

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.56) – MARCH 2023

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

Date	Reference No.	Prepared By	Certified By
17 April 2023	TCS00881/18/600/R0729v2	Anh	An

Nicola HonTam Tak Wing(Environmental Consultant)(Environmental Team Leader)

Version	Date	Remarks
1	12 April 2023	First Submission
2	17 April 2023	Amended according to IEC's comments



Our Ref: TCS00881/18/300/L0732

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

Attn: Mr. SHUM Ngai Hung, Steven

17 April 2023 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.56) – March 2023

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: <u>twtam@fordbusiness.com</u>.

Yours sincerely, For and on Behalf of Action-United Environmental Services & Consulting (AUES)

T. W. Tam Environmental Team Leader TW/nh

cc

ARUP (RE of Contracts 1 and 2) HCTY-JV (Contractor of Contract 1) Sang Hing (Contractor of Contract 2) Acuity (IEC) Mr. Anthony Lau Mr. Ho Man To Mr. Elvin Lam Mr. Jacky Leung

by e-mail by e-mail by e-mail by e-mail





aurecon

Our Ref.: PL-202304014

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

17 April 2023

Dear Sir,

Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery Monthly Environmental Monitoring and Audit Report (No. 56) March 2023

I refer to the email of the ET regarding the captioned Monthly Report. According to Section 3.4 of the EP-534/2017/A and the FEP-01/534/2017/A, I hereby verify the Monthly EM&A Report for February 2023 (Version 2) with Ref. No. TCS00881/18/600/R0729v2.

You are required to follow up the comments from EPD and IEC on the relevant EPs requirement and provide supplementary information of this report for our further review as soon as possible.

Yours faithfully,

CH Leung

Leung CH Jacky Independent Environmental Checker



EXECUTIVE SUMMARY

ES.01. This is the 56th 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 March 2023 (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.

Issues	Environmental Monitoring	Monitorin	Total Occasions/	
155465	Parameters / Inspection	CV/2016/10	CV/2017/02	dates
Air Quality	1-hour TSP	ASR-1	ASR-2	54
Air Quality	24-hour TSP	ASK-1	ASR-3	15
Construction Noise	L _{eq (30min)} Daytime	CN-1 CN-2	CN-3 CN-4	12
Water Quality	In-situ measurement and Water sampling	M3	M1, M2 and M4	13
Ecology	Sensitive Habitat	Transect within site area of CV/2016/10	Transect within site area of CV/2017/02	23 rd Mar 2023
Landscape & Visual	Site Inspection	Site area of CV/2016/10	Site area of CV/2017/02	30 th Mar 2023
Inspection & Audit	Environmental Team (ET) Regular Environmental Site Inspection Independent Environmental Checker (IEC) Monthly Environmental Site Audit	Site area of CV/2016/10	Site area of CV/2017/02	4

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

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.03. In the Reporting Month, no exceedance of air quality and water quality monitoring was recorded. No noise complaint (which triggered Action Level) was received and Limit Level exceedance for noise monitoring exceedance was recorded. The statistics of environmental exceedance, Notification and investigation of exceedance are summarized in the following table.

Environmental	Monitoring	Action	I imit	Event & Action	
Environmental IssuesMonitoring ParametersAction LevelLimit Level		Investigation Findings	Corrective Actions		
Air Quality	1-hour TSP	0	0	-	-
	24-hour TSP	0	0	-	-
Construction Noise	Leq _{30min} Daytime	0	0	-	-
Water Quality	DO	0	0	-	-
	Turbidity	0	0		
water Quanty	Suspended Solids (SS)	0	0	-	-

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

ES.04. Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 23rd March 2023. After analysing survey results in March from 2019 to 2023, there was no significant drop in species richness and abundance for wetland and non-wetland habitat for area of Contract 1, but a decrease in species richness and abundance for wetland and non-wetland habitat for area of Contract 2. Yet, good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work



areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.

- ES.05. In the Reporting Period, there was no vegetation clearance for both Contract 1 and Contract 2, and precautionary check for the presence of nesting birds was not required to carry out.
- ES.06. Landscape and visual inspection at both Contracts were undertaken on *30th March 2023*. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone and ensure no works is allowed within the TPZ.

ENVIRONMENTAL COMPLAINT

ES.07. No environmental complaint was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

Donouting	Month	Environmental Complaint Statistics			
Reporting Month		Frequency	Cumulative	Complaint Nature	
	Contract 1	0	2	(1) Air Quality (1) Noise	
1 st – 31 st March 2023	Contract 2	0	5	 (1) Water (2) Air Quality (1) Noise (1) soil/ muddy water 	

Table ES-3Environmental Complaint Summaries in the Reporting Month

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-4Environmental Summons Summaries in the Reporting Month

Departing Ma	Environmental Summons Statistics			
Reporting Month		Frequency	Cumulative	Summons Nature
1st 21st Manual 2022	Contract 1	0	0	NA
$1^{st} - 31^{st}$ March 2023	Contract 2	0	0	NA

Reporting Month		Environmental Prosecution Statistics			
		Frequency	Cumulative	Prosecution Nature	
1 st – 31 st March 2023	Contract 1	0	0	NA	
$1^{-1} = 51^{-1}$ March 2025	Contract 2	0	0	NA	

ES.09. In addition, no complaint and emergency event relating to violation of environmental legislation for illegal dumping and landfilling was received.

REPORTING CHANGE

ES.010. No reporting change was made in the Reporting Month.

SITE INSPECTION

ES.011. In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the Resident Engineer, ET and the Contractor of the Contract 1 on 2^{nd} , 9^{th} , 15^{th} , 23^{rd} and 30^{th} March 2023. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out 2^{nd} , 9^{th} , 15^{th} , 23^{rd} and 30^{th} March 2023. IEC attended joint site inspection for both Contracts on 16^{th} March 2023. No non-compliance was noted during the site inspections.



FUTURE KEY ISSUES

- ES.012. In coming wet season, water quality mitigation measures as recommended in the EM&A Manual should be fully implemented, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- ES.013. The Contractors are reminded to pay special attention on the 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.014. 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.



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1. INTRODUCTION

1.1PROJECT 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:

Designated Works under EP-534/2017/A

- (i) Site formation of about 5.5 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 800m) connecting the Crematorium and Man Kam To Road and the pick-up/drop-off point at Man Kam To Road;
- (iii) Widening two sections of the existing Sha Ling Road (about 900m and 500m respectively);
- (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 (the barging point is rejected by Tuen Mun DC and no improvement works required)

Designated Works under FEP-01/534/2017/A

- (i) Site formation works for a formed platform of about 1.8 hectares and associated drainage, sewerage and landscape works for development of Columbarium at the Sandy Ridge Cemetery;
- (ii) Construction of the pick-up/drop-off point at Man Kam To Road;
- (iii) Widening of 900m of the existing Sha Ling Road;
- (iv) Improvement works to the existing barging point at Siu Lam (the barging point is rejected by Tuen Mun DC and no improvement works required)
- 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 **56th** Monthly EM&A Report summarizing the monitoring results and inspection findings for the period from **1**st to **31**st March **2023**.

1.2 REPORT STRUCTURE

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

1110 111011111	
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)

- Installation of Type 2 railing and street lighting
- Paving block installation works
- Planting works

Contract 2 (CV/2017/02)

- Construction of footpath at Lin Ma Hang Road
- Watermain pipe and sewer installation at Man Kam To Road North Slow Lane
- Planting works at Sandy Ridge and Lin Ma Hang Road

2.3SUMMARY 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 2-1Status 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	Account no.: 7029769	Valid
	of Construction Waste		

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

Item	Description	License/ Peri	License/ Permit ref no.		
1	(Construction Dust)	Acknowledged by EPD on		Valid	
	Regulation		Kong Nga Po Road		
		Ref. no. 440405 Acknowledged by EPD on 14/12/2018	Fanling Station Road	Valid	
		Ref. no. 440404 Acknowledged by EPD on 14/12/2018	Sa Ling Road (Sandy Ridge Cemetery)	Valid	



Item	Description	License/ Peri	License/ Permit Status	
		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

2.4SUMMARY 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 2-3Status 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 construction companies; ii) ET; and iii) IEC and the supporting team	Submitted and no approval is required.
2	Condition 2.11 of FEP	i) Detailed phasing programme of all construction works; and ii) Location plan of all construction works	Submitted and no approval is required.
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	Pending approval
5	Condition 2.14 to 2.16 of FEP	Vegetation Survey Report and Vegetation Transplantation Proposal for Contract 1	Approved by EPD on 12 October 2018
6	Condition 2.17 of FEP	Woodland Compensation Plan (Rev.05)	Approved by EPD on 30 Jun 2020
7	Condition 2.18 of FEP	Monitoring and Survey Plan for Golden-headed Cisticola for Contract 1 (Rev.02)	Approved by EPD on 22 Oct 2019
8	Condition 2.20 of FEP	Landscape & Visual Mitigation and Tree Preservation Plan(s) Contract 1 (Rev.04)	Pending approval
9	Condition 2.22 of FEP	Traffic Noise Mitigation Plan Contract 1 (Rev. 4)	Pending approval
10	Condition 3.3 of the FEP	Baseline Monitoring Report (Air, Noise and Water)	Approved by EPD on 25 October 2018
11	Condition 4.2 of the FEP	The Contract Internet website	Internet website address has



Item	EP and / or FEP Stipulation	Description	Status
			notified EPD on 15 Jun 2018 and no approval is required.

Table 2-4Status of Submission as under EP

Item	EP and / or FEP Stipulation	Description	Status
1	Condition 2.10 of EP	Management organization of : i) the	Submitted and no approval is
		main construction companies; ii) ET;	required.
		and iii) IEC and the supporting team	
2	Condition 2.11 of EP	i) Detailed phasing programme of all	Submitted and no approval is
		construction works; and ii) Location	required.
		plan of all construction works	
3	Condition 2.12 of EP	Layout Plan for the proposed footpath	
		at Lin Ma Hang Road	2022
4	Condition 2.13 of EP	Contamination Assessment Plan	Approved by EPD on 27 May
		(CAP)	2019
5	Condition 2.14 of EP	Grassland Reinstatement Plan	Pending approval
6	Condition 2.15 to 2.17 of	Vegetation Survey Report and	Approved by EPD on 15 June
	EP	Vegetation Transplantation Proposal	2022
		under Contract 2	
7	Condition 2.18 of EP	Woodland Compensation Plan	Approved by EPD on 30 Jun
		(Rev.05)	2020
8	Condition 2.19 of EP	Monitoring and Survey Plan for	Approved by EPD on 9 Nov
		Golden-headed Cisticola Contract 2	2022
9		Landscape & Visual Mitigation and	Pending approval
	EP	Tree Preservation Plan(s) Contract 2	~
10	Condition 2.23 of EP	Traffic Noise Mitigation Plan	Pending approval
		Contract 2	
11	Condition 3.3 of the EP	Baseline Monitoring Report (Air,	Approved by EPD on 25
		Noise and Water)	October 2018
12	Condition 4.2 of the EP	The Contract Internet website	Internet website address has
			notified EPD on 15 June 2018
			and no approval is required.



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.

3.2MONITORING 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 3-1Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP;
	• 24-hour TSP
Noise	• Leq _(30min) during normal working hours.; and
110150	• Leq _(15min) during the construction works undertaken in Restricted Hours
	In-situ Measurements
	 Dissolved Oxygen Concentration (mg/L) & Saturation (%);
	• Temperature (°C);
	• Turbidity (NTU);
Water Ouality	• Salinity (ppm)
water Quality	• 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)

3.3MONITORING 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*.



Location ID	Description in EM&A Manual	Location	Related Work Contract
ASR-1	Village House along Man Kam To Road	Sha Ling Village House No.6	Contract 1
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

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

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

			5
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 3-4Designated Water Quality Monitoring Stations under the Project

Proposed	Co-ore	linates	Description	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 TSP3 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 3-5Air 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	Laser Dust Monitor, Model AM510

 $Z: Jobs \ 2018 \ TCS \ 0081 \ (CV-2016-10) \ (600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2023) \ (600 \ EM\&A \ Report \ 2018) \ (700 \ Report \ 2023) \ (700 \ Report \ 2018) \ (700 \ 20$



Equipment	Model
	/ Sibata LD-3 Laser Dust monitor Particle Mass Profiler & 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*.

Equipment	Model
Integrating Sound Level Meter	Rion NL-52 Sound Level Meter /Rion NL-31 Sound
Integrating Sound Dever Weter	Level Meter
Calibrator	Rion NC-73 Acoustical Calibrator
Portable Wind Speed Indicator	Testo Anemometer

Table 3-6Noise Monitoring Equipment

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.

<u>pH Measurement</u>

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.



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
Thermometer & DO meter	YSI Professional DSS
pH meter	YSI Professional DSS
Turbidimeter	YSI Professional DSS
Salinometer	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

Table 3-7Water Quality Monitoring Equipment

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

3.6EQUIPMENT 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.

3.8DETERMINATION 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 3-8Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action I	Level (µg /m ³)	Limit Level (µg/m ³)		
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP	



Monitoring Station	Action 1	Level (µg /m ³)	Limit Level (µg/m ³)		
Monitoring 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 3-9Action and Limit Levels for Construction Noise

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

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

	Performance				
Parameter	criteria	M1	M2	M3	M4
$\mathbf{DO}(\mathbf{m}\mathbf{a}/\mathbf{I})$	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(ma/I)	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 18 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*.

Tuble 11 Summary of the Quality fromtoring Results at the AT and Construct 1							
	24-hour	1-hour TSP (μg/m³)					
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
3 Mar 23	77	1-Mar-23	13:00	81	76	72	
9 Mar 23	65	7-Mar-23	13:25	95	93	88	
15 Mar 23	45	13-Mar-23	9:25	73	88	87	
21 Mar 23	48	18-Mar-23	9:25	90	89	93	
27 Mar 23	35	24-Mar-23	9:45	67	72	78	
		30-Mar-23	13:30	81	72	87	
Average	54	Average 82					
(Range)	(35 – 77)	(Range	(Range)		(67 – 95)		

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

	24-hour	1-hour TSP (µg/m³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
3 Mar 23	125	1-Mar-23	13:04	79	72	80
9 Mar 23	113	7-Mar-23	14:05	95	93	90
15 Mar 23	150	13-Mar-23	11:50	90	87	84
21 Mar 23	53	18-Mar-23	14:00	88	90	89
27 Mar 23	42	24-Mar-23	10:25	75	79	82
		30-Mar-23	13:35	79	81	75
Average (Range)	97 (42 - 150)	Average 84 (Range) (72 - 95)				

Table 4-3	Summary of Air Quality Monitoring Results at ASR-3a under Contract 2
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	24-hour	1-hour TSP (µg/m ³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
3 Mar 23	33	1-Mar-23	13:10	72	69	77
9 Mar 23	43	7-Mar-23	14:42	84	89	80
15 Mar 23	54	13-Mar-23	11:52	67	61	59
21 Mar 23	47	18-Mar-23	13:28	87	90	92
27 Mar 23	32	24-Mar-23	11:08	68	65	70
		30-Mar-23	13:41	71	77	65
Average	42	Average 75				
(Range)	(32 - 54)	(Range) (59 – 92)				

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, **5** 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*.

Tuble 2 Summing of Construction Project Promoting Results under Construct P								
	Construction Noise Level (L _{eq30min}), dB(A)							
Date	Start TimeCN1(*)Start TimeCN2(*)							
1 Mar 23	13:08	69	13:42	66				
7 Mar 23	9:28	65	10:18	66				
13 Mar 23	9:30	65	10:36	59				
24 Mar 23	9:26	67	10:20	65				
30 Mar 23	13:30	68	14:05	60				
Limit Level	75 dB(A)							

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

(*) 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 (Leq30min), dB(A)											
Date	Start Time	CN3 ^(*)	Start Time	CN4								
1 Mar 23	14:15	59	14:53	63								
7 Mar 23	11:32	62	14:00	64								
13 Mar 23	14:23	64	13:30	62								
24 Mar 23	10:54	59	11:31	61								
30 Mar 23	14:38	59	15:12	62								
Limit Level		75	5 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 ± 0.5 dB. 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.

5.2NOISE MONITORING EXCEEDANCE

5.2.1 As shown in *Tables 5-1 and 5-2*, no noise complaint (which triggered Action Level) and Limit Level exceedance for noise monitoring exceedance was recorded in the Reporting Month.



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 13 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*.

		Parameters	
Date	DO (Averaged) (mg/L)	Turbidity (Averaged) (NTU)	Suspended Solids (Averaged) (mg/L)
1 Mar 23	8.81	0.6	<2
3 Mar 23	8.98	0.1	<2
6 Mar 23	8.79	0.5	<2
8 Mar 23	8.74	0.4	8.5
10 Mar 23	8.46	0.5	8.0
14 Mar 23	8.67	5.1	8.5
16 Mar 23	8.48	2.9	4.5
18 Mar 23	8.27	1.7	7.5
21 Mar 23	7.84	0.6	2.5
23 Mar 23	7.82	1.0	2.5
25 Mar 23	7.90	1.2	2.5
28 Mar 23	8.42	3.6	3.0
30 Mar 23	8.29	3.8	3.5

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

		Parameters											
Date		(Average (mg/L)	d)		ity (Ave (NTU)	raged)	Suspended Solids (Averaged) (mg/L)						
	M1	M2	M4	M1	M2	M4	M1	M2	M4				
1 Mar 23	8.69	8.84	6.50	1.3	0.6	3.8	7.5	<2	4.0				
3 Mar 23	8.65	8.91	8.65	2.0	2.4	0.4	5.5	3.5	<2				
6 Mar 23	8.15	8.92	8.25	0.8	1.1	0.8	2.5	2.0	<2				
8 Mar 23	8.54	8.71	8.43	0.9	1.9	0.1	6.5	4.0	2.0				
10 Mar 23	7.82	8.69	8.14	1.2	7.6	0.7	2.5	5.5	2.0				
14 Mar 23	7.88	8.43	8.15	6.3	4.2	0.6	3.0	8.5	4.0				
16 Mar 23	8.02	8.45	8.02	2.1	2.5	0.6	6.5	5.0	4.5				
18 Mar 23	7.85	8.05	7.92	0.8	2.8	2.0	5.0	8.5	2.5				
21 Mar 23	7.79	7.65	6.93	4.1	0.4	5.3	5.0	3.5	2.5				
23 Mar 23	7.14	7.78	7.28	1.6	0.4	3.1	6.0	2.0	3.0				
25 Mar 23	7.42	7.72	7.53	2.9	2.2	1.9	7.5	4.5	4.5				
28 Mar 23	8.10	8.37	8.10	2.1	3.2	4.5	5.5	2.0	4.5				
30 Mar 23	7.88	8.17	7.74	2.1	4.8	2.1	6.5	2.5	3.0				

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*.



	Parameters of field measurements										
Monitoring Location	pH (Ave (un		Salinity (A) (ppt	-	Temp (Av (°C	-	Water Flow (Averaged) (m/s)				
	min	max	min	max	min	max	min	max			
M1	7.1	8.0	0.03	0.06	17.2	23.1	< 0.1	< 0.1			
M2	7.2	7.9	0.05	0.11	18.9	23.3	< 0.1	< 0.1			
M3	7.1	8.1	0.01	0.1	18.6	23.3	< 0.1	< 0.1			
M4	7.0	8.1	0.03	0.09	18.1	23.3	< 0.1	< 0.1			

 Table 6-3
 Summary of Field Measurements for Water Quality

6.2 WATER QUALITY MONITORING EXCEEDANCE

6.2.1 In this Reporting Month, no water quality exceedances were recorded. The summary of non-compliance of water quality performance is shown in *Table 6-4*.

Station	DO		Turb	idity	S	SS	To Excee	tal dance	Project excee	Related dance
	Action	Limit	t Action Limit Action		Limit	Action	Limit	Action	Limit	
M1	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0

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

6.2.1 Notification of Exceedance 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	Exceeded	Exceeded	Cause of Water Quality Exceedance
Exceedance	Location	Parameter	



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 AC	tion and Emitt Levels for the	et woodand Habitats wontoning						
Action Level	Response	Limit Level	Response					
	6	taxa diversity by	Investigate cause and if cause identified as related to the project instigate remedial action.					

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

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
	0	species diversity	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 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 7-3Schedule of Faunal Surveys in each year During Construction Phase

	· · · · · · · · · · · · · · · · · · ·					-] • • • •		001100				
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals												
Birds (day)								\checkmark				\checkmark



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Birds (night)								\checkmark				
Herpetofauna								\checkmark				
Dragonflies												
Butterflies								\checkmark				
Aquatic fauna								\checkmark				\checkmark

<u>Mammal Survey</u>

7.2.4 Mammal surveys will be conducted along the proposed transects (shown in *Appendix K* - Ecological Survey Reports) in 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.

<u>Bird Survey</u>

7.2.5 Bird surveys will be conducted along the transects (shown in *Appendix K* - Ecological Survey Reports) 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 K* - Ecological Survey Reports) 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 K* - Ecological Survey Reports) 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 23rd March 2023, a sunny day. The day survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed points. All species seen would 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 species recorded in the monitoring area.

Birds

7.3.3 There were a total of 21 bird individuals from 9 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey.

<u>Herpetofauna</u>

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

<u>Butterfly</u>



7.3.5 There were a total of 8 butterfly individuals from 4 species recorded in the monitoring area.

<u>Dragonfly</u>

7.3.6 There was no odonate 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* and 7-5.

Table 7-4Result of Faunal Survey under Contract 1

Scientific Name	Common /	Chinese Name	Conservation	Non-w	vetland			
Scientific Name	Engineer Name	Chinese Name	Status	UG	WL	MA	WW	WC
Mammal Survey								
Avifauna Survey				-	1			
Spilopelia chinensis	Spotted Dove	珠頸斑鳩					2	
Cacomantis merulinus	Plaintive Cuckoo	八聲杜鵑					1	
Lanius schach	Long-tailed Shrike	棕背伯勞					1	
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯					5	
Phylloscopus fuscatus	Dusky Warbler	褐柳鶯					1	
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		2				
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯					3	
Orthotomus	Common	長尾縫葉鶯		2				
sutorius	Tailorbird			2				
Garrulax	Masked	黑臉噪鶥					4	
perspicillatus	Laughingthrush							
Reptile Survey				1	1			ļ.
<i>N/A</i>								
Amphibian Survey								
N/A								
Butterfly Survey	C D I							
Matapa aria	Common Redeye	瑪弄蝶		1				
Mycalesis zonata	South China Bush Brown	平頂眉眼蝶		2				
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶		1			2	
Abisara echerius	Plum Judy	蛇目褐蜆蝶		2				
Odonate Survey						l 	·	
N/A								

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

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

Scientific Name	Common	Chinese Name	Conservatio	Non-w	etland	V	Vetlaı	nd
Scientific Ivallie	Name	ne Chinese Name	n Status	UG	WL	MA	WW	WC
N/A								

Discussion



7.3.9 After analysing survey results in March from 2019 to 2023, there was no significant drop in species richness and abundance for wetland habitat. Yet, good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.

7.4 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 2)

7.4.1 In the Reporting Month, ecological monitoring was undertaken at work area of Contract 2 on 23rd *March 2023*, 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 would be identified and counted as accurately as possible. Results of the monitoring survey are presented below:

Monitoring Result for Contract 2

<u>Mammal</u>

7.4.2 There was no mammal recorded in the monitoring area

<u>Birds</u>

7.4.3 There were a total of 10 bird individuals from 5 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey.

<u>Herpetofauna</u>

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

Butterfly

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

<u>Dragonfly</u>

7.4.6 There was no odonate individual recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

7.4.7 There were 2 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 7-6Result of Faunal Survey under Contract 2

Scientific Name	Common / Engineer Name	Chinese	Conservation	- • •	on- land	W	Vetlar	nd
	Name	Name	Status	UG	WL	MA	WW	WC
Mammal Survey								
Avifauna Survey								
Amaurornis phoenicurus	White-breasted Waterhen	白胸苦惡鳥				1		
Eudynamys scolopaceus	Asian Koel	噪鵑		1				
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		2			2	
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯		2				
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2				
Reptile Survey								



Scientific Name	Common / Engineer Name	Chinese	Conservation	- • •	on- land	W	Vetlar	nd
	Name	Name	Status	UG	WL	MA	WW	WC
Amphibian Survey								
Butterfly Survey								
Papilio polytes	Common Mormon	玉帶鳳蝶		2				
Pieris canidia	Indian Cabbage White	東方菜粉蝶		1				
Odonate Survey						÷		

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		W	etlan	d
			Status	UG	WL	MA	ww	WC
Gambusia affinis	Mosquito fish	食蚊魚						+
Puntius	Chinese Barb	五線無鬚鰓						+
semifasciolatus								

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

+: Species appeared but uncountable.

Discussion

- 7.4.9 After analysing survey results in March 2019 to 2023, there was a decrease in species richness and abundance for wetland and non-wetland habitats. Still, a good site practice during construction, with reference to EM&A Manual, is still required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.
- 7.4.10 The detailed Ecological Survey Reports for Contract 1 and Contract 2 are attached in Appendix K.
- 7.4.11 The tentative ecology inspection and monitoring in the next Reporting Month (April 2023) is scheduled on *13th April 2023*.

7.5 MONITORING OF FLORA SPECIES OF CONSERVATION INTEREST UNDER CONTRACT 1

- 7.5.1 According to the approved vegetation survey report and transplantation proposal under FEP-01/534/2017/A, an individual of flora species of conservation interest (the transplanted T-2928) was identified and transplanted to the receptor site.
- 7.5.2 According to approved vegetation survey report and transplantation proposal, post-transplantation monitoring was conducted once per week in the first three months after the transplantation in Oct 2018 and once in each of the following month in the remaining establishment period for 12 month. During the remaining construction phase of the project, the transplanted T-2928 would be monitored on quarterly basis.
- 7.5.3 A landscape sub-contractor was employed by the Contractor to monitor the health condition of transplanted species and provide advice on necessary weeding, fertilizing and pest control. The monitoring records were submitted to ET and IEC for review and record. Moreover, inspection of the transplanted T-2928 was undertaken by ET as part of the weekly site inspection. No construction activity and disturbance were observed at the location of the transplanted T-2928. The health condition of the transplanted T-2928 was fair with normal foliage color and density.



7.6 MEASURE FOR PROTECTION OF NESTING BIRD

- 7.6.1 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.
- 7.6.2 In the Reporting Period, there was no vegetation clearance for both Contract 1 and Contract 2, and precautionary check for the presence of nesting birds was not required to carry out.



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 for works area of Contract 1 and Contract 2 on 30th March 2023. The findings / reminders recorded during the inspection are presented in *Tables 8-1 and 8-2*.

Date	Findings and Reminder	Follow-Up Status
30 th March 2023	1. The Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement.	Reminded only
	2. The Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.	Reminder only
	3. Transplanted tree T2465 and T2928 were in fair health condition with normal foliage color and density. Contractor is reminded to provide proper maintenance according to the method statement.	Reminder only

Table 8-1	Landscape	&	Visual In	spection	Finding for	Contract 1
	Lanuscape	u.	v iouai ill	spectron	I mume ivi	Contract

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

Date	Findings and Reminder	Follow-Up
		Status
30 th March 2023	1. Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement. Contractor should prevent any construction material pile within TPZ and ensure no works is allowed within the TPZ.	Reminder only

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.

	Cont	ract 1	Contract 2		
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location	
Total generated C&D Materials (Inert) ('000m ³)	0.300		0		
Reused in this Contract (Inert) ('000m ³)	0		0		
Reused in other Projects (Inert) ('000m ³)	0		0		
Disposal as Public Fill (Inert) ('000m ³)	0.300	Tuen Mun Area 38	0		

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

Remark: the unit is '000kg

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

	Con	tract 1	Contract 2		
Type of Waste	Quantity	Quantity Disposal Location		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 ('000m ³)	0.015	NENT Landfill	4.640 (#)	NENT Landfill	

Remark: (#) the unit is in '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} , 15^{th} , 23^{rd} and 30^{th} March 2023 and IEC attended joint site inspection on 16^{th} March 2023. No non-compliance was noted in the Reporting Month. The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-1*.

Date	Findings / Deficiencies	Follow-Up Status
2 nd March 2023	• The Contractor was reminded to spray water regularly	Reminder
	at exposed work area.	only.
9 th March 2023	• No adverse environmental issue was observed.	N/A
15 th March 2023	• No adverse environmental issue was observed.	N/A
23 rd March 2023	• No adverse environmental issue was observed.	N/A
30 th March 2023	• No adverse environmental issue was observed.	N/A

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

Contract 2

10.2.2 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 2nd, 9th, 15th, 23rd and 30th March 2023 and IEC attended joint site inspection on 16th March 2023. No non-compliance was noted in the Reporting Month. The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-2*.

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

Date	Findings / Deficiencies	Follow-Up Status
2 nd March 2023	• No adverse environmental issue was observed.	N/A
9 th March 2023	• No adverse environmental issue was observed.	N/A
15 th March 2023	• No adverse environmental issue was observed.	N/A
23 rd March 2023	• No adverse environmental issue was observed.	N/A
30 th March 2023	• No adverse environmental issue was observed.	N/A



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*. The complaint log for the Project is shown in *Appendix N*.

	Table 11-1	Statistical Summary	of Environmental	Complaints
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Donouting Mon	41.	Environmental Complaint Statistics		
Reporting Month		Frequency	Cumulative	Complaint Nature
1 st – 31 st March 2023	Contract 1	0	2	(1) Air Quality (1) Noise
1 st – 31 st March 2023	Contract 2	0	5	(1) Water (2) Air Quality (1) Noise (1) Soil / muddy water

Table 11-2 Statistical Summary of Environmental Summons

Reporting Month		Environmental Summons Statistics			
		Frequency	Cumulative	Complaint Nature	
1 st - 31 st March 2023	Contract 1	0	0	NA	
1 st – 31 st March 2023	Contract 2	0	0	NA	

Table 11-3 Statistical Summary of Environmental Prosecution

Reporting Month		Environmental Prosecution Statistics			
		Frequency	Cumulative	Complaint Nature	
1 st - 31 st March 2023	Contract 1	0	0	NA	
1 st – 31 st March 2023	Contract 2	0	0	NA	

11.1.2 In addition, no complaints received and emergency event 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.
- 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*. The status of the Environmental mitigation measures are presented in *Appendix O*.

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 every hour 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. Shut down the plants when not in used.
Waste and	 Provided on-site sorting prior to disposal.
Chemical	Followed requirements and procedures of the "Trip-ticket System"
Management	 Predicted required quantity of concrete accurately. Collected the unused fresh concrete at designated locations in the sites for subsequent disposal.
Ecology	 Implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and impact to any aquatic fauna during the construction phase. Demarcation fencing has been erected to prevent unauthorised encroachment into the riparian corridor by constructions works and traffic. The construction work and site formation have been phased in order to reduce overall noise disturbance impacts in particular areas. Works have been restricted to daytime and any construction lighting was designed and positioned as to not impact on adjacent ecologically sensitive areas.
General	The site was generally kept tidy and clean.Environmental Permit was displayed at site entrance.

 Table 12-1
 Environmental Mitigation Measures



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:
 - Planting works
 - Traffic Sign Installation works
 - Installation Type 2 Railing
 - Paint Road Marking
- 12.2.2 According to the information provided by Sang Hing, the forthcoming construction activities for Contract 2 are listed below:
 - Construction of footpath at Lin Ma Hang Road
 - Watermain pipe and sewer installation work at Man Kam To Road
 - Planting works at Sandy Ridge and Lin Ma Hang Road

12.3 KEY ISSUES FOR THE COMING MONTH

12.3.1 The construction activities are illustrated in *Appendix P*. Key issues to be considered in the coming month for the works of Contract 1 and 2 shown in *Table 12-2* and *Table 12-3*.

Table 12-2	Work Undertaken and Illustrations of Mitigation Measures for Contract 1
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Description of Construction Activities	Used on PME	Environmental Mitigation Measures
Paving block	• Crane lorry	• Provided efficient silt removal facilities to reduce SS level
installation works	 Compaction roller 	before effluent discharge.Exposed slopes surface were compacted and covered with
		tarpaulin or similar means.
		• Maintain damp / wet surface on access road.
Planting works	• Crane Lorry	 Maintain low vehicular speed within the works areas. Provided vehicle wheel washing facilities at each construction site exit;
		• Stockpiles of dusty material were covered with impervious sheeting.
		• Provided workers to clear dusty materials at the vehicle
Installation of Type 2 Railing	• Crane lorry	 entrance or exit regularly. 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. Provided noise barriers or hoarding to enclose the noisy plants.
		plants or works.Shut down the plants when not in used.
		 Provided on-site sorting prior to disposal.
		• Followed requirements and procedures of the "Trip-ticket System"
		• Works have been restricted to daytime and any construction lighting was designed and positioned as to not impact on adjacent ecologically sensitive areas.
		• The site was generally kept tidy and clean.

Table 12-3	Work Undertaken and Illustrations of Mitigation Measures for Contract 2
-------------------	---

Construction Activities	Used on PME	Environmental Mitigation Measures
	*	• Provided efficient silt removal facilities to reduce SS level
footpath at Lin Ma		before effluent discharge.
Hang Road		• Exposed slopes surface were compacted and covered with



 Watermain pipe and sewer installation works at Man Kam To Road Planting works at Sandy Ridge and Lin Ma Hang Road Excavator Roller Dump truck Excavator Roller Dump truck And Hang Road Excavator Restricted operation time of plants from 07:00 any working day except for Public Holiday and S Keep good maintenance of plants. Placed noisy plants away from residence and sch Provided noise barriers or hoarding to enclos 	ities at each vorks area, in vith impervious
 Flovided horse barriers of hoarding to enclose plants or works. Shut down the plants when not in used. Provided on-site sorting prior to disposal. Followed requirements and procedures of the System" Predicted required quantity of concrete accuratel Collected the unused fresh concrete at designate in the sites for subsequent disposal. Demarcation fencing has been erected unauthorised encroachment into the riparian constructions works and traffic. Works have been restricted to daytime and any of lighting was designed and positioned as to not adjacent ecologically sensitive areas. The site was generally kept tidy and clean. 	nd Sunday. school. lose the noisy he "Trip-ticket ately. nated locations d to prevent an corridor by ny construction

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.



13. CONCLUSIONS AND RECOMMENTATIONS

13.1 CONCLUSIONS

- 13.1.1 This is the 56th Monthly EM&A Report presenting the monitoring results and inspection findings for the period of 1st to 31st March 2023.
- 13.1.2 In the Reporting Month, 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 In the Reporting Month, no noise complaint (which triggered Action Level) was received and no Limit Level exceedance for noise monitoring exceedance was recorded.
- 13.1.4 In the Reporting Month, no water quality monitoring exceedance was recorded.
- 13.1.5 Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 23rd March 2023. After analysing survey results in March from 2019 to 2023, there was no significant drop in species richness and abundance for wetland and non-wetland habitat for area of Contract 1, but a decrease in species richness and abundance for wetland and non-wetland habitat for area of Contract 2. Yet, good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.
- 13.1.6 In the Reporting Period, there was no vegetation clearance for both Contract 1 and Contract 2, and precautionary check for the presence of nesting birds was not required to carry out.
- 13.1.7 Landscape and visual inspection at both Contracts were undertaken on *30th* March *2023*. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone and ensure no works is allowed within the TPZ.
- 13.1.8 In the Reporting Month, no environmental complaints, summons and prosecution were received. In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.
- 13.1.9 In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the Resident Engineer, ET and the Contractor of the Contract 1 on 2nd, 9th, 15th, 23rd and 30th March 2023. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 2nd, 9th, 15th, 23rd and 30th March 2023. IEC attended the both Contract joint site inspection on 16th March 2023. No non-compliance was noted during the site inspections.

13.2 Recommendations

- 13.2.1 In coming wet season, water quality mitigation measures as recommended in the EM&A Manual should be fully implemented, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- 13.2.2 The Contractors are reminded to pay special attention on the 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.



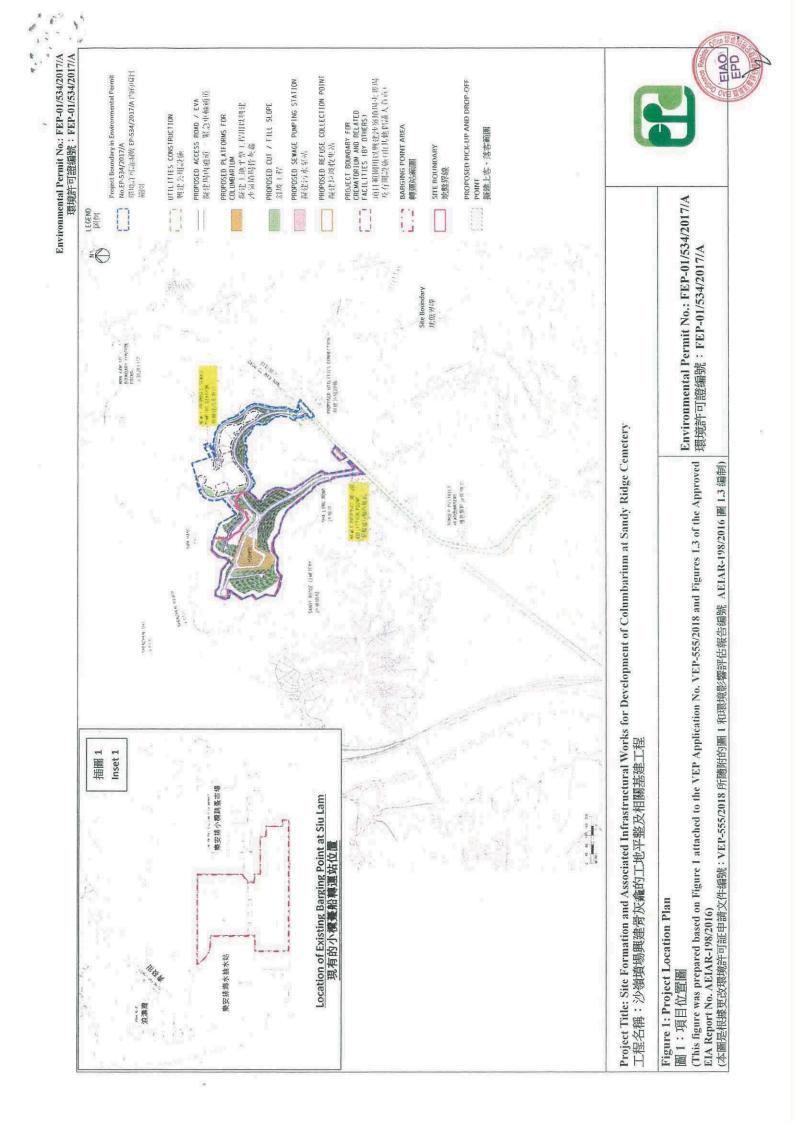
Appendix A

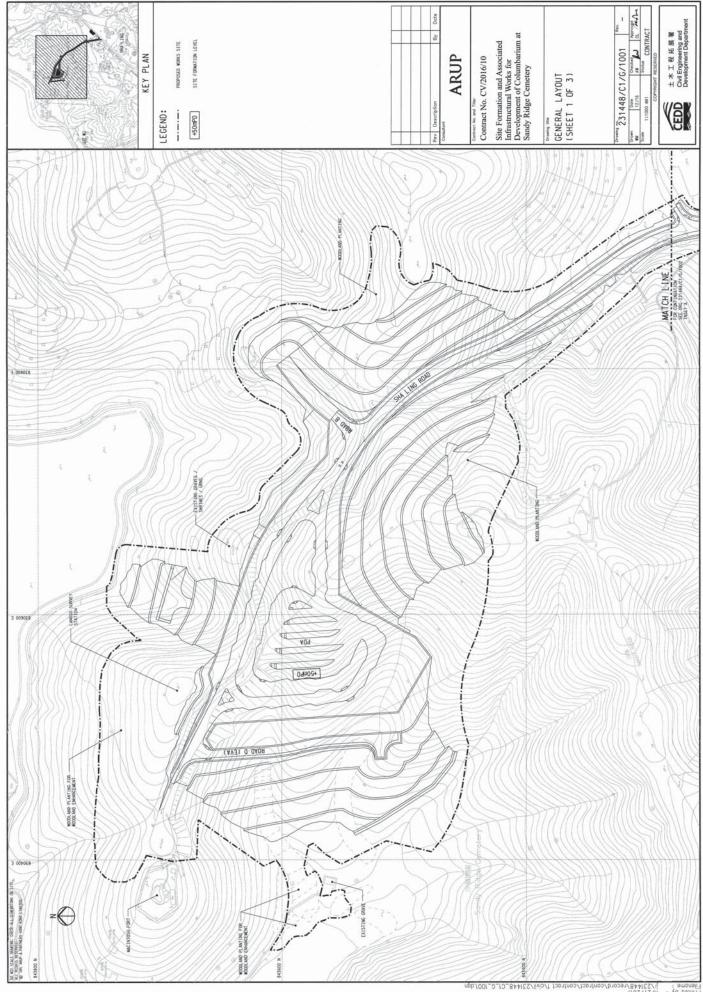
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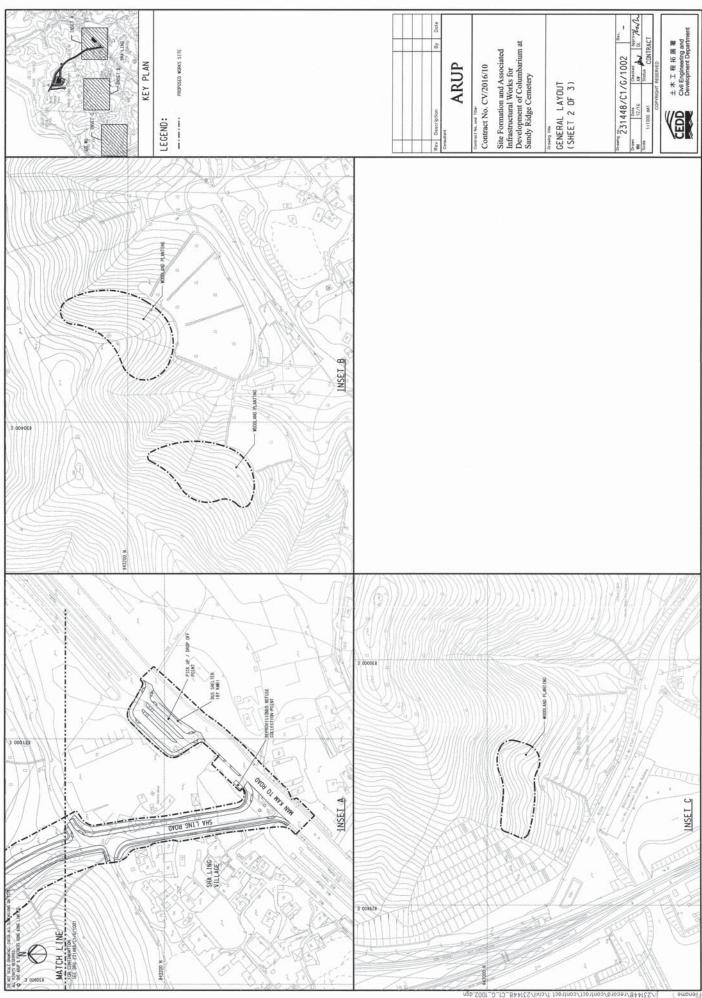


Layout Plan of Contract CV/2016/10

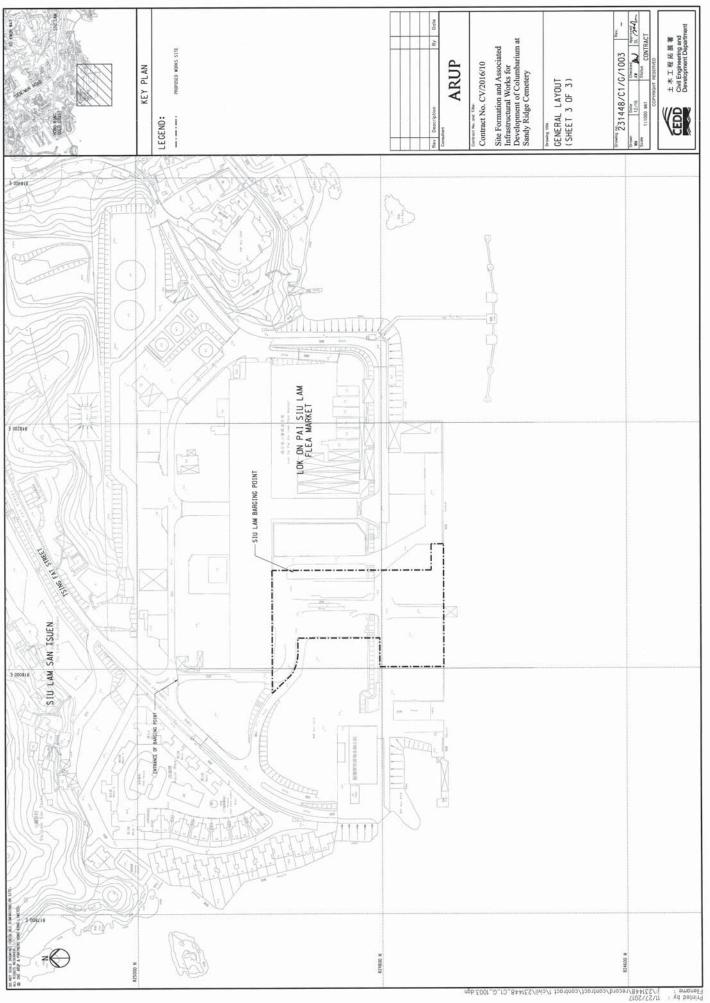




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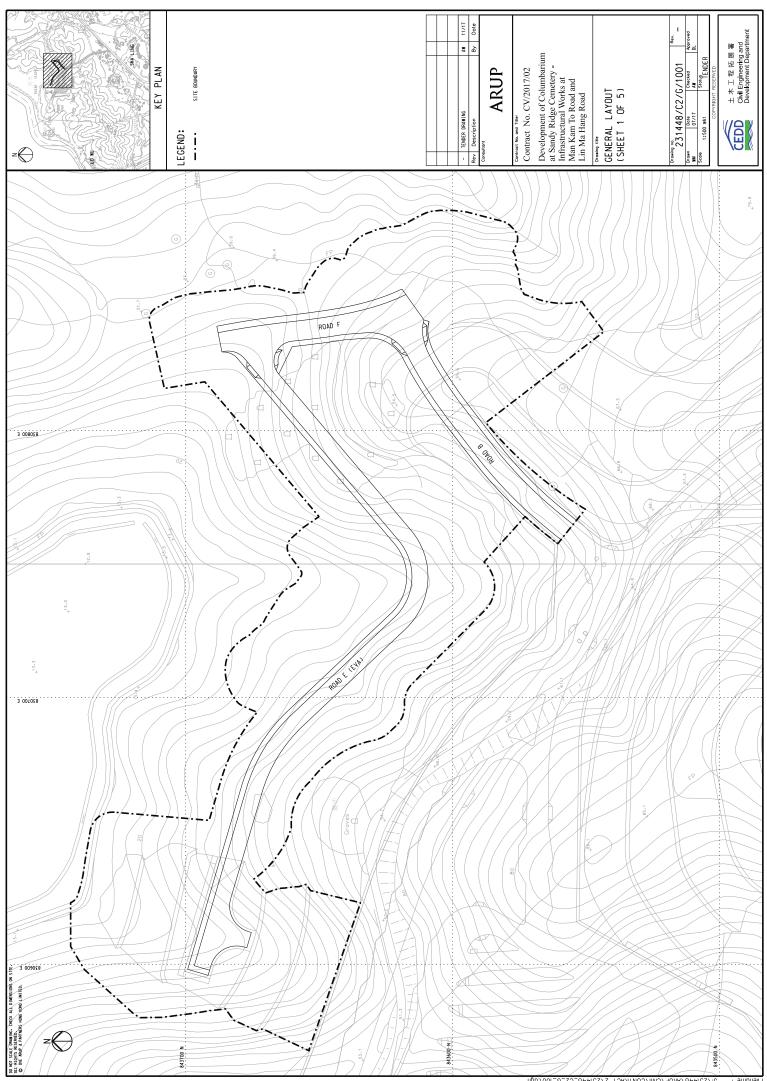
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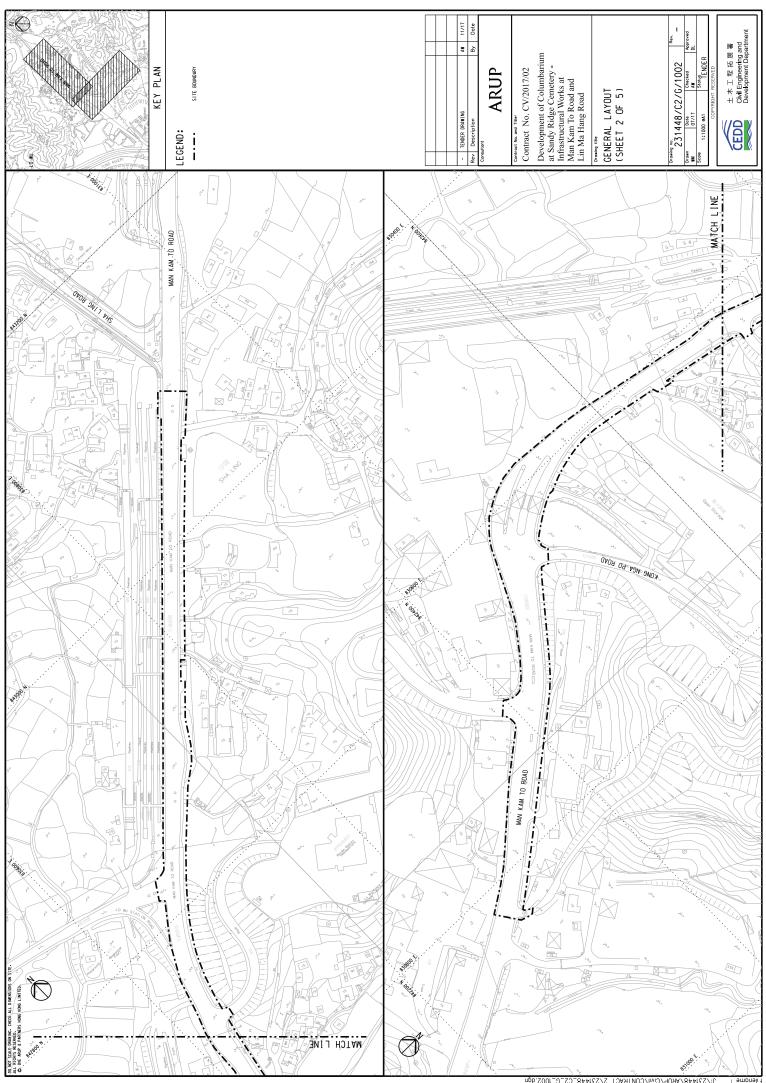


Layout Plan of Contract CV/2017/02

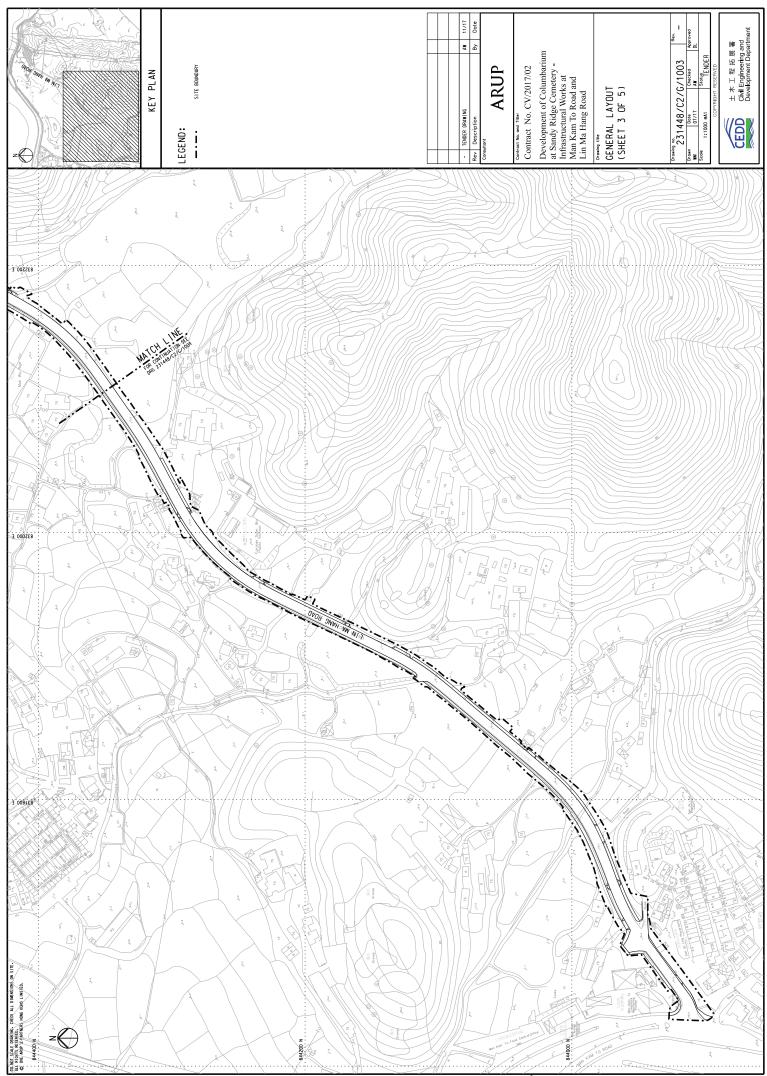
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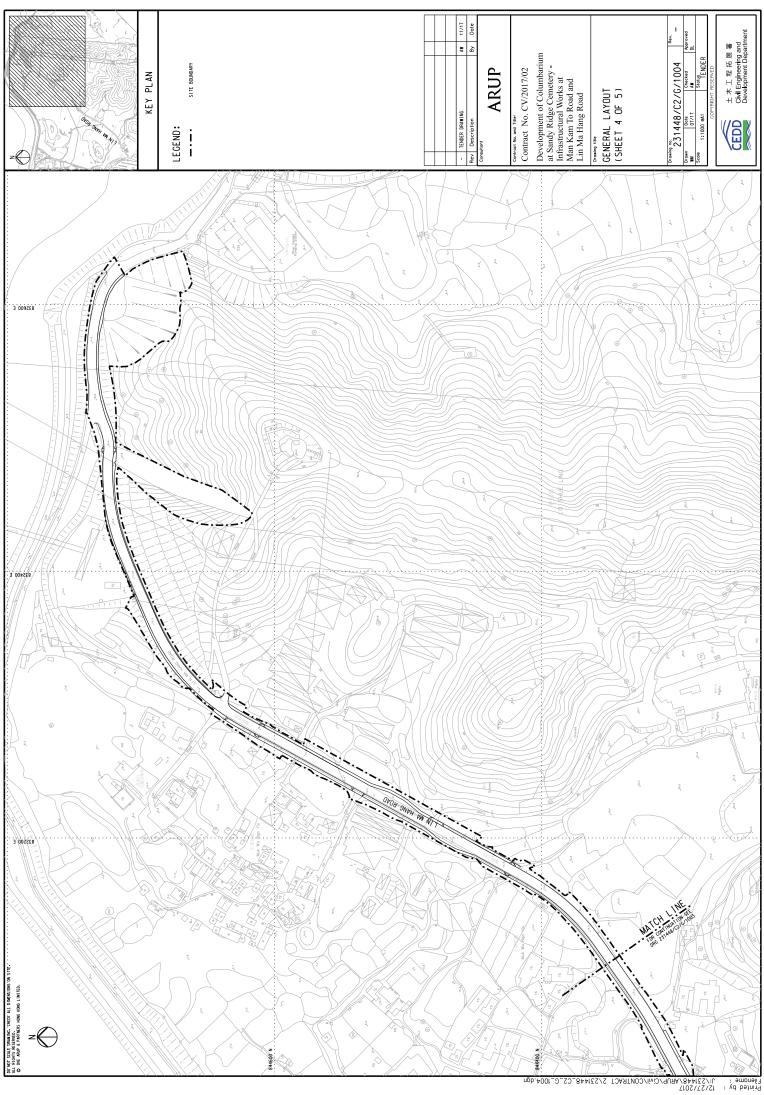
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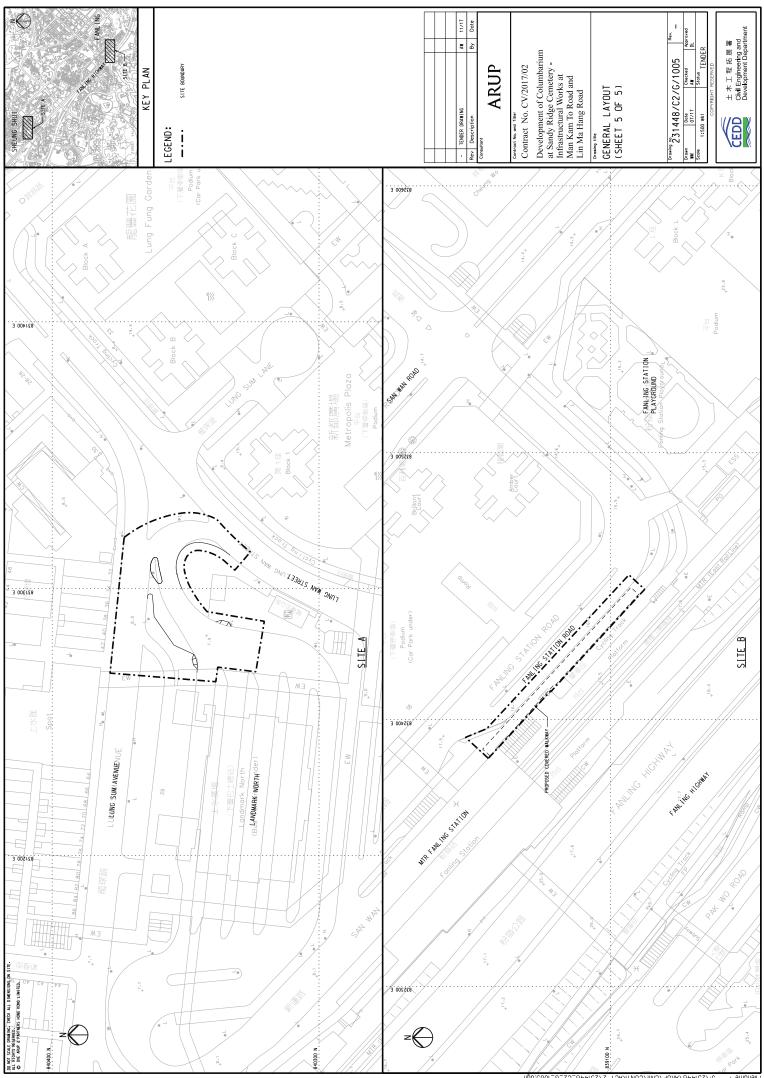


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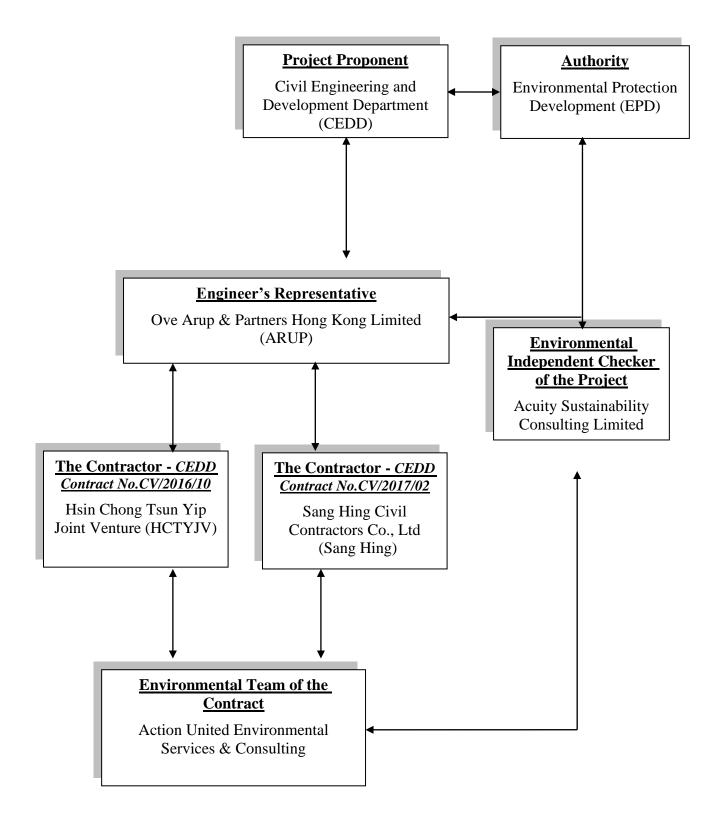


Appendix B

Organization Structure and Contact Details of Relevant Parties



The Contract's Environmental Management Organization





Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	BOK Kwok-ming, Aaron	2762-5624	2714-0695
ARUP	Engineer's Representative	Steve Tang	6190-1513	2268-3950
ACUITY	Independent Environmental Checker	Mr. Leung CH Jacky	2698-6833	2698-9383
HCTYJV	Project Director	Mr. Keniel Kwong	9495-2408	2633-4691
HCTYJV	Construction Manager	Mr. Ho Man To	9620-9794	2633-4691
HCTYJV	Environmental Officer	To be	e advised	
HCTYJV	Environmental supervisor	Mr. Leung Pak Sum	9437-3606	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
AUES	Qualified Ecologist	Mr. Leung Wing Keung, Mike	2959-6059	2959-6079
AUES	Qualified Ecologist	Mr. Keith L.W. Kei	2959-6059	2959-6079
AUES	Registered Landscape Architect	Mr. Shui Yau Bun, Ivan	2959-6059	2959-6079

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

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



Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	BOK Kwok-ming, Aaron	2762-5624	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	Keibi Chan	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
AUES	Qualified Ecologist	Mr. Leung Wing Keung, Mike	2959-6059	2959-6079
AUES	Qualified Ecologist	Mr. Keith L.W. Kei	2959-6059	2959-6079
AUES	Qualified Ecologist	Mr. N.L Lam, Alan	2959-6059	2959-6079
AUES	Registered Landscape Architect	Mr. Shui Yau Bun, Ivan	2959-6059	2959-6079

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

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

Z:\Jobs\2018\TCS00881(CV-2016-10)\600\EM&A Report Submission\Monthly Report\2023\56th Month (March 2023)\R0729v2.doc

3 Month Rolling Programme (Mar 2023 to May 2023)

1	Task Name	Duration	Start
	Key Dates	1071 days	Fri 15/12/17
	Contract Starting Date Contract Completion Date for Section 1	0 days 1 day	Fri 15/12/17 Sat 29/8/20
		Tuay	3al 29/0/20
С	ontract Completion Date for Section 2	1 day	Fri 30/7/21
	Contract Completion Date for Section 3	1 day	Thu 21/11/19
1	Scheduled Completion Date	644 days	Tue 10/12/19
İ	Section 1	0 days	Sat 2/10/21
	Section 2	0 days	Mon 14/2/22
t	Section 3	0 days	Tue 10/12/19
	Preliminary Works	144 days	Tue 20/2/18
	Submission and Approval Required at Environmental Permit for Commencement of Construction	128 days	Tue 20/3/18
1	Other Submission (Initial Survey /Tree Survey/ Condition Survey)	106 days	Tue 20/2/18
	Section 1 of the Works (Parts A1, A2 & A3)	1041 days	Thu 29/3/18
	Ground Investigation and Geotechnical instrumentation for Commencement of Slopework	112 days	Thu 29/3/18
	Verification Drillholes (8 Nos., VDH1, 2, 7-9,8-16) / Inspection Pits and Preliminary Results Submission	114 days	Thu 29/3/18
		TH days	1110 23/3/10
1	Design Review	36 days	Thu 5/7/18
t	Retaining Wall RW1	280 days	Thu 16/8/18
+	General Excavation to Formation Level	37 days	Thu 16/8/18
	Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4	3 days	Fri 28/9/18
	Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8	3 days	Tue 2/10/18
ł	Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13	15 days	Wed 10/10/18
	Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17	7 days	Sat 6/10/18
1	Base slab of Retaining Wall RW1 Bay 1-4	8 days	Tue 2/10/18
	Base slab of Retaining Wall RW1 Bay 5-8	13 days	Mon 8/10/18
	Base slab of Retaining Wall RW1 Bay 9-13	17 days	Mon 22/10/18
	Base slab of Retaining Wall RW1 Bay 34-17	17 days	Mon 22/10/18
	Wall Stem of Retaining Wall RW1 Bay1-4	36 days	Thu 25/10/18
+	Wall Stem of Retaining Wall RW1 Bay 5-8	26 days	Tue 11/12/18
	Wall Stem of Retaining Wall RW1 Bay 10-13	30 days	Wed 14/11/18
	Wall Stem of Retaining Wall RW1 Bay 14-17	23 days	Mon 26/11/18
	Protective Coating / Subsoil Drain / Filter Layer	5 days	Thu 14/2/19
	Drainage and Maintenance Access in front of RW1	75 days	Tue 26/3/19
_	Construction CP1X & CP7X	102 days	Mon 1/4/19
	Filling Works behind Retaining Wall and Fill Slope FS1 South (Section 12 at Drawing C1/GE/1030)	705 days	Mon 1/4/19
	Behind Retaining Wall RW1, Filling Stage 1 (up to +25mPD)	95 days	Mon 1/4/19
	FS1 South , Filling (Rolling by Pass) (+25 to +27.8mPD)	10 days	Sat 20/7/19
	FS1 South Filling Stage 2 (~2.5m, +25.0 to +27.5 mPD)	56 days	Wed 1/4/20
	Filling (Rolling by Pass)	1 day	Wed 1/4/20
_	Filling in 3m Zone	28 days	Thu 2/4/20
	Benching Works for Rolling by Pass Surface	3 days	Thu 2/4/20
	Lay Rockfill Layer (4.5/1m per 5 days)	25 days	Tue 7/4/20
	Drainage and Maintenance Access (+25 to +27.5 mpD)	21 days	Tue 12/5/20
	FS1 South Filling Stage 3 (~7.5m height, +27.5 to +35mPD)	320 days	Sat 1/2/20
	Filling (Rolling by Pass)(~7.5m, 0.5m per day)	175 days	Sat 1/2/20
	Filling in 3m Zone	103 days	Wed 2/9/20
	Benching Works for Rolling by Pass Surface	3 days	Wed 2/9/20
	Lay Rockfill Layer (7.5/1m per 5 days)	100 days	Sat 5/9/20
1	Drainage and Maintenance Access (+27.5 to +35 mpD)	28 days	Thu 7/1/21
	FS1 South Filling Stage 4 (~7.5m height, +35 to +42.5mPD)	188 days	Wed 2/9/20
	Filling (Rolling by Pass)(~7.5m, 0.5m per day)	15 days	Wed 2/9/20
	Filling in 3m Zone	41 days	Thu 7/1/21
	Benching Works for Rolling by Pass Surface	3 days	Thu 7/1/21
	Lay Rockfill Layer (7.5/1m per 5 days)	38 days	Mon 11/1/21
ł	Drainage and Maintenance Access (+35 to +42.5mpD)	35 days	Sat 27/2/21
	FS1 South Filling Stage 5 (~7.5m height, +42.5 to +50mPD)	536 days	Mon 2/12/19
+	Construction of RW11	30 days	Mon 2/12/19
	Filling in 3m Zone	109 days	Sat 27/2/21
	Benching Works for Rolling by Pass Surface	3 days	Sat 27/2/21
	Lay Rockfill Layer (7.5/1m per 5 days)	102 days	Wed 3/3/21
_	Additional Plate Load Test at FS1	4 days	Thu 8/7/21
	Drainage and Maintenance Access (+42.4 to +50 mpD)	35 days	Thu 8/7/21
	Fill Slope FS1 Middle (Section 13 at Drawing C1/GE/1030)	386 days	Mon 10/2/20
_	Drainage and Maintenance Access at toe (+13 mpD)	10 days	Mon 10/2/20
	FS1 middle Filling Stage 1 (~7.0m max, +13.0 mPD to +20 mPD)	22 days	Fri 21/2/20
	Filling (Rolling by Pass)(~2m, 0.5m per day)	4 days	Fri 21/2/20
	Filling in 3m Zone	8 days	Wed 26/2/20
	Benching Works for Rolling by Pass Surface	3 days	Wed 26/2/20
	Lay Filter Layer	5 days	Sat 29/2/20
	Drainage and Maintenance Access (at and below+20 mpD)	10 days	Fri 6/3/20
	FS1 middle Filling Stage 2 (~7.5m, +20.0 to +27.5 mPD)	53 days	Wed 26/2/20
	Filling (Rolling by Pass)(~7.5m, 0.5m per day)	15 days	Wed 26/2/20
2 3	Filling in 3m Zone	23 days	Sat 14/3/20
	Benching Works for Rolling by Pass Surface	3 days	Sat 14/3/20
	Lay Rockfill Layer (7.5m/1m per 5 day)	20 days	Wed 18/3/20
	Drainage and Maintenance Access (at and below+27.5 mpD)	15 days	Wed 15/4/20
	FS1 middle Filling Stage 3 (~7.5m height, +27.5 to ~+35mPD)	283 days	Sat 14/3/20
_	Task Summary F	rogress	
		1021033	
		nactive Task	

	Hsin Chong Tsun Yip Joint Venture Updated Date : March 2023
	2023
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Manual Progress

3 Month Rolling Programme (Mar 2023 to May 2023)

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F31 Noth Filling Stage 4:43: 6:43: 6:42: mPD/L Upgrading of Existing Stope Feature 3NW-C/F37 20 days F1132620 Drainage and Maintenna Access (c136: 6:42: 5mpC) 30 days Sat 30/F21 F31 Noth Filling Stage 4:42: 5mpC) 30 days Sat 30/F21 F31 Noth Filling Stage 4:42: 5mpC) 30 days Sat 30/F21 F31 Noth Filling Stage 4:42: 5mpC) 30 days Sat 30/F21 F31 Noth Filling Stage 4:42: 5mpC) 50 days Wed 120211 F31 Noth Filling Stage 4:42: 5mpC) 50 days Sat 50/F1 Watermonk / Chranage 2: Moria 50 days Sat 50/F1 Watermonk / Varia (CAS): 600 20 days Ned 120/F1 Watermonk / Varia (CAS): 600 20 days Ned 30/F1 Watermonk / Varia (CAS): 600 20 days Ned 30/F1 Watermonk / Varia (CAS): 600 20 days Ned 30/F1 Watermonk / Varia (CAS): 600 20 days Ned 30/F1 Carriageway and footage and Footage 72 days Sat 26/F21 BackElling in Formation Leel 30 days Sat 26/F21 Landtesaye Vorks 72 days Sat 26/F21 Worksine Fair Bit 3: 6.3 10 days Ned 18/F1 Worksine Fair	F31 North Filling Stage 4 (-35 to +2.5 mpC). Upgrading of Existing Stope Feature 3NW-C/F37 20 days F1 128/200 Dirange and Maintenna Access (-35 to +2.5 mpC). 30 days Set 30/F12 F31 Noth Filling Stage 4 (+2.5 to +2.5 mpC). 30 days Set 30/F12 F31 Noth Filling Stage 4 (+2.5 to +00mP). Upgrading of Existing Stope Feature 3NW-C/F37 20 days West 129211. Filling (Noling Varsak-3, m). Gan part any more stage of the stage 3NW-C/F37 20 days West 129211. Filling (Noling Varsak-3, m). Gan part any more stage 3NW-C/F37 20 days West 129211. Over Transpare and Maintenna Access (+35 to +2.5 mpC). 20 days Set 60/F1 West 1000000000000000000000000000000000000	108	Filling (Rolling by Pass)(~3m, 0.5m per day)		
Filling (Rolling Say Fassay-San, DSan per day) 20 days Fri 1282201 Daranage and Materiance Accoses (158 to +12 ampc) 30 days Sat 301/211 Frist North Filling Slueg 5 (+22.50 + 50m/PD, Upgrading of Existing Sloep Feature 3NW-CF37 Sat days Wed 120211 Frist North Filling Slueg 5 (+22.50 + 50m/PD, Upgrading of Existing Sloep Feature 3NW-CF37 Sat days Wed 120211 Frist North Filling Slueg 5 (+22.50 + 50m/PD, Ubgrading of Existing Sloep Feature 3NW-CF37 Sat days Sat days Wed 120211 Chrill Works for Fick-Up/Dronger Works Did days Sat days Sat days Sat days Sat days Wed romage Vorks / Doranage Works Did days Sat days Sat days Sat days Sat days Wed romage Vorks / Doranage Works Did days Sat days	Pring relating by Energic-Am. Cam per day) 20 days Pri 128200 During and Materiance Access (+35 or +22 mpc) 30 days 40 days <td>109</td> <td></td> <td></td> <td></td>	109			
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Pilling Rolling by Easy, Cam, O, Sm, part Apy) So darge Wet and Sold State (44.5 to + 50 mpC) Chvil Works for Picksup/Dorp off area (Part Af, M01 Ch220 to Ch140) 116 22 Agy Sat 63/21 Weterworks / Chanage, Works (Dranage, Works So darge Sat 63/21 Weterworks / Chanage, Works (Dranage, Works (Dranage, Works Provision 20 dargs Weterworks / Traffectup/Drovision 20 dargs Ublines (by others) 10 dargs Sat 63/21 Weterworks / Vita (PC2+0) 20 dargs Traffectup/Drovision 20 dargs Ublines (by others) 10 dargs Sat 63/21 Centragency and Pockety 72 dargs Sat 63/21 Granage Works (Dravision and Stroet Furniture 10 dargs More 78/21 Granagency works 10 dargs Sat 63/21 Structure Planting at Site 3 10 dargs Sat 63/21 Hydroseeding at Fill Soge 80 dargs Sat 63/21 Structure Planting at Site 3 10 dargs Sat 63/21 Hydroseeding at Fill Soge 80 dargs Sat 63/21 Hydroseeding at Fill Soge 80 dargs Sat 63/21 Hydroseeding at Fill Soge 10 dargs Fill 23/21 Hydroseeding at Fill Soge </td <td>IF IFING (Rolling by Energic Vam, 0.5 mp per day) B0 days Wet of Valors Drolling and Multitemanc Access (42.5 to + 50 mpC) B0 days Sat 63/21 View Kork for Fick-up/Doport area (Part AL, M01 CH220 to CH40) 112 days Sat 63/21 Weterwork 7 Tailongs / Sweering Utilities Works 90 days Sat 63/21 Weterwork 7 Tailongs / Sweering Utilities Works 90 days Sat 63/21 Weterwork 7 Trial (CH2-10) 20 days Trial 2/21 Utilies (by others) 10 days Weterwork 7 Weter Sat 7 Mark 7</td> <td>112</td> <td></td> <td></td> <td></td>	IF IFING (Rolling by Energic Vam, 0.5 mp per day) B0 days Wet of Valors Drolling and Multitemanc Access (42.5 to + 50 mpC) B0 days Sat 63/21 View Kork for Fick-up/Doport area (Part AL, M01 CH220 to CH40) 112 days Sat 63/21 Weterwork 7 Tailongs / Sweering Utilities Works 90 days Sat 63/21 Weterwork 7 Tailongs / Sweering Utilities Works 90 days Sat 63/21 Weterwork 7 Trial (CH2-10) 20 days Trial 2/21 Utilies (by others) 10 days Weterwork 7 Weter Sat 7 Mark 7	112			
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Ta	sk Name	Duration	Start
154	Drainage and Maintenance Access (at +94.5mPD berm)	7 days	Fri 26/10/18
155	Drainage and Maintenance Access (+94.5 to +87mPD slope surface)+ GI Works	24 days	Fri 26/10/18
156	Slope Cutting and Soil Nail (+87 to+79.5mPD, 84Nos. of Soil Nail)	40 days	Thu 8/11/18
157 158	Drainage and Maintenance Access (at +87mPD berm) RFI50 (Waiting Instruction / Abortive Works / Additional Earthwork+25m Uchannel at CS13crest)	33 days 61 days	Fri 26/10/18 Thu 22/11/18
158	RFIGU (Walting Instruction / Abortive Works / Additional Earthwork+25m Ochannel at CS (Screst) RFI(Slope Cutting and Soil Nail - additional 24 Nos. of Soil Nail)	39 days	Fri 11/1/19
160	RFI50(Additional Drainage and Mantenance Access (at 87mPD berm)	13 days	Fri 1/2/19
161	Drainage and Maintenance Access (+79.5 to +87mPD slope surface)+ GI Works	10 days	Fri 8/2/19
162	Slope Cutting and Soil Nail (+72 to +79.5,115+21Nos. of Soil Nail)	90 days	Mon 21/1/19
163 164	Drainage and Maintenance Access (at +79.5mPD berm)	42 days	Fri 1/2/19
164	Drainage and Maintenance Access (+72 to +79.5mPD slope surface, CS13 crest)+ GI Works Slope Cutting and Soil Nail (+64.5 to +72 mPD, ,192 Nos. of Soil Nail)	13 days 67 days	Thu 2/5/19 Mon 8/4/19
166	Drainage and Maintenance Access (at +72mPD berm)	29 days	Sat 13/4/19
167	Drainage and Maintenance Access (+64.5 to +72mPD slope surface)+ GI Works	17 days	Wed 3/7/19
168	Slope Cutting and Soil Nail (+57 to +64.5mPD, 521 nos. of Soil Nail, 96 nos. of Raking Drain)	180 days	Tue 2/7/19
169	Drainage and Maintenance Access (at +64.5mPD berm)	40 days	Tue 6/8/19
170	Drainage and Maintenance Access (+57 to +64.5mPD slope surface)+ GI Works	17 days	Fri 7/2/20
171	Slope Cutting and Soil Nail for CS11 (+57 to +49.5 mPD, 88 nos. of Soil Nail, 19 nos. of Raking Drain)	38 days	Thu 12/3/20
172	Drainage and Maintenance Access for CS11 (at +57mPD berm)	20 days	Thu 26/3/20
173	Drainage and Maintenance Access for CS11 (below57 mPD slope surface/ on RW11)+ GI Works	17 days	Sat 2/5/20
174	Slope Cutting and Soil Nail for CS12/CS13 (+57 to +49.5 mPD, 497 nos. of Soil Nail, 80 nos. of Raking Drain)	85 days	Fri 7/2/20
175	Drainage and Maintenance Access for CS12/13 (at +57mPD berm)	35 days	Wed 11/3/20
176	Drainage and Maintenance Access for CS12/CS13 (+49.5 to + 57mPD slope surface)+ GI Works	20 days	Sat 23/5/20
177	Slope Cutting and Soil Nail for CS12/CS13 (+42 to +49.5 mPD, 383 nos. of Soil Nail, 87 nos. of Raking	170 days	Tue 2/6/20
	Drain)		
178	Drainage and Maintenance Access for CS12/13 (at +49.5mPD berm)	42 days	Fri 3/7/20
179	Drainage and Maintenance Access for CS12/CS13 (+42 to +49.5mPD slope surface)+ GI Works	17 days	Sat 29/8/20
180	Slope Cutting and Soil Nail for CS13 (+42 to +34.5 mPD, 126 nos. of Soil Nail, 55 nos. of Raking Drain)	59 days	Wed 23/12/20
181	Drainage and Maintenance Access for CS13 (at +42mPD berm)	28 days	Tue 19/1/21
181	Drainage and Maintenance Access for CS15 (at +4211PD berni) Drainage and Maintenance Access for CS13 (+34.5 to +42mPD slope surface)+ GI Works	25 days	Tue 9/3/21
183	Slope Cutting and Soil Nail for CS13 (+34.5 mPDto toe, 73 nos. of Soil Nail, 27 nos. of Raking Drain)	100 days	Tue 16/3/21
184	Drainage and Maintenance Access for CS42 (at ±24 EmDD horm)	27 douro	Mon 12/4/21
184 185	Drainage and Maintenance Access for CS13 (at +34.5mPD berm) Drainage and Maintenance Access for CS13 (below+34.5 mPD slope surface)+ GI Works	27 days 21 days	Mon 12/4/21 Mon 19/7/21
185	Retaining Wall RW11	98 days	Tue 12/11/19
187	General Excavation with ELS to Formation Level RW11 Bay 1-4	30 days	Tue 12/11/19
188	Plate Load Test and Blinding Layer for RW11 Bays 1-4	5 days	Tue 17/12/19
189	Base slab of Retaining Wall RW11 Bay 1-4	10 days	Sun 22/12/19
190	Wall Stem of Retaining Wall RW11 Bay 1-4	20 days	Mon 13/1/20
191 192	Plate Load Test and Blinding Layer for RW11 Bays 5-6 Base slab of Retaining Wall RW11 Bay 5-6	5 days 10 days	Tue 17/12/19 Sun 22/12/19
193	Wall Stem of Retaining Wall RW11 Bay 5-6	20 days	Tue 7/1/20
194	Protective Coating / Subsoil Drain / Filter Layer	5 days	Sat 8/2/20
195	Filling Works behind Retaining Wall RW11, (~5.8m, up to +54.8mPD)	23 days	Fri 14/2/20
196	Existing Slope Upgrading Works	210 days	Tue 1/12/20
197 198	Existing Feature 3NW-C/C256 Rock Joint Mapping, drainage and maintenance access Existing Feature 3NW-C/C258 Slope Upgrading Works	150 days 200 days	Tue 1/12/20 Mon 28/12/20
198	Slope Cutting and Soil Nail (Crest to To, 29 Nos. of Soil Nail)	100 days	Mon 28/12/20 Mon 28/12/20
200	Drainage and Maintenance Access (Crest)	100 days	Fri 23/4/21
201	Cut Slope CS15, CS16 and CS17	753 days	Thu 16/8/18
202	Slope Cutting and Soil Nail (crest to+69.5mPD,25 nos. of Soil Nail)	36 days	Thu 16/8/18
203 204	Drainage and Maintenance Access (at crest)	15 days	Mon 20/8/18
204 205	Slope Cutting and Soil Nail (+62 to +69.5mPD, 99 nos. of Soil Nail, 37 nos. of Raking Drain) Drainage and Maintenance Access (at +69.5mPD berm)	62 days 49 days	Mon 3/9/18 Mon 3/9/18
205	Drainage and Maintenance Access (at +69.5mPD berni) Drainage and Maintenance Access (+62 to +69.5mPD slope surface)+ GI Works	36 days	Fri 26/10/18
207	Slope Cutting and Soil Nail (+54.5 to +62mPD, 237 nos. of Soil Nail, 58 nos. of Raking Drain)	66 days	Wed 7/11/18
208	Drainage and Maintenance Access (at +62mPD berm)	26 days	Wed 7/11/18
209	Drainage and Maintenance Access (+54.5 to +62mPD slope surface)+ GI Works	38 days	Sat 29/12/18
210	Slope Cutting and Soil Nail (+47 to +54.5mPD, 548 nos. of Soil Nail, 86 nos. of Raking Drain)	155 days	Mon 7/1/19 Sat 19/1/19
211 212	Drainage and Maintenance Access (at +54.5mPD berm) Drainage and Maintenance Access (+54.5 to +47mPD slope surface)+ GI Works	61 days 90 days	Sat 19/1/19 Wed 3/4/19
212	Slope Cutting and Soil Nail (+39.5 to +47mPD, 490 nos. of Soil Nail, 107 nos. of Raking Drain)	90 days 94 days	Mon 6/5/19
214	Drainage and Maintenance Access (at +47mPD berm)	38 days	Tue 2/7/19
215	Drainage and Maintenance Access (+39.5 to +47mPD slope surface)+ GI Works	23 days	Tue 27/8/19
216	Slope Cutting and Soil Nail (+39.5 to toe, 83 nos. of Soil Nail, 18nos. of Raking Drain)	59 days	Mon 4/5/20
217 218	Drainage and Maintenance Access (at +39.5mPD berm and Slope Surface) + GI Works	45 days	Tue 5/1/21
218 219	Fill Slope FS17 Drainage and Maintenance Access at toe	52 days 28 days	Fri 2/7/21 Fri 2/7/21
219	FS17 Filling Stage 1 (~2.5m max)	28 days 24 days	Wed 4/8/21
221	Civil Works for Sha Ling Road (M001 CH710 to CH825, MO11 CH00 to CH20, M014)	224 days	Mon 28/12/20
222	Waterworks / Drainage / Sewerage/ Utilities Works	27 days	Mon 28/12/20
223	Sewerage Works / Drainage Works	18 days	Mon 28/12/20
224	Watermain FW1 (CH532-637), FW1a (CH000-029) and FW2 (CH530-618)	15 days	Tue 12/1/21
225	Road Lighting Civil Works Provision	8 days	Tue 12/1/21
	Task Summary Pr	rogress	
	Milestone Critical Ina	active Task	

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3 Month Rolling Programme (Mar 2023 to May 2023)

Ta	k Name	Duration	Start
		Durution	Start
26	Utilities (by others)	3 days	Tue 12/1/21
7	Carriageway and Footway	57 days	Fri 23/7/21
8	Backfilling to Formation Level	11 days	Fri 23/7/21
	Carriageway	28 days	Thu 5/8/21
	Footpath, Road Marking and Street Furniture	18 days	Tue 7/9/21
1	Civil Works for PDA (PT04, PT05, PT06, PT07 and PT08)	381.1 days	
3	Waterworks / Drainage / Sewerage/ Utilities Works	238 days	Fri 5/6/20
_	Drainage Works (with Petrol Interceptor)	200 days	Fri 5/6/20
	Road Lighting Civil Works Provision	10 days	Thu 11/3/21
	Carriageway and Footway	-	
5	Backfilling to Formation Level	80 days	Tue 23/3/21
7	Carriageway	60 days	Sat 10/4/21
8	Footpath, Road Marking and Street Furniture	22 days	Thu 19/8/21
39 40	Civil Works for PDA (M011 CH140-215,M08 CH70-102)	161 days	Tue 9/3/21
40	Waterworks / Drainage / Sewerage/ Utilities Works	90 days 60 days	Tue 9/3/21 Tue 9/3/21
12	Sewerage Works / Drainage Works Road Lighting Civil Works Provision	10 days	Mon 29/3/21
43	Utilities (by others)	10 days	Thu 17/6/21
4	Carriageway and Footway	71 days	Tue 29/6/21
15	Backfilling to Formation Level	30 days	Tue 29/6/21
46	Carriageway	30 days	Wed 4/8/21
17	Footpath, Road Marking and Street Furniture	11 days	Wed 8/9/21
48	Civil Works for Sha Ling Road (M001 CH610-710)	114 days	Tue 9/3/21
49	Waterworks / Drainage / Sewerage/ Utilities Works	44 days	Tue 9/3/21
50	Sewerage Works / Drainage Works	30 days	Tue 9/3/21
1	Watermain FW1 (CH433-532) and FW2 (CH433-530)	30 days	Thu 25/3/21
52	Road Lighting Civil Works Provision	10 days	Thu 25/3/21
53	Utilities (by others)	10 days	Thu 25/3/21
54	Carriageway and Footway	70 days	Tue 4/5/21
55	Backfilling to Formation Level	30 days	Tue 4/5/21
56	Carriageway	30 days	Wed 9/6/21
257	Footpath, Road Marking and Street Furniture	10 days	Fri 16/7/21
58	Civil Works for Sha Ling Road (M001 CH480-610, M08 CH00-70)	555 days	Tue 3/3/20
59	Sewage Detention Tank Civil and Structural Works	549 days	Tue 3/3/20
50	Civil and Structural Works	74 days	Tue 3/3/20
61	Excavation by open cut	25 days	Tue 3/3/20
262	Blinding layer concreting	1 day	Wed 1/4/20
63	Construction of base slab	7 days	Thu 2/4/20
264	Construction of wall and top slab	20 days	Wed 15/4/20
265 266	Construction of manhole Backailling	7 days	Mon 11/5/20
266	Backgilling VDS and AMS for Sewage Detention Tank (Permanment Design and Submission Approval)	14 days 350 days	Tue 19/5/20 Mon 18/5/20
68	VDS and AMS for Sewage Detention Tank (Permanment Design and Submission Approval) VDS and AMS for Sewage Detention Tank	140 days	Wed 21/7/21
269	Waterworks / Drainage / Sewerage/ Utilities Works	146 days	Tue 4/5/21
270	Sewerage Works / Drainage Works	40 days	Wed 8/9/21
71	Watermain FW1 and FW2 (CH310-433)	17 days	Tue 4/5/21
72	Road Lighting Civil Works Provision	18 days	Tue 25/5/21
73	Utilities (by others)	17 days	Wed 16/6/21
74	Carriageway and Footway	64 days	Thu 28/10/21
75	Backfilling to Formation Level	12 days	Thu 28/10/21
76	Carriageway	32 days	Thu 11/11/21
7	Footpath, Road Marking and Street Furniture	20 days	Sat 18/12/21
8	Civil Works for Sha Ling Road (M001 CH360-480)	104 days	Wed 28/7/21
9	Waterworks / Drainage / Sewerage/ Utilities Works	67 days	Wed 28/7/21
0	Sewerage Works / Drainage Works	28 days	Wed 28/7/21
31	Watermain FW1 and FW2 (CH175-310)	18 days	Thu 19/8/21
2	Additional rising main (CE No. 181)	30 days	Thu 9/9/21
3	Road Lighting Civil Works Provision	15 days	Thu 19/8/21
34	Utilities (by others)	11 days	Thu 19/8/21
5	Carriageway and Footway	37 days	Mon 18/10/21
36	Backfilling to Formation Level	7 days	Mon 18/10/21
.87	Carriageway	18 days	Tue 26/10/21
288	Footpath, Road Marking and Street Furniture	12 days	Tue 16/11/21
289	Civil Works for Sha Ling Road (M001 CH180-360)	109 days	Fri 6/8/21
290	Waterworks / Drainage / Sewerage/ Utilities Works	59 days	Fri 6/8/21
291	Drainage and Sewerage Works	40 days	Fri 6/8/21
92	Watermain FW1 and FW2 (CH000-175)	23 days	Tue 7/9/21
293	Road Lighting Civil Works Provision	22 days	Tue 7/9/21
294	Utilities (by others)	32 days	Tue 7/9/21
295	Carriageway and Footway	50 days	Mon 18/10/21
296	Backfilling to Formation Level	10 days	Mon 18/10/21
297	Carriageway	24 days	Fri 29/10/21
298	Footpath, Road Marking and Street Furniture	16 days	Fri 26/11/21
299	Part B2, G1 and G2	1232 days	Fri 15/12/17
300	Access Date for Part G1 and G2	0 days	Tue 5/2/19
	Task Summary	Progress	

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301	Name Land Decontamination Works	Duration	Start
301 302	Land Decontamination Works Re-appraisal and Contamination Assessment Plan (CAP) Submission to EPD	293 days 10 days	Tue 2/10/18 Tue 2/10/18
303	EPD Review and Acceptance for CAP	195 days	Fri 12/10/18
304 305	Environmental SI for Determination of Decontamination and SI Testing	70 days	Tue 28/5/19
_	Contamination Assessment Report (CAR) Submission to EPD EPD Review and Acceptance for CAR	18 days 14 days	Tue 20/8/19 Tue 10/9/19
	Civil Works for Sha Ling Road (M001 CH40-110)	717 days	Tue 21/5/19
	Objection from Local Village (EW16 & 18)	355 days	Tue 21/5/19
	Application for Road Closure / Road Divertion Noise Barrier Bay 5 to Bay 8	17 days 322 days	Thu 30/7/20 Wed 19/8/20
_	General Excavation with ELS to Formation Level Bay 5 to Bay 8	15 days	Wed 19/8/20
2	Base slab of Noise Barrier Bay 5 to Bay 8	30 days	Thu 20/8/20
13	Wall Stem of Noise Barrier Bay 5 to Bay 8	30 days	Thu 24/9/20 Mon 2/11/20
15	Protective Coating /Temp Fill Installation of panel	5 days 10 days	Mon 6/9/21
16	Waterworks / Drainage / Sewerage/ Utilities Works	70 days	Thu 13/5/21
17	Sewerage Works / Drainage Works	35 days	Thu 13/5/21
18	Watermain FW3 (CH045-105)	20 days	Wed 14/7/21
19 20	Road Lighting Civil Works Provision Utilities (by others)	10 days 15 days	Fri 25/6/21 Fri 25/6/21
20	Carriageway and Footway	59 days	Fri 6/8/21
22	Backfilling to Formation Level	10 days	Fri 6/8/21
323	Carriageway	42 days	Wed 18/8/21
324 325	Footpath, Road Marking and Street Furniture	7 days	Fri 8/10/21
25 26	Ground Investigation and Geotechnical instrumentation for Commencement of Slopework Trial Pit Excavation / Installation of Instruments and Preliminary Results Submission	45 days 45 days	Fri 8/2/19 Fri 8/2/19
27	Fill Slope FS13 and FS14	56 days	Fri 6/8/21
28	Drainage and Maintenance Access at toe	32 days	Fri 6/8/21
)	FS13 and FS14 Filling Stage 1 (~2.5m max)	24 days	Mon 13/9/21
30 31	Cut Slope CS14 Slope Cutting (crest totoe)	20 days 3 days	Wed 13/10/21 Wed 13/10/21
32	Drainage and Maintenance Access (at crest)	17 days	Mon 18/10/21
3	Civil Works for Sha Ling Road (M001 CH110-180)	104 days	Fri 8/10/21
4	Waterworks / Drainage / Sewerage/ Utilities Works	45 days	Fri 8/10/21
35 36	Sewerage Works / Drainage Works Watermain FW3 (CH105-175)	30 days 12 days	Fri 8/10/21 Sat 13/11/21
37	Road Lighting Civil Works Provision	12 days 10 days	Sat 13/11/21 Sat 13/11/21
38	Utilities (by others)	15 days	Sat 13/11/21
339	Carriageway and Footway	59 days	Wed 1/12/21
340	Backfilling to Formation Level	10 days	Wed 1/12/21
341	Carriageway	42 days	Mon 13/12/21
342 343	Footpath, Road Marking and Street Furniture Man Kam To Road Bus Shelter (PT01, PT02 and PT03)	7 days 1175 days	Mon 7/2/22 Fri 15/12/17
344	Used as Temporary Site Office / Storage Area	340 days	Fri 15/12/17
345	Investigation for DongJiang Watermain(CE23)	82 days	Thu 10/1/19
346 347	Works Area Handing Over to WSD as Request Interface Issue with C2 (As request by Arup to delay XP application) (Including Temp. Road Diversion)	198 days	Mon 15/4/19
	include issue with oz (As request by Arup to delay Ar application) (including Temp. Road Diversion)	290 days	Tue 28/5/19
18	TTA and XP Application at Man Kam To Road	14 days	Wed 20/5/20
19 50	Works Area Handling to WSD for DongJiang Watermain Works Waterworks / Drainage / Sewerage/ Utilities Works	<i>37 days</i> 180 days	Wed 25/11/20 Mon 11/1/21
51	Sewerage Work (Petrol Interceptor)	15 days	Fri 16/7/21
52	Sewerage Works / Drainage Works	150 days	Mon 11/1/21
53	Road Lighting Civil Works Provision	11 days	Fri 16/7/21
54	Utilities (by others)	30 days	Fri 16/7/21
55 56	Carriageway and Footway Backfilling to Formation Level	117 days 12 days	Fri 16/7/21 Fri 20/8/21
57	Carriageway	56 days	Fri 3/9/21
58	Footpath, Road Marking and Street Furniture	19 days	Thu 11/11/21
59	Reinstatement to existing Man Kam To Road	5 days	Fri 16/7/21
60 61	Civil Works for Sha Ling Road (M001 CH00-40) TTA and XP Application at Man Kam To Road	985 days	Thu 30/8/18
62	Vorks Area Handing Over to WSD as Request	14 days 120 days	Fri 15/1/21 Mon 6/5/19
363	Work Area Handling to Sang Hing for Turn Around	190 days	Mon 6/4/20
364	Works Area Handling to WSD for DongJiang Watermain Works	41 days	Wed 25/11/20
365 366	Consent from WSD for Works Near Dong Jing Watermain	325 days	Thu 30/8/18
365	Investigation works / Trial Pits for Watermains Submission for Tempworks	150 days 104 days	Thu 30/8/18 Thu 21/2/19
368	Approval from WSD	80 days	Tue 2/7/19
369	Noise Barrier Bay 1-4	196 days	Mon 1/2/21
370	General Excavation with ELS to Formation Level Bay 1-4	30 days	Mon 1/2/21
371 372	Base slab of Noise Barrier Bay 1-4 Wall Stem of Noise Barrier Bay 1-4	30 days 15 days	Thu 11/3/21 Mon 19/4/21
373	Protective Coating /Temp Fill	5 days	Fri 7/5/21
374	Installation of panel	10 days	Fri 17/9/21
375	Waterworks / Drainage / Sewerage/ Utilities Works (RHS + Man Kam To EB Slow Lane)	62 days	Thu 13/5/21
376	Sewerage Works / Drainage Works	54 days	Thu 13/5/21
-	Task Summary	Progress	
	Task Summary	2	

	Hsin Chong Tsun Yip Joint Venture Updated Date : March 2023
	2023
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Manual Progress

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3 Month Rolling Programme (Mar 2023 to May 2023)

	ask Name	Duration	Start
377	Watermain FW3 (CH000-045)	6 days	Mon 19/7/21
378 379	Road Lighting Civil Works Provision Utilities (by others)	8 days 25 days	Mon 19/7/21 Thu 13/5/21
380	Carriageway and Footway (RHS+ Man Kan To EB Slow Lane)	38 days	Wed 28/7/21
381	Backfilling to Formation Level	10 days	Wed 28/7/21
382	Carriageway	24 days	Mon 9/8/21
383	Footpath, Road Marking and Street Furniture	4 days	Mon 6/9/21
384	Waterworks / Drainage / Sewerage/ Utilities Works (LHS)	52 days	Mon 6/9/21
385	Sewerage Works / Drainage Works	42 days	Mon 6/9/21
386	Road Lighting Civil Works Provision	5 days	Thu 28/10/21
387	Utilities (by others)	10 days	Thu 28/10/21
388 389	Carriageway and Footway (LHS)	38 days	Tue 9/11/21
389	Backfilling to Formation Level	10 days	Tue 9/11/21
390 391	Carriageway	24 days	Sat 20/11/21
391 392	Footpath, Road Marking and Street Furniture Part C	4 days 902 days	Sat 18/12/21 Sat 15/12/18
392	Consent from WSD for Works Near Dong Jing Watermain	702 days	Sat 15/12/18
394	Investigation works / Trial Pits for Watermains	60 days	Sat 15/12/18
395	Submission for Tempworks	102 days	Sat 23/2/19
396	Approval from WSD (RFI No.66) & Re-design the arrangement	546 days	Tue 2/7/19
397	Refuse Collection Point	200 days	Tue 4/5/21
398	General Excavation with ELS to Formation	15 days	Tue 4/5/21
399	Substructure Construction	20 days	Sat 22/5/21
400	Superstructure Construction	45 days	Wed 16/6/21
401 402	Pavement / Footpath reinstatment	90 days	Mon 9/8/21
402 403	ABWF Works E&M and Waterworks	120 days 120 days	Mon 9/8/21 Mon 9/8/21
403	Landscape Works	274 days	Tue 2/3/21
404	at Cut Slope CS1, CS2, CS3	90 days	Wed 8/9/21
406	at Cut Slope CS11, CS12, CS13	90 days	Thu 12/8/21
407	at Cut Slope CS15, CS16, CS17	90 days	Tue 2/3/21
408	at Fill Slope FS13, FS14, FS17	60 days	Wed 13/10/21
409	Sha Ling Road and Man Kam To Road	30 days	Thu 23/12/21
410	Woodland Planting at Site 1,2,4, 7, 8, 9	170 days	Tue 2/3/21
411	Irrigation System and Water Points (Except Water Connection)	30 days	Fri 3/12/21
412 413	Section 3 of the Works (Part E)	457 days	Thu 31/5/18
413	Ground Investigation and Geotechnical Instrumentation for Commencement of Slopework	64 days	Thu 31/5/18
414	Verification Drillholes (2 Nos., VDH4-5) and Preliminary Results Submission Design Review	43 days 36 days	Thu 31/5/18 Thu 5/7/18
415	Fill Slope FS3 (Section 17 at Drawing C1/GE/1053)	424 days	Wed 11/7/18
410	Time Lag of CE16	100 days	Wed 11/7/18
417	RFI046 Outfall Location	47 days	Mon 8/10/18
419	Drainage, Maintenance Access at slope toe	63 days	Sat 16/2/19
420	Construction of Outfall CP14X	11 days	Mon 7/1/19
421	FS3 Filling Stage 1(~+16 to+17.6 mPD)	121 days	Thu 6/12/18
422	CE50-No Fine at Slope Toe	12 days	Fri 26/4/19
423	FS Filling (+16.9 to +27.6 mPD) (Rolling by Pass)	60 days	Thu 23/5/19
424	FS Filling (+27.6to 30 mPD) (Rolling by Pass)	12 days	Sat 3/8/19
425	FS3 Filling Stage 1 (+16.9 to +21 mPD)	41 days	Sat 17/8/19
426	Drainage and Maintenance Access (+21 to +28.5 mpD)	19 days	Tue 8/10/19
427	FS3 Filling Stage 2 (~7.5m, 21 to +28.5 mPD)	10 days	Wed 30/10/19
428	Drainage and Maintenance Access (+28.5 to +35.5mpD)	15 days	Fri 22/11/19
429 430	FS3 Filling Stage 3 (~7.5m, +28.5 to 35.5 mPD) Retaining Wall RW4	17 days 96 days	Thu 21/11/19 Sat 17/8/19
430	General Excavation to Formation Level(Bay1~2)	23 days	Sat 17/8/19 Sat 17/8/19
431	Plate Load Test and Blinding Layer for Retaining Wall Bays 3-8	5 days	Fri 13/9/19
432	Plate Load Test and Blinding Layer for Retaining Wall Bays 3-6 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-2	5 days	Fri 20/9/19
434	Base Slab of Retaining Wall RW4 Bay 1-4	16 days	Fri 20/9/19
435	Base Slab of Retaining Wall RW4 Bay 5-8	16 days	Thu 26/9/19
436	Wall Stem of Retaining Wall RW4 Bay 3-6	30 days	Fri 11/10/19
437	Wall Stem of Retaining Wall RW4 Bay 5-8	20 days	Thu 17/10/19
438	Protective Coating / Subsoil Drain / Filter Layer	5 days	Sat 9/11/19
439	Backfilling behind RW4 and Fill Slop FS4 (~8m up to +35.5 mPD)	22 days	Fri 15/11/19
440	Fill Slope FS2	47 days	Thu 17/10/19
441	Drainage and Maintenance Access (+35.5 to +43.0 mpD)	19 days	Thu 17/10/19
442	FS2 Filling Stage 1 (~7.5m, +35.5 to +43 mPD)	20 days	Fri 8/11/19
443	Drainage and Maintenance Access (+43.0 to +50 mpD)	30 days	Thu 17/10/19
444	FS2 Filling Stage 2 (~7.5m, +43 to +50 mPD)	18 days	Wed 20/11/19
445	Cut Slope CS18 and CS19	235 days	Mon 25/2/19
446	Slope Cutting (+54.5 to crest)	30 days	Wed 27/2/19
447	Confirmation of Interface Details at CS18/19 (NCE29)	30 days	Wed 27/2/19
448	Drainage and Maintenance Access (crest)+ GI Works	8 days	Wed 3/4/19
449	Slope Cutting and Raking Drain (+47 to +54.5mPD, 13 nos. of Raking Drain)	113 days	Mon 25/2/19
450 451	Drainage and Maintenance Access (+54.5 to +62mPD slope surface/berm)+ GI Works	30 days	Thu 4/4/19
451 452	Slope Cutting and Raking Drain (+47mPD to toe, 18 nos. of Raking Drain) Drainage and Maintenance Access (below +47mPD slope surface/berm)+ Gl Works	110 days 70 days	Mon 6/5/19 Sat 14/9/19
	ב. אין	ro uays	04(14/0/19
	Task Summary	Progress	
	Milestone \blacklozenge Critical	Inactive Task	
		Interio Tusk	

	Hsin Chong Tsun Yip Joint Venture Updated Date : March 2023
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Manual Progress

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Contract No. CV/2016/10 Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery		3 Month Rolling Programme (Mar 2023 to May 2023)									
ID Task Name	Duration	Start	1	2	3	4		5	6	2023	
453 Landscape Works	67 days	Mon 16/9/19						2	0		
454 at Fill Slope FS2, FS3	50 days	Tue 8/10/19									
455 at Cut Slope CS18, CS19	60 days	Mon 16/9/19									

	Task		Summary	II	Progress	 Inactive Milestone	\diamond	Manual Task	1	Manual Summary Rollup		Start-only	E
	Milestone	•	Critical		Inactive Task	Inactive Summary	0	Duration-only		Manual Summary	I	Finish-only	Э
								7					

Manual Progress



Three Months Rolling Programme of

Contract CV/2017/02

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3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

	structural	Works at Man Kam To Road and Lin Ma Hang	Ruau				(•)	
ID	WBS 7	Task Name	Duration	Start Date	Completion				Qtr 4, 2	2010	
					Date			November	Qu +, 2	June	
						24/9		1/7	7/4	12/1	18/10
1	1	Letter of Accordance	0 dava	20/5/2010	20/5/2010	2479		1//	//4	12/1	16/10
1		Letter of Acceptance	0 days	30/5/2018	30/5/2018	1					
2		Starting Date	0 days	31/5/2018	31/5/2018	• • • • • • • • • • • • • • • • • • •					
5		ET Submissions	9 days	26/9/2018	5/10/2018		H				
12	4	Applications to Government Department	27 days	4/6/2018	30/6/2018	B0					
20	5	Submissions & acceptances	835 days	4/6/2018	15/9/2020	B			_		
44		Liaison with Utility Undertakers	979 days		3/2/2021						i
47		•	979 days		3/2/2021						
.,		A1 to A4 (refer PS Appendix A1)	575 uuys	1/0/2010	5/2/2021						
48			200 dave	4/0/0040	04/0/0040						
40		Liaison Meeting with Interface and associated	389 days	1/6/2018	24/6/2019						
50		contractors									
		Tree Survey Reporting	164 days		11/11/2018			1			
			671 days		1/4/2020	<u> </u>			-		
66	11	Provision of Project Manager's Site Accommodation	28 days	1/6/2018	28/6/2018						
		(PS1.08A(b) & 1.49)									
67	12	Design of irrigation system within the Sandy Ridge	21 davs	20/12/2019	10/1/2020					BK	
		Cemetery (LS/2021, 2041, 2042, W/1041,1011)	, 5								
70		Condition Survey	81 dave	23/8/2018	11/11/2018			4			
		section 1 of the works - Completion of all works			3/2/2021		-				
//			515 uays	51/5/2010	JIZIZUZI						
		within Parts A1, A2 and B of the Site except									
70		Establishment works	050	00/0/00 10	0/0/000		<u> </u>				_
	14.1	Parts A1	859 days		3/2/2021						
79	14.1.1	access date for section 1 (Parts A1) - not more	0 days	28/9/2018	28/9/2018						
		than 120 days after the starting date									
80	14.1.2	form temporary haul road from the south side	14 days	2/10/2018	22/10/2018						
		to Parts A1									
81	14.1.3	general site clearance	30 days	23/10/2018	28/11/2018		l l				
82	14.1.4	initial survey		29/11/2018	2/1/2019						
	14.1.5	construction of temporary drainage	21 days		26/1/2019						
	14.1.6							_			
04	14.1.0		258 days	28/1/2019	23/12/2019					-	
101		Parts A1)									
	14.1.7	A1) Construction of Retaining Wall RW13 (bay			12/12/2019						
125	14.1.8	Site Formation works for Fill Slope FS18	231 days	15/4/2019	3/2/2020						
136	14.1.9	CS21 - slope cutting	7 days	20/12/2019	30/12/2019					•	
137	14.1.10	install instrument for CS21		31/12/2019	6/1/2020					K	
138	14.1.11	placement of erosion control mat/ hydroseeding		7/1/2020	8/1/2020					k −	
	14.1.12	minor cutting CS26 (Parts A1) (for Road E)		9/1/2020	16/1/2020						
		- · · · · · · ·	7 days							· ·	
	14.1.13	Drainage works at Road E	43 days	17/1/2020	10/3/2020					<u> </u>	
143	14.1.14	Waterworks at Road E	24 days	11/3/2020	14/4/2020						
	14.1.15	CS23 - slope cutting & 300U channel	17 days	11/3/2020	1/4/2020						
145	14.1.16	install instrument for CS23	5 days	2/4/2020	8/4/2020					Г Г	
146	14.1.17	placement of erosion control mat/ hydroseeding		9/4/2020	14/4/2020					A A A A A A A A A A A A A A A A A A A	
	14.1.18	backfilling of pipe trench to formation	9 days	15/4/2020	25/4/2020					l K	
		(including SRT test)									
148	14.1.19	300U channel behind RW13	4 days	27/4/2020	2/5/2020						
	14.1.20	300U channel and planter wall at south side of		4/5/2020	6/6/2020						
		Road E	Ju uays	71 51 2020	0/0/2020						
150	14.1.21		161	01610000	20/40/0000						
		Roadworks of Road E (A1-ch66-243)	164 days		30/12/2020					<u> </u>	
151	14.1.21.1	ducting for road lighting (RD/2091) &	20 days	8/6/2020	2/7/2020						
		construction of irrigation system									
152	14.1.21.2	kerbing, sub-base (include subbase SRT	24 days	3/7/2020	30/7/2020					—	
		test) & cross road duct (RD/2061, 2081)									
153	14.1.21.3	concrete pavement	45 days	31/7/2020	21/9/2020						h
154	14.1.21.4				26/11/2020						
		emergency crash gate, beam barriers									
155	14.1.21.5	concrete footpath	27 dave	27/11/2020	30/12/2020						
	14.1.22	•		31/12/2020	16/1/2020						
	14.1.22	street lighting (Drg/ RD/2091)									_ }
		landscaping (hydroseeding)	5 days	18/1/2021	22/1/2021						₽
	14.1.24	landscaping (shrub planting)	10 days		3/2/2021					_	F 1
	14.2	Parts A2		31/12/2019	3/2/2021					↓	
160	14.2.1	access date for section 1 (Parts A2) - not more	0 days	31/12/2019	31/12/2019						
		than 580 days after the starting date								Ш	
161	14.2.2	form temporary haul road to Parts A2	6 days	2/1/2020	8/1/2020	\				₩	
162	14.2.3	general site clearance	18 days		1/2/2020						
		contractors Company Limited			• • • • • •	I		Page 1/	0	1 1	I I

		Qtr 1, 2023
January 25/7	1/5	August 5/2
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3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

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ID WBS	Task Name	Duration	Start Date	Completion				Qtr 4, 2019					Qtr 1, 2023
				Date -		N	November	Qu 7, 2017	June		Janua		August
					24/9		17	7/4	12/1	1	18/10 25/7	1/5	5/2
163 14.2.4	initial survey	12 days	3/2/2020	15/2/2020									
164 14.2.5		20 days	17/2/2020	10/3/2020					Ě				
165 14.2.6	Site Formation works for Cut Slope CS22 (in Pa		11/3/2020	30/3/2020					н				
174 14.2.7	Construction of Retaining Wall RW13 Bay 6 to			10/8/2020					H				
199 14.2.8	(west) drainage works at Road E (ch250 to		8/8/2020	26/8/2020									
	300)	ie daye	0/0/2020	20/0/2020									
200 14.2.9		15 days	27/8/2020	12/9/2020					La contra c				
		io aayo	2110/2020	12/0/2020					_				
201 14.2.10	construction of Irrigation System	5 days	12/9/2020	17/9/2020					, i i i i i i i i i i i i i i i i i i i				
202 14.2.11	U channel for Road E	3 days	17/9/2020	19/9/2020					1	•			
203 14.2.12		42 days	19/9/2020	17/11/2020					F				
209 14.2.13	street lighting for Road E (Drg/ RD/2091)		17/11/2020	26/11/2020									
210 14.2.14	landscaping (shrub planting)		27/11/2020	1/12/2020						K			
211 14.2.15			8/8/2020	4/9/2020									
212 14.2.16	site formation works for Cut Slope CS25 (A2)		5/9/2020	18/9/2020					i i i i i i i i i i i i i i i i i i i				
213 14.2.17	placement of erosion control mat/ hydroseeding		19/9/2020	21/9/2020									
214 14.2.18	drainage works at Road B & sewerage works		19/9/2020	28/10/2020									
	at Road B	20 00 90	10,012020	20,10,2020									
215 14.2.19		25 days	29/10/2020	30/11/2020									
				00,11/2020									
216 14.2.20	backfill formation for Road B	3 days	1/12/2020	3/12/2020						t			
217 14.2.21	street lighting ducts and drawpits at Road B	9 days	1/12/2020	10/12/2020						š			
218 14.2.22	arrange Town Gas to lay cables (NOT YET		11/12/2020	16/12/2020						5			
	AGREED)	,.											
219 14.2.23	planter wall for Road B	5 days	17/12/2020	22/12/2020						ζ			
220 14.2.24	arrange HKT to lay PCCW cables (NOT YET		23/12/2020	30/12/2020						κ			
	AGREED)												
221 14.2.25	Roadworks of Road B (A2-ch28.5-90)	19 days	31/12/2020	22/1/2021						⊢ I			
222 14.2.25.1	kerbing & sub-base (include sub-base SRT t			9/1/2021						Ĩ.			
223 14.2.25.2	DBM (Roadbase)	2 days	11/1/2021	12/1/2021						Б,			
224 14.2.25.3	base course and wearing course	2 days	13/1/2021	14/1/2021						Б, I			
225 14.2.25.4	directional sign, roadmarkings & footpath	7 days	15/1/2021	22/1/2021						T I			
226 14.2.26	landscaping (hydroseeding)	17 days	13/1/2021	1/2/2021						F			
227 14.2.27	landscaping (shrub planting)	3 days	1/2/2021	3/2/2021						- F			
228 14.3	Parts B - refer Appendix MKTR01A &	979 days	31/5/2018	3/2/2021		P							
	Appendix MKTR01B												
229 14.3.1	access date for section 1 (Parts B) - the	0 days	31/5/2018	31/5/2018									
220	starting date												
230 14.3.2			1/6/2018	4/10/2018									
231 14.3.3			5/10/2018	9/11/2018									
232 14.3.4	Temporary Traffic Arrangement (TTA) Scheme	134 days	1/6/2018	9/11/2018		P							
236 14.3.5	for Man Kam Road	050 1	40/44/0010	4714 10000									
230 14.3.3		352 days	10/11/2018	17/1/2020									
237 14.3.5.1	(DN400)-refer to Drawings No. MKTR Phase 1: TTA 1s	52 dava	10/11/2018	12/1/2019									
237 14.3.5.1 246 14.3.5.2			14/11/2018	12/1/2019									
240 14.3.5.2 255 14.3.5.3			20/11/2018	12/1/2019									
264 14.3.5.4			15/1/2019	4/3/2019				.					
273 14.3.5.5		39 days	15/1/2019	4/3/2019									
282 14.3.5.6		40 days	14/1/2019	4/3/2019									
291 14.3.5.7		39 days	5/3/2019	23/4/2019									
300 14.3.5.8		39 days	5/3/2019	23/4/2019									
309 14.3.5.9		39 days	5/3/2019	23/4/2019									
318 14.3.5.10			29/4/2019	14/6/2019				· · ·					
327 14.3.5.11			29/4/2019	14/6/2019									
336 14.3.5.12			24/4/2019	14/6/2019									
345 14.3.5.13		42 days	19/6/2019	7/8/2019									
354 14.3.5.14		45 days	15/6/2019	7/8/2019									
363 14.3.5.15		45 days	15/6/2019	7/8/2019									
372 14.3.5.16		46 days	9/8/2019	3/10/2019									
381 14.3.5.17		40 days 42 days	14/8/2019	3/10/2019				· · ·					
390 14.3.5.18		42 days 47 days	8/8/2019	3/10/2019									
399 14.3.5.19			8/10/2019	27/11/2019									
		110093	5, 10,2013	21/11/2013				· · · ·					1

3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

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ID	WBS	Task Name	Duration	Start Date	Completion	Qtr 4, 2019
					Date	November June
409	14 2 5 20		40.1	440,0040	07/44/0040	24/9 1/7 7/4 12/1
408	14.3.5.20 14.3.5.21	Phase 7: TTA14s	46 days	4/10/2019	27/11/2019	
417 427	14.3.5.21	Phase 7: additional TTA21s		24/10/2019	27/11/2019	
427	14.3.5.22	additional Phase 8: additional TTA 0s		27/11/2019	17/1/2020	
		Construction of Sewerage (DN630) - refer to Drawing No. MKTR Programme/DR/001		18/1/2020	3/2/2021	
438	14.3.6.1	Phase A: TTA 1n	50 days	21/1/2020	21/3/2020	
447	14.3.6.2	Phase A: TTA 7n	52 days	18/1/2020	21/3/2020	
456	14.3.6.3	Phase B: TTA 2n	52 days	23/3/2020	28/5/2020	
465	14.3.6.4	Phase B: TTA 8n	52 days	23/3/2020	28/5/2020	
474	14.3.6.5	Phase C: TTA 3n	52 days	29/5/2020	30/7/2020	
483 492	14.3.6.6 14.3.6.7	Phase C: TTA 9n	52 days	29/5/2020	30/7/2020	
501	14.3.6.8	Phase D: TTA 4n	52 days	31/7/2020	29/9/2020	
510	14.3.6.9	Phase D: TTA 10n	52 days	31/7/2020	29/9/2020	
519	14.3.6.10	Phase E: TTA 5n	52 days	30/9/2020	2/12/2020 2/12/2020	
528	14.3.6.11	Phase E: TTA 11n Phase F: TTA 6n	52 days	30/9/2020	3/2/2020	
537	14.3.6.12		51 days	3/12/2020	3/2/2021	
546	14.3.6.12	Phase F: additional TTA 12s Phase F: additional TTA 0n	38 days 38 days	18/12/2020 18/12/2020	3/2/2021	
555	14.3.0.13	Planned Completion for section 1 of the works	0 days	3/2/2020	3/2/2021	
556	16	Completion Date for section 1 of the works	0 days 0 days	3/2/2021	3/2/2021	
557		section 2 of the works - Completion of all works			3/2/2021	
		within Parts C1 and C2 of the Site except Establishment works	or o udys	51/5/2010	JIZIZUZ I	
	17.1	access date for section 2 (Part C1)	0 days	31/5/2018	31/5/2018	
559	17.2	Temporary Traffic Arrangement (TTA) Scheme for Lin Ma Hang Road	162 days		9/11/2018	
565	17.3	works at Lin Ma Hang Road (section 2 Part C1) refer Appendice LMHR01a to d	817 days	10/11/2018	3/2/2021	
566	17.3.1	Phase I (stage 1)-south lane (chainage 240-28	3 23 davs	10/11/2018	6/12/2018	
577	17.3.2	Phase I (stage 2)-north lane (chainage 240-28		7/12/2018	27/12/2018	H
587	17.3.3	Phase I (stage 3)-south lane (chainage 283-33		28/12/2018	28/1/2019	
598	17.3.4	Phase I (stage 4)-north lane (chainage 283-33		29/1/2019	20/2/2019	
608	17.3.5	Phase I (stage 5)-south lane (chainage 335-38		21/2/2019	13/3/2019	
618	17.3.6	Phase I (stage 6)-north lane (chainage 335-38	(16 days	14/3/2019	1/4/2019	н
627	17.3.7	Phase I (stage 7)-south lane (chainage 380-43	23 days	2/4/2019	3/5/2019	
638	17.3.8	Phase I (stage 8)-north lane (chainage 380-43		4/5/2019	22/5/2019	н
648	17.3.9	Phase I (stage 9)-south lane (chainage 190-24		23/5/2019	13/6/2019	
659	17.3.10	Phase I (stage 10)-north lane (chainage 190-2		14/6/2019	3/7/2019	
669	17.3.11	Phase II (stage 1)-south lane (chainage 32-85)-Noise Barrier MM6 (bays 1-3) & MM7 (bays 1-2)	95 days	4/7/2019	25/10/2019	
703	17.3.12	Phase II (stage 2)-north lane (chainage	84 dave	26/10/2019	7/2/2020	
		32-85)-Noise Barrier MM9 (bays 1-4)	o r uuyo		11212020	
735	17.3.13	Phase II (stage 3)-south lane (chainage 85-13)	8 38 davs	8/2/2020	23/3/2020	
746	17.3.14	Phase II (stage 4)-north lane (chainage 85-138)-Noise Barrier MM10 (bays 1-4)	68 days	24/3/2020	17/6/2020	
776	17.3.15	Phase II (stage 5)-south lane (chainage 138-1	36 days	18/6/2020	31/7/2020	
787	17.3.16	Phase II (stage 6)-north lane (chainage 138-190)-Noise Barrier MM10 (bays 5-9)	85 days	1/8/2020	11/11/2020	
818	17.3.17	Phase II (stage 7)-south lane (chainage	53 days	12/11/2020	15/1/2021	н н
051	47.0.40	0-32)-Noise Barrier MM5 (bays 1-2)	40.1	10111055	0/0/0000	
851	17.3.18	Phase II (stage 8)-north lane (chainage 0-32)	16 days	16/1/2021	3/2/2021	
862	17.3.19	Noise Barrier MM8 (bays 1-3)	140 days		18/1/2021	
891	17.3.20	Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch0-435)	21 days	14/12/2020	9/1/2021	
892	17.3.21	tree planting	3 days	11/1/2021	13/1/2021	
893	17.3.22	Street furniture & construction of footpath (ch0-435)	22 days	9/1/2021	3/2/2021	
894	17.3.23	Phase Ia (stage 101)-south lane (chainage 63	3 20 days	10/11/2018	3/12/2018	P⊨4
904	17.3.24	Phase la (stage 102)-north lane (chainage 633		4/12/2018	21/12/2018	H
914	17.3.25	Phase Ia (stage 103)-south lane (chainage 68		22/12/2018	23/1/2019	
925	17.3.26	Phase Ia (stage 104)-north lane (chainage 685	5 17 days	24/1/2019	15/2/2019	

		Qtr 1, 2023
January 25/7	1/5	August 5/2
LJII	115	JIZ

3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

No. No. <th>- Innastructural</th> <th>Works at Marrian To Road and Lin Ma hang Road</th> <th></th> <th></th> <th>· · · · · · · · · · · · · · · · · · ·</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	- Innastructural	Works at Marrian To Road and Lin Ma hang Road			· · · · · · · · · · · · · · · · · · ·								
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3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

	Works at Main Rain To Road and Lin Ma hang	Noau				(
ID WBS	Task Name	Duration	Start Date	Completion			Qtr 4, 2	2019			O	tr 1, 2023
				Date –		Novemb		June		January	Q	August
					24/9	1/7	7/4	12/1	18/10	25/7	1/5	5/2
1291 17.4.13	fabricating of panel and steelworks	180 days	16/1/2020	13/7/2020								
1292 17.4.14			14/7/2020	27/9/2020								
1293 17.4.15	completion of concrete curing of substructure			19/1/2021			 					
	of Nosie Barriers	-										
1301 17.4.16			28/9/2020	25/11/2020				F				
1005	substructure of the noise barrier MM6, MM7 &											
1308 17.4.17		54 days	26/11/2020	30/1/2021					BB			
1215 47440	substructure of the noise barrier MM10 (app.	40.1	0011/0001	00///0000/								
1315 17.4.18	construction works above the concrete	10 days	20/1/2021	30/1/2021					F			
1322 17.4.19	substructure of the noise barrier MM5 & MM8	0 days	3/2/2021	3/2/2021								
1.7.13	submit as-built drawings & design calculation & 2 sets of velographs for noise barrier works	0 days	JIZIZUZI	JIZIZUZI								
	a 2 sets of verographs for holse battler WOINS											
1323 17.5	access date for section 2 (Part C2)	0 days	24/2/2019	24/2/2019			*					
1324 17.6	additional site possession for areas outside	0 days		24/2/2019			*					
	site boundary {for 3NW-C/C470 (existing	,.										
	D-DH7), C224 (existing D-DH11) & C225 new											
	drillholes DHA1,A2 & A3 }											
1325 17.7			25/2/2019	3/2/2021								
1326 17.7.1			25/2/2019	18/4/2019								
1327 17.7.2			11/4/2019	8/6/2019								
1328 17.7.3 1329 17.7.4			22/5/2019	15/6/2019								
1529 11.1.4	drilling of verification boreholes DHA1,A2 & A3	21 days	17/6/2019	11/7/2019								
1330 17.7.5	baseline monitoring for 3NW-C/C230 (DH15 &	30 dava	12/7/2019	15/8/2019								
1550 11.1.0	16) & C225 (DH3 & 17) on existing drillholes &		12/1/2019	15/0/2019								
	3NW-C/C470 (existing D-DH7), C224 (existing											
	D-DH11) & C225 proposed verification											
	drillholes DHA1,A2 & A3											
1331 17.7.6	submit 4 sets of initial readings of baseline	0 days	15/8/2019	15/8/2019			▲					
	monitoring and preliminary logs to the Project											
	Manager to the Project Manager											
1332 17.7.7	• • • •	59 days		26/10/2019								
1333 17.7.7.1	removal of existing trees	10 days	16/8/2019	27/8/2019			–					
1224 47770	hearding 0.4	0.1	00/0/00 10	0/0/0040								
1334 17.7.7.2	hoarding & fencing	6 days	28/8/2019	3/9/2019								
1335 17.7.7.3	slope excavation works	1 day	4/9/2019	4/9/2019								
1555 11.1.1.0	Siche excavation mores	1 day	4/3/2013	41312013								
1336 17.7.7.4	temporary scaffolding	5 days	5/9/2019	10/9/2019								
1337 17.7.5	proposed slope stripping for mapping or	8 days		20/9/2019								
	rock and relict discontinuities (AS5-A,B,											
1338 17.7.7.6	Phase I	8 days	21/9/2019	30/9/2019			н					
1339 17.7.7.6.1	install test nail PN02 & pull out test		21/9/2019	27/9/2019			l 👗					
	-											
1340 17.7.7.6.2	drill, install steel bars and grout soil nails	2 days	28/9/2019	30/9/2019			۲ - F					
1041	(B01-12)	•										
1341 17.7.7.7	Phase II		2/10/2019	11/10/2019			₩					
1342 17.7.7.1	install test nail PN01 & pull out test	6 days	2/10/2019	9/10/2019								
1343 17.7.7.2	duil install start have and security of the	م مام	10/10/0010	11/10/0010			↓ ↓					
1545 11.1.1.2	drill, install steel bars and grout soil nails (A01-17)	∠ days	10/10/2019	11/10/2019			٦ ا					
1344 17.7.7.8	(A01-17) raking drains	1 day	12/10/2019	12/10/2019								
1345 17.7.7.9	TDR Test (including test & wait issue result)			15/10/2019								
1346 17.7.7.10	soil nail head works		16/10/2019	18/10/2019								
1347 17.7.7.11			19/10/2019	24/10/2019								
1348 17.7.7.12			25/10/2019				↓ · · · ·					
	hydroseeding	,0										
1349 17.7.8	Slopeworks: - 3NW-C/C230 (ch1240-1330S/I	130 days	28/10/2019	2/4/2020								
1350 17.7.8.1	removal of existing trees		28/10/2019	7/11/2019			l 👗					
	•											
1351 17.7.8.2	hoarding & fencing	9 days	8/11/2019	18/11/2019								
10.50												
1352 17.7.8.3	temporary scaffolding	7 days	19/11/2019	26/11/2019			Ă					

3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

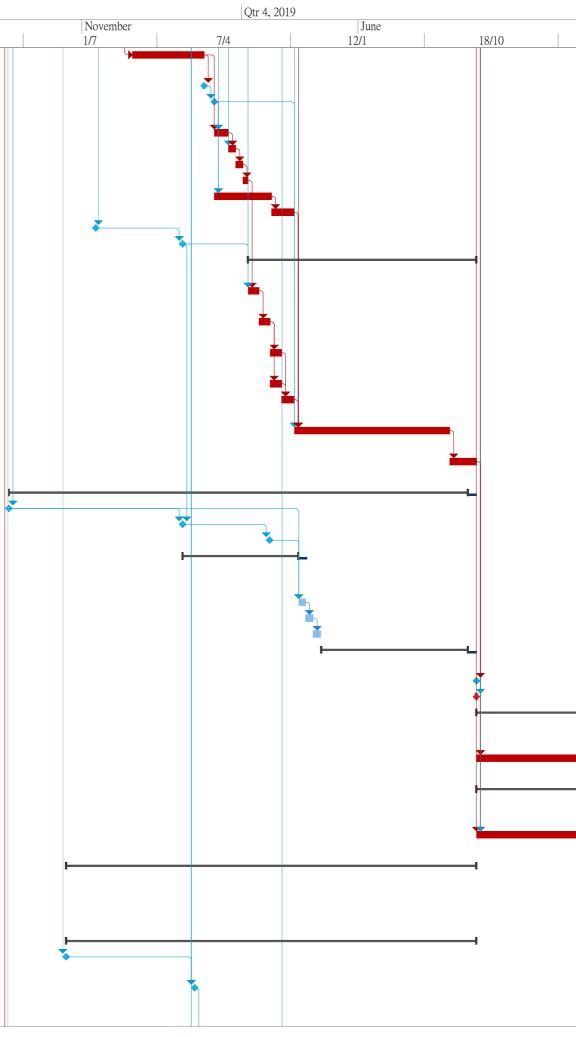
	Works at Marrian To Road and Ein Marriang	Jittodu				(
ID WBS	Task Name	Duration S	Start Date C	Completion				Qtr 4, 2019		 			Qtr 1, 2023
				Date		Novemb			June		January		August
10.50					24/9	1/7		7/4	12/1	 18/10	25/7	1/5	5/2
1353 17.7.8.4	proposed slope stripping for mapping or rock and relict discontinuities (AS3-A,B,	8 days 2		5/12/2019									
1354 17.7.8.5	slope excavation works	1 day 6	6/12/2019	6/12/2019				h					
1355 17.7.8.6	Phase I	25 days 7	7/12/2019	8/1/2020				⊢ -4					
1356 17.7.8.6.1	install test nail PN22 & pull out test	6 days 7	7/12/2019 1	3/12/2019				ř					
1357 17.7.8.6.2	drill, install steel bars and grout soil nails (K01-22, N01-05, M01-11, J01-25)	10 days 14	4/12/2019 2	7/12/2019									
1358 17.7.8.6.3	TDR Test (including test & wait issue resu	u 2 days 2		0/12/2019				<u>F</u>					
1359 17.7.8.6.4	soil nail head works	7 days 3		8/1/2020				Б.					
1360 17.7.8.7	Phase II			6/2/2020				L L L L L L L L L L L L L L L L L L L	4				
1361 17.7.8.7.1	install test nail PN21 & pull out test	6 days	9/1/2020	15/1/2020				•					
1362 17.7.8.7.2	drill, install steel bars and grout soil nails (H01-25, L01-16)	8 days 1	16/1/2020	24/1/2020									
1363 17.7.8.7.3	raking drains	2 days 2	29/1/2020	30/1/2020				1					
1364 17.7.8.7.4	TDR Test (including test & wait issue resu			1/2/2020				ì	*				
1365 17.7.8.7.5	soil nail head works	4 days	3/2/2020	6/2/2020				i	K.				
1366 17.7.8.8	225UC, 300SC & catchpits	-		2/3/2020									
1367 17.7.8.9	600mm width concrete maintenance staircase with handrailing	9 days	3/3/2020	12/3/2020									
1368 17.7.8.10	soil replacement by no-fines concrete	6 days 1	13/3/2020	19/3/2020					м				
1369 17.7.8.10.1	stage 1			14/3/2020									
1370 17.7.8.10.1	temporary cut & excavation of soil			13/3/2020					H				
1371 17.7.8.10.1	placement of no-fine concrete			14/3/2020					5				
1372 17.7.8.10.2	stage 2	2 days 1	16/3/2020	17/3/2020					I				
1373 17.7.8.10.2				16/3/2020					5				
1374 17.7.8.10.2				17/3/2020					ĥ				
1375 17.7.8.10.3				19/3/2020					↓				
1376 17.7.8.10.3 1377 17.7.8.10.3				18/3/2020					↓				
1377 17.7.8.10.3 1378 17.7.8.11	placement of no-fine concrete biodegradable erosion control mat with			19/3/2020 2/4/2020									
1576 11.1.6.11	hydroseeding & shrub planting	12 udys 2	20/3/2020	2/4/2020					-				
1379 17.7.9	Slopeworks: - 3NW-C/C224 (ch1040-1120N/	/I117 days 3	31/3/2020	22/8/2020					H				
1404 17.7.10	Slopeworks: - 3NW-C/C225 (ch1300-1376N/		3/12/2019	3/2/2021				F					
1438 17.7.11	Slopeworks: - 3NW-C/C231 (ch1220-1240N/			3/2/2021									
	Planned Completion for section 2 of the works			3/2/2021						Į			
	Completion Date for section 2 of the works			3/2/2021									
	section 3 of the works - Completion of all works within Parts D and E of the Site			3/2/2021									
1508 20.1 1509 20.1.1	Parts D access date for section 3 (Parts D) - not more	800 days 2		3/2/2021 6/11/2018									
1510 20.1.2	than 180 days after the starting date seek specialist for design, supply and	59 days 2		24/1/2019			F						
	installation of the covered walkway	00 dayo 2											
1511 20.1.3	acceptance of specialist	0 days 1		14/2/2019			N						
1512 20.1.4	design for approval for lighting system for the covered walkway	-		14/7/2019									
1513 20.1.5	submit for approval for lighting system for the covered walkway	-		14/7/2019									
1514 20.1.6	acceptance of lighting system for the covered walkway	-		4/8/2019									
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)		5/8/2019	19/1/2020									
1516 20.1.8	design for glazing system of the proposed covered walkway at Fanling Station Road	150 days 1		14/7/2019									
1517 20.1.9	submission of glazing system			14/7/2019			1						
1518 20.1.10	acceptance of glazing system and fall arrest system by Project Manager	0 days	4/8/2019	4/8/2019									

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

3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

24/9

- IIIIa	Siluciula	I WORKS at Mail Nath TO Noau and Lin Ma hang	Nuau		
ID	WBS	Task Name	Duration	Start Date	Completion Date -
	20.1.11	design for fall arrest system of the proposed covered walkway at Fanling Station Road	150 days	15/2/2019	14/7/2019
	20.1.12 20.1.13	submission of fall arrest system acceptance of fall arrest system by Project	0 days 0 days	14/7/2019 4/8/2019	14/7/2019 4/8/2019
1522	20.1.14	Manager Liaison with MTRC for the works arrangement	30 days	5/8/2019	3/9/2019
	20.1.15	general site clearance	12 days	4/9/2019	18/9/2019
	20.1.16	initial survey	12 days	19/9/2019	3/10/2019
	20.1.17	utility detection and submit reports	8 days	4/10/2019	14/10/2019
	20.1.18	Fabrication of Steelworks & glass panel	100 days	5/8/2019	2/12/2019
1527	20.1.19	delivery steelworks & glass panel to site	38 days	3/12/2019	18/1/2020
1528	20.1.20	application of XP (for Parts D)	0 days	29/11/2018	29/11/2018
1529	20.1.21	acceptance of XP (for Parts D)	0 days	30/5/2019	30/5/2019
1530	20.1.22	Construction of Covered Walkway at Fanling Station	390 days	15/10/2019	3/2/2021
1531	20.1.22.1	construct the concrete foundation of covered walkway (first 20m)	20 days	15/10/2019	6/11/2019
	20.1.22.2	construct the concrete foundation of covered walkway (2nd 20m)	20 days	7/11/2019	29/11/2019
	20.1.22.3	construct the concrete foundation of covered walkway (3rd 20m)	20 days	30/11/2019	23/12/2019
	20.1.22.4	demolished existing planter (drg.WY/1051)	20 days	30/11/2019	23/12/2019
	20.1.22.5	construct the concrete foundation of covered walkway (4th 20m)	20 days	24/12/2019	18/1/2020
	20.1.22.6	construction of covered walkway including steelworks, glass panel and electrical works	265 days	20/1/2020	9/12/2020
	20.1.22.7	Reinstatement of the pavement and street furniture	45 days	10/12/2020	3/2/2021
	20.2	Parts E	782 days	31/5/2018	16/1/2021
	20.2.1	access date for section 3 (Parts E)	0 days	31/5/2018	31/5/2018
	20.2.2	application of XP (for Parts E)	0 days	30/5/2019	30/5/2019
	20.2.3 20.2.4	acceptance of XP (for Parts E)	0 days	28/11/2019	28/11/2019
1342	20.2.4	Temporary Traffic Arrangement (TTA) Scheme for Sheung Shui Landmark North PTI and Fanling Station Road	242 days	31/5/2019	27/1/2020
1546	20.2.5	general site clearance	12 days	29/1/2020	11/2/2020
1547	20.2.6	initial Survey	14 days	12/2/2020	27/2/2020
1548	20.2.7	utility detection and submit reports	14 days	28/2/2020	14/3/2020
1549	20.2.8	Road Improvement works at Sheung Shui Landmark North PTI	250 days	16/3/2020	16/1/2021
	21	Planned Completion for section 3 of the works	0 days	3/2/2021	3/2/2021
	22	Completion Date for section 3 of the works	0 days	3/2/2021	3/2/2021
1561	23	section 4 of the works - Completion of Establishment works for the Landscape Softworks within Parts A1, A2 and B of the Site	1095 days	4/2/2021	3/2/2024
1562	23.1	Establishment works for the Landscape Softworks within Parts A1, A2 and B of the Site	1095 days	4/2/2021	3/2/2024
1565	26	section 5 of the works - Completion of Establishment works for the Landscape Softworks within Parts C1 and C2 of the Site	1095 days	4/2/2021	3/2/2024
1566	26.1	Establishment works for the Landscape Softworks within Parts C1 and C2 of the Site	1095 days	4/2/2021	3/2/2024
1569	29	section 6 of the works (section Subject to Excision) - Completion of all works within Parts A3 and A4 of the Site except Establishment works. Extent of works under section 6 of the works is defined in Drawing No.:	859 days	28/9/2018	3/2/2021
	29.1	Parts A3	859 days	28/9/2018	3/2/2021
	29.1.1	access date for section 6 (Part A3) - not more than 120 days after the starting date	0 days	28/9/2018	28/9/2018
1572	29.1.2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days commencing from and including the starting	0 days	24/6/2019	24/6/2019



		Qtr 1, 2023	
January 25/7		5/2	August
2311	1/5	512	

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

3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

	WORKS at Wall Kall TO KOau and Lin Wa hang	Ittoau				(
ID WBS 7	Fask Name	Duration	Start Date	Completion			Qtr 4, 2019					Qtr 1, 2023
				Date		November	Zu 1, 2017	June		January	I	August
					24/9	1/7	7/4	12/1	18/10	25/7	1/5	5/2
1573 29.1.3		5 days	25/6/2019	29/6/2019			—— H ĭ					
	to Parts A3											
1574 29.1.4	general site clearance & tree felling	12 days	2/7/2019	15/7/2019			Ĩ. Internet in the second s					
1575 29.1.5	initial survey	12 days	2/7/2019	15/7/2019								
1576 29.1.6	construction of temporary drainage		15/7/2019	30/7/2019								
1577 29.1.7	Construction of Retaining Wall RW14 (Bay			22/8/2020			I					
	1-Bay 6)	· · · , ·										
1602 29.1.8	backfilling works behind Retaining Wall RW14	90 days	22/8/2020	15/12/2020					•			
1602 00 4 0	(bay1 to 6) (include SRT tests)	07.1	001010000	0/44/0000								
1603 29.1.9			30/9/2020	9/11/2020				H				
1613 29.1.10		30 days	10/11/2020	15/12/2020								
1614 00 4 44	(include SRT tests)			10/10/0000					_			
1614 29.1.11	install instrument for RW14		11/12/2020	16/12/2020								
1615 29.1.12	construct 300U channel & catchpit in front of R	,		19/12/2020					₽			
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	22/8/2020	15/12/2020				•				
1617 29.1.14	300U channel & stepped channel for FS19 & 2	3 days	16/12/2020	18/12/2020								
1618 29.1.15	install instrument for FS19 & FS20	5 days	16/12/2020	21/12/2020								
1619 29.1.16	minor site formation works for cut slope CS25		16/12/2020	16/12/2020					H			
1620 29.1.17	minor site formation works for cut slope CS26	3 days	17/12/2020	19/12/2020					F			
1621 29.1.18	install instruments for CS25 & CS26	5 davs	21/12/2020	28/12/2020					X			
1622 29.1.19	waterworks at Road E		21/12/2020	6/1/2021					The second secon			
		12 duys	21/12/2020	0/1/2021								
1623 29.1.20	drainage works at Road E	10 days	31/12/2020	12/1/2021								
1624 29.1.21	U channels at Road E	7 days	5/1/2021	12/1/2021					1 1 1			
1625 29.1.22	Roadworks of Road E (ch20-60)	19 days	13/1/2021	3/2/2021					н			
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	17/9/2019	20/9/2019			ĥ					
1632 29.1.24	install instrument for CS24	5 days	23/9/2019	27/9/2019			The second se					
1633 29.1.25	temporary soil nails between CS20 & RW12 (for RW12 bays 1-3)	30 days	23/9/2019	4/11/2019								
1634 29.1.26		67 days	5/11/2019	24/1/2020			F					
1657 29.1.27		40 davs	4/6/2020	22/7/2020								
1658 29.1.28	Completion of Site Formation works for Cut Slope 25	2 days	21/7/2020	22/7/2020								
1659 29.1.29	Waterworks at Road F	24 days	23/7/2020	19/8/2020				μ.				
1660 29.1.30			20/8/2020	17/9/2020				1				
1661 29.1.31	planter wall for Road E and Road F in Parts A3		18/9/2020	3/10/2020				i				
1662 29.1.32	UU-Arrange Town Gas & PCCW to lay across			22/10/2020				Ě.				
	Road F (not yet agree)											
1663 29.1.33		55 days	23/10/2020	4/1/2021				F				
1664 29.1.33.1	kerbing and cross road duct (RD/2061, 2081)		23/10/2020	6/11/2020				۱. Element of the second se				
1665 29.1.33.2	ducting for road lighting & construction of	12 days	9/11/2020	23/11/2020								
1666 29.1.33.3	irrigation system	10 de	04/44/0000	7/10/0000					T			
1667 29.1.33.3	bituminous pavement		24/11/2020	7/12/2020								
	traffic signs, directional signs, type 2 railing & footpath			4/1/2021								
1668 29.1.34	street lighting (Drg/ RD/2091)	6 days	5/1/2021	11/1/2021					l f			
1669 29.1.35	landscaping (hydroseeding)	9 days	12/1/2021	21/1/2021					L L			
1670 29.1.36			22/1/2021	3/2/2021					i i			
1671 29.2	Parts A4		24/6/2019	3/2/2021			P					
1672 29.2.1	access date for section 6 (Parts A4) - not more than 580 days after the starting date			31/12/2019								
1673 29.2.2		0 davs	24/6/2019	24/6/2019								
	Excision" for section 6 and 7 is within 390 days											
	commencing from and including the starting											

Sang Hing Civil Contractors Company Limited

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

3 Month Rolling Programme (from 26/12/2022 to 25/2/2023)

		· ·					-		-						
ID	WBS	Task Name	Duration	Start Date	Completion Date			Qtr 4, 20	019						Qtr 1, 2023
1					Daie		November		June				January		August
						24/9	1/7	7/4	12/1		18/10	2	5/7	1/5	5/2
	29.2.3	general site clearance	15 days	2/1/2020	18/1/2020				■						
1675		initial survey	11 days	11/1/2020	23/1/2020										
	29.2.5	construction of temporary drainage	15 days	16/1/2020	5/2/2020				■ ́h						
1677	29.2.6	Site Formation works for Cut Slope CS24	7 days	29/1/2020	5/2/2020										
		(include temporary cutting from top of RW12 to toe of CS24) (for RW12 bays 4-6)													
1678		install instrument for CS24	3 days	6/2/2020	8/2/2020				h						
1679	29.2.8	temporary soil nails between CS20 & RW12 (for RW12 bays 4-6)	35 days	6/2/2020	17/3/2020										
1680	29.2.9	Construction of Retaining Wall RW12 CH 21-40	58 days	18/3/2020	3/6/2020				—						
1703	29.2.10		125 days		3/11/2020				I						
1737	29.2.11	Site Formation works for Cut Slope CS26 (A4)		13/10/2020	22/10/2020					B					
			,												
	29.2.12	Site Formation works for Cut Slope CS25 (A4)	9 days	23/10/2020	5/11/2020					Ť					
	29.2.13	complete the construction of U channel at CS 25 and 26	15 days	4/11/2020	23/11/2020										
1740	29.2.14	planter wall	10 days	18/11/2020	28/11/2020					- F					
1741	29.2.15	Waterworks at Road B		24/11/2020	2/12/2020					Ť					
			,												
	29.2.16	Sewerage works at Road B	7 days	27/11/2020	4/12/2020					ľ					
	29.2.17	Drainage works at Road B	7 days	30/11/2020	7/12/2020										
	29.2.18	UU - Arrange Town Gas & PCCW to lay cables (not agreed yet)	14 days	8/12/2020	23/12/2020					Ť					
	29.2.19	Roadworks of Road B (A4-ch90-130)	23 days	23/12/2020	21/1/2021					F	4				
	29.2.20	street lighting (Drg/ RD/2091)	4 days	21/1/2021	25/1/2021						Ы				
	29.2.21	landscaping (hydroseeding)	7 days	25/1/2021	1/2/2021						K				
	29.2.22	landscaping (shrub planting)	5 days	29/1/2021	3/2/2021						ъ т				
1753		Planned Completion for section 6 of the works	0 days	3/2/2021	3/2/2021						1				
1754	31	Completion Date for section 6 of the works	0 days	3/2/2021	3/2/2021						4				
1755		section 7 of the works (section Subject to	1095	4/2/2021	3/2/2024						•				
		Excision) - Completion of Establishment works for the Landscape Softworks within Parts A3	days												
1756	32.1	Establishment works for the Landscape Softworks within Parts A3 and A4 of the Site	1095 days	4/2/2021	3/2/2024						*				

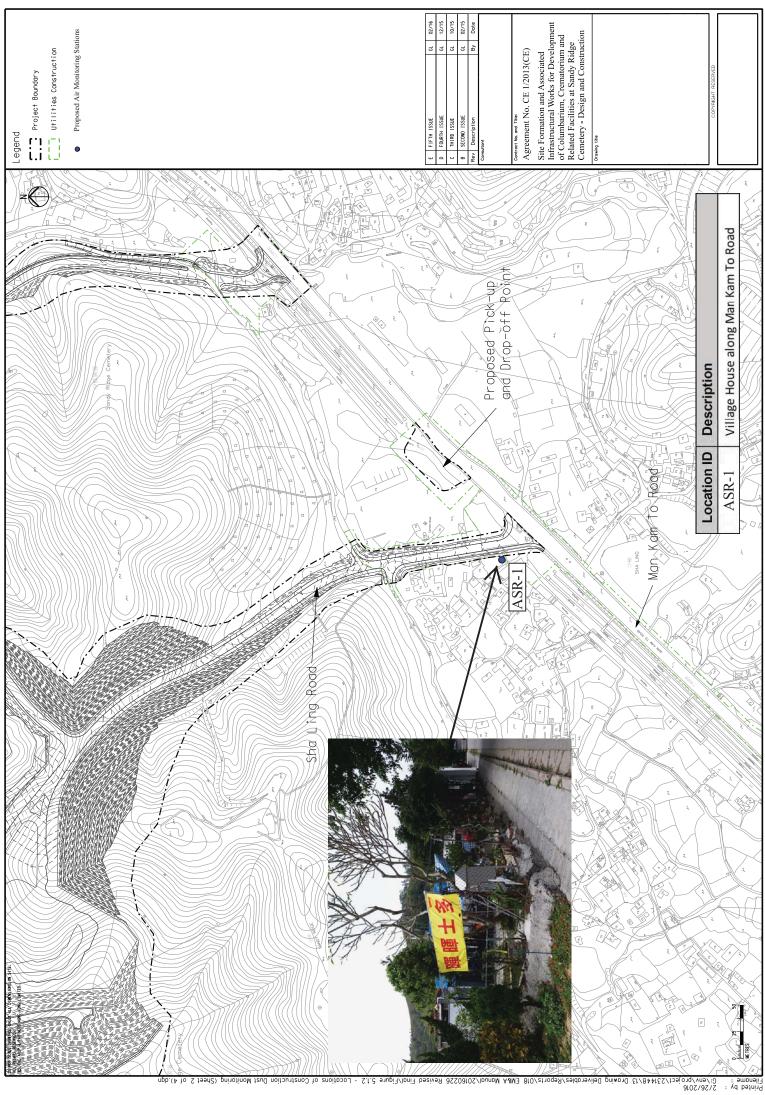


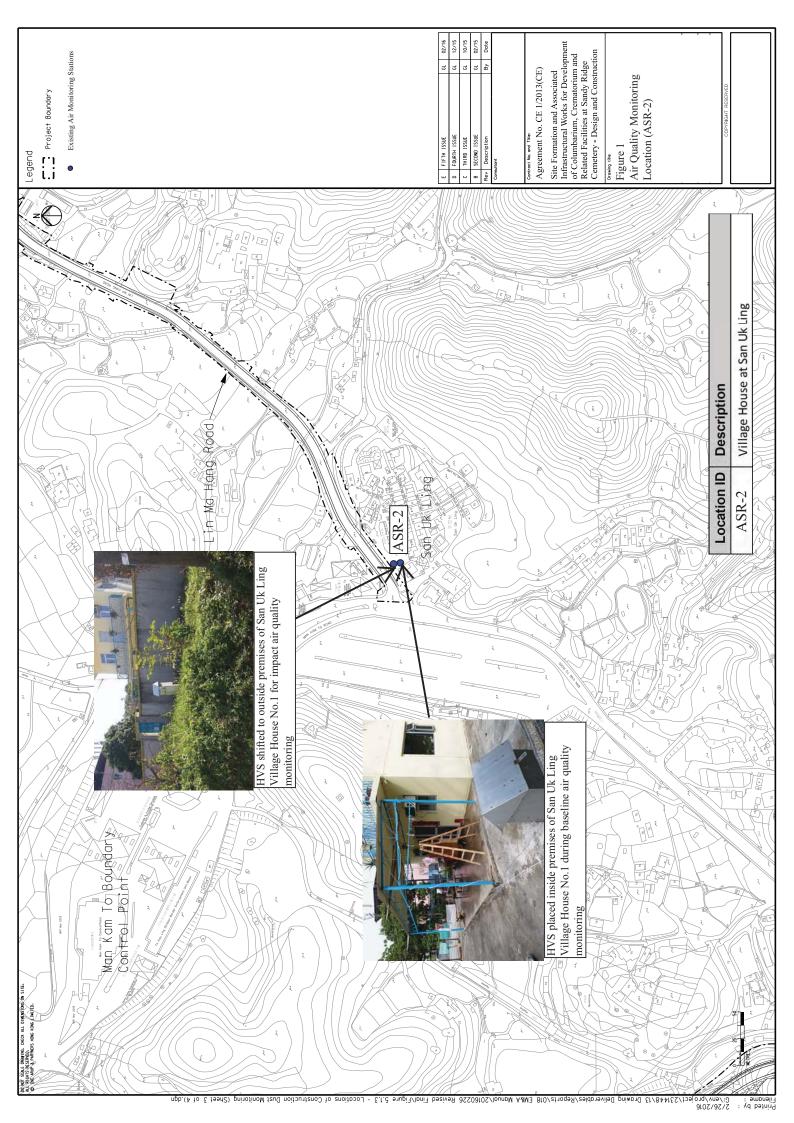
Appendix D

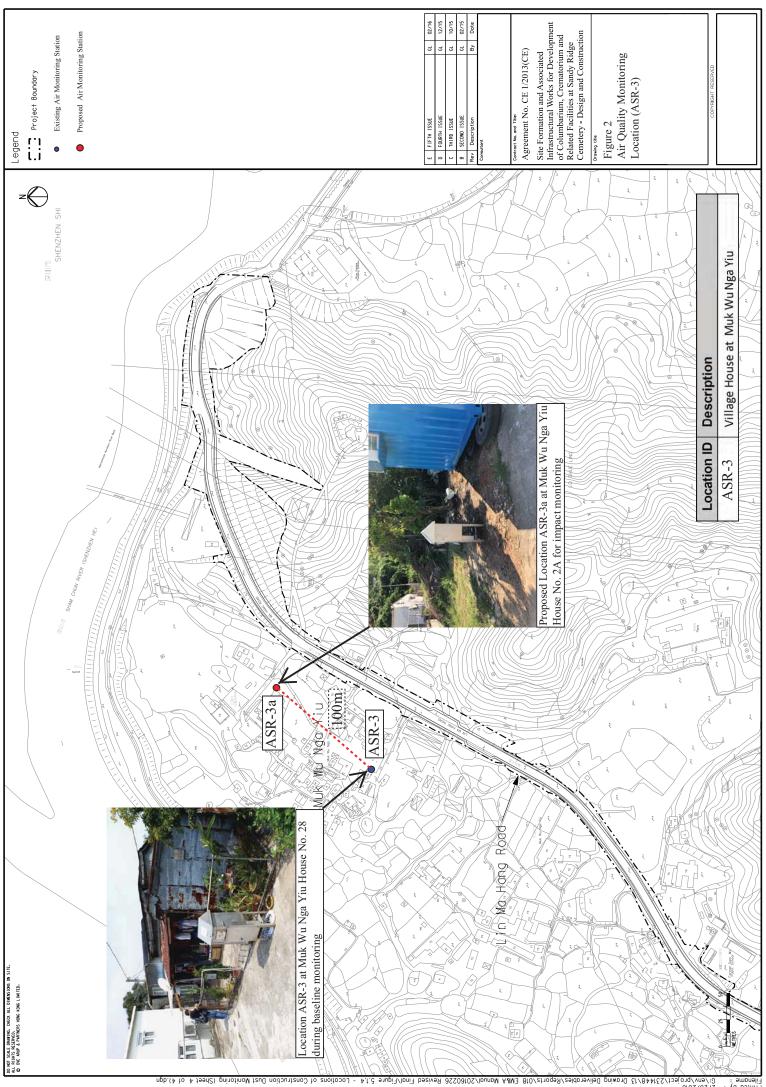
Monitoring Locations



Air Quality Monitoring Location

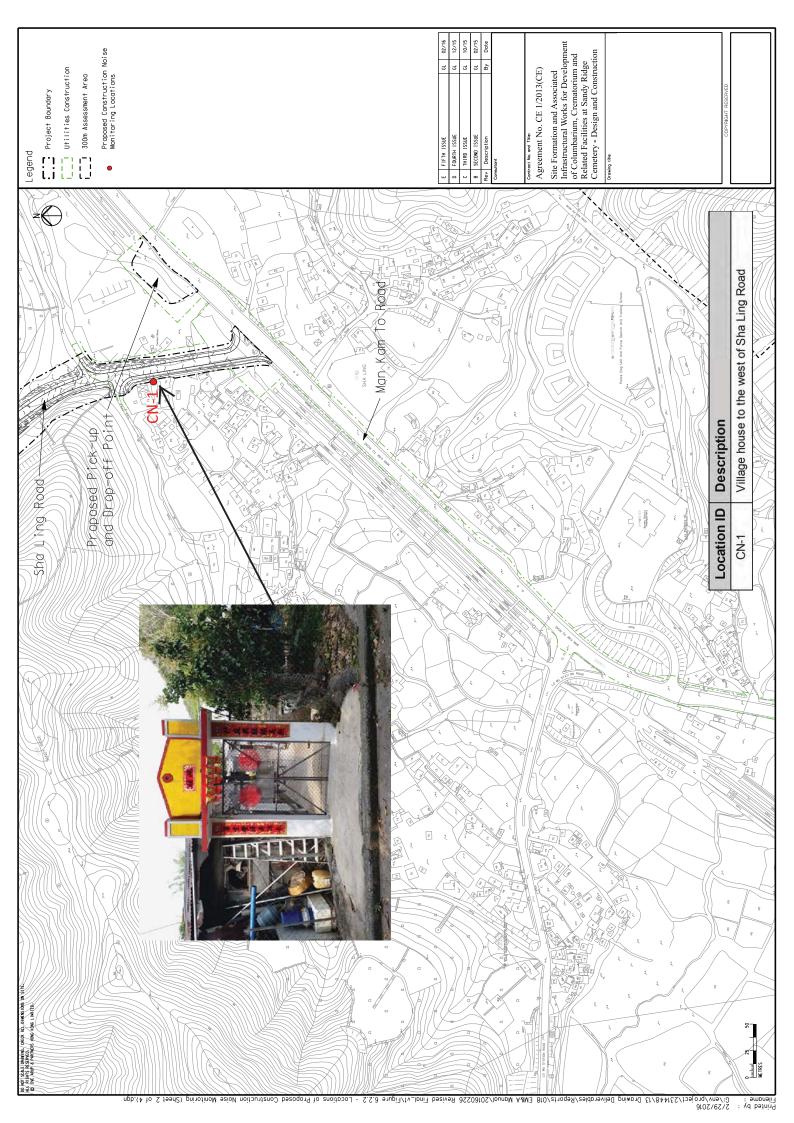


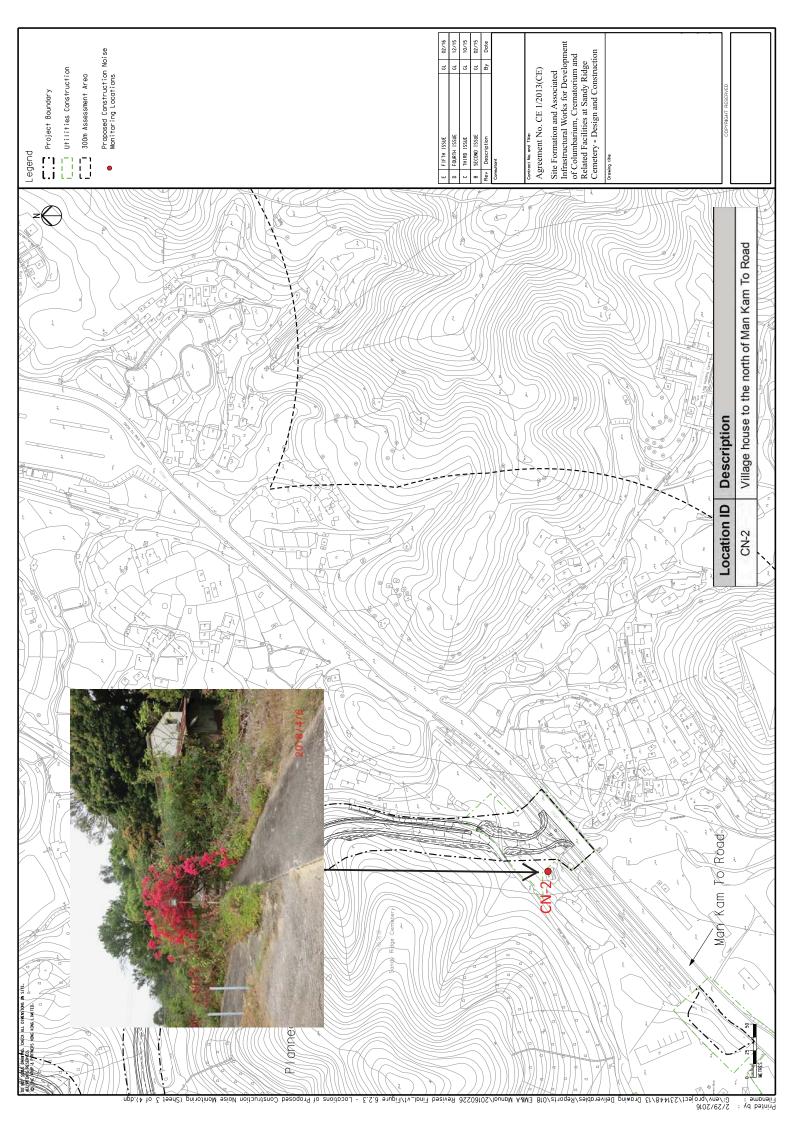


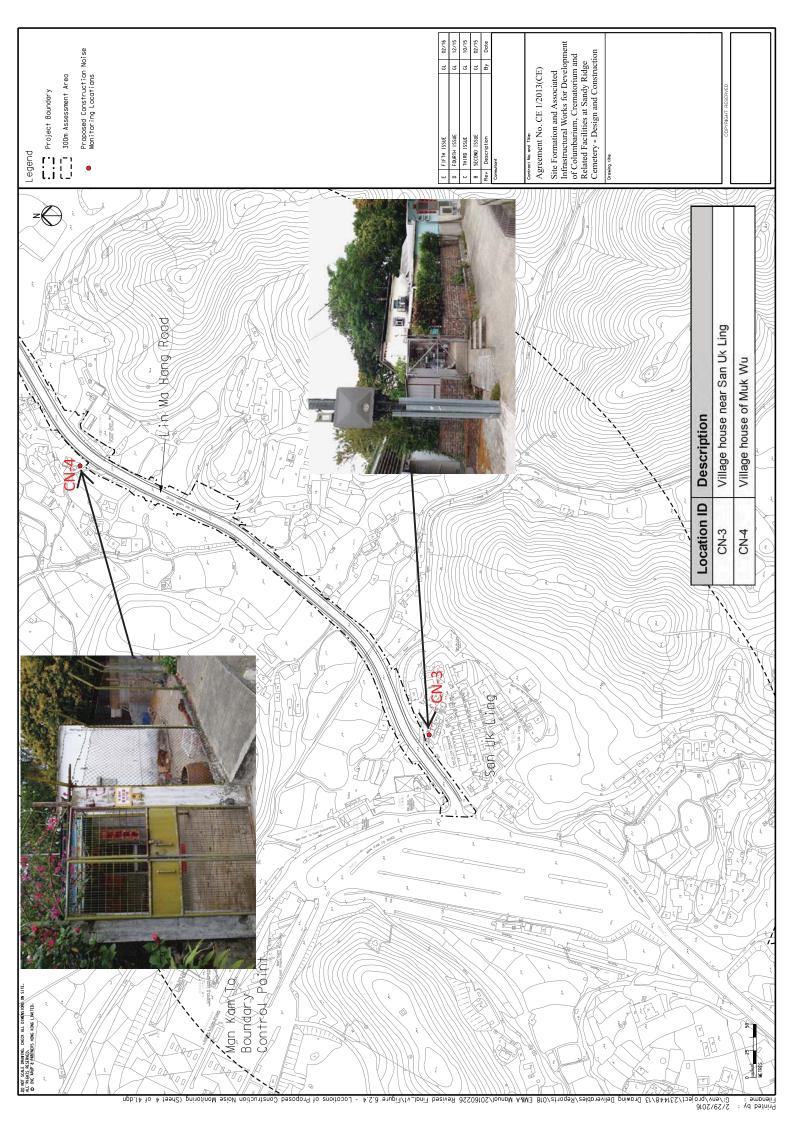




Noise Monitoring Location

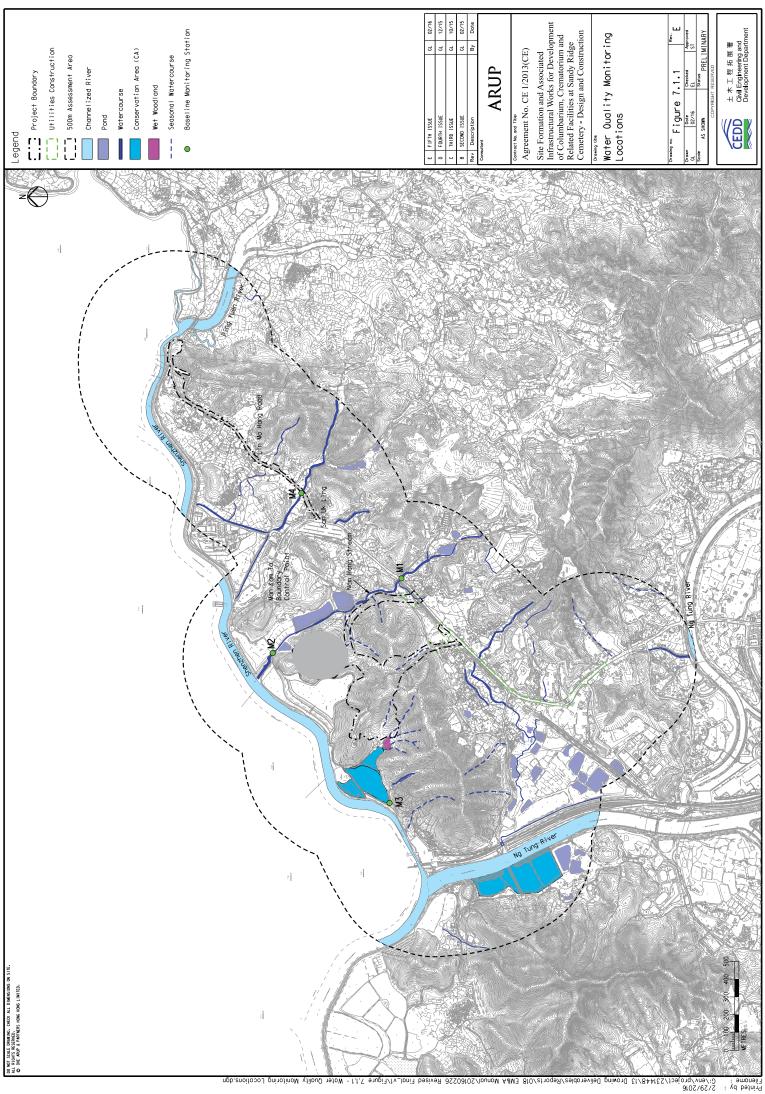








Water Quality Monitoring Station





Appendix E

Calibration Certificate of Monitoring Equipment and

Laboratory Certificate

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2023 \ 56th \ Month \ (March \ 2023) \ R0729 \ v2. \ doc \ R0729 \ R0729 \ r2. \$



CALIBRATION CERTIFICATES FOR MONITORING EQUIPMENT USED IN THE REPORTING MONTH

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	24 Feb 23	10 Mar 23
1b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	14 Mar 23	28 Mar 23
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	24 Feb 23	10 Mar 23
2b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	14 Mar 23	28 Mar 23
3a	Air	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	24 Feb 23	10 Mar 23
3b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	14 Mar 23	28 Mar 23
4		Calibration Kit TISCH Model TE-5025A Orifice ID 4064 and Rootsmeter S/N 438320	15 Dec 22	15 Dec 23
5		Laser Dust Monitor, Model LD-3B (Serial No. 366407) – EQ107	13 Feb 23	13 Feb 24
6		Laser Dust Monitor, Model LD-3B (Serial No. 366418) – EQ108	13 Feb 23	13 Feb 24
7		Laser Dust Monitor, Model LD-3B (Serial No. 366410) – EQ110	13 Feb 23	13 Feb 24
9		Rion NL-52 Sound Level Meter (Serial No. 00921191) – EQ013	19 Nov 22	19 Nov 23
10	Noise	Rion NL-52 Sound Level Meter (Serial No. 00142581) – EQ015	19 Nov 22	19 Nov 23
11		Rion NC-73 Acoustical Calibrator (Serial No. 10655561) – EQ085	20 Aug 22	20 Aug 23
12	W/ater	YSI Professional DSS (Serial No.17B102764)	4 Jan 23	4 Apr 23
13	Water	Global Water FP211 Flow Meter (Serial No. 22B106785)	3 May 22	3 May 23

Location :	Sha Lin	o Village	House	No.6			Date of C	Calibration: 24 Feb 23
Location I		ASR-1	1100.00			N		ation Date: 10 Mar 23
Name and	Model:	TISCH H	IVS Mo	del TE-5170				echnician: Eric Chan
					(CON	IDITIONS	
	Se	ea Level I Temp	Pressure perature	. ,		18.9 19.8		Corrected Pressure (mm Hg)764.175Temperature (K)293
					CALIE	BRA	TION ORIF	ICE
				Make-> Model-> Serial # ->	5025A			Qstd Slope -> 2.10977 Qstd Intercept -> -0.03782
					C	CALI	BRATION	
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chai	rt)	IC corrected	LINEAR REGRESSION
18	6.50	6.50	13.0	1.747	58	-	59.19	Slope = 38.8351
13	5.20	5.20	10.4	1.564	51		52.05	Intercept = -9.0146
10	4.30	4.30	8.6	1.424	44		44.90	Corr. coeff. = 0.9974
7 5	2.40 1.70	2.40 1.70	4.8 3.4	1.068 0.902	33 25		33.68 25.51	
	1.70	1.70	5.4	0.902		-	23.31	
								FLOW RATE CHART
Qstd = 1/r IC = I[Sqr				[1a))-b]			70.00	
10 1[091		.)(1500,11					60.00	
Qstd = sta							00.00	
IC = corre I = actual		-	es			()	50.00	y = 38.835x - 9.015
m = calibi		-				response (I		
b = calibra	~	-						
	_		_	oration (deg ation (mm)		char	30.00	*
$r \sin - a \cos \theta$	uai piess		g canora			Actual chart	00.00	
For subse	equent c	alculatio	n of sam	pler flow:		4	20.00	
1/m((I)[S	Sqrt(298/	Tav)(Pav	/760)]-b)				
m = samp	ler slone						10.00	
h = samp b = samp		ept						
I = chart r		-					0.00	0.500 1.000 1.500 2.000
Tav = dail		-						Standard Flow Rate (m3/min)
Pav = dail	y averag	e pressur	e		L			

Location :	San Uk	t Ling V	illage H	ouse No.1			Date of	Calibrati	on: 24 Fe	b 23			
Location I	D :	ASR-2				l	Next Calib	ration Da	ate: 10 M	ar 23			
Name and	Model: 7	FISCH H	IVS Mo	del TE-517(0			Technici	an: Eric (Chan			
						ONE	DITIONS						
	Se	a Level I	Pressure	(hPa)	10	18.0]	Co	rrected Pr	essure (1	mm Ha)	76/	1 1 7 5
	50			. ,				CO			0,	704	
		Temp		(\mathbf{C})		19.0			rempe		K)		293
				(CALIBI	RAT		ICE					
				Make->	TISCI	H	1		Ostd SI	one ->		2 109'	77
								C	-	-			
						1		,		.cpt ->		-0.037	02
				Serial # ->	4004]						
					CA	\LIB	RATION						
Plate	H20 (L)	H2O (R)	H20	Ostd	I		IC			LINE	AR		
				``````````````````````````````````````								15	
										-			
										-			
									C011. 0		0.771	0	
5	1.00	1.00	5.2	0.870	20	)	20.30						
Calculatio	ne ·							F	LOW RA		RT		
	Technician: Eric Chan         CONDITIONS         Sea Level Pressure (hPa) Temperature (°C)       IOI8.9 19.8       Corrected Pressure (mm Hg)       764.175 293         CALIBRATION ORIFICE         Make-> [TISCH Model-> 5025A Scrial # -> 4064       Qstd Slope -> Qstd Intercept -> 40.03782         CALIBRATION         Plate H20 (L)H2O (R] H20 Ostd II (in) (in) (m) (m)/mini (chart) corrected REGRESSION 18       CALIBRATION         Plate H20 (L)H2O (R] H20 Ostd II (in) (in) (m)/mini (chart) corrected REGRESSION 13       LINEAR REGRESSION         Reference to a field of the state of t												
_				(1a)) <b>-</b> 0]									
IC = I[Sqr	(Pa/Psid	)(15ta/13	a)]				60.00					•	-
0.1	1 1 0											/	
-							50.00						
	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$												
	$\begin{array}{c c c c c c c c c c c c c c c c c c c $												
	-	-				noq	40.00						-
b = calibra	ator Qstd	intercep	t			res				×			
Ta = actua	al tempera	ature dur	ing calib	oration ( deg	g K )	hart	30.00			Δ			
Pstd = act	ual pressu	are durin	g calibra	ation (mm)	Hg)	al c			•				
						Actu							
For subse	equent ca	lculatio	n of sam	pler flow:			20.00						
1/m((I)[S	Sqrt(298/7	Гav)(Pav	/760)]-b	)									
			· -				10.00						
m = samp	ler slope												
-	-	ept											
-		- r ·						0.5	00	1.000	1.500	2.	000
	-	e temner	ature					St			/min)		
		-			L	L							
	y average	pressur	C										

Location :	: Muk Wi	u Nga Yi	iu House	No.2A			Da	te of C	alibra	ation: 24 Fe	b 23			
Location 1	ID:	ASR-3a				l	Next							
Name and	l Model: '	TISCH H	IVS Mo	del TE-517(	)			Т	echn	ician: Eric C	Chan			
					C	ONDI	TION	S						
	Se				10				(		-			
		Temp	perature	(°C)		19.8				Tempe	erature (K)		2	93
				C/	ALIBF	RATIO	O NC	RIFICE						
										-	-			
										Qstd Interc	ept ->	-0.	03782	<u>'</u>
					CA	LIBR	RATIO	ON						
Plate	H20 (L)	H2O (R)	H20	Ostd		I	1	IC			LINEAR			
No.	(in)	(in)	(in)	(m3/min)						RI		ON		
18	6.50	6.50	13.0	1.747	5	55	5	6.13		S	lope = 32	2.1255		
13	5.30	5.30	10.6	1.579							-			
										Corr. co	eff. = 0	).9973		
	1.50	1.30	2.0	0.791		.)	L	5.51						
Calculatio	ons :				Γ									
Qstd = 1/r	m[Sqrt(H	20(Pa/Ps	td)(Tstd/	/Ta))-b]		6	0.00 -			FLOW RATE	CHART			
IC = I[Squ	rt(Pa/Pstd	)(Tstd/T	a)]									/		
18         6.50         6.50         13.0         1.747         55         56.13         Slope = 32.1255														
-			00							y = 32.12	5x - 0.827			
		-	es			<b>a</b> 4	0.00 -							
	-					e (IC								
	-	-	t			suod					•			
Ta = actua	al temper	ature dur	ing calib	oration ( deg	g K 🕽		0.00 -							
Pstd = act	ual press	ure durin	ig calibra	ation ( mm ]	Hg )	char				▲				
		loulotio	n of oom	nlor flow		2 ctual	0.00 -					_		
	-			-		Ă								
1/111(( 1 )[,	5411(296/	ΓάνχΓάν	///UU)]-U	)		1	0.00 -							
m = samp	ler slope													
_	_	ept					0 00 -							
	-							000	0.5	500 1.0	000	1.500	2.00	0
		-							S	tandard Flow F	Rate (m3/min	)		
Pav = dail	ly average	e pressur	e		L									
1														

Location			e House	No.6				alibration: 14 Mar 23				
Location		ASR-1				N		ation Date: 28 Mar 23				
Name and	l Model:	TISCH H	HVS Mo	del TE-517				echnician: Eric Chan				
					(	CON	DITIONS					
	Se	o Loval I	<b>D</b> #20013#2	$(1,\mathbf{D}_{n})$	101	0.0		Composted Duessium (new IIa) 764 175				
	36	a Level I		. ,		8.9		Corrected Pressure (mm Hg) 764.175				
		Temp	erature	$(\mathbf{C})$	]	9.8		Temperature (K) 293				
					CALIE	BRA		ICE				
							l .					
				Make->				Qstd Slope -> 2.10977				
				Model->				Qstd Intercept -> -0.03782				
				Serial # ->	4064							
					C	ALI	BRATION					
Dlata			1120	Ortil	т		IC					
PlateH20 (L)H2O (R)H20QstdIICLINEARNo.(in)(in)(m3/min)(chart)correctedREGRESSION												
18	6.40	6.40	12.8	1.733	(cha) 57	-	58.17	Slope = 39.1221				
13	5.20	5.20	12.8	1.755	51		52.05	Stope = -9.5745				
10	4.20	4.20	8.4	1.408	44		44.90	Corr. coeff. = 0.9995				
10 7	2.40	2.40	4.8	1.408	32		32.66					
5	1.70	1.70	0 3.4	0.902	25		25.51					
	1170	1170		0.702		-	20101					
Calculatio	ons :							FLOW RATE CHART				
Qstd = 1/r	m[Sqrt(H	[20(Pa/Ps	td)(Tstd	/Ta))-b]			70.00					
IC = I[Sq]	rt(Pa/Psto	d)(Tstd/T	'a)]									
							60.00					
Qstd = sta												
IC = correction		-	es			<u>〔</u>	50.00	y = 39.122x - 9.575				
I = actual		-				0		y - 39.122X - 9.575				
m = calib						spor	40.00					
b = calibr	-	-		1	. 17.)	r e	10100					
	-		-	bration ( de		cha	30.00	<b>y</b>				
Pstd = act	lual press	sure durir	ig callor	ation ( mm	ng)	Actual chart respons	30.00					
For subse	equent ca	alculatio	n of sam	pler flow:		Ă	20.00					
1/m((I)[	Sqrt(298/	'Tav)(Pav	/760)] <b>-</b> t	))								
							10.00					
m = samp	oler slope											
b = samp		cept					0.00					
I = chart i	-						0.000	0.500 1.000 1.500 2.000 Standard Flow Pate (m3/min)				
Tav = dai								Standard Flow Rate (m3/min)				
Pav = dai	ly averag	ge pressui	e		L							
1												

Location :	San Uk	t Ling V	illage H	ouse No.1			Date of	f Calibi	ration: 14 Mar	23			
Location I		ASR-2	inage II						Date: 28 Mar				
Name and			IVS Mc	del TE-517	0			Techr	nician: Eric Ch	an			
					С	ONI	DITIONS						
							-						
	Se	a Level I				)18.9			Corrected Pres	•	Hg)	764.	
		Temp	erature	(°C)		19.8	3		Tempera	ture (K)	L		293
				(	ALIB	RAT	ION ORIF	ICE					
				Make->	TISC	н	1		Qstd Slop	e ->	2	.1097	7
				Model->					Qstd Intercer			0.0378	
				Serial # ->					Quia microop			010270	52
					6	ALIE	BRATION						
Plate	H20 (L)	H2O (R)	H20	Qstd	Ι		IC			LINEAR			
No.	(in)	(in)	(in)	(m3/min)	(cha	art)	correcte	ed	RE	GRESSIO	N		
18	6.60	6.60	13.2	1.760	60		61.23		Sloj	-	6.9454		
13	5.40	5.40	10.8	1.594	53		54.09		Interce	-	4.8398		
10	4.40	4.40	8.8	1.440	40		46.95		Corr. coe	ff. =	0.9967		
7 5	2.50	2.50	5.0	1.090	34		34.70						
5	1.60	1.60	3.2	0.876	28	8	28.58						
Calculatio	ons :						70.00		FLOW RATE	CHART			
Qstd = 1/r	n[Sqrt(H	20(Pa/Ps	td)(Tstd	/Ta))-b]			10.00						
IC = I[Squ	t(Pa/Pstd	l)(Tstd/T	a)]				60.00				•	•	
							00.00						
Qstd = sta	ndard flo	w rate									*		
IC = correction		-	es			<u>í</u>	50.00		y = 36.945	c - 4.840	•		
I = actual	-	-				Actual chart response (I							
m = calibr	-	-	+			lods	40.00						
$b = calibration T_{a} - actus$	-	-		bration ( de	σK	art re							
	-		-	ation ( mm	<u> </u>	l ch	30.00		-				
1 510 - 401	uur pross		ig ounor		115 /	vctua							
For subse	equent ca	alculatio	n of san	npler flow:		٩	20.00						
1/m((I)[S	Sqrt(298/	Tav)(Pav	r/760)]-l	))									
							10.00						
m = samp													
b = samp		ept					0.00		0.500		1 500		
I = chart r	-	a tarras	otru-				0.000		0.500 1.0 Standard Flow R		1.500	2.0	00
Tav = dail Pav = dail		-								,			
i av – uali	ly average	e pressui											

r													
	Location : Muk Wu Nga Yiu House No.2ADate of Calibration: 14 Mar 23Location ID : ASR-3aNext Calibration Date: 28 Mar 23Name and Model: TISCH HVS Model TE-5170Technician: Eric Chan												
				1-1 TE 517	0		Next						
Name and	Wodel:	113CH F	1 1 5 1010	del TE-ST/		חאר							
					0			10					
	Se	a Level I	Pressure	(hPa)	1(	018.	9		Correct	ed Pressure (m	m Hg)	764.175	
			erature	· · ·		19.				emperature (K)		293	
		1											
				CA	LIBF	RATI		RIFICE					
				I			_		_		<b>.</b>		
				Make->			_		-	td Slope ->		0977	
				Model->			_		Qstd I	Intercept ->	-0.0	03782	
				Serial # ->	4004								
					CA	LIB	RATIO	N					
Dlate	H20 (L)	H2⊖ (₽)	<u>Ц</u> 20	Ostd	-	T		IC					
PlateH20 (L)H2O (R)H20QstdIICLINEARNo.(in)(in)(in)(m3/min)(chart)correctedREGRESSION													
18	6.40	6.40	12.8	1.733		5	-	6.13		Slope = $33$			
13	5.40	5.40	10.8	1.594		.9		0.01		Intercept = $-2$			
10	4.20	4.20	8.4	1.408	4	-3	4	3.88	Сс	orr. $coeff. = 0$	0.9984		
7	2.40	2.40	4.8	1.068	3	2	3	2.66					
5	1.40	1.40	2.8	0.820	2	5	2	5.51					
O de la de la					Г								
			+.d)(T+.d	/T)) 1-1			60.00		FLOW	RATE CHART			
Qstd = 1/r IC = I[Sqr				/1a))-0]							•		
IC – 1[54		1)(1510/1	a)]										
Qstd = sta	ndard flo	ow rate					50.00			= 33.184x - 2.320			
IC = correction			es						y –	. 55. 1042 - 2.520	•		
I = actual		-				ົດ	40.00						
m = calibat	ator Qsta	d slope				response (IC)							
b = calibr	-	-				noq	30.00						
	_		_	oration ( deg	- 1	ц	00.00						
Pstd = act	ual press	ure durin	ig calibr	ation (mm	Hg	cha				•			
Foroubo	au ant a	alaulatia	n of oon	pler flow:		Actual chart	20.00						
1/m(( I )[	•			•		Ă							
1/111((1)[,	5411(290/	ΙάνχΓάν	//////]-l	))			10.00						
m = samp	ler slope												
b = samp	_	ept											
I = chart I		1					0.00 0.0	000	0.500	1.000	1.500	2.000	
Tav = dai	-	e temper	ature						Standard	Flow Rate (m3/mi	n)		
Pav = dai	y averag	e pressur	e		L								
I													



RECALIBRATION DUE DATE:

December 15, 2023

nmental Certificate of Calibration

- 1 -			Calibration					017	
Cal. Date:	December	15, 2022	Roots	meter S/N:	438320	Ta:	295	°K	
Operator:	Jim Tisch					Pa:	748.0	mm Hg	1
Calibration	Model #:	TE-5025A	Calil	prator S/N:	4064				1
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1	×
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)		
	1	1	2	1	1.4430	3.2	2.00		
	2	3	4	1	1.0210	6.4	4.00	1	
	3	5	6	1	0.9170	7.9	5.00		
	4	7	8	1	0.8730	8.8	5.50	1	
	5	9	10	1	0.7210	12.8	8.00	]	
	-			Data Tabula	tion		)'	1	
				V Total V				1	
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	√∆H( Ta/Pa)		
	(m3)	(x-axis)	(y-ax	is)	Va	(x-axis)	(y-axis)		
	0.9900	0.6861	1.41	01	0.9957	0.6900	0.8881	.]	
	0.9858	0.9655	1.99		0.9914	0.9711	1.2560	-	
	0.9838	1.0728	2.22		0.9894	1.0790	1.4042	-	
	0.9826	1.1255	2.33		0.9882	1.1320	1.4728	-	
	0.9772	1.3554	2.82		0.9829	1.3632	1.7762	-	
	OCTD	m= b=	-0.03	All source into party or construction of the second	0.4	m= b=	1.32110	-	
	QSTD	r=	0.999		QA	r=	0.99998	-	
			ana da kana da	Calculatio	ns			ī	
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T		procession of the second se	ΔVol((Pa-Δ	P)/Pa)	1	
	Qstd=	Vstd/∆Time			the second se	Va/∆Time		1	
			For subsequ	ent flow ra	te calculatio	ns:		]	
	Qstd=	1/m (( √∆H(	Pa <u>Tstd</u> Pstd Ta	-))-b)	Qa=	1/m ((√∆ł	H(Ta/Pa))-b)		
	Standard	Conditions						_	
Tstd						RECA	LIBRATION		
Pstd		mm Hg			LIS EDA rocc	ommende o	nnual recalibrati	on por 1	202
		<b>(ey</b> ter reading (i	n H2O)				Regulations Part	-	
		eter reading (i					, Reference Met		
		perature (°K)					ended Particulat		
		ressure (mm				-	ere, 9.2.17, page		111
b: intercept	t				u u	слатоэри		50	
m: slope									

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002

# **ALS Technichem (HK) Pty Ltd**

# **ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES



#### SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER HK2307087
CLIENT	ACTION-UNITED ENVIRONMENTAL	
	SERVICES & CONSULTING	
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41	SUB-BATCH : 1
	TAI LIN PAI ROAD, KWAI CHUNG, N.T.	DATE RECEIVED : 20-FEB-2023
	······································	DATE OF ISSUE : 27-FEB-2023
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.) is provided by client.

- Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified.
- Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.

#### Signatories

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

Signatories	Position	
Richard Juny.		
Richard Fung	Managing Director	

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release. ALS Technichem (HK) Pty Ltd

Part of the ALS Laboratory Group

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

WORK ORDER SUB-BATCH

CLIENT

PROJECT

: HK2307087

: 1 : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING : ....



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2307087-001	S/N: 366407	AIR	20-Feb-2023	S/N: 366407

## **Equipment Verification Report (TSP)**

#### **Equipment Calibrated:**

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366407
Equipment Ref:	EQ107

#### **Standard Equipment:**

Standard Equipment:	Higher Volume Sampler (TSP)				
Location & Location ID:	AUES office (calibration room)				
Equipment Ref:	HVS 018 & HVS 019				
Last Calibration Date:	14 December 2022 & 10 January 2023				

### **Equipment Verification Results:**

Verification Date:

10, 11 &12 January 2023

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
10-Jan-23	2hr1min	14:41 ~ 16:42	18.2	1018.8	7.6	613	5.1
11-Jan-23	2hr01min	13:16 ~ 15:17	18.1	1017.6	25.2	1786	14.8
11-Jan-23	2hr01min	15:25 ~ 17:26	18.1	1017.6	15.8	1206	10.0
12-Jan-23*	61mins	09:31 ~ 10:32	18.8	1014.5	112.8	3679	60.1
12-Jan-23*	61mins	10:36 ~ 11:37	18.8	1014.5	81.5	2077	33.9

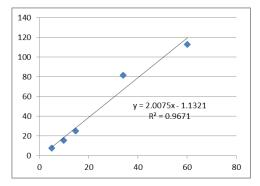
(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration) <u>565 (CPM)</u> 565 (C

### Linear Regression of Y or X

Slope (K-factor): Correlation Coefficient (R)

<u>2.0075 (µg/m³)/CPM</u> 0.9834 13 February 2023



(CPM)

### Remarks:

Date of Issue

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

2. Factor 2.0075 (µg/m³)/CPM should be apply for TSP monitoring

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

Operator :	Fai So	Signature :	Ja	Date :	13 February 2023
QC Reviewer :	Ben Tam	Signature : _	\$6	Date :	13 February 2023

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	Location : Gold King Industrial Building, Ky Location ID : Calibration Room(HVS 018)	wai Chung		Date of Calibration: 14-Dec-22 Next Calibration Date: 14-Mar-23	
Temperature (°C)         12.5         Temperature (K)         286           CALIBRATION ORIFICE           Make-> Model->         TISCH 5025A 27-Dec-21         Qstd Slope -> Qstd Intercept -> 27-Dec-22         1.99838 4.000903 27-Dec-22           CALIBRATION ORIFICE           Temperature (K)         286           Plate         H20 (D) H20 (R         H20 Qstd         I         IC         LINEAR           No. (in) (in) (in) (m3/min) (chart) corrected REGRESSION         REGRESSION         Slope = 29.6312           13         4.8         4.8         9.6         1.595         48         49.23         Intercept = 2.5287           10         3.8         3.8         7.6         1.420         44         45.13         Corr. coeff. = 0.9991           8         2.5         2.5         5.0         1.152         36         36.93           Calculations : (Std = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b] IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]           Graduat flow rate IC = corrected chart response m = calibrator Qstd slope b = calibrator Qstd slope b = calibrator Qstd slope b = calibrator Qstd slope for the calibration (deg K) Pstd = actual temperature during calibration (deg K) Pstd = actual pressure during calibration (deg K) Im = sampler slope         FLOW RATE CHART		CONDITIO	NS		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					
Model->       5025A       Qstd Intercept -> $0.00903$ 27-Dec-21       Expiry Date-> $27$ -Dec-22         CALIBRATION         INTERCENTION         CALIBRATION         CALIBRATION         CALIBRATION         CALIBRATION         INTERCENT COLSPAN         INTERCENT         CALIBRATION         Superior Colspan="2">CALIBRATION         CALIBRATION         CALIBRATION         CALIBRATION         Calculations :         Calculations :         Calibrator Qstd flow rate <th colspa="&lt;/td"><td>CALIE</td><td>BRATION</td><td>ORIFICE</td><td>E</td></th>	<td>CALIE</td> <td>BRATION</td> <td>ORIFICE</td> <td>E</td>	CALIE	BRATION	ORIFICE	E
Plate       H20 (L)H2O (R)       H20       Qstd       I       IC       LINEAR         No.       (in)       (in)       (in)       (m3/min)       (chart)       corrected       REGRESSION         18       6       6       12.0       1.783       54       55.39       Slope = 29.6312         13       4.8       4.8       9.6       1.595       48       49.23       Intercept = 2.5287         10       3.8       3.8       7.6       1.420       44       45.13       Corr. coeff. = 0.9991         8       2.5       2.5       5.0       1.152       36       36.93       28         28       28.72       28       28.72       28       28.72         Calculations :         Qstd = standard flow rate       IC = corrected chart respones       I       actual chart respones       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I <td>Model-&gt; 502</td> <td>25A</td> <td></td> <td>Qstd Intercept -&gt; -0.00903</td>	Model-> 502	25A		Qstd Intercept -> -0.00903	
No.         (in)         (in)         (m ² /min)         (chart)         corrected         REGRESSION           18         6         6         12.0         1.783         54         55.39         Slope = 29.6312           13         4.8         4.8         9.6         1.595         48         49.23         Intercept = 2.5287           10         3.8         3.8         7.6         1.420         44         45.13         Corr. coeff. = 0.9991           8         2.5         2.5         5.0         1.152         36         36.93           5         1.5         1.5         3.0         0.894         28         28.72           Calculations :           Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]         IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.0	C	CALIBRAT	ION		
18       6       6       12.0       1.783       54       55.39       Slope = 29.6312         13       4.8       4.8       9.6       1.595       48       49.23       Intercept = 2.5287         10       3.8       3.8       7.6       1.420       44       45.13       Corr. coeff. = 0.9991         8       2.5       2.5       5.0       1.152       36       36.93       Corr. coeff. = 0.9991         State       1.5       1.5       3.0       0.894       28       28.72       Corr. coeff. = 0.9991         Calculations :         Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]       FLOW RATE CHART         IC = corrected chart response       60.00       50.00       50.00       50.00         m = calibrator Qstd intercept       Ta = actual temperature during calibration (deg K)       9       9       9       90.00       9         Pstd = actual pressure during calibration (mm Hg)       10.00       10.00       10.00       10.00       10.00       10.00					
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 slope         b = 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	18         6         6         12.0         1.783         5.7           13         4.8         4.8         9.6         1.595         4           10         3.8         3.8         7.6         1.420         4           8         2.5         2.5         5.0         1.152         3	8 49 4 4 <u>4</u> 6 30	9.23 5.13 6.93	Intercept = $2.5287$	
b = sampler intercept $I = chart response$ $0.00 + + + + + + + + + + + + + + + + + +$	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 slope b = calibrator Qstd intercept Ta = actual temperature during calibration ( deg K ) Pstd = actual pressure during calibration ( mm Hg ) <b>For subsequent calculation of sampler flow:</b> 1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b) m = sampler slope b = sampler intercept	- 00.05 - 00.05 - 00.05 - 00.02 - 00.01 - 00.01			



RECALIBRATION DUE DATE:

December 27, 2022

	Ce	rtifa	Calibration				ntion	
Cal. Date:	December	27 2021		meter S/N:		annan an ann an Adres An Inne Aigeine Inne Station	295	°K
		27, 2021	ROOLS	meter 5/14.	436320			
Operator:	Jim Tisch					Pa:	740.4	mm Hg
Calibration	Model #:	TE-5025A	Cali	brator S/N:	1612			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.3890	3.2	2.00	
	2	3	4	1	0.9760	6.4	4.00	
	3	5	6	1	0.8740	7.9	5.00	
	4	7	8	1	0.8320	8.8	5.50	
	5	9	10	1	0.6870	12.7	8.00	
				Data Tabula	tion			
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	√∆H(Ta/Pa)	
	(m3)	(x-axis)	y (y-ax		Va	(x-axis)	(y-axis)	
	0.9799	0.7055	1.40	1	0.9957	0.7168	0.8927	
	0.9756	0.9996	1.98		0.9914	1.0157	1.2624	
	0.9736	1.1140	2.21	1	0.9893	1.1320	1.4114	
	0.9724	1.1688	2.32	65	0.9881	1.1876	1.4803	
	0.9673	1.4079	2.80	1	0.9828	1.4306	1.7853	
		m=	1.998			m=	1.25135	
	QSTD	b=	-0.00903		QA	b=	-0.00574	
		r= 0.99999				r=	0.99999	
			(m	Calculation				
		ΔVol((Pa-ΔP) Vstd/ΔTime	/Pstd)(Tstd/T	a)	Va=			
	Q3tu-	For subsequ	lent flow ra	Qa= Va/∆Time				
	Qstd=	1/m (( \\ \ \ \ \ \ \ \ \ \ \ \ \ (	Pa <u>Tstd</u> Pstd Ta	The second s		1/m ((√∆H	l(Ta/Pa))-b)	
		Conditions						I
Tstd:	298.15	°K		Ι		RECA	LIBRATION	
Pstd:	Contraction of the second seco	mm Hg			LIS EPA reco	mmende	nnual recalibratio	n ner 1000
AH: calibrat		<b>(ey</b> ter reading (i	n H2O)				Regulations Part 5	
		eter reading					, Reference Meth	
Ta: actual al	osolute tem	perature (°K)					ended Particulate	
		ressure (mm	Hg)				ere, 9.2.17, page 3	
b: intercept				l			,	
m: slope								

Tisch Environmental, Inc.

145 South Miami Avenue

Village of Cleves, OH 45002

<u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9005

Location :Gold King Industrial Building, Kwai ChungLocation ID :Calibration Room(HVS 019)						nung	Date of Calibration: 10-Jan-23 Next Calibration Date: 9-Apr-23	
						COND	ITIONS	
	Se	a Level I Temp	Pressure erature	. ,	1	018.8 18.2		Corrected Pressure (mm Hg) 764.1 Temperature (K) 291
					CALI	BRATI	ON ORIFIC	CE
Make-> TIS Model-> 502 Calibration Date-> 15-De								Qstd Slope ->         2.10977           Qstd Intercept ->         -0.03782           Expiry Date->         15-Dec-23
					C	CALIB	RATION	
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)		[ art)	IC corrected	LINEAR REGRESSION
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				5 4 4	5         55.79           8         48.69           4         44.63           36         36.52		Slope = 31.4802 Intercept = 1.9499 Corr. coeff. = 0.9967	
Pstd = actu For subse 1/m((I)[S m = sampl b = sampl I = chart re	n[Sqrt(H t(Pa/Pstc ndard flo cted cha chart res ator Qstd tor Qstd l temper ual press <b>quent ca</b> qrt(298/ er slope er interc esponse	d)(Tstd/T ow rate rt respon ponse d slope intercep ature durin ure durin <b>alculation</b> Tav)(Pav	a)] es t ting cali g calibr <b>n of san</b> t/760)]-t	bration ( de ation ( mm apler flow:		00 905 905 905 905 901 901 901	0.00 0.00 0.00 0.00 0.00 0.000	FLOW RATE CHART
Tav = dail Pav = dail						<u> </u>		



RECALIBRATION DUE DATE:

December 15, 2023

nmental Certificate of Calibration

- 1 -			Calibration					°K	
Cal. Date:			meter S/N:	438320	Ta:	Ta: 295			
Operator:	Jim Tisch					Pa:	748.0	mm Hg	1
Calibration	Model #:	TE-5025A	Calil	prator S/N:	4064				1
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1	×
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)		
	1	1	2	1	1.4430	3.2	2.00		
	2	3	4	1	1.0210	6.4	4.00	1	
	3	5	6	1	0.9170	7.9	5.00		
	4	7	8	1	0.8730	8.8	5.50	1	
	5	9	10	1	0.7210	12.8	8.00	]	
	-			Data Tabula	tion		)'	1	
				V Total V				1	
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	√∆H( Ta/Pa)		
	(m3)	(x-axis)	(y-ax	is)	Va	(x-axis)	(y-axis)		
	0.9900	0.6861	1.41	01	0.9957	0.6900	0.8881	.]	
	0.9858	0.9655	1.9943		0.9914	0.9711	1.2560	-	
	0.9838	1.0728	2.22		0.9894	1.0790	1.4042	-	
	0.9826	1.1255	2.33		0.9882	1.1320	1.4728	-	
	0.9772	1.3554	2.82		0.9829	1.3632	1.7762	-	
	OCTD	m= b=	-0.03	All source into party or construction of the second	0.4	m= b=	1.32110	-	
	QSTD	r=	0.999		QA	r=	0.99998	-	
			ana da kana da	Calculatio	ns			ī	
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T		procession of the second se	ΔVol((Pa-Δ	P)/Pa)	1	
	Qstd=	Qstd= Vstd/∆Time			Qa= Va/ATime				
					ent flow rate calculations:				
	<b>Qstd=</b> $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)\right)$			-))-b)	Qa=	1/m ((√∆ł	H(Ta/Pa))-b)		
	Standard	Conditions						_	
Tstd						RECA	LIBRATION		
Pstd		mm Hg			LIS EDA rocc	ommende o	nnual recalibrati	on por 1	202
		<b>(ey</b> ter reading (i	n H2O)				Regulations Part	-	
		eter reading (i					, Reference Met		
		perature (°K)							
		ressure (mm			Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30				
b: intercept	t				u u	слатоэри		50	
m: slope									

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002

# **ALS Technichem (HK) Pty Ltd**

# **ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES



#### SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER HK2307088
CLIENT	ACTION-UNITED ENVIRONMENTAL	
	SERVICES & CONSULTING	
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41	SUB-BATCH : 1
	TAI LIN PAI ROAD, KWAI CHUNG, N.T.	DATE RECEIVED : 20-FEB-2023
		DATE OF ISSUE : 27-FEB-2023
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.) is provided by client.

- Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified.
- Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.

#### Signatories

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

Signatories	Position	
Kirland Jong .		
Richard Fung	Managing Director	

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release. ALS Technichem (HK) Pty Ltd

Part of the ALS Laboratory Group

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

WORK ORDER SUB-BATCH

CLIENT

PROJECT

: HK2307088

: 1 : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING : ....



ALS Lab **Client's Sample ID** Sample Sample Date External Lab Report No. ID Туре HK2307088-001 AIR 20-Feb-2023 S/N: 366418 S/N: 366418

## **Equipment Verification Report (TSP)**

#### **Equipment Calibrated:**

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366418
Equipment Ref:	EQ108

#### **Standard Equipment:**

Standard Equipment:	Higher Volume Sampler (TSP)				
Location & Location ID:	AUES office (calibration room)				
Equipment Ref:	HVS 018 & HVS 019				
Last Calibration Date:	14 December 2022 & 10 January 2023				

### **Equipment Verification Results:**

Verification Date:

10, 11 &12 January 2023

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
10-Jan-23	2hr1min	14:41 ~ 16:42	18.2	1018.8	7.6	584	4.8
11-Jan-23	2hr01min	13:16 ~ 15:17	18.1	1017.6	25.2	1677	13.9
11-Jan-23	2hr01min	15:25 ~ 17:26	18.1	1017.6	15.8	1106	9.1
12-Jan-23*	61mins	09:31 ~ 10:32	18.8	1014.5	112.8	3546	57.9
12-Jan-23*	61mins	10:36 ~ 11:37	18.8	1014.5	81.5	2110	34.5

(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration) <u>685 (CPM)</u> 685 (C

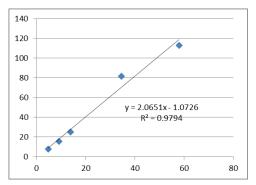
### Linear Regression of Y or X

Slope (K-factor):

Correlation Coefficient (R)

0.9896 13 February 2023

2.0651 (µg/m³)/CPM



(CPM)

### Remarks:

Date of Issue

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

2. Factor 2.0651 (µg/m³)/CPM should be apply for TSP monitoring

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

Operator :	Fai So	Signature :	Ja	Date :	13 February 2023
QC Reviewer :	Ben Tam	Signature : _	\$6	Date :	13 February 2023

Location : Gold King Industrial Building, Kwa Location ID : Calibration Room(HVS 018)							nung	Date of Calibration: 14-Dec-22 Next Calibration Date: 14-Mar-23		
						COND	ITIONS			
	Sea Level Pressure (hPa)1021.4Corrected Pressure (mm Hg)766.05Temperature (°C)12.5Temperature (K)286									
					CALI	BRATI	ON ORIFIC	CE		
			Calibrat	Make-> Model-> ion Date->	502	CH 25A ec-21		Qstd Slope ->         1.99838           Qstd Intercept ->         -0.00903           Expiry Date->         27-Dec-22		
					(	CALIB	RATION			
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)		I art)	IC corrected	LINEAR REGRESSION		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					4 4 3	54         55.39           48         49.23           44         45.13           36         36.93           28         28.72		Slope = 29.6312 Intercept = 2.5287 Corr. coeff. = 0.9991		
	n[Sqrt(H t(Pa/Pstc ndard flc cted cha chart res ator Qstd tor Qstd il temper ual press <b>quent ca</b> Sqrt(298/ er slope er interc	d)(Tstd/T ow rate rt respond ponse d slope intercep rature dur ure durin <b>alculatior</b> Tav)(Pav	a)] es t ing cali g calibr <b>n of san</b>	bration ( de ation ( mm apler flow:		00 Actual chart response (IC) 00 01 01		FLOW RATE CHART		
Tav = dail Pav = dail						<u> </u>				



RECALIBRATION DUE DATE:

December 27, 2022

	Ce	rtifa	Calibration				ntion			
Calibration Certification Information         Cal. Date:       December 27, 2021       Rootsmeter S/N: 438320       Ta: 295       °K										
Operator:   Jim Tisch   Pa: 740.4										
Calibration	Model #:	TE-5025A	Cali	brator S/N:	1612					
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	]		
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)			
	1	1	2	1	1.3890	3.2	2.00			
	2	3	4	1	0.9760	6.4	4.00	1		
	3	5	6	1	0.8740	7.9	5.00	-		
	4	7	8	1	0.8320	8.8	5.50	4		
	5	9	10	1	0.6870	12.7	8.00	]		
				Data Tabula	tion			]		
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)(Tstd)		Qa	√∆H(Ta/Pa)			
	(m3)	(x-axis)	y (y-ax		Va	(x-axis)	(y-axis)			
	0.9799	0.7055	1.40	1	0.9957	0.7168	0.8927			
	0.9756	0.9996	1.98		0.9914	1.0157	1.2624			
	0.9736	1.1140	2.21	1	0.9893	1.1320	1.4114			
	0.9724	1.1688	2.32	65	0.9881	1.1876	1.4803			
	0.9673	1.4079	2.80	1	0.9828	1.4306	1.7853	1		
		m=	1.998			m=				
	QSTD	b=	-0.00		QA	b=	-0.00574	3		
		r=	0.999	999		r=	0.99999	]		
				Calculation						
	been service and service on the service of the serv	the local data and the second	/Pstd)(Tstd/T	a)	Conception of the owner owner owner owner owner	Va= $\Delta Vol((Pa-\Delta P)/Pa)$				
	Qstd=	Vstd/∆Time	For subcos	ont flow no		Va/∆Time				
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 $\left( \left( \sqrt{\Delta H \left( Ta/Pa \right)} \right) - b \right)$										
		Conditions		. / /		//.		1		
Tstd:	298.15	°K		Γ		RECA	LIBRATION			
Pstd:	Contractor and the second seco	mm Hg		ľ				4000		
AH: calibrat		<b>(ey</b> ter reading (i	n H2O)				nnual recalibratio			
		eter reading (I					Regulations Part ! Reference Meth			
		perature (°K)			Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in					
Pa: actual b	arometric pi	ressure (mm					erided Particulation and Part			
b: intercept						- Autoophe	, J.2.17, page			
m: slope				-						

Tisch Environmental, Inc.

145 South Miami Avenue

Village of Cleves, OH 45002

<u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9005

Location :Gold King Industrial Building, Kwai ChuLocation ID :Calibration Room(HVS 019)							ung		bration: 10-Jan-23 n Date: 9-Apr-23		
						COND	ITIONS				
	Sea Level Pressure (hPa)1018.8Corrected Pressure (mm Hg)764.1Temperature (°C)18.2Temperature (K)291										
					CALI	BRATI	ON ORIFIC	E			
			Calibrat	Make-> Model-> ion Date->	502	CH 25A ec-22		Qstd Slope -> Qstd Intercept -> Expiry Date->	2.10977 -0.03782 15-Dec-23		
					C	CALIBI	RATION		-		
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	(ch	I art)	IC corrected	LINEAR REGRESSI			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				1000000000000000000000000000000000000		Slope = 31.4802 Intercept = 1.9499 Corr. coeff. = 0.9967					
Pstd = actu For subse 1/m((I)[S m = sampl b = sampl I = chart re	n[Sqrt(H t(Pa/Pstc ndard flo cted char chart res ator Qstd l temper ial press <b>quent ca</b> qrt(298/ er slope er interc esponse	d)(Tstd/T ow rate rt respon- ponse d slope intercep ature durin ure durin <b>alculation</b> Tav)(Pav	a)] es t ing cali g calibr n of sam (/760)]-t	bration ( de ation ( mm	<b>·</b> ·	.00 .02 .02 .02 .02 .02 .01 .01 .01	00	FLOW RATE CHART	1.500 2.000		
Tav = dail Pav = dail		-				[					



RECALIBRATION DUE DATE:

December 15, 2023

nmental Certificate of Calibration

- 1 -			Calibration					017	*approximation
Cal. Date:							295	°K	
Operator:	Jim Tisch				748.0	mm Hg	1		
Calibration	Model #:	TE-5025A	Calil	prator S/N:	4064				1
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1	×
	Run				(min)	(mm Hg)	(in H2O)		
	1	1	2	(m3) 1	1.4430	3.2	2.00		
	2	3	4	1	1.0210	6.4	4.00	1	
	3	5	6	1	0.9170	7.9	5.00		
	4	7	8	1	0.8730	8.8	5.50	1	
	5	9	10	1	0.7210	12.8	8.00	]	
	-			Data Tabula	tion		)'	1	
				V Total V				1	
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	√∆H( Ta/Pa)		
	(m3)	(x-axis)	(y-ax	is)	Va	(x-axis)	(y-axis)		
	0.9900	0.6861	1.41	01	0.9957	0.6900	0.8881	.]	
	0.9858	0.9655	1.99		0.9914	0.9711	1.2560	-	
	0.9838	1.0728	2.22		0.9894	1.0790	1.4042	-	
	0.9826	1.1255	2.33		0.9882	1.1320	1.4728	-	
	0.9772	1.3554	2.82		0.9829	1.3632	1.7762	-	
	OCTD	m= b=	-0.03	All source into party or construction of the second	0.4	m= b=	1.32110	-	
	QSTD	r=	0.999		QA	r=	0.99998	-	
			ana da kana da	Calculations					
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T		procession of the second se	ΔVol((Pa-Δ	P)/Pa)	1	
	Qstd=	Vstd/∆Time		<b>Qa=</b> Va/ΔTime					
			For subsequ	ent flow ra	te calculatio	ns:		]	
	Qstd=	1/m (( √∆H(	Pa Pstd Tstd	-))-b)	Qa=	1/m ((√∆ł	H(Ta/Pa))-b)		
	Standard	Conditions						_	
Tstd						RECA	LIBRATION		
Pstd		mm Hg			LIS EDA rocc	ommende o	nnual recalibrati	on por 1	202
		<b>(ey</b> ter reading (i	n H2O)				Regulations Part	-	
		eter reading (i					-		
		perature (°K)			Appendix B to Part 50, Reference Method for the				
		ressure (mm			Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30				
b: intercept	t				u u	слатоэри		50	
m: slope									

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002

## **ALS Technichem (HK) Pty Ltd**

### **ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES



#### SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER HK2307089
CLIENT	ACTION-UNITED ENVIRONMENTAL	
	SERVICES & CONSULTING	
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41	SUB-BATCH : 1
	TAI LIN PAI ROAD, KWAI CHUNG, N.T.	DATE RECEIVED : 20-FEB-2023
		DATE OF ISSUE : 27-FEB-2023
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.) is provided by client.

- Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified.
- Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.

#### Signatories

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

Signatories	Position	
Richard Juny.		
Richard Fung	Managing Director	

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release. ALS Technichem (HK) Pty Ltd

Part of the ALS Laboratory Group

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

WORK ORDER SUB-BATCH

CLIENT

PROJECT

: HK2307089

: 1 : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING : .....



ALS Lab **Client's Sample ID** Sample Sample Date External Lab Report No. ID Туре HK2307089-001 AIR 20-Feb-2023 S/N: 366410 S/N: 366410

### **Equipment Verification Report (TSP)**

#### **Equipment Calibrated:**

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366410
Equipment Ref:	EQ110

#### **Standard Equipment:**

Standard Equipment:	Higher Volume Sampler (TSP)
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018 & HVS 019
Last Calibration Date:	14 December 2022 & 10 January 2023

#### **Equipment Verification Results:**

Verification Date:

10, 11 &12 January 2023

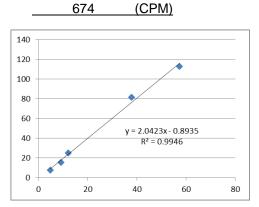
Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
10-Jan-23	2hr1min	14:41 ~ 16:42	18.2	1018.8	7.6	584	4.8
11-Jan-23	2hr01min	13:16 ~ 15:17	18.1	1017.6	25.2	1470	12.2
11-Jan-23	2hr01min	15:25 ~ 17:26	18.1	1017.6	15.8	1103	9.1
12-Jan-23*	61mins	09:31 ~ 10:32	18.8	1014.5	112.8	3507	57.3
12-Jan-23*	61mins	10:36 ~ 11:37	18.8	1014.5	81.5	2311	37.8

(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration) 674 (CPM)

#### Linear Regression of Y or X

Slope (K-factor):2.0423 (µg/m³)/CPMCorrelation Coefficient (R)0.9973Date of Issue13 February 2023



#### Remarks:

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

2. Factor 2.0423 (µg/m³)/CPM should be apply for TSP monitoring

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

Operator :	Fai So	Signature :	Ja	Date :	13 February 2023
QC Reviewer :	Ben Tam	Signature :		Date :	13 February 2023

#### TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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	Location : Gold King Industrial Building, Ky Location ID : Calibration Room(HVS 018)	wai Chung		Date of Calibration: 14-Dec-22 Next Calibration Date: 14-Mar-23		
Temperature (°C)         12.5         Temperature (K)         286           CALIBRATION ORIFICE           Make-> Model->         TISCH 5025A 27-Dec-21         Qstd Slope -> Qstd Intercept -> 27-Dec-22         1.99838 4.000903 27-Dec-22           CALIBRATION ORIFICE           Temperature (K)         286           Plate         H20 (D) H20 (R         H20 Qstd         I         IC         LINEAR           No. (in) (in) (in) (m3/min) (chart) corrected REGRESSION         REGRESSION           18         6         6         1.2.0         1.783         54         55.39         Slope = 29.6312           13         4.8         4.8         9.6         1.595         48         49.23         Intercept = 2.5287           Corr. coeff. = 0.9991           8         2.5         2.5         5.0         1.152         36         36.93           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 m = calibrator Qstd slope b = calibrator Qstd slope b = calibrator Qstd slope b = calibrator Qstd slope for the calibration (deg K) Pstd = actual temperature during calibration (deg K) Pstd = actual pressure during calibration (deg K) I/m(1)[Sqrt(298/Tav)(Pav/760)]-b) m = sampler slope <th colspate<="" th="" th<=""><th></th><th>CONDITIO</th><th>NS</th><th></th></th>	<th></th> <th>CONDITIO</th> <th>NS</th> <th></th>		CONDITIO	NS		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $						
Model->       5025A       Qstd Intercept -> $0.00903$ 27-Dec-21       Expiry Date-> $27$ -Dec-22         CALIBRATION         Image: Calibration (in) (in) (in) (m3/min) (chart) corrected REGRESSION         Image: Calibration (in) (in) (m3/min) (chart) corrected REGRESSION         Image: Calibration (in) (in) (m3/min) (chart) corrected REGRESSION         Image: Calibration (in) (in) (m3/min) (chart) (chart) (chart) (chart) (corrected REGRESSION         Image: Calibration (in) (in) (in) (m3/min) (chart) (c	CALIE	BRATION	ORIFICE	E		
Plate       H20 (L)H2O (R)       H20       Qstd       I       IC       LINEAR         No.       (in)       (in)       (in)       (m3/min)       (chart)       corrected       REGRESSION         18       6       6       12.0       1.783       54       55.39       Slope = 29.6312         13       4.8       4.8       9.6       1.595       48       49.23       Intercept = 2.5287         10       3.8       3.8       7.6       1.420       44       45.13       Corr. coeff. = 0.9991         8       2.5       2.5       5.0       1.152       36       36.93       28         28       28.72       28       28.72       28       28.72         Calculations :         Qstd = standard flow rate       IC = corrected chart respones       I       actual chart respones       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I <td>Model-&gt; 502</td> <td>25A</td> <td></td> <td>Qstd Intercept -&gt; -0.00903</td>	Model-> 502	25A		Qstd Intercept -> -0.00903		
No.         (in)         (in)         (m ² /min)         (chart)         corrected         REGRESSION           18         6         6         12.0         1.783         54         55.39         Slope = 29.6312           13         4.8         4.8         9.6         1.595         48         49.23         Intercept = 2.5287           10         3.8         3.8         7.6         1.420         44         45.13         Corr. coeff. = 0.9991           8         2.5         2.5         5.0         1.152         36         36.93           5         1.5         1.5         3.0         0.894         28         28.72           Calculations :           Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]         IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.00         60.0	C	CALIBRAT	ION			
18       6       6       12.0       1.783       54       55.39       Slope = 29.6312         13       4.8       4.8       9.6       1.595       48       49.23       Intercept = 2.5287         10       3.8       3.8       7.6       1.420       44       45.13       Corr. coeff. = 0.9991         8       2.5       2.5       5.0       1.152       36       36.93       Corr. coeff. = 0.9991         State       1.5       1.5       3.0       0.894       28       28.72       Corr. coeff. = 0.9991         Calculations :         Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]       FLOW RATE CHART         IC = corrected chart response       60.00       50.00       50.00       50.00         m = calibrator Qstd intercept       Ta = actual temperature during calibration (deg K)       9       9       9       90.00       9         Pstd = actual pressure during calibration (mm Hg)       10.00       10.00       10.00       10.00       10.00       10.00						
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 slope         b = 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	18         6         6         12.0         1.783         5.7           13         4.8         4.8         9.6         1.595         4           10         3.8         3.8         7.6         1.420         4           8         2.5         2.5         5.0         1.152         3	54         55.39           18         49.23           14         45.13           36         36.93		Intercept = $2.5287$		
b = sampler intercept $I = chart response$ $0.00 + + + + + + + + + + + + + + + + + +$	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 slope b = calibrator Qstd intercept Ta = actual temperature during calibration ( deg K ) Pstd = actual pressure during calibration ( mm Hg ) <b>For subsequent calculation of sampler flow:</b> 1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b) m = sampler slope b = sampler intercept	- 00.05 - 00.05 - 00.05 - 00.02 - 00.01 - 00.01				



RECALIBRATION DUE DATE:

December 27, 2022

	Ce	rtifa	Calibration				ntion		
Cal. Date:	December	27 2021		meter S/N:		annan an ann an Adres An Inne Aigeine Inne Station	295	°K	
		27, 2021	ROOLS	meter 5/14.	436320				
Operator:	Jim Tisch					Pa:	740.4	mm Hg	
Calibration	Model #:	TE-5025A	Cali	brator S/N:	orator S/N: <b>1612</b>				
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ		
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)		
	1	1	2	1	1.3890	3.2	2.00		
	2	3	4	1	0.9760	6.4	4.00		
	3	5	6	1	0.8740	7.9	5.00		
	4	7	8	1	0.8320	8.8	5.50		
	5	9	10	1	0.6870	12.7	8.00		
				Data Tabula	tion				
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	√∆H(Ta/Pa)		
	(m3)	(x-axis)	y (y-ax		Va	(x-axis)	(y-axis)		
	0.9799	0.7055	1.40	1	0.9957	0.7168	0.8927		
	0.9756	0.9996	1.98		0.9914	1.0157	1.2624		
	0.9736	1.1140	2.21	1	0.9893	1.1320	1.4114		
	0.9724	1.1688	2.32	65	0.9881	1.1876	1.4803		
	0.9673	1.4079	2.80	1	0.9828	1.4306	1.7853 <b>1.25135</b>		
		m=	1.998						
	QSTD	b=	-0.00		QA	b=	-0.00574		
		r= 0.99999				r=	0.99999		
			(m	Calculation					
		ΔVol((Pa-ΔP) Vstd/ΔTime	/Pstd)(Tstd/T	a)	Conception of the local division of the loca	ΔVol((Pa-Δ Va/ΔTime	P)/Pa)		
	Q3tu-	vstu/Anne	For subsequ	lent flow ra	te calculation				
	Qstd=	1/m (( \\ \ \ \ \ \ \ \ \ \ \ \ \ (	Pa <u>Tstd</u> Pstd Ta	The second s		1/m ((√∆H	l(Ta/Pa))-b)		
		Conditions						I	
Tstd:	298.15	°K		Ι		RECA	LIBRATION		
Pstd:	Contraction of the second seco	mm Hg			LIS EPA reco	mmende	onual recalibratio	n ner 1000	
AH: calibrat		<b>(ey</b> ter reading (i	n H2O)		US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51,				
		eter reading							
Ta: actual al	osolute tem	perature (°K)			Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in				
		ressure (mm	Hg)				ere, 9.2.17, page 3		
b: intercept				l			,		
m: slope									

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#### TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Location I	D :			strial Buildi m(HVS 019		wai Cł	nung	Date of Calibration: 10-Jan-23 Next Calibration Date: 9-Apr-23
						COND	ITIONS	
	Se	a Level I Temp	Pressure erature	. ,	1	018.8 18.2		Corrected Pressure (mm Hg) 764.1 Temperature (K) 291
					CALI	BRATI	ON ORIFIC	CE
			Calibrat	Make-> Model-> ion Date->		25A		Qstd Slope ->2.10977Qstd Intercept ->-0.03782Expiry Date->15-Dec-23
					C	CALIB	RATION	
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)		[ art)	IC corrected	LINEAR REGRESSION
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					5 4 4	55         55.79           48         48.69           44         44.63           36         36.52		Slope = 31.4802 Intercept = 1.9499 Corr. coeff. = 0.9967
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						00 905 905 905 905 901 901 901	0.00 0.00 0.00 0.00 0.00 0.000	FLOW RATE CHART
Tav = dail Pav = dail						<u> </u>		



RECALIBRATION DUE DATE:

December 15, 2023

nmental Certificate of Calibration

- 1 -			Calibration					017	
Cal. Date:							295	°K	
Operator:	Jim Tisch				748.0	mm Hg	1		
Calibration	Model #:	TE-5025A	Calil	prator S/N:	4064				1
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1	×
	Run				(min)	(mm Hg)	(in H2O)		
	1	1	2	(m3) 1	1.4430	3.2	2.00		
	2	3	4	1	1.0210	6.4	4.00	1	
	3	5	6	1	0.9170	7.9	5.00		
	4	7	8	1	0.8730	8.8	5.50	1	
	5	9	10	1	0.7210	12.8	8.00	]	
	-			Data Tabula	tion		)'	1	
				V Total V				1	
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	√∆H( Ta/Pa)		
	(m3)	(x-axis)	(y-ax	is)	Va	(x-axis)	(y-axis)		
	0.9900	0.6861	1.41	01	0.9957	0.6900	0.8881	.]	
	0.9858	0.9655	1.99		0.9914	0.9711	1.2560	-	
	0.9838	1.0728	2.22		0.9894	1.0790	1.4042	-	
	0.9826	1.1255	2.33		0.9882	1.1320	1.4728	-	
	0.9772	1.3554	2.82		0.9829	1.3632	1.7762	-	
	OCTD	m= b=	-0.03	All source into party or construction of the second	0.4	m= b=	1.32110	-	
	QSTD	r=	0.999		QA	r=	0.99998	-	
			ana da kana da	Calculations					
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T		procession of the second se	ΔVol((Pa-Δ	P)/Pa)	1	
	Qstd=	Vstd/∆Time		<b>Qa=</b> Va/ΔTime					
			For subsequ	ent flow ra	te calculatio	ns:		]	
	Qstd=	1/m (( √∆H(	Pa <u>Tstd</u> Pstd Ta	-))-b)	Qa=	1/m ((√∆ł	H(Ta/Pa))-b)		
	Standard	Conditions						_	
Tstd						RECA	LIBRATION		
Pstd		mm Hg			LIS EDA rocc	ommende o	nnual recalibrati	on por 1	202
AH. calibrat		<b>(ey</b> ter reading (i	n H2O)				Regulations Part	-	
		eter reading (i					-		
		perature (°K)			Appendix B to Part 50, Reference Method for the				
		ressure (mm			Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30				
b: intercept	t				u u	слатоэри		50	
m: slope									

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002



Sun Creation Engineering Limited

Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No. : C226777 證書編號

ITEM TESTED / 送檢項目		(Job No. / 序引編號:IC22-2282)	Date of Receipt / 收件日期: 8 November 2022
Description / 儀器名稱	:	Sound Level Meter (EQ013)	
Manufacturer / 製造商	:	Rion	
Model No. / 型號	:	NL-52	
Serial No. / 編號	:	00921191	
Supplied By / 委託者	:	Action-United Environmental Services a	and Consulting
		Unit A, 20/F., Gold King Industrial Buil	ding,
		35-41 Tai Lin Pai Road, Kwai Chung, N	I.T.
TEST CONDITIONS /	) 비나구너	ht III-	

#### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

#### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 November 2022

#### TEST RESULTS / 測試結果

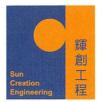
The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. The results are detailed in the subsequent page(s).

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

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

Tested By 測試	:H T Wong Assistant Engineer		
Certified By 核證	: KCLee Engineer	Date of Issue : 簽發日期	21 November 2022

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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No. : C226777 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 was performed before the test.
- 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	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

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

		Applied Value		UUT	IEC 61672		
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)	(dB) Weighting Weighting					(dB)	(dB)
30 - 130	L _A	А	Fast	94.00	1	93.8	± 1.1

#### 6.1.2 Linearity

	UU	Γ Setting	Applie	d Value	UUT	
Range	Function	Frequency Time		Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	30 - 130 L _A A		Fast	94.00	1	93.8 (Ref.)
				104.00		103.9
				114.00		113.9

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

#### 6.2 Time Weighting

UUT Setting					d 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	А	Fast	94.00	1	93.8	Ref.
			Slow			93.8	$\pm 0.3$

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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C226777 證書編號

#### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

	UUT		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	А	Fast	94.00	63 Hz	67.6	$-26.2 \pm 1.5$
					125 Hz	77.6	$-16.1 \pm 1.5$
					250 Hz	85.1	$-8.6 \pm 1.4$
					500 Hz	90.5	$-3.2 \pm 1.4$
					1 kHz	93.8	Ref.
					2 kHz	95.0	$+1.2 \pm 1.6$
					4 kHz	94.8	$+1.0 \pm 1.6$
					8 kHz	92.8	-1.1 (+2.1 ; -3.1)
					16 kHz	85.8	-6.6 (+3.5 ; -17.0)

#### 6.3.2 <u>C-Weighting</u>

	UUT		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	C	Fast	94.00	63 Hz	92.9	$\textbf{-0.8} \pm 1.5$
					125 Hz	93.6	$-0.2 \pm 1.5$
					250 Hz	93.8	$0.0 \pm 1.4$
					500 Hz	93.8	$0.0 \pm 1.4$
					1 kHz	93.8	Ref.
					2 kHz	93.6	$-0.2 \pm 1.6$
					4 kHz	93.0	$-0.8 \pm 1.6$
>					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					16 kHz	83.9	-8.5 (+3.5 ; -17.0)

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.



## Certificate of Calibration 校正證書

Certificate No. : C226777 證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 12910

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :	94 dB :	63 Hz - 125 Hz 250 Hz - 500 Hz	
		1 kHz	$\pm 0.20 \text{ dB}$
		2 kHz - 4 kHz	$\pm 0.35 \text{ dB}$
		8 kHz	$\pm 0.45 \text{ dB}$
		16 kHz	$\pm 0.70 \text{ dB}$
	104 dB :	1 kHz	: ± 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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C226779 證書編號

ITEM TESTED / 送檢項	目	(Job No. / 序引編號:IC22-2282)	Date of Receipt / 收件日期: 8 November 2022
Description / 儀器名稱 :		Sound Level Meter (EQ015)	
Manufacturer / 製造商 :		Rion	
Model No. / 型號 :		NL-52	
Serial No. / 編號 :		00142581	
Supplied By / 委託者 :		Action-United Environmental Services a	nd Consulting
		Unit A, 20/F., Gold King Industrial Buil	ding,
		35-41 Tai Lin Pai Road, Kwai Chung, N	Г.Т.

#### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

#### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 November 2022

#### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. The results do not exceed manufacturer's specification. 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
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Assistant Engineer

Certified By 核證 K 🕻 Lee Engineer

Date of Issue 簽發日期 :

21 November 2022

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.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No.: C226779 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 was performed before the test.
- 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	C220381
CL281	Multifunction Acoustic Calibrator	AV210017

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

		Applie	d Value	UUT	IEC 61672		
Range	Time	Level	Freq.	Reading	Class 1 Spec.		
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L _A	Α	Fast	94.00	1	93.8	$\pm 1.1$

#### 6.1.2 Linearity

	UU	Г Setting	Applie	d Value	UUT	
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L _A	А	Fast	94.00	1	93.8 (Ref.)
				104.00		103.8
				114.00		113.7

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

#### 6.2 Time Weighting

	UUT	Setting		Applie	d 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	А	Fast	94.00	1	93.8	Ref.
			Slow			93.8	± 0.3

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.



Sun Creation Engineering Limited

**Calibration & Testing Laboratory** 

# Certificate of Calibration 校正證書

Certificate No. : C226779 證書編號

#### 6.3 Frequency Weighting

#### 6.3.1 A-Weighting

	UUT 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	А	Fast	94.00	63 Hz	67.5	$-26.2 \pm 1.5$
					125 Hz	77.6	$-16.1 \pm 1.5$
					250 Hz	85.1	$-8.6 \pm 1.4$
					500 Hz	90.6	$-3.2 \pm 1.4$
					1 kHz	93.8	Ref.
					2 kHz	95.0	$+1.2 \pm 1.6$
					4 kHz	94.8	$+1.0 \pm 1.6$
					8 kHz	92.8	-1.1 (+2.1 ; -3.1)
					16 kHz	85.8	-6.6 (+3.5 ; -17.0)

#### 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	92.9	$-0.8 \pm 1.5$
					125 Hz	93.6	$-0.2 \pm 1.5$
					250 Hz	93.8	$0.0 \pm 1.4$
					500 Hz	93.8	$0.0 \pm 1.4$
					1 kHz	93.8	Ref.
					2 kHz	93.6	$-0.2 \pm 1.6$
					4 kHz	93.0	$-0.8 \pm 1.6$
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					16 kHz	83.9	-8.5 (+3.5 ; -17.0)

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。



## Certificate of Calibration 校正證書

Certificate No. : C226779 證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 20044

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :	250 Hz - 50 1 kHz 2 kHz - 4 kH 8 kHz 16 kHz	$\begin{array}{lll} 0 \ \text{Hz} & : \pm 0.30 \ \text{dB} \\ & : \pm 0.20 \ \text{dB} \\ \text{Hz} & : \pm 0.35 \ \text{dB} \\ & : \pm 0.45 \ \text{dB} \\ & : \pm 0.70 \ \text{dB} \end{array}$
		: $\pm$ 0.70 dB
	104 dB : 1 kHz	$\pm 0.10 \text{ dB} (\text{Ref. 94 dB})$
	114 dB : 1 kHz	$\pm 0.10 \text{ dB} (\text{Ref. 94 dB})$

- 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



#### Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No.: C224779 證書編號

ITEM TESTED / 送檢功	頁目	(Job No. / 序引編號: IC22-1539)	Date of Receipt / 收件日期: 4 August 2022
Description / 儀器名稱	:	Sound Level Calibrator (EQ085)	
Manufacturer / 製造商	:	Rion	
Model No. / 型號	:	NC-73	
Serial No. / 編號	:	10655561	
Supplied By / 委託者	:	Action-United Environmental Services a	nd Consulting
		Unit A, 20/F., Gold King Industrial Build	ding,
		35-41 Tai Lin Pai Road, Kwai Chung, N	.т.
		55-41 Tai Lin Fai Koad, Kwai Chung, N	.1.

#### TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

#### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 August 2022

#### 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 :

1

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

Tested By 測試	: H T Wong Assistant Engineer			
Certified By 核證	: K C Lee Engineer	Date of Issue 簽發日期	:	23 August 2022

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.



## Certificate of Calibration 校正證書

Certificate No. : C224779 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 Multifunction Acoustic Calibrator Measuring Amplifier <u>Certificate No.</u> C223647 AV210017 C221750

- 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	94.0	± 0.5	± 0.2

#### 5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	User's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	0.953	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 %.

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.



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 www.alsglobal.com

### **REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION**

CONTACT:	MR BEN TAM	WORK ORDER:	HK2251569
CLIENT:	ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING		
ADDRESS:	RM A 20/F., GOLD KING IND BLDG,	SUB-BATCH:	0
	NO. 35-41 TAI LIN PAI ROAD,	LABORATORY:	HONG KONG
	KWAI CHUNG, N.T.	DATE RECEIVED:	29-Dec-2022
		DATE OF ISSUE:	05-Jan-2023

### 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:	04-January-2023

#### **GENERAL COMMENTS**

This report superseded any previous report(s) with same work order number.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganics

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

### **REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION**



WORK ORDER:	HK2251569		
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 05-Jan-2023 ACTION-UNITED ENVIRONMEN	NTAL SERVICES & CONSULTING	
Equipment Type:	Multifunctional Meter		
Brand Name/ Model No.:	[YSI]/ [Professional DSS]		
Serial No./ Equipment No.:	[17B102764/17B100758]/[EQV	V019]	
Date of Calibration:	04-January-2023	Date of Next Calibration:	04-April-2023

#### **PARAMETERS:**

Conductivity

#### Method Ref: APHA (23rd edition), 2510B

Expected Reading (µS/cm)	Displayed Reading (µS/cm)	Tolerance (%)
146.9	156.1	+6.3
6667	7092	+6.4
12890	13808	+7.1
58670	61025	+4.0
	Tolerance Limit (%)	±10.0

#### **Dissolved Oxygen**

#### Method Ref: APHA (23rd edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.03	3.14	+0.11
4.68	4.77	+0.09
7.37	7.37	+0.00
	Tolerance Limit (mg/L)	±0.20

#### pH Value

#### Method Ref: APHA (23rd edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)			
4.0	3.80	-0.20			
7.0	7.05	+0.05			
10.0	9.96	-0.04			
	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.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganics

### **REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION**



WORK ORDER:	HK2251569		
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 05-Jan-2023 ACTION-UNITED ENVIRONMEN	NTAL SERVICES & CONSULTING	
Equipment Type: Brand Name/ Model No.:	Multifunctional Meter [YSI]/ [Professional DSS]		
Serial No./ Equipment No.: Date of Calibration:	[17B102764/17B100758]/ [EQV 04-January-2023	V019] Date of Next Calibration:	04-April-2023
	-		•

#### PARAMETERS:

Turbidity

#### Method Ref: APHA (23rd edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	-0.92	
4	4.37	+9.3
40	37.54	-6.2
80	73.45	-8.2
400	370.84	-7.3
800	725.48	-9.3
	Tolerance Limit (%)	±10.0

Salinity

#### Method Ref: APHA (23rd edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	10.61	+6.1
20	21.35	+6.8
30	31.14	+3.8
	Tolerance Limit (%)	±10.0

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

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganics

### **REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION**



WORK ORDER:	HK2251569		
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 05-Jan-2023 ACTION-UNITED ENVIRONMEN	NTAL SERVICES & CONSULTING	
Equipment Type:	Multifunctional Meter		
Brand Name/ Model No.:	[YSI]/ [Professional DSS]		
Serial No./ Equipment No.:	[17B102764/17B100758]/[EQV	V019]	
Date of Calibration:	04-January-2023	Date of Next Calibration:	04-April-2023

#### **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)
7.5	8.5	+1.0
20.5	21.0	+0.5
42.0	42.0	+0.0
	Tolerance Limit (°C)	±2.0

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

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganics



# **Manufacturing Certificate**

This product has been tested in accordance with procedures established through Global Water Instrumentation's Quality Management System. This product meets or exceeds its manufacturing acceptance criteria.

ITEM DESCRIPTION:	Flow Probe, 5.5 - 14'
MODEL NAME/ NUMBER:	FP211
PART NUMBER:	BB1100
SERIAL NUMBER:	22B106785
ACCURACY:	± 0.1 FPS (0.03 MPS)
POWER REQUIRED:	Internal Lithium Coin Cell Battery
CABLE LENGTH:	N/A
CERTIFICATES:	CE Compliant
RANGE:	0.3 - 19.9 FPS (0.1 - 6.1 MPS)
OUTPUT:	Flow Display, FPS/MPS
CALIBRATION FACTOR:	318

Technician Barnette, Melinda

Inspector Wineberg, Josh

Date 3/5/2022

NOTE: Global Water Instrumentation warrants that its products are free from defects in material & workmanship under normal use & service for a period of one year from date of original shipment from factory. Repaired components are warranted for a period of 90 days from shipment. Contact us for complete warranty details.

Global Water a xylem brand

In the U.S. call toll free at 1-800-876-1172 International: 1-979-690-5560 Fax: 1-979-690-0440 Email: globalw@globalw.com Visit our online catalog at: www.globalw.com Our Service Address: 151 Graham Rd College Station, TX 77845



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

is accredited by the Hong Kong Accreditation Service (HKAS) to ISO/IEC 17025:2017 for performing specific laboratory activities as listed in the scope of accreditation within the test category of 獲香港認可處根據ISO/IEC 17025:2017認可 進行載於認可範圍內下述測試類別中的指定實驗所活動

**Environmental Testing** 

環境測試

 This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and<br/>the implementation of a management system relevant to laboratory operation<br/>(see joint IAF-ILAC-ISO Communiqué).

 此項 ISO/IEC 17025:2017 的認可資格證明此實驗所具備指定範疇內所須的技術能力並<br/>實施一套與實驗所運作相關的管理體系<br/>(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 HKAS is affixed hereto by the authority of the HKAS Executive 現經香港認可處執行機關授權在此蓋上香港認可處的印章



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

SHUM Wai-leung, Executive Administrator 執行幹事 沈偉良 Issue Date : 28 February 2020 簽發日期 : 二零二零年二月二十八日

Registration Number : HOKLAS 066 註冊號碼:

### L001934



## Appendix F

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

#### **Event and Action Plan for air quality**

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

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	<ol> <li>Notify IEC, ER and Contractor;</li> <li>Carry out investigation;</li> <li>Report the results of investigation to the IEC, ER and Contractor;</li> <li>Discuss with the Contractor and formulate remedial measures;</li> <li>Increase monitoring frequency to check mitigation effectiveness</li> </ol>	3. Supervise the implementation of remedial measures.	<ul> <li>failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analyzed noise problem;</li> <li>4. Ensure remedial measures are properly implemented</li> </ul>	<ol> <li>Submit noise mitigation proposals to IEC and ER;</li> <li>Implement noise mitigation proposals</li> </ol>	
Limit Level Exceedance	<ol> <li>Identify source;</li> <li>Inform IEC, ER, EPD and Contractor;</li> <li>Repeat measurements to confirm findings;</li> <li>Increase monitoring frequency;</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	actions; 2. Review Contractors remedial actions whenever necessary to assure their	<ul> <li>failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analyzed noise problem;</li> <li>4. Ensure remedial measures properly</li> </ul>	<ul><li>3. Implement the agreed proposals;</li><li>4. Resubmit proposals if problem still not under control;</li></ul>	

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

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



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

#### Impact Monitoring Schedule of Air Quality, Noise and Water Quality - March 2023

✓	Monitoring Day
	Sunday or Public Holiday



#### Impact Monitoring Schedule of Air Quality, Noise and Water Quality – April 2023

	D-4-		Air Quality	y Monitoring	We take Orea Pter
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Sat	1-Apr-23				$\checkmark$
Sun	2-Apr-23				
Mon	3-Apr-23				
Tue	4-Apr-23	✓	✓		$\checkmark$
Wed	5-Apr-23				
Thu	6-Apr-23		✓	✓	$\checkmark$
Fri	7-Apr-23				
Sat	8-Apr-23				
Sun	9-Apr-23				
Mon	10-Apr-23				
Tue	11-Apr-23			✓	$\checkmark$
Wed	12-Apr-23	✓	✓		
Thu	13-Apr-23				$\checkmark$
Fri	14-Apr-23				
Sat	15-Apr-23				$\checkmark$
Sun	16-Apr-23				
Mon	17-Apr-23			✓	
Tue	18-Apr-23	✓	√		$\checkmark$
Wed	19-Apr-23				
Thu	20-Apr-23				$\checkmark$
Fri	21-Apr-23				
Sat	22-Apr-23			✓	$\checkmark$
Sun	23-Apr-23				
Mon	24-Apr-23	✓	✓		
Tue	25-Apr-23				$\checkmark$
Wed	26-Apr-23				
Thu	27-Apr-23				$\checkmark$
Fri	28-Apr-23			✓	
Sat	29-Apr-23		√		$\checkmark$
Sun	30-Apr-23				

✓	Monitoring Day
	Sunday or Public Holiday



### Appendix H

### **Monitoring Data**

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



Air Quality (24-hour TSP)



						24-H	our TSI	P Monitor	ring Data f	or ASR-1					
DATE	SAMPLE NUMBER		APSED TI	ME	CHAI	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER V (g	r)	DUST WEIGHT COLLECTED	24-Hr TSP (μg/m ³ )
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³ )	INITIAL	FINAL	(g)	
3 Mar 23	29177	26758.71	26782.71	1440.00	40	40	40.0	18.6	1024.9	1.28	1842	2.7452	2.7452 2.8869		77
9 Mar 23	29192	26782.71	26806.71	1440.00	39	39	39.0	22.5	1017.7	1.24	1790	2.7410	2.8569	0.1159	65
15 Mar 23	29202	26806.71	26830.71	1440.00	40	40	40.0	21	1017.4	1.28	1838	2.7314	2.8140	0.0826	45
21 Mar 23	29223	26830.71	26854.71	1440.00	39	39	39.0	23.7	1009.2	1.24	1788	2.7123	2.7988	0.0865	48
27 Mar 23	29231	26854.71	26878.71	1440.00	39	39	39.0	18.6	1016.2	1.25	1806	2.7434	2.8074	0.0640	35

						24-Ho	ur TSP	Monitori	ng Data fo	r ASR-2					
DATE	SAMPLE NUMBER		APSED TIN	МE	CHAI	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER (g	r)	DUST WEIGHT COLLECTED	24-Hr TSP $(\mu g/m^3)$
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³ )	INITIAL	FINAL	(g)	
3 Mar 23	29178	24197.36	97.36 24221.36 1440.00		42	42	42.0	18.6	1024.9	1.29	1856	2.7447	2.9768	0.2321	125
9 Mar 23	29191	24199.36	24223.36	1440.00	42	42	42.0	22.5	1017.7	1.28	1839	2.7513	2.9588	0.2075	113
15 Mar 23	29210	24223.36	24247.36	1440.00	42	42	42.0	21	1017.4	1.28	1840	2.7151	2.9910	0.2759	150
21 Mar 23	29224	24247.36	24271.36	1440.00	42	42	42.0	23.7	1009.2	1.27	1826	2.7043	2.8018	0.0975	53
27 Mar 23	29230	24271.36	24295.36	1440.00	41	41	41.0	18.6	1016.2	1.25	1806	2.7320	2.8073	0.0753	42

						24-Ho	our TSP	Monitor	ing Data fo	or ASR-3a					
DATE	SAMPLE NUMBER		APSED TI	ME	CHAI	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER V (g		DUST WEIGHT COLLECTED	24-Hr TSP $(\mu g/m^3)$
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³ )	INITIAL	FINAL	(g)	
3 Mar 23	29179	17965.11	17965.11 17989.11 1440.00		39	39	39	18.6	1024.9	1.26	1814	2.7547	2.8147	0.0600	33
9 Mar 23	29190	17989.11	18013.11	1440.00	39	39	39	22.5	1017.7	1.25	1796	2.7445	2.8225	0.0780	43
15 Mar 23	29211	18013.11	18037.11	1440.00	39	39	39	21	1017.4	1.26	1808	2.7080	2.8056	0.0976	54
21 Mar 23	29225	18037.11	18061.11	1440.00	39	39	39	23.7	1009.2	1.25	1793	2.7085	2.7922	0.0837	47
27 Mar 23	29232	18061.11	18085.11	1440.00	40	40	40	18.6	1016.2	1.29	1858	2.7312	2.7914	0.0602	32



Noise



								Noise 1	Measu	rement	Results (	( <b>dB</b> (A))	of 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 ₃₀ min	Façade Correction (*)
1 Mar 23	13:08	69.5	63	52.5	60.8	65.2	51.9	57.9	61.8	50.9	59	63.3	52.5	58.7	59.6	51.6	71.2	64.3	53.4	66	69
7 Mar 23	9:28	60.9	62.9	59	60.4	62.2	58.5	61.3	61.2	58.6	62.4	64.2	59.5	64.4	66	58.8	61.4	62.7	60.3	62	65
13 Mar 23	9:30	61.6	63.3	57.2	62.8	64.4	57.6	61.3	63.8	56.8	60.2	65.1	58.3	63.7	65.3	58.5	63.5	66	58.9	62	65
24 Mar 23	9:26	69.8	63.9	55.9	60.1	61.9	56.4	59	61.2	56	63.2	64.2	54.9	59.6	62.2	55.2	61	63.1	55.2	64	67
30 Mar 23	13:30	66.6	65.1	60.1	64.5	66.1	61.1	61.9	60.8	59.1	62.4	65.5	59.9	65.4	66.6	59.2	64.7	66.8	62.3	65	68

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

								Noise	Measu	rement	Results (	dB(A))	of 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 ₃₀ min	Façade Correction (*)
1 Mar 23	13:42	60.8	62.7	54.6	68	72.2	55.6	58.6	61.2	53.4	61.8	63.5	55.7	60.9	64.1	56.2	58.3	61.9	54.6	63	66
7 Mar 23	10:18	63.6	67.1	50.3	62.8	66.6	50	63	67.1	49.2	62.2	66.5	50	63	67.4	51.3	63.4	67.4	51.4	63	66
13 Mar 23	10:36	57.4	64.2	52.1	58.3	63.6	51.8	55.6	64.5	51.6	53.6	60.3	49.2	55.4	59	48.5	56.7	60.8	52.2	56	59
24 Mar 23	10:20	60.8	64.1	53.9	62.7	64.5	52.7	61.8	64.7	52.9	63.1	65.9	53.9	61.5	65.1	53.1	60.7	64.1	52.5	62	65
30 Mar 23	14:05	56.2	63.2	52.2	57	66.2	53.4	58.8	64.5	52.9	56.6	61.2	50.9	57.2	61.8	49.9	56.6	62.2	50.8	57	60

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

	Noise Measurement Results (dB(A)) of 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 ₃₀ min	Façade Correction (*)
1 Mar 23	14:15	53.5	55.6	46.5	53.7	55.4	46.4	57.2	58.7	50	60.1	64.3	52.5	54.7	56.3	47.7	54.7	56.8	45.5	56	59
7 Mar 23	11:32	58.6	61.9	52.1	59.2	61.6	52.1	59.7	63.2	52.1	58.9	61.9	53.3	57.8	62.1	53.9	59	63.3	53.7	59	62
13 Mar 23	14:23	58.7	63.1	54.5	59.6	65.3	56.1	59.2	63.5	56.3	61.5	63.6	58.7	62.6	63.1	58.2	63.3	65.2	59	61	64
24 Mar 23	10:54	55.5	59.1	48.2	55.1	60.5	49.7	56.2	60	48.2	56.3	60.2	49.6	55.3	59.5	48.5	54.5	58.3	48.6	56	59
30 Mar 23	14:38	59.8	53.3	46.6	53.4	51.1	46.2	52.5	50.9	45.9	55.7	57.9	46.4	55	58.7	46.1	54.3	51.7	44.2	56	59

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

	Noise Measurement Results (dB(A)) of 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}
1 Mar 23	14:53	68.2	65.7	52.2	61.8	64.3	53.5	61.7	61.5	55	59.7	61.8	51.7	59.3	59.8	51.4	61	65.1	52.5	63
7 Mar 23	14:00	70.1	64.2	53.6	62.2	65.9	53.0	60.3	63.2	52.2	60.4	64.2	53.7	60.1	60.8	52.8	59.4	62.2	52.8	64
13 Mar 23	13:30	63.7	66.3	58.1	62.8	64.6	57.3	62.9	65.2	57.8	60.2	64.8	56.3	58.8	63.7	55.6	59.2	64.8	56	62
24 Mar 23	11:31	61.6	64.6	50.4	62.8	64.9	46.7	61.4	62.6	48.4	61.9	64.2	48.9	60	62.9	47.5	60.7	64.1	47.5	61
30 Mar 23	15:12	62.5	64.1	58	64.5	65.8	59	62.8	65.1	57.7	60.1	66.2	54.9	61.9	65.9	56.9	59.9	61.5	56.6	62



Water Quality

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2023 \ 56th \ Month \ (March \ 2023) \ R0729 \ v2. doc \ R0729 \ v2. \ doc \ R0729 \ v2. \ R0729 \ r2. \ r$ 



Monthly Environmental Monitoring & Audit Report (No.56) - March 2023

### Water Quality Impact Monitoring Result for M1

Date	1 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS(1	ng/L)
M1	10.00	0.14	17.8	17.0	< 0.1	<0.1	8.69	8.69	85.5	055	1.3	12	7.36	74	0.05	0.05	7	75
IVI I	10:00	0.14	17.8	17.0	< 0.1	<0.1	8.68	0.09	85.4	05.5	1.26	1.5	7.36	7.4	0.05	0.05	8	1.5

Date	3 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO (	(%)	Turbidit	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
<b>M</b> 1	0.20	0.14	18.6	10.0	< 0.1	-0.1	8.66	9.65	98.5	00.2	2.01	2.0	7.63	7.6	0.05	0.05	6	5 5
M1	9:30	0.14	18.6	18.0	< 0.1	<0.1	8.63	8.65	98.1	98.3	1.93	2.0	7.63	7.0	0.05	0.05	5	5.5

Date	6 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidit	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
N/1	0.20	0.12	18.5	10 5	< 0.1	<0.1	8.16	0.15	92.8	02.7	0.86	0.0	7.40	7.4	0.06	0.06	3	2.5
IVI I	9:30	0.13	18.5	18.5	< 0.1	<0.1	8.14	8.15	92.6	92.7	0.82	0.8	7.40	7.4	0.06	0.06	2	2.5

Date	8 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidit	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	12.00	0.12	17.2	17.0	< 0.1	-0.1	8.55	8 54	97.2	07.1	0.99	0.0	7.06	7.1	0.03	0.02	7	65
M1	13:00	0.15	17.2	17.2	< 0.1	<0.1	8.53	8.34	97.0	97.1	0.9	0.9	7.06	/.1	0.03	0.03	6	6.5

Date	10 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidit	ty (NTU)	p	H	Sali	nity	SS(1	ng/L)
M1	13:00	0.13	19.5 19.5	19.5	<0.1 <0.1	<0.1	7.82 7.81	7.82	91.9 91.8	91.9	1.23 1.18	1.2	7.36 7.36	7.4	0.06	0.06	2 3	2.5

Date	14 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO (	(%)	Turbidit	y (NTU)	p	H	Sali	nity	SS(1	ng/L)
M1	9:30	0.13	19.4 19.4	19.4	<0.1 <0.1	<0.1	7.9 7.86	7.88	92.1 91.7	91.9	6.35 6.26	6.3	7.39 7.39	7.4	0.03 0.03	0.03	2 4	3.0

Date	16 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO (	(%)	Turbidi	ty (NTU)	p	Н	Sali	nity	SS(1	mg/L)
M1	0.20	0.14	19.5	19.5	< 0.1	-0.1	8.06	8.02	94.1	02.6	2.07	2.1	7.85	70	0.06	0.06	6	65
MII	9:30	0.14	19.5	19.5	< 0.1	<0.1	7.97	8.02	93.1	93.6	2.14	2.1	7.84	7.8	0.06	0.00	7	0.5

Date	18 Mar 23									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	<b>Turbidity (NTU)</b>	pН	Salinity	SS(mg/L)

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



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I	141	0.20	0.14	21	01.0	< 0.1	.0.1	7.86	7 05	94.4	04.2	0.84	0.0	7.31	7.0	0.05	0.05	4	5.0
	M1	9:30	0.14	21	21.0	< 0.1	<0.1	7.83	7.85	94.1	94.3	0.82	0.8	7.31	7.3	0.05	0.05	6	5.0

Date	21 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	0.20	0.14	21.8	21.0	< 0.1	-0.1	7.8	7 70	93.4	02.2	4.13	4 1	7.50	75	0.04	0.04	4	5.0
INI I	9:30	0.14	21.8	21.8	< 0.1	< 0.1	7.77	1.19	93.1	95.5	3.99	4.1	7.50	1.5	0.04	0.04	6	5.0

Date	23 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO (	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(I	mg/L)
M1	0.24	0.12	22.1	22.1	< 0.1	-0.1	7.16	7 1 4	88.1	87.0	1.6	1.6	8.03	8.0	0.05	0.05	7	6.0
M1	9:34	0.13	22.1	22.1	< 0.1	<0.1	7.12	7.14	87.6	87.9	1.53	1.0	8.03	8.0	0.05	0.05	5	6.0

Date	25 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	10:00	0.13	23.1 23.1	23.1	<0.1 <0.1	<0.1	7.43 7.41	7.42	92.8 92.6	92.7	2.94 2.87	2.9	7.67 7.67	7.7	0.05	0.05	8 7	7.5

Date	28 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M1	10.15	0.15	18.4	10.4	< 0.1	-0.1	8.1	0.10	92.3	02.2	2.12	0.1	7.44	7.4	0.03	0.02	6	
MI	10:15	0.15	18.4	18.4	< 0.1	<0.1	8.09	8.10	92.2	92.3	2.15	2.1	7.44	7.4	0.03	0.03	5	5.5

Date	30 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	0.20	0.14	19.9	10.0	< 0.1	-0.1	7.88	7 00	91.3	013	2.11	2.1	7.87	7.0	0.05	0.05	6	65
IVI I	9:30	0.14	19.9	19.9	< 0.1	<0.1	7.87	7.88	91.2	91.5	2.09	2.1	7.87	7.9	0.05	0.05	7	0.3



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### Water Quality Impact Monitoring Result for M2

Date	1 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbic	lity (NTU)	I	эΗ	Sali	nity	SS(r	ng/L)
M2	9:11	0.07	20.7 20.7	20.7	<0.1 <0.1	<0.1	8.79 8.88	8.84	98.2 98.2	98.2	0.64 0.65	0.6	7.92 7.92	7.9	0.11 0.11	0.11	<2 <2	<2

Date	3 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	velocity (m/s)	DO (I	ng/L)	DO	(%)	Turbid	lity (NTU)	ŀ	ьH	Sali	nity	SS(1	ng/L)
M2	10:00	0.07	21.3 21.3	21.3	<0.1 <0.1	<0.1	8.91 8.9	8.91	100.4 100.4	100.4	2.39 2.33	2.4	7.81 7.81	7.8	0.1	0.10	3 4	3.5

Date	6 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbic	lity (NTU)		ы	Sali	nity	SS(1	mg/L)
M2	10:00	0.08	21.2 21.2	21.2	<0.1 <0.1	<0.1	8.91 8.93	8.92	100.5 100.6	100.6	1.13 1.12	1.1	7.94 7.94	7.9	0.1	0.10	2 2	2.0

Date	8 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (I	mg/L)	DO	(%)	Turbid	lity (NTU)	ŀ	эН	Sali	nity	SS(1	mg/L)
M2	13:04	0.08	21.9 21.9	21.9	<0.1 <0.1	<0.1	8.71 8.7	8.71	99.4 99.3	99.4	1.93 1.95	1.9	7.70 7.77	7.7	0.09	0.09	4	4.0

Date	10 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (I	ng/L)	DO	(%)	Turbic	lity (NTU)	P	ьH	Sali	nity	SS(1	mg/L)
M2	13:34	0.07	21.7 21.7	21.7	<0.1 <0.1	<0.1	8.68 8.69	8.69	98.8 98.9	98.9	7.57 7.62	7.6	7.80 7.80	7.8	0.05	0.05	5 6	5.5

Date	14 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbid	lity (NTU)	p	Н	Sali	nity	SS(1	mg/L)
M2	10:05	0.08	19.8 19.8	19.8	<0.1 <0.1	<0.1	8.43 8.43	8.43	96.3 96.3	96.3	4.17 4.15	4.2	7.79 7.79	7.8	0.09	0.09	8 9	8.5

Date	16 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbid	ity (NTU)	p	Н	Sali	nity	SS(r	ng/L)
M2	10:30	0.08	21.1 21.1	21.1	<0.1 <0.1	<0.1	8.44 8.45	8.45	99.4 99.5	99.5	2.5 2.47	2.5	7.84 7.84	7.8	0.09	0.09	6 4	5.0

Date	18 Mar 23									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)

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



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	10.00	0.00	22.1	22.1	< 0.1	0.1	8.02	0.05	97.9	00.0	2.78	•	7.64		0.09	0.00	9	0.5
M2	10:00	0.08	22.1	22.1	< 0.1	<0.1	8.08	8.05	98.7	98.3	2.82	2.8	7.64	7.6	0.09	0.09	8	8.5

Date	21 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbid	lity (NTU)	I	ы	Sali	nity	SS(1	mg/L)
M2		0.08	23.3 23.3	23.3	<0.1 <0.1	<0.1	7.65 7.64	7.65	94.3 94.2	94.3	0.39 0.38	0.4	7.85 7.85	7.9	0.07	0.07	4 3	3.5

Date	23 Mar 23																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	/elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbid	lity (NTU)	ŀ	н	Sali	nity	SS(1	ng/L)
M2		0.08	23.2 23.2	23.2	<0.1 <0.1	<0.1	7.8 7.76	7.78	96.2 95.7	96.0	0.38	0.4	7.82 7.82	7.8	0.07	0.07	2 2	2.0

Date	25 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	/elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbic	lity (NTU)	ŀ	ьH	Sali	nity	SS(r	mg/L)
M2	10:50	0.05	23.3 23.3	23.3	<0.1 <0.1	<0.1	7.74 7.69	7.72	95.6 95.0	95.3	2.19 2.23	2.2	7.79 7.79	7.8	0.06	0.06	4 5	4.5

Date	28 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (I	ng/L)	DO	(%)	Turbid	lity (NTU)	p	ьH	Sali	nity	SS(1	mg/L)
M2	10:55	0.10	18.9 18.9	18.9	<0.1 <0.1	<0.1	8.4 8.33	8.37	94.5 93.8	94.2	3.18 3.2	3.2	7.24 7.24	7.2	0.07	0.07	2 2	2.0

Date	30 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	/elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbic	lity (NTU)	ŀ	н	Sali	nity	SS(I	mg/L)
M2	10:15	0.09	20.5 20.5	20.5	<0.1 <0.1	<0.1	8.18 8.16	8.17	94.7 94.5	94.6	4.77 4.78	4.8	7.92 7.92	7.9	0.07	0.07	23	2.5



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### Water Quality Impact Monitoring Result for M3

Date	1 Mar 23																	
Location	Time	Depth (m)	Temp	( <b>oC</b> )	Flow V	elocity (m/s)		mg/L)	DO	(%)	Turbid	lity (NTU)		Н	Sali	nity	SS(	mg/L)
M3	9:44	2.36	20.5 20.5	20.5	<0.1 <0.1	<0.1	8.8 8.81	8.81	97.8 97.9	97.9	0.6 0.59	0.6	7.94 7.94	7.9	0.1	0.10	<2 <2	<2
Date	3 Mar 23																	
Location	Time	Depth (m)	Temp	( <b>oC</b> )	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)		Н		nity	SS(	mg/L)
M3	10:10	2.37	21.2 21.2	21.2	<0.1 <0.1	< 0.1	8.97 8.99	8.98	101.0 101.2	101.1	0.13 0.14	0.1	7.94 7.94	7.9	0.07	0.07	<2 <2	<2
Date	6 Mar 23												-					
Location	Time	Depth (m)	Temp	( <b>oC</b> )		elocity (m/s)		mg/L)	DO	(%)		lity (NTU)	-	Н		nity	, ,	mg/L)
M3	10:10	2.38	20.6 20.6	20.6	<0.1 <0.1	< 0.1	8.78 8.8	8.79	97.6 97.8	97.7	0.51 0.53	0.5	7.81 7.81	7.8	0.05	0.05	<2 <2	<2
Date	8 Mar 23																	
Location	Time	Depth (m)	Temp	( <b>oC</b> )	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)	p	Н	Sali	nity	SS(	mg/L)
M3	14:00	2.35	21.8 21.8	21.8	<0.1 <0.1	<0.1	8.74 8.73	8.74	99.8 99.7	99.8	0.42 0.38	0.4	7.49 7.49	7.5	0.09	0.09	8 9	8.5
Date	10 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)	p	Н	Sali	nity	SS(	mg/L)
M3	14:11	2.36	21.8 21.8	21.8	<0.1	<0.1	8.45 8.46	8.46	96.4 96.5	96.5	0.47	0.5	7.88 7.88	7.9	0.09	0.09	8	8.0
Date	14 Mar 23							1								1		
Location	Time	Depth (m)	Temp	( <b>oC</b> )	Flow V	elocity (m/s)	DO	mg/L)	DO	(%)	Turbid	lity (NTU)	p	Н	Sali	nitv	SS	mg/L)
M3	10:15	2.37	19.7 19.7	19.7	<0.1 <0.1	<0.1	8.66 8.68	8.67	99.1 99.4	99.3	5.17 5.03	5.1	7.90 7.89	7.9	0.1	0.10	8	8.5
Date	16 Mar 23	1					0.00	1	····		0.00	1				1		
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)	p	Н	Sali	nity	SS(	mg/L)
M3	10:40	2.35	21.2 21.2	21.2	<0.1 <0.1	<0.1	8.48 8.48	8.48	99.6 99.7	99.7	2.91 2.87	2.9	8.00 8.01	8.0	0.09	0.09	4 5	4.5
Date	18 Mar 23						-	-			-	-			•		-	

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



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Location	Time	Depth (m)	Temp	) (oC)	Flow V	/elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	ity (NTU)	P	ьH	Sali	nity	SS(	mg/L)
M3	10:10	2.38	22.3 22.3	22.3	<0.1	< 0.1	8.23 8.3	8.27	99.4 100.2	99.8	1.58	1.7	7.45 7.45	7.5	0.09	0.09	8	7.5

Date	21 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)	P	н	Sali	nity	SS(	mg/L)
M3	10:12	2.36	23.1 23.1	23.1	<0.1 <0.1	<0.1	7.86 7.82	7.84	97.2 96.9	97.1	0.65 0.62	0.6	8.02 8.02	8.0	0.01 0.01	0.01	3 2	2.5

Date	23 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)	ŀ	н	Sali	nity	SS(1	mg/L)
M3	10:15	2.36	23.3 23.3	23.3	<0.1 <0.1	<0.1	7.82 7.81	7.82	96.8 96.7	96.8	0.97 0.96	1.0	7.99 7.99	8.0	0.01 0.01	0.01	3 2	2.5

Date	25 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	ity (NTU)	P	ы	Sali	nity	SS(I	mg/L)
M3	11:00	2.35	23.1 23.1	23.1	<0.1 <0.1	<0.1	7.91 7.89	7.90	97.6 97.3	97.5	1.26 1.17	1.2	8.09 8.09	8.1	0.01 0.01	0.01	23	2.5

Date	28 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	lity (NTU)		ы	Sali	nity	SS(	mg/L)
М3	11:10	2.39	18.6 18.6	18.6	<0.1 <0.1	<0.1	8.47 8.36	8.42	96.6 95.4	96.0	3.6 3.51	3.6	7.13 7.13	7.1	0.01 0.01	0.01	3 3	3.0

Date	30 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow V	elocity (m/s)	DO (	mg/L)	DO	(%)	Turbid	ity (NTU)		Н	Sali	nity	SS(r	mg/L)
M3	10:25	2.41	20.7 20.7	20.7	<0.1 <0.1	<0.1	8.29 8.29	8.29	96.0 95.9	96.0	3.83 3.79	3.8	8.04 8.04	8.0	0.01 0.01	0.01	3 4	3.5



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### Water Quality Impact Monitoring Result for M4

1 Mar 23																	
Time	Depth (m)	Tem	) (oC)	Flow Velo	city (m/s)	DO (m	g/L)	DO (	(%)	Turbidit	y (NTU)	1	H	Sali	nity	SS(1	mg/L)
10.20	0.42	18.1	18.1	< 0.1	<01	6.57	6 50	71.7	71.2	3.8	3.8	7.35	74	0.09	0.00	4	4.0
10.20	0.42	18.1	10.1	< 0.1	<0.1	6.43	0.50	70.6	/1.2	3.8	5.0	7.35	7.4	0.09	0.07	4	4.0
3 Mar 23																	
Time	Depth (m)	Tem	) (oC)	Flow Velo	city (m/s)	DO (m	g/L)	DO (	<b>%</b> )	Turbidit	v (NTU)	p	Н	Sali	nitv	SS(1	mg/L)
10:30	0.41	19.2	19.2	<0.1	<0.1	8.7	8.65	98.9	98.5	0.4	0.4	7.49	7.5	0.05	0.05	<2	<2
		19.2		<0.1		8.0		96.0		0.4		7.49		0.05		< <u>2</u>	
6 Mar 23																	
Time	Depth (m)	Tem	o (oC)	Flow Velo	city (m/s)	DO (m	g/L)	DO (	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS(1	mg/L)
10:30	0.40	18.9 18.9	18.9	<0.1 <0.1	<0.1	8.06 8.44	8.25	91.8 96.2	94.0	0.8	0.8	7.02	7.0	0.03	0.03	<2 <2	<2
8 Mar 23																	
	Denth (m)	Temi	$\mathbf{D}(\mathbf{nC})$	Flow Velo	city (m/s)	DO (m	σ/L.)	DO (	⁽ %)	Turbidit	v (NTI)	n	н	Sali	nitv	SSG	mg/L)
-											Ĩ				- <b>J</b>	,	0 /
13:15	0.43	18.9	18.9	<0.1	<0.1	8.42	8.43	95.5	95.6	0.1	0.1	7.11	7.1	0.09	0.09	2	2.0
10 Mar 23																	
Time	Depth (m)	Tem	) (oC)	Flow Velo	city (m/s)	DO (m	g/L)	DO (	(%)	Turbidit	y (NTU)	p	H	Sali	nity	SS(1	mg/L)
13:15	0.42	19.8 19.8	19.8	<0.1	<0.1	8.17 8.11	8.14	95.8 95.2	95.5	0.6	0.7	7.49 7.49	7.5	0.07	0.07	2 2	2.0
14 May 22														•			
	Donth (m)	Tom	$\mathbf{v}(\mathbf{n}\mathbf{C})$	Flow Volo	eity (m/s)	DO (m	g/I)		(0/2)	Turbidit	v (NTU)	n	и	Sali	nity	556	mg/I)
											Č (				× v	Ì	Ŭ ź
10:30	0.41	20.3	20.3	<0.1	< 0.1	8.13	8.15	94.4	94.6	0.7	0.6	7.80	7.8	0.09	0.09	4	4.0
16 Mar 23																	
Time	Depth (m)	Tem	o (oC)	Flow Velo	city (m/s)	DO (m	g/L)		(%)	Turbidit	y (NTU)	1	H		nity	SS(1	mg/L)
				< 0.1	1	8.04		93.9		0.5		7.69		0.09		4	
	Time         10:20         3 Mar 23         Time         10:30         6 Mar 23         Time         10:30         8 Mar 23         Time         13:15         10         13:15         13:15         10         13:15         10:30         10:315         10:30         10:30         10:30         10:30	Time       Depth (m)         10:20       0.42         3 Mar 23       Depth (m)         10:30       0.41         10:30       0.41         6 Mar 23       Depth (m)         10:30       0.40         8 Mar 23       0.40         10:30       0.40         10:30       0.40         10:30       0.43         13:15       0.43         13:15       0.42         10 Mar 23       0.42         13:15       0.42         10:30       0.41         10:30       0.41	Time         Depth (m)         Temp           10:20         0.42         18.1           3 Mar 23         18.1           Time         Depth (m)         Temp           10:30         0.41         19.2           10:30         0.41         19.2           10:30         0.41         19.2           6 Mar 23         Temp         19.2           7         Depth (m)         Temp           10:30         0.40         18.9           10:30         0.40         18.9           13:15         0.43         18.9           13:15         0.43         18.9           13:15         0.42         19.8           13:15         0.42         19.8           13:15         0.42         19.8           13:15         0.42         19.8           19.8         19.8         19.8           10:30         0.41         20.3           20.3         20.3         20.3           16 Mar 23         10         10	Time         Depth (m)         Temp (oC) $10:20$ $0.42$ $18.1$ $18.1$ $10:20$ $0.42$ $18.1$ $18.1$ $10:20$ $0.42$ $18.1$ $18.1$ $3$ Mar 23 $IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII$	Time         Depth (m)         Temp (oC)         Flow Veloc $10:20$ $0.42$ $18.1$ $18.1$ $add times (add time$	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s) $10:20$ $0.42$ $18.1$ $18.1$ $add 0.1$ $add 0.1$ $10:20$ $0.42$ $18.1$ $18.1$ $add 0.1$ $add 0.1$ $3$ Mar 23 $add 0.1$ $add 0.1$ $add 0.1$ $add 0.1$ $add 0.1$ $10:30$ $0.41$ $19.2$ $19.2$ $add 0.1$ $add 0.1$ $10:30$ $0.41$ $19.2$ $19.2$ $add 0.1$ $add 0.1$ $10:30$ $0.40$ $18.9$ $18.9$ $add 0.1$ $add 0.1$ $10:30$ $0.40$ $18.9$ $18.9$ $add 0.1$ $add 0.1$ $13:15$ $0.43$ $18.9$ $18.9$ $add 0.1$ $add 0.1$ $13:15$ $0.42$ $19.8$ $19.8$ $add 0.1$ $add 0.1$ $13:15$ $0.42$ $19.8$ $19.8$ $add 0.1$ $add 0.1$ $13:15$ $0.42$ $19.8$ $19.8$ $add 0.1$ $add 0.1$ $10:30$ <	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (m)           10:20 $0.42$ $18.1$ $18.1$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L) $10:20$ $0.42$ $18.1$ $18.1$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$ $(0.1)$	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO ( 71.7           10:20         0.42         18.1         18.1         18.1         <0.1	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)           10:20         0.42 $18.1$ 18.1 $<0.1$ $<0.1$ $<0.1$ $6.57$ $6.50$ $71.7$ $71.2$ 3 Mar 23           Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)           10:30         0.41 $19.2$ $19.2$ $<0.1$ $<0.1$ $8.6$ $98.9$ $98.5$ 6 Mar 23         Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)           10:30         0.40 $18.9$ $<0.1$ $<0.1$ $<0.1$ $8.66$ $8.25$ $91.8$ $94.0$ 10:30         0.40 $18.9$ $<0.1$ $<0.1$ $<0.1$ $8.44$ $8.43$ $95.7$ $95.6$ 13:15         0.43 $18.9$ $<0.1$ $<0.1$ $<0.1$ $8.44$ $8.43$ $95.7$ $95.6$ 13:15         0.42 $19.8$ $19.8$ $<0.1$ $<0.1$ </td <td>Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidit           10:20         0.42         18.1         18.1         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> <td>Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidity (NTU)         pH           10:20         0.42         18.1         18.1         $&lt;0.1$ $&lt;0.1$ $&lt;0.1$ $&lt;6.57$ $6.50$ $71.7$ $71.2$ $3.8$ $3.8$ $7.35$ $7.4$           January 10:20         0.42         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidity (NTU)         pH           January 10:20         0.41         19.2         $&lt;0.1$ $&lt;0.1$ $8.7$ $8.65$ $98.9$ $98.5$ $0.4$ $0.4$ $7.49$ $7.5$           January 10:20         0.41         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidity (NTU)         pH           10:30         0.40         18.9         18.9         $&lt;0.1$ $&lt;0.1$ $8.44$ $8.25$ $91.8$ $94.0$ $0.8$ $0.8$ $7.02$ $7.0$           Structure of the matrix of the</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td>	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidit           10:20         0.42         18.1         18.1         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)         (0.1)	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Time         Depth (m)         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidity (NTU)         pH           10:20         0.42         18.1         18.1 $<0.1$ $<0.1$ $<0.1$ $<6.57$ $6.50$ $71.7$ $71.2$ $3.8$ $3.8$ $7.35$ $7.4$ January 10:20         0.42         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidity (NTU)         pH           January 10:20         0.41         19.2 $<0.1$ $<0.1$ $8.7$ $8.65$ $98.9$ $98.5$ $0.4$ $0.4$ $7.49$ $7.5$ January 10:20         0.41         Temp (oC)         Flow Velocity (m/s)         DO (mg/L)         DO (%)         Turbidity (NTU)         pH           10:30         0.40         18.9         18.9 $<0.1$ $<0.1$ $8.44$ $8.25$ $91.8$ $94.0$ $0.8$ $0.8$ $7.02$ $7.0$ Structure of the matrix of the	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$

Date 18 Mar 23

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



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Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS(I	mg/L)
M4	0.50	0.42	21.7	21.7	< 0.1	-0.1	7.92	7 92	94.9	94 9	2.0	2.0	7.93	7.0	0.09	0.00	3	2.5
M4	9:50	0.42	21.7	21.7	< 0.1	< 0.1	7.91	1.92	94.8	94.9	2.0	2.0	7.93	7.9	0.09	0.09	2	2.3

Date	21 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow Veloc	city (m/s)	DO (I	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS()	mg/L)
M4	9:45	0.42	22.1 22.1	22.1	<0.1 <0.1	<0.1	7.01 6.85	6.93	83.6 81.7	82.7	5.2 5.4	5.3	7.44 7.44	7.4	0.09	0.09	3 2	2.5

Date	23 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	ity (m/s)	DO (I	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	H	Sali	nity	SS(1	mg/L)
M4	9:53	0.41	23.3 23.3	23.3	<0.1 <0.1	< 0.1	7.3 7.25	7.28	88.5 87.8	88.2	3.1 3.0	3.1	8.10 8.10	8.1	0.09	0.09	3	3.0

Date	25 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M4	11:20	0.41	23.3	22.2	< 0.1	<0.1	7.53	7 52	92.9	92.9	1.9	1.0	7.82	70	0.09	0.09	4	15
1014	11.20	0.41	23.3	25.5	< 0.1	<0.1	7.52	1.55	92.8	92.9	1.9	1.9	7.82	7.0	0.09	0.09	5	4.5

Date	28 Mar 23																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	ity (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	Н	Sali	nity	SS()	mg/L)
M4	11.20	0.44	18.9	19.0	< 0.1	-0.1	8.1	8.10	62.5	77 4	4.5	15	7.29	7.2	0.06	0.06	5	15
M4	11:30	0.44	18.9	18.9	< 0.1	<0.1	8.09	8.10	92.3	//.4	4.5	4.5	7.29	7.5	0.06	0.06	4	4.5

Date	30 Mar 23																	
Location	Time	Depth (m)	Temp	) (oC)	Flow Veloc	tty (m/s)	DO (1	ng/L)	DO (	(%)	Turbidit	y (NTU)	р	Н	Sali	nity	SS()	mg/L)
M4	10.40	0.44	20.9	20.0	< 0.1	-0.1	7.74	774	89.6	80.5	2.2	2.1	7.79	70	0.09	0.00	3	2.0
M4	10:40	0.44	20.9	20.9	< 0.1	<0.1	7.73	7.74	89.4	89.5	2.1	2.1	7.79	7.8	0.09	0.09	3	3.0

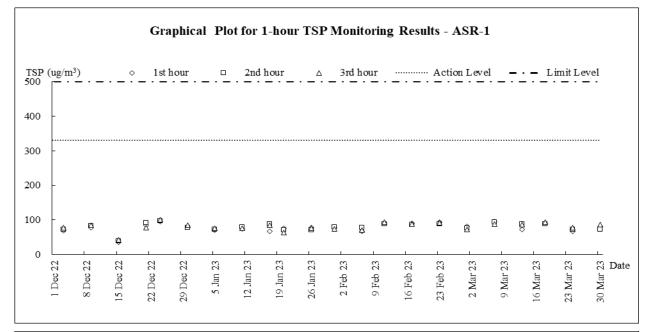


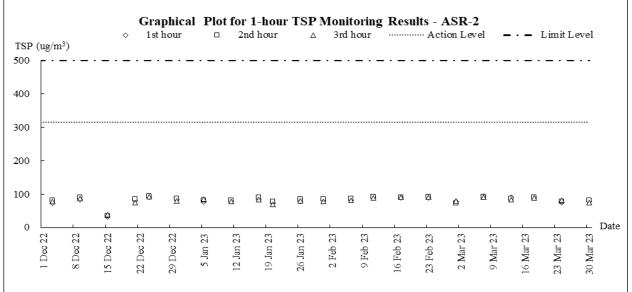
## Appendix I

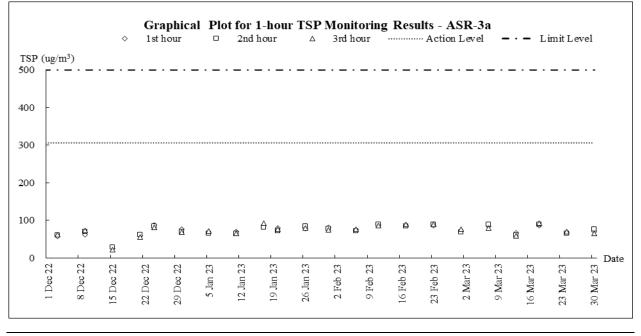
## Graphical Plots of Air Quality, Noise and Water Quality



#### Air Quality Impact Monitoring – 1-hour TSP



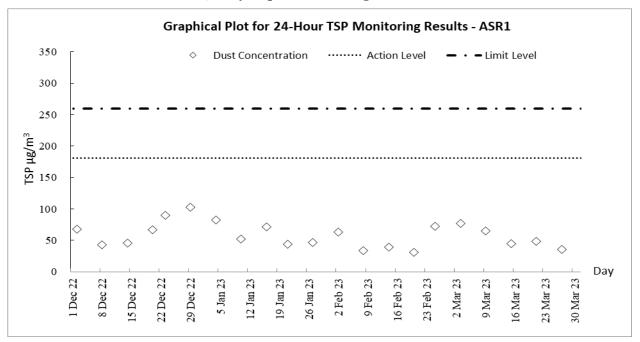


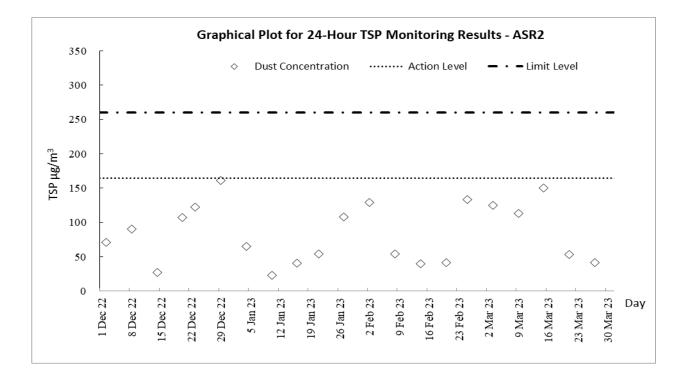


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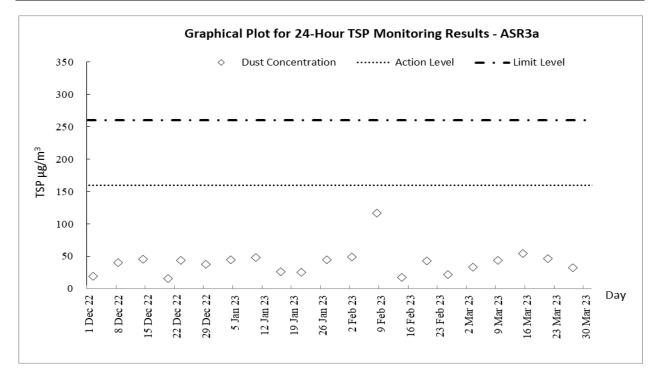
#### Air Quality Impact Monitoring – 24-hour TSP





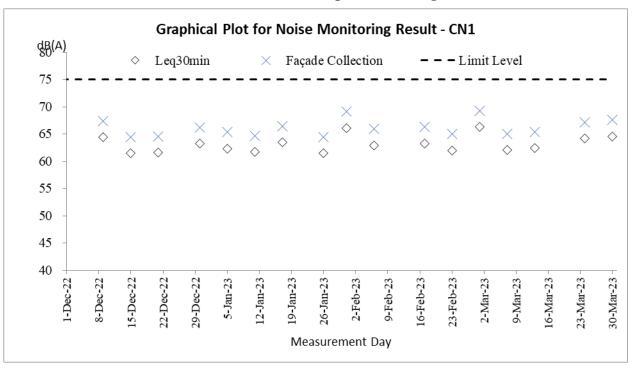
Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.56) – March 2023

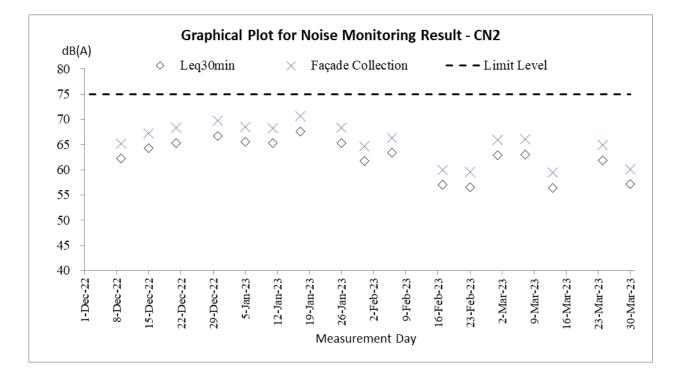




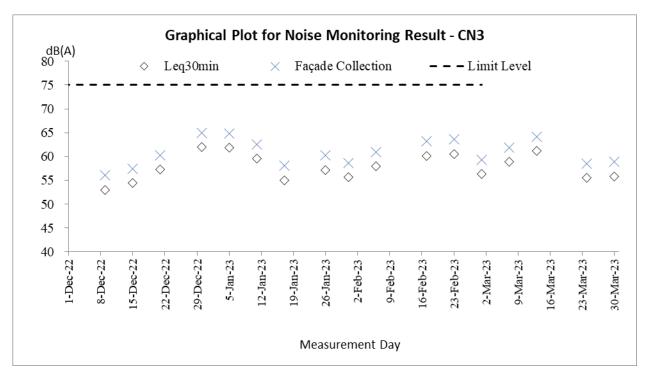


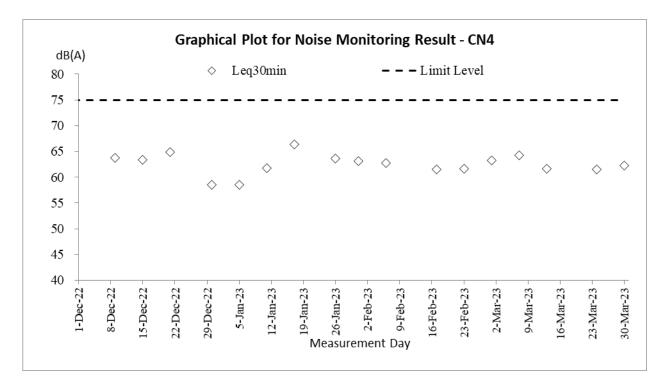
#### **Construction Noise Impact Monitoring**





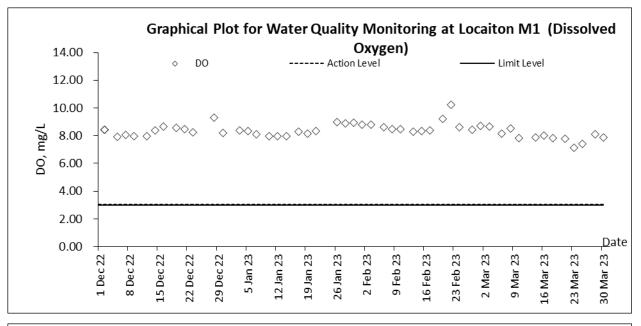


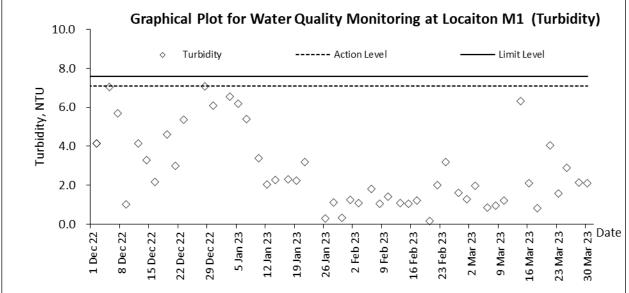


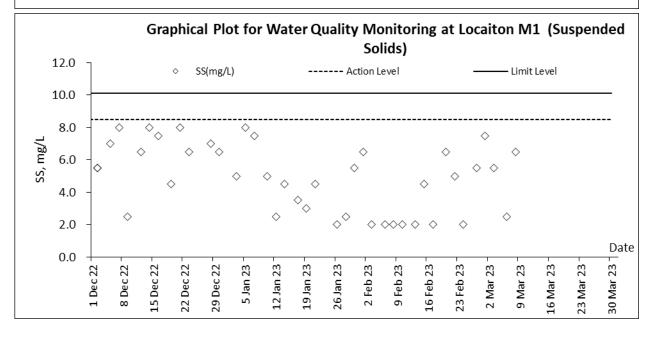




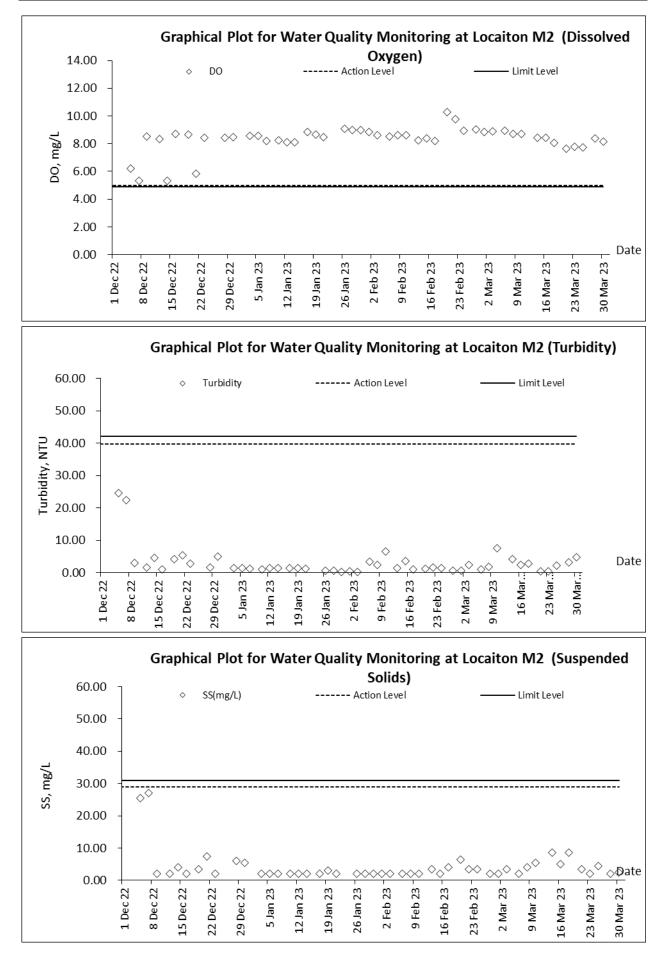
#### Water Quality Impact Monitoring



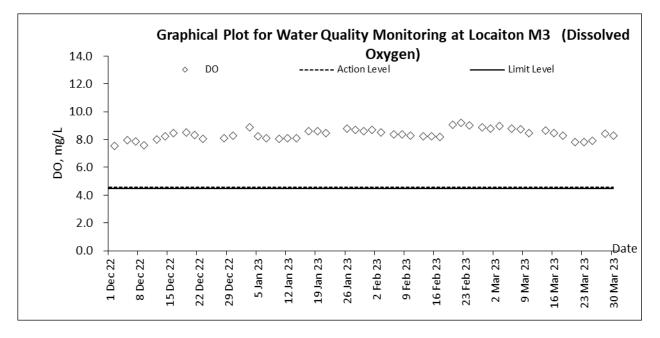


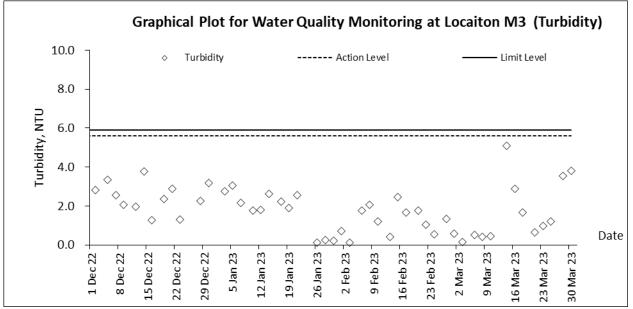


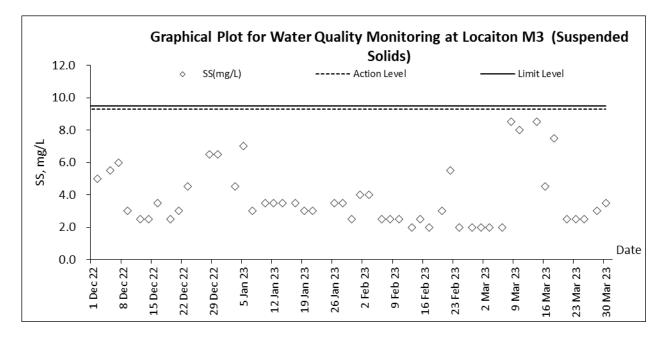




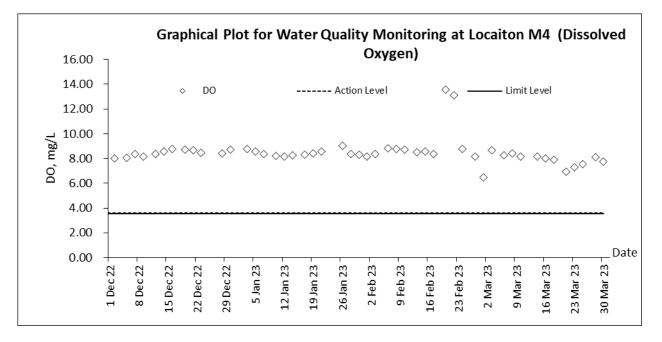


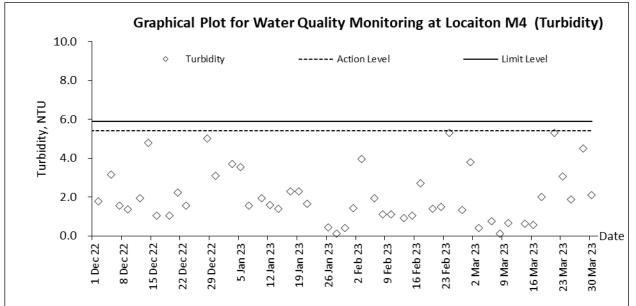


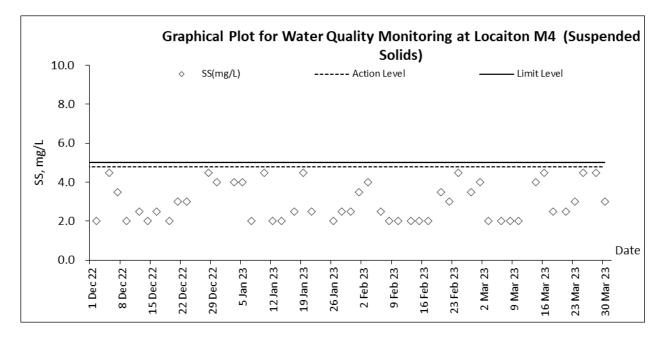














# Appendix J

## Meteorological Data of the Reporting Month



				r	Ta Kwu	Ling Station	ı
Date		Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Mar-23	Wed	Fine. Warm and dry during the day.	0	18.8	6.2	65.7	NW
2-Mar-23	Thu	Some haze later. Light winds.	0	19.6	8.7	70.0	E/SE
3-Mar-23	Fri	Fine. Dry during the day.	0	18.9	8.7	54.5	E/SE
4-Mar-23	Sat	Moderate to fresh easterly winds	0	20.8	7.7	51.0	E/SE
5-Mar-23	Sun	Fine and dry. Moderate to fresh easterly winds	0	18.4	7.5	51.7	E/SE
6-Mar-23	Mon	Fine. Warm and very dry during the day.	0	19.9	9.2	55.7	E/NE
7-Mar-23	Tue	Fine and dry. Warm in the afternoon	0	17.5	8.5	50.7	Е
8-Mar-23	Wed	Fine and dry. Rather warm in the afternoon.	0	19.5	6	73.2	E/SE
9-Mar-23	Thu	Moderate easterly winds.	0	22.2	5.5	68.0	E/SE
10-Mar-23	Fri	Fine and dry. Moderate to fresh easterly winds	0	22.7	9.2	64.0	E/SE
11-Mar-23	Sat	Fine. Warm and very dry during the day.	0	21.2	10.7	71.0	E/SE
12-Mar-23	Sun	Mainly cloudy. Moderate easterly winds.	0.1	21.1	10.7	61.0	N/NE
13-Mar-23	Mon	Mainly cloudy. Sunny intervals in the afternoon.	Trace	19.4	11.2	50.7	N/NE
14-Mar-23	Tue	Dry with sunny periods in the afternoon	0	19.5	6.2	55.0	E/SE
15-Mar-23	Wed	Mainly fine. Dry during the day.	0	20.9	8.5	73.2	E/SE
16-Mar-23	Thu	Moderate easterly winds.	Trace	21.1	9	62.5	E/SE
17-Mar-23	Fri	Moderate to fresh easterly winds	0.5	23.4	11.7	69.0	E
18-Mar-23	Sat	Moderate southerly winds.	0	22.4	10.5	73.7	E
19-Mar-23	Sun	Mainly cloudy. One or two showers tomorrow.	0.6	21.0	11	83.2	E/SE
20-Mar-23	Mon	Coastal mist in the morning	0.3	22.5	12.5	82.0	E
21-Mar-23	Tue	Sunny intervals during the day.	Trace	23.2	7	82.2	E/SE
22-Mar-23 23-Mar-23	Wed Thu	Sunny intervals in the afternoon. Mainly cloudy with isolated showers.	Trace 0	24.7 25.2	8.5 11	80.7 78.2	S/SW S/SW
24-Mar-23	Fri	Mainly cloudy with isolated showers.	0	26.0	9.2	74.7	S/SE
25-Mar-23	Sat	Cloudy with occasional rain.	53.5	22.7	7.8	82.0	S/SE
26-Mar-23	Sun	Fresh easterly winds	5.9	18.4	5	925.0	E/NE
27-Mar-23	Mon	Cloudy with occasional rain.	6.3	17.0	9	87.5	E/NE
28-Mar-23	Tue	Cloudy with a few rain patches.	Trace	17.0	11	89.7	E/NE
29-Mar-23	Wed	Moderate to fresh easterly winds	0.9	20.2	8.5	83.0	E/NE
30-Mar-23	Thu	Cloudy with a few showers.	0.3	20.4	11.8	89.2	E/NE
31-Mar-23	Fri	Mainly cloudy with a few showers.	1.9	20.4	12	74	E/NE



# Appendix K

## **Ecological Survey Report**



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 – March 2023

Revision Date of issue	0 31 March 2023	
Prepared by	Alan Lam	A
Reviewed by	Rachel Siu	Ps.
Verified by	Mike Leung	A



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### **1 INTRODUCTION**

### 1.1 <u>BACKGROUND</u>

- 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 <u>OBJECTIVE</u>

- 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	$\checkmark$											
Birds (day)	$\checkmark$											
Birds (night)				$\checkmark$								
Herpetofauna				$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			
Dragonflies			$\checkmark$									
Butterflies			$\checkmark$									
Aquatic fauna	$\checkmark$											

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 butterflies 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 23rd March 2023, a rainy 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 would be identified and counted as accurately as possible.

### Mammal

There was no mammal species recorded in the monitoring area.

### Bird

There were a total of 21 birds individuals from 9 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey.

### Herpetofauna

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

### ■ Butterfly

There was a total of 8 butterfly individuals from 4 species recorded in the monitoring area.

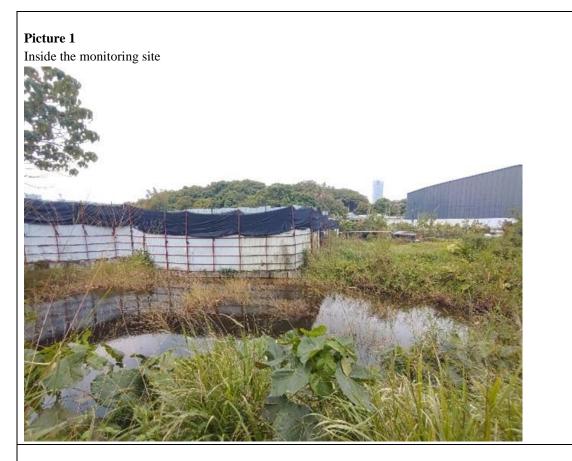
### Dragonfly

There was no odonate species recorded in the monitoring area.

### ■ Freshwater communities

There was no freshwater community recorded in the monitoring area.





### Picture 2 Mycalesis zonata 平頂眉眼蝶 South China Bush Brown





### Table 4Result of mammal in survey

Scientific Name				23/3/2023					
	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland		d	
				UG	WL	MA	ww	WC	
		N/A							

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 5Result of Avifauna in survey

				23/3/2023						
Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland				
				UG	WL	MA	Wetland	WC		
Spilopelia chinensis	Spotted Dove	珠頸斑鳩					2			
Cacomantis merulinus	Plaintive Cuckoo	八聲杜鵑					1			
Lanius schach	Long-tailed Shrike	棕背伯勞					1			
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯					5			
Phylloscopus fuscatus	Dusky Warbler	褐柳鶯					1			
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		2						
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯					3			
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2						
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥					4			

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 6Result of reptile in survey

				23/3/2023					
Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland		d	
				UG	WL	MA	ww	WC	
N/A									

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse



### Table 7Result of amphibian in survey

Scientific Name				23/3/2023					
	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland		d	
				UG	WL	MA	ww	WC	
		N/A							

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse + Species appeared but uncountable

### Table 8Result of butterfly in survey

	Common Name		Conservation Status	23/3/2023					
Scientific Name				Non- wetland		Wetland			
				UG	WL	MA	ww	WC	
Matapa aria	Common Redeye	瑪弄蝶		1					
Mycalesis zonata	South China Bush Brown	平頂眉眼蝶		2					
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶		1			2		
Abisara echerius	Plum Judy	蛇目褐蜆蝶		2					

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 9Result of Odonate in survey

				23/3/2023					
Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		Vetlan	tland		
				UG	WL	MA	ww	WC	
		N/A							

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 10Result of freshwater communities in survey

Scientific Name				23/3/2023					
	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland		d	
				UG	WL	MA	ww	WC	
		N/A							

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse



### **5 DISCUSSION**

Data analysis was carried out to compare with the biodiversity within the site boundary in the same month over years. General description of the ecological conditions is first revealed in terms of abundance as well as species richness, following by statistical analysis of the existing database. The result is considered as significant whenever the drop of diversity indexes exceeds the percentages mentioned in previous sections 2.2 and 2.3.

5.1

Total abundance and species richness in March over years were compared to show the trends. Figures 1 and 2 indicate the total species richness and total abundance within the site boundary respectively.

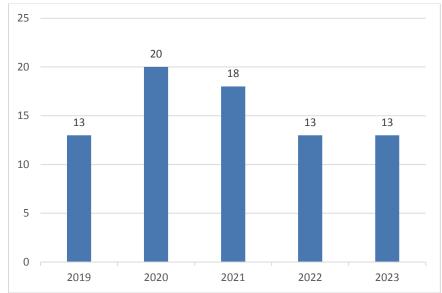


Figure 1: Bar chart showing the total species richness within site boundary from 2019 to 2023 (Actual quantity annotated at the top of each bar)

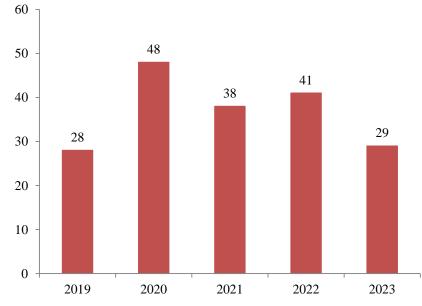


Figure 2: Bar chart showing the total abundance within site boundary from 2019 to 2023 (Actual quantity annotated at the top of each bar)



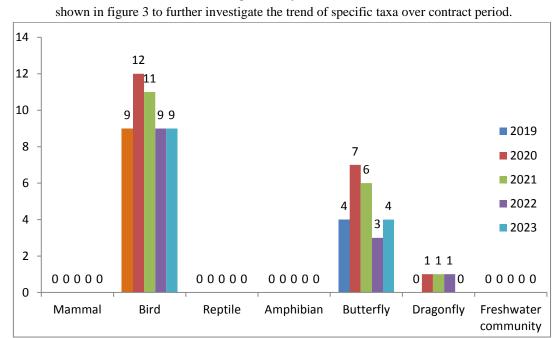


Figure 3: Bar chart showing the species richness within site boundary by taxa from 2019 to 2023 (Actual quantity annotated at the top of each bar)

5.3 According to EM&A Manual, monitoring measures was determined by the species diversity of types of sensitive habitats, i.e. non-wetland and wetland habitats. Abundance and species richness by habitat type in March over years were compared in Figures 4 and 5.

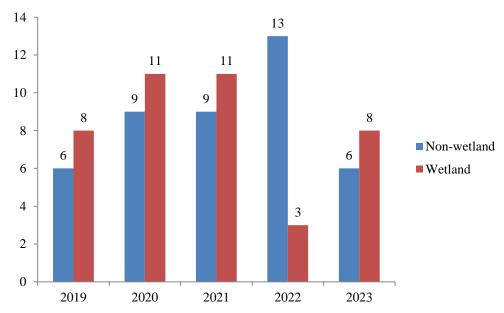


Figure 4: Bar chart showing the species richness based on habitat type from 2019 to 2023 (Actual quantity annotated at the top of each bar)

5.2

As results in section 4 were categorized by taxa, a detailed breakdown of each taxon is



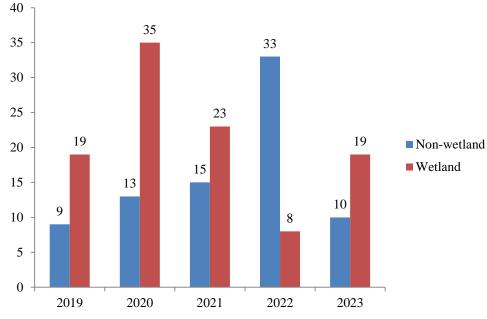


Figure 5: Bar chart showing the abundance based on habitat type from 2019 to 2023 (Actual quantity annotated at the top of each bar)

5.4

After analysing survey results in March from 2019 to 2023, there was no significant drop in species richness and abundance for wetland habitat. Yet, good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.



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

1 Man Kam To Boundary Control Point Shenzhen River Station Boundary of Contract 1 Survey Transect for Contract 1 **Fixed Point for** Contract 1



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 – March 2023

Revision	0	
Date of issue	31 March 2023	
Prepared by	Alan Lam	未
Reviewed by	Rachel Siu	Ps.
Verified by	Mike Leung	A



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## **1 INTRODUCTION**

### 1.1 <u>BACKGROUND</u>

- 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 <u>OBJECTIVE</u>

- 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	$\checkmark$											
Birds (day)	$\checkmark$											
Birds (night)				$\checkmark$								
Herpetofauna				$\checkmark$								
Dragonflies			$\checkmark$									
Butterflies			$\checkmark$									
Aquatic fauna	$\checkmark$											

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 butterflies 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 23rd March 2023, a rainy 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 would be identified and counted as accurately as possible.

#### Mammal

There was no mammal recorded in the monitoring area.

#### Bird

There were total of 10 bird individuals from 5 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey.

#### Herpetofauna

There was no reptile recorded in the monitoring area. There was no amphibian recorded in the monitoring area.

#### ■ Butterfly

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

#### Dragonfly

There was no odonate recorded in the monitoring area.

#### Freshwater communities

There were 2 species of freshwater fish recorded in the monitoring area.



**Picture 1** Watercourse in monitoring area.



**Picture 2** Watercourse in monitoring area.





### Table 4Result of mammal in survey

Scientific Name	Common Name		Conservation Status	23/3/2023					
				UG	WL	MA	ww	WC	
N/A									

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

#### Table 5Result of Avifauna in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	23/3/2023					
			Status	UG	WL	MA	WW	WC	
Amaurornis phoenicurus	White-breasted Waterhen	白胸苦惡鳥				1			
Eudynamys scolopaceus	Asian Koel	噪鶥		1					
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		2			2		
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯		2					
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2					

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 6Result of reptile in survey

Scientific Name	Common Name		Conservation Status	23/3/2023					
				UG	WL	MA	ww	WC	
N/A									

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 7Result of amphibian in survey

Scientific Name	Common Name	Chinese Conservation Name Status	23/3/2023							
			~ ~ ~ ~ ~ ~ ~	UG	WL	MA	ww	WC		
N/A										

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

+ Species appeared but uncountable



### Table 8Result of butterfly in survey

Scientific Name	Common Name		Conservatio n Status	23/3/2023					
				UG	WL	MA	ww	WC	
Papilio polytes	Common Mormon	玉帶鳳蝶		2					
Pieris canidia	Indian Cabbage White	東方菜粉蝶		1					

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 9Result of Odonate in survey

Scientific Name	Common Name		Conservation Status	23/3/2023					
				UG	WL	MA	ww	WC	
		N/A							

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

### Table 10Result of freshwater communities in survey

Scientific Name	Common Name	Chinese Name	Conservatio n Status	23/3/2023				
				UG	WL	MA	ww	WC
Gambusia affinis	Mosquito fish	食蚊魚						+
Puntius semifasciolatus	Chinese Barb	五線無鬚鮑						+

 $* UG: Upland \ Grassland \ | \ WL: \ Woodland \ | \ MA: \ Marsh \ | \ WW: \ Wet \ Woodland \ | \ WC: \ Watercourse$ 

+ Species appeared but uncountable



### **5 DISCUSSION**

Data analysis was carried out to compare with the biodiversity within the site boundary in the same month over years. General description of the ecological conditions is first revealed in terms of abundance as well as species richness, following by statistical analysis of the existing database. The result is considered as significant whenever the drop of diversity indexes exceeds the percentages mentioned in previous sections 2.2 and 2.3.

5.1

Total abundance and species richness in March over years were compared to show the trends. Figures 1 and 2 indicate total species richness and total abundance within the site boundary respectively.

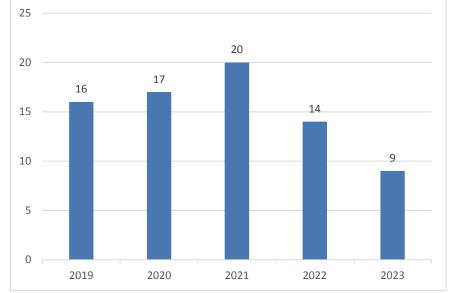


Figure 1: Bar chart showing the total species richness within site boundary from 2019 to 2023 (Actual quantity annotated at the top of each bar)

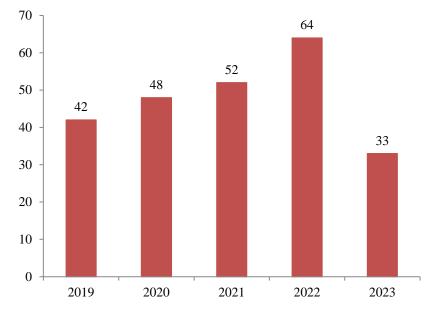
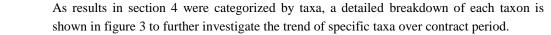


Figure 2: Bar chart showing the total abundance within site boundary from 2019 to 2023 (Actual quantity annotated at the top of each bar)





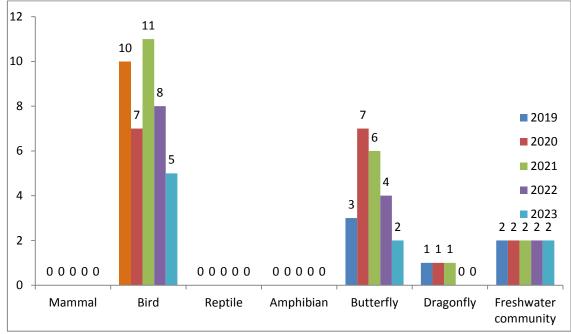


Figure 3: Bar chart showing the species richness within site boundary by taxa from 2019 to 2023 (Actual quantity annotated at the top of each bar)

5.3 According to EM&A Manual, monitoring measures was determined by the species diversity of types of sensitive habitats, i.e. non-wetland and wetland habitats. Abundance and species richness by habitat type in March over years were compared in figures 4 and 5.

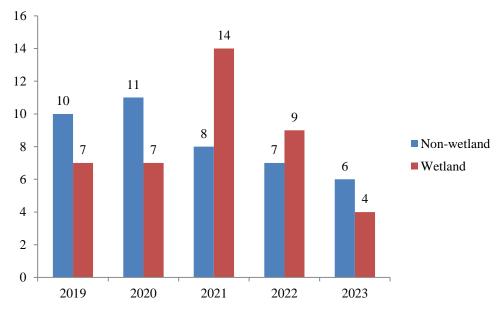
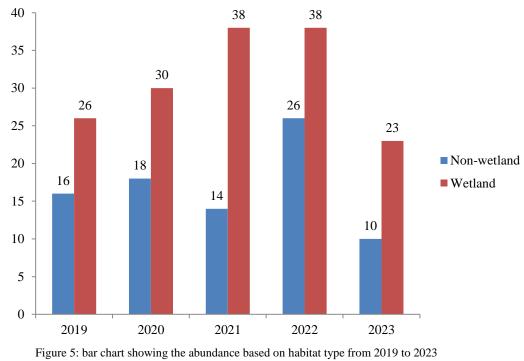


Figure 4: bar chart showing the species richness based on habitat type from 2019 to 2023 (Actual quantity annotated at the top of each bar)





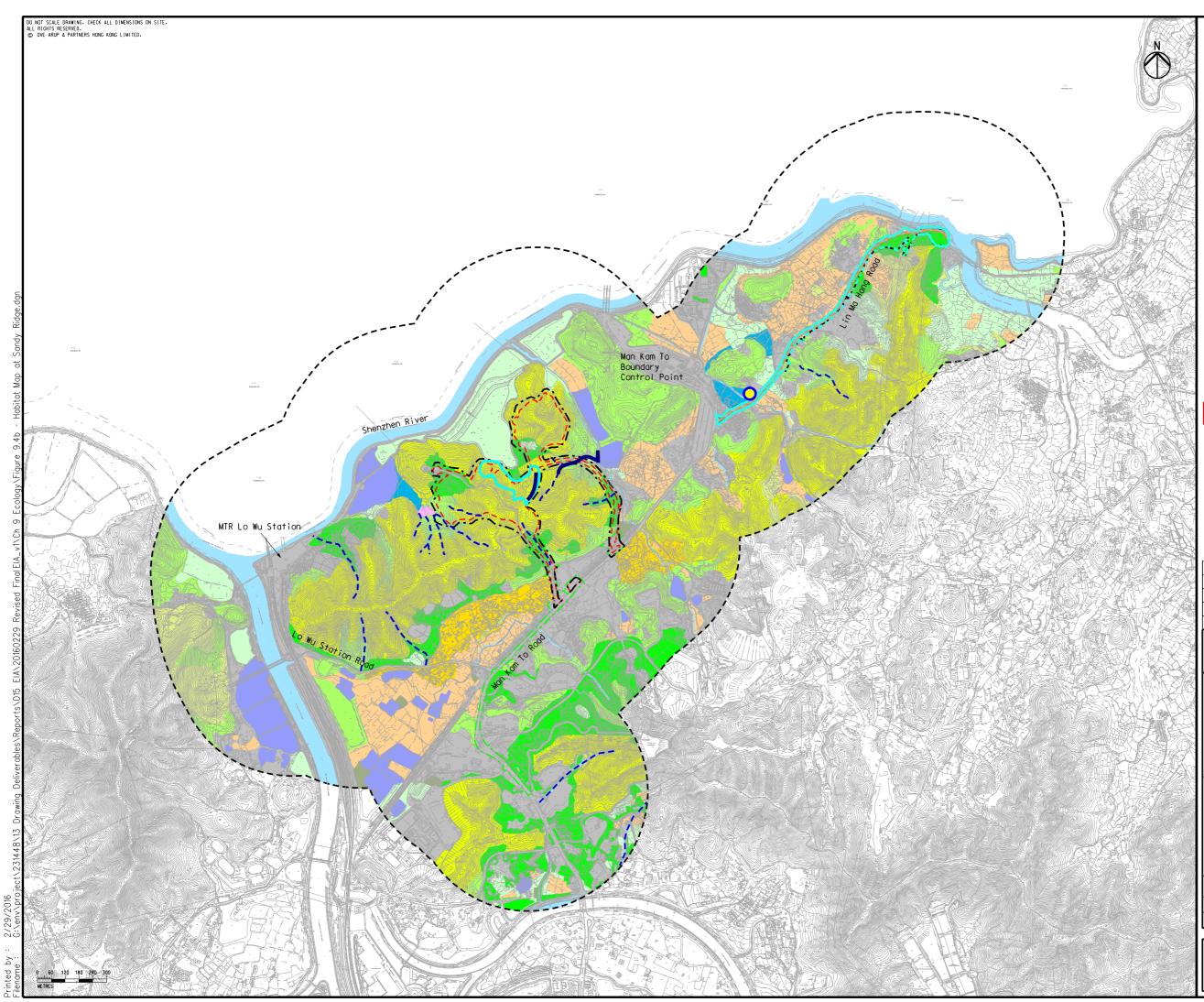
(Actual quantity annotated at the top of each bar)

5.4

After analysing survey results in March from 2019 to 2023, there was a decrease in species richness and abundance for wetland and non-wetland habitats. Still, a good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.



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



egeno	ť
::2	Project Boundary
	Utilities Construction
111	Sandy Ridge Works Area
11	Lin Ma Hang Road Works Area
	500m Assessment Area
	Watercourse
	Seasonal Watercourse
	Pond
	Developed Area
	Agricultural Land
	Marsh
	Wasteland
	Grassland
	Upland Grassland
	Shrubland
	Plantation
	Woodland
	Wet Woodland
	Village Area
_	Site boundary of Contract 2
	Survey Transect for Contract 2
0	Fixed Point for Contract 2

G	SEVENTH ISSUE	GL	02/16						
F	SIXTH ISSUE	GL	01/16						
Ε	FIFTH ISSUE	GL	12/15						
D	FOURTH ISSUE	GL	10/15						
Rev	Description	By	Date						
C	Generalization								

# ARUP

Contract No. and Title:

Agreement No. CE 1/2013(CE)

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

Drawing tit

Habitat	Мар	at	Sandy	Ridge					
Drowing no. Figure 9.4b									
	ote 2/16	E	hecked L	Approved ST					
Scole AS SHO	#N	s	PREL I	MINARY					
	COPYRI	GHT RE	ESERVED						
生 木 工 程 拓 展 署 Civil Engineering and Development Department									



# 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: 30/03/2023 10:30 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures	Im	pleme	ntation	Actions/ Remarks		
	8	Yes	No	N/A			
1	Landscape and Visual	T					
1.1	Is the construction period become shortened?			$\checkmark$	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)	~					

### **Summary / Remarks:**



### Follow up actions taken by Contractor for previous comments:

N/A

### New observation:

N/A

### **Reminders:**

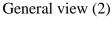
- 1. Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement.
- 2. Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 3. Transplanted trees T2465 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 B.



General view (1)

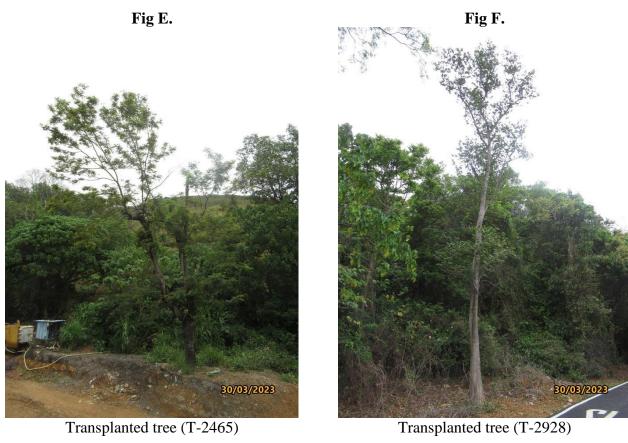




General view (3)

General view (4)







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: 30/03/2023 11:30 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures	Im	plemer	ntation	Actions/ Remarks
		Yes	No	N/A	_
1	Landscape and Visual	1			
1.1	Is the construction period become shortened?			$\checkmark$	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?			~	
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:**

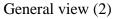
1. Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement. Contractor should prevent any construction material pile within TPZ and ensure no works is allowed within the TPZ.

### **Photo Record:**



General view (1)







General view (3)

General view (4)



### Signature:

		Signature's Registra	PULL AS
Recorded by	Registered Landscape Architect	中 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一	142 30 Mar 2023
Checked by	Environmental Team Leader	Am	11 Apr 2023
	Independent Environmental Checker	h	17 April 2023



# Appendix M

## Monthly Summary Waste Flow Table

### Monthly Summary Waste Flow Table for 2023

 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 Quantitie	s of Inert C&D N	Iaterials Generated	l Monthly			Actual Quantities	s of C&D Wastes	Generated Monthly	7
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	0.340	0.000	0.000	0.000	0.340	0.000	0.000	0.000	0.000	0.000	0.020
Feb	0.300	0.000	0.000	0.000	0.300	0.000	0.000	0.000	0.000	0.000	0.015
Mar	0.157	0.000	0.000	0.000	0.157	0.000	0.000	0.000	0.000	0.000	0.015
Apr											
May											
June											
Sub-total	0.797	0.000	0.000	0.000	0.797	0.000	0.000	0.000	0.000	0.000	0.050
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	0.797	0.000	0.000	0.000	0.797	0.000	0.000	0.000	0.000	0.000	0.050

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) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(6) Broken concrete for recycling into aggregates.

Name of Department: CEDD

	Interning oraninary master rew rubie for 2023										
	А	ctual Quantities	of Inert C&D N	Iaterials Gener	rated Monthl	у	Actual Q	uantities of C	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 Litre)	(in '000kg)
JAN	191.800	0.000	0.000	0.000	191.8	0.000	0.000	0.000	0.000	0.000	5.800
FEB	356.600	0.000	0.000	0.000	356.6	0.000	0.000	0.000	0.000	0.000	9.600
MAR	0.000	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000	4.640
APRIL											
MAY											
JUN											
Sub Total	548.400	0.000	0.000	0.000	548.400	0.000	0.000	0.000	0.000	0.000	20.040
JUL											
AUG											
SEP											
OCT											
NOV											
DEC											
Total	548.400	0.000	0.000	0.000	548.400	0.000	0.000	0.000	0.000	0.000	20.040

# Monthly Summary Waste Flow Table for 2023

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	0	0	0	0	1	0

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

**Complaint Log** 



Complaint Log for Contract 1							
Log ref.	Date of complaint	Complaint route	Reference no.	Complaint nature	Investigation fining	Status	
1	15-Apr-21	EPD	EPD Ref.: EP3/N07/RN/8770-21	Air Quality	Non-project related	Interim IR was submitted to EPD on 22 April 2021 and included in EM&A Report – Apr 2021	
2	11-Feb-22	EPD	EPD Ref.: EP3/N07/RN/03921-22	Noise	Non-project related	Interim IR was submitted to EPD on 25 Feb 2022 and included in EM&A Report – Feb 2021	

### **Complaint Log for Contract 1**

### **Complaint Log for Contract 2**

Log ref.	Date of complaint	Complaint route	Reference no.	Complaint nature	Investigation fining	Status
1	4-Sep-20	EPD	EPD Ref.: EP/RN/419300	Water quality	Non-project related	Interim IR was submitted to EPD on 14 Sep 2020 and included in EM&A Report – Sep 2020
2	15-Apr-21	EPD	EPD Ref.: EP3/N07/RN/8770-21	Air Quality	Non-project related	Interim IR was submitted to EPD on 22 April 2021 and Included in EM&A Report – Apr 2020
3	11-Feb-22	EPD	EPD Ref.: EP3/N07/RN/03921-22	Noise	Non-project related	Interim IR was submitted to EPD on 25 Feb 2022 and included in EM&A Report – Feb 2021
4	14-July-22	EPD	EPD Ref.: N07/RN/00014141-22	Soil/muddy water	Non-project related	Interim IR was submitted to EPD on 19 Aug 2022 and included in EM&A Report – Aug 2022
5	23-9-22	EPD	EPD Ref.: N07/RN/00020415-22	Air Quality	Non-project related	Interim IR was submitted to EPD on 30 Sep 2022 and included in EM&A Report – Sep 2022



# Appendix O

# **Implementation Schedule for Environmental Mitigation Measures**

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	Implementation status and remark*
Common M	Aitigation Measures (Applicable to ALL Project Components, including DPs and Non-D	PS)					
Construction	on Dust Impact		1	1	T	1	
\$4.4.5.2	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	Implemented.
84.4.5.3	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	Implemented. *2 nos. of water truck were running on haul road for sufficient water spraying
\$4.4.5.2	<ul> <li>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;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;</li> <li>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;</li> <li>Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;</li> <li>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;</li> <li>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;</li> <li>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;</li> <li>Any area that involves demolition activities should be sprayed with water or a</li> </ul>	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	Implemented Implemented Implemented Implemented Implemented Implemented Implemented Implemented

## Environmental Mitigation Implementation Schedule – Sandy Ridge

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	Implementation status and remark*
	<ul><li>dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li><li>Any skip hoist for material transport should be totally enclosed by impervious</li></ul>						Implemented
	<ul><li>sheeting;</li><li>Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA)</li></ul>						Implemented
	should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;						Implemented
	<ul> <li>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;</li> <li>Exposed earth should be properly treated by compaction, turfing, hydroseeding,</li> </ul>						Implemented
	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.						Implemented
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	Implemented. 3 dust monitoring stations were Implemented.
\$4.4.5.3	<ul> <li>All road surface within the barging facilities will be paved.</li> <li>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.</li> <li>Vehicles will be required to pass through designated wheel wash facilities.</li> </ul>	Minimise dust impact at the nearby sensitive receivers	Contractor	Barging point at Siu Lam	Construction phase	• TM-EIAO	No Applicable. * Barging point at Siu Lam is not in used.
Constructio	Continuous water spray at the loading point.						
S5.5.5.3	<ul> <li>Implement the following good site management practices:</li> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> </ul>	Control construction noise	Contractor	All construction sites	Construction phase	• Annex 5, TM-EIAO	Implemented
	<ul> <li>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;</li> </ul>			51105			Implemented
	<ul> <li>plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> </ul>						Implemented
	<ul> <li>silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> </ul>						Implemented
	<ul> <li>mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from onsite construction</li> </ul>						Implemented Implemented

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	Implementation status and remark*
	activities.						
\$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	Implemented * Quiet plants were in used.
\$5.5.5.6	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	Implemented where necessary. * Temporary noise barriers are not practicable due to site constraint.
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/m2 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	Implemented where necessary. * Movable noise barriers are not practicable due to site constraint.
85.5.5.13	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	Implemented

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	Implementation status and remark*
S13.2.1.1 - S13.4.1.2	Implement a noise monitoring under EM&A programme.	Monitortheconstructionnoiselevels at the selectedrepresentativelocations	Contractor	Selected representative noise monitoring station	Construction phase	TM-EIAO	Implemented. * 4 noise monitoring stations were Implemented.
<i>Operation</i> S5.6.6.4	In Noise (Road Traffic Noise)           Provide a series of noise mitigation measures including absorptive noise barriers and	Reduce operation	Contractor	Refer to	Prior to operation	• TM-EIAO	Shall be
	<ul> <li>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:</li> <li><i>For existing representative NSRs</i></li> <li>Approx. 12m of absorptive noise barrier 2.5m above road level along Sha Ling Road (MM1);</li> <li>Approx. 92m of absorptive noise barrier 2.5m above road level along Sha Ling Road (MM2);</li> <li>Approx. 28m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM3);</li> <li>Approx. 51m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM4);</li> <li>Approx. 25m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM5);</li> <li>Approx. 21m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM6);</li> <li>Approx. 14m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM7);</li> <li>Approx. 18m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM8);</li> <li>Approx. 42m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM9);</li> <li>Approx. 93m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM9);</li> <li>Approx. 42m of absorptive noise barrier 3m above road level along Lin Ma Hang Road opposite San Uk Ling (MM9);</li> <li>Approx. 185m of low noise sarrier 3m above road level along Lin Ma Hang Road opposite San Uk Ling (MM9);</li> <li>Approx. 185m of low noise barrier 5m above road level along Lin Ma Hang Road near San Uk Ling (MM10);</li> <li>Approx. 36m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near San Uk Ling (MM11);</li> <li>For planned representative NSRs</li> <li>Approx. 36m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM12);</li> <li>Approx. 47m of</li></ul>	noise from road traffic		Figures 5.6.9 - 5.6.13 of the EIA Report	of the Project for existing representative NSRs. While for barriers to protect planned representative NSRs, it should constructed before intake of planned representative NSRs.		implemented Prior to operation of the Project.

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	Implementation status and remark*
	<ul> <li>Road near Muk Wu Nga Yiu (MM13);</li> <li>Approx. 31m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM14);</li> <li>Approx. 31m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM15);</li> <li>Approx. 41m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM16);</li> <li>Approx. 340m of low noise surfacing materials along Lin Ma Hang Road near Muk Wu Nga Yiu (MM17).</li> </ul>						
Water Qua	ity (Construction Phase)						
S6.4.4.1 - S6.4.4.3	<ul> <li>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: <u>General Site Operation</u></li> <li>At the start of site establishment, perimeter cut-off drains to direct offsite 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;</li> <li>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;</li> </ul>	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	Implemented
	<ul> <li>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;</li> </ul>						Implemented
	• The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction;						Implemented
	<ul> <li>Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be</li> </ul>						Implemented

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	Implementation status and remark*
	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						Implemented
	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						Implemented
	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						Implemented
	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						Implemented
	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						Implemented
	or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.						1
	Particular attention should be paid to the control of silty surface runoff during						
	storm events, especially for areas located near steep slopes;						
	• 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						Implemented
	adequately designed and sited wheel washing facilities should be provided at						*
	every construction site exit where practicable.						
	• Wash-water 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						Implemented
	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						Implemented
	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;						

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	Implementation status and remark*
	<ul> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts;</li> <li>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;</li> <li>Regular environmental audit on the construction site should be carried out in</li> </ul>						Implemented Implemented
	<ul> <li>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;</li> <li>Adopt best management practices.</li> </ul>						Implemented
S6.4.4.4 - S6.4.4.5	<ul> <li><u>Sewage from workforce</u></li> <li>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;</li> <li>Notices should be posted at conspicuous locations to remind the workers not to</li> </ul>	To minimise water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance     TM-DSS	Implemented
	<ul><li>discharge any sewage or wastewater into the nearby environment during the construction phase of the Project;</li><li>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.</li></ul>						Implemented
S6.4.4.6	<ul> <li>Operation of Barging Point at Siu Lam</li> <li>All barges should be fitted with tight bottom seals to prevent leakage of materials during transport;</li> <li>Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation;</li> <li>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</li> </ul>	To minimise water quality from operation of barging point at Siu Lam	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance     TM-DSS	No Applicable. * Barging point at Siu Lam is not in used.
Water Qua	<ul> <li>Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water.</li> <li>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.</li> <li><i>ity (Operational Phase)</i></li> </ul>						

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	Implementation status and remark*
S6.5.4.1 - S6.5.4.6	<ul> <li>The following mitigation measures during operational phase are recommended:</li> <li>Sewage and wastewater discharge should be connected to foul sewerage system;</li> <li>Proper drainage systems with silt traps and oil interceptors should be installed;</li> <li>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;</li> <li>The silt traps and oil interceptors should be cleaned and maintained regularly, especially before peak seasons of the visitors in Ching Ming</li> <li>Festival and Chung Yeung Festival;</li> <li>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.</li> </ul>	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	For Operational phase
Waste Man	agement (Construction Waste)						
S7.3.3.8	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 50,000m ₃ .	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	
S7.3.4.2	<ul> <li><u>Good Site Practice</u></li> <li>The following good site practices are recommended throughout the construction activities: <ul> <li>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;</li> <li>training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;</li> <li>provision of sufficient waste disposal points and regular collection for disposal;</li> <li>appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed</li> </ul> </li> </ul>	Minimise waste generation during construction	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented Implemented Implemented Implemented
	<ul> <li>of waste by entire covering trucks or by transporting wastes in enclosed containers;</li> <li>regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;</li> <li>a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.</li> </ul>						Implemented Implemented

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	Implementation status and remark*
\$7.3.4.3	<ul> <li><u>Waste Reduction Measures</u></li> <li>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: <ul> <li>segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>proper storage and site practices to minimise the potential for damage and contamination of construction materials;</li> <li>plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste;</li> <li>sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete metal etc.);</li> </ul> </li> </ul>	Reduce waste generation	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented Implemented Implemented Implemented Implemented
\$7.3.4.5	<ul> <li>procedures, including waste reduction, reuse and recycling.</li> <li><u>Storage of Waste</u></li> <li>The following recommendation should be implemented to minimise the impacts: <ul> <li>non-inert C&amp;D materials such as soil should be handled and stored well to ensure secure containment;</li> <li>stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away;</li> <li>different locations should be designated to stockpile each material to enhance reuse;</li> </ul> </li> </ul>	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction phase	<ul> <li>Land (Miscellaneous Provisions)</li> <li>Ordinance</li> <li>Waste Disposal</li> <li>Ordinance</li> <li>ETWB TCW No.</li> <li>19/2005</li> </ul>	Implemented Implemented Implemented
S7.3.4.6	<ul> <li><u>Collection and Transportation of Waste</u></li> <li>The following recommendation should be implemented to minimise the impacts: <ul> <li>remove waste in timely manner;</li> <li>employ the trucks with cover or enclosed containers for waste transportation;</li> <li>obtain relevant waste disposal permits from the appropriate authorities; and</li> <li>disposal of waste should be done at licensed waste disposal facilities.</li> </ul> </li> </ul>	Minimise waste impacts from storage	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented Implemented Implemented Implemented
\$7.3.4.8 - \$7.3.4.15	<ul> <li><u>Excavated and C&amp;D Materials</u></li> <li>Wherever practicable, C&amp;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 implemented in handling the excavated and C&amp;D materials: <ul> <li>maintain temporary stockpiles and reuse excavated fill material for backfilling;</li> <li>carry out on-site sorting;</li> <li>make provisions in the Contract documents to allow and promote the</li> </ul> </li> </ul>	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul> <li>Land</li> <li>(Miscellaneous</li> <li>Provisions)</li> <li>Ordinance</li> <li>Waste Disposal</li> <li>Ordinance</li> </ul>	Implemented Implemented Implemented

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	Implementation status and remark*
\$7.3.4.17 -	<ul> <li>use of recycled aggregates where appropriate; and</li> <li>implement a recording system for the amount of waste generated, recycled and disposed of for checking.</li> <li>The recommended C&amp;D materials handling should include:</li> <li>On-site sorting of C&amp;D materials;</li> <li>Reuse of C&amp;D materials; and</li> <li>Use of Standard Formwork and Planning of Construction Material purchasing.</li> <li><u>Chemical Waste</u></li> <li>If chemical wastes are produced at the construction site, the Contractors should register</li> </ul>	Control the chemical waste and ensure	Contractor	All	Construction	• Waste Disposal (Chemical Waste)	Implemented Implemented Implemented Implemented Implemented Implemented Implemented
S7.3.4.18	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.	proper storage, handling and disposal.		sites		General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	
\$7.3.4.19	<ul> <li><u>General Refuse</u></li> <li>General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling.</li> <li>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.</li> <li>A reputable waste collector should be employed to remove general refuse on a daily basis.</li> </ul>	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented Implemented Implemented
\$7.3.4.20	<ul> <li><u>Sewage</u></li> <li>The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities.</li> <li>Regularly collection by licensed collectors should be arranged to minimise potential environmental impacts.</li> </ul>	Minimise production of sewage impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented Implemented
Waste Man	pagement (Operational Waste)	I	1	1	1	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	Highways Department /Contractor	Roads network for the C&C facilities and Lin Ma Hang Road	Operational phase	• Waste Disposal Ordinance	Implemented

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	Implementation status and remark*
Land Cont	amination	·					
\$8.9.1.1	Re-appraisal of the potentially contaminated site (SRC-1)	Identify any hot spots for SI within the southeast and western portions of SRC-1	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	Once the works area for the Project is confirmed and site access is available (e.g. after land resumption)	<ul> <li>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);</li> <li>Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management;</li> <li>Guidance Notes for Contaminated Land Assessment and Remediation; and</li> <li>Practice Guide for Investigation and Remediation of Contaminated Land</li> <li>Recommendations in Health Risk Assessment</li> </ul>	Implemented
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 reappraisal and strategy of the recommended SI, if required	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	After land resumption and prior to the construction phase	Ditto	Implemented
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	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto	Implemented
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	Project Proponent	Potentially contaminated	Prior to the construction	Ditto	Not required as no contamination is

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	Implementation status and remark*
		measures for the contaminated soil and groundwater identified in the assessment if remediation is required	Detailed Design Consultant	site (SRC-1)	phase		identified.
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	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto	Not required as no contamination is identified.
Ecology (	Construction Phase)						
\$9.7.2.3	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	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 <b>Figure</b> <b>9.11</b> of the EIA Report	Prior to construction phase	<ul> <li>Reinstatement and establishment requirements to be detailed in Upland Grassland Reinstatement Plan</li> <li>TM-EIAO</li> </ul>	Implemented *Upland Grassland Reinstatement Plan was submitted to EPD.

EIA Ref.	Recommended Mitigation Measures	Objectives of the	Implementation	Location /	Implementation	Requirements	Implementation
		Recommended	Agent	Timing	Stage	and / or standards to	status and remark*
		Measures & Main	-	_		be achieved	
		Concerns to address					
		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.					
S9.7.2.5	Preparation and submission of a Vegetation Survey Report and	The Vegetation Survey	Project Proponent/	Within the	Prior to	<ul> <li>Survey findings and</li> </ul>	Implemented
-	Transplantation Proposal (if needed as concluded in the Vegetation Survey Report) to	will report the	Detailed Design	Project	construction	transplantation	* Vegetation Survey
\$9.7.2.6	EPD for agreement.	presence, as well as	Consultant	Area where	phase	methodology to be	Report and
		update the conditions,	(qualified	applicable		detailed in Vegetation	Transplantation
		number, locations and	ecologist/			Survey Report and	Proposals for
		habitat types of any	botanist) for			Transplantation Plan	Contract 1 and
		identified floral	Vegetation Survey			respectively.	Contract 2 were
		species of	Report and			• TM-EIAO.	submitted to EPD.
		conservation	Transplantation				
		importance to be	Proposal.				
		impacted by the					
		development, 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		1			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address and maintenance programme.	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
\$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 <b>Figure 9.11</b> of the EIA Report	Prior to construction phase	<ul> <li>Enhancement planting and establishment requirements to be detailed in Wooded Enhancement Proposal.</li> <li>TM-EIAO</li> </ul>	Implemented *Woodland compensation plan was submitted to EPD.
\$9.7.3.1	Indirect impacts due to potential changes in water quality, hydrology and	Minimise the indirect	Contractor	On the edge	Prior to	• ETWB TCW No.	Implemented.
- \$9.7.3.3	<ul> <li>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.</li> <li>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).</li> <li>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.</li> </ul>	impacts to Water Quality and Hydrology	/detailed design consultant.	of any active works area, 30m from The watercourse	commencement and during construction phase	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	Implementation status and remark*
S9.7.3.4 - S9.7.3.6	Mitigation for noise disturbance (details refer to S5.5.5 to S5.6.6 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 birdfriendly 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	Contractor Project Proponent	All construction sites	Prior to commencement and during construction phase	• TM-EIAO.	
		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					
.9.7.3.7	<ul> <li>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:</li> <li>Put up signs to alert site staff about any locations which are ecologically sensitive and measures to prevent accidental impacts;</li> <li>Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering</li> </ul>	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.	Implemented Implemented

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	Implementation status and remark*
S.9.7.3.9	<ul> <li>watercourses;</li> <li>Prohibition of soil storage against trees or close to waterbodies;</li> <li>Delineation of works site to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value;</li> <li>No smoking, hot works or sources of fire close to upland grassland;</li> <li>No on-site burning of waste; and</li> <li>Waste and refuse in appropriate receptacles.</li> <li>Precautionary checks by a suitably experienced ecologist of the vegetation for the</li> </ul>	Minimise the impacts	Contractor	All	Prior to site	• TM-EIAO	Implemented Implemented Implemented Implemented Implemented Implemented during
	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.	to breeding birds within the works areas.		construction sites	clearance	• WAPO	breeding season.
Ecology (C	perational Phase)						
89.7.2	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 <b>Figure</b> <b>9.11</b> of the EIA Report	Operational phase	<ul> <li>Monitoring methodology and successfulness of survival of upland grassland should follow Upland Grassland Reinstatement Plan.</li> <li>TM-EIAO.</li> </ul>	Upland Grassland Reinstatement Area will be implemented by other contract.
\$9.7.5.3 - \$9.7.5.6	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	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	Operational phase	<ul> <li>Enhancement planting and establishment requirements to be detailed in Wooded Area Proposal.</li> <li>TM-EIAO.</li> </ul>	

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	Implementation status and remark*
		maintenance		Indicative			
		programme.		locations for			
		1 0		Enhancement			
				Woodland			
				should			
				be referred to			
				Figure 9.11			
				of the			
				EIA Report			
S9.7.4.1	Mitigation for Impacts to Water Quality and Hydrology (Operational	Specific mitigation	Detailed Design	Wet	Detailed Design	• TM-EIAO	Implemented before
-	Phase)	measures will be	Consultant	woodland	phase/Operational		Operational phase
S9.7.4.5	• Stormwater drainage system will be further developed in detailed design stage to	implemented to		(and further	phase		
	collect dusty materials from water collected from the platform and associated road	prevent indirect		down			
	system. Silt traps will be installed to ensure removal of dusty materials. Regular	impacts wetland		the marsh and			
	cleaning will be conducted to avoid debris entering downstream rivers during first	habitats and fauna.		mitigation			
	flush; and	Mitigation measures		ponds)			
	• The proposed small diameter bore pile system at the foundation of	are to be further		and the			
	the proposed platform structure.	developed in the		seasonal			
		detailed design stage		watercourse			
		to address any water		to the			
		quality impacts due to		east of the			
		the drainage from the		Project			
		proposed platform,		boundary			
		and any erosion issues					
		due to the drainage					
		from the 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					

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	Implementation status and remark*
\$9.7.4.6 - \$9.7.4.7	<ul> <li>Minimise the potential indirect light disturbance on the Street Lighting on fireflies surrounding the Project Site during operational phase</li> <li>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</li> </ul>	proposed platform structure would allow a notional free area of about 87 – 91% for groundwater to pass through. Reduce light pollution and impact on the nearby habitats and their associated wildlife groups, particularly nocturnal	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO	Implemented before Operational phase
\$9.7.4.9 - \$9.7.4.9 <i>Fisheries</i>	<ul> <li>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.</li> </ul>	fireflies. Minimise the risk of hill fires.	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO	Implemented before Operational phase
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.	-	-	-	-	-	Not applicable
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	-	Implemented.

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	Implementation status and remark*
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	-	Implemented.
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	-	Implemented.
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	-	Implemented.
11.8.1.3, 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	<ul> <li>DEVB TC(W)</li> <li>07/2015</li> <li>Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB</li> </ul>	Implemented.
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	Implemented.

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	Implementation status and remark*
S11.8.1.3 , Table	CM8 - Implementing precautionary control measures during construction stage accordingly to ETWB TCW No. 5/2005 – Protection of natural streams/rivers from	Minimize landscape impact	Funded by CEDD and	Work site/ during	Design and Construction	(GLTM) Section, DevB • Latest recommended horticultural practices from GLTM Section, DevB • ETWB TCW No. 5/2005 – Protection	Implemented.
11.9	adverse impacts arising from construction works to avoid direct or indirect impacts any watercourses and good site practices.		implemented by Contractor	construction	phase	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	<ul> <li>DEVB TC(W)</li> <li>07/2015 – Tree</li> <li>Preservation</li> <li>Latest recommended</li> <li>horticultural practices</li> <li>from Greening,</li> <li>Landscape and Tree</li> <li>Management</li> <li>(GLTM) Section,</li> <li>DevB</li> <li>DEVB TCW No.</li> <li>06/2015 –</li> <li>Maintenance of</li> <li>Vegetation and Hard</li> <li>Landscape Features</li> </ul>	Implemented
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	<ul> <li>DEVB TC(W)</li> <li>07/2015 - Tree</li> <li>Preservation</li> <li>Latest recommended</li> <li>horticultural practices</li> <li>from Greening,</li> <li>Landscape and Tree</li> <li>Management (GLTM)</li> <li>Section, DevB</li> <li>DEVB TCW No.</li> <li>06/2015 -</li> </ul>	Implemented

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	Implementation status and remark*
						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	<ul> <li>Guidelines on Greening of Noise Barriers, issued April 2012, GLTMS, DevB</li> <li>DEVB TCW No. 06/2015 – Maintenance of Vegetation and Hard Landscape Features</li> </ul>	Implemented
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.	Implemented
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	-	Implemented 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	-	Implemented 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	Implemented

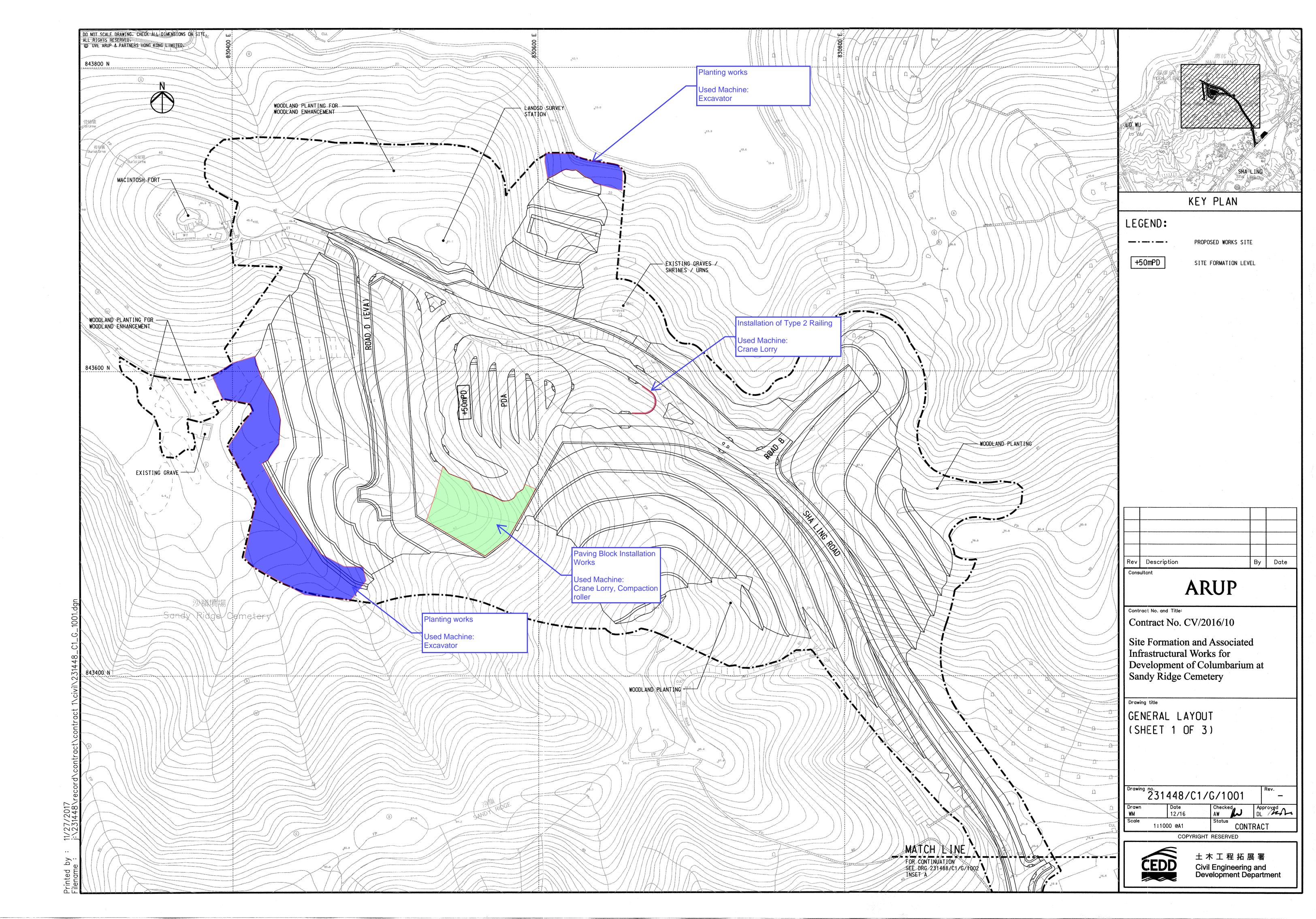
EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*	
						system.		
S11.8.1.3 , Table 11.9	OM8 - Silt traps 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		Implemented	
<ul> <li>(c) Contra period</li> <li>(d) Highw landse</li> <li>(e) The la</li> <li>- Buff</li> <li>- Aest</li> <li>- Vert</li> <li>- At-g</li> <li>- Arch</li> </ul>	<ul> <li>(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 a period</li> <li>(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 n 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 alloced and the state of t</li></ul>							
EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementatio Stage	on Requirements and / or standards to be achieved	Implementation status and remark*	
-	isatory woodland planting shall be included woodland mixed whips, seeding, and shrubs. Ted with AFCD, the woodland enhancement planting shall refer to Chapter 9.	The principle of the locatio	n shall be the extension	on of the existing	woodland, as well as ti	he original lost woodland l	ocation. The proposal	
\$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	Implemented	
S13.2.1.1 - S13.4.1.2	<ol> <li>An Environmental Team needs to be employed as per the EM&amp;A Manual.</li> <li>Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</li> <li>An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&amp;A Manual are fully complied with.</li> </ol>	Perform environmental monitoring & auditing	Highways Department / Contractor	All construction sites	Construction phase	• EIAO Guidance Note No.4/2010 • TM-EIAO	Implemented	

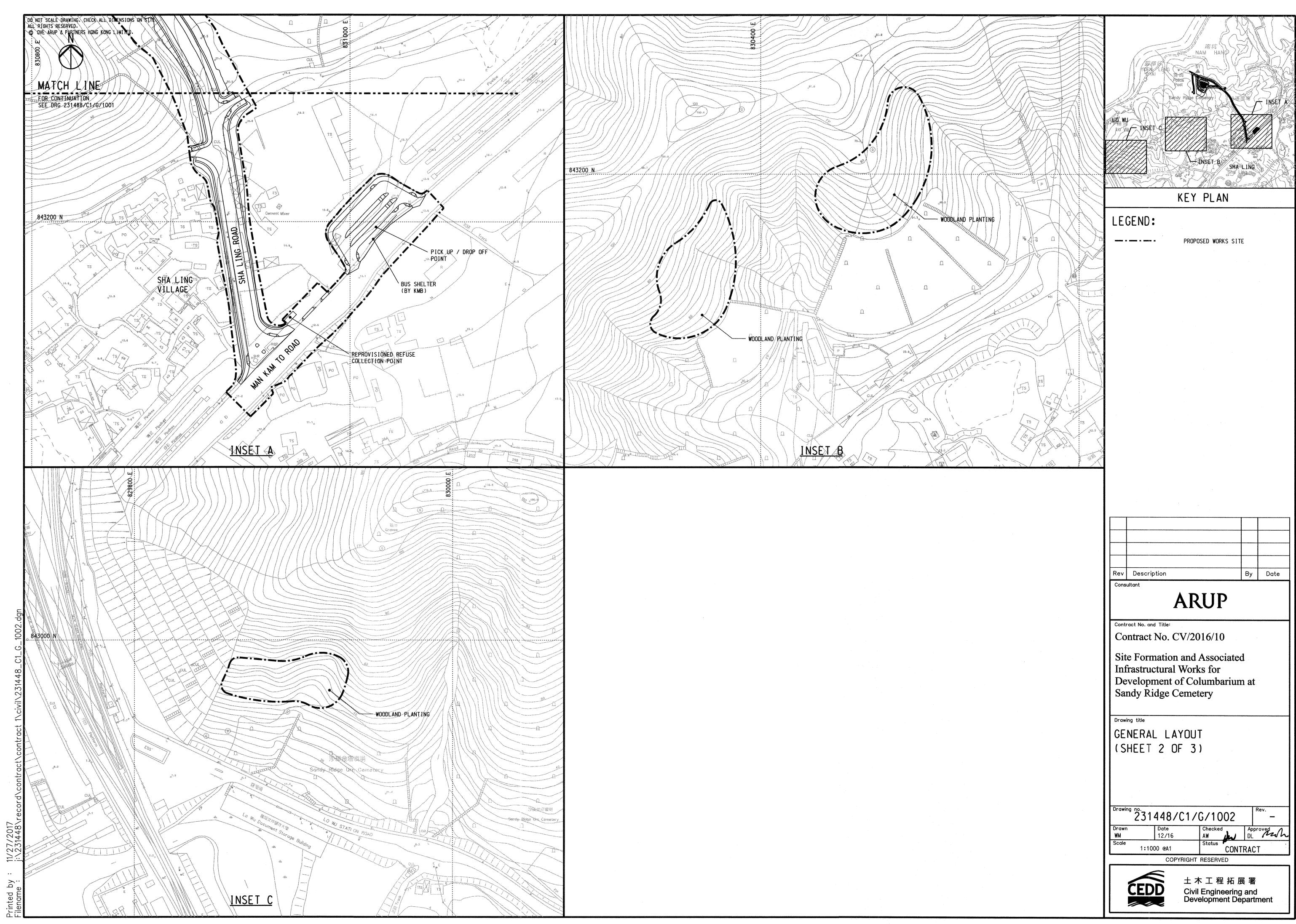


## Appendix P

## **Illustrations of Site Activities**

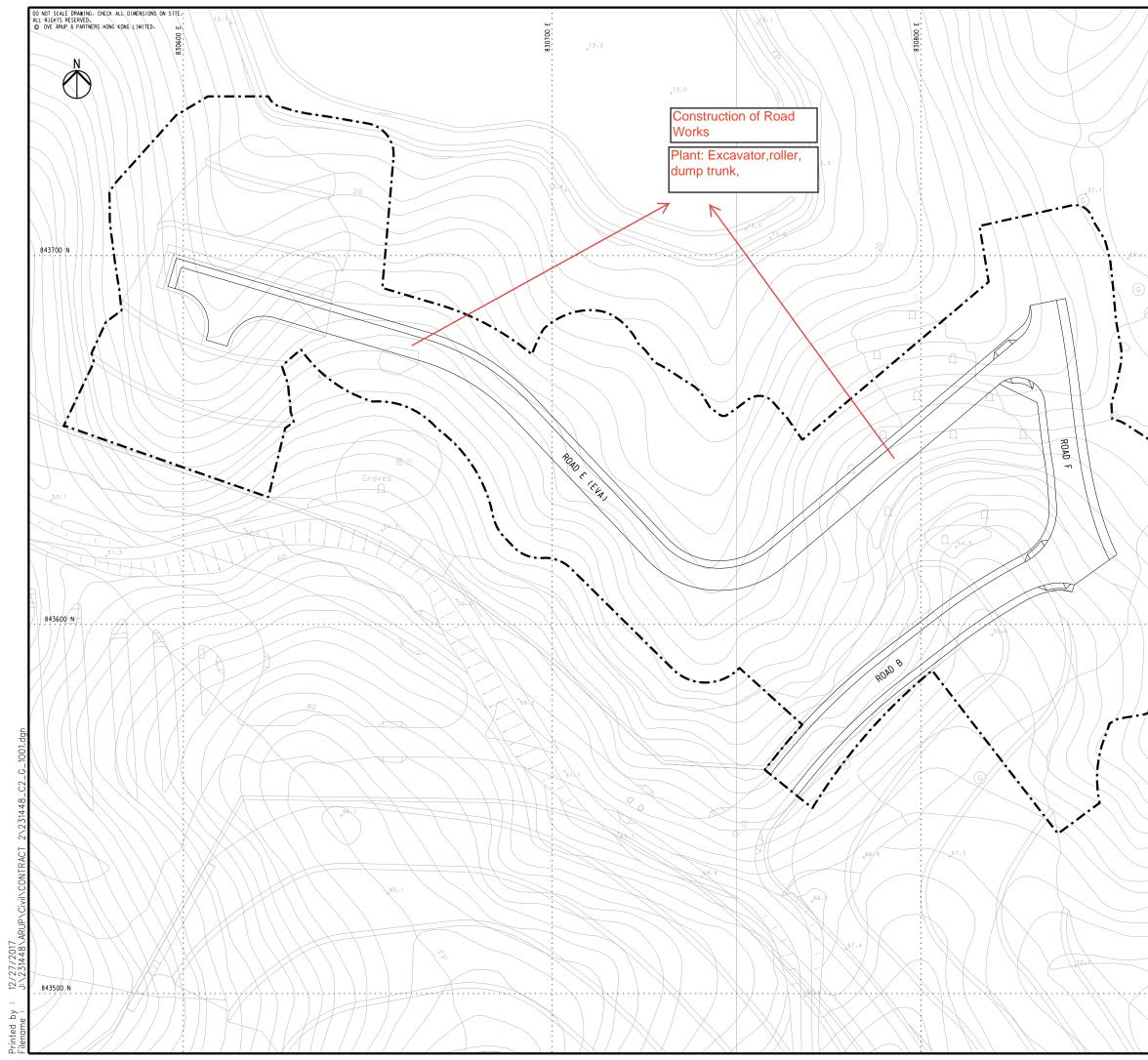
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