. This creates a rather uncommon habitat in Hong Kong offering suitable conditions for a good assemblage of common wetland species. The wet woodland provides a good assemblage of micro-habitats, which is relatively undisturbed and has good linkages to other natural habitats. Several species of conversation importance were recorded in EIA report from this habitat: East Asian Porcupine, Leopard Cat, Red Muntjac, Two-striped Grass Frog, Small Snakehead, *Somanniathelphusa zanklon*, Dancing Shadow-emerald.
- 2.1.3 Seasonal watercourse running west to east in the eastern part of the area inside the Project boundary is shallower in gradient than those running off the hillside. This seasonal watercourse is heavily vegetated with wetland-associated herbs including *Commelina diffusa*, *Polygonum chinense*, *Colocasia esculenta* and *Dracaena sanderiana*. A mature tree of *Aquilaria sinensis* was recorded at the bank of the seasonal watercourse to the west of the Sandy Ridge Cemetery Office. Seasonal watercourses are restricted to the steeper slopes within the project boundary and are characterised by being entirely dry for much of the dry season. However, endemic crab *S. zanklon* population is supported by ephemeral watercourses close to the project boundary.
- Upland grassland is the major habitat within the project boundary. The semi-natural habitat is dominated by typical upland grassland species: fern *Dicranopteris pedata*, grass *Neyraudia reynaudiana*, *Miscanthus floridulus*, climbing vines *Smilax china*, *Smilax glabra*, and shrubs such as *Rhodomyrtus tomentosa*, *Breynia fruticosa* and *Helicteres angustifolia*. Approximately 30 flowering spikes of two orchid species Bamboo Orchid and Toothed Habenaria were recorded near the hill top in the northern part of this upland grassland. Golden-headed Cisticola, which is considered as Local Concern by Fellowes *et al.* (2002), was also recorded in upland grassland on Sandy Ridge, including a proved breeding record of fledged young in September 2013. In addition, numerous species of conservation interest were recorded in EIA report, such as East Asian Porcupine, Leopard Cat, Red Muntjac, Great Swift, Tamil Grass Dart, Small Three-ring and Small Grass Yellow.



2.1.5 Scattered patches of woodland are present throughout the assessment area, with the largest contiguous block located immediately to the east of the project boundary. These woodlands are relatively young with single-layered of canopy dominants (~10 – 15m tall) including *A. dioica, Bridelia tomentosa, Cinnamomum burmannii, Daphniphyllum calycinum, Litsea glutinosa, Rhus succedanea*, and *Zanthoxylum avicennae*. Such areas comprise secondary woodland which is largely derived from natural regeneration and colonisation of trees as a result of seed dispersal by birds and/or bats. A mature tree of *A. sinensis* is located at the woodland edge at the central part of the Project according to EIA report.

2.2 MONITORING MEASURES OF WETLAND HABITATS

- 2.2.1 Wetland habitats include wet woodland and watercourses. Monitoring surveys using standardised quantitative methodology will be conducted at fixed points. For seasonal watercourse, survey shall be conducted whenever the habitat appears.
- 2.2.2 Measures to respond to decreases in numbers of aquatic fauna using the wetland habitats and action and limit levels to trigger these measures are detailed in Table 1.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
taxa diversity	cause identified as related	in taxa	cause identified as related
by 30%	to the project instigate	diversity	to the project instigate
	remedial action to remove	by 50%	remedial action.
	or reduce source of		
	disturbance.		

Table 1 Action and Limit Levels and Responses to Evidence of Declines in Aquatic Fauna

2.3 MONITORING MEASURES OF NON-WETLAND HABITATS

- 2.3.1 Non-wetland habitats consist of upland grassland and woodland. Monthly quantitative surveys of non-aquatic fauna will be conducted using standard route transect counts.
- 2.3.2 Measures to respond to decreases in numbers of non-aquatic fauna using the non-wetland habitats and action and limit levels to trigger these measures are detailed in Table 2.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
species diversity	cause identified as related	in species	cause identified as related
by 30%	to the project instigate	diversity by	to the project instigate
	remedial action to remove	50%	remedial action.
	or reduce source of		
	disturbance.		

Table 2 Action and Limit Levels and Responses to Evidence of Declines in Non-Aquatic Fauna



3 METHODOLOGY

The ecological survey includes all taxa being investigated in EIA report. Table 3 summarizes schedule of faunal surveys.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals	V	√	V									
Birds (day)	V	V	V	V	V	V	√	V	V	V	V	V
Birds (night)				√	√	V	V	√	√	1		
Herpetofau na				V	V	V	1	V	V	V		
Dragonflies			1	V	V	V	V	1	1	V		
Butterflies			1	V	V	V	V	1	1	V		
Aquatic fauna	√	√	1	V	1	V	1	V	V	V	V	V

Table 3 Survey Schedule

3.1 MAMMAL SURVEY

3.1.1 Mammal surveys will be conducted along the transects shown in Appendix 1 during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

3.2 BIRD SURVEY

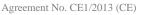
3.2.1 Bird surveys will be conducted along the transects shown in Appendix 1 during the surveys, species and their vocalizing individuals recorded will be enumerated and recorded according to the habitat(s) they are utilising.

3.3 HERPETOFAUNA SURVEY

3.3.1 Reptile and amphibian surveys will be conducted along transects shown in Appendix 1 during surveys careful searches of appropriate microhabitats and refugia for reptiles and their vocalizing individuals will be undertaken and all reptiles observed will be identified and counted.

3.4 DRAGONFLY SURVEY

3.4.1 Dragonfly surveys will be conducted along transects shown in Appendix 1 during surveys all dragonflies seen will be identified and counted as accurately as possible.





Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction Monthly Report of Ecologically Sensitive Habitats Monitoring

3.5 BUTTERFLY SURVEY

3.5.1 Butterfly surveys will be conducted along transects shown in Appendix 1 during surveys all dragonflies seen will be identified and counted as accurately as possible.

3.6 AQUATIC FAUNA SURVEY

3.6.1 Freshwater fishes and macro-invertebrates will be recorded by direct observation. All species trapped/recorded will be enumerated and identified (to the lowest taxonomic level possible), and the species of conservation importance photographed.

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction Monthly Report of Ecologically Sensitive Habitats Monitoring

4 RESULT

This monitoring survey started on 7th July 2020. A sunny day. The day and night survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed points. All species seen will be identified and counted as accurately as possible.

Mammal

There was no mammal recorded in the monitoring area.

■ Bird

There were a total of 16 bird individuals from 8 species recorded in the monitoring area. Three species of conservation interests were recorded in the monitoring area: *Tachybaptus ruficollis*, Little Grebe(小鸊鷉), *Nycticorax nycticorax*, Black-crowned Night Heron (夜鷺), and *Centropus bengalensis*, Lesser Coucal (小鴉鵑).

Herpetofauna

There was no reptile recorded in the monitoring area.

There was two amphibian species recorded in the monitoring area.

■ Butterfly

There was a total of 7 butterfly individuals from 3 species recorded in the monitoring area.

Dragonfly

There was a total of 15 odonate individuals from 8 species recorded in the monitoring area.

■ Freshwater communities

There was no freshwater community recorded in the monitoring area.



Agreement No. CE1/2013 (CE)
Site Formation and Associated Infrastructural Works for Development of Columbarium,
Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction
Monthly Report of Ecologically Sensitive Habitats Monitoring

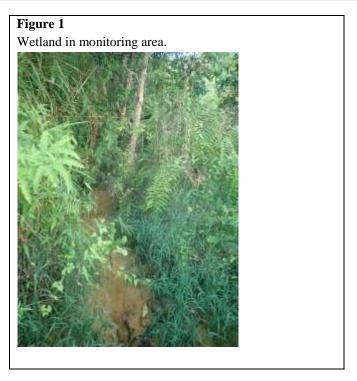






Table 4 Result of mammal in survey

Scientific Name	Name English Name Chinese Nam		Conservation	7-Jul-2020	
Scientific Name	English Nume	eminese ivame		Non- wetland	Wetland
N/A					

Table 5 Result of Avifauna in survey

Sajantifia Nama	English Nome	Chinese	Conservation Status	7-Jul-2020	
Scientific Name	English Name	Name	Conservation Status	Non- wetland	Wetland
Tachybaptus ruficollis	Little Grebe	小鸊鷉	Fellowes et al. (2002): LC		1
Nycticorax nycticorax	Black-crowned Night Heron	夜鷺	Fellowes et al. (2002):(LC)		2
Centropus bengalensis	Lesser Coucal	小鴉鵑	Class 2 Protected Animal of China;China Red Data Book Status: (Vulnerable)		1
Lanius schach	Long-tailed Shrike	棕背伯勞			1
Dicrurus macrocercus	Black Drongo	黑卷尾			2
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		3	
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		2	
Hirundo rustica	Barn Swallow	家燕			4

Table 6 Result of reptile in survey

Scientific Name	Common Name	Chinese Name	7-J	ul-2020
Scientific Name	Common Name	Chinese Ivame	Non-wetland	Wetland
		N/A		
		1771		

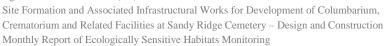




Table 7 Result of amphibian in survey

Table 7 Result of amphibian in survey					
Scientific Name	Common Name	Chinese Name	Conservation	7-Jul-2020	
			Status	Non- wetla nd	Wetland
Polypedates megacephalus	Brown Tree Frog	斑腿泛樹蛙			+
Bufo melanostictus	Asian Common Toad	黑眶蟾蜍			+

^{+:} Uncountable due to vocal identification

Table 8 Result of butterfly in survey

Scientific Name	Common Name	Chinese Name	7-Jւ	7-Jul-2020		
			Non-wetland	Wetland		
Abisara echerius	Plum Judy	蛇目褐蜆蝶	4			
Chilasa clytia	Common Mime	斑鳳蝶	1			
Catopsilia pomona	Lemon Emigrant	遷粉蝶		2		

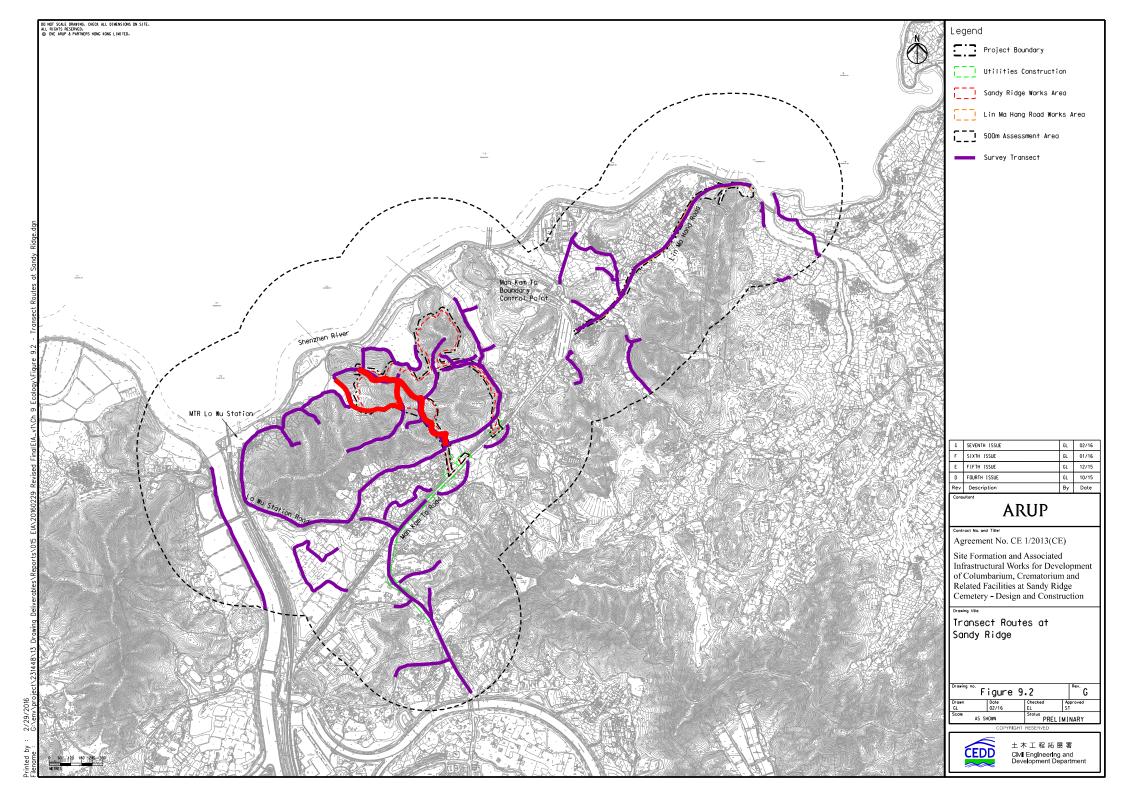
Table 9 Result of Odonate in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	7-Jul-2020	
				Non- wetland	Wetland
Brachydiplax chalybea	Blue Dasher	藍額疏脈蜻			2
Lyriothemis elegantissima	Forest Chaser	華麗寬腹蜻			1
Neurothemis tullia	Pied Percher	截斑脈蜻			1
Pantala flavescens	Wandering Glider	黄蜻			2
Rhyothemis triangularis	Sapphire Flutterer	三角麗翅蜻	Fellowes et al. (2002): LC	4	
Rhyothemis variegata	Variegated Flutterer	斑麗翅蜻			2
Urothemis signata	Scarlet Basker	赤斑曲鈎脈蜻	Fellowes et al. (2002): LC	2	
Zyxomma petiolatum	Dingy Dusk-darter	細腹綠眼蜻			1

Table 10 Result of freshwater communities in survey

			Conservation	7-Jul-2020	
Scientific Name	Common Name	Chinese Name	Status	Non- wetland	Wetland
N/A					

Appendix I – Transect Routes for Contract CV/2016/10



Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.24) – July 2020



Ecological Survey Report for Contract CV/2017/02



Contract No. CV/2017/02 Development of Columbarium at Sandy Ridge Cemetery – Infrastructural Works at Man Kam To Road and Lin Ma Hang Road

Monthly Report of Ecologically Sensitive Habitats Monitoring – July 2020

Revision Date of issue	0 28 Jul 2020	
Prepared by	Alan Lam	特
Reviewed by	Edwina Yeung	Quino .
Verified by	Mike Leung	

1



Table of Contents

1	INT	RODUCTION	4
	1.1	BACKGROUND	4
	1.2	OBJECTIVE	4
2	ECC	DLOGICALLY SENSITIVE HABITATS	5
	2.1	DESCRIPTION OF HABITATS	5
	2.2	MONITORING MEASURES OF WETLAND HABITATS	6
	2.3	MONITORING MEASURES OF NON-WETLAND HABITATS	6
3	ME	ГНОDOLOGY	7
	3.1	MAMMAL SURVEY	7
	3.2	BIRD SURVEY	7
	3.3	HERPETOFAUNA SURVEY	7
	3.4	DRAGONFLY SURVEY	7
	3.5	BUTTERFLY SURVEY	8
	3.6	AQUATIC FAUNA SURVEY	8
4	RES	SULT	9
Apr	oendix l	- Transect Routes for Contract CV/2017/02	13



LIST OF TABLE	
Table 1	Action and Limit Levels and Responses to Evidence of Declines
	in Aquatic Fauna
Table 2	Action and Limit Levels and Responses to Evidence of Declines
	in Non-Aquatic Fauna
Table 3	Survey Schedule
Table 4	Result of mammal in survey
Table 5	Result of Avifauna in survey
Table 6	Result of reptile in survey
Table 7	Result of amphibian in survey
Table 8	Result of butterfly in survey
Table 9	Result of Odonate in survey
Table 10	Result of freshwater communities in survey

LIST OF APPENI	<u>DIX</u>
Appendix I	Transect Routes for Contract CV/2017/02



1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 The main objective of the proposed site formation and associated infrastructural works for development of columbarium, crematorium (C&C) and related facilities at Sandy Ridge Cemetery is to increase the public cremation services and supply of public niches to meet the future demand.
- 1.1.2 The project includes site formation and associated works for development of C&C facilities at the Sandy Ridge Cemetery, road works within Sandy Ridge Cemetery, widening a section of Lin Ma Hang Road (from 6.5m to 7.3m), provision of off-site pick-up/drop-off points for shuttle buses as well as barging point at Siu Lam, Lok On Pai.
- 1.1.3 The Environmental Impact Assessment (EIA) report, including Environmental Monitoring and Audit Manual (EM&A Manual), was approved with conditions on 8 August 2016 (Register No.: AEIAR-198/2016). EPD issued an Environmental Permit (EP) for the Project (EP-534/2017) on 7 April 2017, variation of EP (EP-534/2017/A) were issued on 24 December 2018.
- 1.1.4 According to Clause 3.1 of the EP (EP-534/2017/A), "The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual. Any changes to the programme shall be justified by the ET Leader and verified by the IEC as conforming to the information and requirements contained in the EM&A Manual before submission to the Director for approval".
- 1.1.5 This Ecologically Sensitive Habitats Monitoring Methodology articulates the protocol of monitoring the ecology of concerned habitats as specified in EM&A Manual.

1.2 **OBJECTIVE**

- 1.2.1 According to approved EIA report (AEIAR-198/2016), habitat types within project boundary comprise of watercourse, grassland, upland grassland, plantation, woodland and developed area. Natural habitats were of moderate ecological value in terms of species diversity, species rarity, species abundance, ecological linkage as well as nursery. Moreover, 0.3ha of wet woodland on the northern side of Sandy Ridge was deemed habitat with high ecological value. Four types of habitats were regarded as ecologically sensitive habitats, namely wet woodland, watercourses, upland grassland and woodland. Considering human disturbance in upcoming construction and operation phases, ecologically sensitive habitats shall be monitored in accordance with EM&A Manual.
- 1.2.2 The objective of ecologically sensitive habitats monitoring is to evaluate the effectiveness of measures to minimize impacts on concerned habitats from disturbance and pollution.



2 ECOLOGICALLY SENSITIVE HABITATS

2.1 DESCRIPTION OF HABITATS

2.1.1 In order to monitor the effectiveness of the measures to the minimise impact on ecologically sensitive habitats from disturbance and pollution, monthly monitoring during construction and operation phases is required as specified in EM&A Manual. Standard faunal transect and sampling surveys cover both wetland and non-wetland habitats:

Wetland habitats	Non-wetland habitats			
Wet Woodland	Upland Grassland			
Watercourses	Woodland			

- 2.1.2 Wet woodland is small patch present on northwest of the project boundary, and is confined by the marsh area to the north and the secondary woodland to the east, south and south-west parts. A number of mature trees Cleistocalyx nervosum and Acronychia pedunculata form the tree canopy, with other self-sown shrubs (including Psychotria asiatica, Ligustrum sinense and Glochidion lanceolarium) and trees (Aporosa dioica and Litsea monopetala). Whilst botanically it comprises of naturally regenerated secondary woodland and ground level are a series of small braided streams and weep points which even during the dry season remain wet. This creates a rather uncommon habitat in Hong Kong offering suitable conditions for a good assemblage of common wetland species. The wet woodland provides a good assemblage of micro-habitats, which is relatively undisturbed and has good linkages to other natural habitats. Several species of conversation importance were recorded in EIA report from this habitat: East Asian Porcupine, Leopard Cat, Red Muntjac, Two-striped Grass Frog, Small Snakehead, Somanniathelphusa zanklon, Dancing Shadow-emerald.
- 2.1.3 Seasonal watercourse running west to east in the eastern part of the area inside the Project boundary is shallower in gradient than those running off the hillside. This seasonal watercourse is heavily vegetated with wetland-associated herbs including *Commelina diffusa*, *Polygonum chinense*, *Colocasia esculenta* and *Dracaena sanderiana*. A mature tree of *Aquilaria sinensis* was recorded at the bank of the seasonal watercourse to the west of the Sandy Ridge Cemetery Office. Seasonal watercourses are restricted to the steeper slopes within the project boundary and are characterised by being entirely dry for much of the dry season. However, endemic crab *S. zanklon* population is supported by ephemeral watercourses close to the project boundary.
- 2.1.4 Upland grassland is the major habitat within the project boundary. The semi-natural habitat is dominated by typical upland grassland species: fern *Dicranopteris pedata*, grass *Neyraudia reynaudiana*, *Miscanthus floridulus*, climbing vines *Smilax china*, *Smilax glabra*, and shrubs such as *Rhodomyrtus tomentosa*, *Breynia fruticosa* and *Helicteres angustifolia*. Approximately 30 flowering spikes of two orchid species Bamboo Orchid and Toothed Habenaria were recorded near the hill top in the northern part of this upland grassland. Golden-headed Cisticola, which is considered as Local Concern by Fellowes *et al.* (2002), was also recorded in upland grassland on Sandy Ridge, including a proved breeding record of fledged young in September 2013. In addition, numerous species of conservation interest



- were recorded in EIA report, such as East Asian Porcupine, Leopard Cat, Red Muntjac, Great Swift, Tamil Grass Dart, Small Three-ring and Small Grass Yellow.
- 2.1.5 Scattered patches of woodland are present throughout the assessment area, with the largest contiguous block located immediately to the east of the project boundary. These woodlands are relatively young with single-layered of canopy dominants (~10 15m tall) including *A. dioica, Bridelia tomentosa, Cinnamomum burmannii, Daphniphyllum calycinum, Litsea glutinosa, Rhus succedanea,* and *Zanthoxylum avicennae*. Such areas comprise secondary woodland which is largely derived from natural regeneration and colonisation of trees as a result of seed dispersal by birds and/or bats. A mature tree of *A. sinensis* is located at the woodland edge at the central part of the Project according to EIA report.

2.2 MONITORING MEASURES OF WETLAND HABITATS

- 2.2.1 Wetland habitats include wet woodland and watercourses. Monitoring surveys using standardised quantitative methodology will be conducted at fixed points. For seasonal watercourse, survey shall be conducted whenever the habitat appears.
- 2.2.2 Measures to respond to decreases in numbers of aquatic fauna using the wetland habitats and action and limit levels to trigger these measures are detailed in Table 1.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
taxa diversity	cause identified as related	in taxa	cause identified as related
by 30%	to the project instigate	diversity	to the project instigate
	remedial action to remove	by 50%	remedial action.
	or reduce source of		
	disturbance.		

Table 1 Action and Limit Levels and Responses to Evidence of Declines in Aquatic Fauna

2.3 MONITORING MEASURES OF NON-WETLAND HABITATS

- 2.3.1 Non-wetland habitats consist of upland grassland and woodland. Monthly quantitative surveys of non-aquatic fauna will be conducted using standard route transect counts.
- 2.3.2 Measures to respond to decreases in numbers of non-aquatic fauna using the non-wetland habitats and action and limit levels to trigger these measures are detailed in Table 2.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
species diversity	cause identified as related	in species	cause identified as related
by 30%	to the project instigate	diversity by	to the project instigate
	remedial action to remove	50%	remedial action.
	or reduce source of		
	disturbance.		

Table 2 Action and Limit Levels and Responses to Evidence of Declines in Non-Aquatic Fauna



3 METHODOLOGY

The ecological survey includes all taxa being investigated in EIA report. Table 3 summarizes schedule of faunal surveys.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals	1	√	V	V	V	√	√	1	V	√	1	V
Birds (day)	V	V	V	1	V	√	V	V	V	V	1	V
Birds (night)				√	√	1	V	√	√	1		
Herpetofau na				V	√	1	1	V	V	V		
Dragonflies			1	1	1	V	√	1	V	√		
Butterflies			V	V	V	V	√	V	V	V		
Aquatic fauna	√	√	V	√	√	1	1	V	V	V	V	√

Table 3 Survey Schedule

3.1 MAMMAL SURVEY

3.1.1 Mammal surveys will be conducted along the transects shown in Appendix 1 during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

3.2 BIRD SURVEY

3.2.1 Bird surveys will be conducted along the transects shown in Appendix 1 during the surveys, species and their vocalizing individuals recorded will be enumerated and recorded according to the habitat(s) they are utilising.

3.3 HERPETOFAUNA SURVEY

3.3.1 Reptile and amphibian surveys will be conducted along transects shown in Appendix 1 during surveys careful searches of appropriate microhabitats and refugia for reptiles and their vocalizing individuals will be undertaken and all reptiles observed will be identified and counted.

3.4 DRAGONFLY SURVEY

3.4.1 Dragonfly surveys will be conducted along transects shown in Appendix 1 during surveys all dragonflies seen will be identified and counted as accurately as possible.



3.5 BUTTERFLY SURVEY

3.5.1 Butterfly surveys will be conducted along transects shown in Appendix 1 during surveys all dragonflies seen will be identified and counted as accurately as possible.

3.6 AQUATIC FAUNA SURVEY

3.6.1 Freshwater fishes and macro-invertebrates will be recorded by direct observation. All species trapped/recorded will be enumerated and identified (to the lowest taxonomic level possible), and the species of conservation importance photographed.



4 RESULT

This monitoring survey started on 7th July 2020. A sunny day. The day and night survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed point. All species seen will be identified and counted as accurately as possible.

Mammal

There was no mammal recorded in the monitoring area.

■ Rird

There were total of 19 bird individuals from 8 species recorded in the monitoring area.

■ Herpetofauna

There was no reptile recorded in the monitoring area.

There was two amphibian recorded in the monitoring area.

Butterfly

There was total 3 butterfly individuals from 2 species recorded in the monitoring area.

Dragonfly

There was total 3 odonate individuals from 2 species recorded in the monitoring area.

■ Freshwater communities

There were two species of freshwater fish recorded in the monitoring area.



Figure 1
The construction site in monitoring area.

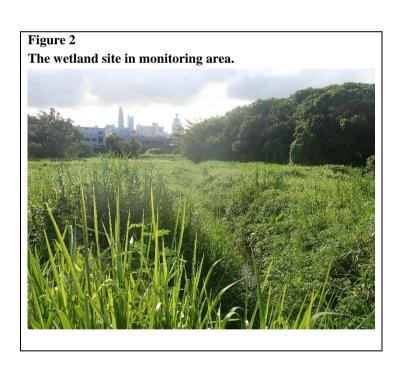




Table 4 Result of mammal in survey

Scientific Name	English Name	Chinese Name		7-Jul	-2020
Scientific Ivame	English I talle	Chinese I value		Non- wetland	Wetland
		N/A			

Table 5 Result of Avifauna in survey

Scientific Name	English Name	Chinese Name	Conservation	7-Jul-2020		
Scientific Name	English Name	Chinese Name	Status	Non- wetland	Wetland	
Spilopelia chinensis	Spotted Dove	珠頸斑鳩		1	2	
Lanius schach	Long-tailed Shrike	棕背伯勞			1	
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		2		
Hirundo rustica	Barn Swallow	家燕		4		
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯			1	
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2	2	
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		2		
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥		2		

Table 6 Result of reptile in survey

Scientific Name	Common Name Chinese Name		7-Jul-2020			
			Non-wetland	Wetland		
		N/A				



Table 7 Result of amphibian in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	7-Jul-2020		
				Non- wetland	Wetland	
Bufo melanostictus	Asian Common Toad	黑眶蟾蜍			+	
Polypedates megacephalus	Brown Tree Frog	斑腿泛樹蛙			+	

^{+:} Uncountable due to vocal identification

Table 8 Result of butterfly in survey

Coiontifio Nome	Common Name	Chinasa Nama	7-Jul-2020		
Scientific Name	Common Name	Chinese Name	Non-wetland	Wetland	
Papilio polytes polytes	Common Mormon	玉帶鳳蝶	1		
Pieris canidia	Indian Cabbage White	東方菜粉蝶		2	

Table 9 Result of Odonate in survey

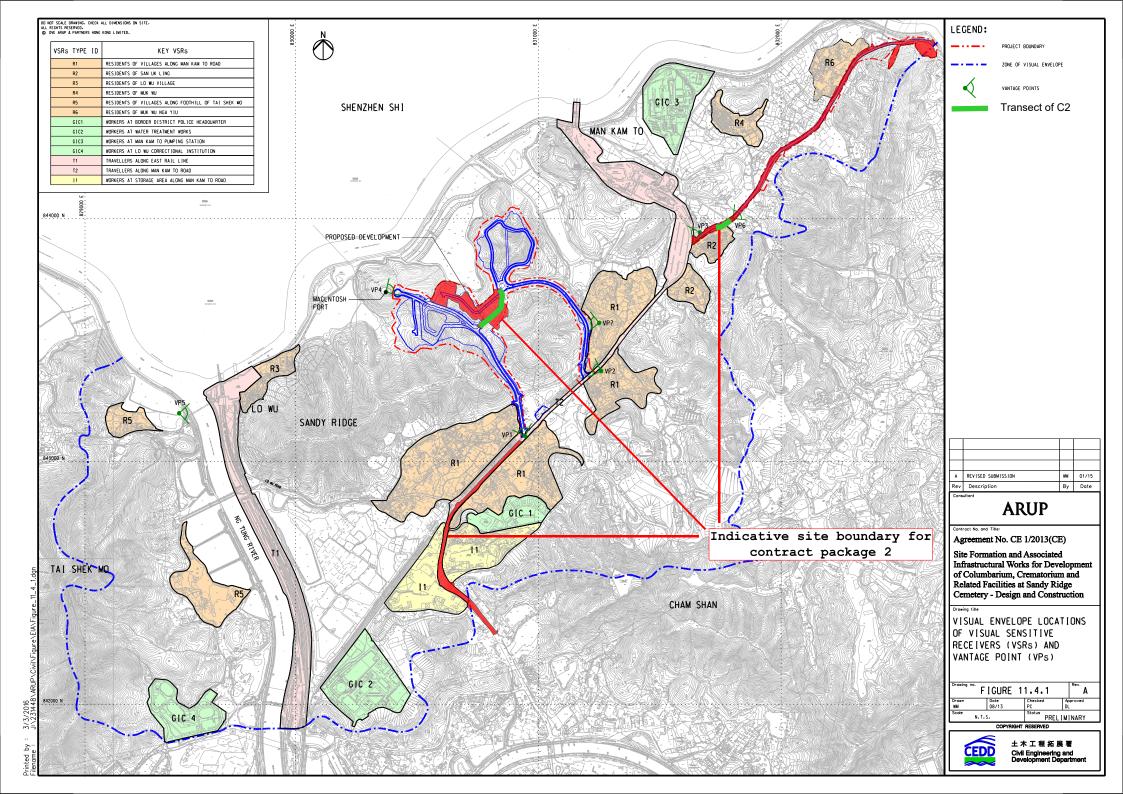
Scientific Name	Common Name	C'hinese Name	Conservation Status	7-Jul-2020		
				Non- wetland	Wetland	
Prodasineura autumnalis	Black Threadtail	烏齒原蟌			2	
Tholymis tillarga	Evening Skimmer	雲斑蜻			1	

Table 10 Result of freshwater communities in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	7-Jul-2020
Gambusia affinis	Mosquito fish	食蚊魚		#
Puntius semifasciolatus	Chinese Barb	五線無鬚舥		#

^{#:} Species appeared but uncountable

Appendix I – Transect Routes for Contract CV/2017/02





Appendix L

Landscape & Visual Inspection Checklist



Contract No. CV/2016/10

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Landscape and Visual Impact Assessment Checklist for Site Audit

Date/ Time: 21/7/2020 10:00 Weather: Fine/ Overeast/ Rain/ Windy

Item	em Mitigation Measures		olemen	tation	Actions/ Remarks	
		Yes	No	N/A		
1	Landscape and Visual					
1.1	Is the construction period become shortened?			✓	Under review.	
1.2	Is the work site confined within site boundaries and without encroaching into the landscape resources offsite?	✓				
1.3	Is the site kept clean and tidy (E.g. storage of materials, location and appearance of site accommodation being well positioned)	✓				
1.4	Is the construction site screened properly by hoardings or noise barriers in visually unobstructed colours?	✓				
1.5	Is the erosion and dust control for exposed soil well performed during excavation work? (E.g. Exposed soil shall be covered or "camouflaged" and watered frequently. Areas that are expected to be left with bare soil for a long period of time should be hydro seeded and / or covered with suitable protective fabrics.)	✓				
1.6	Are the woodland, plantation and other vegetation being protected and preserved in accordance with DEVB TC(W) No. 07/2015(E.g. Set up Tree Protection Zone)?	✓				
1.7	Are the trees which are in direct conflict with the development proposal being transplanted as far as practical in accordance with and DEVB TC(W) No. 07/2015?	✓				
1.8	Are compensatory planting for trees being provided to compensate the trees felled in accordance with DEVB TC(W) No. 07/2015?			✓	Tree planting works have not yet been commenced.	
1.9	Are precautionary control measures to protect natural streams and rivers from adverse impact being implemented in accordance with ETWWB TCW No. 5/2005? (E.g. Construction debris and spoil should be covered up and properly disposed)	✓				
1.10	Is light and glare control such as hooding being implemented during construction and operation to minimize light pollution and night time glare? (E.g. All security floodlights for construction sites should be equipped with adjustable shield, frosted diffusers and reflective covers)	✓				

Muni Arborist

Summary / Remarks:

Follow up actions taken by Contractor for previous comments:

N/A

New observation:

N/A

Reminders:

- 1. Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 2. Transplanted trees T2465, T2468 and T2928 were in fair health condition with normal foliage color and density. Contractor is reminded to provide proper maintenance according to approved method statement.

Photo Record:

Fig A. Fig B.



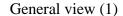
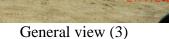


Fig C.



General view (2)





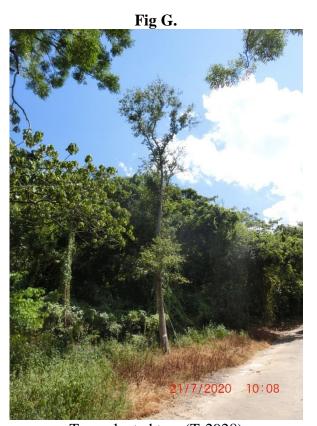


Tree protection zone





Transplanted tree (T-2465)



Transplanted tree (T-2928)





Contract No. CV/2017/02

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Development of Columbarium at Sandy Ridge Cemetery – Infrastructural Works at Man Kam To Road and Lin Ma Hang Road Landscape and Visual Impact Assessment Checklist for Site Audit

Date/ Time: 21/7/2020 11:30 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures	Implementation			Actions/ Remarks		
		Yes	No	N/A			
1	Landscape and Visual						
1.1	Is the construction period become shortened?			✓	Under review		
1.2	Is the work site confined within site boundaries and without encroaching into the landscape resources offsite?	✓					
1.3	Is the site kept clean and tidy (E.g. storage of materials, location and appearance of site accommodation being well positioned)	✓					
1.4	Is the construction site screened properly by hoardings or noise barriers in visually unobstructed colours?	✓					
1.5	Is the erosion and dust control for exposed soil well performed during excavation work? (E.g. Exposed soil shall be covered or "camouflaged" and watered frequently. Areas that are expected to be left with bare soil for a long period of time should be hydro seeded and / or covered with suitable protective fabrics.)	✓					
1.6	Are the woodland, plantation and other vegetation being protected and preserved in accordance with DEVB TC(W) No. 07/2015(E.g. Set up Tree Protection Zone)?	✓					
1.7	Are the trees which are in direct conflict with the development proposal being transplanted as far as practical in accordance with and DEVB TC(W) No. 07/2015?			✓	Tree transplanting works have not yet been commenced		
1.8	Are compensatory planting for trees being provided to compensate the trees felled in accordance with DEVB TC(W) No. 07/2015?			✓			
1.9	Are precautionary control measures to protect natural streams and rivers from adverse impact being implemented in accordance with ETWWB TCW No. 5/2005? (E.g. Construction debris and spoil should be covered up and properly disposed)			✓			
1.10	Is light and glare control such as hooding being implemented during construction and operation to minimize light pollution and night time glare? (E.g. All security floodlights for construction sites should be equipped with adjustable shield, frosted diffusers and reflective covers)			✓			



Summary / Remarks:

Follow up actions taken by Contractor for previous comments:

N/A

New Observation:

N/A

Reminders:

- 1. Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 2. Proper TPZ should be set up according to approved method statement.

Photo Record:

Fig A.

Fig B.

General view (1)

General view (2)





General view (3) General view (4)



Signature:

		Signature istration &	Date
Recorded by	Registered Landscape Architect	Shiji Yau Bun Shiji Yau Bun R-142	23 Jul 2020
Checked by	Environmental Team Leader	Am Share	12 Aug 2020
Checked by	Independent Environmental Checker		13 Aug 2020



Appendix M

Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table for 2020

Department: Civil Engineering and Development Department Contract No.: CV/2016/10

Contract Title: Site Formation and Assoicated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

Commencement Date: 15-Dec-2017 Estimated completion Date 22-Dec-2023 Estimated Contract Sum: 780M

		Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly					
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse	
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	
Jan	34.748	0.000	9.595	0.000	25.153	0.000	0.000	0.000	0.000	0.000	0.070	
Feb	48.481	0.000	5.352	0.000	43.129	0.000	0.000	0.000	0.000	0.000	0.214	
Mar	16.411	0.000	14.155	0.000	2.256	0.000	0.000	0.000	0.000	0.498	0.222	
Apr	10.024	0.000	8.924	0.000	1.100	0.000	0.000	0.000	0.000	0.000	0.176	
May	9.923	0.000	9.383	0.000	0.540	0.000	0.000	0.000	0.000	0.000	0.052	
June	15.159	0.000	14.439	0.000	0.720	0.000	0.000	0.000	0.000	0.000	0.040	
Sub-total	134.746	0.000	61.848	0.000	72.898	0.000	0.000	0.000	0.000	0.498	0.774	
July	9.201	0.000	8.523	0.000	0.678	0.000	0.000	0.000	0.000	0.000	0.188	
Aug												
Sept												
Oct												
Nov												
Dec												
Total	143.947	0.000	70.371	0.000	73.576	0.000	0.000	0.000	0.000	0.498	0.962	

Notes: (1) The waste flow table should cover the whole construction period of the Contract.

- (2) The original estimates of the C&D materials should be the estimates at contract commencement and should not be altered during construction.
- (3) Inert C&D materials that are specified in the Contract to be imported for use at the Site shall be separately indicated.
- (4) The yearly estimates of the C&D materials should be updated as appropriate taking into account the latest works programme etc.
- $(5) \quad Plastics \ refer \ to \ plastic \ bottles/containers, \ plastic \ sheets/foam \ from \ packaging \ material.$
- (6) Broken concrete for recycling into aggregates.

Name of Department: CEDD

Monthly Summary Waste Flow Table for 2020

	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse	
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	
JAN	8926.560	0.000	0.000	0.000	8926.56	0.000	0.000	0.000	0.000	0.000	50.290	
FEB	588.150	0.000	0.000	0.000	588.15	0.000	0.000	0.000	0.000	0.000	40.800	
MAR	12694.520	0.000	0.000	0.000	12694.52	0.000	0.000	0.000	0.000	0.000	11.660	
APRIL	1664.920	0.000	0.000	0.000	1664.92	0.000	0.000	0.000	0.000	0.000	6.110	
MAY	958.450	0.000	0.000	0.000	958.45	0.000	0.000	0.000	0.000	0.000	5.160	
JUN	2010.780	0.000	0.000	0.000	2010.78	0.000	0.000	0.000	0.000	0.000	10.560	
Sub Total	26843.380	0.000	0.000	0.000	26843.380	0.000	0.000	0.000	0.000	0.000	124.580	
JUL	*916.390	0.000	0.000	0.000	*916.390	0.000	0.000	0.000	0.000	0.000	15.720	
AUG												
SEP												
OCT												
NOV												
DEC												
Total	*27759.770	0.000	0.000	0.000	*27759.770	0.000	0.000	0.000	0.000	0.000	140.300	

Notes: * estimated quantity (pending from EPD NENT (soil) to update the actual quantity)

Name of Department: CEDD

	Forecast of Total Quantities of C&D Materials to be Generated from the Contract (see Note 4)										
Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metal	Paper / cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse	
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)	
0	0	0	0	0	350	30	4	2	1	4	

Notes:

- (1) The performance targets are given in PS clause 6(14) above.
- (2) The waste flow table shall also include C&D materials that are specified in the Contractor to be imported for use at the Site.
- (3) Plastic refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature
- Hard Rocks and Large Broken Concrete = Cannot be defined at this stage
- Imported Fill = Estimated by the Contractor
- Metal = Estimated by the Contractor
- Paper/cardboard packaging = Estimated by the Contractor
- Plastics = Estimated by the Contractor
- Chemical Waste = Estimated by the Contractor (Spent lubricating oil, assume density 0.9kg/L)
- Other, e.g. general refuse = Estimated by the Contractor



Appendix N

Implementation Schedule for Environmental Mitigation Measures

Environmental Mitigation Implementation Schedule - Sandy Ridge

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 12 of the EIA report present the EIA findings and mitigation measures are described

below with cross-reference to the EIA report. Chapters 13 to 15 describe the environmental monitoring requirements and conclusion.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved					
Common Mitiga	Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPS)										
Construction Du	Construction Dust Impact										
S4.4.5.2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO criteria					
S4.4.5.3	Water spraying every hour for all active works area.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO criteria					
S4.4.5.2	 Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Vehicle wheel washing facilities should be provided at each construction 	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO criteria					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;					
	 When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; 					
	• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;					
	Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;					
	 Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; 					
	Any skip hoist for material transport should be totally enclosed by impervious sheeting;					
	 Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 					
	Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system;					
	 Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S4.4.5.1	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO
S4.4.5.3	 All road surface within the barging facilities will be paved. Dust enclosures will be provided for the loading ramp, installation of 3-sided screen with top cover and the provision of water sprays at the discharge point would be provided. Vehicles will be required to pass through designated wheel wash facilities. Continuous water spray at the loading point. 	Minimise dust impact at the nearby sensitive receivers	Contractor	Barging point at Siu Lam	Construction phase	• TM-EIAO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved			
Construction Noise	Construction Noise								
S5.5.5.3	 Implement the following good site management practices: only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from onsite construction activities. 	Control construction noise	Contractor	All construction sites	Construction phase	• Annex 5, TM-EIAO			
S5.5.5.5	Adopt quiet plants during the construction of viaduct, widening of Sha Ling Road, construction of platform for crematorium and widening of Lin Ma Hang Road. The quiet plants should be made reference to the PME listed in the TM or the QPME/ other commonly used PME listed in EPD web pages or taken from BS5228: Part 1: 2009 Noise Control on Construction and Open Sites as far as possible.	Reduce the noise levels of plant items	Contractor	Works area for construction of viaduct, widening of Sha Ling Road, construction of platform for crematorium and widening of Lin Ma Hang Road	Construction phase	• Annex 5, TM-EIAO			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S5.5.5.6	Install temporary noise barriers (in the form of site hoardings, approx. 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIAO
S5.5.5.7 – S5.5.5.12	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressors, generators etc.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIAO
S5.5.5.13	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIAO
S13.2.1.1 – S13.4.1.2	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representativ e noise monitoring station	Construction phase	• TM-EIAO
Operational Noise (Road	Traffic Noise)	,				
S5.6.6.4	Provide a series of noise mitigation measures including absorptive noise barriers and low noise road surfacing materials along Lin Ma Hang Road and Sha Ling Road before operation of the proposed project for existing and planned representative NSRs. Locations of noise mitigation measures are stated as following: For existing representative NSRs Approx. 12m of absorptive noise barrier 2.5m above road level along Sha Ling Road (MM1); Approx. 92m of absorptive noise barrier 2.5m above road level along Sha Ling Road (MM2);	Reduce operation noise from road traffic	Contractor	Refer to Figures 5.6.9 – 5.6.13 of the EIA Report	the Project for existing	• TM-EIAO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	Approx. 28m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM3);					
	Approx. 51m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM4);					
	Approx. 25m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM5);					
	Approx. 21m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM6);					
	Approx. 14m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM7);					
	Approx. 18m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM8);					
	Approx. 42m of absorptive noise barrier 3m above road level along temporary pullover space opposite San Uk Ling (MM9);					
	Approx. 93m of absorptive noise barrier 3m above road level along Lin Ma Hang Road opposite San Uk Ling (MM10);					
	Approx. 185m of low noise surfacing materials along Lin Ma Hang Road near San Uk Ling (MM11);					
	For planned representative NSRs					
	Approx. 36m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM12);					
	Approx. 47m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM13);					
	Approx. 31m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM14);					
	Approx. 31m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM15);					
	Approx. 41m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM16);					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	Approx. 340m of low noise surfacing materials along Lin Ma Hang Road near Muk Wu Nga Yiu (MM17).					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Construct	tion Phase)					
S6.4.4.1 – S6.4.4.3	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: General Site Operation • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction; • Diversion of natural stormwater should be avoided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates;	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction phase	Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS
	guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction;					
	 Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; 					
	 If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; 					
	 All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; 					
	 All open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; 					
	 Manholes (including newly constructed ones) should always be covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; 					
	 Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes; 					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	 All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Washwater should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby; Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, marsh and ponds; Adopt best management practices. 					
S6.4.4.4 – S6.4.4.5	Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance;	To minimise water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance TM-DSS

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	 Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; 					
	 Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 					
S6.4.4.6	Operation of Barging Point at Siu Lam	To minimise water quality from	Contractor	All	Construction phase	• Water Pollution
	 All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation; 	operation of barging point at Siu Lam		construction sites where practicable		Control Ordinance • TM-DSS
	 All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and 					
	• Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water.					
	 Mitigation measures for land-based activities as outlined in Section 6.4.4 should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate. 					
Water Quality (Operational	l Phase)	_				
S6.5.4.1 – S6.5.4.6	The following mitigation measures during operational phase are recommended: • Sewage and wastewater discharge should be connected to foul sewerage system;	To minimise the road runoff, wastewater discharge and erosion of seasonal watercourse during the operational phase	Highways Department / Contractors	Whole alignment	Construction / Operational Phase	Water Pollution Control Ordinance TM-DSS
	Proper drainage systems with silt traps and oil interceptors should be installed;					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	 The design of road gullies with silt traps should be incorporated especially for the catchment leading to the existing wet woodland area located at the north of the site; The silt traps and oil interceptors should be cleaned and maintained regularly, especially before peak seasons of the visitors in Ching Ming Festival and Chung Yeung Festival; Energy dissipaters should be installed at the seasonally wet watercourses to reduce the magnitude of the first flush in order to minimise the erosion impact to the wet woodland. 					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved			
Waste Management (C	Waste Management (Construction Waste)								
\$7.3.3.8	Construction & Demolition Material Management Plan (C&DMMP) A C&DMMP shall be submitted to the Public Fill Committee for approval in the case of C&D materials disposal exceeding 50,000m³.	To enhance the management of construction and demolition (C&D) material including rock in public works projects	Contractor	All construction sites	Construction phase	Project Administrative Handbook for Civil Engineering Works, 2012 Edition			
\$7.3.4.2	 Good Site Practice The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval. 	Minimise waste generation during construction	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance			
\$7.3.4.3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	proper storage and site practices to minimise the potential for damage and contamination of construction materials;					
	plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste;					
	sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.);					
	provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					
S7.3.4.5	Storage of Waste	Good site practice to minimise the	Contractor	All	Construction phase	• Land
	The following recommendation should be implemented to minimise the impacts:	C&D materials as far as			(Miscellaneous Provisions)	
	non-inert C&D materials such as soil should be handled and stored well to ensure secure containment;					Ordinance
	stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away;	amount for final disposur				• Waste Disposal Ordinance
	different locations should be designated to stockpile each material to enhance reuse;					• ETWB TCW No. 19/2005
\$7.3.4.6	Collection and Transportation of Waste	Minimise waste impacts from	Contractor	All	Construction phase	• Waste Disposal
	The following recommendation should be implemented to minimise the impacts:	storage		construction sites		Ordinance
	remove waste in timely manner;					
	employ the trucks with cover or enclosed containers for waste transportation;					
	obtain relevant waste disposal permits from the appropriate authorities; and					
	disposal of waste should be done at licensed waste disposal facilities.					
S7.3.4.8 – S7.3.4.15	Excavated and C&D Materials	Minimise waste impacts from	Contractor	All	Construction phase	• Land
	Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be	excavated and C&D materials		construction sites		(Miscellaneous Provisions) Ordinance
	implemented in handling the excavated and C&D materials:					• Waste Disposal Ordinance
	maintain temporary stockpiles and reuse excavated fill material for					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	backfilling;					• ETWB TCW No.
	carry out on-site sorting;					19/2005
	make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and					• Project Administrative
	• implement a recording system for the amount of waste generated, recycled and disposed of for checking.					Handbook for Civil Engineering Works,
	The recommended C&D materials handling should include:					2012 Edition
	On-site sorting of C&D materials;					
	Reuse of C&D materials; and					
	Use of Standard Formwork and Planning of Construction Materials purchasing.					
S7.3.4.17 – S7.3.4.18	Chemical Waste		Contractor	All	Construction phase	• Waste Disposal (Chemical Waste)
	If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	ensure proper storage, handling and disposal.		construction sites		General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
\$7.3.4.19	General Refuse • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling.	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
	Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean.					
	A reputable waste collector should be employed to remove general refuse on a daily basis.					
\$7.3.4.20	Sewage The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability,	Minimise production of sewage impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
W . M	 Regularly collection by licensed collectors should be arranged to minimise potential environmental impacts. 					
Waste Management (Opera	ttional waste)		1	T	1	
S7.4.4.1	General Refuse A reputable waste collector should be employed to remove general refuse on a daily basis.	Remove general refuse during routine road cleaning activities on the roads network and avoid odour, pest and litter impacts	Contractor	Roads network for the C&C facilities and Lin Ma Hang Road	Operational phase	• Waste Disposal Ordinance

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination						
S8.9.1.1	Re-appraisal of the potentially contaminated site (SRC-1)	Identify any hot spots for SI within the southeast and western portions of SRC-1		Potentially contaminated site (SRC-1)	Once the works area for the Project is confirmed and site access is available (e.g. after land resumption)	• Annex 19 of the TM-EIAO, Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3: Potential Contaminated Land Issues);
						Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management;
						• Guidance Notes for Contaminated Land Assessment and Remediation; and
						• Practice Guide for Investigation and Remediation of Contaminated Land
						• Recommendations in Health Risk Assessment
S8.11.1.1	Preparation and submission of Contamination Assessment Plan (CAP) to EPD for review and approval, if required	Present the findings of the re- appraisal and strategy of the recommended SI, if required		Potentially contaminated site (SRC-1)	After land resumption and prior to the construction phase	Ditto
S8.11.1.2	Preparation and submission of Contamination Assessment Report (CAR) to EPD for review and approval, if required	Present the findings of SI, if any, and evaluate the level and extent of potential contamination		Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S8.11.1.2	Preparation and submission of Remediation Action Plan (RAP) to EPD for review and approval if contamination is identified	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the assessment if remediation is required	Detailed Design	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto
S8.11.1.2	Preparation and submission of Remediation Report (RR) to EPD for review and approval following the completion of any necessary remediation works	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP		Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Ecology (Construction Ph	nase)					
S9.7.2.3	Preparation and submission of Upland Grassland Reinstatement Plan to EPD for agreement.	An Upland Grassland Reinstatement Plan will be prepared by a qualified ecologist/botanist with full details of the findings of a baseline grassland survey, the practical details and methodology of the physical excavation, transport and storage or turves/topsoil and their subsequent reinstatement once the receptor sites have been established, along with an implementation programme of reinstatement, post- reinstatement monitoring and maintenance programme. A contingency plan should be proposed in the Grassland Reinstatement Plan so as to describe the action and limit levels and the action plan if certain performance criteria (such as area of preferred habitat) are not met during the monitoring and maintenance period.	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for Upland Grassland Reinstatement Plan	Engineered slopes of Crematorium Indicative locations for Grassland Reinstatement should be referred to Figure 9.11 of the EIA Report	Prior to construction phase	Reinstatement and establishment requirements to be detailed in Upland Grassland Reinstatement Plan TM-EIAO
S9.7.2.5 – S9.7.2.6	Preparation and submission of a Vegetation Survey Report and Transplantation Proposal (if needed as concluded in the Vegetation Survey Report) to EPD for agreement.	The Vegetation Survey will report the presence, as well as update the conditions, number, locations and habitat types of any identified floral species of conservation importance to be impacted by the development,	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for	Within the Project Area where applicable	Prior to construction phase	• Survey findings and transplantation methodology to be detailed in Vegetation Survey Report and Transplantation Plan

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		and evaluate suitability and/or practicality of transplantation. The Transplantation Proposal will recommend locations of the receptor site(s), transplantation methodology, implementation programme of transplantation and post-transplantation monitoring and maintenance programme.	Vegetation Survey Report and Transplantation Proposal.			respectively. • TM-EIAO.
\$9.7.5.3 - \$9.7.5.5, \$9.8.1.6	Preparation and submission of Enhancement Woodland Proposal to EPD for agreement.	Recommend appropriate enhancement planting programme, planting and post-transplantation monitoring methodology, action plan for monitoring the enhancement planting and maintenance programme.	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for Wooded Area Proposal.	Filled slope west of the platform, and north west of the platform in the valley below MacIntosh Fort Indicative locations for Enhancement Woodland should be referred to Figure 9.11 of the EIA Report	Prior to construction phase	Enhancement planting and establishment requirements to be detailed in Wooded Enhancement Proposal. TM-EIAO
S9.7.3.1 – S9.7.3.3	Indirect impacts due to potential changes in water quality, hydrology and sedimentation could occur to a series of downstream watercourses and wetland systems (including the wet woodland, marsh and mitigation ponds) during both the construction (for the Platform and LMHR widening works) and operational stages. Generally, indirect water impact to any aquatic fauna during the construction phase should easily be avoided by implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and good site practices (further details are discussed in Section 6 of the EIA Report).	Minimise the indirect impacts to Water Quality and Hydrology	Contractor /detailed design consultant.	On the edge of any active works area, 30m from the watercourse	Prior to commencement and during construction phase	• ETWB TCW No. 5/2005 • TM-EIAO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	In addition, construction phase impacts on the watercourses, riparian corridor and fauna using these areas will be minimised by erection of a 2m high, solid, dull green site boundary fence on the edge of any active works area, 30m from the watercourse. Where this is not practicable due to site constraints, demarcation fencing will need to be erected to prevent unauthorised encroachment into the riparian corridor by constructions works and traffic. Detailed mitigation measures will be designed at the detailed design stage.					
S9.7.3.4 – S9.7.3.6	Mitigation for noise disturbance (details refer to \$5.5.5 to \$5.6.6 of this table). Site formation and construction are tentatively proposed to cover a 65-month period from mid 2017 to late 2022. As a precautionary approach, consideration should be given at the detailed design stage to avoid the use of highly reflective materials in the design and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers. Works will be restricted to daytime and any construction lighting should be designed and positioned as to not impact on adjacent ecologically sensitive areas.	The construction work and site formation will be phased in order to reduce overall noise disturbance impacts in particular areas. Collisions usually occurs as a result of birds perceiving a clear path through an object that is transparent or appears to be transparent at some distance, or if the noise barrier is highly reflective which would appear to be composed of the adjacent natural vegetation. Furthermore, mitigation measures to control noise disturbance during this phase will involve the selection of quieter plant, use of movable noise barriers and erection of hoarding and fencing to demarcate the site boundary	Contractor Project Proponent	All construction sites	Prior to commencement and during construction phase	• TM-EIAO.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S.9.7.3.7	In order to demonstrate ecological awareness and to minimise the risk of indirect impacts from water pollution and hill fires, a series of good site practices should be adopted by site staff throughout the construction phase at each works site. These are as follows: • Put up signs to alert site staff about any locations which are ecologically sensitive and measures to prevent accidental impacts; • Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses; • Prohibition of soil storage against trees or close to waterbodies; • Delineation of works site to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value; • No smoking, hot works or sources of fire close to upland grassland; • No on-site burning of waste; and • Waste and refuse in appropriate receptacles.	Minimise impacts on hydrological condition and water quality of hillside watercourses and reduce chances of hillfires.	Contractor	All construction sites	Prior to commencement and during construction phase	• TM-EIAO.
S.9.7.3.9	Precautionary checks by a suitably experienced ecologist of the vegetation for the presence of nesting birds should be carried out in the breeding season (February to July) before vegetation clearance. These impacts can be avoided by conducting vegetation clearance during the non-breeding season (tentatively August-January) and phased through the project period to minimise impacts.	Minimise the impacts to breeding birds within the works areas.	Contractor	All construction sites	Prior to site clearance	• TM-EIAO • WAPO
Ecology (Operational Phas	se)					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S9.7.2	Establishment, maintenance and monitoring of a Upland Grassland Reinstatement Area	Reinstatement of upland grassland and to maintain connectivity in Sandy Ridge.	Project Proponent / Contractor / Maintenance Authority	Engineered slopes of Crematorium Indicative locations for Grassland Reinstatement should be referred to Figure 9.11 of the EIA Report	Operational phase	Monitoring methodology and successfulness of survival of upland grassland should follow Upland Grassland Reinstatement Plan. TM-EIAO.
S9.7.5.3 – S9.7.5.6	Establishment, maintenance and monitoring of an enhancement woodland	Recommend appropriate enhancement planting programme, planting and post-transplantation monitoring methodology, action plan for monitoring the enhancement planting and maintenance programme.	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for Wooded Area Proposal.	Filled slope west of the platform, and north west of the platform in the valley below MacIntosh Fort Indicative locations for Enhancement Woodland should be referred to Figure 9.11 of the EIA Report	Operational phase	Enhancement planting and establishment requirements to be detailed in Wooded Area Proposal. TM-EIAO.
S9.7.4.1 – S9.7.4.5	Mitigation for Impacts to Water Quality and Hydrology (Operational Phase) Stormwater drainage system will be further developed in detailed design stage to collect dusty materials from water collected from the platform and associated road system. Silt traps will be installed to ensure removal of dusty materials. Regular cleaning will be conducted to avoid debris entering downstream rivers during first flush; and The proposed small diameter bore pile system at the foundation of the proposed platform structure.	Specific mitigation measures will be implemented to prevent indirect impacts wetland habitats and fauna. Mitigation measures are to be further developed in the detailed design stage to address any water quality impacts due to the drainage from the proposed platform, and any erosion issues due to the drainage from the	Detailed Design Consultant	Wet woodland (and further down the marsh and mitigation ponds) and the seasonal watercourse to the east of the Project boundary	Detailed Design phase/Operational phase	• TM-EIAO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		proposed platform. The surface runoff collected on the platform will be captured by a stormwater drainage system, which will be further developed at the detailed design stage The proposed small diameter bore pile system at the foundation of the proposed platform structure would allow a notional free area of about 87 – 91% for groundwater to pass through				
S9.7.4.6 – S9.7.4.7	Minimise the potential indirect light disturbance on the Street Lighting on fireflies surrounding the Project Site during operational phase It is considered that at the detailed design stage, street lighting of similar lux/light intensity as to what is currently present is utilised. Furthermore, as a precautionary measure, it is suggested that deflectors are fixed to the back of the street lights to prevent additional light reaching the marsh and causing adverse impacts to fireflies.	Reduce light pollution and impact on the nearby habitats and their associated wildlife groups, particularly nocturnal fireflies.	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO
S9.7.4.9 – S9.7.4.9	The increase in visitors to the columbarium allows greater public access to the upland grassland of Sandy Ridge and in turn, the potential for hill fires is also increased. Fires may emanate from discarded cigarettes and from specific practices during festivals or grave-sweeping. In order to reduce the risk of hill fires, sufficient educational signage should be displayed throughout the columbarium warning people of the risks of fire and strictly prohibits practices that could cause hill fires. This will require input in the detailed design phase.	Minimise the risk of hill fires.	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO

EIA Ref.	Recommended Mitigation Measures	Measures & Main Concerns to	Implementation	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved			
Fisheries	Fisheries								
S10.5.1.1	No loss of fish ponds is anticipated and no <i>in situ</i> mitigation is required. However, mitigation measures for water quality (S6.4.4 – S6.5.4 in this table) proposed are also pertinent in ensuring that fisheries impacts of the Project do not occur downstream of the Project area either locally or in Inner Deep Bay.	-	-	-	-	-			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Landscape & Visual						
S11.8.1.3, Table 11.9	CM1 – The construction area and contractor's temporary works areas should be minimised to avoid impacts on adjacent landscape, and the reliance on off-site construction.	Minimise landscape impact and visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-
S11.8.1.3, Table 11.9	CM3 – Screening of construction works by hoardings/noise barriers around works area in visually unobtrusive colours and to screen construction works. It is proposed that screening be compatible with the surrounding environment and non-reflective, recessive colours be used. Hoarding should be taken down at the end of the construction period.	Minimise visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-
S11.8.1.3, Table 11.9	CM4 – Dust and Erosion Control for Exposed Soil - Excavation works and demolition of existing building blocks shall be well planned with precautions to suppress dust. Exposed soil shall be covered or watered often. Areas that are expected to be left with bare soil for a long period of time after excavation shall be properly covered with suitable protective fabric. Suitable drainage shall be provided around construction sites to avoid discharge of contaminants and sediments into sensitive water-based habitat.	Minimise indirect landscape impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-
S11.8.1.3, Table 11.9	CM5 – Control night-time lighting and glare by hooding all lights.	Minimise visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.8.1.3, Table 11.9	CM6 – Tree Protection and Preservation – Woodland, plantation and other vegetation within the Study Area will be protected and preserved as far as possible in accordance with ETWB TCW No. 29/2004 - Registration of Old and Valuable Trees, and Guidelines for their Preservation and DEVB TCW No.07/2015 – Tree Preservation. Detailed Design Considerations are made to avoid impacts to trees, e.g. proper viaduct/ bridge design routing to avoid majority of the woodland, locating the columbarium buildings in areas with less trees and ensuring design of the buildings has as small a footprint as practical.	Minimise landscape impact and visual impact	Funded by CEDD and implemented by Contractor	Work site/during construction	Construction phase	DEVB TC(W) 07/2015 Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB
S11.8.1.3, Table 11.9	CM7 – Tree Transplantation – Tree(s) will be affected according to the Tree Preservation and Removal Proposal to be carried out in a later stage. Established trees of value are to be re-located where practically feasible.	Minimise landscape and visual impact	Funded by CEDD and implemented by Contractor	Work site/during construction	Design and Construction phase	'Guidelines for Tree Risk Management and Assessment Arrangement on an Area Basis and on a Tree Basis', issued January 2011, Greening, Landscape and Tree Management (GLTM) Section, DevB Latest recommended horticultural practices from GLTM Section, DevB

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.8.1.3, Table 11.9	CM8 - Implementing precautionary control measures during construction stage accordingly to ETWB TCW No. 5/2005 - Protection of natural streams/rivers from adverse impacts arising from construction works to avoid direct or indirect impacts any watercourses and good site practices.	Minimize landscape impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Design and Construction phase	• ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works
S11.8.1.3, Table 11.9	OM1 – Compensatory Woodland Planting - The arrangement of compensatory planting (e.g. areas of woodland to be compensated and space to be allowed within the Project Site) will be subject to detailed engineering design, landscape design and planting plan, and is recommended to be implemented prior to the construction activities as far as practical.	Compensate the loss of landscape greenery and enhance the overall visual value of the site.	Funded by CEDD and implemented by Contractor	Within Project Site	Prior to Construction phase	DEVB TC(W) 07/2015 — Tree Preservation Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB DEVB TCW No. 06/2015 — Maintenance of Vegetation and Hard Landscape Features

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.8.1.3, Table 11.9	OM2 – Compensatory Tree Planting for Plantation and Other Vegetated Areas - Compensatory planting should be provided in accordance with DEVB TCW No. 07/2015 to compensate for those trees felled. According to the preliminary design, compensatory trees will be planted on the cut/fill slopes, along new roads and in car parks. The selection of planting species shall be made with reference to the species identified in the future Detailed Tree Survey and be native to Hong Kong or the South China region.	Compensate the loss of landscape greenery and enhance the overall visual value of the site.	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	DEVB TC(W) 07/2015 - Tree Preservation Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB DEVB TCW No. 06/2015 - Maintenance of Vegetation and Hard Landscape Features
S11.8.1.3, Table 11.9	OM3 – Amenity Planting and aesthetic streetscape design of hard landscaping for Pedestrian Walkway, Roadside - Roadside amenity planting should be provided along Sha Ling Road, Lin Ma Hang Road, as well as the internal road within Sandy Ridge columbarium and crematorium site; to enhance the landscape quality of the existing and proposed transport routes. Climbers are proposed to cover vertical, hard surfaces of the piers of the proposed viaducts, and also the newly formed retaining wall within the site. Shade tolerant plants will be planted, where light is sufficient, to improve aesthetic value of areas under viaducts.	Minimise visual impact and also enhance landscape.	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	Guidelines on Greening of Noise Barriers, issued April 2012, GLTMS, DevB DEVB TCW No. 06/2015 — Maintenance of Vegetation and Hard Landscape Features
S11.8.1.3, Table 11.9	OM4 – Greening Works and Contour Grading Works on Cut/ Fill Slopes - Greening works such as hydroseeding/ terraces of shrub or tree planting will be provided where slope gradient allows, according to Geotechnical Engineering Office (GEO) Publication No.1/2011 Technical Guidelines on Landscape Treatment for Slopes.	Minimise landscape and visual impact	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	Geotechnical Engineering Office (GEO) Publication No.1/2011 Technical Guidelines on Landscape Treatment for Slopes.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.8.1.3, Table 11.9	OM5 – Landscape design treatment to be provided by relevant government department.	Mitigate the loss of greenery and enhance the overall landscape and visual value	Funded by FEHD and implemented by Contractor	Within Project Site	After handover to the relevant department	-
S11.8.1.3, Table 11.9	OM6 – Architectural and chromatic treatment of the hard architectural and engineering structures and facilities.	Mitigate the loss of greenery and enhance the overall landscape and visual value	Funded by FEHD and implemented by Contractor	Within Project Site	After handover to the relevant department	-
S11.8.1.3, Table 11.9	OM7 – Aesthetic design of the proposed noise barriers.	Mitigate the visual impact	Funded by CEDD and implemented by Contractor	Along Sha Ling Road and Lin Ma Hang Road	Construction phase	WBTC No. 36/2004 ACABAS - submission is required to ACABAS for approval of any bridges and associated structures within the public highway system.
S11.8.1.3, Table 11.9	OM8 - Silt traps should also be incorporated into design of road gullies for the natural water stream(s).	Minimise the landscape impact on natural stream	Funded by CEDD and implemented by Contractor	Within Project Site	Construction Phase	

Notes:

- (a) A detailed Tree Survey Report showing all identified valuable trees and OVT will be undertaken in a separate Tree Preservation and Removal Proposal.
- (b) Wood resulting from tree removal should be recycled as mulch or soil conditioner for re-use within the Project or in other projects as far as possible e.g. for the construction of soft landscape work, were practical.
- (c) Contractor is responsible for landscaping during the agreed establishment and maintenance period. Other designated management and maintenance agents to take up maintenance and management of landscaping after end of agreed period.
- (d) Highways Department (HyD) is responsible for maintenance and management of landscaping of public road side slope, Leisure and Cultural Services Department (LCSD) is responsible for the management and maintenance of soft landscapes along non-expressway public roads outside Country Park and Food and Environmental Hygiene Department (FEHD) is responsible for maintenance and management of landscaping of other areas allocated to FEHD.
- (e) The landscape mitigation treatment of the future development site shall follow the below frameworks:
 - Buffer planting shall be provided to soften the edge of the site.
 - Aesthetic landscape treatment including both soft and hard landscape features shall be provided.
 - Vertical greening shall be provided as far as practicable.
 - At-grade tree planting shall be provided as far as possible while planting space is allowed, to enhance the overall environment.
 - Architectural design shall blend in with the surrounding environment.
 - Overall greening ratio shall comply with TC(W) No.3/2012 Site coverage of Greenery for Government Building Projects.

EIA Ref. Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
---	---	-------------------------	----------------------	-------------------------	--

The compensatory woodland planting shall be included woodland mixed whips, seeding, and shrubs. The principle of the location shall be the extension of the existing woodland, as well as the original lost woodland location. The proposal will be agreed with AFCD, the woodland enhancement planting shall refer to Chapter 9.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project						
\$13.1.1.1, \$13.2.1.2	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Highways Department	All construction sites	Construction phase	• EIAO Guidance Note No.4/2010 • TM-EIAO
S13.2.1.1 – S13.4.1.2	 An Environmental Team needs to be employed as per the EM&A Manual. Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. 	Perform environmental monitoring & auditing	Highways Department / Contractor	All construction sites	Construction phase	• EIAO Guidance Note No.4/2010 • TM-EIAO



Appendix O

Implementation of Water Quality Mitigation Measures

Water Quality Mitigation Measures under CV/2016/10 (Contract 1)



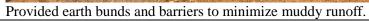
Provided efficient silt removal facilities to prevent leakage of muddy runoff from site area. Removal of silt was conducted by the Contractor regularly.



Temporary drainage was provided to prevent runoff going through site surface.

Water Quality Mitigation Measures under CV/2016/10 (Contract 1)



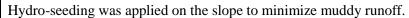


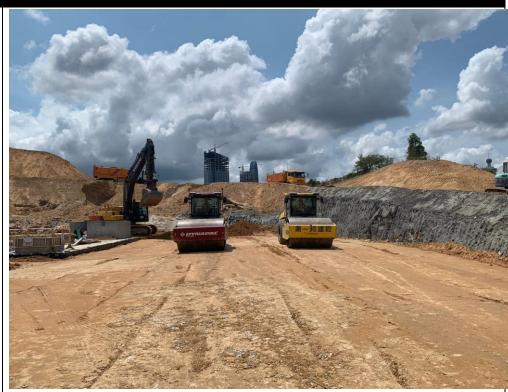


Hydro-seeding was applied on the slope to minimize muddy runoff.

Water Quality Mitigation Measures under CV/2016/10 (Contract 1)







Exposed slopes surface were covered by cement mortar

Water Quality Mitigation Measures under CV/2017/02 (Contract 2)



Provided wastewater treatment facilities at works area on Sandy Ridge.

Provided earth bunds and barriers to minimize muddy runoff.

Water Quality Mitigation Measures under CV/2017/02 (Contract 2)



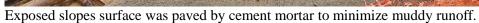
Sump pit and geo-textile were installed to prevent leakage of muddy runoff at Area Part A1.



Exposed slopes surface was paved by cement mortar to minimize muddy runoff.

Water Quality Mitigation Measures under CV/2017/02 (Contract 2)







Hydro-seeding was applied on the slope to minimize muddy runoff.