Monthly Environmental Monitoring & Audit Report – October 2024

0039/23/ED/0324 01

Contract No. CPW 01/2023 Environmental Team for Relocation of Sha Tin Sewage Treatment Works to Caverns

ANEWR

Drainage Services Department
Cavern Projects Division
44/F, Revenue Tower
5 Gloucester Road
Wanchai
Hong Kong

Your reference:

Our reference: HKDSD209/50/110134

Date: 18 November 2024

Attention: Mr Felix Yu

BY EMAIL & POST
(email: csyu03@dsd.gov.hk)

Dear Sirs

Contract No. CPW 02/2023
Independent Environmental Checker Services for
Relocation of Sha Tin Sewage Treatment Works to Caverns
Verification of Monthly EM&A Report (October 2024)

We refer to the emails of 13 and 18 November 2024 attaching Monthly EM&A Report (October 2024) for the captioned project prepared by the ET.

I have no further comment and hereby verify the captioned report in accordance with Clause 3.5 of the Environmental Permit no. EP-533/2017/A.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

Louis Kwan
Independent Environmental Checker

KSYL/thy

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Document Control

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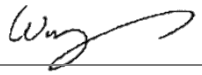
WS	Wingo So	Environmental Team Leader	
CL	Calvin Leung	Deputy Environmental Team Leader	

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EXECUTIVE SUMMARY

i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report of Relocation of Sha Tin Sewage Treatment Works to Caverns – Site Preparation and Access Tunnel Construction under Environmental Permit no. EP-533/2017/A (Hereafter as "the Project"). This is the 68th EM&A report presenting the environmental monitoring findings and information recorded during the period of 1 October to 31 October 2024. The cut-off date of reporting is at the end of each reporting month.

ii. In the reporting month, the principal work activities of individual contracts are included as follow:

Contract no. DC/2020/05 –
Relocation of Sha Tin Sewage Treatment Works to Caverns – Main Caverns Construction
(The contract was commenced on 5 July 2021)

- Slope stabilization works
- Tunneling works
- Retaining wall construction
- Operation of rock crushing plant
- TBM Tunneling and Pipe Jacking
- Preservation and protection of existing trees
- Excavation and installation of soil nail, skin wall and capping beam at main portal area
- Construction of U-channel, berm platform and installation of soil nail and raking drain
- Overhead Ventilation Duct (OHVD)
- Concreting
- Removal of blast door
- Hard Rock Excavation

Contract no. DC/2023/12 –
Relocation of Sha Tin Sewage Treatment Works to Caverns – Ancillary Buildings, Cavern Ventilation System and Associated Works
(The contract was commenced on 1 August 2023)

- Site formation and construction of footing of site accommodation for PM
- Construction of wastewater drainage and watermains, excavation, shoring, backfilling and reinstatement works at Mui Tsz Lam Road
- Pre-drilling at P10C, ACVB and SAT Portal Area
- Piling Works at Portion 10C, Portion 2 and Portion 9
- Guide wall construction at Portion 9
- Guide wall construction at Portion 2

Air Quality Monitoring

iii. 1-hour TSP monitoring was conducted at AM1, AM2, AM3(B), AM4, AM5 and ASR51 on 5, 10, 16, 22 and 28 October 2024 in the reporting period.

iv. No action or limit level exceedances were determined in the reporting period.

Noise Monitoring

v. Noise monitoring was conducted at CM1, CM2(B), CM3, CM4 and CM5 on 10, 16, 22 and 28 October 2024 in the reporting period.

vi. No action or limit level exceedances were determined in the reporting period.

vii. Additional weekly noise monitoring from 19:00 to 23:00 was carried out at CM4 on 10, 16, 22 and 28 October 2024 with respect to the restricted hour works under CNP GW-RN1101-24, GW-RN0630-24 and GW-RN1163-24. All the results are within or below the baseline level range after baseline correction.

viii. Additional weekly night time noise monitoring from 23:00 to 07:00 on next day was carried out at CM4 10, 17, 22 and 28 October 2024 with respect to the restricted hour works under CNP GW-RN1101-24, GW-RN0630-24 and GW-RN1163-24. All the results are within or below the baseline level range after baseline correction.

APS Monthly Performance Test

ix. APS monthly performance test was conducted at ASR52 & ASR55 on 21, 22, 23 and 24 October 2024 in this reporting period.

x. The effectiveness of APS at Nana Café, Lantau Link Visitor Centre and Workshop Office were considered satisfactory and no additional units of APS were recommended to be deployed at the above-mentioned ASRs.

Complaints, Notifications of Summons and Successful Prosecutions

xi. No environmental complaint was received in the reporting period.

xii. No notification of summons and successful prosecutions were received in the reporting month.

Reporting Changes

xiii. The Ecological Monitoring Report is attached in the **Appendix 1.1**.

Future Key Issues

xiv. In coming reporting months, the scheduled construction activities and the recommended mitigation measures are listed as follows:

Key Construction Works	Recommended Mitigation Measures
Contract no. DC/2020/05 • Slope stabilization works • Tunneling works • Retaining wall construction • Operation of rock crushing plant • TBM Tunneling and Pipe Jacking • Preservation and protection of existing trees • Excavation and installation of soil nail, skin wall and capping beam at main portal area • Construction of U-channel, berm platform and installation of soil nail and raking drain • Overhead Ventilation Duct (OHVD) • Concreting • Hard Rock Excavation	• Dust control during dust generating works; • Implementation of proper noise pollution control; • Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system; • Direct impact to plant species of conservation importance recorded in the vicinity of the construction sites shall be avoided; • Excavation materials shall be well covered; and • Mitigation measures to dust and noise control should be provided to construction of noise barrier, bored piling, Installation of noise barrier.
Contract no. DC/2023/12 • Site formation and construction of footing of site accommodation for PM • Construction of wastewater drainage and watermains, excavation, shoring, backfilling and reinstatement works at Mui Tsz Lam Road • Piling Works at Portion 2 and Portion 9 • Guide wall construction at Portion 9 • Guide wall construction at Portion 2 • Drill bore hole at SUB1 • Construction of temporary pipe pile wall for 132kV Substation No.2	• Dust control during dust generating works; • Implementation of proper noise pollution control; • Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system; • Direct impact to plant species of conservation importance recorded in the vicinity of the construction sites shall be avoided; • Excavation materials shall be well covered; and • Mitigation measures to dust and noise control should be provided to construction of noise barrier, bored piling, Installation of noise barrier.

1. Introduction

1.1 Scope of the Report

1.1.1 Fugro Technical Services Limited (FTS) has been appointed as the Environmental Team (ET) by Drainage Services Department (DSD) under Environmental Permit (EP) no. EP-533/2017/A to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Relocation of Sha Tin Sewage Treatment Works to Caverns – Site Preparation and Access Tunnel Construction (Register No.: AEIAR-202/2016).

1.1.2 In accordance with Clause 3.5 stated in EP-533/2017/A, 4 hard copies and 3 electronic copies of the Monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of each reporting month throughout the entire construction period.

1.1.3 In accordance with Section 13.4.1.1 of the Project EM&A Manual, the Monthly EM&A Report should be prepared and submitted to the Contractor, the IEC, the ER and EPD within 10 working days at the end of each reporting month, with the first report due the month after construction commences.

1.2 Structure of the Report

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

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

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

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

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

Section 6 **Land Decontamination** – summarizes the status of land decontamination works at the VDC site.

Section 7 **Compliance Audit** – summarizes the auditing of monitoring results, all exceedances environmental parameters.

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

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

Section 10 **Conclusion**

2. Project Background

2.1 Background

2.1.1 The Relocation of Sha Tin Sewage Treatment Works (STSTW) to Caverns (the Project) is implemented so as to release the existing site, of a size about 28 hectares, for other uses.

2.1.2 In May 2012, Drainage Services Department (DSD), the Project Proponent commenced a detailed feasibility study on "Relocation of Sha Tin Sewage Treatment Works to Caverns" (the Feasibility Study). The findings of Feasibility Study affirmed that relocating the STSTW to caverns to be constructed at Nui Po Shan of A Kung Kok is technically feasible and financially viable.

2.1.3 The Project is a Designated Project (DP) under the Environmental Impact Assessment Ordinance (EIAO). An application for an Environmental Impact Assessment (EIA) Study Brief under section 5(1)(a) of the EIAO was submitted on 12 May 2014 with a Project Profile (No. PP-508/2014) for the Project. An EIA Study Brief (No. ESB-273/2014) was issued in June 2014. An EIA for the Project was then undertaken, as part of the Assignment, in accordance with this EIA Study Brief and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). The location of the Project is shown **Figure 2.1**.

2.2 Scope of the Project and Site Description

2.2.1 The Project covers the following DP elements as specified in Schedule 2 of the EIAO (Cap.499):

Table 2.1 Schedule 2 Designated Projects under this Project

Item	Designated Project	EIAO Reference
DP1	Sewage treatment works with an installed capacity of more than 15,000 m3 per day under Item F.1	Schedule 2, Part I,
DP2	Sewage treatment works under Item F.2 • With an installed capacity of more than 5,000 m3 per day; and • A boundary of which is less than 200m from the nearest boundary of an existing or planned residential area, educational institution and health care institution.	Schedule 2 Part I
DP3	An activity for the reuse of treated sewage effluent from a treatment plant under Item F.4	Schedule 2 Part I
DP4	Underground rock caverns under Item Q.2	Schedule 2 Part I
DP5	An explosives depot in a stand-alone, purpose built building under Item K.10	Schedule 2 Part I;
DP6	Decommissioning of an explosives depot under Item 11	Schedule 2 Part II

2.3 Project Organization and Contact Personnel

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

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

Table 2.2 Contact Details of Key Personnel

Party	Role / Post	Name	Contact No.	Contact Fax
AECOM	Principal Resident Engineer	Mr. Peter Poon	9861 8654	2251 0693
China State – Alchmex Joint Venture (CSAJV) (DC/2020/05)	Construction Manager	S. Y. Tsz	9078 0458	3914 5951
	Site Agent	Mr. Elvis Kong	9186 2081	
	Environmental Officer	Mr. Lam Moon Lin	9489 4641	
		Mr. Michael Tsang	9277 4956	
	Environmental Supervisor	Tsang Chiu Fat	9137 8733	
		Chan Chin Ming	9128 9993	
		Ip Tat Hing	9600 8900	
China State – Alchmex Joint Venture (CSAJV) (DC/2023/12)	Project Manager	Dave Chan	9027 4422	2252 9319
	Site Agent	Thomson Leung	6433 9285	
	Environmental Officer	Nic Lam	6346 6860	
	Environmental Supervisor	Tina Zhuang	5649 5837	
ANewR Consulting Limited (ANewR)	Independent Environmental Checker (IEC)	Mr. Louis Kwan	2618 2831	3007 8648
Fugro Technical Services Limited (Fugro)	Environmental Team Leader (ETL)	Mr. Wingo So	9558 3402	2694 0659

2.4 Construction Activities

2.4.1 In the reporting month, the principal work activities of individual contracts are included as follow:

Contract no. DC/2020/05 –
Relocation of Sha Tin Sewage Treatment Works to Caverns – Main Caverns Construction
(The contract was commenced on 5 July 2021)

- Slope stabilization works
- Tunneling works
- Retaining wall construction
- Operation of rock crushing plant
- TBM Tunneling and Pipe Jacking
- Preservation and protection of existing trees
- Excavation and installation of soil nail, skin wall and capping beam at main portal area
- Construction of U-channel, berm platform and installation of soil nail and raking drain
- Overhead Ventilation Duct (OHVD)
- Concreting
- Removal of blast door
- Hard Rock Excavation

Contract no. DC/2023/12 –
Relocation of Sha Tin Sewage Treatment Works to Caverns – Ancillary Buildings, Cavern Ventilation System and Associated Works
(The contract was commenced on 1 August 2023)

- Site formation and construction of footing of site accommodation for PM
- Construction of wastewater drainage and watermains, excavation, shoring, backfilling and reinstatement works at Mui Tsz Lam Road
- Pre-drilling at P10C, ACVB and SAT Portal Area
- Piling Works at Portion 10C, Portion 2 and Portion 9
- Guide wall construction at Portion 9
- Guide wall construction at Portion 2

2.4.2 In coming reporting months, the scheduled construction activities of individual contracts are listed as follows:

Contract no. DC/2020/05 –
Relocation of Sha Tin Sewage Treatment Works to Caverns – Main Caverns Construction

- Slope stabilization works
- Tunneling works
- Retaining wall construction
- Operation of rock crushing plant
- TBM Tunneling and Pipe Jacking
- Preservation and protection of existing trees

- Excavation and installation of soil nail, skin wall and capping beam at main portal area
- Construction of U-channel, berm platform and installation of soil nail and raking drain
- Overhead Ventilation Duct (OHVD)
- Concreting
- Hard Rock Excavation

Contract no. DC/2023/12 –
Relocation of Sha Tin Sewage Treatment Works to Caverns – Ancillary Buildings, Cavern Ventilation System and Associated Works

- Site formation and construction of footing of site accommodation for PM
- Construction of wastewater drainage and watermains, excavation, shoring, backfilling and reinstatement works at Mui Tsz Lam Road
- Piling Works at Portion 2 and Portion 9
- Guide wall construction at Portion 9
- Guide wall construction at Portion 2
- Drill bore hole at SUB1
- Construction of temporary pipe pile wall for 132kV Substation No.2

3. Status of Regulatory Compliance

3.1 Status of Environmental Licensing and Permitting under the Project

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

Table 3.1 Summary of the current status on licences and/or permits

Permits and/or Licences	Reference No.	Valid Date (dd-MM-yyyy)	Expiry Date (dd-MM-yyyy)	Status
Contract No. DC/2020/05				
Environmental Permit	EP-533/2017/A	11/08/2022	N/A	Valid
Notification of Works Under APCO (Main Site in Ma On Shan)	469268	08/07/2021	N/A	Valid
Notification of Works Under APCO (WA3 & WA4 in Tsing Yi)	477699	15/03/2022	N/A	Valid
Licence for the Conduct of a Specified Process (WA3 & WA4 in Tsing Yi)	L-11-55(01)	26/09/2022	25/09/2024	Valid
Registration as a Chemical Waste Producer (Main Site in Ma On Shan)	5117-756-C4617-01	02/08/2021	N/A	Valid
Registration as a Chemical Waste Producer (WA3 in Tsing Yi)	8335-351-C4742-01	21/09/2022	N/A	Valid
Billing account under Waste Disposal Ordinance	7041077	22/07/2021	N/A	Valid
Discharge Licence (Main Site in Ma On Shan)	WT00040534-2022	15/11/2022	30/04/2027	Valid
Discharge Licence (WA3 in Tsing Yi)	WT00042574-2022	07/12/2022	31/12/2027	Valid
Construction Noise Permit (Tunnel)	GW-RN1101-24	01/10/2024	31/01/2025	Valid
Construction Noise Permit (Portion 11)	GW-RN0926-24	10/08/2024	09/01/2025	Valid
Construction Noise Permit (WA3 & WA4)	GW-RW0764-24	01/09/2024	28/02/2025	Valid
Construction Noise Permit (P6A)	GW-RN0630-24	20/06/2024	19/10/2024	Expired
	GW-RN1163-24	20/10/2024	19/02/2025	Valid
Contract No. DC/2023/12				
Environmental Permit	EP-533/2017/A	11/08/2022	N/A	Valid
Notification of Works Under APCO	495674	07/08/2023	N/A	Valid
Billing account under Waste Disposal Ordinance	7048254	14/08/2023	N/A	Valid
Registration as a Chemical Waste Producer	5213-753-C4536-02	27/11/2023	N/A	Valid
Discharge Licence (P12)	WT10002655-2023	27/03/2024	31/03/2029	Valid
Discharge Licence (P2)	WT10045058-2024	25/09/2024	30/09/2029	Valid
Discharge Licence (P9)	WT10045094-2024	25/09/2024	30/09/2029	Valid
Construction Noise Permit (P9)	GW-RN1175-24	11/10/2024	10/01/2025	Valid

3.2 Status of Submission under the EP-533/2017/A

3.2.1 A summary of the current status on submission under EP-533/2017/A is shown in **Table 3.2**.

Table 3.2 Summary of Submission Status Under EP-533/2017/A

EP Condition	Submission	Date of Submission (dd-MM-yyyy)
Condition 1.12	Notification of Commencement Date of Works (1)	18/02/2019
Condition 2.1	Notification of EPD of Community Liaison Group (1)	18/04/2019
Condition 2.2	Notification of EPD of telephone hotline (1)	18/04/2019
Condition 2.12	Management Organization of Main Construction Companies (1)	18/04/2019
Condition 2.13	Submission of Detailed Vegetation Survey Report (1)	18/04/2019
	Submission of Protection and Transplantation Proposal (1)	18/04/2019

EP Condition	Submission	Date of Submission (dd-MM-yyyy)
Condition 2.15	Submission of Woodland Compensation Plan (1)	26/08/2021
Condition 2.18	Submission of Landscape & Visual Mitigation and Tree Preservation Plan(s) (1)	18/04/2019
Condition 2.21	Submission of Supplementary Contamination Assessment Plan (CAP) (1)	10/09/2020
	Submission of Supplementary Contamination Assessment Plan (CAP) for Sha Tin Sewage Treatment Works (For the Areas of Mechanical Workshop, Chemical Waste Area, Scrap Iron Storage Area and Chemical Waste Collection Tank, Dangerous Goods and Chemical Waste Sore, ENV-G04, ENV-G07, ENV-G14 and ENV-G28) (1)	25/11/2021
Condition 2.22	Submission of Measures to Mitigate Traffic Noise from Ma On Shan Road (1)	18/04/2019
Condition 2.29	Commissioning Test Report for Air Purification System Installed at Air Sensitive Receivers (1)	13/12/2022
	Revised Commissioning Test Report and Updated Implementation Plan	07/06/2023
Condition 3.1	Proposal for Alternative Sampling Method for Construction Phase Air Quality Monitoring (1-hr TSP) (1)	16/04/2019
	Proposal for Commencement of Construction Phase Air Quality Monitoring in Phases (1)	17/04/2019
	Temporary suspension of EM&A Programme during 29 Jan 2020 to 2 Feb 2020 (1)	28/02/2020
	Proposal for Proposed Fine Adjustment for Air and Noise Monitoring Stations at Kowloon City Baptist Church Hay Nien Primary School & Updated EM&A Manual (1)	06/03/2020
Condition 3.4	Baseline Noise Monitoring Report (1)	11/08/2021
	Baseline Air Quality Monitoring Report for the Rock Processing Plant at Ngau Kok Wan (1)	03/11/2022
Condition 4.2	Dedicated internet website (1)	22/05/2019

Remark 1: Submission under EP-533/2017.

4. Monitoring Requirements

4.1 Air Monitoring

Air Quality Monitoring Stations

4.1.1 Air monitoring stations AM1 and AM2 were setup and commencement of monitoring on 12 April 2019 while AM4 and AM5 were setup and commencement of monitoring on 3 May 2019 and 18 April 2019 respectively.

4.1.2 Based on the Project baseline report, the air quality monitoring station AM3, Ma On Shan Tsung Tsin Secondary School was relocated to AM3(A), Kowloon City Baptist Church Hay Nien Primary School. A change of the monitoring location in subsequent impact monitoring for AM3(A) - Kowloon City Baptist Church Hay Nien Primary School was identified necessary as access was not granted for setting up the onsite monitoring station. The new monitoring location AM3(B) – ground level of outside A Kung Kok Street Garden for impact air quality monitoring station was proposed based on the criteria as stated in section 2.2.4.2 and 2.2.4.3 of EM&A Manual by ET and approved by ER and verified by IEC and submitted to EPD for agreement on 5 September 2019. The proposal for proposed fine adjustment for air monitoring station at Kowloon City Baptist Church Hay Nien Primary School was agreed by EPD on 17 December 2020 and the air quality monitoring for the station AM3(B) was commenced on 18 December 2020.

4.1.3 Air quality monitoring for the station AM6 was commenced on 2 November 2021 since the demolition of DSD staff quarter and ended on 31 December 2021. The proposal was verified by IEC and approved by EPD on 9 May 2019.

4.1.4 Air quality monitoring station ASR51 at WA3 was recommended in the supporting document for application for variation of Environmental Permit (EP-533/2017/A issued on 11 August 2022) and the associated air quality monitoring was commenced on 19 August 2022.

4.1.5 Due to the demolition works for the remaining existing DSD staff quarter starting from 20 May 2024, the air monitoring for stations AM6 has been resumed on 20 May 2024. The completion of the demolition works on 17 July 2024 and the air monitoring for stations AM6 ended on 17 July 2024.

4.1.6 The updated air monitoring stations for the Project are listed and shown in **Table 4.1** and **Figure 4.1**.

Table 4.1 Air Monitoring Station

Monitoring Station ID	Monitoring Location	Level (in terms of no. of floor)
AM1	Ah Kung Kok Fishermen Village	G/F
AM2	Block H, Kam Tai Court	Roof
AM3(B)	Outside A Kung Kok Street Garden	G/F
AM4	Wellborn Kindergarten	G/F
AM5	The Neighbourhood Advice-Action Council Harmony Manor	Roof
ASR51	The Hong Kong Yaumati Ferry Company Ltd. Administrative Building	G/F

Air Monitoring Parameters, Frequency and Duration

4.1.7 One-hour TSP levels should be measured to indicate the impacts of construction dust on air quality.

4.1.8 The sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

4.1.9 Portable direct reading dust meter was proposed to use for 1-hour TSP level instead of HVS to undertaking the air quality monitoring for the project as shown in **Table 4.1**. The proposal was verified by IEC on 8 March 2023 and submitted to EPD on 14 March 2023.

Sampling Procedure and Monitoring Equipment

4.1.10 Monitoring Procedures

a) Check the calibration period of portable direct reading dust meter prior to monitoring (The direct reading dust meter was calibrated at 2-years interval and checked with High Volume Sampler (HVS) yearly.)
b) Record the site condition near / around the monitoring stations.
c) Install the portable direct reading dust meter to the monitoring location.
d) Slide the power switch to turn the power on.
e) Check of portable direct reading dust meter to ensure the equipment operation in normal condition.
f) Select the period of measurement to 60mins.
g) Check and set the correct time.
h) Select the appropriate unit display for the equipment.
i) Slide the power switch to turn the power off when the monitoring period ended (3 times 1 hour TSP monitoring per day).
j) Uninstall the portable direct reading dust meter
k) Collected the sampled data for analysis.
l) Remark: Procedures (c) to (h) may be different subject to the brands and models of portable direct reading dust meter

4.1.11 Maintenance and Calibration

a) The direct reading dust meter was calibrated at 2-years interval and checked with High Volume Sampler (HVS) yearly to determine the accuracy and validity of the results measured.
b) Checking of direct reading dust meter will be carried out in order to determine the conversion factor between the direct reading dust meter and the standard equipment, HVS. The comparison check is to be considered valid based on correlation coefficient checked by HOKLAS laboratory.

4.1.12 The 1-hour TSP air quality monitoring was performed by using portable direct reading dust meters at each designated monitoring station. The brand and model of the equipment are given in **Table 4.2**.

Table 4.2 Air Quality Monitoring Equipment

Equipment	Brand and model
Portable direct reading dust meter	Sibata, Model LD-5R

4.1.13 The calibration certificates of the monitoring equipment are attached in **Appendix 4.2**.

Wind Data

4.1.14 The representative wind data from Sha Tin HKO Automatic Weather Station was obtained covering the 1-hr TSP monitoring periods for stations of AM1, AM2, AM3(B), AM4 & AM5. And wind data from Tsing Yi HKO Automatic Weather Station was obtained covering the 1-hr TSP monitoring periods for station of ASR51. The wind data were extracted and shown in **Appendix 4.3**.

Event and Action Plan

4.1.15 The Action and Limit levels for construction air quality are defined in **Table 4.3** and **Appendix 4.1**. Should non-compliance of the air quality criteria occur, action in accordance with the Event and Action Plan in **Appendix 7.1** shall be carried out.

Table 4.3 Action and Limit Level for Air Quality Monitoring

Monitoring Locations	1-hour TSP Level in mg/m^3	
	Action Level	Limit Level
AM1	294	500
AM2	325	500
AM3(B)	360	500
AM4	297	500
AM5	349	500
ASR51	310	500

4.2 Noise Monitoring

Noise Monitoring Stations

4.2.1 Noise monitoring stations CM4 and CM5 were setup and commencement of monitoring on 13 April 2019 and 18 April 2019 respectively. Noise monitoring for stations CM1 and CM3 were commenced on 2 May 2019.

4.2.2 Based on the Project baseline report, the noise monitoring station CM2, Ma On Shan Tsung Tsin Secondary School was relocated to CM2(A), Kowloon City Baptist Church Hay Nien Primary School. A change of the monitoring location in subsequent impact monitoring for CM2(A) - Kowloon City Baptist Church Hay Nien Primary School was identified necessary as access was not granted for setting up the onsite monitoring station. The new monitoring location CM2(B) – ground level of outside A Kung Kok Street Garden for impact noise monitoring station was proposed by ET and approved by ER and verified by IEC and submitted to EPD for agreement on 5 September 2019. The proposal was agreed by EPD on 17 December 2020 and the noise monitoring for station CM2(B) was commenced on 18 December 2020.

4.2.3 Noise monitoring for stations DM1, DM2 and DM3 were commenced on 2 November 2021 and ended on 31 December 2021.

4.2.4 Due to the demolition works for the remaining existing DSD staff quarter starting from 20 May 2024, the noise monitoring for stations DM1, DM2 and DM3 has been resumed on 20 May 2024. The completion of the demolition works on 17 July 2024 and the noise monitoring for stations DM1, DM2 and DM3 ended on 17 July 2024.

4.2.5 The updated noise monitoring stations for the Project are listed and shown in **Table 4.4** and **Figure 4.2**.

Table 4.4 Noise Monitoring Station

Monitoring Station ID	Monitoring Location	Measurement Type	Level (in terms of no. of floor)
CM1	Wellborn Kindergarten	Free field	G/F
CM2(B)	Outside A Kung Kok Street Garden	Free field	G/F
CM3	S.K.H. Ma On Shan Holy Spirit Primary School	Façade	Roof
CM4	Ah Kung Kok Fishermen Village	Free field	G/F
CM5	The Neighbourhood Advice-Action Council Harmony Manor	Façade	Roof

Noise Monitoring Parameters, Frequency and Duration

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

- One set of measurements between 0700-1900 hours on normal weekdays;
- One set of measurements between 1900-2300 hours;
- One set of measurements between 2300-0700 hours of next day; and
- One set of measurements between 0700-2300 hours on holidays (six consecutive Leq/5min readings).

4.2.7 If construction works are extended to include works during the hours of 1900-0700, additional weekly impact monitoring shall be carried out during evening and night-time works for the latter 3 sets of measurements specified in Section 4.2.4 above, one set of measurements shall at least include 6 consecutive Leq (5min) results.

4.2.8 Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.

4.2.9 If a school exists near the construction activity, noise monitoring shall be carried out at the monitoring stations for the schools during the examination periods. The ET leader shall liaise with the school's personnel and the examination authority to ascertain the exact dates and times of all examination periods during the course of the contract.

Monitoring Equipment

4.2.10 Noise monitoring was performed using sound level meter at the designated monitoring locations. The sound level meters shall comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator shall be deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 4.5**.

Table 4.5 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Casella, CEL-633A
Acoustic Calibrator	Casella, CEL-120/1

4.2.11 The calibration certificates of the noise monitoring equipment are attached in **Appendix 4.2**.

Sampling Procedure and Monitoring Equipment

4.2.12 Monitoring Procedure

a) The monitoring station shall normally be at a point 1m from the exterior of the sensitive receiver's building façade and be at a position 1.2m above the ground.

b) Façade measurements were made at the monitoring locations. For free-field measurement, a correction factor of +3 dB (A) would be applied.
c) The battery condition was checked to ensure the correct functioning of the meter.
d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
   - Frequency weighting: A,
   - Time weighting: Fast,
   - Measurement time set: continuous 5 mins
e) Prior and after to the noise measurement, the meter was checked using the acoustic calibrator for 94dB (A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than ±1 dB (A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
f) Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

4.2.13 Maintenance and Calibration

a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.
b) The sound level meter and calibrator were calibrated at yearly intervals.

Event and Action Plan

4.2.14 Noise Standards for Daytime Construction Activities are specified under EIAO-TM. The Action and Limit levels for construction noise are defined in **Table 4.6** and **Appendix 4.1**. Should non-compliance of the criteria occurs, action in accordance with the Event and Action Plan in **Appendix 7.1** shall be carried out.

Table 4.6 Action and Limit Level for Noise Monitoring

Monitoring Station	Action Level	Limit Level (dB(A))		
		0700-1900 hrs on normal weekdays	0700-2300 hrs on holidays (including Sundays); and 1900-2300 hrs on all days [2]	2300-0700 hrs of all days [2]
CM1	When one documented complaint is received	65 / 70 [1]	60 / 65 / 70 [3]	45 / 50 / 55 [3]
CM2(B)		65 / 70 [1]		
CM3		65 / 70 [1]		
CM4		75		
CM5		75		

Remark 1: Limit level of CM1, CM2(B) and CM3 reduce to 65 dB (A) during examination periods if any.

Remark 2: Construction noise during restricted hours is under the control of Noise Control Ordinance Limit Level to be selected based on Area Sensitivity Rating.

Remark 3: Limit Level for restricted hour monitoring shall act as reference level only. Investigation would be conducted on CNP compliance if exceedance recorded during restricted hour noise monitoring period.

4.3 APS Performance Test

4.3.1 According to EP Condition 2.29(ii) of EP-533/2017/A, monthly performance test shall be carried out in the following month of the Air Purification System (APS) commissioning test, in order to monitor the effectiveness of the APS in removing NO_2 at the designated air sensitive receivers (ASR) as described in the Environmental Review Report (ERR) submitted under the application for Variation of EP (Application No.: VEP-618/2022).

4.3.2 The commissioning test was carried out for a duration of 24 hours at Model Train Shop (ASR55), Lantau Link Visitor Centre (ASR55), Nana Café (ASR55) and Workshop Office (ASR52) on 19 to 20, 20 to 21, 26 to 27 (for Nana Café & Workshop Office) September 2022, respectively, the Commissioning Test Report (CTR) was then submitted to EPD on 3 November 2022. Since the owner of premises (Model Train Shop) requested to reduce the APS units due to the space constraints. The measurement was re-carried out in 21 to 22 November 2022 by using one APS unit for commissioning test. The CTR was submitted to EPD on 13 December 2022 for approval (Ref: LES/J2021-03/CS/L062).

4.3.3 The ASRs of the APS Performance Test are listed and shown in **Table 4.7** and **Figure 4.2**.

Table 4.7 ASR of the APS Performance Test

ASR ID	Location of ASR
ASR52	North West Tsing Yi Interchange Maintenance Workshops
ASR55	Lantau Link Visitor Centre
	Nana Café
	Model Train Shop

Monitoring Equipment

4.3.4 The monitoring equipment used for the APS Performance Test are listed in **Table 4.8**.

Table 4.8 NO_2 Monitoring Equipment

Equipment	Serial Number
Aeroqual AQS1 Urban Air Quality Monitor	AQS1 17082022-2139
	AQS1 17082022-2140A
	AQS1 17082022-2141
	AQS1 17082022-2142

4.3.5 The calibration certificates of the NO_2 monitoring equipment are attached in **Appendix 4.2**.

Sampling Procedure

4.3.6 The monthly performance tests will be carried out in accordance with the measurement method as described in Appendix 3.8E of the ERR submitted under the application for Variation of EP (Application No.: VEP-618/2022) which is extracted below:

a) Measure the ambient NO_2 concentration at indoor and outdoor simultaneously at the ASRs.

b) Measure hourly NO_2 concentration in 24 hours to capture daily fluctuation on the measurement day.
c) Compare the NO_2 concentration at indoor and outdoor, and determine the effectiveness of the APS.
d) Measurement duration: 1 day.

Maintenance and Contingency Plan

4.3.7 Maintenance and contingency plan described in Appendix 3.8E of the ERR submitted under the application for Variation of EP (Application No.: VEP-618/2022) which is extracted below:

a) If the NO_2 removal efficiency of the Air Purifier is lower than 60% after the ad-hoc maintenance work for any malfunction of the equipment or regular maintenance work by replacement of filters, another Air Purifier shall be deployed for treatment of air pollutants.
b) 1 no. spare unit is ready for immediate replacement of malfunctioned Air Purifier upon notification.
c) Regular maintenance schedule: The HEPA filter shall be replaced every six months while the NCCO filter shall be replaced every three years under normal operational conditions insider the premises.

4.3.8 The responsibilities of relevant parties presented in **Table 4.9** as per Appendix 3.8E of the ERR submitted under the application for Variation of EP (Application No.: VEP-618/2022):

Table 4.9 Responsibilities Matrix

Actions	Responsible Parties
Implementation Plan	The Contractor (Contract No. DC/2020/05)
Commissioning Test Plan	The Environmental Team (*for measurement*)
Performance Test Plan	The Contractor (Contract No. DC/2020/05) (*for follow-up actions*)
Maintenance and Contingency Plan	The Contractor (Contract No. DC/2020/05)

5. Monitoring Results

5.1.1 The environmental monitoring will be implemented based on the division of works areas of each designed projects. Overall layout showing work areas and monitoring stations is shown in **Figure 2.1** and **Figure 4.1-4.3** respectively.

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

5.1 Air Monitoring Results

5.1.1 1-hour TSP monitoring was conducted at AM1, AM2, AM3(B), AM4, AM5 and ASR51 on 5, 10, 16, 22 and 28 October 2024 in the reporting period.

5.1.2 No action or limit level exceedances were determined in the reporting period.

5.1.3 Details of air monitoring results and graphical presentation is shown in **Appendix 5.2**.

5.2 Noise Monitoring Results

5.2.1 Noise monitoring was conducted at CM1, CM2(B), CM3, CM4 and CM5 on 10, 16, 22 and 28 October 2024 in the reporting period.

5.2.2 No action or limit level exceedances were determined in the reporting period.

5.2.3 Additional weekly noise monitoring from 19:00 to 23:00 was carried out at CM4 on 10, 16, 22 and 28 October 2024 with respect to the restricted hour works under CNP GW-RN1101-24, GW-RN0630-24 and GW-RN1163-24. All the results are within or below the baseline level range after baseline correction.

5.2.4 Additional weekly night time noise monitoring from 23:00 to 07:00 on next day was carried out at CM4 10, 17, 22 and 28 October 2024 with respect to the restricted hour works under CNP GW-RN1101-24, GW-RN0630-24 and GW-RN1163-24. All the results are within or below the baseline level range after baseline correction.

5.2.5 Details of noise monitoring results and graphical presentation is shown in **Appendix 5.3**.

5.3 APS Performance Test Results

5.3.1 APS monthly performance test was conducted at ASR52 & ASR55 on 21, 22, 23 and 24 October 2024 in this reporting period. Rock crushing activities at the rock crushing plant were undertaken within the reporting period.

5.3.2 APS performance test results measured in this reporting period are reviewed and summarized in **Table 5.1**. Details of APS Performance Test results is shown in **Appendix 5.4**.

Table 5.1 APS Performance Test Results

ASR	Location of ASR	Monitoring Date	Measured Daily Average of Indoor NO_2 Concentration ($\mu g/m^3$)	Measured Daily Average of Outdoor NO_2 Concentration ($\mu g/m^3$)	NO_2 Removal Efficiency (%)
ASR52	Workshop Office	10/23/2024 - 10/24/2024	21.1	26.9	21.6
ASR55	Lantau Link Visitor Centre	10/22/2024 - 10/23/2024	15.8	22.7	30.4
	Nana Café	10/21/2024 - 10/22/2024	37.7	38.8	2.8
	Model Train Shop (1)	--	--	--	--

Remark 1: As no permission to enter the ASR, no monitoring was conducted in the reporting period.

5.3.3 Based on the results presented in **Table 5.1**, The NO_2 removal efficiency for Workshop Office (ASR52), Lantau Link Visitor Centre and Nana Café (ASR55) were below the criterion of 60% or above. Nevertheless, it should be noted that the daily average of Indoor NO_2 were found to be below another criterion of 40 $\mu g/m^3$ for all ASRs.

5.3.4 Based on the above-mentioned findings, the effectiveness of APS at Nana Café, Lantau Link Visitor Centre and Workshop Office were considered satisfactory and no additional units of APS were recommended to be deployed at the above-mentioned ASRs.

5.3.5 As no permission to enter the Model Train Shop (ASR55), no monitoring was conducted in the reporting period. A request for termination of NO2 monitoring at Model Train Shop and Nana Café was made by the tenant in late September 2024.

5.4 Waste Management

5.4.1 The quantities of waste for disposal in the Reporting Period are summarized in **Table 5.2** and the Monthly Summary Waste Flow Table are shown in **Appendix 5.5**. Whenever possible, materials were reused on-site as far as practicable.

Table 5.2 Summary of Waste Disposal

Contract no. DC/2020/05

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds	Remarks:
Inert C&D materials disposed**, m^3**	8,829	66,422	Fill Bank at Tuen Mun Area 38	--
	4,767	118,912*	Lam Tei Quarry & CEDD Contract No. NE/2015/01	Alternative Disposal Ground
Inert C&D materials recycled**, m^3**	52	2,333	Fill Bank at Tuen Mun Area 38	Broken concrete

Non-inert C&D materials disposed**, tonne**	130.5	2,003.45	SENT	--
Non-inert C&D materials recycled**, kg**	200	4,020	Golden Sino Management Limited	Waste Paper
	0	430		Plastic
	0	148,519		Metals
Chemical waste disposed, **L**	0	2000	Collected by licensed chemical collector: Ecospace Limited	Spent Lube Oil
Asbestos waste disposed, **Kg**	0	560	WENT	--

Contract no. DC/2023/12

Waste Type	**Quantity this month**	**Cumulative Quantity-to-Date**	**Disposal / Dumping Grounds**	**Remarks:**
Inert C&D materials disposed**, m³**	511	3120	Fill Bank at Tseung Kwan O Area 137	--
	0	0	--	Alternative Disposal Ground
Inert C&D materials recycled**, m³**	0	174	Fill Bank at Tseung Kwan O Area 137	Broken concrete
Non-inert C&D materials disposed**, tonne**	13	143	SENT	--
Non-inert C&D materials recycled**, kg**	0	0	tbc	Waste Paper
	0	0		Plastic
	0	72410	Chuen Wo Standard Weighbridge	Metals
Chemical waste disposed, **L**	0	0	Collected by licensed chemical collector	Spent Lube Oil
Asbestos waste disposed, **Kg**	0	0	WENT	--

** 1449 m^3 was deleted from the cumulative record as the quantity last month was wrongly doubled*

6. Land Contamination

6.1.1 Remediation report (RR) for Ex-Sha Tin Vehicle Detention Centre (VDC) was accepted by EPD on 23 April 2021 and placed in the EIAO Register Office for public information.

6.1.2 The confirmatory sampling for DSD staff quarter at existing STSTW was completed.

6.1.3 Land decontamination work for the DSD staff quarter at existing STSTW started on 16 June 2021, the Remediation Report was submitted to EPD for approval on 9 September 2021.

6.1.4 The Remediation Report was accepted by EPD on 8 November 2021.

7. Compliance Audit

7.1.1 The Event Action Plan for construction noise, air quality are presented in **Appendix 7.1**.

7.1.2 The summary of exceedance is presented in **Appendix 7.2**.

7.1 Air Monitoring

7.1.1 No action or limit level exceedances were determined in the reporting period at stations of AM1, AM2, AM3(B), AM4, AM5 and ASR51.

7.2 Noise Monitoring

7.2.1 No action or limit level exceedances were determined in the reporting period for the stations of CM1, CM2(B), CM3, CM4 and CM5.

7.2.2 Additional weekly noise monitoring from 19:00 to 23:00 was carried out at CM4 on 10, 16, 22 and 28 October 2024 with respect to the restricted hour works under CNP GW-RN1101-24, GW-RN0630-24 and GW-RN1163-24. All the results are within or below the baseline level range after baseline correction.

7.2.3 Additional weekly night time noise monitoring from 23:00 to 07:00 on next day was carried out at CM4 10, 17, 22 and 28 October 2024 with respect to the restricted hour works under CNP GW-RN1101-24, GW-RN0630-24 and GW-RN1163-24. All the results are within or below the baseline level range after baseline correction.

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

7.3.1 No environmental non-compliance was recorded in the reporting month.

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

7.4.1 There was no particular action taken since no non-compliance was recorded in the reporting period.

8. Environmental Site Audit

Weekly Site Inspection

8.1.1 Contract no. DC/2020/05: The Environmental Team (ET) conducted weekly site inspections for the Contract on 3, 10, 17, 24 and 31 October 2024. IEC attended the joint site inspection on 3, 10, 17, 24 and 31 October 2024.

8.1.2 Contract no. DC/2023/12: The Environmental Team (ET) conducted weekly site inspections for the Contract on 7, 16, 23 and 30 October 2024. IEC attended the joint site inspection on 7, 16, 23 and 30 October 2024.

Landscape Site Audit

8.1.3 Within this reporting month, bi-weekly landscape site audits were conducted on 8 and 22 October 2024.

Ecology Site Audit

8.1.4 Within this reporting month, monthly ecology site audits were conducted on 22 October 2024.

8.1.5 The summary of inspection is presented in **Appendix 8.1**.

9. Complaints, Notification of Summons and Prosecution

9.1.1 No environmental complaint was received in the reporting period.

9.1.2 No notification of summons and successful prosecutions were received in the reporting month.

9.1.3 The details of cumulative complaint log and updated summary of complaints are presented in **Appendix 9.1**.

9.1.4 Cumulative statistic on complaints and successful prosecutions are summarized in **Table 9.1** and **Table 9.2** respectively.

Table 9.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
October 2024	**0**
Total	**14**

Table 9.2 Cumulative Statistics on Successful Prosecutions

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

10. Conclusion

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

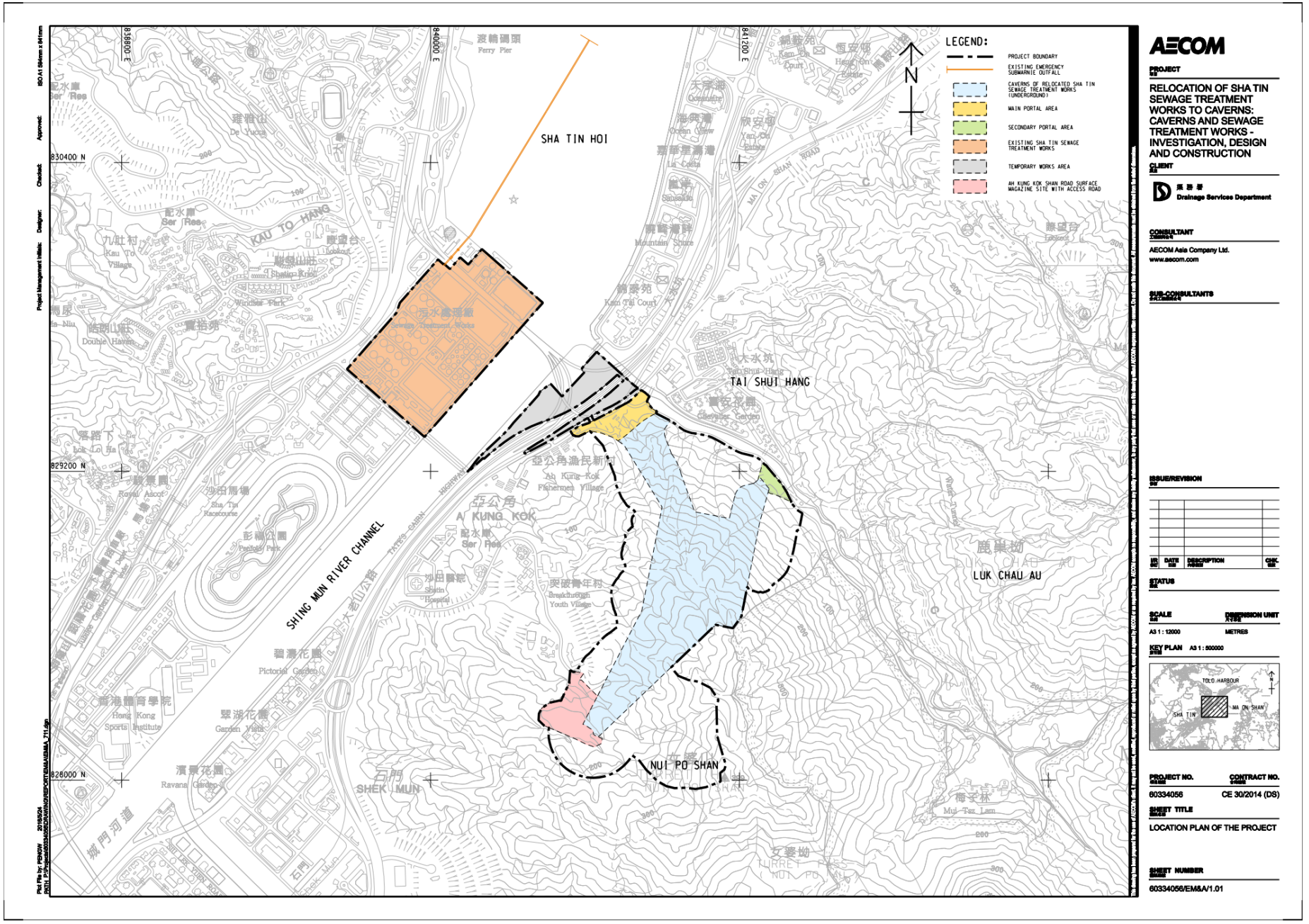
10.1.2 The scheduled construction activities and the recommended mitigation measures for the coming month are listed in **Table 10.1**. The construction programmes of the Project are provided in **Appendix 10.1**.

Table 10.1 Construction Activities and Recommended Mitigation Measures in Coming Reporting Month

Key Construction Works	Recommended Mitigation Measures
Contract no. DC/2020/05 • Slope stabilization works • Tunneling works • Retaining wall construction • Operation of rock crushing plant • TBM Tunneling and Pipe Jacking • Preservation and protection of existing trees • Excavation and installation of soil nail, skin wall and capping beam at main portal area • Construction of U-channel, berm platform and installation of soil nail and raking drain • Overhead Ventilation Duct (OHVD) • Concreting • Hard Rock Excavation	• Dust control during dust generating works; • Implementation of proper noise pollution control; • Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system; • Direct impact to plant species of conservation importance recorded in the vicinity of the construction sites shall be avoided; • Excavation materials shall be well covered; and • Mitigation measures to dust and noise control should be provided to construction of noise barrier, bored piling, Installation of noise barrier.
Contract no. DC/2023/12 • Site formation and construction of footing of site accommodation for PM • Construction of wastewater drainage and watermains, excavation, shoring, backfilling and reinstatement works at Mui Tsz Lam Road • Piling Works at Portion 2 and Portion 9 • Guide wall construction at Portion 9 • Guide wall construction at Portion 2 • Drill bore hole at SUB1 • Construction of temporary pipe pile wall for 132kV Substation No.2	• Dust control during dust generating works; • Implementation of proper noise pollution control; • Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system; • Direct impact to plant species of conservation importance recorded in the vicinity of the construction sites shall be avoided; • Excavation materials shall be well covered; and • Mitigation measures to dust and noise control should be provided to construction of noise barrier, bored piling, Installation of noise barrier.

Figure 2.1

Project Layout



AECOM

PROJECT

RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS: CAVERNS AND SEWAGE TREATMENT WORKS - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT

Drainage Services Department

CONSULTANT

AECOM Asia Company Ltd.
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SUB-CONSULTANTS

ISSUE/REVISION

RE	DATE	DESCRIPTION	CHK

STATUS

SCALE A3 1 : 12000

DIMENSION UNIT METRES

KEY PLAN A3 1 : 500000

PROJECT NO. 60334056

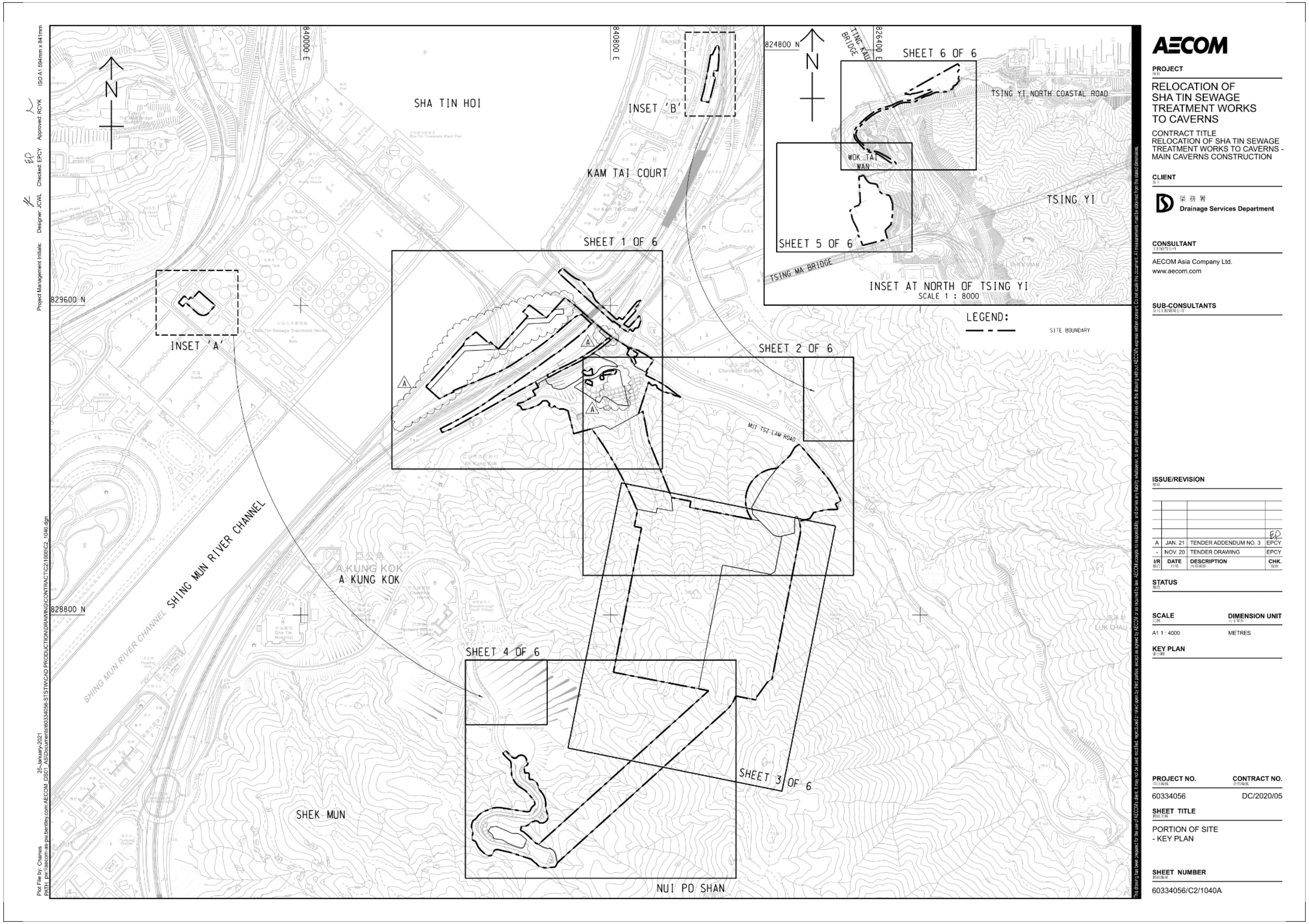
CONTRACT NO. CE 30/2014 (DS)

SHEET TITLE

LOCATION PLAN OF THE PROJECT

SHEET NUMBER

60334056/EM&A/1.01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SHEET 6 OF 6
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WOK TAI WAN
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TSING MA BRIDGE
TING KAU BRIDGE
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AECOM
PROJECT
RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS
CONTRACT TITLE
RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS - MAIN CAVERNS CONSTRUCTION
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Drainage Services Department
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ISSUE/REVISION
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- NOV. 20 TENDER DRAWING EPCY
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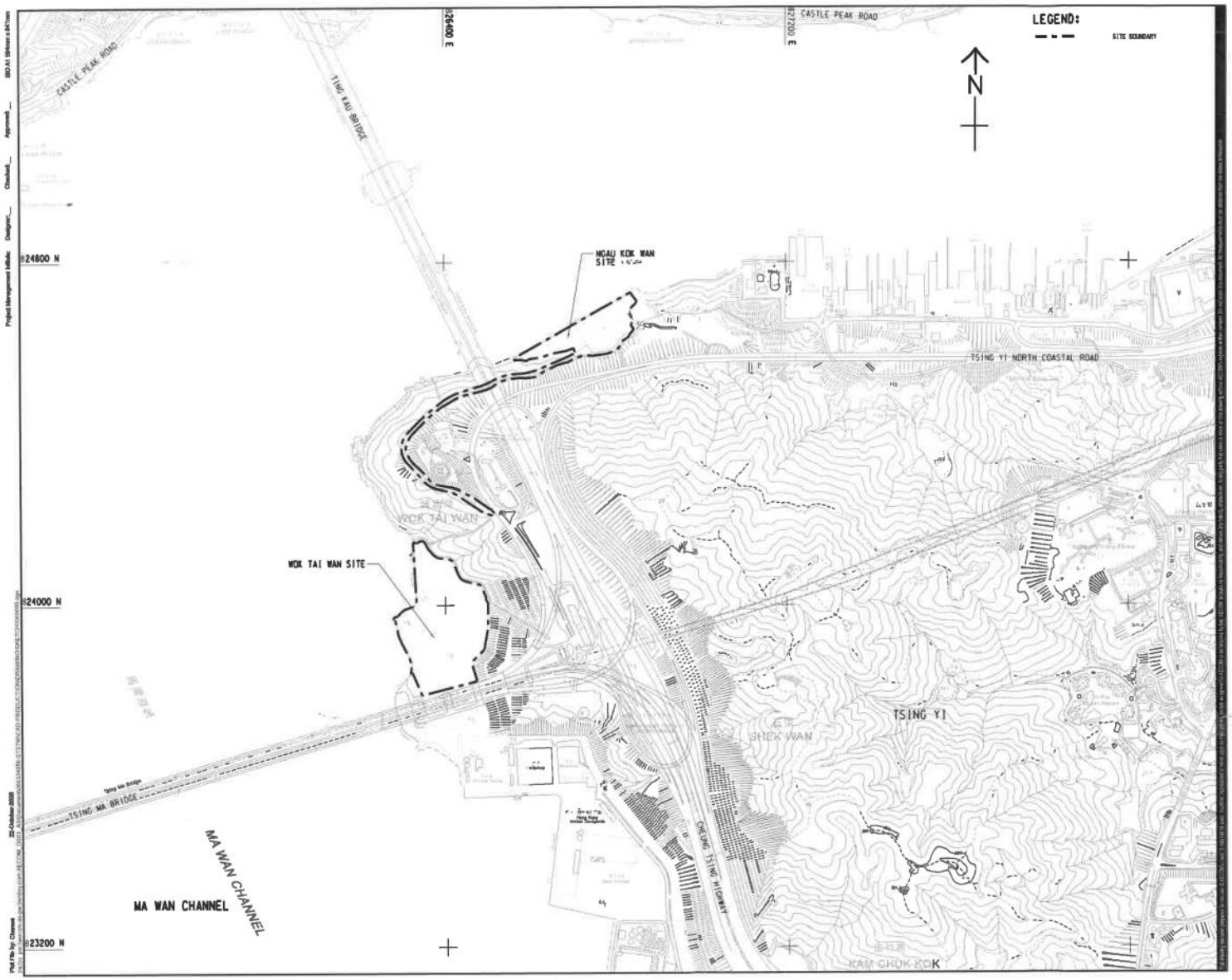
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PROJECT
RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS
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STATUS
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DIMENSION UNIT
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PROJECT NO.
60334056
CONTRACT NO.
SHEET TITLE
LOCATION OF WOK TAI WAN AND NGAU KOK WAN
SHEET NUMBER
Figure 1

Figure 2.2

Project Organization Chart

Project Organization Chart

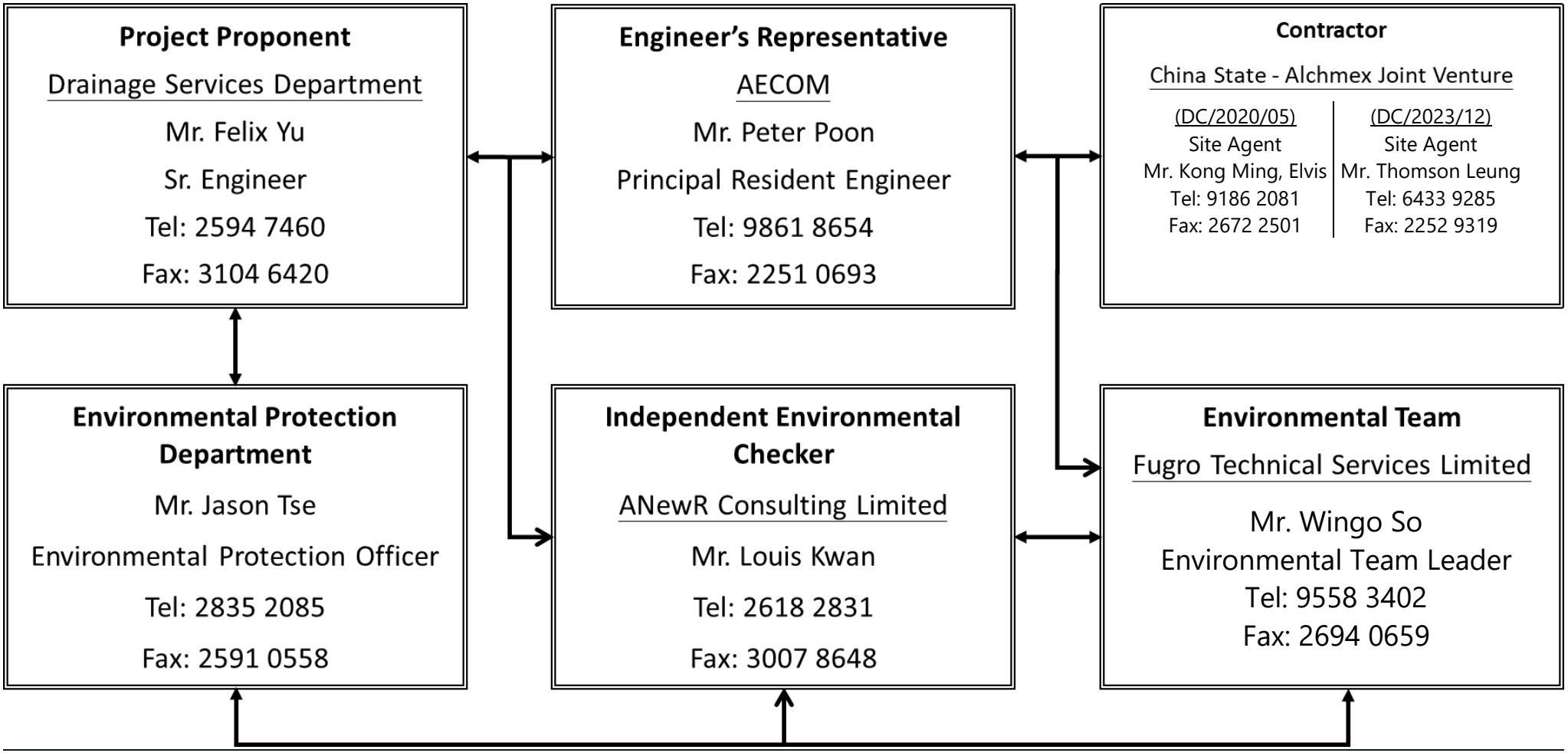
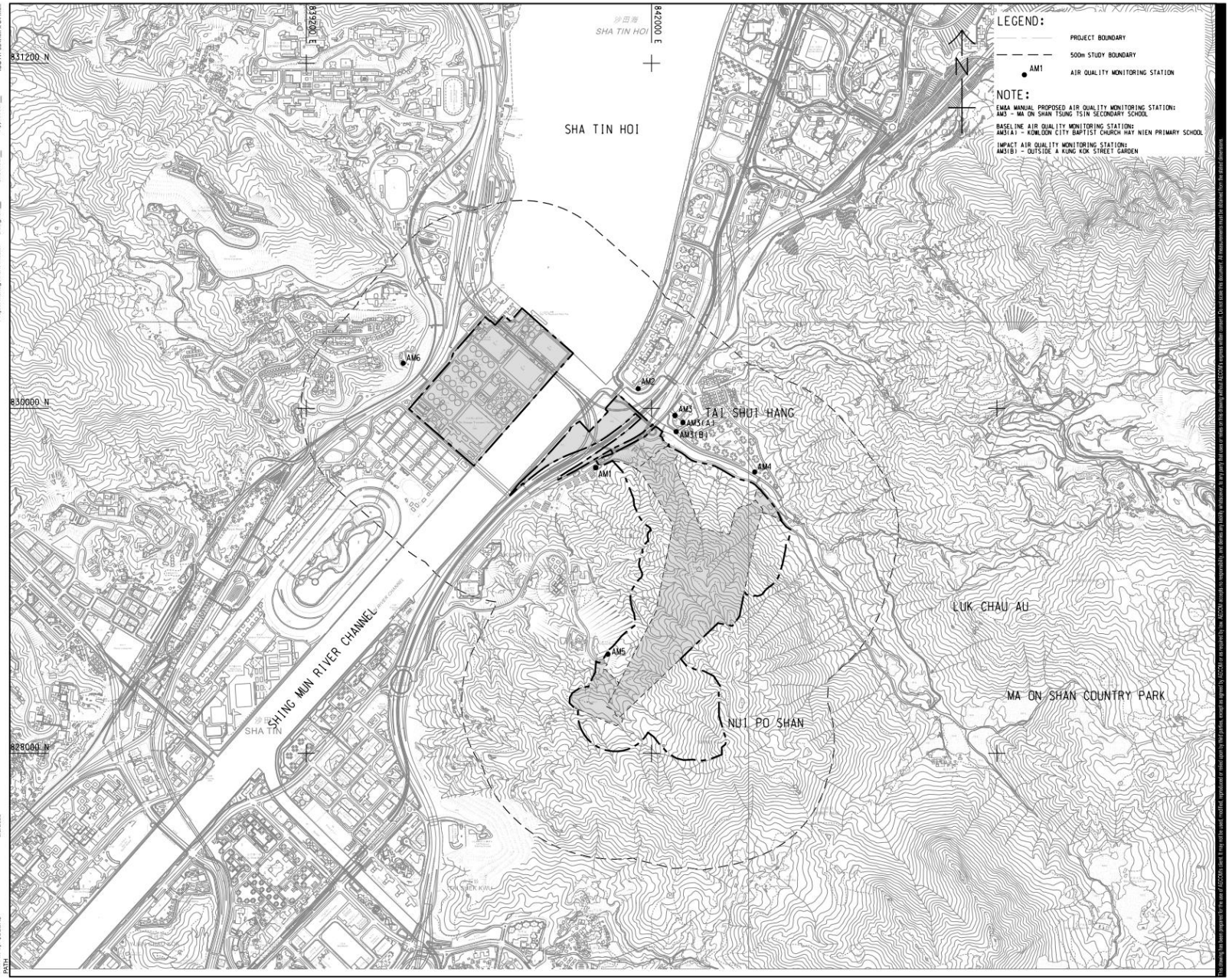


Figure 4.1 to 4.3

Locations of Environmental Monitoring Station



AECOM

PROJECT

RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS: CAVERNS AND SEWAGE TREATMENT WORKS - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT

Drainage Services Department

CONSULTANT

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ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.

STATUS

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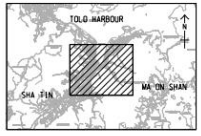
DIMENSION UNIT METRES

KEY PLAN A3 1 : 400000



PROJECT NO. 60334056

CONTRACT NO. CE 30/2014 (DS)

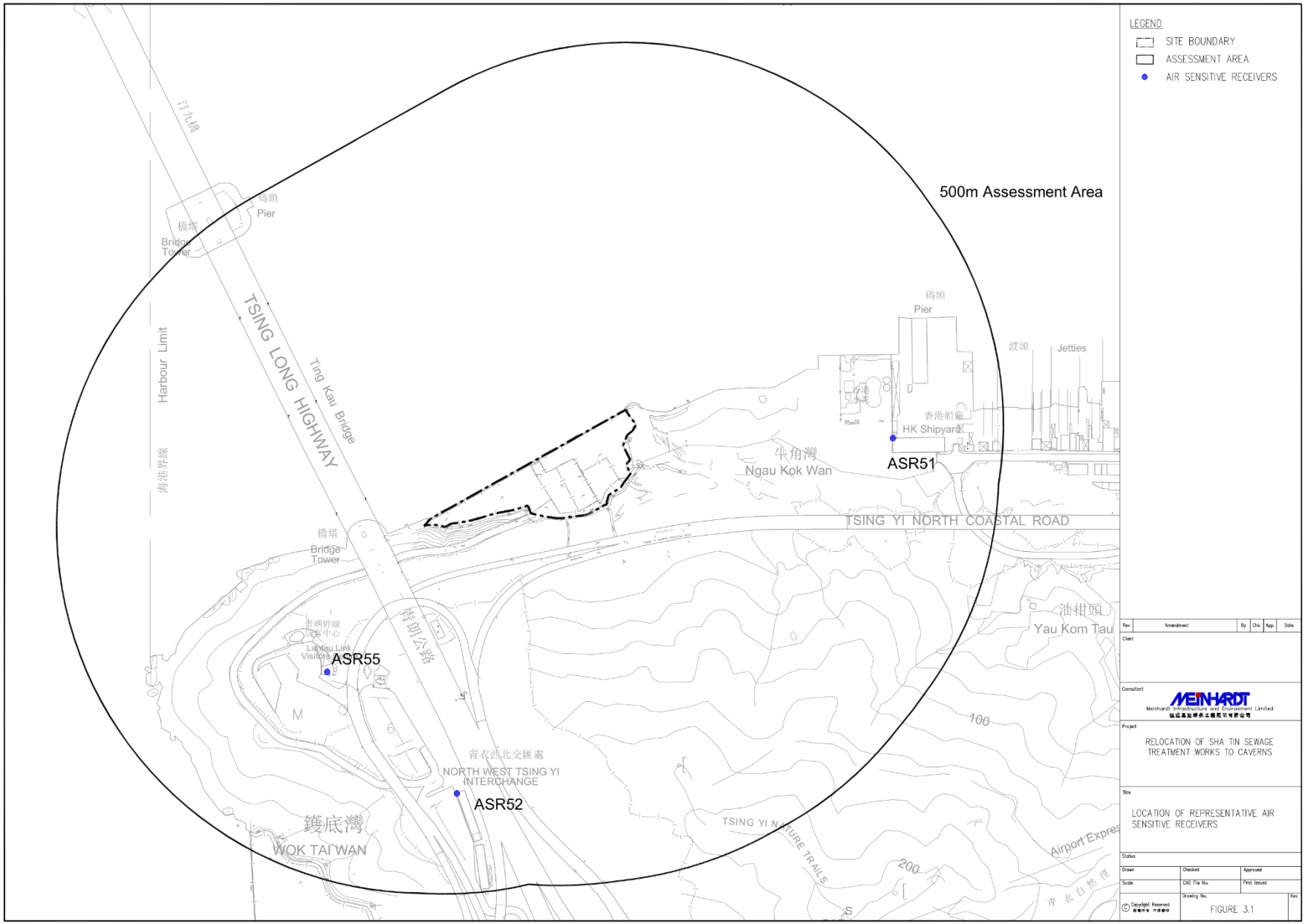
SHEET TITLE

LOCATION OF AIR QUALITY MONITORING STATION DURING CONSTRUCTION PHASE

SHEET NUMBER

60334056/EM&A/2.01

FUGRO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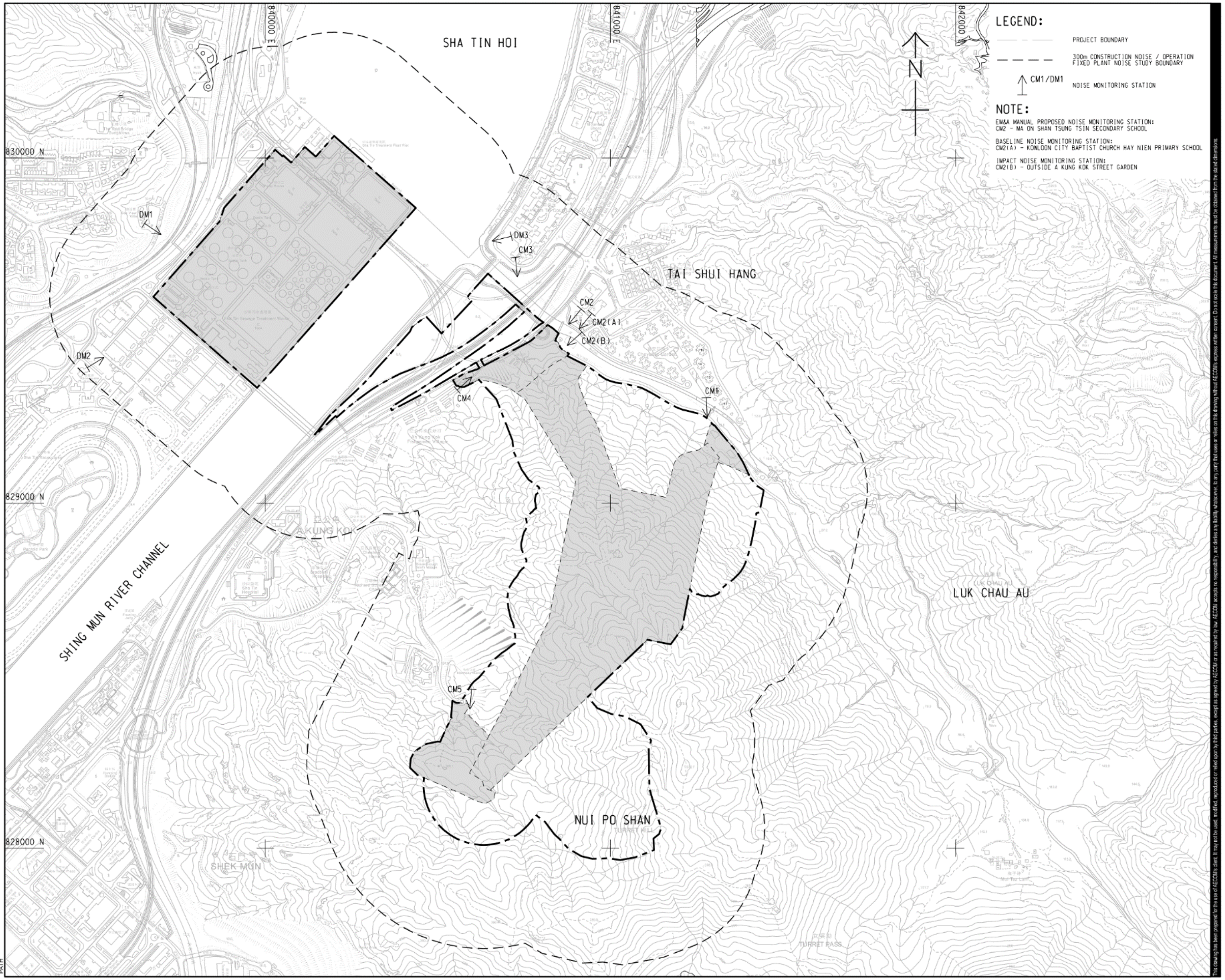
SITE BOUNDARY
ASSESSMENT AREA
AIR SENSITIVE RECEIVERS
500m Assessment Area
ASR51
ASR52
ASR55
TSING LONG HIGHWAY
Ting Kau Bridge
Harbour Limit
TSING YI NORTH COASTAL ROAD
Ngau Kok Wan
牛角灣
HK Shipyard
香港船廠
Pier
碼頭
Jetties
渡頭
Bridge Tower
橋塔
NORTH WEST TSING YI INTERCHANGE
青衣西北交匯處
WOK TAI WAN
鑊底灣
Yau Kom Tau
油柑頭
TSING YI NATURE TRAILS
Airport Express
青朗公路
RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS
LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS
FIGURE 3.1
MEINHARDT
Meinhardt Infrastructure and Environment Limited



AECOM

PROJECT

RELOCATION OF SHA TIN SEWAGE TREATMENT WORKS TO CAVERNS: CAVERNS AND SEWAGE TREATMENT WORKS - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT

渠務署
Drainage Services Department

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.

STATUS

SCALE A3 1 : 10000

DIMENSION UNIT METRES

KEY PLAN A3 1 : 500000

PROJECT NO. 60334056

CONTRACT NO. CE 30/2014 (DS)

SHEET TITLE

LOCATION OF CONSTRUCTION PHASE TRAFFIC NOISE MONITORING STATION

SHEET NUMBER

60334056/EM&A/3.01

Appendix 1.1

Ecological Monitoring Report

Ecological Monitoring Report

Contract No. CPW 01/2023 Environmental Team for Relocation of Sha Tin Sewage Treatment Works to Caverns

0039/23/ED/0041 00 | 12 November 2024

Draft

Drainage Services Department

Document Control

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Project Team

Initials	Name	Role
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JT	Jhomar Tillo	Ecologist

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1. Recommendation on Plant Species of Conservation Importance Under the Approved Protection and Transplantation Proposal

1.1 Pre-construction Survey

1.1.1 As per section 3.1 of the approved Protection and Transplantation Proposal (ver. 8.2), pre-construction survey shall be carried out by a qualified ecologist which includes:

1) Desktop study and survey preparation based on the specific area of site clearance as notified by the construction contractor confirmed with the Resident Site Staff;

2) Schedule and conduct physical site survey to locate the affected species, reconfirm the species condition and record physical condition before transplantation; and

3) Report site survey results and provide recommendations to contractor on transplantation and post-transplantation maintenance.

1.2 Transplantation

1.2.1 According to the approved Protection and Transplantation Proposal (ver. 8.2), four out of six recorded plant species of conservation importance are to be transplanted. The relevant information of the plant species were summarized in **Table 1, Table 2** and **Appendix A**.

Table 1. Recommendations (By Site) on the Recorded Plant Species of Conservation Importance (Approved Protection and Transplantation Proposal ver. 8.2)

Common Name	Species Name	Units	Recommendations				
			Retain	Transplant	Fell	Total (in Project Boundary)	Compensatory Planting in Temporary Works Area
Adopted from approved Protection and Transplantation Proposal ver. 8.2							
Site 1							
Small Persimmon	*Diospyros vaccinioides*	No.	930	350	4810	6090	Seedlings + Broadcast Seeding
Luofushan Joint-fir	*Gnetum luofuense*	m^2	270	0	1660	1930	Seedlings
Purple Bulb Orchid	*Ania hongkongensis*	No.	4	1	0	5	N/A
Site 2							
Small Persimmon	*Diospyros vaccinioides*	No.	3240	250	4050	7540	Seedlings + Broadcast Seeding
Luofushan Joint-fir	*Gnetum luofuense*	m^2	750	0	3230	3980	Seedlings

Common Name	Species Name	Units	Recommendations				
			Retain	Transplant	Fell	Total (in Project Boundary)	Compensatory Planting in Temporary Works Area
Hong Kong Eagle's Claw	*Artabotrys hongkongensis*	No.	0	0	1	1	1 Seedling
Butulang Canthium	*Canthium dicoccum*	No.	6	3	5	14	5 Whip Trees
Lamb of Tartary	*Cibotium barometz*	No.	860	61	30	951	No suitable habitat for compensatory planting
Buttercup Orchid	*Spathoglottis pubescens*	No.	0	16	1	17	Difficult to propagate from seed & not available in the market
Site 3							
Small Persimmon	*Diospyros vaccinioides*	No.	4510	100	8250	12860	Seedlings + Broadcast Seeding
Luofushan Joint-fir	*Gnetum luofuense*	m^2	990	0	1990	2980	Seedlings
Butulang Canthium	*Canthium dicoccum*	No.	0	0	4	4	4 Whip Trees
Lamb of Tartary	*Cibotium barometz*	No.	101	7	50	158	No suitable habitat for compensatory planting
Incense Tree	*Aquilaria sinensis*	No.	0	1	0	1	N/A

Table 2. Recommendations on the Recorded Plant Species of Conservation Importance (Approved Protection and Transplantation Proposal ver. 8.2)

Common Name	Species Name	Units	Recommendations				
			Retain	Transplant	Fell	Total (in Project Boundary)	Compensatory Planting in Temporary Works Area
Adopted from approved Protection and Transplantation Proposal ver. 8.2							
Small Persimmon	*Diospyros vaccinioides*	No.	8,680	700	17,110	26,490	Seedlings (17,110)
Luofushan Joint-fir	*Gnetum luofuense*	m^2	2,010	0	6,880	8,890	Seedlings (22 locations at 50m interval)
Purple Bulb Orchid	*Ania hongkongensis*	No.	4	1	0	5	N/A
Hong Kong Eagle's Claw	*Artabotrys hongkongensis*	No.	0	0	1	1	1 Seedling

Common Name	Species Name	Units	Recommendations				
			Retain	Transplant	Fell	Total (in Project Boundary)	Compensatory Planting in Temporary Works Area
Butulang Canthium	*Canthium dicoccum*	No.	6	3	9	18	9 Whip Trees
Lamb of Tartary	*Cibotium barometz*	No.	961	68	80	1,109	No suitable habitat for compensatory planting
Incense Tree	*Aquilaria sinensis*	No.	0	1	0	1	N/A
Buttercup Orchid	*Spathoglottis pubescens*	No.	0	16	1	17	Difficult to propagate from seed & not available in the market

1.3 Compensatory Planting

1.3.1 The potential compensatory planting of the 17,110 nos. of *Diospyros vaccinioides,* 6,880 m^2 of *Gnetum luofuense,* nine (9) nos. of *Canthium dicoccum,* about 80 nos. of *Cibotium barometz,* and one (1) no. of *Artabotrys hongkongensis* shall be in accordance with the approved Protection and Transplantation Proposal (ver. 8.2). The status of the compensatory planting is presented in **Table 3**.

Table 3. Summary of the Status of Compensatory Planting

Common Name	Species Name	Units	Compensatory Planting in Temporary Works Area	Contract No.	Seeds Collection		Broadcast Seeding	Seedling Planting	Monitoring Status		
					Nos. of Seeds Collected	Date (MM/YY)	Date (MM/YY)	Date (MM/YY)	Started at	Ended at	Status
Small Persimmon	*Diospyros vaccinioides*	No.	Seedlings (17,110)	DC/2020 /05	3000	11/2021-12/2021	4/2022	8/2022 & 9/2022	9/2022 & 10/2022	9/2023	**Completed**
					3000	11/2022	4/2023	08/2023	08/2023	08/2024	**Completed**
					3000	11/2023	4/2024	06/2024	06/2024	-	On-going
Luofushan Joint-fir	*Gnetum luofuense*	m^2	Seedlings (22 locations at 50m interval)	Pending	-	-	-	-	-	-	-
Hong Kong Eagle's Claw	*Artabotrys hongkongensis*	No.	1 Seedling	Pending	-	-	-	-	-	-	-
Butulang Canthium	*Canthium dicoccum*	No.	9 Whip Trees	Pending	-	-	-	-	-	-	-

1.3.2 Further to **Table 3**, this monitoring report currently focuses on the status of the compensatory planting for *D. vaccinoides*.

Seeds Collection, Germination, Broadcast Seeding, and Seedling Planting of *Diospyros vaccinioides*

1.3.3 According to Section 3.8 under the approved Protection and Transplantation Proposal (ver. 8.2), healthy seeds of *D. vaccinoides* will be selected within the fruiting period (October – February). Before the receptor site is available, the collected seeds should be stored in a sealed container, with moisture content below 7% and at temperatures of less than 15°C.

1.3.4 According to Section 5.8 of the approved protection and Transplantation Proposal (ver. 8.2), a total of 13,060 nos. of *D. vaccinioides* seedlings shall be planted on newly formed SIMAR slopes in Sites 1 and 3.

1.3.5 According to Section 5.13 of the approved Protection and Transplantation Proposal (ver. 8.2), seeds of *D. vaccinioides* shall be broadcasted in spring so that the seeds can germinate and establish on wet season. To improve the germination rate of the seeds, soaking is recommended by the contractor.

2. Results of the Ecological Monitoring

2.1 Pre-construction survey

2.1.1 Pre-construction survey was already completed.

2.2 Transplantation Monitoring

2.2.1 Based on method statement in the approved Protection and Transplantation Proposal, all the plants affected by the Project shall be transplanted as soon as possible. Where possible, transplantation work is preferably done on the same day of lifting. Otherwise, the plants dug out shall be transported to a nursery before transplanting into their final receptor sites.

2.2.2 No transplantation was conducted in October 2024.

One-year Establishment Period after Planting (Post-Transplantation Monitoring)

2.2.3 Regular monitoring of health condition of transplanted plants, also called post-transplantation monitoring, shall be carried out in monthly basis in the first three months, quarterly afterwards during one-year establishment period after transplanting to receptor site/nursery as per Section 5.4 and 5.5 of the approved Protection and Transplantation Proposal (ver. 8.2).

Recommendation on post-transplantation monitoring maintenance

2.2.4 According to environmental condition and location of the receptor sites/nursery, watering frequency was recommended in daily practice for at least the first 3 months as the transplant time is in summer months with strong sunlight and high temperature; except the days with fog and rain. Water frequency may be reduced based on the plant condition after monitoring in the first 3 months.

2.2.5 In contrast, the Landscape Contractor was recommended to check all transplanted plants after heavy rains/typhoon under safe condition, in order to carry out any stabilization/maintenance work. Blocked drainage shall be cleared; excessive water shall be pumped or diverged from nursery ground; saturated soil shall be aerated.

2.2.6 Other maintenance works (e.g., weeding, spraying off construction dust, use of approved pesticide and fertilization shall be determined throughout the monitoring period in agreement with the Supervisor of the Contract and ET.

Summary of the Transplantation and Recommendations after Establishment Period

2.2.7 The status of the transplantation is provided in **Table 4**.

Table 4: Summary of the Status of Transplantation

Common Name	Species Name	Units	Recommendations for Transplant*	Pre-construction survey implementation**	Transplantation Date		Monitoring Status		
					To Nursery (MM/YY)	To Receptor Site (MM/YY)	Started at	Ended at	Status
Site 1									
Small Persimmon	*Diospyros vaccinioides*	No.	228	12/2019	2/2020	5/2021	6/2021	6/2022	**Completed**
			122	7/2020	9/2020	5/2021	6/2021	6/2022	**Completed**
Purple Bulb Orchid	*Ania hongkongensis*	No.	1	N/A	-	7/2019	8/2019	7/2020	**Completed**
Site 2									
Small Persimmon	*Diospyros vaccinioides*	No.	40	before transplantation	8/2019	5/2021	6/2021	6/2022	**Completed**
			10	7/2020	9/2020	5/2021	6/2021	6/2022	**Completed**
			50	before transplantation	11/2020	5/2021 & 9/2021	6/2021 & 10/2021	6/2022 & 9/2022	**Completed**
			150	9/2021	-	10/2021	11/2021	10/2022	**Completed**
Butulang Canthium	*Canthium dicoccum*	No.	3	NA	-	10/2021	11/2021	10/2022	**Completed**
Lamb of Tartary	*Cibotium barometz*	No.	19	NA	-	9/2020	10/2020	9/2021	**Completed**
			42	NA	-	-	-	-	Undisturbed

Common Name	Species Name	Units	Recommendations for Transplant*	Pre-construction survey implementation**	Transplantation Date		Monitoring Status		
					To Nursery (MM/YY)	To Receptor Site (MM/YY)	Started at	Ended at	Status
Buttercup Orchid	*Spathoglottis pubescens*	No.	16	NA	-	-	-	-	Undisturbed
Site 3									
Small Persimmon	*Diospyros vaccinioides*	No.	100	7/2020	9/2020	5/2021	6/2021	6/2022	**Completed**
Lamb of Tartary	*Cibotium barometz*	No.	7	NA	-	7/2019	7/2019	6/2020	**Completed**
Incense Tree	*Aquilaria sinensis*	No.	1	NA	-	7/2019	7/2019	6/2020	**Completed**

*Adopted from previously approved Protection and Transplantation Proposal Version 8.2

** Pre-construction survey implementation was conducted on *Diospyros vaccinioides* only

2.2.8 Based on latest conditions of the after-establishment period, regular monitoring is not recommended after establishment period except replacement planting if found dead (subject to agreement with AFCD).

2.3 Compensatory Planting Monitoring

2.3.1 No seeds collection of *Diospyros vaccinioides* was conducted in October 2024. However, a total of 9,000 nos. of seeds of *D. vaccinioides* were collected by the contractor of Contract No. DC/2020/05 (3,000 *D. vaccinioides* seedlings between November and December 2021; 3,000 *D. vaccinioides* seedlings in November 2022; and 3,000 *D. vaccinioides* seedlings in November 2023). Photo records of *D. vaccinioides* are shown in **Appendix B**.

2.3.2 A total of 9,000 nos. of *D. vaccinioides* seeds were sown on plates in nursery by the contractor of Contract No. DC/2020/05 (3,000 nos. of seeds of *D. vaccinioides* in April 2022; 3,000 nos. of seeds of *D. vaccinioides* in April 2023; and 3,000 nos. of seeds of *D. vaccinioides* in April 2024). Photo records of *D. vaccinioides* are shown in **Appendix B**.

2.3.3 Soaked seeds of *D. vaccinioides* (third batch) were broadcasted in the nursery in April 2024. A total of 3,000 nos. of *D. vaccinioides* seedlings have been planted on the newly formed SIMAR slopes (Portion 11: RMZ2 and RMZ3) in June 2024 during wet season. Moreover, the contractor was reminded that frequent watering is required to reduce water loss in dry season. Photo records of *D. vaccinioides* are shown in **Appendix B**.

2.3.4 A total of 3,000 nos. of *D. vaccinioides* (third batch) was planted on the 7th and 8th of June 2024 next to the retaining wall RMZ2 and RMZ3 in Portion 11. Monitoring of the status of these newly planted seedlings started within the same month (**Table 3)**.

2.3.5 Monthly monitoring for the on-going compensatory planting was conducted on 22 October 2024. Health and growth condition of the transplanted third batch of *D. vaccinioides* seedlings are generally fair in condition. It was also noted that there were no construction activities adjacent to the receptor site; hence, there are no adverse impacts on the transplanted seedlings. Photo records of *D. vaccinioides* and site observations are shown in **Appendix B**.

3. Summary

3.1.1 Monthly ecological monitoring was conducted on 22 October 2024. No pre-construction survey was conducted during the current monitoring period since it has already been completed.

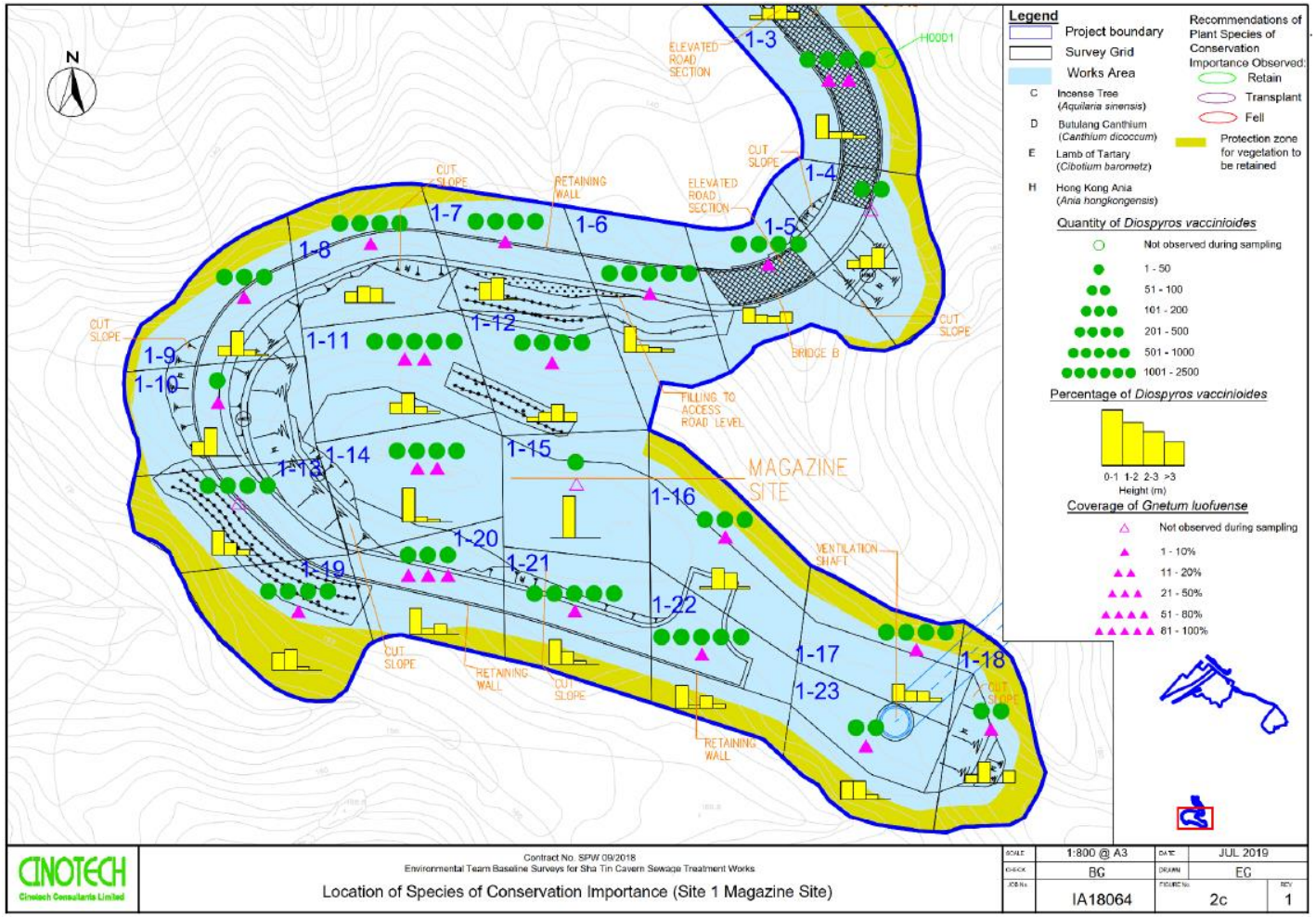
3.1.2 During the current monitoring period, it was noted that the growth and health condition of the transplanted third batch of *D. vaccinioides* seedlings were generally fair in condition. There were no construction activities adjacent to the receptor; hence, no adverse impacts are expected on the transplanted seedlings of *D. vaccinioides* in the receptor site.

3.1.3 Based on the on-going detailed design of the Project, the details of the approved Protection and Transplantation Proposal (ver. 8.2) and the ecological monitoring are subject to review and will be updated in stages.

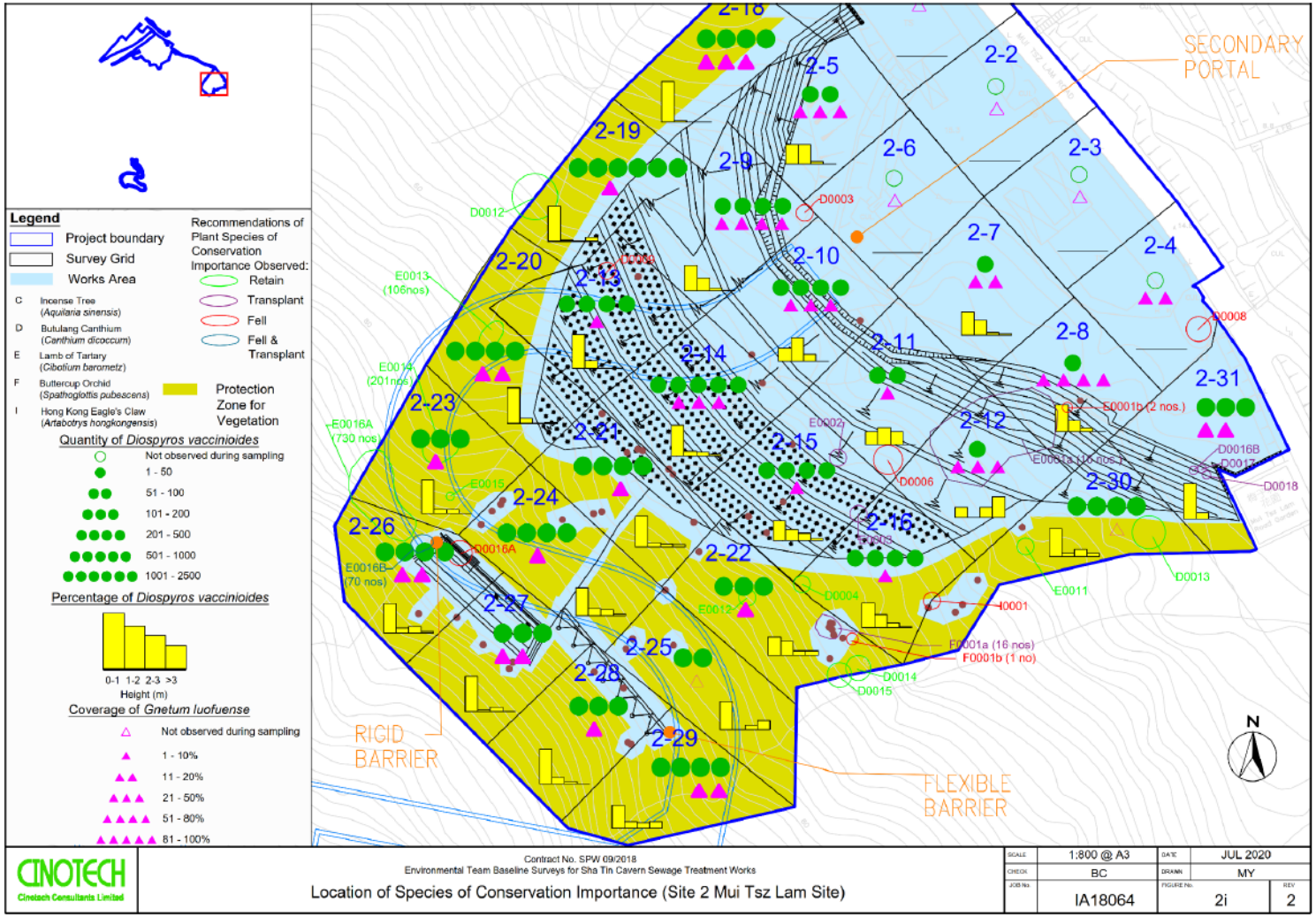
Appendix A

Locations of the Species of Conservation Importance

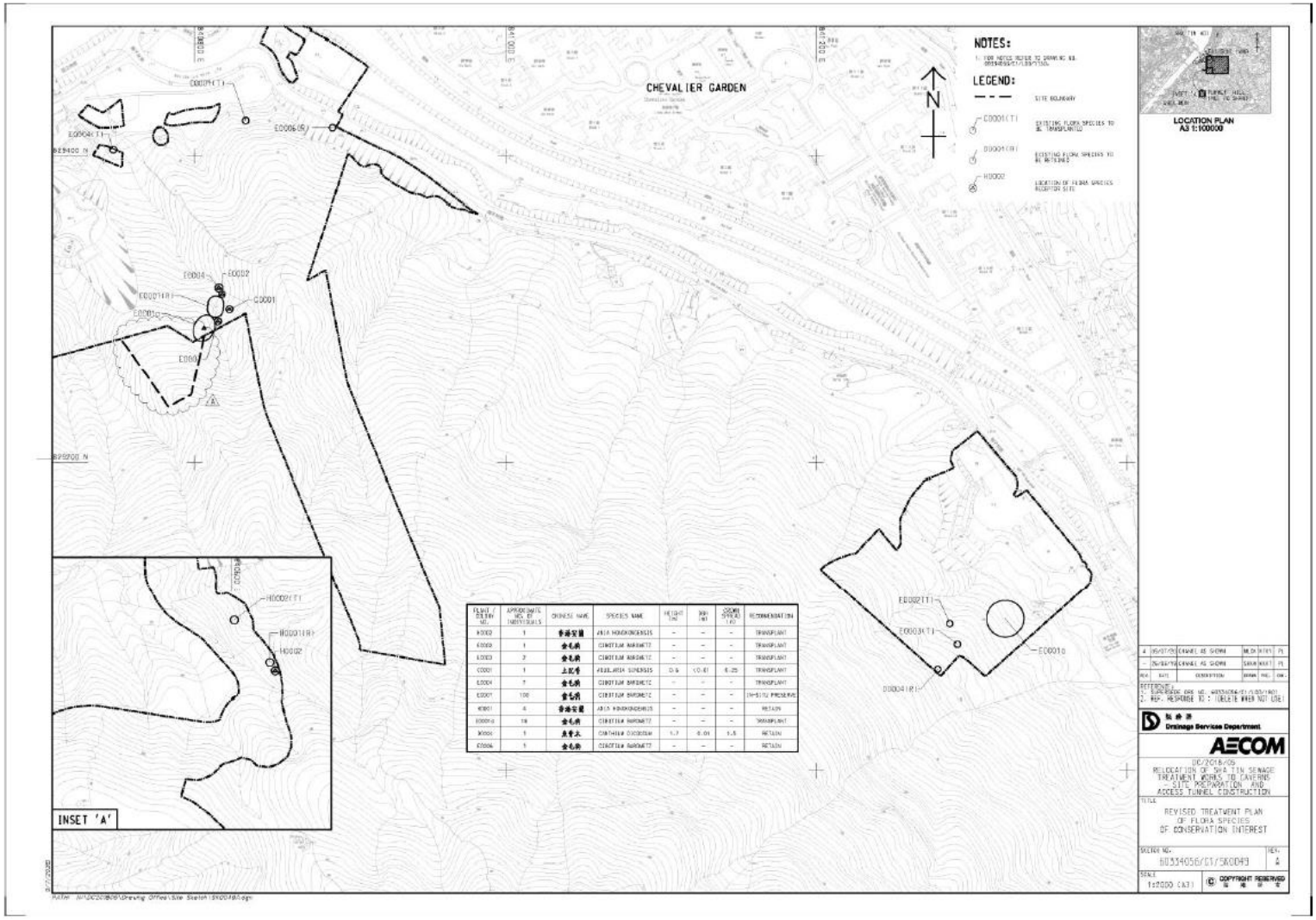
A.1 Original location of DV0229-DV0268 and DV0001 at Site 1



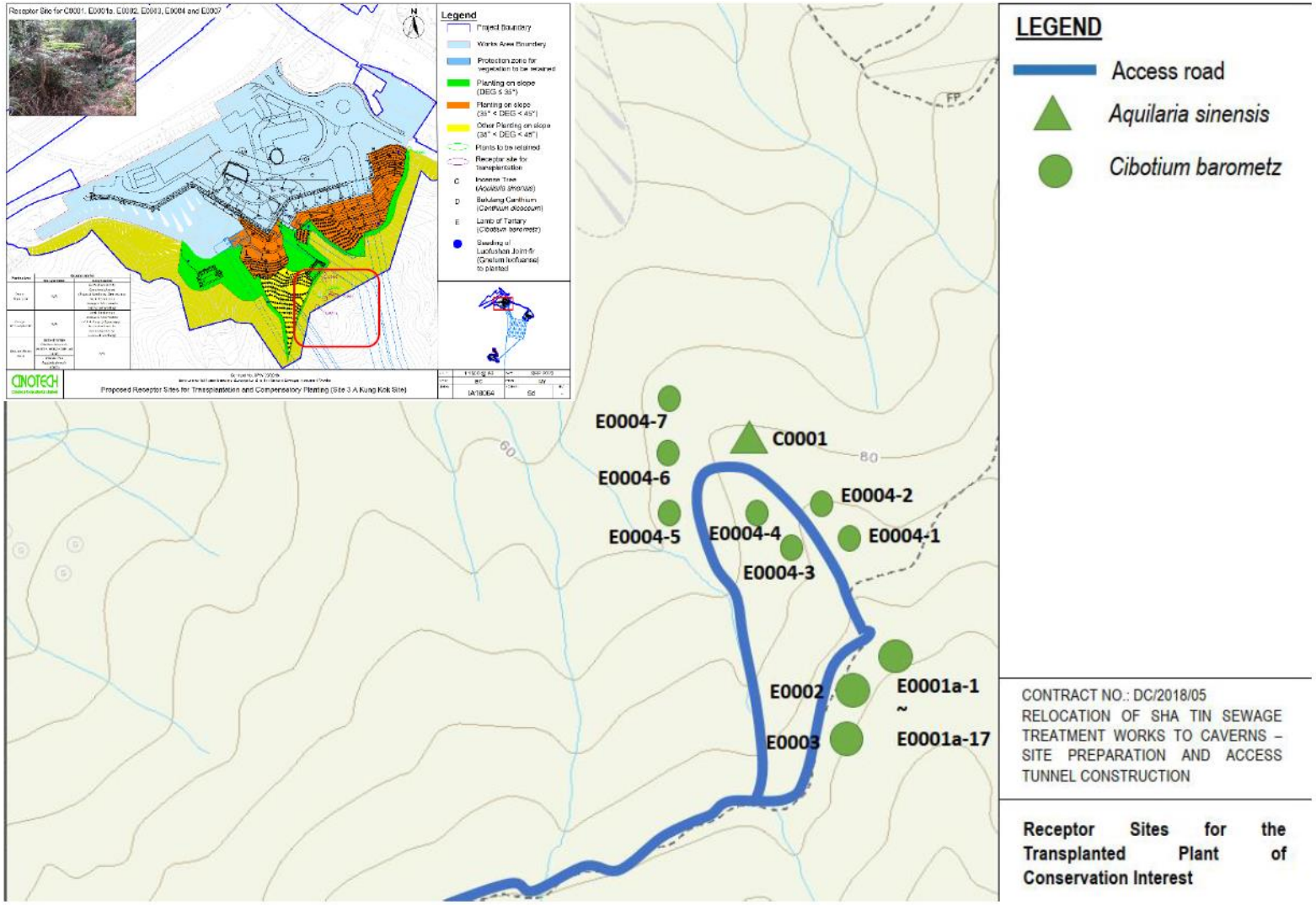
A.2 Original location of DV0269-DV0500 and DV0501-DV0550 at Site 2. Nursery site highlighted in red frame for DV0229-DV0268, DV-001-DV0228, DV0269-DV0500 and DV0501-DV0550 at Site 2



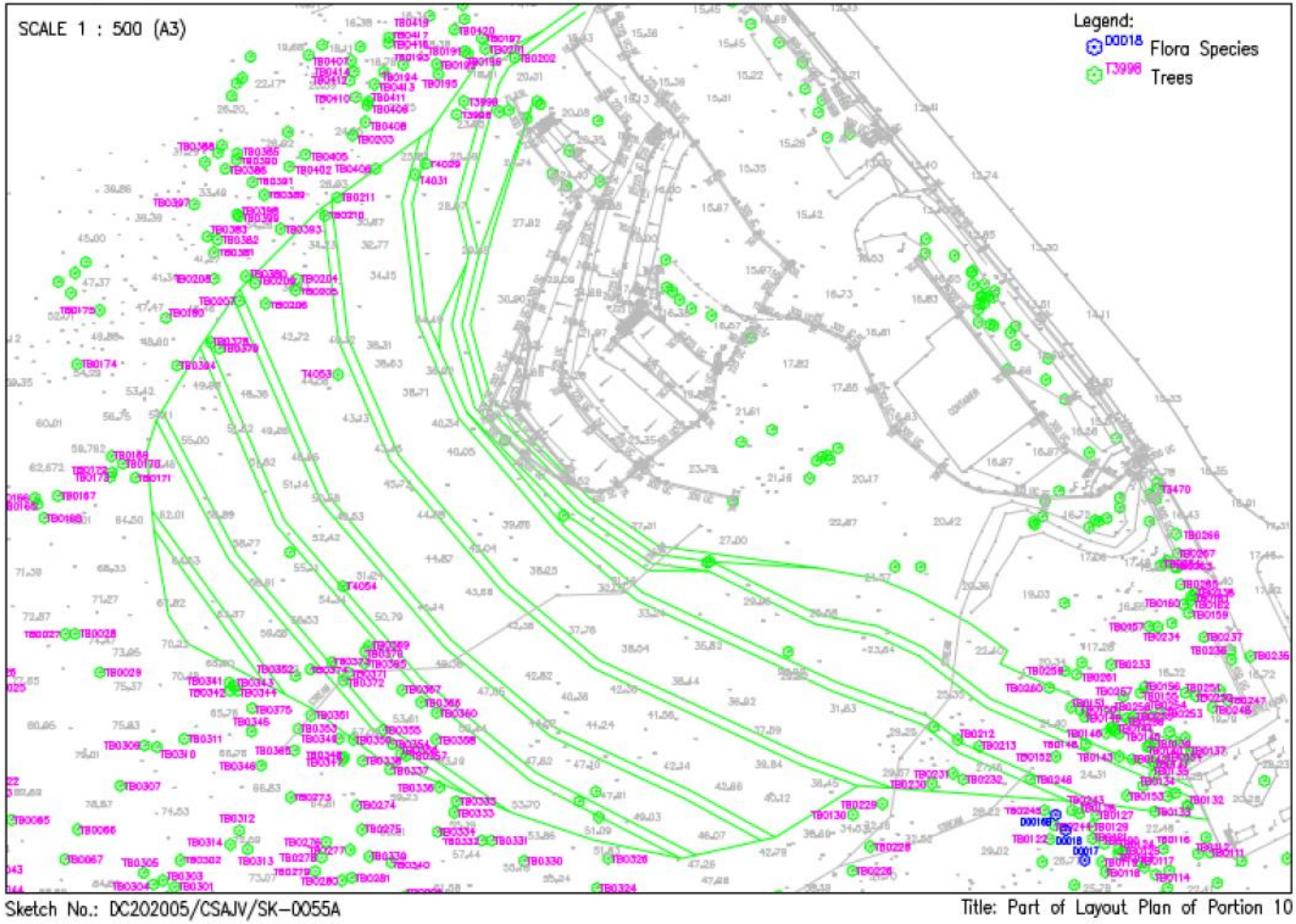
A.3 Original location of species of conservation importance frame and its receptor site



A.4 Receptor site for C0001 and E0001a-E0004, the area highlighted in red frame is enlarged



A.5 Receptor site of *Canthium dicoccum*



Appendix B

Photographic Records of the Compensatory Seeds Collection and Planting for *Diospyros vaccinioides*

Photo B.1: Seeds collection by the Contractor

Figure B.2: Seeds of *Diospyros vaccinioides*

Photo B.3: Weight of *Diospyros vaccinioides*

Photo B.4: Seeds of *Diospyros vaccinioides* were sown on plates in the nursery

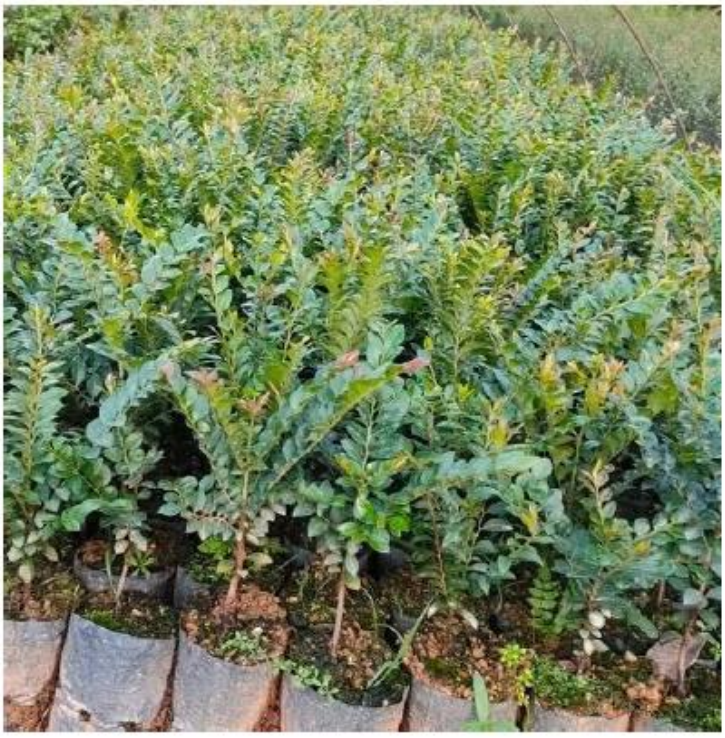


Photo B.5: Seedlings of *Diospyros vaccinioides* in the nursery

Photo B.6: Seedlings of *Diospyros vaccinioides* (3rd batch) planted in receptor site observed on 22 October 2024

Photo B.7: Seedlings of *Diospyros vaccinioides* (3rd batch) planted in receptor site observed on 22 October 2024

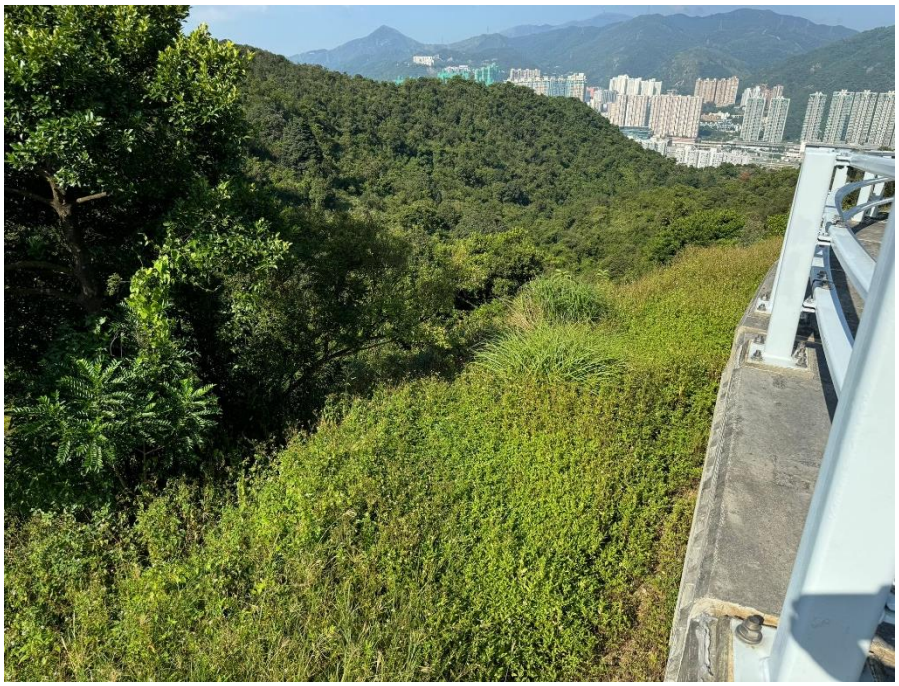


Photo B.8: Seedlings of *Diospyros vaccinioides* (3rd batch) planted in receptor site observed on 22 October 2024

Photo B.9: Seedlings of *Diospyros vaccinioides* (3rd batch) planted in receptor site observed on 22 October 2024

Photo B.10: Construction activities observed during the monitoring on 22 October 2024 but not adjacent to the receptor site.

Appendix 3.1

Environmental Mitigation Implementation Schedule

APPENDIX C IMPLEMENTATION SCHEDULE OF RECOMMENDED MITIGATION MEASURES

C.1 Introduction

C.1.1 This section presents the implementation schedule of mitigation measures for the Project. **Table C.1** summarises the details of the recommended mitigation measures for all works areas. For each recommended mitigation measures, both the location and timing for the measure have clearly been identified as well as the parties responsible for implementing the measure and for maintenance (where applicable).

Table C.1 Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
					Des	C	O	Dec	
	Air Quality Impact								
	Construction Phase								
Table 3.5	2.4.1	The rock crushing plant is configured as an enclosed system. Dust collector with dust removal efficiency of 99% will be provided at the exhaust of the rock crusher during rock crushing. Watering will be provided to maintain material in wet condition. Vehicles would be required to pass through the wheel washing facilities provided at site exit.	Rock Crushing Plant / Construction Phase	Contractor	√	√		√	Air Pollution Control Ordinance (APCO)
3.8.1	2.4.1	Watering eight times a day on active works areas, exposed areas and unpaved haul roads to reduce dust emission by 87.5%.	All active works areas, exposed areas and unpaved haul roads	Contractor		√		√	APCO

[1] Des = Design; C = Construction; O = Operation; Dec = Decommissioning

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
					Des	C	O	Dec	
3.8.1	2.4.1	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area	Construction Sites	Contractor		√		√	APCO and Air Pollution Control (Construction Dust) Regulation

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
					Des	C	O	Dec	
		where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. • Every stock of more than 20 bags of cement or dry PFA should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.							

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
					Des	C	O	Dec	
	Operation Phase								
3.5.2	-	Sludge tanks with totally enclosed design proven by DSD should be deployed for transporting sludge. With thorough cleaning practice and regular condition test of the sludge tanks, odour emission and leachate leakage during storage and transportation are not anticipated.	Cavern Sewage Treatment Works (CSTW) / Operation Phase	Project Proponent / Operator	√		√		-
3.6.2, 3.7.2	2.4.2	All treatment units with potential odour emission will be covered and the exhausted air will be conveyed to the deodouriser (with 80 – 97% odour removal efficiency) for treatment before discharge to the environment.	CSTW / Operation Phase	Design team / Project Proponent / Operator	√		√		-
3.7.2	2.4.2	The following appropriate odour control measures would be implemented. (i) Adopting the advantage of caverns as natural barriers for odour control; (ii) Covering up of odour sources; (iii) Preventing odour leakage through the access tunnels by applying negative pressure inside caverns; (iv) Installing deodourizing units to clean up the collected foul air; (v) Discharging exhausted air at height to further enhance the dilution effect; and (vi) Enhancing the odour management of the sludge transportation.	CSTW / Operation Phase	Design team / Project Proponent / Operator	√		√		-

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3.10.2	2.3.1	Odour monitoring at the inlet and outlet of the deodourizing units is proposed to be conducted for first three years of the operation of CSTW, quarterly in the first year, and once every 6 months in the second and third years if monitoring results remain below the limit levels.	CSTW / Operation Phase	Project Proponent / Operator	√		√		-
3.10.2	2.3.2	An Odour Complaint Registration System is also proposed in the EM&A programme to check whether the deodorizing units can fulfill the recommended odour removal performance.	CSTW / Operation Phase	Operator			√		-
3.10.2	-	Any unexpected leakage from tanks could be observed with monitoring equipment. Monitoring equipment would be installed in the CSTW to monitor the concentration of H_2S, CO and CO_2 and methane. Investigation and repair works would be carried out immediately if abrupt increase of these concentrations are reported. Emergency Plan would be established for these upset conditions.	CSTW / Operation Phase	Project Proponent / Operator	√		√		-
	Noise Impact								
	Construction Phase								
4.5.1.6	-	Re-provision of 220m length noise barrier with 10mPD on temporary access haul road to replace the existing 150m length noise barrier with 9.2mPD to 10mPD on Ma On Sha Road. The	Proposed temporary access / Construction Phase	Contractor		√			Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), Noise Control Ordinance (NCO)

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		location of the relocated noise barrier is shown in **Figure No. 60334056/EIA/4.02** and **Appendix 4.07**. Once the construction work for the CSTW is completed, the temporary access roads would be demolished and the relevant section of Ma On Shan Road and associated noise barrier would be recovered as before.							
4.8.1	3.8.1	The use of quiet plant associated with the construction works is prescribed in British Standard "Code of practice for noise and vibration control on construction and open sites, BS5228" which contains the SWLs for specific quiet PME.	All Construction Work Sites	Contractor		√		√	EIAO-TM, NCO
4.8.1	3.8.1	To alleviate the construction noise impact on the affected NSRs, movable noise barrier for Air Compressor, Bar Bender and Cutter, Breaker, Chisel, Saw, Compactor, Mixers, Pump, Crane, Desander, Drilling Rig, Dump Truck, Excavator, Generator, Grab, Lorry, Paver, Poker and Roller are proposed.	All Construction Work Sites	Contractor		√		√	EIAO-TM, NCO
4.8.1	3.8.1	Provision of noise barrier/acoustic mats for Drilling Jumbo so as to have screening effecting with 10 dB(A) noise attenuation	Drilling Jumbo operate outside the portal and within 20m inside the portal	Contractor		√			EIAO-TM, NCO
4.8.1	3.8.1	To further alleviate the construction noise impact on the Neighbourhood Advice-Action Council Harmony	Construction Site for access road for	Contractor		√		√	EIAO-TM, NCO

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		Manor, it is proposed to limit the number of on-time operating PMEs within 120m of this NSR during construction of access road.	magazine at A Kung Kok Road						
4.9.1	3.8.1	In addition to the above-mentioned mitigation measures, good site practices listed below shall be adopted by all the contractors to further ameliorate the noise impacts. • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	All Construction Work Sites	Contractor		√		√	EIAO-TM, NCO

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		• Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.							
	Operation Phase								
4.7.4	3.8.2	The maximum allowable sound power levels for the ventilation shaft, ventilation buildings at main portal and emergency portal, ventilation fan for chiller plant room and cooling tower at the administration building as presented in Table 4.16 of the EIA Report should be achieved such that the nearest affected NSRs can be in compliance with the noise criteria	Ventilation Shaft, Administration Building and Ventilation Buildings/ Operation Phase	Project Proponent	√		√		EIAO-TM, NCO
4.11.2	3.8.2	Prior to the operational phase of the Project, a commissioning test for the ventilation buildings, the ventilation shaft, ventilation fan for chiller plant room at administration building and cooling tower at the administration building would be conducted to ensure compliance with the relevant allowable maximum sound power levels.	Ventilation Shaft, Administration Building and Ventilation Buildings/ Operation Phase	Contractor			√		EIAO-TM, NCO

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	Water Quality Impact								
	Construction Phase								
5.7.2	4.10	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Construction Sites / Construction Phase	Contractor		√			Water Pollution Control Ordinance (WPCO), EIAO-TM
5.7.2	4.10	All vehicles and plant should be cleaned before they leave a construction site to minimise the deposition of earth, mud, debris on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Construction Sites / Construction Phase	Contractor		√			Professional Persons Environmental Consultative Committee (ProPECC) Practice Note (PN) 1/94, WPCO, Waste Disposal Ordinance (WDO)
5.7.2	4.10	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM

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5.7.2	4.10	The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed where applicable to minimise surface run-off and the chance of erosion.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, ProPECC PN 1/94
5.7.2	4.10	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS). The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of RO of EPD.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, (TM-DSS)
5.7.2	4.10	Contractor must register as a chemical waste producer if chemical wastes would be produced from the	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, WDO

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		construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.							
5.7.2	4.10	Any service shop and maintenance facilities should be located on hard standings within a bonded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM
5.7.2	4.10	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance should be followed to avoid leakage or spillage of chemicals.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, WDO
5.7.2	4.10	Sufficient chemical toilets should be provided in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM

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5.7.2	4.10	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM
5.7.2	4.10	The practices outlined in ETWB TC (Works) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works" should also be adopted where applicable to minimise the water quality impacts upon any natural streams or surface water systems.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, ETWB TC (Works) No. 5/2005
5.7.2	4.10	Appropriate measures during the construction of the cavern construction should be implemented to minimise the groundwater infiltration.	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM
5.7.2	4.10	No directly discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas at the existing STSTW site, the baseline groundwater quality in these areas should be reviewed based on the relevant SI data and any additional groundwater quality measurements to be performed with reference to *Guidance Note for Contaminated Land Assessment and Remediation* and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, Guidance Note for Contaminated Land Assessment and Remediation

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		works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the TM-DSS. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.							
5.7.2	4.10	If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of the TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells, and submit a working plan to EPD for agreement. Pollution	Construction Sites / Construction Phase	Contractor		√			WPCO, EIAO-TM, TM-DSS

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
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		levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater							
5.7.2	4.10	THEES connection works should be synchronized with the THEES maintenance, for a duration not longer than 4 weeks each outside the algae blooming season (January to May) and frequency of THEES maintenance shall be no more than once per year during the construction phase of the Project.	Tolo Harbour / Construction Phase	Project Proponent / Contractor	√	√			EIAO-TM
	Construction and Operation Phases								
5.10.2	4.10	Shutdown of the THEES for maintenance should be shortened as far as possible. It is recommended that the maintenance of the THEES tunnel should be avoided during the algae blooming season (January to May).	Tolo Harbour / Construction and Operation Phase	Project Proponent		√	√		WPCO, EIAO-TM

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5.10.2	4.10	Relevant government departments including EPD, WSD, AFCD as well as the key stakeholders for mariculture and fisheries in Tolo Harbour should be informed of the maintenance event prior to any discharge.	Tolo Harbour / Construction and Operation Phase	Project Proponent		√	√		WPCO, EIAO-TM
5.10.3	4.2-4.5	An event and action plan and a water quality monitoring programme (as presented in the EM&A Manual) should be implemented for the THEES maintenance discharge	Tolo Harbour / Construction and Operation Phase	Project Proponent		√	√		WPCO, EIAO-TM
5.10.1	4.10	Silt screen may be installed at the flushing water intakes during the THEES maintenance discharge should it appear necessary. Close communication between DSD and WSD should be maintained to minimize any impact on the flushing water intakes due to THEES maintenance discharge.	WSD flushing water intakes / Construction and Operation Phase	WSD / Project Proponent		√	√		WPCO, EIAO-TM
	Design and Operation Phases								
5.8.3	4.6	In case adverse impact on KTN is identified based on the result of the three-month monitoring programme after commissioning of the project, the operation conditions of the treatment and THEES system should be investigated, and corrective and remedial action should be implemented to improve the effluent discharge from the CSTW. Furthermore, DSD should extend the water quality monitoring	Project site / Design and Operation Phases	Project Proponent			√		WPCO, EIAO-TM

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		programme for at least three months or as agreed by the Director of Environmental Protection.							
5.11.2	4.10	Dual power supply or ring main supply from CLP Power Hong Kong Ltd. CLP should be provided for the CSTW to prevent the occurrence of power failure. In addition, standby facilities for the main treatment units and standby equipment parts / accessories should also be provided in order to minimise the chance of emergency discharge. CLP should be consulted in order to ascertain the power supply for normal plant operation within the caverns. It is recommended that government departments including EPD, WSD and AFCD as well as the key stakeholders for mariculture and fisheries in Tolo Harbour should be informed as soon as possible in case of any emergency discharge so that appropriate actions can be taken.	Project site / Design and Operation Phases	Project Proponent	√		√		WPCO, EIAO-TM
5.11.2	4.10	In case of emergency discharge, the plant operators of CSTW should carry out necessary follow-up actions according to the procedures of the current contingency plan formulated for the existing STSTW to minimise the water quality impact.	Project site / Operation Phase	Project Proponent			√		WPCO, EIAO-TM
5.11.2	4.10	WSD may also consider, should it appear necessary, to shut down the Sha Tin seawater pumping station for a short period of time in case of	Sha Tin seawater pumping station / Operation Phase	WSD / Project Proponent			√		WPCO, EIAO-TM

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		emergency discharge in order to minimize any adverse impacts.							
5.13.2	4.10	Best Management Practices to reduce storm water and non-point source pollution are also proposed as follows: <u>Design Measures</u> • Exposed surface shall be avoided within the road and portal sites to minimise soil erosion. The access road and the portal areas shall be either hard paved or covered by landscaping area where appropriate. • Streams near the Project site will be retained to maintain the original flow path. The drainage system will be designed to avoid flooding. • Green areas / planting etc. should be introduced alongside the access road and within the portal areas, as far as possible, to minimise runoff pollution. <u>Devices/ Facilities to Control Pollution</u> • Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system. • Road gullies with standard design and silt traps should be provided to	Project site / Design and Operation Phase	Project Proponent	√		√		WPCO, ProPECC PN 5/93

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		remove particles present in stormwater runoff, where appropriate. <u>Administrative Measures</u> • Good management measures such as regular cleaning and sweeping of road surface/ open areas are suggested. The road surface/ open area cleaning should also be carried out prior to occurrence rainstorm. • Manholes, as well as stormwater gullies, ditches provided at the Project site should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.							
	Land Contamination								
6.7.1	-	Further site walkover and/or detailed land contamination assessment will be required for sites that are inaccessible or currently in operation / yet to be constructed (i.e. existing STSTW, David Camp and part of existing Sha Tin VDC, and proposed A Kung Kok Shan Road surface magazine site within the Project boundary). The site walkover, detailed land contamination assessment and if necessary, remediation works should be carried out after decommissioning of the sites	Existing STSTW, David Camp and VDC / Construction Phase	Project Proponent / Contractor		√		√ (for existing STSTW)	Guidance Note for Contaminated Land Assessment and Remediation, Practice Guide for Investigation and Remediation of Contaminated Land, Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management

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		but prior to re-development and should include the following: • Prior to the commencement of the SI works, review the CAP to confirm whether the proposed SI works (e.g. sampling locations, testing parameters etc.) are still valid and to confirm the appropriate RBRGs land use scenario for the development; • Submit supplementary CAP(s), presenting the findings of the above review for EPD endorsement. If land contamination issues were identified within David Camp or part of existing VDC / proposed A Kung Kok Shan Road surface magazine site within the Project boundary in the further site walkover, findings of the site walkover and the proposal for SI works should also be presented in the supplementary CAP(s); • Carry out SI works according to the supplementary CAP endorsed by EPD; • Submit CAR(s), detailing findings of the SI works and nature/extent of any soil/groundwater contamination, and, if contaminated identified, RAP(s), discussing the appropriate remedial methods and mitigation							

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		measures, for the identified contamination, for EPD agreement; and • Carry out soil/groundwater remediation works according to EPD agreed RAP and submit RR(s) afterwards for EPD agreement. The remediation works and agreement of RR should be completed prior to re-development.							
6.7.2	-	If contamination were identified, mitigation measures as recommended in the RAP should be followed and should include the following: • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Supply of suitable clean backfill material (or treated soil) after excavation; • Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be fully covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent	Project Site / Construction Phase	Contractor		√		√ (for existing STS TW)	Guidance Note for Contaminated Land Assessment and Remediation, Practice Guide for Investigation and Remediation of Contaminated Land, Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management

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		usage, regular watering shall be applied. However, watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff. • Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions; • Speed control for the trucks carrying contaminated materials shall be enforced; • Vehicle wheel and body washing facilities at the site's exist points shall be established and used; and • Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines.							

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	Hazard to Life								
	Construction Phase								
7.14.1	6.2.2	The following recommendations are justified to be implemented to meet the EIAO-TM requirements: • The truck should be designed to minimise the amount of combustible in the cabin. The fuel carried in the fuel tank should also be minimised to reduce the duration of any fire; • The accident involvement frequency of the explosives delivery truck should be minimised through implementation of several administrative measures, such as providing training programme to the driver, regular "tool box" briefing session, implementing a defensive driving attitude, selecting driver with good safety record, and providing regular medical checks for the driver; • Avoidance of returning unused explosives to the magazine, only the required quantity of explosives for a particular blast should be transported; • Maintain a minimum headway of 10 minutes between two	Explosives dlivery route / Construction Phase	Contractor	√	√			EIAO-TM

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		consecutive truck convoys whenever practicable; and • The fire involvement frequency should be minimised by carrying better types of fire extinguishers and with bigger capacity onboard of the explosives delivery truck. Emergency plans and trainings could also be provided to make sure that the fire extinguishers are used adequately.							
7.14.2	6.2.3	The magazine should be designed, built, operated and maintained in accordance with Mines Division's guidelines and appropriate industry best practice. In addition, the following recommendations should be implemented: • The security plan should address different alert security level to reduce opportunity for arson or deliberate initiation of explosives; • Emergency plan should be developed to address uncontrolled fire in magazine area, and drill of the emergency plan should be regularly carried out; • Suitable work control system should be set-up, such as an operational manual including Permit-to-Work system, to ensure that work activities undertaken	Magazine Site/ Construction Phase	Contractor	√	√			-

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		during operation of the magazine are properly controlled; • Good house-keeping within the magazine to ensure no combustible materials are accumulated; • Good house-keeping outside the magazine stores to ensure no combustible materials are accumulated; and • Regular checking of the magazine store to ensure no water seepage through the roof, walls or floor.							
7.14.3	6.2.4	The following recommendations should be implemented: • Emergency plan should be developed to address uncontrolled fire during transport. Case of fire near an explosive delivery truck in jammed traffic should be included in the plan. Activation of fuel and battery isolation switches on vehicle when fire breaks out should also be included in the emergency plan to reduce likelihood of prolonged fire leading to explosion; • Working guideline should be developed to define procedure for explosives transport during adverse weather such as thunderstorm;	To and from Magazine Site / Construction Phase	Contractor	√	√			-

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		• Detonators should be transported separately from other Class 1 explosives. Separation of vehicles should also be maintained through the trip; • Develop procedure to ensure the availability of parking space on site for the explosives delivery truck. Delivery should not be commenced if parking space on site is not secured; • Hot work or other activities should be banned in the vicinity of the explosives offloading or charging activities; • Lining should be provided within the transportation box on the vehicle; • Fire screen should be used between cabin and the load on the vehicle; • Ensure packaging of detonators remains intact until handed over at blasting site; • Ensure that cartridged emulsion packages are not damaged before every trip; and • Use experienced driver with good safety record.							

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7.14.4	6.2.5	The following recommendations should be implemented for the safe use of explosives: • Blast Charge Weight should be within MIC as specified for the given blast face; • Temporary mitigation measures such as blast doors or heavy duty blast curtains should be installed at the portals or shafts and at suitable locations underground to prevent flyrock and control the air overpressure; • Multiple faces blasting will be carried out for the construction of cavern in this project. Good communication and control will need to be adopted in ensuring that the works are carried out safely; • It is not intended to carry out complete evacuation of the construction areas and secure refuge areas should be identified to workers in the areas; • A Chief Shotfirer and a Blasting Engineer shall be employed in addition to the normal blasting personnel to ensure that the works are safe and coordinated between blasting areas; • Shotfirer to be provided with a lightning detector, and appropriate	CSTW / Construction Phase	Contractor	√	√			-

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
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		control measures should be in place; • Speed limit for the diesel vehicle truck and bulk emulsion truck in the access tunnel and cavern should be imposed. The truck may be escorted while underground to ensure route is clear from hazards and obstructions; and • Hot work should be suspended during passage of the diesel vehicle truck and bulk emulsion truck in the access tunnel and cavern. • A boulder survey should be undertaken based on the likely PPV values that would result from the blasting process. Those boulders subject to the vibration higher than the allowable limit should be strengthened, removed, or constructed with boulder fence, prior to the commencement of blasting.							
	Operation Phase								
		Nil							

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	Ecological Impact (Terrestrial and Marine)								
	Construction Phase								
8.8.2	7.2.1	Construction of access roads and other temporary works should be carefully designed (e.g. elevated road for crossing streams) to avoid / minimise habitat loss and fragmentation.	Project site – areas access road / Pre-Construction Phase	Design team / Project Proponent	√				-
8.8.3	7.2.2	Minimise habitat loss to nearby habitats and associated wildlife by implementing the following mitigation measures: - • confining the works within the site boundary; • controlling access of site staff to avoid damage to the vegetation in surrounding areas; and • placement of equipment or stockpile in the existing disturbed / urbanised land within the site boundary of the Project to minimise disturbance to vegetated areas;	Project site / Construction Phase	Contractor		√			-
8.8.3	7.2.2	Reinstatement planting should be implemented upon the completion of construction works to minimise the ecological impact arising from the temporary habitat loss	Project Site (Main Portal Area / Secondary Portal Area / Access Road / Temporary Works Area) /Construction Phase	Project Proponent	√	√		√	

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8.8.2, 8.8.3 & 8.10	7.2.2	Detailed Vegetation Survey shall be conducted by a suitably qualified botanist / ecologist within the works area requiring vegetation clearance prior to commencement of works to identify plant species of conservation importance. The potentially affected individuals shall be tagged and fenced off for preservation, and in the case of unavoidable loss, for transplantation to nearby suitable habitat(s).	Proposed works areas (Main Portal, Secondary Portal, Access Road) / Pre-Construction Phase	Project Proponent / Qualified botanist or ecologist		√			
8.8.2, 8.8.3 & 8.10	7.3.1	A Protection and Transplantation Proposal including the subsequent monitoring visit for the affected plant species should be prepared and conducted by a suitably qualified local ecologist. The Proposal should be submitted for approval at least one month before works commencement. To review the performance of the transplantation exercise, monitoring of transplanted flora should be conducted monthly after the transplantation throughout the construction phase. The parameters to be monitored should include the health condition and survival rate of the transplanted flora and presence of weedy species. Any observations and recommendations should be reported in monthly EM&A reports	Recipient Site for transplanted species / Construction Phase	Project Proponent / Qualified botanist or ecologist		√			

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8.8.3	7.2.2	Mitigation measures should be implemented to control runoff from the construction site, as well as the adopting guidelines and good site practices for handling and disposal of construction discharges in order to minimise the potential indirect impact on the streams (particularly S2) resulting from site runoff. Precautionary measures should also be implemented to minimise indirect impacts to the streams, such as isolating the work site by placing sandbags and silt curtains, covering up construction materials, debris and spoil to avoid being washed into the stream, and properly collecting and treating construction effluent and sewage.	Access Road on Nui Po Shan / Construction Phase	Contractor		√			ETWB TCW No. 5/2005
8.8.3	7.2.2	Implement good site practice to further minimise impacts from disturbance such as noise, air quality and water quality issues, such as: - • the use of quiet plant and EPD's QPME and the availability of British Standards 5228 has been considered; • the use of movable noise barrier; • the use of temporary noise screening structures or purpose-built temporary noise barriers;	Project site / Construction Phase	Contractor		√			-

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		• install site hoarding as temporary noise barrier where construction works are undertaken; • only well-maintained plant should be operated on site and plant should be serviced regularly during the construction programme; • Mitigation measures stipulated in the ProPECC PN 1/94 "Construction Site Drainage" should be complied to minimise water quality impact; • Installation of stand-by pump, emergency power supply and telemetry system to avoid sewage overflow and surcharge to sewerage system due to power/equipment failure.							
8.8.3	7.2.2	Minimise groundwater infiltration during cavern construction with the following water control strategies:- • Probing Ahead: As a normal practice, the Contractor will undertake rigorous probing of the ground ahead of excavation works to identify zones of significant water inflow. The probe drilling results will be evaluated to determine specific grouting requirements in line with the tunnel / cavern advance. In such zones of significant water inflow that could occur as a result of discrete, permeable features, the intent	Project site / Construction Phase	Contractor		√			-

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
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		would be to reduce overall inflow by means of cut-off grouting executed ahead of the tunnel / cavern advance; • Pre-grouting: Where water inflow quantities are excessive, pre-grouting will be required to reduce the water inflow into the tunnel / cavern. The pre-grouting will be achieved via a systematic and carefully specified protocol of grouting; • In principle, the grout pre-treatment would be designed on the basis of probe hole drilling ahead of the tunnel / cavern face; • The installation of waterproof lining would also be adopted after the formation of the tunnels and caverns.							
8.8.3	7.2.2	In the event of excessive infiltration being observed as a result of the tunnelling or excavation works even after incorporation of the water control strategies, post-grouting should be applied as far as practicable as described below: • Post-grouting: Groundwater drawdown will be most likely due to inflows of water into the tunnel / cavern that have not been sufficiently controlled by the pre-grouting measures in high permeability area. Where this	Project site / Construction Phase	Contractor		√			-

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		occurs post grouting will be undertaken before the lining is installed. Whilst unlikely to be required in significant measure, such a contingency should be allowed for reduction in permeability of the tunnel / cavern surround (by grouting) to limit inflow to acceptable levels. The practical groundwater control measures stated above are proven technologies and have been extensively applied in other past projects. These measures or other similar methods, as approved by the Engineer to suit the works condition shall be applied to minimise the groundwater infiltration.							
8.8.3	7.2.2	In case seepage of groundwater occurs, groundwater should be pumped out from works areas and discharged to the storm system via silt trap. Uncontaminated groundwater from dewatering process should also be discharged to the storm system via silt removal facilities.	Project site / Construction Phase	Contractor		√			-

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8.8.3	7.2.2	Mitigation measures recommended in the water quality impact assessment for controlling water quality impact will also serve to protect marine ecological resources from indirect impacts and ensure no unacceptable impact on marine ecological resources. Relevant government departments including EPD, WSD and AFCD as well as key stakeholders for mariculture and fisheries in Tolo Harbour should be informed of the THEES maintenance / emergency discharge event prior to any discharge. It is recommended that the temporary effluent bypass event and the THEES maintenance period should be shortened as far as possible.	Tolo Harbour / Construction Phase	Contractor and Operator		√			-
	Construction and Operation Phase								
8.8.3	7.2.2	Overall reduction of glare during both construction and operation phase should be considered. A balance between lighting for safety, and avoiding excessive lighting can be achieved through the use of directional lighting to avoid light spill into sensitive areas, and control/timing of lighting periods of some facilities, particularly at the secondary portal which lies approximately 200 m northwest of Ma On Shan Country Park.	Project site / Construction and Operation Phase	Contractor and Operator		√	√		-

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8.8.3	7.2.2	During the decommissioning and demolition of the existing STSTW, the direction and lighting periods should be controlled during ardeid breeding season (March to August) to minimise the potential indirect impact on Penfold Park Egretry and the ardeids flying over the existing STSTW.	Existing STSTW / Decommissioning / March to August	Contractor				√	-
8.10	7.3	It is anticipated that the construction of rock caverns would not have adverse impacts on groundwater in Nui Po Shan. Nonetheless, surface water level or groundwater level near the caverns will be closely monitored during the construction and operation stage.	Project site / Construction and Operation Phase	Contractor and Operator		√	√		-
	Compensatory Planting								
8.8.4& 8.10.1	7.2.3	Compensatory planting would be provided at main and secondary portal areas, and along the access road.	Main portal, secondary portal, and along access road	Project Proponent	√	√			DEVB TC(W) No. 7/2015
8.8.4 & 8.10.1	7.2.3	To facilitate successful planting, a detailed Woodland Compensation Plan should be prepared by local ecologists with at least 10 years relevant experience to form the basis of the proposed compensatory planting. The Woodland Compensation Plan should include implementation details, management requirement, as well as monitoring requirements (e.g. frequency and parameters) of the	Compensatory planting area (Main portal, secondary portal, and along access road) / pre-construction	Project Proponent	√	√			

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage [1]				Relevant Legislation & Guidelines
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		compensatory planting area. Approval of the Plan should be obtained from EPD at least three months before the prior to commencement of compensatory woodland planting.							
8.8.4 & 8.10.1	7.2.3	Upon the completion of planting, monitoring of the woodland compensation areas should be implemented, with maintenance works (e.g. irrigation, weeding, pruning, control of pests and diseases, replacement planting, repair of damage, etc.) conducted as necessary.	Compensatory planting area (Main portal, secondary portal, and along access road) / Operation	Project Proponent / CSTW Operator			√		
	Fisheries Impact								
9.6	8.2	Potential impacts on fisheries resources and fishing operations arising from the Project have been avoided and minimised by construction of a connection pipes to the existing emergency outfall of STSTW by trenchless method underneath Shing Mun River with the least water quality impact. In addition, the temporary effluent bypass event for THEES connection work would be synchronized within regular THEES maintenance. Therefore, additional water quality impact and fisheries impact from changes of water quality have been avoided. Furthermore, the THEES maintenance discharge would avoid the blooming season of algae (i.e. January to May) to minimise the potential water quality impacts. It is	Tolo Harbour /Construction and Operation Phase	Project Proponent / Contractor	√	√			-

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		recommended that any THEES maintenance period should be shortened as far as possible.							
9.6	8.2	Mitigation measures recommended in the water quality impact assessment for controlling water quality impact will also serve to protect fisheries from indirect impacts and ensure no unacceptable impact on fisheries resources and operations. For more detailed mitigation measures regarding water quality refer to Sections 5.7.2 and 5.13.2 of the EIA Report.	Construction and Operation Phase	Contractor and Operator		√	√		-
9.6	8.2	Relevant government departments including EPD, WSD and AFCD as well as key stakeholders for mariculture and fisheries in Tolo Harbour should be informed prior to the THEES maintenance / emergency discharge events.	Tolo Harbour / Construction and Operation Phase	Project Proponent		√	√		
	Landscape and Visual Impact								
Table 10.10	-	CM1 - Preservation of Existing Vegetation	Construction Sites/ Construction Phase	Project Proponent	√	√		√	DEVB TCW No. 7/2015 and latest Guidelines on Tree Preservation during Development issued by GLTM Section of DEVB
Table 10.10	-	CM2 - Transplanting of Affected Trees	Construction Sites/ Construction Phase	Project Proponent	√	√		√	DEVB TCW No. 7/2015 and the latest Guidelines on Tree Transplanting issued by GLTM Section of DEVB

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Table 10.10	-	CM3 - Compensatory Tree Planting	Construction Sites/ Construction Phase	Project Proponent	√	√		√	DEVB TCW No. 7/2015
Table 10.10	-	CM4 - Control of Night-time Lighting Glare	Construction Sites/ Construction Phase	Project Proponent	√	√		√	
Table 10.10	-	CM5 - Erection of Decorative Screen Hoarding	Construction Sites/ Construction Phase	Project Proponent	√	√		√	
Table 10.10	-	CM6 - Management of Construction Activities and Facilities	Construction Sites/ Construction Phase	Project Proponent	√	√		√	
Table 10.10	-	CM7 - Reinstatement of Temporarily Disturbed Landscape Areas	Construction Sites/ Construction Phase	Project Proponent	√	√		√	
Table 10.11	-	OM1 - Tree and Shrub Planting at the Temporary Project Magazine Site after Completion of Engineering Works	Temporary Project Magazine Site / Operation Phase	Project Proponent	√	√	√		
Table 10.11	-	OM2 - Aesthetically pleasing design of Aboveground Structures	Tunnel Portals, Administration Building, Ventilation Buildings, Electrical Substations and Ventilation Shaft / Operation Phase	Project Proponent	√	√	√		

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Table 10.11	-	OM3 - Aesthetically pleasing design of Highways Structures	Access Road to Ventilation Shaft / Operation Phase	Highways Department	√	√	√		
Table 10.11	-	OM4 - Reprovision of Cycle Track	Cycle track / Operation Phase	Highways Department	√	√	√		
Table 10.11	-	OM5 - Provision of Green Roof	Administration Building and Ventilation Buildings / Operation Phase	Project Proponent	√	√	√		
Table 10.11	-	OM6 - Provision of Buffer Planting	Main and Secondary Portal Areas / Operation Phase	Project Proponent	√	√	√		
Table 10.11	-	OM7 - Hydroseeding on the disturbed ground surface after demolition works prior to future redevelopment of the existing STSTW	Existing STSTW / Operation Phase	Lands Department (LandsD) or future development agent in existing STSTW	√	√	√		
Table 10.11	-	OM8 - Woodland Mix Planting on Soil Slopes	Soil Slopes / Operation Phase	Project Proponent	√	√	√		

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	Cultural Heritage Impact								
11.5.1.1	10.1.1	No potential direct or indirect impact to cultural heritage resource is anticipated, and therefore no mitigation measures are required.	N/A	N/A					EIAO EIAO-TM Antiquities and Monuments Ordinance Guidelines for Cultural Heritage Impact Assessment
	Wastes Management Implications								
12.6.2	11.2.2	Appropriate waste handling, transportation and disposal methods for all waste arising generated during the construction works for the Project should be implemented to ensure that construction wastes do not enter the nearby streams or drainage channel. It is anticipated that adverse impacts would not arise on the construction site, provided that good site practices are strictly followed. Recommendations for good site practices during the construction activities include: • Nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility.	Project Site Area / Construction Phase	Contractor		√		√	Waste Disposal Ordinance

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		• Training of site personnel in proper waste management and chemical waste handling procedures. • Provision of sufficient waste reception/ disposal points, of a suitable vermin-proof design that minimises windblown litter. • Arrangement for regular collection of waste for transport off-site and final disposal. • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. • A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed. • A Waste Management Plan should be prepared and should be submitted to the Engineer for approval. One may make reference to ETWB TCW No. 19/2005 for details. In order to monitor the disposal of C&D material at landfills and public filling areas, as appropriate, and to control fly tipping, a trip-ticket system should be included as one of the contractual								

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		requirements to be implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. One may make reference to DEVB TCW No.6/2010 for details.							
12.6.3	11.2.3	Good management and control of construction site activities / processes can minimise the generation of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Segregate and store different types of construction related waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Provide separate labelled bins to segregate recyclable waste such as aluminium cans from other general refuse generated by the work force, and to encourage collection by individual collectors. • Any unused chemicals or those with remaining functional capacity shall be recycled. • Maximising the use of reusable steel formwork to reduce the amount of C&D material. • Prior to disposal of C&D waste, it is recommended that wood, steel	Project Site Area / Construction Phase	Contractor		√		√	Waste Disposal Ordinance

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		and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill. • On-site crushing and sorting facilities are being considered to reduce the rock size to fulfill the size requirements from relevant waste collection / transfer / disposal facilities; • Adopt proper storage and site practices to minimise the potential for damage to, or contamination of, construction materials. • Plan the delivery and stock of construction materials carefully to minimise the amount of surplus waste generated. • Adopt pre-cast construction method instead of cast-in-situ method for construction of concrete structures as much as possible; and • Minimise over ordering of concrete, mortars and cement grout by doing careful check before ordering. In addition to the above measures, other specific mitigation measures are recommended below to minimise environmental impacts during handling, transportation and disposal of wastes.							

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12.6.4	11.2.4	Storage of materials on site may induce adverse environmental impacts if not properly managed, recommendations to minimise the impacts include: • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers as much as practicable and water spraying system to prevent materials from wind-blown or being washed away; and • Different locations should be designated to stockpile each material to enhance reuse.	Project Site Area / Construction Phase	Contractor		√		√	-
12.6.4	11.2.4	Licensed waste haulers should be employed for the collection and transportation of waste generated. The following measures should be enforced to minimise the potential adverse impacts: • Remove waste in timely manner; • Waste collectors should only collect wastes prescribed by their permits; • Impacts during transportation, such as dust and odour, should be	Project Site Area / Construction Phase	Contractor		√		√	Waste Disposal Ordinance Waste Disposal (Charges for Disposal of Construction Waste) Regulation Land (Miscellaneous Provisions) Ordinance

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		mitigated by the use of covered trucks or in enclosed containers; • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Waste should be disposed of at licensed waste disposal facilities; and • Maintain records of quantities of waste generated, recycled and disposed.							
12.6.4	11.2.4	Land transport will be used for transportation of excavated and stockpile materials. It is expected there will be 1260 vehicles per day for transporting waste during peak construction phase. The tentative transportation routings for the disposal of various types of wastes are shown in Table 12.4. The transportation routing may be changed subject to the traffic conditions. Nevertheless, it is anticipated that there is no adverse impact from the waste during transportation with the implementation of appropriated measures (e.g. using water-tight containers and covered trucks).	Transportation Route of Waste / Construction Phase	Contractor		√			-

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12.6.4	11.2.4	In order to monitor the disposal of C&D materials at PFRFs and landfills and to control fly-tipping, a trip-ticket system should be established in accordance with DEVB TCW No. 6/2010. A recording system for the amount of waste generated, recycled and disposed, including the disposal sites, should also be set up. Warning signs should be put up to remind the designated disposal sites. Close-circuited television should be installed at the vehicular entrance and exit of the site as additional measures to prevent fly-tipping.	Project Site Area / Construction Phase	Contractor		√		√	DEVB TCW No. 6/2010
12.6.4	11.2.5	In addition to the above general measures, other specific mitigation measures on handling the C&D materials and materials generated from site formation and demolition work are recommended below, which should form the basis of the WMP to be prepared by the contractor(s) in construction phase.	Project Site Area / Construction Phase	Contractor		√		√	Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site
12.6.5	11.2.5	In order to minimise the impact resulting from collection and transportation of C&D materials for off-site disposal, the excavated material arising from site formation and foundation works should be reused on-site as backfilling material and for landscaping works as far as practicable. Other mitigation requirements are listed below:	Project Site Area / Construction Phase	Contractor		√		√	Waste Disposal Ordinance ETWB TCW No.19/2005 DEVB TCW No. 6/2010

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		• A WMP, which becomes part of the EMP, should be prepared in accordance with ETWB TCW No.19/2005; • A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be adopted for easy tracking; and • In order to monitor the disposal of C&D materials at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be adopted (refer to DEVB TCW No. 6/2010). It is recommended that specific areas should be provided by the Contractors for sorting and to provide temporary storage areas (if required) for the sorted materials.							
12.6.5	11.2.5	The Contactor should prepare and implement an EMP in accordance with ETWB TCW No.19/2005, which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should	Project Site Area / Construction Phase	Contractor		√			ETWB TCW No.19/2005

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		be submitted to the Engineer for approval. The Contractor should implement waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor, preferably on a monthly basis.							
12.6.5	11.2.5	All surplus C&D materials arising from or in connection with construction works should become the property of the Contractor when it is removed unless otherwise stated. The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and promptly removing all sorted and process materials arising from the construction activities to minimise temporary stockpiling on-site. The system should be included in the EMP identifying the source of generation, estimated quantity, arrangement for on-site sorting, collection, temporary storage areas and frequency of collection by recycling Contractors or frequency of removal off-site.	Project Site Area / Construction Phase	Contractor		√		√	-
12.6.6	11.2.6	The practices of good housekeeping for CSTW listed below should be followed to ameliorate any odour impact from handling, collection, transportation and disposal of sludge:	Operation Phases	Operator			√		Waste Disposal Ordinance

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		• Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge should be transported to the STF by water-tight containers to avoid Hydrogen Sulphide (H_2S)/odour emission and ingress of water into the containers which would lower the sludge dryness during transportation • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly							

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		• Sludge trucks and containers should be washed thoroughly before leaving the CSTW to avoid any odour nuisance during transportation							
12.6.6	11.2.6	In addition, all wastewater generated from the sludge dewatering process and all contaminated water from the cleaning operations recommended for odour control will be diverted to the relocated STSTW for proper treatment.	Operation Phases	Operator			√		Waste Disposal Ordinance
12.6.7	11.2.7	If chemical wastes are produced at the construction site or during operation, the Contractor during construction or the operator during operation will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to the licensed Chemical Waste Treatment Centre, or other	Construction and Operation Phases	Contractor / Operator		√	√		Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes

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					Des	C	O	Dec	
		licensed facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.							
12.6.8	11.2.8	Recycling of waste paper, aluminium cans and plastic bottles should be encouraged, it is recommended to place clearly labelled recycling bins at designated locations which could be accessed conveniently. Other general refuse should be separated from chemical and industrial waste by providing separated bins for storage to maximise the recyclable volume.	Construction and Operation Phases	Contractor / Operator		√	√		Public Health and Municipal Services Ordinance (Cap.132)
12.6.8	11.2.8	A reputable licensed waste collector should be employed to remove general refuse on a daily basis to minimise odour, pest and litter impacts.	Construction and Operation Phases	Contractor / Operator		√	√		Public Health and Municipal Services Ordinance (Cap. 132)
	Health Impact								
-	-	Not applicable.							

Appendix 4.1

Action and Limit Level

Action and Limit Level for Noise Monitoring

Monitoring Station	Action Level	Limit Level (dB(A))		
		0700-1900 hrs on normal weekdays	0700-2300 hrs on holidays (including Sundays); and 1900-2300 hrs on all days [2]	2300-0700 hrs of all days [2]
CM1	When one documented complaint is received	65 / 70 [1]	60 / 65 / 70 [3]	45 / 50 / 55 [3]
CM2(B)		65 / 70 [1]		
CM3		65 / 70 [1]		
CM4		75		
CM5		75		

Remark 1: Limit level of CM1, CM2(B), CM3 and DM3 reduce to 65 dB (A) during examination periods if any.

Remark 2: Construction noise during restricted hours is under the control of Noise Control Ordinance Limit Level to be selected based on Area Sensitivity Rating.

Remark 3: Limit Level for restricted hour monitoring shall act as reference level only. Investigation would be conducted on CNP compliance if exceedance recorded during restricted hour noise monitoring period.

Action and Limit Level for Air Quality Monitoring

Monitoring Locations	1-hour TSP Level in mg/m^3	
	Action Level	Limit Level
AM1	294	500
AM2	325	500
AM3(B)	360	500
AM4	297	500
AM5	349	500
ASR51	310	500

Appendix 4.2

Copies of Calibration Certificates

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report no.: 212769CA240201

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Materialab Consultants Ltd.
Project : Calibration Services

Details of Unit Under Test, UUT -

Description : Sound Level Meter
Manufacturer : Casella

	Meter	Microphone	Preamplifier
Model No. :	CEL-633A	CE-251	CEL-495
Serial No. :	1488272	4507	004064

Equipment ID : N/A
Next Calibration Date : 22-Jan-2025
Specification Limit : EN 61672-1: 2003 Class 1

Laboratory Information

Details of Reference Equipment -

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)
Equipment ID. : R-108-1

Date of Receipt : 16-Jan-2024
Date of Calibration : 23-Jan-2024
Calibration Location : Calibration Laboratory of FTS
Method Used : By direct comparison
Ambient Temperature : 20±2 °C
Relative Humidity : <80% R.H.

Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weigthing frequency response	4000Hz	1.0	2.6 to -0.6
	2000Hz	1.3	2.8 to -0.4
	1000Hz	0.1	1.1 to -1.1
	500Hz	-3.4	-1.8 to -4.6
	250Hz	-8.8	-7.2 to -10.0
	125Hz	-16.2	-14.6 to -17.6
	63Hz	-26.3	-24.7 to -27.7
Differential level linearity	94dB-104dB	0.0	± 0.6
	104dB-114dB	0.0	± 0.6

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast
4. The UUT does comply with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.
5 The values given in this Calibration Certificate only relate to unit under test and the values measured at the time of the test. Any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during tranportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

Checked by : _____ Date : 29/1-2024 Certified by : K.T. Leung Date : 1-2-2024

CA-R-297 (22/07/2009)

Leung Kwok Tai (Assistant Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report no.: 240751CA241730

CALIBRATION CERTIFICATE OF SOUND LEVEL METER

Client Supplied Information

Client : Materialab Consultants Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT -

Description : Sound Level Meter

Manufacturer : Casella

	Meter	Microphone	Preamplifier
Model No. :	CEL-633A	CE-251	CEL-495
Serial No. :	1488304	00995	003341

Equipment ID : N-62

Next Calibration Date : 17-Jul-2025

Specification Limit : EN 61672-1: 2003 Class 1

Laboratory Information

Details of Reference Equipment -

Description : B & K Acoustic Multifunction Calibrator 4226 (Traditional free field setting)

Equipment ID. : R-108-1

Date of Receipt : 15-Jul-2024

Date of Calibration : 18-Jul-2024

Calibration Location : Calibration Laboratory of FTS

Method Used : By direct comparison

Ambient Temperature : 20±2 °C

Relative Humidity : <80% R.H.

Calibration Results :

Parameters		Mean Value (dB)	Specification Limit(dB)
A-weigthing frequency response	4000Hz	1.3	2.6 to -0.6
	2000Hz	1.3	2.8 to -0.4
	1000Hz	0.0	1.1 to -1.1
	500Hz	-3.3	-1.8 to -4.6
	250Hz	-8.7	-7.2 to -10.0
	125Hz	-16.1	-14.6 to -17.6
	63Hz	-26.2	-24.7 to -27.7
Differential level linearity	94dB-104dB	0.1	± 0.6
	104dB-114dB	0.0	± 0.6

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. For calibration: Reference SPL are 94, 104 & 114dB, range setting is 20-140dB & time weighting is fast
4. The UUT does comply with EN 61672-1: 2003 Class 1 sound level meter for the above measurement.
5 The values given in this Calibration Certificate only relate to unit under test and the values measured at the time of the test. Any uncertainties will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during tranportation, overloading, mis-handling or the capability of any other laboratory to repeat the measurement.

Checked by : _____ Date : 18-7-2024 Certified by : K I Leung Date : 19-7-2024

CA-R-297 (22/07/2009)

Leung Kwok Tai (Assistant Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report no.: 240751CA241730(1)

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client Supplied Information

Client : Materialab Consultants Ltd.

Project : Calibration Services

Details of Unit Under Test, UUT -

Description : Sound Calibrator

Manufacturer : Casella (Model CEL-120/1)

Serial No. : 1677126

Equipment ID : N/A

Next Calibration Date : 16-Jul-2025

Specification Limit : EN 60942: 2003 Class 1

Laboratory Information

Details of Calibration Equipment -

Description : Reference Sound level meter

Equipment ID. : R-119-3

Date of Receipt : 15-Jul-2024

Date of Calibration : 17-Jul-2024

Calibration Location : Calibration Laboratory of FTS

Ambient Temperature : 20±2 °C

Method Used : By direct comparison

Relative Humidity : <80% R.H.

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	0.3 dB	±0.4dB
114dB	0.4 dB	

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. The equipment under test does comply with the specification limit.
4. The values given in this Calibration Certificate only relate to the unit-under-test and the values measured at the time of the test. Any uncertainties quoted will not include allowances for the environmental changes, variation and shock during transportation, or the capability of any other laboratory to repeat the measurement.

Checked by : _____ Date : 18-7-2024 Certified by : K T Leung Date : 19-7-2024

CA-R-297 (22/07/2009)

Leung Kwok Tai (Assistant Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report no. : 240029CA242014(11)

CALIBRATION CERTIFICATE OF DUST METER

Client : Fugro Technical Services Limited

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT -

Description : Laser Dust Monitor

Manufacturer : SIBATA

Model No. : LD-5R

Serial No. : 155717

Next Calibration Date : 13-Jun-2025

Laboratory Information

Details of Reference Equipment -

Description : Reference balance

Equipment ID. : C-065-5

Date of Calibration : 14-Jun-2024 Ambient Temperature : 30 °C

Calibration Location : Calibration Lab. of FTS

Method Used : By direct comparison the weight of dust particle trapped in a filter paper using high volume sampler (TSP method) for a certain period, with the reading of the UUT. They should be placed at the same location and powered on and off at the same time.

Calibration Results :

Reference concentration (mg/m^3)	Total count for 1 hour	CPM (Count per minute)
0.2438	5279	87.98
0.2650	5388	89.80
0.2044	5119	85.32

Remarks:

1. The equipment being used in this calibration is traceable to recognized National Standards.
2. The interpolation equation : Concentration (mg/m^3) = K x UUT reading (CPM) where K = 0.002711
3. Correlation coefficient (r) : 0.9980

Checked by : _____ Date : 15-8-2014 Certified by : _____ Date : 15-8-2014

CA-R-297 (22/07/2009)

Leung Kwok Tai (Assistant Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Laser dust monitor Information

Model:	Sibata LD-5R
Serial No:	155717
Performance Check Date:	14 Jun 2024
Validity of Performance Check:	14 Jun 2025

High Volume Sampler Information

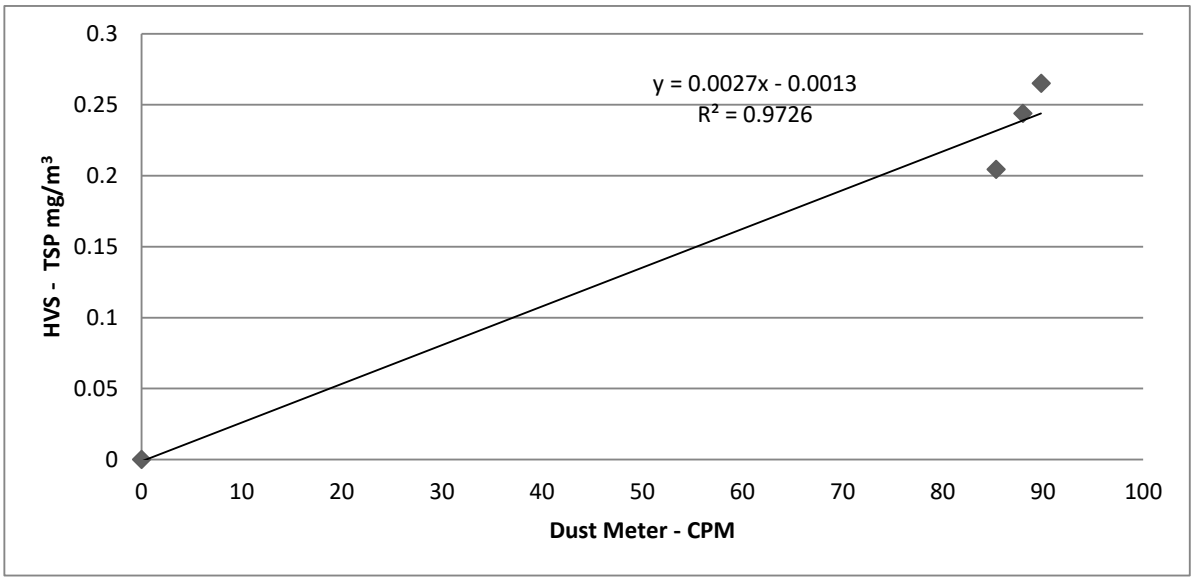
Model:	Tisch TE-5170
Serial No:	4350
Method Used:	By direct comparison the weight of dust particle trapped in a filter paper using HVS (TSP method) for a certain period, with the reading of the Unit under test. They should be paced at the same location and powered on and off at the same time.

Results:

Mean Pressure:	1006
Mean Temp:	29.7

	Zero Check	1st Test	2nd Test	3rd Test
HVS - Concentration in mg/m^3:	0	0.2438	0.2650	0.2044
Dust Meter - CPM	0	88.0	89.8	85.3

*Filter paper weighting was conducted by HOKLAS accredited laboratory



Remarks:

1. K-Factor = 0.002711
2. Correlation coefficient (r) = 0.9980

Calibrated by : Eve Ma Date : 14 Jun 2024 Supervised by : Felix Fong Date : 15 Jun 2024
(Assistant Technical Officer) (Technical Officer)

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report no. : 240029CA242014(6)

CALIBRATION CERTIFICATE OF DUST METER

Client : Fugro Technical Services Limited

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT -

Description	: Laser Dust Monitor
Manufacturer	: SIBATA
Model No.	: LD-5R
Serial No.	: 620407
Next Calibration Date	: 13-Jun-2025

Laboratory Information

Details of Reference Equipment -

Description	: Reference balance
Equipment ID.	: C-065-5
Date of Calibration	: 14-Jun-2024 Ambient Temperature : 30 °C
Calibration Location	: Calibration Lab. of FTS
Method Used	: By direct comparison the weight of dust particle trapped in a filter paper using high volume sampler (TSP method) for a certain period, with the reading of the UUT. They should be placed at the same location and powered on and off at the same time.

Calibration Results :

Reference concentration (mg/m^3)	Total count for 1 hour	CPM (Count per minute)
0.2438	5764	96.07
0.2650	5892	98.20
0.2044	5348	89.13

Remarks:

1. The equipment being used in this calibration is traceable to recognized National Standards.
2. The interpolation equation : Concentration (mg/m^3) = K x UUT reading (CPM) where K = 0.002517
3. Correlation coefficient (r) : 0.9923

Checked by : _____ Date : 12-8-2024 Certified by : _____ Date : 15-8-2024

CA-R-297 (22/07/2009)

Leung Kwok Tai (Assistant Manager)

** End of Report **

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Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Laser dust monitor Information

Model:	Sibata LD-5R
Serial No:	620407
Performance Check Date:	14 Jun 2024
Validity of Performance Check:	14 Jun 2025

High Volume Sampler Information

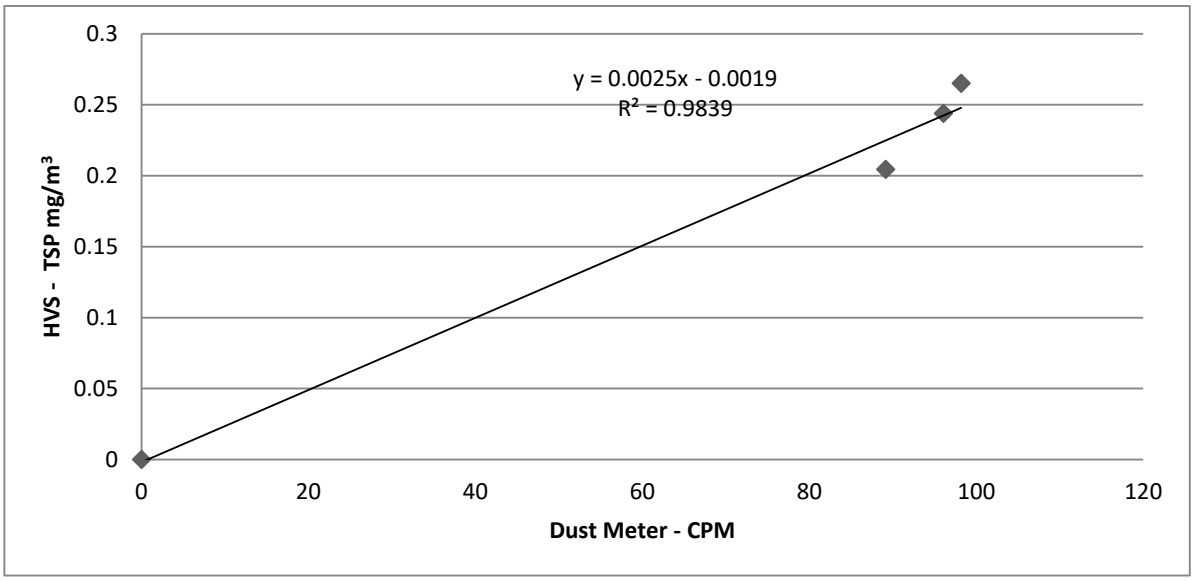
Model:	Tisch TE-5170
Serial No:	4350
Method Used:	By direct comparison the weight of dust particle trapped in a filter paper using HVS (TSP method) for a certain period, with the reading of the Unit under test. They should be paced at the same location and powered on and off at the same time.

Results:

Mean Pressure:	1006
Mean Temp:	29.7

	Zero Check	1st Test	2nd Test	3rd Test
HVS - Concentration in mg/m^3:	0	0.2438	0.2650	0.2044
Dust Meter - CPM	0	96.1	98.2	89.1

*Filter paper weighting was conducted by HOKLAS accredited laboratory



Remarks:

1. K-Factor = 0.002517
2. Correlation coefficient (r) = 0.9923

Calibrated by : Eve Ma Date : 14 Jun 2024 Supervised by : Felix Fong Date : 15 Jun 2024
(Assistant Technical Officer) (Technical Officer)

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Report no. : 240029CA242014(4)

CALIBRATION CERTIFICATE OF DUST METER

Client : Fugro Technical Services Limited

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT -

Description	: Laser Dust Monitor
Manufacturer	: SIBATA
Model No.	: LD-5R
Serial No.	: 620480
Next Calibration Date	: 13-Jun-2025

Laboratory Information

Details of Reference Equipment -

Description	: Reference balance
Equipment ID.	: C-065-5

Date of Calibration : 14-Jun-2024 Ambient Temperature : 30 °C

Calibration Location : Calibration Lab. of FTS

Method Used : By direct comparison the weight of dust particle trapped in a filter paper using high volume sampler (TSP method) for a certain period, with the reading of the UUT. They should be placed at the same location and powered on and off at the same time.

Calibration Results :

Reference concentration (mg/m^3)	Total count for 1 hour	CPM (Count per minute)
0.2438	4995	83.25
0.2650	5231	87.18
0.2044	4726	78.77

Remarks:

1. The equipment being used in this calibration is traceable to recognized National Standards.
2. The interpolation equation : Concentration (mg/m^3) = K x UUT reading (CPM) where K = 0.002862
3. Correlation coefficient (r) : 0.9909

Checked by : _____ Date : 12-8-2024 Certified by : K. T. Leung Date : 15-8-2024

CA-R-297 (22/07/2009) Leung Kwok Tai (Assistant Manager)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre
5 Lok Yi Street, Tai Lam
Tuen Mun, NT
Hong Kong

Laser dust monitor Information

Model:	Sibata LD-5R
Serial No:	620480
Performance Check Date:	14 Jun 2024
Validity of Performance Check:	14 Jun 2025

High Volume Sampler Information

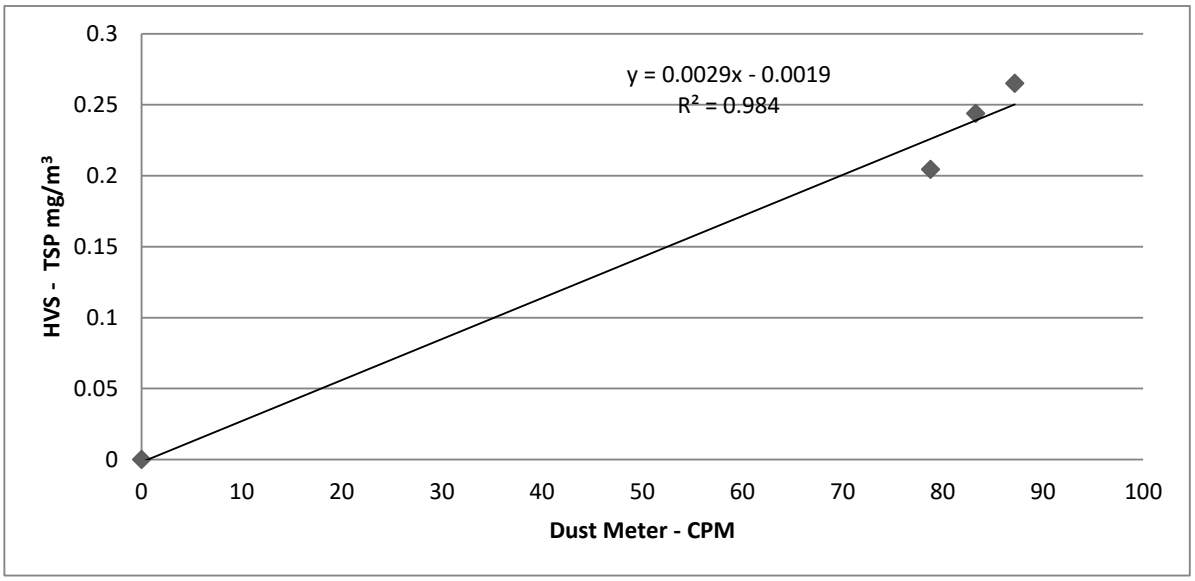
Model:	Tisch TE-5170
Serial No:	4350
Method Used:	By direct comparison the weight of dust particle trapped in a filter paper using HVS (TSP method) for a certain period, with the reading of the Unit under test. They should be paced at the same location and powered on and off at the same time.

Results:

Mean Pressure:	1006
Mean Temp:	29.7

	Zero Check	1st Test	2nd Test	3rd Test
HVS - Concentration in mg/m^3:	0	0.2438	0.2650	0.2044
Dust Meter - CPM	0	83.3	87.2	78.8

*Filter paper weighting was conducted by HOKLAS accredited laboratory



Remarks:

1. K-Factor = 0.002862
2. Correlation coefficient (r) = 0.9909

Calibrated by : Eve Ma Date : 14 Jun 2024 Supervised by : Felix Fong Date : 15 Jun 2024
(Assistant Technical Officer) (Technical Officer)

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
Tel: (852) 2553 7101 FAX: (852) 2553 8711
E-Mail: info@innotechi.com Web: http://www.innotechi.com

創 新 科 儀 有 限 公 司
香港黃竹坑道 27 號甄沾記大廈 21 樓 D 室
電話: (852) 25537101 傳真: (852) 2553 8711
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Calibration Report

Report Number: 240730-CSA-YP-P01
Customer Name: China State – Alchmex Joint Venture
Unit-Under-Test: Aeroqual AQS1
Serial Number: 17082022-2139 (AQS1 main body)
2206091-003 (NO_2 sensor 0 – 0.5 ppm)
Calibration Date: 30 July 2024
Temperature: 26.6 °C %RH: 59.7 %

Standard Used:

Standard	Make/ Model	Serial Number	Calibration Date
52.5 ppm NO in N_2	Scientific Gas	ER0005215	23 Jan 2023
Dynamic Calibrator	Teledyne API, T700	1506	13 Jun 2024
Flowmeter	MesaLabs, Defender 530-L	211426	03 Oct 2023

** All our calibration gases are traceable to National Standards-this is maintained by our gas suppliers.*

** NO_2 gas is prepared by Gas Phase Titration method (GPT). NO is mixed with known amount of O_3, which is generated by T700 to produce NO_2.*

Test Result – Sample flow rate:

NO_2 sample flow rate (sccm)	Measured Flow Rate (sccm)	Result
60	57.8	PASS

** NO_2 sample flow rate: 60 +/- 5 sccm*

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
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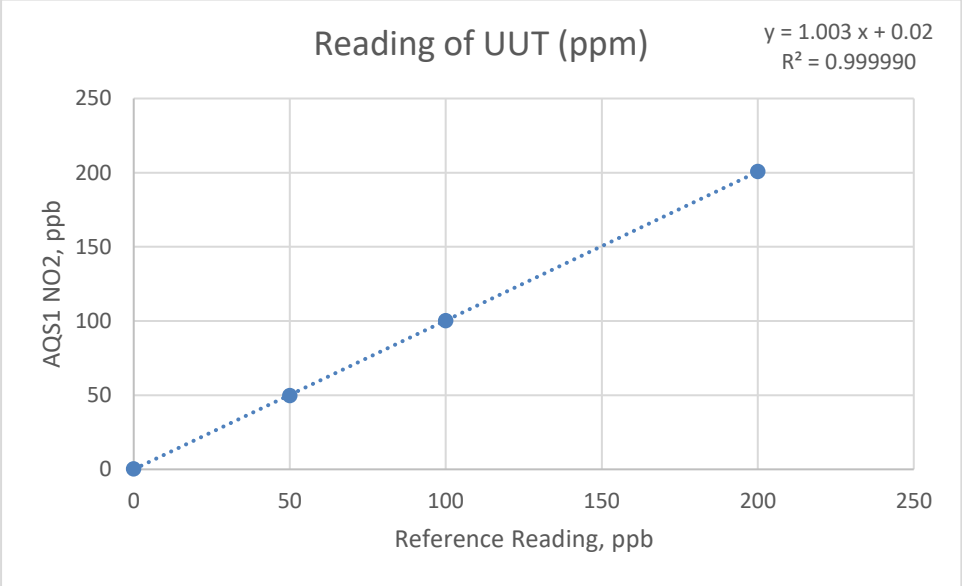
電郵: info@innotechi.com 網址: http://www.innotechi.com

Test Result – Concentration:

Reference Set Point (ppm)	Reading of UUT (ppm)	Result
Zero	0.3	PASS
200	200.7	PASS
100	100.3	PASS
50	49.8	PASS

** Zero reading: 0 +/- 5 ppb*

** Span reading: 200 +/- 10 ppb*



Calibrated by: Pang Yee Yam Date: 31 Jul 2024

*** End of report ***

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
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電話: (852) 25537101 傳真: (852) 2553 8711
電郵: info@innotechi.com 網址: http://www.innotechi.com

Calibration Report

Report Number: 240730-CSA-YP-P04
Customer Name: China State – Alchmex Joint Venture
Unit-Under-Test: Aeroqual AQS1
Serial Number: 17082022-2140A (AQS1 main body)
2206091-016 (NO_2 sensor 0 – 0.5 ppm)
Calibration Date: 8 Aug 2024
Temperature: 25.9 °C %RH: 55.3 %

Standard Used:

Standard	Make/ Model	Serial Number	Calibration Date
52.5 ppm NO in N_2	Scientific Gas	ER0005215	23 Jan 2023
Dynamic Calibrator	Teledyne API, T700	1506	13 Jun 2024
Flowmeter	MesaLabs, Defender 530-L	211426	03 Oct 2023

** All our calibration gases are traceable to National Standards-this is maintained by our gas suppliers.*

** NO_2 gas is prepared by Gas Phase Titration method (GPT). NO is mixed with known amount of O_3, which is generated by T700 to produce NO_2.*

Test Result – Sample flow rate:

NO_2 sample flow rate (sccm)	Measured Flow Rate (sccm)	Result
60	59.7	PASS

** NO2 sample flow rate: 60 +/- 5 sccm*

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
Tel: (852) 2553 7101 FAX: (852) 2553 8711
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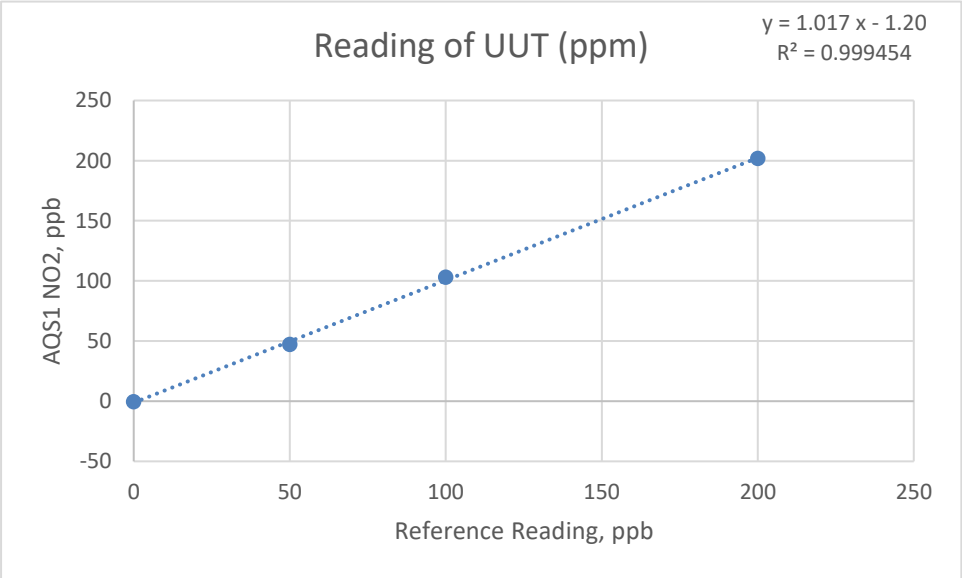
Test Result – Concentration:

Reference Set Point (ppm)	Reading of UUT (ppm)	Result
Zero	-0.5	PASS
200	201.8	PASS
100	102.9	PASS
50	47.2	PASS

** Zero reading: 0 +/- 5 ppb*

** Span reading: 200 +/- 10 ppb*



Calibrated by: Pang Yee Yam Date: 9 Aug 2024

*** End of report ***

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
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電話: (852) 25537101 傳真: (852) 2553 8711
電郵: info@innotechi.com 網址: http://www.innotechi.com

Calibration Report

Report Number: 240730-CSA-YP-P02
Customer Name: China State – Alchmex Joint Venture
Unit-Under-Test: Aeroqual AQS1
Serial Number: 17082022-2141 (AQS1 main body)
2206091-014 (NO_2 sensor 0 – 0.5 ppm)
Calibration Date: 30 July 2024
Temperature: 26.6 °C %RH: 59.7 %

Standard Used:

Standard	Make/ Model	Serial Number	Calibration Date
52.5 ppm NO in N_2	Scientific Gas	ER0005215	23 Jan 2023
Dynamic Calibrator	Teledyne API, T700	1506	13 Jun 2024
Flowmeter	MesaLabs, Defender 530-L	211426	03 Oct 2023

** All our calibration gases are traceable to National Standards-this is maintained by our gas suppliers.*

** NO_2 gas is prepared by Gas Phase Titration method (GPT). NO is mixed with known amount of O_3, which is generated by T700 to produce NO_2.*

Test Result – Sample flow rate:

NO_2 sample flow rate (sccm)	Measured Flow Rate (sccm)	Result
60	59.8	PASS

** NO2 sample flow rate: 60 +/- 5 sccm*

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
Tel: (852) 2553 7101 FAX: (852) 2553 8711
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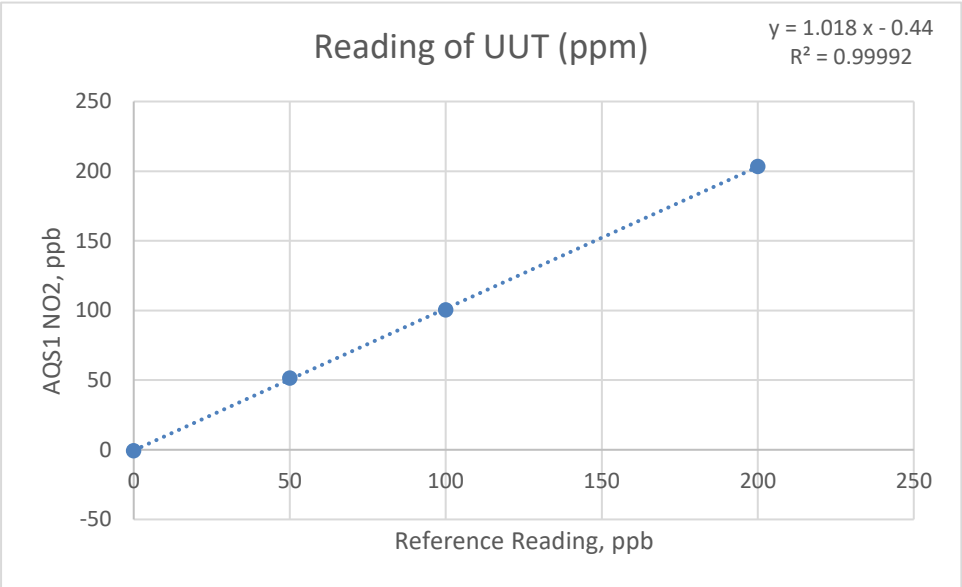
電郵: info@innotechi.com 網址: http://www.innotechi.com

Test Result – Concentration:

Reference Set Point (ppm)	Reading of UUT (ppm)	Result
Zero	-0.7	PASS
200	203.3	PASS
100	100.4	PASS
50	51.4	PASS

** Zero reading: 0 +/- 5 ppb*

** Span reading: 200 +/- 10 ppb*



Calibrated by: Pang Yee Yam Date: 31 Jul 2024

*** End of report ***

InnoTech Instrumentation Co., Limited
Unit D, 21/F, Yan's Tower, 27 Wong Chuk Hang Road, Hong Kong
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E-Mail: info@innotechi.com Web: http://www.innotechi.com

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電話: (852) 25537101 傳真: (852) 2553 8711
電郵: info@innotechi.com 網址: http://www.innotechi.com

Calibration Report

Report Number: 240730-CSA-YP-P03
Customer Name: China State – Alchmex Joint Venture
Unit-Under-Test: Aeroqual AQS1
Serial Number: 17082022-2142 (AQS1 main body)
2111252-014 (NO_2 sensor 0 – 0.5 ppm)
Calibration Date: 30 July 2024
Temperature: 26.6 °C %RH: 59.7 %

Standard Used:

Standard	Make/ Model	Serial Number	Calibration Date
52.5 ppm NO in N_2	Scientific Gas	ER0005215	23 Jan 2023
Dynamic Calibrator	Teledyne API, T700	1506	13 Jun 2024
Flowmeter	MesaLabs, Defender 530-L	211426	03 Oct 2023

** All our calibration gases are traceable to National Standards-this is maintained by our gas suppliers.*

** NO_2 gas is prepared by Gas Phase Titration method (GPT). NO is mixed with known amount of O_3, which is generated by T700 to produce NO_2.*

Test Result – Sample flow rate:

NO_2 sample flow rate (sccm)	Measured Flow Rate (sccm)	Result
60	59.7	PASS

** NO2 sample flow rate: 60 +/- 5 sccm*

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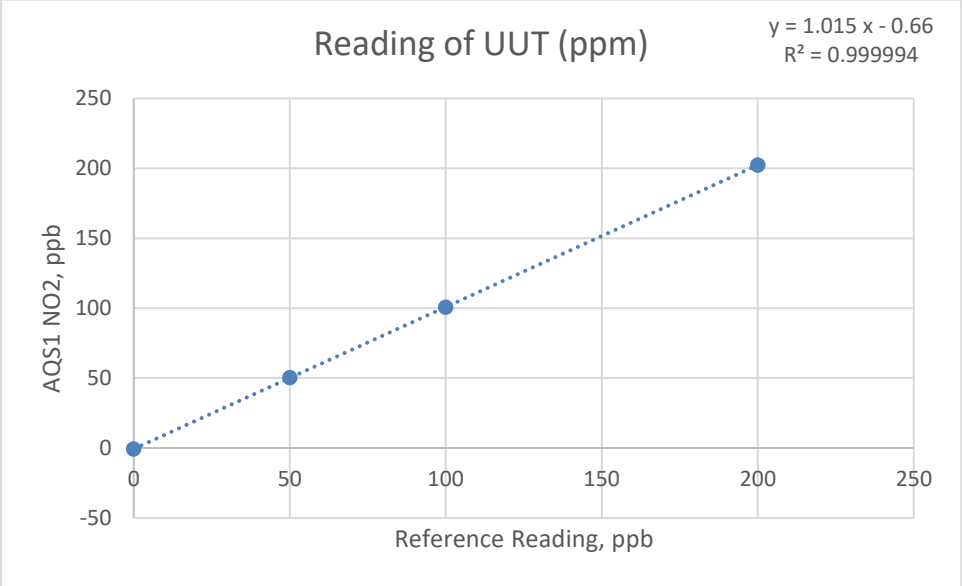
電郵: info@innotechi.com 網址: http://www.innotechi.com

Test Result – Concentration:

Reference Set Point (ppm)	Reading of UUT (ppm)	Result
Zero	-0.8	PASS
200	202.4	PASS
100	100.7	PASS
50	50.4	PASS

** Zero reading: 0 +/- 5 ppb*

** Span reading: 200 +/- 10 ppb*



Calibrated by: Pang Yee Yam Date: 31 Jul 2024

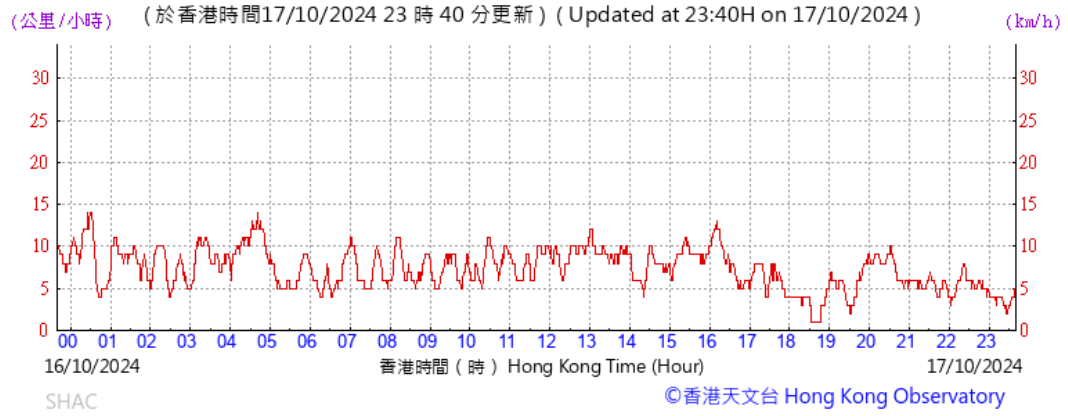
*** End of report ***

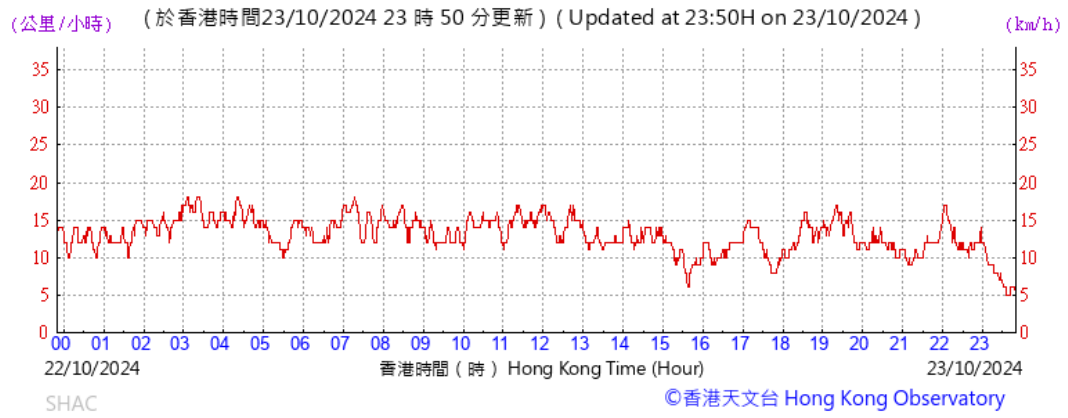
Appendix 4.3

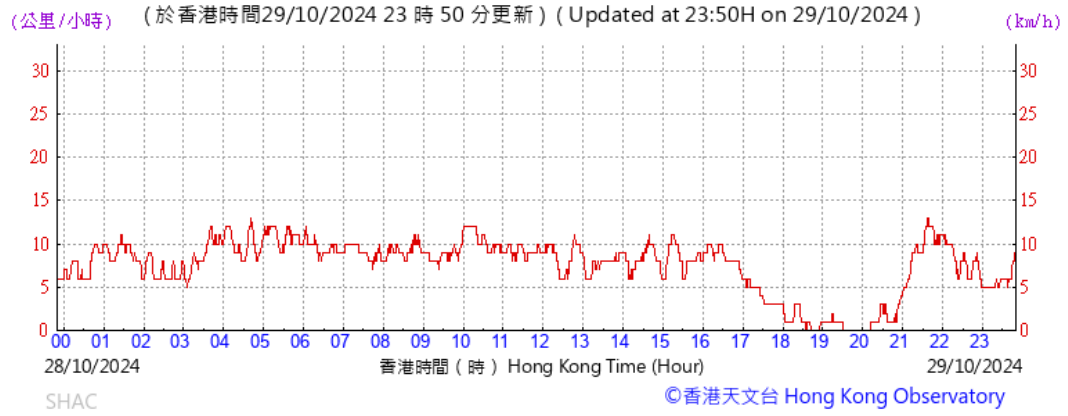
Wind data extracted from Sha Tin and

Tsing Yi HKO Automatic Weather Stations

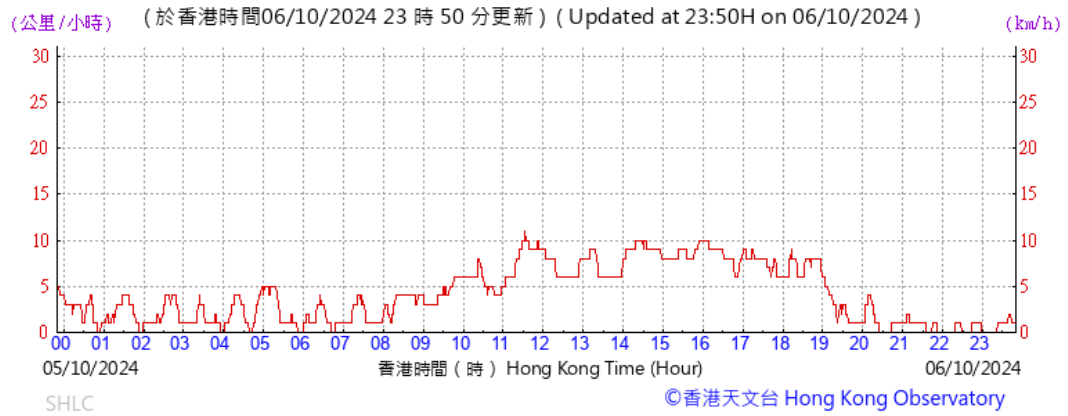
Wind data extracted from Sha Tin HKO Automatic Weather Stations

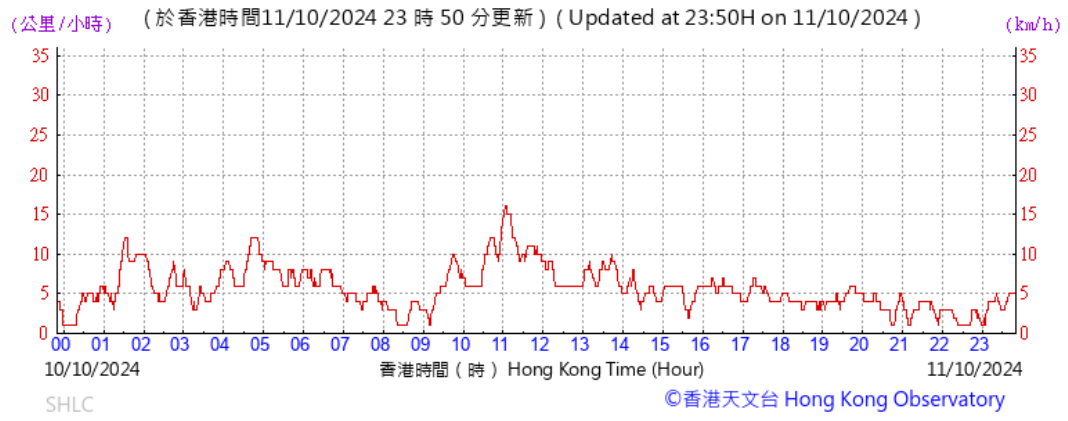


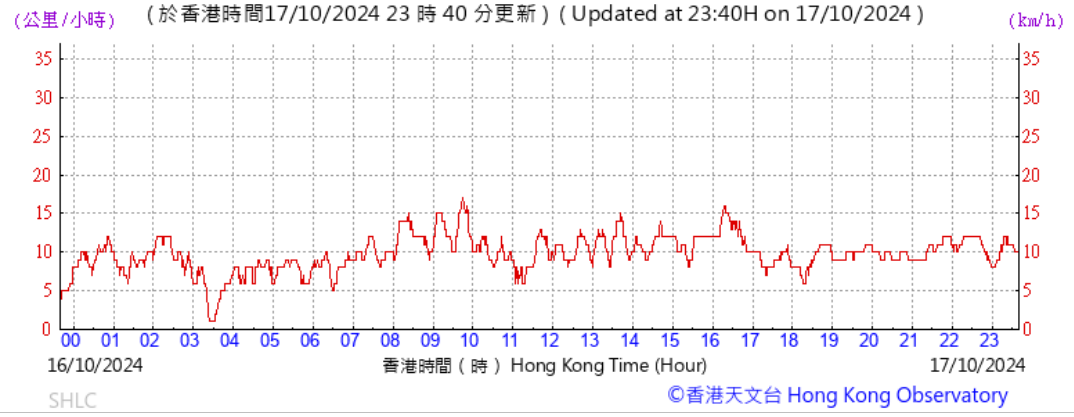




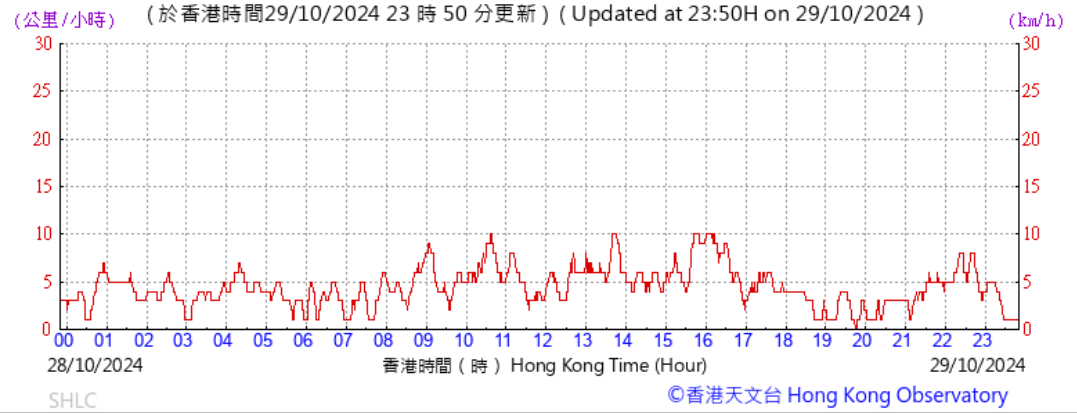
Wind data extracted from Tsing Yi HKO Automatic Weather Stations








(公里/小時)
(於香港時間23/10/2024 23 時 50 分更新) (Updated at 23:50H on 23/10/2024)
(km/h)
45
40
35
30
25
20
15
10
5
0
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
22/10/2024
香港時間 (時) Hong Kong Time (Hour)
23/10/2024
SHLC
©香港天文台 Hong Kong Observatory


(公里/小時)
(於香港時間29/10/2024 23 時 50 分更新) (Updated at 23:50H on 29/10/2024)
(km/h)
30
25
20
15
10
5
0
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
28/10/2024
香港時間 (時) Hong Kong Time (Hour)
29/10/2024
SHLC
©香港天文台 Hong Kong Observatory

October 2024

	Hong Kong Observatory								King's Park	Waglan Island^	
Day	Mean Pressure (hPa)	Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)	Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)	Total Bright Sunshine (hours)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1	1005.2	34.2	30.9	27.8	21.6	58	78	0.0	***	***	***
2	1009.9	30.8	27.4	25.5	17.3	54	75	0.0	***	***	***
3	1013.2	29.4	26.1	23.3	14.6	49	74	0.0	***	***	***
4	1014.4	30.9	27.0	24.6	15.8	50	69	0.0	***	***	***
5	1013.3	31.5	27.9	25.5	20.0	63	80	0.0	***	***	***
6	1013.7	33.3	29.2	26.7	23.0	70	42	0.0	***	***	***
7	1014.4	32.9	29.3	27.3	22.2	66	60	0.0	***	***	***
8	1014.2	31.7	28.2	26.2	20.1	62	35	0.0	***	***	***
9	1013.5	27.4	26.4	25.2	20.1	68	83	Trace	***	***	***
10	1013.0	30.6	27.0	24.5	20.4	68	58	Trace	***	***	***
11	1013.7	27.5	25.3	23.2	21.3	79	84	8.7	***	***	***
12	1015.1	29.7	27.0	25.6	20.2	67	31	0.0	***	***	***
13	1014.5	30.2	27.5	25.9	22.2	73	65	0.0	***	***	***
14	1013.5	31.0	28.0	26.3	23.0	75	34	0.0	***	***	***
15	1013.6	30.9	28.1	26.6	23.3	75	77	0.0	***	***	***
16	1014.5	31.1	28.2	27.4	23.0	74	88	Trace	***	***	***
17	1013.9	29.7	27.8	27.1	23.3	77	85	Trace	***	***	***
18	1013.2	30.7	28.3	27.1	24.0	78	85	Trace	***	***	***
19	1014.1	33.7	29.2	26.4	23.9	74	43	0.0	***	***	***
20	1016.5	29.7	27.9	26.9	23.1	75	82	1.9	***	***	***
21	1015.0	31.5	27.8	26.4	22.9	75	69	Trace	***	***	***
22	1013.7	32.3	28.3	26.0	20.5	64	52	0.0	***	***	***
23	1012.4	28.4	25.7	23.4	16.4	57	81	0.0	***	***	***
24	1009.2	28.5	24.8	22.0	10.6	42	84	0.0	***	***	***
25	1006.7	29.4	26.0	22.9	13.2	45	78	0.0	***	***	***
26	1006.6	28.5	26.6	25.3	19.8	67	88	0.7	***	***	***
27	1009.3	29.2	27.3	25.9	22.0	73	77	Trace	***	***	***
28	1010.1	27.2	25.8	24.6	19.2	67	83	Trace	***	***	***
29	1011.1	26.7	25.3	23.7	19.1	69	86	Trace	***	***	***
30	1010.3	29.3	26.2	24.3	18.7	64	70	0.0	***	***	***
31	1006.0	30.6	27.1	24.1	16.4	52	41	0.0	***	***	***

*** *unavailable*

^ *Information of wind direction and wind speed for Waglan Island are based on automatic weather station data since August 1989*

Trace means rainfall less than 0.05 mm

Data Source: Hong Kong Observatory

Appendix 5.1

Monitoring Schedule for Reporting Month and Next Month

Project: **Contract No. CPW 01/2023 for Relocation of Sha Tin Sewage Treatment Works to Caverns**

Impact Monitoring Schedule (October 2024)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5 AQM
6	7	8	9	10 AQM NM NM (Evening & Night time)	11	12
13	14	15	16 AQM NM NM (Evening & Night time)	17	18	19
20	21 APS Performance Test	22 AQM NM NM (Evening & Night time) APS Performance Test	23 APS Performance Test	24 APS Performance Test	25	26
27	28 AQM NM NM (Evening & Night time)	29	30	31		

Project: **Contract No. CPW 01/2023 for Relocation of Sha Tin Sewage Treatment Works to Caverns**

Impact Monitoring Schedule (November 2024)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2 AQM
3	4	5	6	7	8 AQM, NM NM NM (Evening & Night time)	9
10	11 APS Performance Test	12 APS Performance Test	13 APS Performance Test	14 AQM NM NM (Evening & Night time)	15	16
17	18	19	20 AQM NM NM (Evening & Night time)	21	22	23
24	25	26 AQM NM NM (Evening & Night time)	27	28	29	30

Remarks

1. Actual monitoring may be subjected to change due to any safety concern or adverse weather condition
2. **AQM**: Air Quality Monitoring: 3 x 1-hour TSP Monitoring per 6 days
3. **APS Performance Test**: Monthly Air Purification System performance test
4. **NM**: Noise Monitoring: Leq (30 min) between 0700 and 1900 hours
5. **NM (Evening time)**: Additional noise monitoring will be carried out if construction works are extended to include works between 1900 and 2300 hours.
6. **NM (Night time)**: Additional noise monitoring will be carried out if construction works are extended to include works between 2300 and 0700 hours of next day.
7. Air Quality Monitoring Location: **AM1** (Ah Kung Kok Fishermen Village), **AM2** (Block H, Kam Tai Court), **AM3(B)** (Outside A Kung Kok Street Garden), **AM4** (Wellborn Kindergarten), **AM5** (The Neighbourhood Advice-Action Council Harmony Manor), **ASR51** (The Hong Kong Yaumati Ferry Company Ltd. Administrative Building),
8. Noise Monitoring Location: **CM1** (Wellborn Kindergarten), **CM2(B)** (Outside A Kung Kok Street Garden), **CM3** (S.K.H. Ma On Shan Holy Spirit Primary School), **CM4** (Ah Kung Kok Fishermen Village), **CM5** (The Neighbourhood Advice-Action Council Harmony Manor),
9. APS Performance Test Location: **ASR52** (North West Tsing Yi Interchange Maintenance Workshops), **ASR55** (Lantau Link Visitor Centre)

Appendix 5.2

Air Quality Monitoring Results and Graphical Presentations

AM1 - Ah Kung Kok Fishermen Village

Action Level ($\mu g/m^3$) - 294

Limit Level ($\mu g/m^3$) - 500

Date	Weather Condition	Time	Mass Concentration ($\mu g/m^3$)
05/10/2024	Fine	15:02	43
05/10/2024	Fine	16:02	48
05/10/2024	Fine	17:02	48
10/10/2024	Fine	15:01	50
10/10/2024	Fine	16:01	52
10/10/2024	Fine	17:01	52
16/10/2024	Fine	15:04	63
16/10/2024	Fine	16:04	63
16/10/2024	Fine	17:04	58
22/10/2024	Fine	15:00	81
22/10/2024	Fine	16:00	76
22/10/2024	Fine	17:00	92
28/10/2024	Cloudy	15:03	68
28/10/2024	Cloudy	16:03	66
28/10/2024	Cloudy	17:03	66

AM2 - Block H, Kam Tai Court

Action Level ($\mu g/m^3$) - 325

Limit Level ($\mu g/m^3$) - 500

Date	Weather Condition	Time	Mass Concentration ($\mu g/m^3$)
05/10/2024	Fine	14:47	29
05/10/2024	Fine	15:47	33
05/10/2024	Fine	16:47	33
10/10/2024	Fine	14:44	33
10/10/2024	Fine	15:44	38
10/10/2024	Fine	16:44	43
16/10/2024	Fine	14:47	40
16/10/2024	Fine	15:47	40
16/10/2024	Fine	16:47	35
22/10/2024	Fine	14:35	23
22/10/2024	Fine	15:35	15
22/10/2024	Fine	16:35	33
28/10/2024	Cloudy	14:49	48
28/10/2024	Cloudy	15:49	43
28/10/2024	Cloudy	16:49	43

AM3(B) - Outside A Kung Kok Street Garden

Action Level ($\mu g/m^3$) - 360

Limit Level ($\mu g/m^3$) - 500

Date	Weather Condition	Time	Mass Concentration ($\mu g/m^3$)
05/10/2024	Fine	9:46	27
05/10/2024	Fine	10:46	28
05/10/2024	Fine	11:46	23
10/10/2024	Fine	9:48	33
10/10/2024	Fine	10:48	35
10/10/2024	Fine	11:48	35
16/10/2024	Fine	9:52	41
16/10/2024	Fine	10:52	46
16/10/2024	Fine	11:52	49
22/10/2024	Fine	9:42	41
22/10/2024	Fine	10:42	52
22/10/2024	Fine	11:42	27
28/10/2024	Cloudy	9:54	52
28/10/2024	Cloudy	10:54	49
28/10/2024	Cloudy	11:54	49

AM4 - Wellborn Kindergarten

Action Level ($\mu g/m^3$) - 297

Limit Level ($\mu g/m^3$) - 500

Date	Weather Condition	Time	Mass Concentration ($\mu g/m^3$)
05/10/2024	Fine	13:55	17
05/10/2024	Fine	14:55	19
05/10/2024	Fine	15:55	19
10/10/2024	Fine	13:57	35
10/10/2024	Fine	14:57	30
10/10/2024	Fine	15:57	33
16/10/2024	Fine	13:56	38
16/10/2024	Fine	14:56	38
16/10/2024	Fine	15:56	35
22/10/2024	Fine	13:47	27
22/10/2024	Fine	14:47	19
22/10/2024	Fine	15:47	24
28/10/2024	Cloudy	13:55	41
28/10/2024	Cloudy	14:55	41
28/10/2024	Cloudy	15:55	35

AM5 - The NAAC Harmony Manor

Action Level ($\mu g/m^3$) - 349

Limit Level ($\mu g/m^3$) - 500

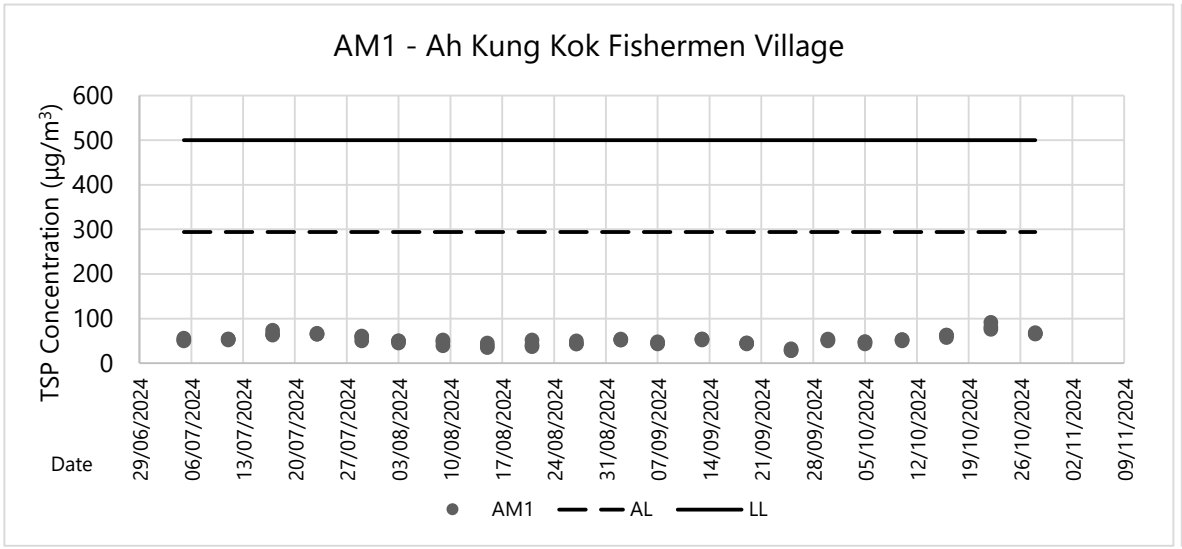
Date	Weather Condition	Time	Mass Concentration ($\mu g/m^3$)
05/10/2024	Fine	8:20	30
05/10/2024	Fine	9:20	37
05/10/2024	Fine	10:20	26
10/10/2024	Fine	8:23	25
10/10/2024	Fine	9:23	33
10/10/2024	Fine	10:23	35
16/10/2024	Fine	8:21	23
16/10/2024	Fine	9:21	30
16/10/2024	Fine	10:21	28
22/10/2024	Fine	8:17	38
22/10/2024	Fine	9:17	45
22/10/2024	Fine	10:17	40
28/10/2024	Cloudy	8:23	28
28/10/2024	Cloudy	9:23	38
28/10/2024	Cloudy	10:23	45

ASR51 - The Hong Kong Yaumati Ferry Company Ltd. Administrative Building

Action Level ($\mu g/m^3$) - 310

Limit Level ($\mu g/m^3$) - 500

Date	Weather Condition	Time	Mass Concentration ($\mu g/m^3$)
05/10/2024	Fine	8:46	111
05/10/2024	Fine	9:46	98
05/10/2024	Fine	10:46	96
10/10/2024	Fine	8:53	82
10/10/2024	Fine	9:53	94
10/10/2024	Fine	10:53	84
16/10/2024	Fine	10:11	70
16/10/2024	Fine	11:11	78
16/10/2024	Fine	12:11	80
22/10/2024	Fine	9:00	52
22/10/2024	Fine	10:00	47
22/10/2024	Fine	11:00	55
28/10/2024	Cloudy	9:11	68
28/10/2024	Cloudy	10:11	97
28/10/2024	Cloudy	11:11	86


AM1 - Ah Kung Kok Fishermen Village
TSP Concentration (µg/m³)
600
500
400
300
200
100
0
29/06/2024
06/07/2024
13/07/2024
20/07/2024
27/07/2024
03/08/2024
10/08/2024
17/08/2024
24/08/2024
31/08/2024
07/09/2024
14/09/2024
21/09/2024
28/09/2024
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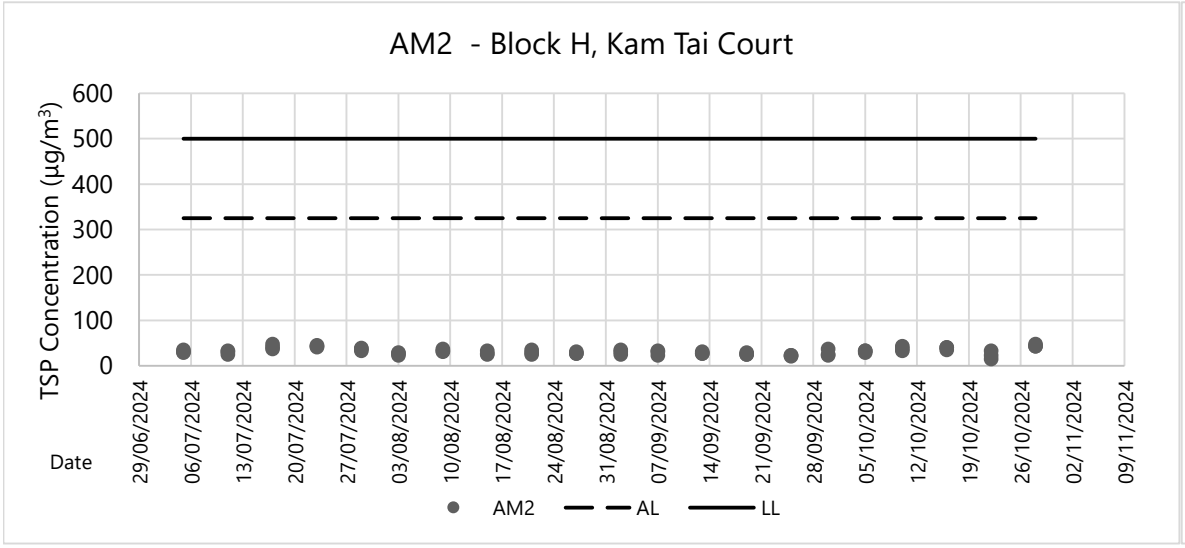
02/11/2024
09/11/2024
Date
AM1
AL
LL


AM2 - Block H, Kam Tai Court
TSP Concentration (µg/m³)
600
500
400
300
200
100
0
29/06/2024
06/07/2024
13/07/2024
20/07/2024
27/07/2024
03/08/2024
10/08/2024
17/08/2024
24/08/2024
31/08/2024
07/09/2024
14/09/2024
21/09/2024
28/09/2024
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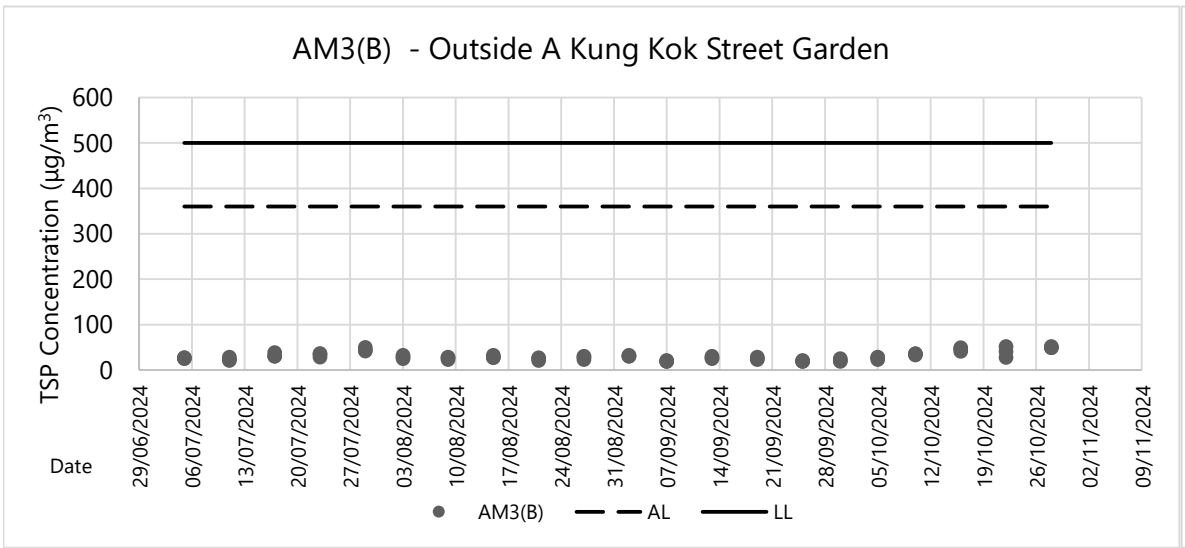
02/11/2024
09/11/2024
Date
AM2
AL
LL


AM3(B) - Outside A Kung Kok Street Garden
TSP Concentration (µg/m³)
600
500
400
300
200
100
0
29/06/2024
06/07/2024
13/07/2024
20/07/2024
27/07/2024
03/08/2024
10/08/2024
17/08/2024
24/08/2024
31/08/2024
07/09/2024
14/09/2024
21/09/2024
28/09/2024
05/10/2024
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19/10/2024
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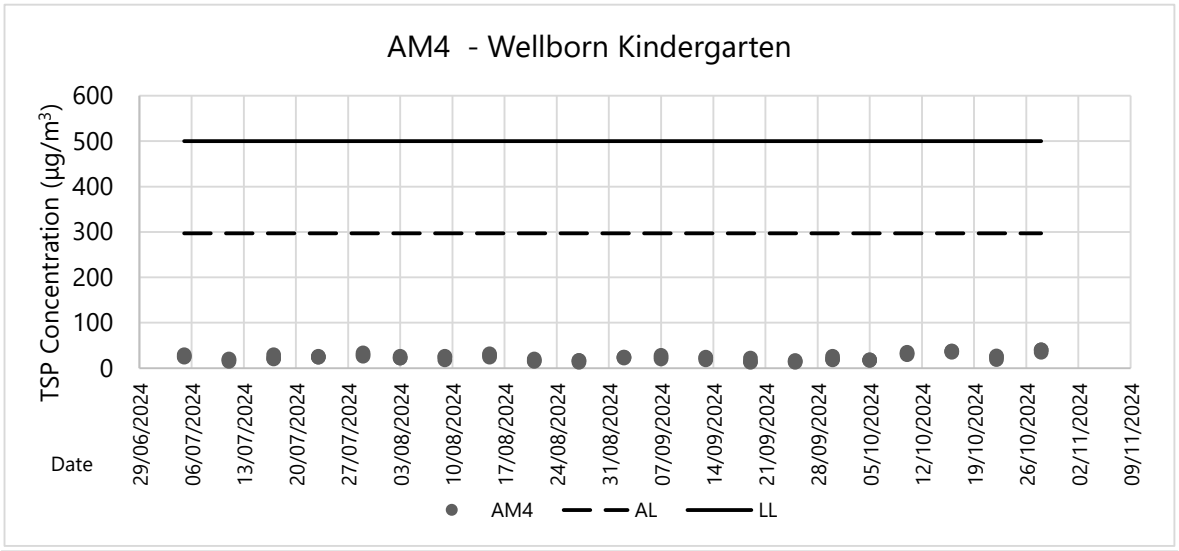
02/11/2024
09/11/2024
Date
AM3(B)
AL
LL


AM4 - Wellborn Kindergarten
TSP Concentration (µg/m³)
600
500
400
300
200
100
0
Date
29/06/2024
06/07/2024
13/07/2024
20/07/2024
27/07/2024
03/08/2024
10/08/2024
17/08/2024
24/08/2024
31/08/2024
07/09/2024
14/09/2024
21/09/2024
28/09/2024
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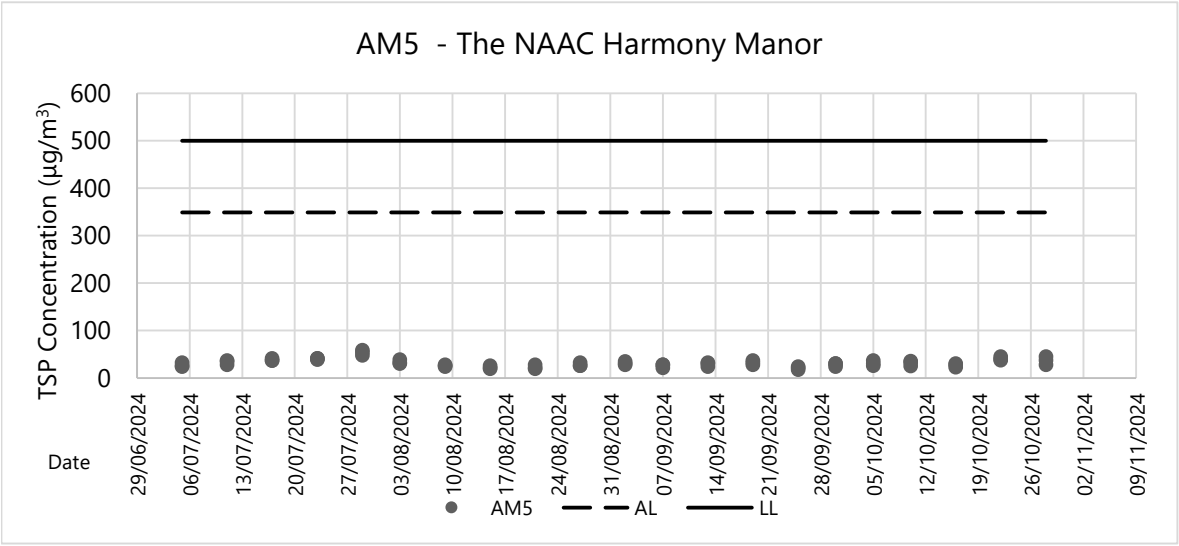
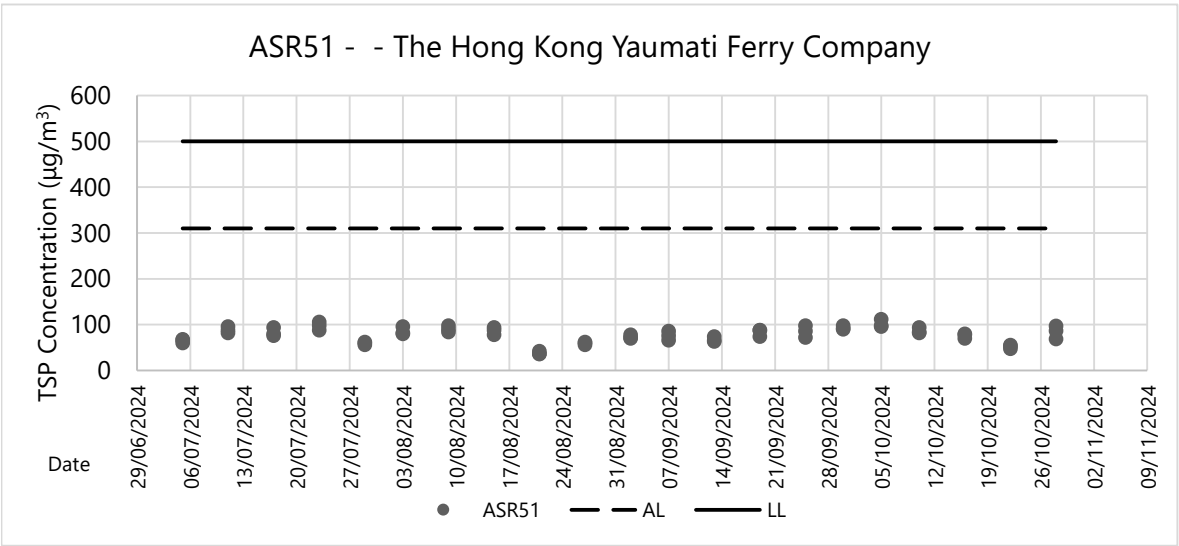
02/11/2024
09/11/2024
AM4
AL
LL


AM5 - The NAAC Harmony Manor
TSP Concentration (µg/m³)
600
500
400
300
200
100
0
Date
29/06/2024
06/07/2024
13/07/2024
20/07/2024
27/07/2024
03/08/2024
10/08/2024
17/08/2024
24/08/2024
31/08/2024
07/09/2024
14/09/2024
21/09/2024
28/09/2024
05/10/2024
12/10/2024
19/10/2024
26/10/2024
02/11/2024
09/11/2024
AM5
AL
LL


ASR51 - - The Hong Kong Yaumati Ferry Company
TSP Concentration (µg/m³)
600
500
400
300
200
100
0
Date
29/06/2024
06/07/2024
13/07/2024
20/07/2024
27/07/2024
03/08/2024
10/08/2024
17/08/2024
24/08/2024
31/08/2024
07/09/2024
14/09/2024
21/09/2024
28/09/2024
05/10/2024
12/10/2024
19/10/2024
26/10/2024
02/11/2024
09/11/2024
ASR51
AL
LL

Appendix 5.3

Noise Monitoring Results and Graphical Presentations

Day Time (0700 - 1900hrs on weekday)

Monitoring Location : CM1 - G/F, Wellborn Kindergarten

Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (30min)			Limit Level
				Leq dB(A)[2]	L90 dB(A)	L10 dB(A)	Leq[1]
10-10-2024	Fine	0.3	14:29	58.1	53.0	57.0	70
16-10-2024	Fine	0.4	14:22	57.9	52.5	56.5	70
22-10-2024	Fine	0.9	14:22	61.1	54.5	59.5	70
28-10-2024	Cloudy	0.5	14:25	56.9	51.5	55.0	70

Monitoring Location : CM2(B) - G/F, Outside A Kung Kok Street Garden

Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (30min)			Limit Level
				Leq dB(A)[2]	L90 dB(A)	L10 dB(A)	Leq[1]
10-10-2024	Fine	0.6	13:44	69.7	64.5	68.0	70
16-10-2024	Fine	0.5	13:46	65.3	60.5	63.5	70
22-10-2024	Fine	1.4	13:38	69.8	63.0	69.0	70
28-10-2024	Cloudy	0.4	13:48	64.8	59.5	63.0	70

Monitoring Location : CM3 - R/F, S.K.H. Ma On Shan Holy Spirit Primary School

Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (30min)			Limit Level
				Leq dB(A)	L90 dB(A)	L10 dB(A)	Leq[1]
10-10-2024	Fine	0.4	10:54	65.4	63.5	67.0	70
16-10-2024	Fine	0.5	10:52	64.8	62.5	66.0	70
22-10-2024	Fine	0.7	10:48	64.7	62.9	66.0	70
28-10-2024	Cloudy	0.6	10:54	63.6	61.5	65.0	70

Monitoring Location : CM4 - G/F, Ah Kung Kok Fishermen Village

Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (30min)			Limit Level
				Leq dB(A)[2]	L90 dB(A)	L10 dB(A)	Leq
10-10-2024	Fine	0.7	17:00	62.7	58.5	64.6	75
16-10-2024	Fine	0.5	15:06	60.9	58.0	63.0	75
22-10-2024	Fine	0.5	16:06	61.2	58.1	62.6	75
28-10-2024	Cloudy	0.4	16:04	60.2	57.6	62.0	75

Monitoring Location : CM5 - R/F, The Neighbourhood Advice-Action Council Harmony Manor

Date	Weather	Wind Speed (m/s)	Start Time	Noise Monitoring (30min)			Limit Level
				Leq dB(A)	L90 dB(A)	L10 dB(A)	Leq
10-10-2024	Fine	0.5	8:25	53.4	51.0	55.0	75
16-10-2024	Fine	0.7	8:28	56.1	54.5	58.0	75
22-10-2024	Fine	0.9	8:20	52.7	50.0	54.5	75
28-10-2024	Cloudy	0.5	8:27	55.3	53.0	57.0	75

1) Limit level was adjusted to 65dB(A) during examination period.
2) Noise results were calculated by +3 dB (A) correction for free-field measurement.

Evening Time (1900 - 2300hrs)

Monitoring Location : **CM4 - G/F, Ah Kung Kok Fishermen Village**

Date	Weather	Start Time	Noise Monitoring 5min in dB(A)			Mean Noise Level	Baseline Level Range (mean level)	Construction Noise Level (Baseline correction)	Major Construction Noise Source(s)	Other Noise Source(s)	Limit Level
			Leq[1]	L90	L10	Leq (5min) in dB(A)					dB(A)
10-10-2024	Fine	19:00	59.0	56.0	61.5	59.1	53.5-70.9 (mean:56.7)	55.0	nil.	Traffic	70
		19:05	59.2	56.0	61.5						
		19:10	59.1	56.5	61.0						
		19:15	58.9	55.5	61.0						
		19:20	59.1	56.5	61.0						
		19:25	59.4	56.5	61.5						
16-10-2024	Fine	19:00	59.4	56.5	62.0	59.9	53.5-70.9 (mean:56.7)	57.1	nil.	Traffic	70
		19:05	59.9	57.0	62.0						
		19:10	59.6	56.5	61.5						
		19:15	59.5	56.0	62.0						
		19:20	61.1	56.5	63.5						
		19:25	59.5	56.0	61.5						
22-10-2024	Fine	16:06	62.1	58.0	62.5	61.2	53.5-70.9 (mean:56.7)	59.3	nil.	Traffic	70
		16:11	60.0	58.0	62.0						
		16:16	60.7	58.0	62.0						
		16:21	59.9	57.5	61.5						
		16:26	62.4	58.0	64.0						
		16:31	61.2	59.0	63.0						
28-10-2024	Fine	19:00	58.0	55.5	60.0	58.1	53.5-70.9 (mean:56.7)	52.5	nil.	Traffic	70
		19:05	58.0	55.5	60.0						
		19:10	57.8	55.0	60.0						
		19:15	58.1	55.5	60.0						
		19:20	58.7	55.5	61.0						
		19:25	58.2	55.5	60.5						

Remarks:

1) Noise results were calculated by +3 dB (A) correction for free-field measurement.

Night Time (2300 - 0700hrs on next day)

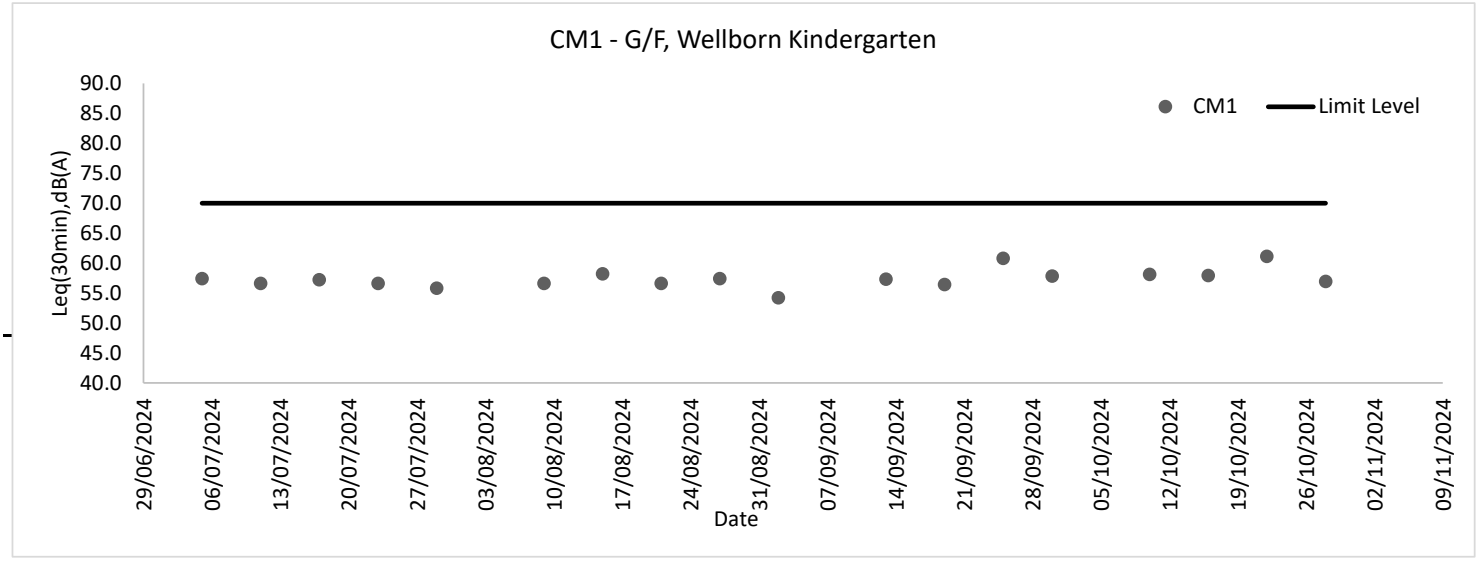
Monitoring Location : **CM4 - G/F, Ah Kung Kok Fishermen Village**

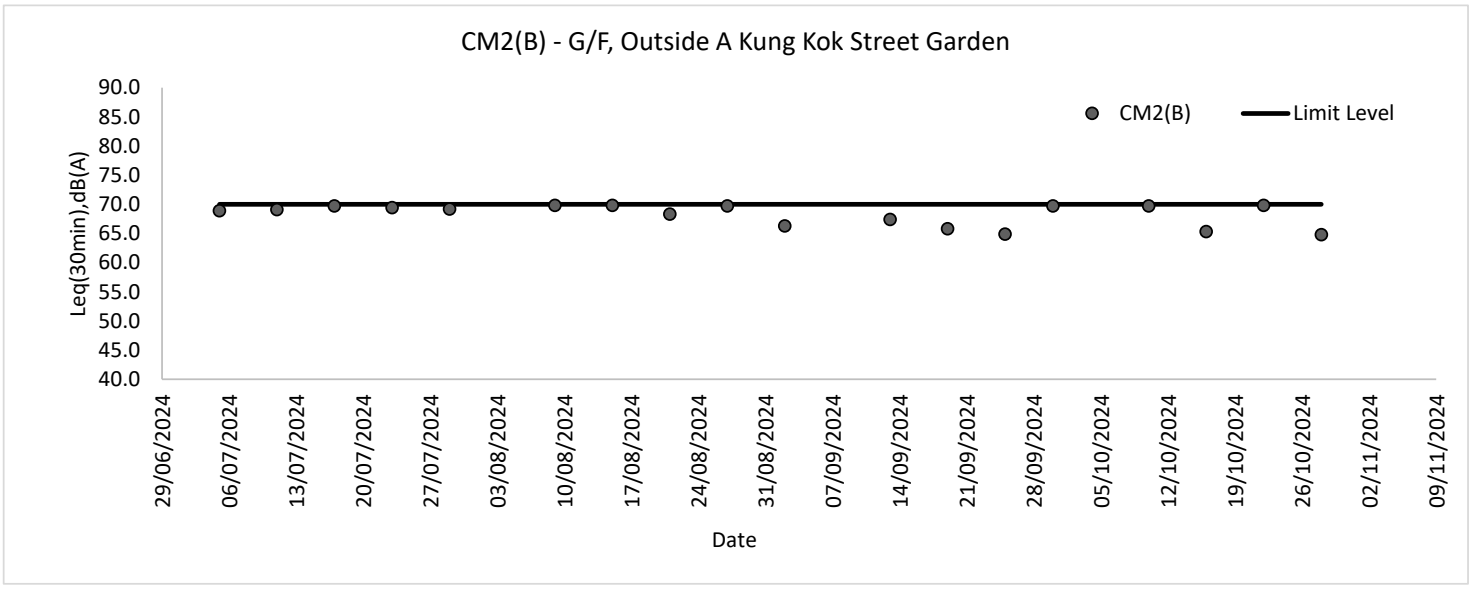
Date	Weather	Start Time	Noise Monitoring 5min in dB(A)			Mean Noise Level[2]	Baseline Level Range (mean level)	Construction Noise Level (Baseline correction)	Major Construction Noise Source(s)	Other Noise Source(s)	Limit Level
			Leq[1]	L90	L10	Leq (5min) in dB(A)					dB(A)
10-10-2024	Fine	23:00	56.7	52.0	59.5	56.4	45.6-63.2 (mean 52.8)	54.0	nil.	Traffic	55
		23:05	55.8	52.5	58.5						
		23:10	56.0	52.0	58.5						
		23:15	55.6	52.0	58.0						
		23:20	56.4	52.0	59.0						
		23:25	57.8	54.0	60.5						
17-10-2024	Fine	0:00	56.3	50.0	59.5	56.4	45.6-63.2 (mean 52.8)	53.9	nil.	Traffic	55
		0:05	56.9	51.5	60.5						
		0:10	56.7	51.0	60.0						
		0:15	56.9	50.5	60.5						
		0:20	55.6	50.5	58.5						
		0:25	55.7	49.0	58.5						
22-10-2024	Fine	23:01	56.0	51.0	59.0	55.5	45.6-63.2 (mean 52.8)	52.2	nil.	Traffic	55
		23:06	55.6	50.5	58.5						
		23:11	55.4	49.5	58.5						
		23:16	55.3	49.5	58.0						
		23:21	55.1	50.5	58.0						
		23:26	55.5	51.0	58.5						
28-10-2024	Fine	23:00	54.8	51.0	57.0	54.9	45.6-63.2 (mean 52.8)	50.7	nil.	Traffic	55
		23:05	55.1	50.0	58.5						
		23:10	54.6	50.0	57.5						
		23:15	54.6	50.0	57.0						
		23:20	55.0	50.5	57.5						
		23:25	55.0	50.5	58.0						

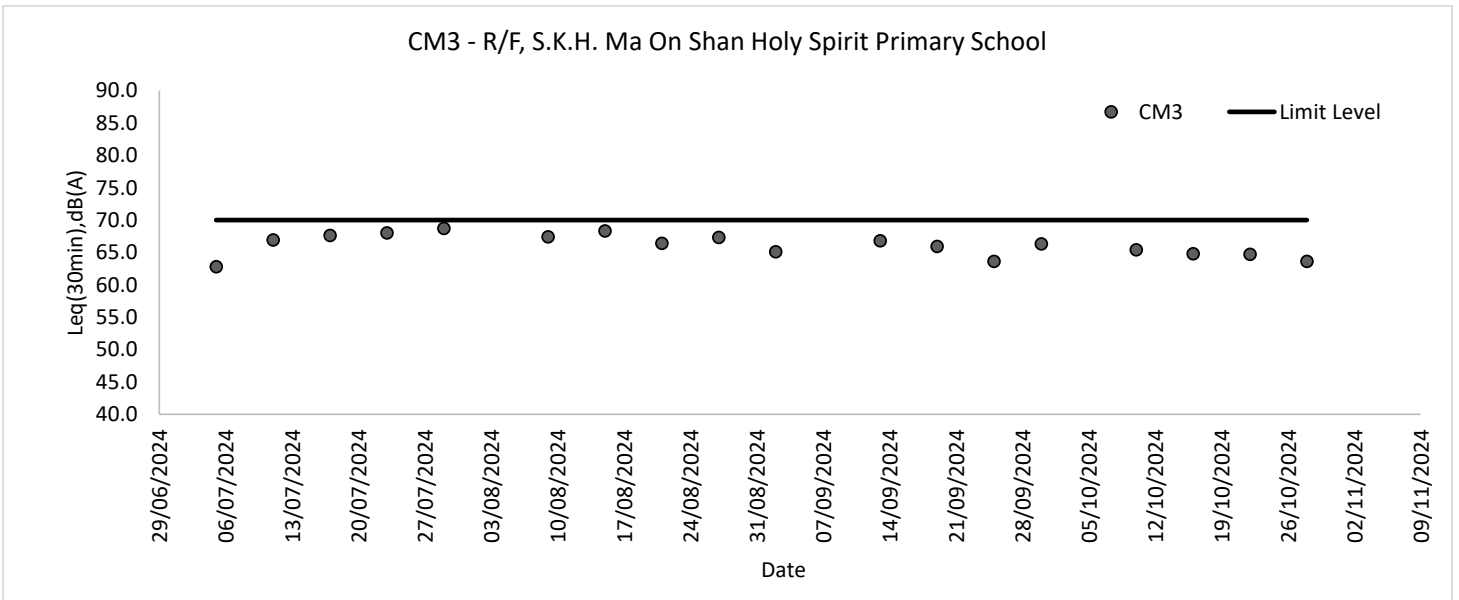
Remarks:

1) Noise results were calculated by +3 dB (A) correction for free-field measurement.

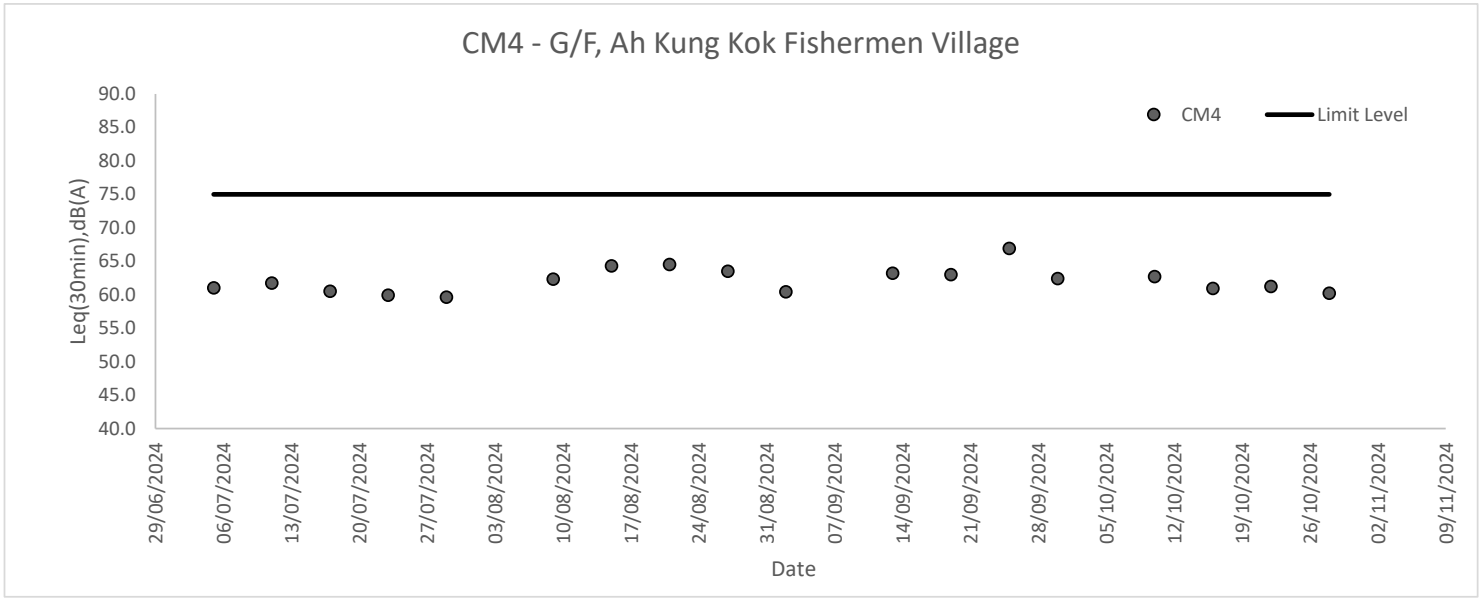
Graphic Presentation of Noise Monitoring Result
Day Time (0700 - 1900hrs on normal weekdays)

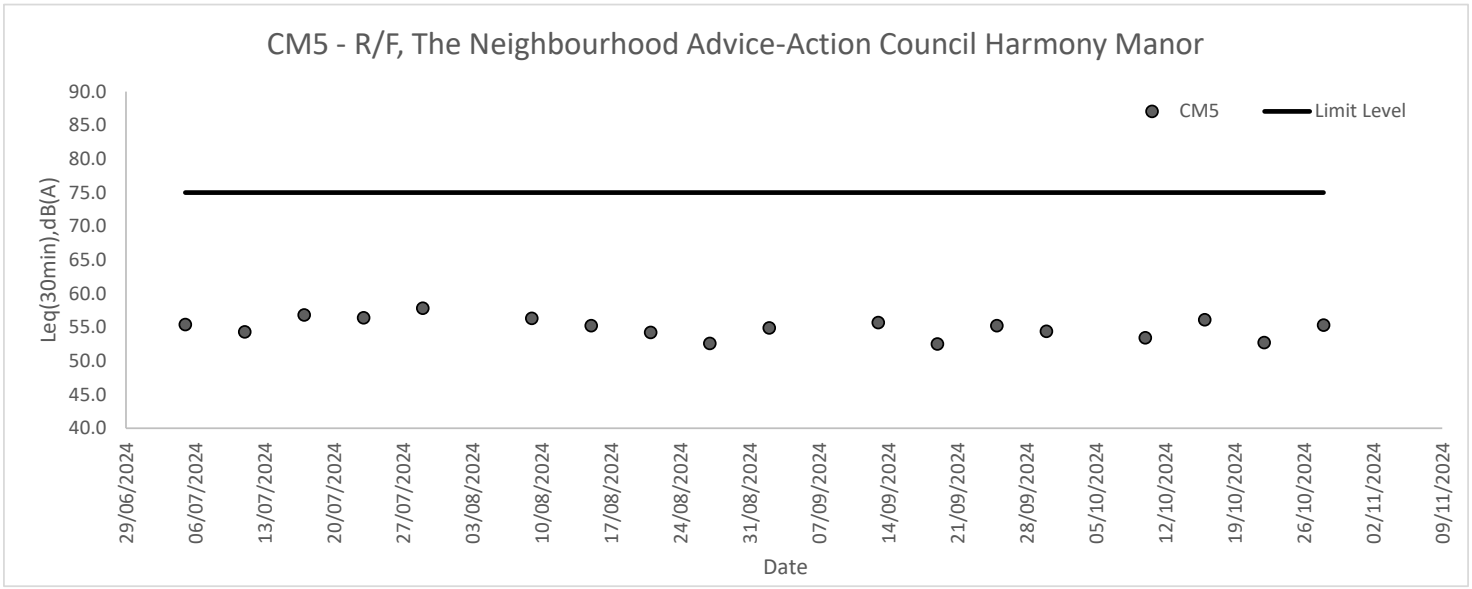




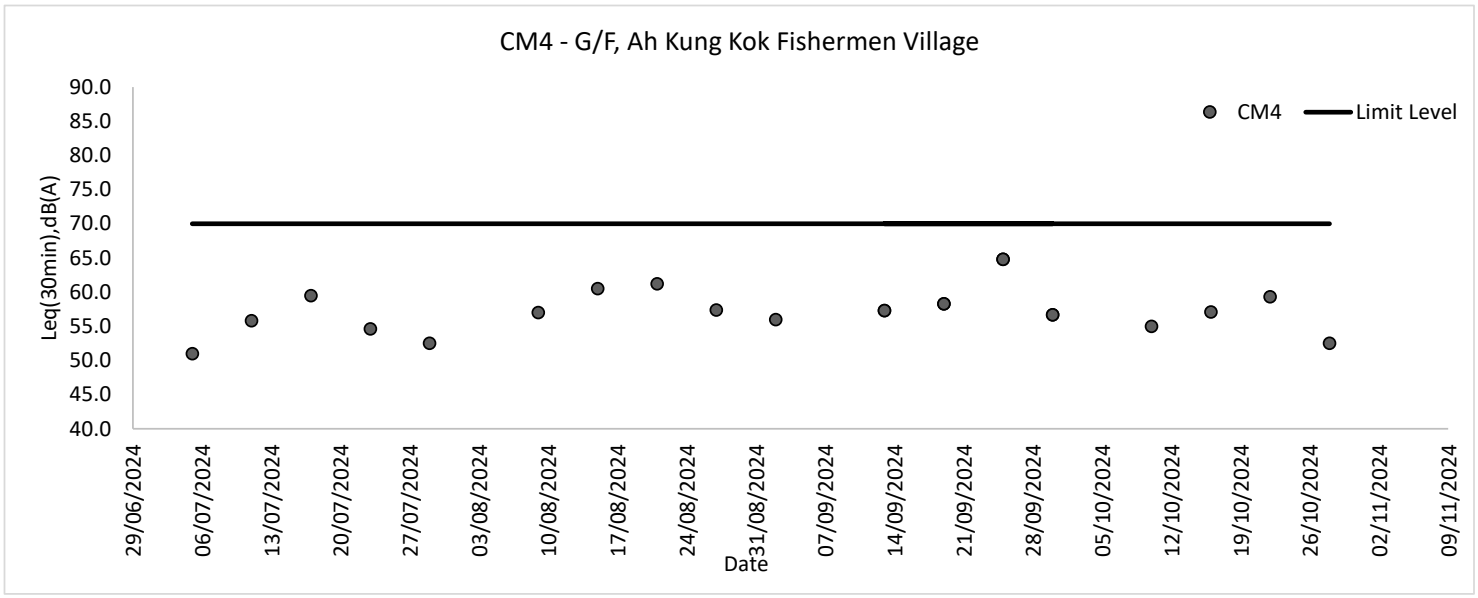


Graphic Presentation of Noise Monitoring Result
Day Time (0700 - 1900hrs on normal weekdays)

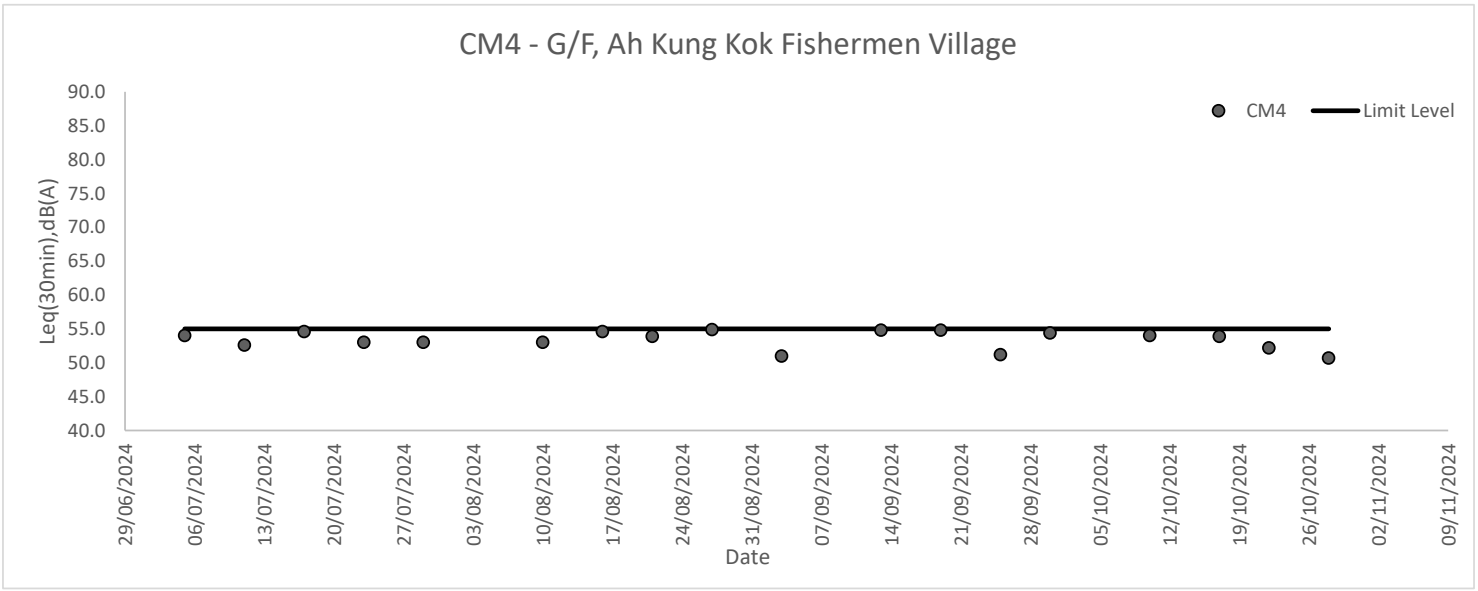




Graphic Presentation of Noise Monitoring Result
Evening Time (1900 - 2300hrs on normal weekdays)



Graphic Presentation of Noise Monitoring Result
Night Time (2300 - 0700hrs on normal weekdays)



Appendix 5.4

APS Performance Test Result

Location	Date and Time	Indoor NO_2 Conc. ($\mu g/m^3$) [(1)]	Outdoor NO_2 Conc. ($\mu g/m^3$) [(1)]	NO_2 Removal Efficiency (%)
Workshop Office [(2)]	2024/10/23 12:00	14.9	18.9	21.6
	2024/10/23 13:00	15.3	20.5	
	2024/10/23 14:00	34.8	27.9	
	2024/10/23 15:00	24.3	32.1	
	2024/10/23 16:00	28.9	36.5	
	2024/10/23 17:00	32.5	38.6	
	2024/10/23 18:00	35.8	62.5	
	2024/10/23 19:00	31.0	43.6	
	2024/10/23 20:00	16.4	23.5	
	2024/10/23 21:00	12.2	14.7	
	2024/10/23 22:00	16.4	26.2	
	2024/10/23 23:00	14.5	14.5	
	2024/10/24 00:00	9.4	19.5	
	2024/10/24 01:00	11.3	17.0	
	2024/10/24 02:00	16.1	26.0	
	2024/10/24 03:00	15.9	30.0	
	2024/10/24 04:00	13.6	21.2	
	2024/10/24 05:00	16.8	19.1	
	2024/10/24 06:00	10.1	8.8	
	2024/10/24 07:00	11.9	16.1	
	2024/10/24 08:00	31.2	34.0	
	2024/10/24 09:00	37.5	33.1	
	2024/10/24 10:00	27.5	31.0	
	2024/10/24 11:00	28.5	30.0	
	24-hr Average	21.1	26.9	

Notes:

(1) Conversion factor of 1.9125 was applied for NO_2 from ppb to $\mu g/m^3$ at 20°C and at 1 atm.

(2) One unit of APS was deployed for NO_2 measurements at indoor and outdoor each simultaneously.

Location	Date and Time	Indoor NO_2 Conc. ($\mu g/m^3$) [1]	Outdoor NO_2 Conc. ($\mu g/m^3$) [1]	NO_2 Removal Efficiency (%)
Lantau Link Visitor Centre [2]	2024/10/22 12:00	32.9	32.9	30.4
	2024/10/22 13:00	19.9	34.6	
	2024/10/22 14:00	20.1	35.6	
	2024/10/22 15:00	19.1	43.2	
	2024/10/22 16:00	18.2	37.3	
	2024/10/22 17:00	16.3	38.3	
	2024/10/22 18:00	18.7	61.6	
	2024/10/22 19:00	18.9	39.2	
	2024/10/22 20:00	13.8	16.4	
	2024/10/22 21:00	10.1	11.7	
	2024/10/22 22:00	10.1	8.8	
	2024/10/22 23:00	10.3	8.0	
	2024/10/23 00:00	9.6	8.4	
	2024/10/23 01:00	7.3	5.9	
	2024/10/23 02:00	7.5	5.7	
	2024/10/23 03:00	6.9	4.8	
	2024/10/23 04:00	5.7	5.5	
	2024/10/23 05:00	5.4	5.5	
	2024/10/23 06:00	7.1	8.0	
	2024/10/23 07:00	19.5	28.7	
	2024/10/23 08:00	26.6	30.2	
	2024/10/23 09:00	27.2	28.5	
	2024/10/23 10:00	24.1	20.1	
	2024/10/23 11:00	24.7	25.4	
	24-hr Average	15.8	22.7	

Notes:

(1) Conversion factor of 1.9125 was applied for NO_2 from ppb to $\mu g/m^3$ at 20°C and at 1 atm.

(2) One unit of APS was deployed for NO_2 measurements at indoor and outdoor each simultaneously.

Location	Date and Time	Indoor NO_2 Conc. ($\mu g/m^3$) [1]	Outdoor NO_2 Conc. ($\mu g/m^3$) [1]	NO_2 Removal Efficiency (%)
Nana Café [2]	2024/10/21 11:00	15.7	5.7	2.8
	2024/10/21 12:00	14.9	13.6	
	2024/10/21 13:00	26.0	19.7	
	2024/10/21 14:00	52.6	64.8	
	2024/10/21 15:00	77.3	79.8	
	2024/10/21 16:00	82.2	81.7	
	2024/10/21 17:00	71.9	74.6	
	2024/10/21 18:00	88.5	90.1	
	2024/10/21 19:00	53.9	46.1	
	2024/10/21 20:00	35.6	39.4	
	2024/10/21 21:00	29.8	31.4	
	2024/10/21 22:00	28.9	29.3	
	2024/10/21 23:00	32.5	33.5	
	2024/10/22 00:00	24.9	24.3	
	2024/10/22 01:00	25.2	24.5	
	2024/10/22 02:00	18.2	17.2	
	2024/10/22 03:00	23.1	27.3	
	2024/10/22 04:00	22.8	23.3	
	2024/10/22 05:00	19.3	17.6	
	2024/10/22 06:00	18.7	22.2	
	2024/10/22 07:00	27.0	43.0	
	2024/10/22 08:00	35.0	42.8	
	2024/10/22 09:00	36.7	40.9	
	2024/10/22 10:00	43.8	38.3	
	24-hr Average	37.7	38.8	

Notes:

(1) Conversion factor of 1.9125 was applied for NO_2 from ppb to $\mu g/m^3$ at 20°C and at 1 atm.

(2) One unit of APS was deployed for NO_2 measurements at indoor and outdoor each simultaneously.

Appendix 5.5

Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table

Name of Department: Drainage Services Department **Contract No.: DC/2020/05**

Monthly Summary Waste Flow Table for October 2024 [to be submitted not later than the 15th day of each month following reporting month]

(All quantities shall be rounded off to 3 decimal places.)

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Broken Concrete (see Note 3)	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed as Public Fill	(f) Metals	(g) Paper/cardboard packaging	(h) Plastics (see Note 2)	(i) Chemical Waste	(j) Others, e.g. general refuse disposed at Landfill
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in tonne)
Jan-24	3.782	0.053	0.000	0.399	3.330	0.025	0.000	0.200	0.000	54.970
Feb-24	1.853	0.429	0.000	0.557	0.867	0.000	0.000	0.000	0.000	61.670
Mar-24	3.416	0.127	0.000	0.284	3.005	0.000	0.200	0.000	0.800	78.710
Apr-24	4.580	0.082	0.000	0.420	4.078	0.000	0.000	0.000	0.000	58.390
May-24	2.655	0.017	0.000	0.578	2.060	0.000	0.200	0.000	0.000	82.240
Jun-24	5.165	0.008	0.000	0.336	4.820	0.000	0.000	0.000	0.000	80.700
Sub-total	21.449	0.716	0.000	2.573	18.161	0.025	0.400	0.200	0.800	416.680
Jul-24	7.932	0.017	0.000	0.746	7.169	0.045	0.200	0.000	0.000	79.680
Aug-24	7.728	0.026	0.000	0.903	6.799	0.000	0.000	0.000	1.000	69.680
Sep-24	7.052	0.011	0.000	1.449	5.592	0.000	0.000	0.000	0.000	85.650
Oct-24	13.648	0.052	0.000	4.767	8.829	0.000	0.200	0.000	0.000	130.500
Total	57.809	0.822	0.000	10.437	46.550	0.070	0.800	0.200	1.800	782.190

Notes:

(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

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

(3) Broken concrete for recycling into aggregates.

(4) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 5 m^3 by volume.

(5) Conversion factors for reporting purpose:

Excavated: rock = 2.0 tonnes/m^3, soil = 1.8 tonnes/m^3, broken concrete and bitumen = 2.4 tonnes/m^3, Slurry = 2.8 tonnes/m^3

Monthly Summary Waste Flow Table

Name of Department: Drainage Services Department **Contract No.: DC/2023/12**

Monthly Summary Waste Flow Table for Oct 2024 [to be submitted not later than the 15th day of each month following reporting month]

(All quantities shall be rounded off to 3 decimal places.)

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Broken Concrete (see Note 3)	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed as Public Fill	(f) Metals	(g) Paper/cardboard packaging	(h) Plastics (see Note 2)	(i) Chemical Waste	(j) Others, e.g. general refuse disposed at Landfill
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000tonne)
Jan-24	0.077	0.000	0.000	0.000	0.077	0.000	0.000	0.000	0.000	0.000
Feb-24	0.061	0.000	0.000	0.000	0.061	0.000	0.000	0.000	0.000	0.000
Mar-24	0.066	0.000	0.000	0.000	0.066	0.000	0.000	0.000	0.000	0.000
Apr-24	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000
May-24	0.105	0.004	0.000	0.000	0.101	0.000	0.000	0.000	0.000	0.072
Jun-24	1.241	0.161	0.000	0.000	1.080	72.410	0.000	0.000	0.000	0.004
Sub-total	1.553	0.165	0.000	0.000	1.388	72.410	0.000	0.000	0.000	0.076
Jul-24	0.293	0.006	0.000	0.000	0.287	0.000	0.000	0.000	0.000	0.006
Aug-24	0.717	0.002	0.000	0.000	0.716	0.000	0.000	0.000	0.000	0.029
Sep-24	0.220	0.000	0.000	0.000	0.220	0.000	0.000	0.000	0.000	0.010
Oct-24	0.511	0.000	0.000	0.000	0.511	0.000	0.000	0.000	0.000	0.013
Total	3.294	0.174	0.000	0.000	3.120	72.410	0.000	0.000	0.000	0.133

Notes:

(1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

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

(3) Broken concrete for recycling into aggregates.

(4) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 5 m^3 by volume.

(5) Conversion factors for reporting purpose:

Excavated: rock = 2.0 tonnes/m^3, soil = 1.8 tonnes/m^3, broken concrete and bitumen = 2.4 tonnes/m^3, Slurry = 2.8 tonnes/m^3

Appendix 7.1

Event and Action Plans

Event and Action Plan for Construction Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Action level being exceedance by one sampling	1 Identify source, investigate the causes of exceedance and propose remedial measures; 2 Inform Contractor, IEC, ER, and EPD; 3 Repeat measurement to confirm finding; 4 Increase monitoring frequency to daily.	1 Check monitoring data submitted by ET; 2 Check Contractor's working method; and 3 Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1 Notify Contractor.	1 Identify source(s), investigate the causes of exceedance and propose remedial measures; 2 Implement remedial measures; and 3 Amend working methods agreed with the ER as appropriate
2. Action level being exceeded by two or more consecutive sampling	1 Identify source; 2 Inform Contractor, IEC and ER; 3 Advise the Contractor and ER on the effectiveness of the proposed remedial measures; 4 Repeat measurements to confirm findings; 5 Increase monitoring frequency to daily; 6 Discuss with IEC and Contractor on remedial actions required; 7 If exceedance continues, arrange meeting with Contractor, IEC and ER; 8 If exceedance stops, cease additional monitoring.	1 Check monitoring data submitted by ET; 2 Check Contractor's working method; 3 Discuss with ET, ER and Contractor on possible remedial measures; 4 Advise the ET and ER on the effectiveness of the proposed remedial measures; and 5 Supervise Implementation of remedial measures.	1 Confirm receipt of notification of exceedance in writing; 2 Notify Contractor; 3 Ensure remedial measures properly implemented. 4 If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1 Identify source and investigate the causes of exceedance; 2 Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3 Implement the agreed proposals; and Amend proposal as appropriate. 4 Amend proposal as appropriate.

Event and Action Plan for Construction Air Quality (Con't)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Limit level exceedance by one sampling	1 Identify source, investigate the causes of exceedance and propose remedial measures; 2 Inform Contractor, IEC, ER, and EPD; 3 Repeat measurement to confirm finding; 4 Increase monitoring frequency to daily; and 5 Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1 Check monitoring data submitted by ET; 2 Discuss amongst ER, ET, and Contractor on the potential remedial actions; 3 Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 4 Supervise implementation of remedial measures.	1 Confirm receipt of notification of exceedance in writing; 2 Notify Contractor; 3 Ensure remedial measures properly implemented.	1 Identify source(s) and investigate the causes of exceedance; 2 Take immediate action to avoid further exceedance; 3 Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4 Implement the agreed proposals; and 5 Amend proposal if appropriate.
2. Limit level exceedance by two or more consecutive sampling	1 Notify IEC, ER, Contractor and EPD; 2 Identify source; 3 Repeat measurement to confirm findings; 4 Increase monitoring frequency to daily; 5 Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6 Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7 Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8 If exceedance stops, cease additional monitoring.	1 Check monitoring data submitted by the ET; 2 Discuss amongst ER, ET, and Contractor on the potential remedial actions; 3 Review Contractor' s remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 4 Supervise the implementation of remedial measures.	1 Confirm receipt of notification of exceedance in writing; 2 In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3 Supervise the implementation of remedial measures; and 4 If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1 Identify source(s) and investigate the causes of exceedance; 2 Take immediate action to avoid further exceedance; 3 Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4 Implement the agreed proposals; 5 Revise and resubmit proposals if problem still not under control; and 6 Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

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

Appendix 7.2

Summary for Notification of Exceedance

Ref no.	Date	Location	Parameters (Unit)	Measures	Action Level	Limit Level	Follow-up action
-	-	-	-	-	-	-	-

Appendix 8.1

Summary of Environmental Inspections

Date	Reminders/Observations	Action taken by Contractor	Outcome
Follow action(s) of last reporting month (Contract No. DC/2020/05 [C2])			
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Follow action(s) of last reporting month (Contract No. DC/2023/12 [C3])			
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Weekly Site Inspection (Contract No. DC/2020/05 [C2])			
03-10-2024	No particular findings.	NIL.	NIL.
10-10-2024	Obs.1 Chemicals should be stored in the designated location (e.g providing a drip tray or chemical storage area). (Portion 6)	Rectified.	Completion as observed on 15 October 2024
17-10-2024	Obs.1 Dusty materials should be placed in an area sheltered on the top and the 3 sides. (Portion 10)	Rectified.	Completion as observed on 17 October 2024
	Obs.2 The broken site entrance should be repaired to prevent the road outside the site from becoming muddy when vehicles leave the site. (Portion 10)	Rectified.	Completion as observed on 17 October 2024
24-10-2024	No particular findings.	NIL.	NIL.
31-10-2024	No particular findings.	NIL.	NIL.
Weekly Site Inspection (Contract No. DC/2023/12 [C3])			
07-10-2024	Obs.1 Rubbish and litter should be disposed of in the rubbish bin to prevent spreading in the site area. Recycling of aluminum cans and plastic bottles should be encouraged. (WA2)	Rectified.	Completion as observed on 18 October 2024
	Obs.2 More than 20 bags of cement should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. (Portion 9)	Rectified.	Completion as observed on 18 October 2024
	Obs.3 Haul road should be watered regularly to reduce dust emissions. (Portion 2)	Rectified.	Completion as observed on 18 October 2024
16-10-2024	Obs.1 Drip tray should be provided for chemical containers. (Portion 2)	Rectified.	Completion as observed on 21 October 2024
23-10-2024	Obs.1 Suspected oil stain should be cleared or absorbed with absorptive pads and treated as chemical waste. (Portion 2 & 9)	Pending.	On-going.
	Obs.2 Drip tray should be provided for chemical containers. (Portion 2)	Rectified.	Completion as observed on 21 October 2024
30-10-2024	Obs.1 Haul road should be regularly sprayed with water to reduce the dust nuisance to the surroundings. (Portion 2)	Pending.	On-going.
	Obs.2 Chemicals should be stored in a designated area. (Portion 2)	Pending.	On-going.
Landscape Site Audit			

Date	Reminders/Observations	Action taken by Contractor	Outcome
08-10-2024	No particular findings.	NIL.	NIL.
22-10-2024	No particular findings.	NIL.	NIL.
Ecology Site Audit			
22-10-2024	No particular findings.	NIL.	NIL.

Appendix 9.1

Complaint Log

Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
190808	29/07/2019	DSD	Construction site area Portion 6	Exposed slope surface without any covering was observed at Portion 6	A public complaint regarding construction dust received by DSD on 29 July 2019 was subsequently referred to ET on 6 August 2019. The complainant reported that exposed slope surface without any covering at Portion 6. Based on the information provided by the Contractor, the concerned area was under slope cutting and filling works for temporary haul road construction. Based on the observation on 6 August 2019 and weekly site inspection on 7 August 2019, the concerned slope was observed covered with the tarpaulin sheets to alleviate the potential dust impact to the surroundings. Upon review on the monitoring data, no exceedances were recorded at the air quality monitoring stations AM2 - Block H, Kam Tai Court and AM4 - Wellborn Kindergarten (located nearest to the concerned slope) during the 1hr TSP monitoring on 23 July 2019 and 29 July 2019 respectively. Follow up site inspection was conducted by the Environmental Team on 07 August 2019 and it was observed that the slope at Portion 6 was properly covered. Nevertheless, in view of the public concern, the Contractor of DC/2018/05 was reminded to enhance the dust suppression measure by providing adequate watering to any exposed surface during cutting slope and fill works to avoid potential dust impact to the surroundings.	Interim investigation report was issue on 16 August 2019
201112	12/11/2020	DSD	Outside site boundary of Portion 11	water contamination / ecological impact	A letter from Kadoorie Farm and Botanic Garden (KFBG) regarding water contamination / ecological impact received by DSD on 12 November 2020 was subsequently referred to ET on 12 November 2020. The KFBG alleged that: - Extracting water directly from the stream, - Surface run-off silt smothering forest understorey and silting the stream, - Cement has been disposed into the forest understorey and the stream , and - Diesel fuel leaking from pumps and generators at Portion 11. The concerned area is natural stream near slope cutting and filling works for temporary haul road construction, outside of the DC/2018/05 construction site boundary. The Contractor, RSS conducted walk-through survey on 17 November 2020 starting from around the tree tag T9511/ T9512 and ending at the pool of the natural stream near Portion 11 of DC/2018/05. Additional site inspection with EPD, DSD, RSS, ET and the Contractor was conducted on 17 November 2020, additional site inspection with KFBG, DSD, RSS, ET and the Contractor was conducted on 19 November 2020. No Pollutants were observed being discharged to the stream, the natural stream was clean with running water during above inspections. However, few spots were found with cement and silt on the bedding of the stream.	Interim investigation report was issue on 14 December 2020

					According to the Contractor, the water pumps were the emergency pumps and it had been removed away from the natural stream. No pump was observed during above inspections. There was no sign of any diesel fuel leaking from pumps or generators. The nearest generator for the construction work has been located far away from the concerned location. By the walk-through survey along the natural stream, there was no oil-strain or diesel likes contamination being observed. By the walk-through survey, various locations were found with silting / sand. The sources of the silt were not necessary from the construction site of DC/2018/05. It could also be contributed by the natural erosion from both sides of the stream. Nevertheless, in view of the public concern, the Contractor of DC/2018/05 was willing to clean up the stream to address the concerns from KFBG to protect the environment. The Contractor also reminded to keep review the performance of mitigation measures including well cover slope / area with exposed soil with tarpaulin sheets to prevent surface runoff, using cellular confinement system to prevent soil erosion.	
210127	27/01/2021	DSD	Construction Area at Portion 6 (Tunnel)	Air Quality	A public complaint regarding construction dust referred by DSD on 27 January 2021 was subsequently received by ET on 27 January 2021. The complainant reported that: - Construction dust emission arising from blasting works in tunnel was observed near Block 6, Chevalier Garden. Blasting in the tunnel was carried out under Contract DC/2018/05 at the concerned area According to the relevant site information provided by the Contractor of DC/2018/05, there are total of 13nos. of blasting works was carried out in January 2021 in the tunnel. The blasting works was carried out in the tunnel. Dust screen, mist curtain, sprinkler system and mist cannon were installed / operated when blasting, the blast door was tightly closed during blasting. Based on review on air quality monitoring data, no exceedances were recorded at the air quality monitoring stations AM3(B) - Outside A Kung Kok Street Garden and AM4 - Wellborn Kindergarten (located nearest to the concerned area) during the scheduled 1hr TSP monitoring in January 2021. Ad-hoc TSP monitoring and inspection was carried out on 29 January and 1 February 2021 during blasting, no exceedances were recorded at the air quality monitoring stations AM3(B) - Outside A Kung Kok Street Garden and AM4 - Wellborn Kindergarten. Based on the site inspection on 28 January 2021, 2nos. mist cannons have been installed and operated on the top of blast door during / after the blast door opened to reduce fumes / mists emission.	Interim investigation report was issue on 7 February 2021

					The Contractor of DC/2018/05 was reminded to enhance the dust suppression measure by providing adequate watering after the blast door opened. Contractor is requested to consider extend the time to open the blast door after blasting in order to the fumes and rock dust have been settled in the tunnel. Also, the Contractor of DC/2018/05 was reminded that the ventilation system in the tunnel should be maintained in good condition.	
20211201	01/12/2021	AECOM	Construction Area at Portion 12 (The Neighbourhood Advice-Action Council Harmony Manor)	Noise	A public complaint regarding construction noise referred by AECOM on 3 December 2021 was subsequently received by ET on 3 December 2021. The complainant reported to 1823 online dated on 1 December 2021 that the construction noise (heavy vehicle and drilling works) generated from the construction site at A Kung Lok Shan Road was causing noise nuisance to complainant's son. According to the relevant site information provided by the Contractor of DC/2020/05, preparation works for sheet pile driving, which included machinery and materials mobilization, were carried out on 1 December 2021. Sheet pile work was commenced on 2 December 2021. Based on review on noise monitoring data, no exceedances were recorded at the noise monitoring station CM5 - R/F, The Neighbourhood Advice-Action Council Harmony Manor (located nearest to the concerned area) during the scheduled Leq30 min noise monitoring in November 2021. ET conducted regular noise monitoring on 3 December 2021, no exceedances was record at the noise monitoring stations CM5 - R/F, The Neighbourhood Advice-Action Council Harmony Manor. Weekly noise monitoring was conducted on 7 December 2021, no exceedances was recorded at the noise monitoring station CM5 - R/F, The Neighbourhood Advice-Action Council Harmony Manor. Site inspection was conducted on 8 December 2021, it is observed that breaking /drilling works by other contractor was conducted next to The Neighbourhood Advice-Action Council Harmony Manor. No heavy vehicles passing by A Kung Lok Shan Road during noise monitoring. After receiving the complaint, additional noise mitigation measures, including wrapping up the breaker tip with acoustic mat and deploying of temporary noise barrier have been implemented by the Contractor of DC/2020/05. The Contractor of DC/2020/05 was reminded to enhance the noise mitigation measures by providing sufficient temporary noise barrier. Contractor is advised to make good communication with The Neighbourhood AdviceAction Council Harmony Manor and consider scheduling the time of sheet pilling and machinery / materials mobilization in order to avoid further complaint.	Interim investigation report was issue on 10 December 2021

20220506	06/05/2022	Contractor	Construction Area at Portion 10 (Next to the Chevalier Garden)	Noise	A public complaint regarding construction noise referred by the Contractor was received by ET on 12 May 2022. The complainant reported to 1823 Call Centre (ICC) dated on 6 May 2022 that the construction noise (rock-breaking and excavation) generated from the construction site of Portion 10 at Mui Tsz Lam Road was causing noise nuisance to complainant. According to the relevant site information provided by the Contractor of DC/2020/05, rock-breaking and excavation works were conducted during the concerned period. Based on review on noise monitoring data, no exceedances were recorded at the noise monitoring stations CM1 - G/F, Wellborn Kindergarten and CM2(B) - G/F, Outside A Kung Kok Street Garden (located within the Chevalier Garden) during the scheduled Leq30 min noise monitoring in April 2022. ET conducted regular noise monitoring on 6 May 2022, no exceedances were recorded at the noise monitoring stations CM1 - G/F, Wellborn Kindergarten and CM2(B) - G/F, Outside A Kung Kok Street Garden. Site inspection was conducted on 5 &12 May 2022, it is observed that rock-breaking was conducted at the construction site of Portion 10. Ad-hoc noise monitoring at CM1 - G/F, Wellborn Kindergarten and CM2(B) - G/F, Outside A Kung Kok Street Garden on 13 May 2022, no exceedances were recorded. During execution of rock breaking works, below noise mitigation measures had been implemented by the Contractor of DC/2020/05 • Erection of 8m height noise barrier • Wrapping up the breaker tip with acoustic material • Upgrade the existing hoarding to perform as noise barrier by affixing a layer of sound absorption material to the hoarding surface • Voluntary to late start of rock breaking work at 0900hrs instead of 0700hrs, which is allowed under the Regulation. Contractor of DC/2020/05 also carried out self-noise monitor for the rock-breaking works on 4, 5 & 6 May 2022, All results show the construction noise levels are below the 75dB(A). ET would continue to monitor the adequacy of mitigation measures and review the monitoring data of the monitoring stations of CM1 - G/F, Wellborn Kindergarten and CM2(B) - G/F, Outside A Kung Kok Street Garden. The Contractor is recommend to review the construction operation to erect the temporary noise barriers, if feasible and ensure all idled PME are shut down to minimize potential noise emanation at the concerned works area to avoid potential nuisance.	Interim investigation report was issue on 13 May 2022

20220816	16/08/2022	Contractor	WA3 (Ngau Kok Wan, Tsing Yi)	Air Quality	A public complaint suspecting improper operation of mineral works without relevant environmental permits/licenses and dust mitigation measures at WA3 referred by the Contractor was received by ET on 17 August 2022. The complaint was made via email to the relevant authorities, including Environmental Protection Department (EPD) and Drainage Services Department (DSD), on 16 August 2022, the complainant suspected a mineral site near Tsing Yi North Coastal Road and Ting Kau Bridge was in operation without relevant environmental permits/licenses, the complainant also stated no dust mitigation measures, such as covering and water spraying for dusty stockpile and conveyor belts; and provision of wheel washing facility, were implemented based on his observation. The location where the complaint refers to is one of the works areas for the Project (i.e. WA3 at Ngau Kok Wan, Tsing Yi) for the proposed rock crushing operation as the location for such operation under the Environmental Permit (EP) (EP-533/2017/A) issued on 11 August 2022, and the Specified Process License (SPL) for the category of mineral works (stone crushing works) under Air Pollution Control (Specified Processes) Regulations for such operation has been applied since April 2022 and the associated application result was pending from EPD at the time of the complaint received. The works activities at WA3 between 12 and 17 August 2022 were reviewed. As advised by the Contractor, the works activities undertaken during the period mainly included i) assembly and adjustment of the rock crushing machineries; ii) provision of training for workers on the operation of machineries for rock crushing activities; and iii) import of rocks from the main site (i.e. works areas of Cavern at Ma On Shan) on land logistics by dump trucks for construction of a loading platform and temporary storage at WA3. Relevant mitigation measures for air quality impacts were implemented on site during the period including i) water spraying on haul roads; ii) water spraying for the temporary stockpile of dusty materials; iii) covering dusty materials with use of impervious sheeting; and iv) installation of dust enclosure and misting system for conveyor systems, etc. In addition, regular site inspections were carried out by the ET at WA3 on 12 and 17 August 2022, with no particular observations associated with air quality recorded and wheel washing facilities were in place for subsequent use, during the site inspections except a verbal reminder on proper covering for the stockpiles being idle on site was given to the Contractor on 17 August 2022 for improvement. As referred to the Air Pollution Control Plan (APCP) attached to the application of SPL, the proposed rock crushing operation with maximum output capacity of 1,400 tonnes per hour by two operation lines (i.e. output capacity of 700 tonnes per hour for each) for the rocks being processed as aggregates of about 3M tonnes was mentioned and 12 hours a day (7:00 to 19:00) was assumed for the rock crushing operation taken in the air quality modelling assessment except Sundays and public holidays whereas, as advised by the Contractor, about 2,000 tonnes of rock were processed in the training sessions for the workers during the period (i.e. 12 to 17 August 2022), which is below the allowed maximum output for the rock crushing operation (i.e. 100,800 tonnes) during the period. Moreover, relevant monitoring data in relation to suspended particulates were not available for review as a result of the fact that the application result for SPL is pending from EPD and actual rock crushing operation has not been commenced at the time of	Interim investigation report was issue on 31 August 2022

					the complaint received such that the corresponding total suspended particulates (TSP) and respirable suspended particulates as required by the SPL, and 1-hr TSP as recommended in the Environmental Review Report (ERR) for the application of variation of EP (i.e. EP-533/2017/A), respectively, had not been monitored at the time of the complaint received. Based on the investigation above, the works activities at WA3 did not result in any unacceptable environmental impacts to the surrounding environment as reviewed with the relevant environmental requirements under EP-533/2017/A and the associated APCP for application of SPL for the Project. Though works activities at WA3 did not result in any unacceptable environmental impacts to the surrounding environment, the Contractor was reminded to properly maintain the implementation of recommended mitigation measures for air quality impacts as recommended in the approved EIA Report, EP (i.e. EP-533/2017/A), the Updated EM&A Manual and/or ERR/APCP for the Project, and all mitigation measures as stated in the APCP for obtaining the SPL approved by EPD. An ad-hoc site inspection was also carried out by the ET at WA3 on 19 August 2022 noting that fugitive dust emission was observed during breaking of artificial hard material by a backhoe equipped with hydraulic breaker without effective mitigation measures for air quality impacts (e.g. water spraying) implemented properly, and the Contractor was subsequently reminded to follow up on this for improvement. The ET will continue carrying out site inspections on a regular basis to check that appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the environmental documents mentioned.	
20230317	17/03/2023	DSD	Construction site entrance at Ma On Shan Road (Portion 4) and Mui Tsz Lam Road (Portion 6)	Air Quality	A notice of complaints from Environmental Protection Department (EPD) referred by AECOM was subsequently received by ET on 17 March 2023. Based on the information provided by the Contractor, no construction activity and performs as an access road for construction vehicles at Portion 6 and fill the access road for retaining wall and slope, Footing & wall construction, removal of the temporary stockpile of soil and performs as an access road for construction vehicles at Portion 6. Moreover, the existing dust mitigation measures were implemented at portion 4 and 6 by Contractor in February 2023. According to the Main Contractor, enhanced mitigation measures were implemented after the complaint and summarized as below: <u>Portion 4</u> •Arrange workers and water tanker to spray water for the section of Ma On Shan Road connecting to the site entrance one hour earlier than before, i.e. at 0700 hrs. •Rent a road sweeper to clean the section of Ma On Shan Road connecting to the site entrance at Portion 4 once a week. •Upgrade the number of sprinklers from 6 to 8 to increase the water spraying area on 17 March 2023. <u>Portion 6</u>	Interim investigation report was issue on 24 March 2023

					•Increase the frequency of watering and road sweeping to the works area and Mui Tsz Lam Road roundabout to maintain it clean and free of dust. According to the ET regular air quality monitoring results in February 2023, no exceedance for all monitoring stations including the nearest stations AM1 and AM3(B) was found in reporting month. An ad-hoc air quality monitoring was conducted at nearest station AM1 and AM3(B) by the ET on 22 March 2023 and no exceedance was recorded. Nevertheless, in view of the public concern, the Contractor of DC/2018/05 was reminded to increase the frequency of watering the haul roads in dry weather and dry seasons, appropriate speed control shall be adopted for the vehicles on construction sites haul roads and all the use of vehicle wheel and body washing facilities and the water sprinklers should be regularly reviewed and maintained that make sure they are functioning properly.	
20230525	05/06/2023	ET	The outfall outside construction site at Mui Tsz Lam Nullah.	Water Quality	A notice of complaints from Environmental Protection Department (EPD) letter dated on 25 May 2023 was subsequently received by ET on 5 June 2023. One complaint to EPD on 8 May 2023 regarding muddy water discharge from construction site to Mui Tsz Lam Nullah and finally direct to Shing Mun River. As mentioned in EPD's complaint letter, muddy water appeared at the outfall located in Portion 3. According to Contractor Discharge Licence (Licence No.: WT00040534-2022) provided, the effluent from the wastewater treatment system in Portion 4, Portion 6 and the Caverns are permitted to be discharged to the stormwater drain and come out at this outfall. Also, by reviewing the drainage record, this outfall is also connected to further upstream from A Kung Kok catchment areas. <u>Other Works Area:</u> Portion 4: Wastewater produced in Portion 4 generally came from wheel washing at its site entrance. The treated wastewater was recirculated and consumed internally for road dust suppression and considered as seldom discharged. Portion 6 and Portion 9: Two wastewater treatment systems with 80m3/hr treatment capacity are deployed at Portion 6 and Portion 9 (the Main Access Tunnel) respectively. As advised by Contractor, a full-time worker has been appointed responsible for the daily operation and maintenance of each of the wastewater treatment facilities. Tunnel: A Filtration System was installed and connected to the wastewater treatment system inside the tunnel which can further reduce the suspended particulate of the effluent from the existing treatment system and is able to monitor the pH and SS value of the effluent and generate an alert when it exceeds the standard.	Interim investigation report was issue on 16 June 2023.

					Contractor Self-Monitoring: According to the discharge licence (Licence No.: WT00040534-2022) part B2, The Contractor shall carry out self-monitoring monthly and recording of the constituents. A water sampling (6 samples in total were collected) was carried out on 9 May 2023 and no exceedance was recorded in May 2023. Contractor Daily Observation: Muddy water appeared at the outfall each time when the tidal is low, even though the Contractor's discharging was clear enough at the time. Besides, there are two manholes in Portion 4 and a layer of muddy sediment is identified at the bottom of the drain. The contractor believes that the sediment was exposed to the air during low tidal and it was eroded by the water flow especially when we discharged or there was rainfall. It is the reason why muddy water appeared when the tide is low at the outfall of Portion 3. Ad-hoc Inspection: An ad-hoc inspection was conducted by the representative of ET, RSS and Contractor representative on 8 June 2023. According to ET's field observations, there is no evidence to prove that the muddy water discharged from the outfall area is project related. Although there was no evidence to indicate that the muddy water being discharged from the outfall was related to the project, AECOM has proposed a proactive approach by instructing CSAJV to clean up a section of the storm drain adjacent to the last manhole to safeguard the water body along the Mui Tsz Lam culvert. The proposal is currently in progress. The ET will continue to carry out site inspections on a regular basis to check that appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the environmental documents mentioned.	
20231109	06/11/2023	EPD	WA4 (Wok Tai Wan, Tsing Yi)	Air Quality and Water Quality	A notice of complaints from Environmental Protection Department (EPD) email dated on 7 November 2023 was subsequently received by ET on 9 November 2023. One complaint to EPD on 6 November 2023 concerning the operation of a stockpiling site at Wok Tai Wan (GLA-TKT 1939) allocated to DSD. The complainant reported that: 1. As mentioned in EPD's complaint letter, other than few areas, large area of rock stockpile were not covered and fugitive dust appeared. 2. There have been continuous heavy rains in recent days. If the rock stockpile is close to the seaside, there is a risk of landslides and seabed pollution. Upon receipt of the complaint on 9 November 2023, the Environmental Team (ET) requested the Contractor (CSAJV) to provide necessary information for investigation on 9 November 2023, with following up on the supplementary information on 15 November 2023. <u>Contractor Response to the Complaint</u>	Interim investigation report was issue on 20 November 2023.

					Contractor have investigated the case and reported the environmental mitigation measures implemented before and after receiving the complaint. Before the Complaint 1. Watering the haul road by both manpower and water bowser. 2. Covered the slope of the lower platform of the rock stockpile. After the Complaint More slope has been covered and the covering work will be continued. Weekly Site Inspection Weekly site inspection was conducted by the representative of ET, IEC, RSS and Contractor representative on 8 November 2023. According to ET's field observations, landslides from rock stockpile were not observed and no evidence to prove that the fugitive dust appeared from the rock stockpile was project related. Corrective Action(s) 1. In view of public concerns, the Contractor was advised to water the haul road by both manpower and water bowser more frequently. 2. Cover the slope of the lower platform of the rock stockpile. Preventive Action(s) The Contractor was reminded to cover more slope and the covering work will be continued, and increase water spraying frequency for dust suppression particularly in dry season. The ET will continue to carry out site inspections on a regular basis to check that appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the environmental documents mentioned.	
20240731	31/07/2024	EPD	Shing Mun River	Water Quality	A notice of complaint from Environmental Protection Department (EPD) dated on 31 July 2024 was subsequently received by ET on 31 July 2024. One complaint to EPD on 31 July 2024 regarding muddy water. The complainant reported that: 1) Muddy water spotted from Shing Mun River near the Project site. Upon receipt of the complaint on 31 July 2024, the Environmental Team (ET) requested the Contractor (CSAJV) to provide necessary information for investigation on 31 July 2024, with following up on the supplementary information on 6 August 2024. Contractor Response to the Complaint:	Interim investigation report was issue on 7 August 2024.

					Portion 2 1. Site inspection at Portion 2 was conducted by the representative of AECOM, ET and Contractor representative at about 1:15 p.m. on 31 July 2024. No discharge of muddy water was observed at the time. However, we suspected that there was potential leakage of surface runoff from the bottom of the hoarding to the nullah outside Portion 2. 2. Three EPD's inspectors inspected the Project site at about 4:30 p.m. on 31 July 2024. They did not observe any muddy being discharged at the time. They also inspected the temporary drainage system and wastewater treatment facility in Portion 2C. They suggested pond water after rainfall should be properly diverted and the discharge point should be kept clean. <u>Preventive Measure</u> 3. Contractor have investigated the case and reported the environmental preventive measures implemented after receiving the complaint and EPD's suggestions: 3.1. Seal the bottom of the hoarding to prevent surface runoff from leaking out. (Date of Completion: 31 July 2024. 3.2. Flatten the ground level for the area next to the hoarding to prevent the formation of a water pond during rainfall. 3.3. Filled up the area to avoid water ponding and pumping water. 3.4. Clean up the drain outside the discharge point. <u>Preventive Action(s)</u> 1. The Contractor was reminded to regularly review and inspect the drain near the Project site to ensure the sealed hoarding bottom is functioning properly, particularly during the rainy season. 2. The Contractor was reminded to maintain the tidiness of these areas and timely clear water ponding after rain to prevent spillage to nearby surface drains. The ET will continue to carry out site inspections on a regular basis to check that appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the environmental documents mentioned.	
20240807	07/08/2024	AECOM	Portion 2	Noise	A public complaint referred by AECOM on 7 August 2024 was subsequently received by ET on 7 August 2024. One complaint on 6 August 2024 regarding noise aspect. The complainant reported that construction work was conducted before 7:00 a.m. and no noise barrier was set up at Portion 2. Upon receipt of the complaint on 7 August 2024, the Environmental Team (ET) requested the Contractor (CSAJV) to provide necessary information for investigation on 9 August 2024, with following up on the supplementary information on 9, 12 and 16 August 2024. According to the site diary record, no construction work was conducted before 7:00 a.m. from 31 July 2024 to 6 August 2024.	investigation report was issue on 19 August 2024.

					Contractor Response to the Complaint: Attendance Records: 1. Contractor had checked the worker's attendance records and showed that all workers arrived at the site after 0700 hours in the morning from 31 July 2024 to 6 August 2024. As such, it is unlikely that construction activities were carried out before 0700 hours on the concerned period. Noise Mitigation Measures: 2. According to the Main Contractor, the following noise mitigation measures are implementing: • Use rock stockpile to form a noise barrier to reduce noise impact; • Warp the hydraulic breaker with sound-absorbing material to reduce noise impact. Site Inspection and Environmental Monitoring: 3. Site inspection at Portion 2 was conducted by the representative of IEC, ET, and Contractor representative on 8 August 2024, and it was observed that the major noise sources from screening rock works during working hours. 4. Based on the review on the nearest noise monitoring stations (CM3 - S.K.H. Ma On Shan Holy Spirit Primary School & CM4 - Ah Kung Kok Fishermen Village), there is no exceedance recorded for the monitoring results in July 2024 and on 9 August 2024. Preventive Action(s) 1. The Contractor was reminded to strictly follow the acceptable working hours according to Noise Control Ordinance. 2. The Contractor is also recommend to limit the number of powered mechanical equipment to be operated at the same time and ensure all idled PME are shut down to minimize potential noise impact at the concerned works area. ET would continue to monitor the adequacy of mitigation measures and review the monitoring data of the monitoring stations of CM3 - S.K.H. Ma On Shan Holy Spirit Primary School & CM4 - Ah Kung Kok Fishermen Village.	
20240822	21/08/2024	AECOM	Portion 2	Air & Water Quality	A public complaint referred by AECOM on 22 August 2024 was subsequently received by ET on 22 August 2024. One complaint on 21 August 2024 regarding air and water quality aspect at Portion 2. Upon receipt of the complaint on 22 August 2024, the Environmental Team (ET) requested the Contractor (CSAJV) to provide necessary information for investigation on 22 August 2024, with following up on the supplementary information on 26 August 2024.	investigation report was issue on 28 August 2024.

Complaint Regarding Water Quality:

According to the Main Contractor, additional works have been carried out to improve the temporary drainage system to prevent the outflux of surface runoff to the public road:

- Concrete pavement the haul road with intercepting earth bund to prevent outflux of surface runoff to the public road.
- Construction of intercepting ditches at the slip road leading from the public road to the site to prevent the outflux of surface runoff from the road opening. In addition, a sump pit is constructed to collect the outflow to the wastewater treatment facility.
- Deploy Wastewater treatment facility.
- Concrete pavement for the slip road leading from the construction site to the public road and intercepting ditches are constructed to prevent the outflux of surface runoff from the road opening to the public road. In addition, a sump pit is constructed to collect the outflow to the wastewater treatment facility.

Complaint Regarding Air Quality:

According to the Main Contractor, the following mitigation measures are implementing:

- Watering the haul road regularly to maintain it in wet condition.
- Deploy a wheel washing machine and provide wheel washing for every vehicle before departing the site.
- Install sprinklers to water the temporary stockpile of rock continuously.
- Cover all temporary stockpiles of dusty materials when no work is scheduled.
- Continual watering when handling dusty materials.

As such, the Main Contractor considered the existing dust suppression work adequate.

Based on the review on the nearest air quality monitoring stations (AM1 - Ah Kung Kok Fishermen Village & AM2 - Block H,

Kam Tai Court), there is no exceedance recorded for the monitoring results as of 21 August 2024.

Preventive Action(s)

1. The Contractor was reminded to maintain the tidiness of these areas and timely clear water ponding after rain to prevent spillage to nearby surface drains.

2. The Contractor was reminded to increase water spraying frequency for dust suppression, particularly in dry weather.

ET would continue to monitor the adequacy of mitigation measures and review the monitoring data of the monitoring stations of AM1 - Ah Kung Kok Fishermen Village & AM2 - Block H, Kam Tai Court.

20240913	12/09/2024	AECOM	Portion 2	Air Quality	A public complaint referred by AECOM on 13 September 2024 was subsequently received by ET on 13 September 2024. One complaint on 12 September 2024 regarding air quality aspect. Upon receipt of the complaint on 13 September 2024, the Environmental Team (ET) requested the Contractor (CSAJV) to provide necessary information for investigation on 13 September 2024, with following up on the supplementary information on 19 September 2024. 1. <u>Complaint Regarding Air Quality:</u> According to the Main Contractor, the following mitigation measures are implementing: 1.1. Existing Dust Mitigation Measures: • Watering the haul road regularly to maintain it in wet condition. • Deploy a wheel washing machine and provide wheel washing for every vehicle before departing the site. • Install sprinklers to water the temporary stockpile of rock continuously. • Cover all temporary stockpiles of dusty materials when no work is scheduled for the coming week. • Continual watering when handling dusty materials. 1.2. Enhancement of Dust Mitigation Measures after receiving the complaint: • Extend a partially covered rockpile to an entire one.) • Upgrade the capacity of the water truck from 8,000L to 15,000L. Meanwhile, a water cannon is equipped to ease the mobilization of water spraying for dust suppression when necessary. • Install additional sprinklers for more effective dust suppression. Impact Monitoring (Air Quality) of the Project: Based on the review on the nearest air quality monitoring stations (AM1 - Ah Kung Kok Fishermen Village & AM2 - Block H, Kam Tai Court), there is no exceedance recorded for the monitoring results as of 13 September 2024. <u>Preventive Action(s)</u> 1. The Contractor was reminded to increase water spraying frequency for dust suppression, particularly in dry weather. ET would continue to monitor the adequacy of mitigation measures and review the monitoring data of the monitoring stations of AM1 - Ah Kung Kok Fishermen Village & AM2 - Block H, Kam Tai Court.	investigation report was issue on 20 September 2024.
20240925	Aug & Sept 2024	EPD	Portion 2 & 10	Noise, Air Quality and Water Quality	A notice of complaints from Environmental Protection Department (EPD) letter dated on 17 September 2024 was subsequently received by ET on 25 September 2024.	investigation report was

Five complaints to EPD in August and September 2024 concerning water quality, air quality and noise aspect.	issue on 10 October 2024.

Upon receipt of the complaint on 25 September 2024, the Environmental Team (ET) requested the Contractor (CSAJV) to provide necessary information for investigation on 27 September 2024, with following up on the supplementary information on 30 September 2024 and 2 October 2024.

1. Complaint number: RN22409-24

1.1 ET had completed the investigation report and record in ET's Environmental Complaints Log. (ET Log No.: 20240822)

2. Complaint number: RN22786-24

2.1 According to the Main Contractor, the following mitigation measures are implementing:

Portion 10

2.1.1 Assign specific personnel for daily maintenance of the wastewater treatment units to ensure the quality of site discharge comply with the statutory requirements.

2.1.2 Regular maintenance for the temporary drainage system and proper divert of surface runoff to the wastewater treatment units for silt removal before discharging.

2.1.3. Proper treatment for the bare slope prior to forecasting of rainstorms to minimize soil erosion.

2.2. According to the discharge licence (Licence No.: WT00040534-2022), the Contractor shall carry out self-monitoring monthly and recording of the constituents. Water sampling at sampling points were carried out on 8 August 2024 and 5 September 2024, and no exceedance was recorded.

3. Complaint number: RN23631-24

3.1. According to the site diary record, tunnel works were conducted at 11:30 p.m. on 30 August 2024 in Portion 6. No work was conducted outside the tunnel.

3.2. According to Hong Kong Observatory weather observations at Sha Tin Station, 0 mm total rainfall was recorded on 30 August 2024.

3.3. According to the Main Contractor, the following mitigation measures are implementing:

Portion 6

3.3.1. The wastewater treatment unit deploys inside the tunnel. The water quality of site effluent is collected and checked regularly to ensure its compliance with the legal requirements.

3.3.2. Another set of wastewater treatment unit deploys outside the tunnel. The water quality of site effluent is collected and checked regularly to ensure its compliance with the legal requirements.

3.3.3. According to the discharge licence (Licence No.: WT00040534-2022), the Contractor shall carry out self-monitoring monthly and recording of the constituents. Water sampling at

sampling points were carried out on 8 August 2024 and 5 September 2024, and no exceedance was recorded.

3.3.4. The site outfall comprises water flowing from two sources, one from the Project site and another from A Kung Kok Fishermen Village's direction. Two sets of wastewater treatment units are deployed in the area for wastewater treatment. These two sets of wastewater treatment units operate non-stop even at night. All wastewater generated from the Project site has to be treated to meet the statutory requirements before discharging.

3.3.5. There is no evidence to prove that the muddy water discharged from the outfall area is project related.

4. Complaint number: RN24492-24

4.1. ET had completed the investigation report and record in ET's Environmental Complaints Log. (ET Log No.: 20240913)

5. Complaint number: RN24919-24

5.1. According to the Main Contractor, the following mitigation measures are implementing:

Portion 10

5.1.1. Adjust late starting of all noisy works to after 0900hrs in the morning to reduce noise impact.

5.1.2. Erect temporary noise barriers and wrap the breaker hammer with acoustic material to reduce noise impact.

5.2. Impact Monitoring (Noise) of the Project:

5.2.1. Based on the review on the nearest noise monitoring station (CM1 - Wellborn Kindergarten), there is no exceedance recorded for the monitoring results as of 25 September 2024.

Preventive Action(s)

1. The Contractor was reminded to maintain the tidiness of these areas and timely clear water ponding after rain to prevent spillage to nearby surface drains.

2. The Contractor was reminded to increase water spraying frequency for dust suppression, particularly in dry weather.

3. The Contractor was reminded to regularly review and inspect the existing wastewater treatment facilities to ensure that they are functioning properly, particularly during the rainy season.

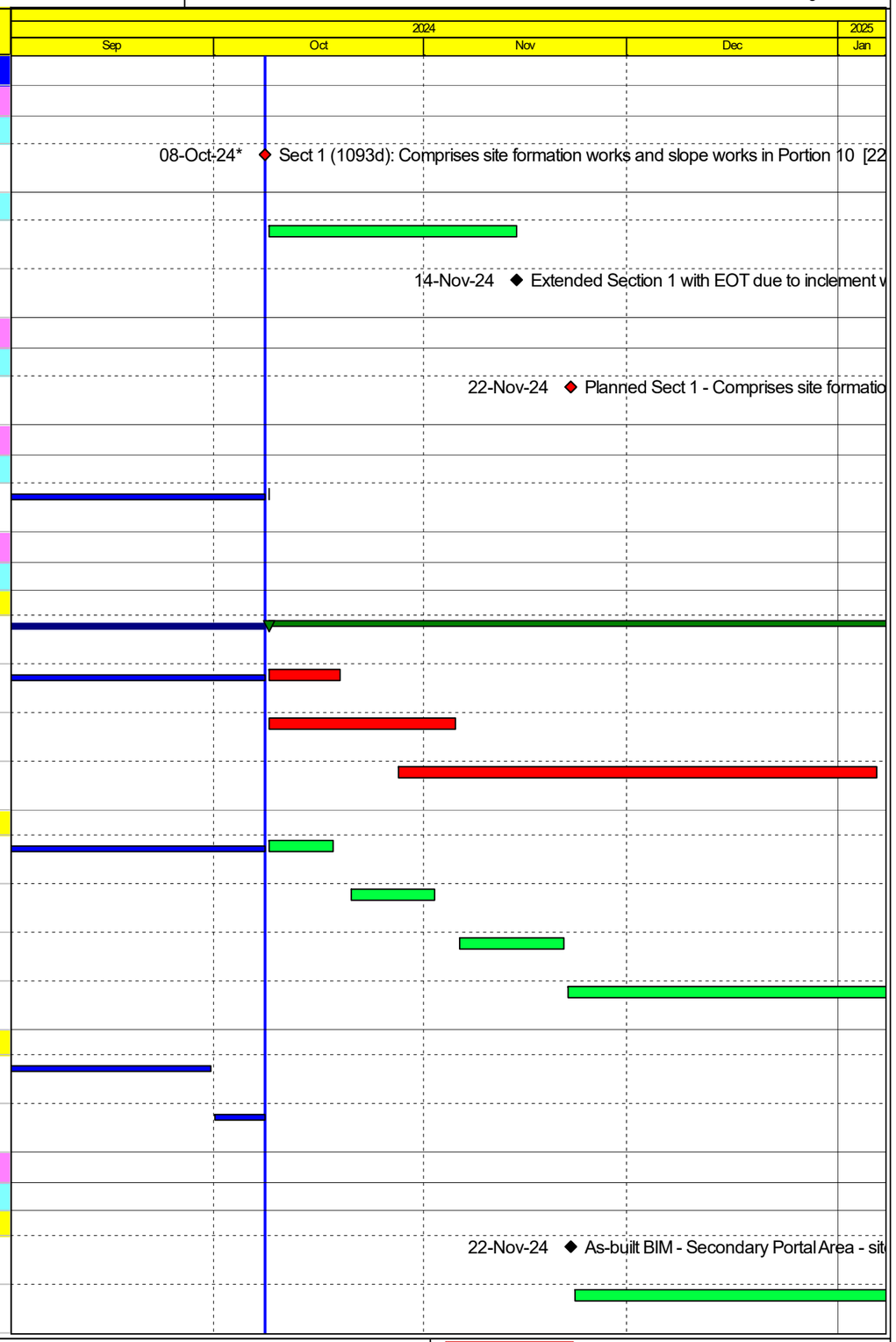
4. The Contractor was reminded to strictly follow the acceptable working hours according to Noise Control Ordinance.

5. The Contractor is also recommended to limit the number of powered mechanical equipment to be operated at the same time and ensure all idled PME are shut down to minimize potential noise impact at the concerned works area.

Appendix 10.1

Construction Programme of Individual Contracts

Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
DC/2020/05, Relocation of STST to Caverns - Main Caverns Construction					
Contract Particulars, Key Dates, Section of Completions, Access Dates					
Contract Sectional Completion					
C-Sect01	Sect 1 (1093d): Comprises site formation works and slope works in Portion 10 [22 Sep 24]	0%	0		08-Oct-24*
Extended Sectional Completion with EOT assessed by AECOM due to Inclement Weather (under review)					
EOT-IW-Sec1-10	Sec 1 EOT assessed by AECOM due to inclement weather (Jun 23 to Mar 24) (37cd to be finalized)	0%	37	09-Oct-24	14-Nov-24
EOT-IW-Sec1-20	Extended Section 1 with EOT due to inclement weather (under review)	0%	0		14-Nov-24
Planned Completion Dates					
Planned Sectional Completion					
Sect01	Planned Sect 1 - Comprises site formation works and slope works in Portion 10	0%	0		22-Nov-24
CCEN, PMI & CE					
CCEN068 - delay of works due to Interpretation of Engineering Condition of WA3					
CCEN68-30	Under amendment of Noise Control Notice, no transportation happened on each Saturday from Cavern to P2	0%	0	02-Sep-23 A	09-Oct-24
Preliminary Works & Preparation Works					
Off-Site Fabrication for Cavern Complex					
Shop Drawings for Internal Structures & OHVD					
A20400	OHVD & internal structure Precast Unit - Shop Design preparation, review and accept by PM	20%	95	07-Mar-24 A	07-Feb-25
A20400-020	Shop Drawing - air drop leg and protected lobby - prepare and submit to PM	55%	9	04-Jul-24 A	19-Oct-24
A20400-030	Shop Drawing - Pressurized Ducts - prepare and submit to PM	0%	23	09-Oct-24	05-Nov-24
A20400-040	Shop Drawing - Columns & Beams - prepare and submit to PM	0%	58	28-Oct-24	06-Jan-25
Steel Formwork Fabrication for off-site Precast Construction					
A20400-070	Steel formwork - emergency bypass - fabricate steel mould	10%	8	17-Jun-24 A	18-Oct-24
A20400-080	Steel formwork - air drop leg and protected lobby - fabricate steel mould	0%	12	21-Oct-24	02-Nov-24
A20400-100	Steel formwork - Pressurized Ducts - fabricate steel mould	0%	14	06-Nov-24	21-Nov-24
A20400-120	Steel formwork - Columns & Beams - fabricate steel mould	0%	50	22-Nov-24	22-Jan-25
Off-site Fabrication of Emergency Bypass box structure					
A30930	Emergency Bypass - Factory Fabrication (Batch 1)	100%	0	15-Jul-24 A	30-Sep-24 A
A30940	Emergency Bypass - Factory Fabrication (Batch 2)	5%	20	01-Oct-24 A	08-Feb-25
BIM Management [PS App 29.1]					
BIM As-built Record and O&M Manuals					
As-built BIM Model for Secondary Portal Area (Portion 10)					
A24630	As-built BIM - Secondary Portal Area - site formation work complete	0%	0		22-Nov-24
A24640	As-built BIM - Secondary Portal Area - prepare and submit draft as-built BIM	0%	78	23-Nov-24	04-Mar-25



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Crit. Milestone

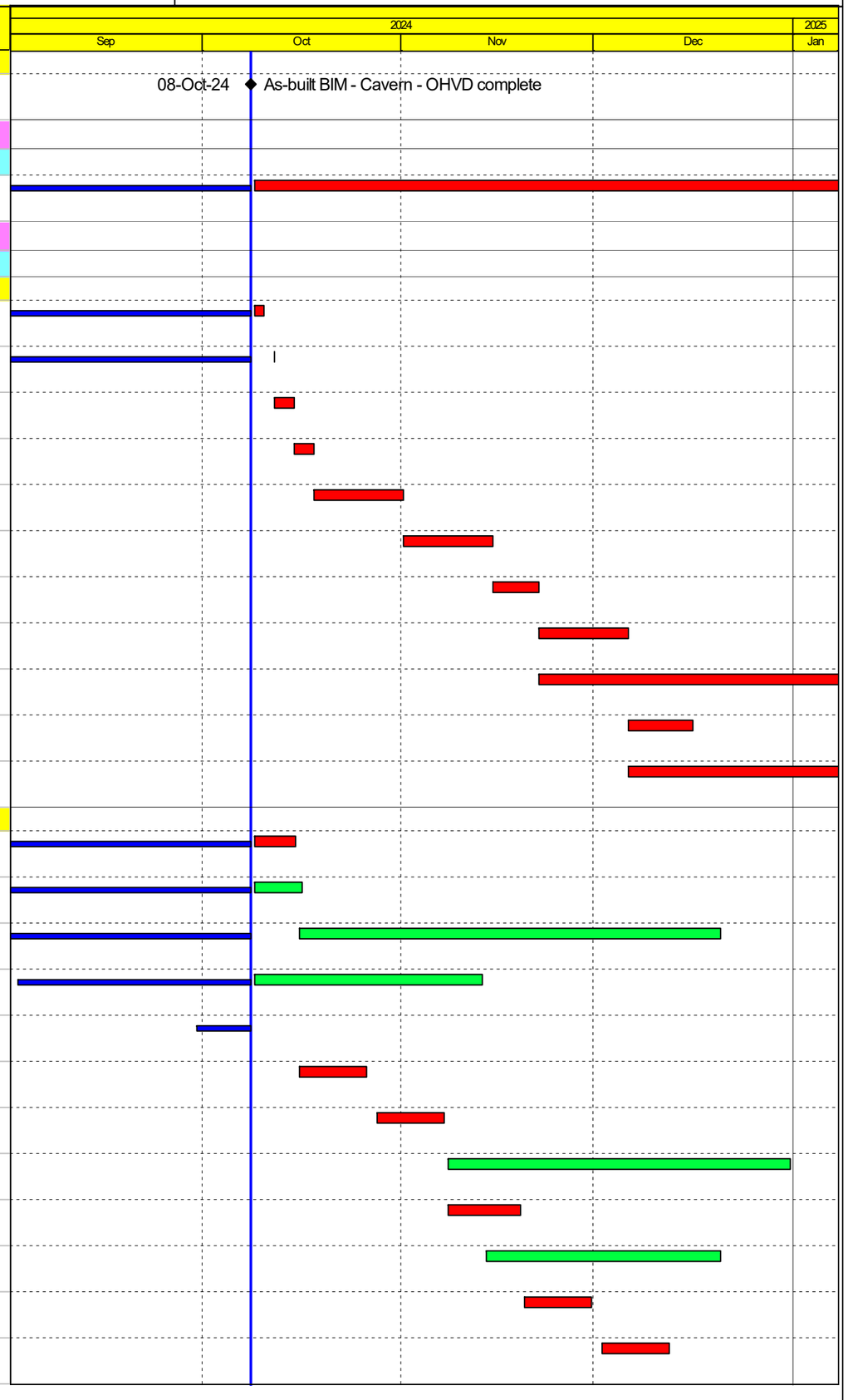
Project File: C2-MP008e-08Oct24
Layout: C2 - MPR - 3M Rolling Prog (submission)
Data Date: 08-Oct-24
Page 1 of 14

Contract No. DC/2020/05
Relocation of STST to Caverns - Main Caverns Construction

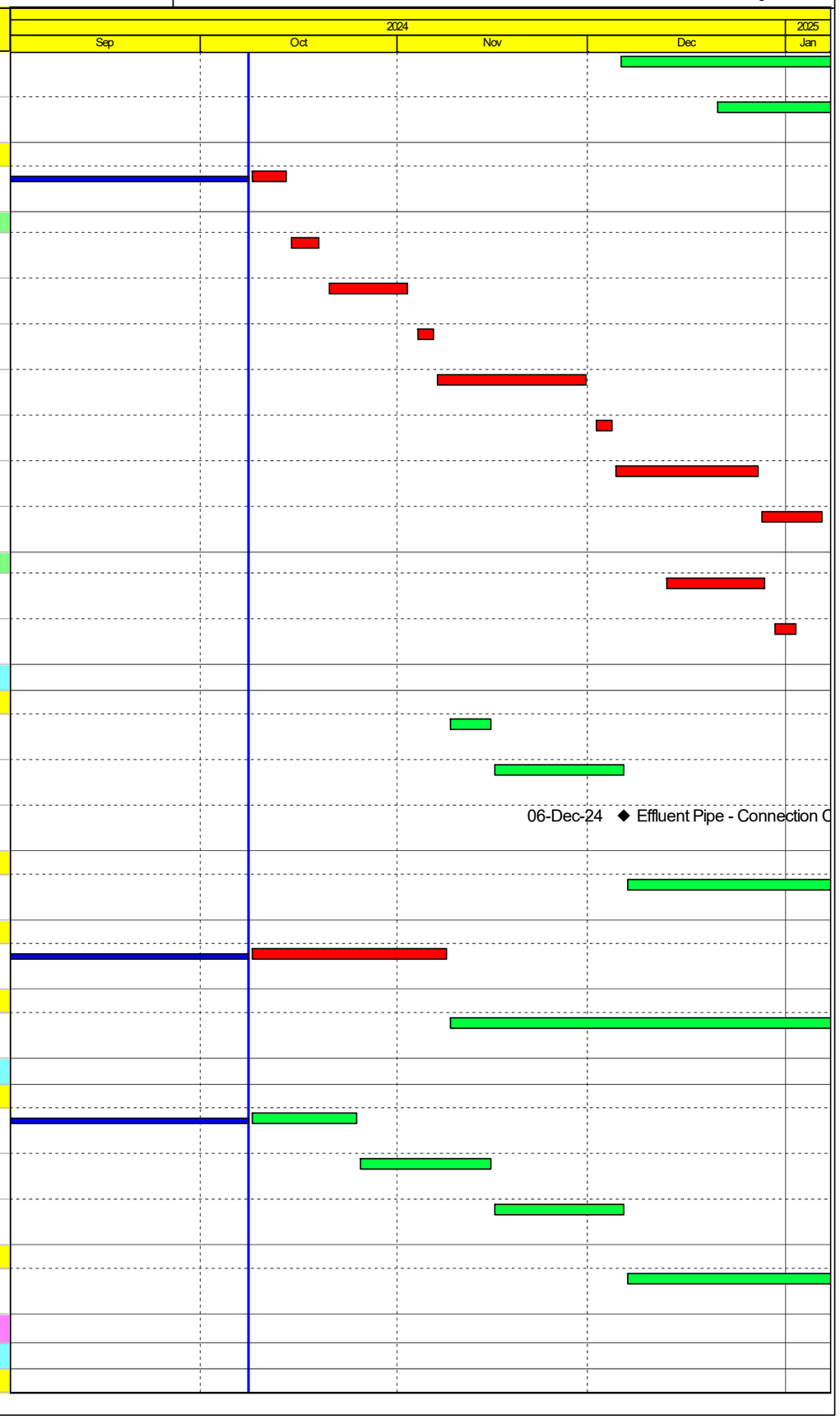
3 Months Rolling Programme (Oct to Dec 2024)

China State – Alchmex Joint Venture

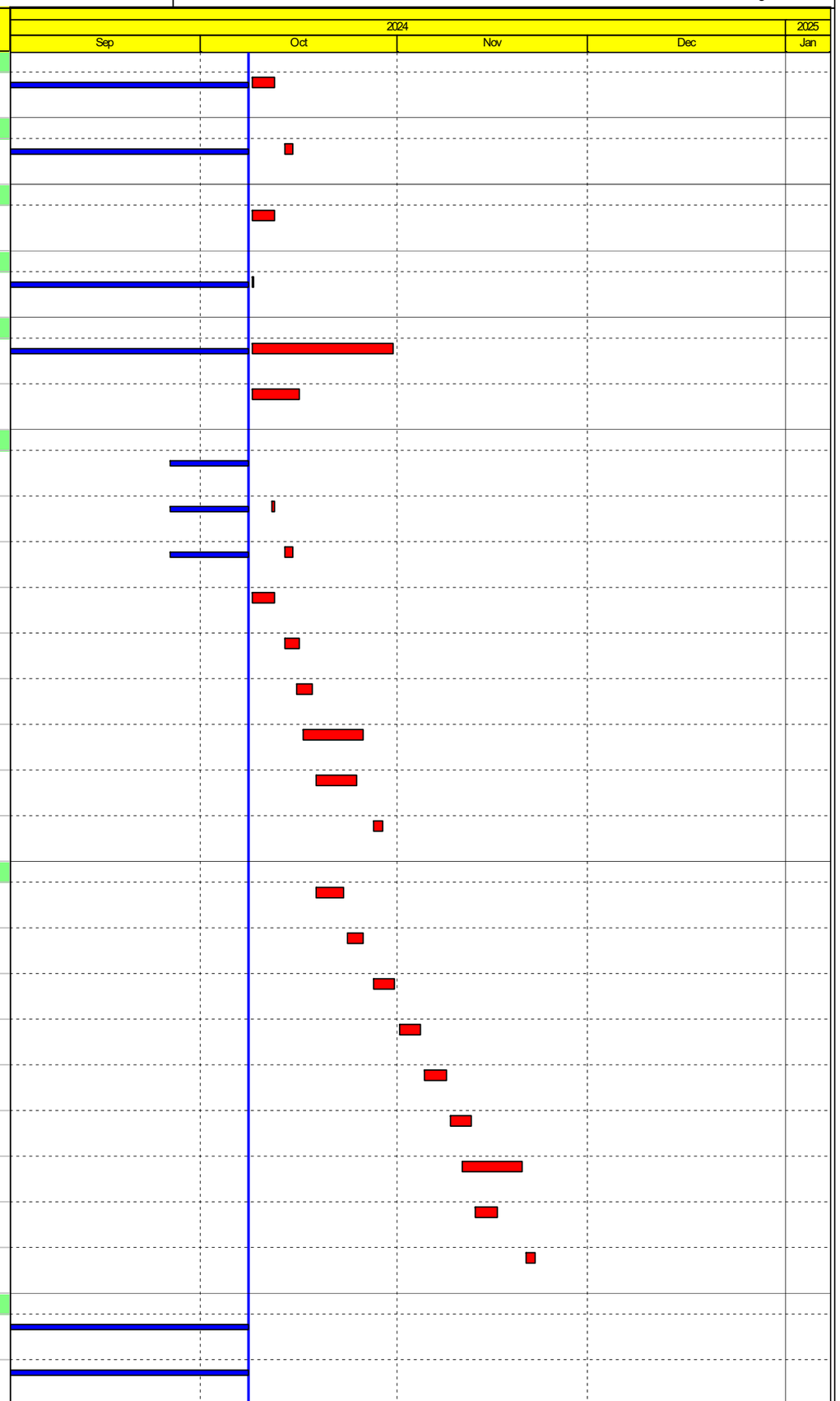
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
As-built BIM Model for Cavern (Cavern Complex, MAT, SAT, Ventilation Adit, Ventilation Shaft)					
A24780	As-built BIM - Cavern - OHVD complete	0%	0		08-Oct-24
General Site Preparation Works					
Tree Preservation and Protection					
C1050	Preservation and Protection of Existing Trees	56%	661	05-Jul-21 A	07-Jan-27
Main Portal Area and Main Access Tunnel (MAT, MATE, MATW)					
Main Portal Area - Site Formation for Main Portal					
Main Portal Area - Soil Nail at Slope SMP5					
A25280	SMP5 - Excavation (20.5-16.5mpd)	60%	2	02-Apr-24 A	10-Oct-24
A25290	SMP5 - Soil Nail at 18.5mpd - (e1-52) - 52 nos.	95%	0	15-Jun-24 A	12-Oct-24
A25300	SMP5 - Soil Nail at 16.5mpd - (d48-50) - 3 nos.	0%	2	12-Oct-24	15-Oct-24
A25310	SMP5 - Excavation (16.5-12.5mpd)	0%	3	15-Oct-24	18-Oct-24
A25320	SMP5 - Soil Nail at 15.5mpd - (d1 - 47) - 47 nos.	0%	12	18-Oct-24	01-Nov-24
A25330	SMP5 - Soil Nail at 13.5mpd - (c1 - 47) - 47 nos.	0%	12	01-Nov-24	15-Nov-24
A25340	SMP5 - Excavation (12.5-9.5mpd)	0%	6	15-Nov-24	22-Nov-24
A25350	SMP5 - Soil Nail at 11.5mpd - (b1 - 43) - 43 nos.	0%	12	22-Nov-24	06-Dec-24
A10660	SMP5 - 300 & 375 dia U-channel	0%	52	22-Nov-24	25-Jan-25
A25360	SMP5 - Soil Nail at 9.5mpd - (a1 - 32) - 32 nos.	0%	8	06-Dec-24	16-Dec-24
A25370	Replace of soil by no fine concrete	0%	26	06-Dec-24	09-Jan-25
Main Portal Area - Retaining Wall RMP7					
A10650	RMP7 - Excavation & lagging plate (1st & 2nd layer TBa1 to TBa32, TBb1 to TBb23, TBa33 to TBa55)	75%	5	16-Oct-23 A	15-Oct-24
A10630	RMP7 - Excavation at (PL1-9)	75%	6	01-Dec-23 A	16-Oct-24
A10650-70	RMP7 - install remaining tie back nail, nail head and waling	0%	57	15-Aug-24 A	20-Dec-24
A25220-10	RMP7 - remainig portion of Mass Concrete at PL73 - remove sheetpiles, remove ex. retaining wall	0%	30	02-Sep-24 A	13-Nov-24
A10650-10	RMP7 - Excavation & lagging plate (remaining 2nd layer TBb24 to TBb33)	100%	0	30-Sep-24 A	08-Oct-24 A
A10650-20	RMP7 - Excavation & lagging plate (3rd layer TBc1 to TBc27)	0%	10	16-Oct-24	26-Oct-24
A10650-60	RMP7 - Excavation & lagging plate (remaining layer to 1m below formation level)	0%	10	28-Oct-24	07-Nov-24
A25190	RMP7 - construct Skin wall	0%	44	08-Nov-24	31-Dec-24
A10650-30	RMP7 - Excavation & lagging plate (3rd layer TBc28 to TBc37)	0%	10	08-Nov-24	19-Nov-24
A25220-20	RMP7 - remainig portion of Mass Concrete at PL73 - construct mass concrete wall & backfill	0%	32	14-Nov-24	20-Dec-24
A10650-50	RMP7 - strengthening of existing piles of steel bridge	0%	10	20-Nov-24	30-Nov-24
A10650-40	RMP7 - Excavation & lagging plate (3rd layer TBc38 to TBc62)	0%	10	02-Dec-24	12-Dec-24



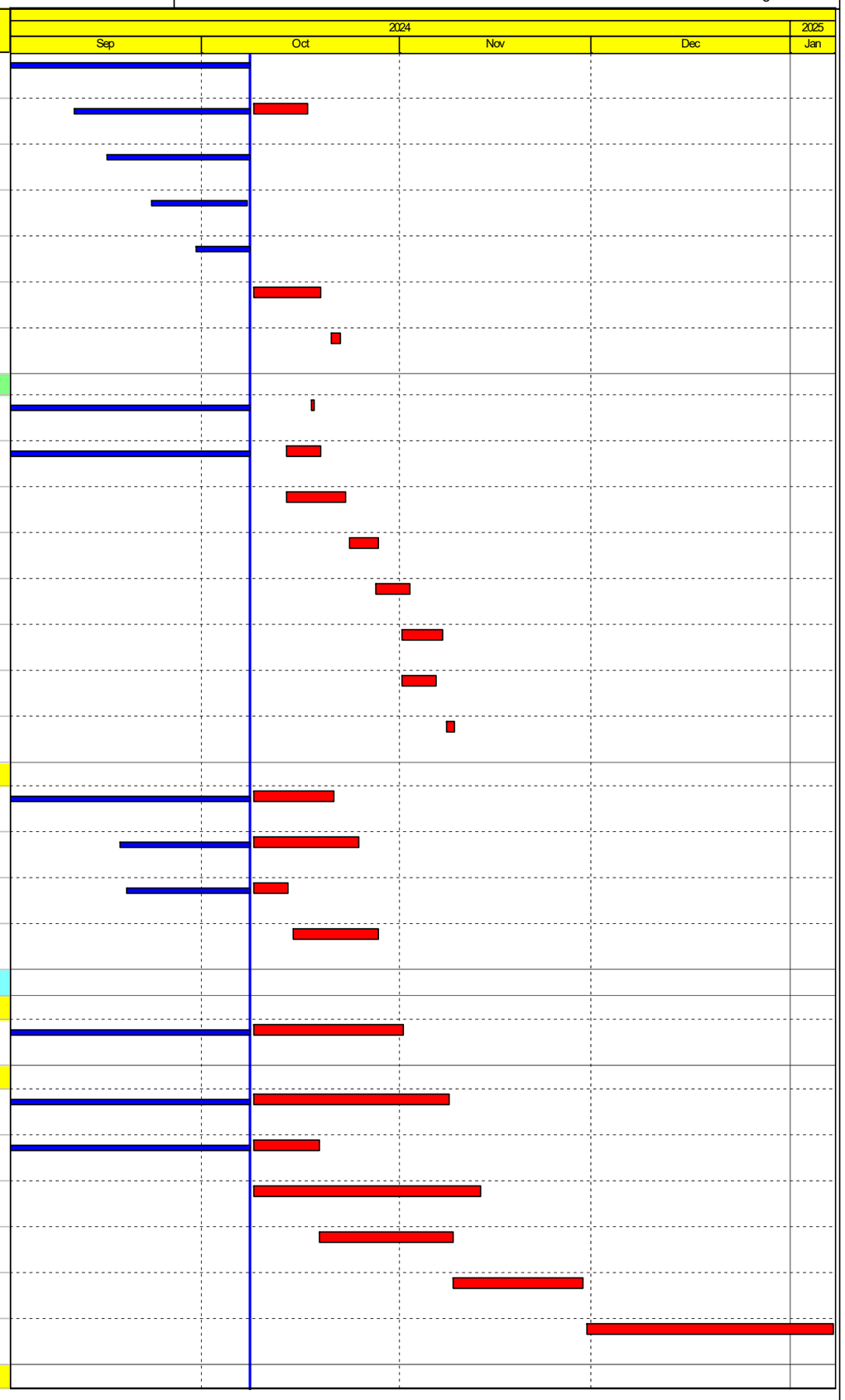
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A10640	RMP7 - 300dia & 450dia U-channel	0%	30	06-Dec-24	13-Jan-25
A25220-30	RMP7 - site clearance	0%	22	21-Dec-24	18-Jan-25
	Main Portal Area - PMI223 Additional Screen wall & Capping Beam for RMP7-1				
A30830	PMI223 - lagging wall & capping beam - subletting (T056)	20%	6	19-Aug-24 A	14-Oct-24
	Screen wall from Bored Pile BP1 to BP3				
A30710	PMI223 - lagging wall (BP1 to BP3) - plant mobilization and site preparation work (5d)	0%	5	15-Oct-24	19-Oct-24
A30720	PMI223 - lagging wall (BP1 to BP3) - Erect working platform from +8 to +25mPD (12d)	0%	12	21-Oct-24	02-Nov-24
A30730	PMI223 - lagging wall (BP1 to BP3) - general cleaning to the as-constructed bored piles (3d)	0%	3	04-Nov-24	06-Nov-24
A30740	PMI223 - lagging wall (BP1 to BP3) - Install anchor bolts (21d)	0%	21	07-Nov-24	30-Nov-24
A30750	PMI223 - lagging wall (BP1 to BP3) - construct lagging wall (3 bays) (50d)	0%	3	02-Dec-24	04-Dec-24
A30760	PMI223 - lagging wall (BP1 to BP3) - construct capping beam (18d)	0%	18	05-Dec-24	27-Dec-24
A31580	PMI223 - lagging wall (BP1 to BP3) - site clearance (7d)	0%	7	28-Dec-24	06-Jan-25
	Screen Wall from Bored Pile BP4 to BP6				
A30780	PMI223 - lagging wall (BP4 to BP6) - Erect working platform from +8 to +25mPD (12d)	0%	12	13-Dec-24	28-Dec-24
A30790	PMI223 - lagging wall (BP4 to BP6) - general cleaning to the as-constructed bored piles (3d)	0%	3	30-Dec-24	02-Jan-25
	Effluent Pipelines and Connection Chamber				
	Effluent Pipeline - Chamber Retaining Wall RWC1				
A10380	Effluent Pipe - Connection Chamber RWC1 - Excavation	0%	6	09-Nov-24	15-Nov-24
A10390	Effluent Pipe - Connection Chamber RWC1 - Footing & wal	0%	18	16-Nov-24	06-Dec-24
A17292	Effluent Pipe - Connection Chamber RWC1 - structure complete	0%	0		06-Dec-24
	Effluent Pipeline - Chamber Retaining Wall RWC2				
A10430	RWC2 remaining wall and roof structure	0%	50	07-Dec-24	13-Feb-25
	Effluent Pipeline - TBM Tunneling and Pipe Jacking				
A17280	Effluent Pipe - Pipe Jacking and install pipe for E201 (Ch718 - 386 @2m/d)	82%	26	08-Apr-24 A	08-Nov-24
	Effluent Pipeline - Pipework in BD4				
A17290	Effluent Pipe - Install pipe for E101 and E201 (Ch366 - 386) (in BD4)	0%	75	09-Nov-24	14-Feb-25
	Diversion of Steel Bridge				
	Steel Bridge - Design Preparation, Submission, Approval				
A11680	Main Portal West - Steel Bridge - PM 1st Comment	30%	14	26-Feb-24 A	25-Oct-24
A11690	Main Portal West - Steel Bridge - Design re-submission	0%	18	26-Oct-24	15-Nov-24
A11700	Main Portal West - Steel Bridge - Design approval	0%	18	16-Nov-24	06-Dec-24
	Steel Bridge - Erection and Diversion				
A11630	Main Portal West - Steel Bridge - Temp work to protect existing steel bridge piles	0%	25	07-Dec-24	08-Jan-25
	Secondary Portal Area and Secondary Access Tunnel (SAT)				
	Secondary Portal Area - Site Formation & Landscaping for Secondary Portal				
	Secondary Portal Area - Slope SSP1 - Cut Slope and Soil Nail (+76mPD to +13.5mPD)				



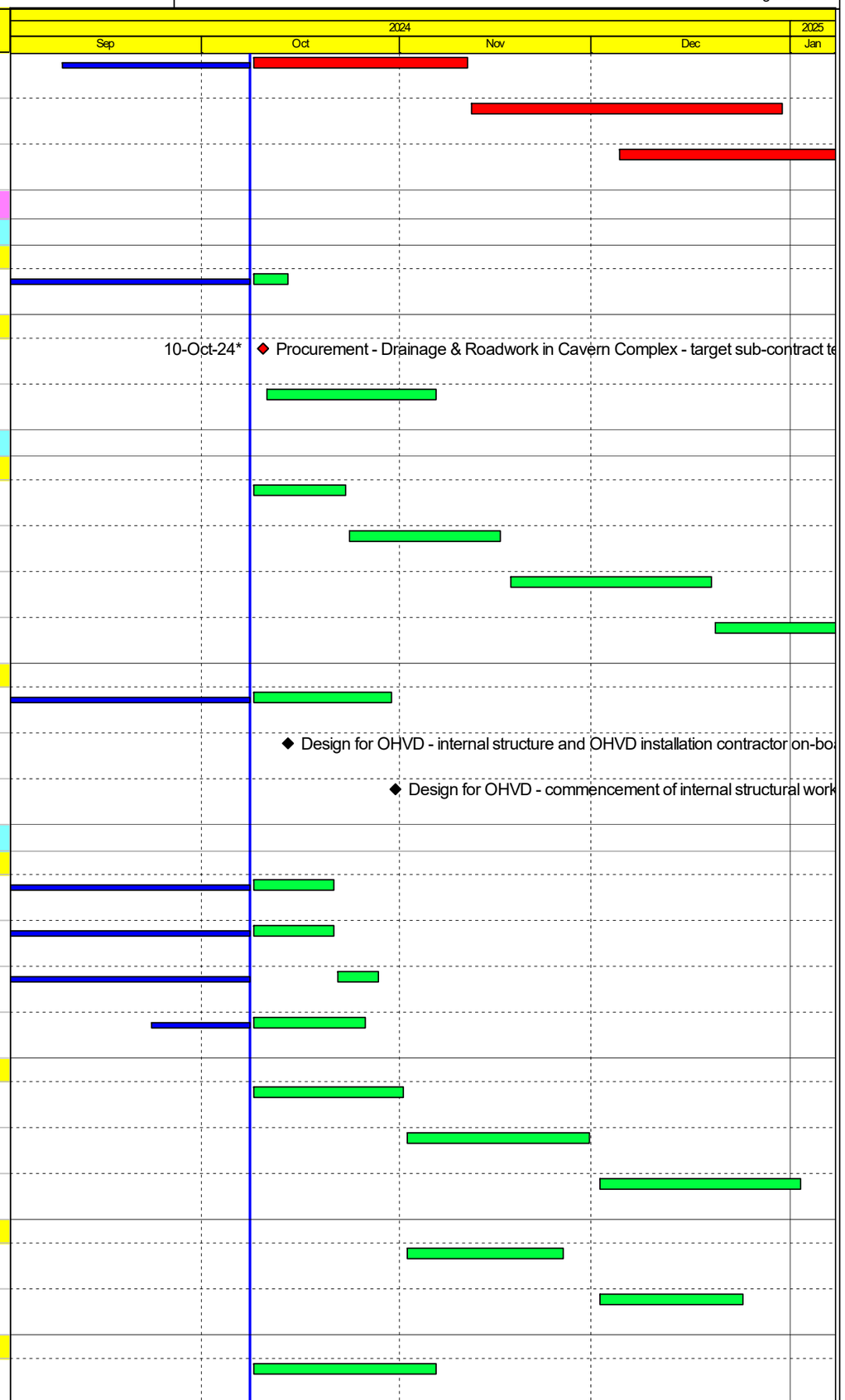
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
Slope SSP1 - Stage 2 (+33.4mPD to +25.9mPD) [Area 4]					
A27140	Slope SSP1 - Stage2 - area 4 (33.4 to 25.9mPD) - construct u-channel & beam platform @+25.9mPD	80%	3	08-Aug-24 A	12-Oct-24
Slope SSP1 - Stage 1 (+25.9mPD to +19.5mPD) [Area 5]					
A27260	Slope SSP1 - Stage1 - area 5 (25.9 to 19.5mPD) - construct u-channel & berm platform @+19.4mPD	88%	2	10-Jun-24 A	15-Oct-24
Slope SSP1 - Stage 3 (+48.4mPD to +40.9mPD) [Area 9]					
A26520	Slope SSP1 - Stage3 - area 9 (48.4mPD to 40.9mPD) - lay earth mat & wire mesh	0%	3	09-Oct-24	12-Oct-24
Slope SSP1 - Stage 3 (+40.9mPD to +33.4mPD) [Area 10]					
A26550	Slope SSP1 - Stage3 - area 10 (40.9mPD to 33.4mPD) - construct u-channel & berm platform @+33.4mPD	90%	1	19-Aug-24 A	09-Oct-24
Slope SSP1 - Stage 3 (+33.4mPD to +25.9mPD) [Area 11]					
A27180	Slope SSP1 - Stage 3 - area 11 (25.9mPD to 12.8mPD) - cut slope at SAT portal area	63%	19	26-Aug-24 A	31-Oct-24
A26760	Slope SSP1 - Stage3 - area 11 (33.4mPD to 25.9mPD) - construct u-channel & berm platform @+25.9mPD	0%	6	09-Oct-24	16-Oct-24
Slope SSP1 - Stage 3 (+25.9mPD to +19.5mPD) [Area 12]					
A26560	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - excavate for soil nail F1 to F14	100%	0	26-Sep-24 A	08-Oct-24 A
A26580	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - excavate for soil nail E1 to E14	80%	1	26-Sep-24 A	12-Oct-24
A26600	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - excavate for soil nail D1 to E15	60%	2	26-Sep-24 A	15-Oct-24
A26570	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - soil nail works for F1 to F14 @+25mPD [14 nos.]	0%	3	09-Oct-24	12-Oct-24
A26590	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - soil nail works for E1 to E14 @+23mPD [14 nos.]	0%	3	14-Oct-24	16-Oct-24
A26610	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - soil nail works for D1 to D15 @+21mPD [15 nos.]	0%	3	16-Oct-24	18-Oct-24
A26620	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - construct soil nail head for Row D, E, F	0%	9	17-Oct-24	26-Oct-24
A26630	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - construct u-channel & berm platform @+19.5mPD	0%	6	19-Oct-24	25-Oct-24
A26640	Slope SSP1 - Stage3 - area 12 (25.9mPD to 19.5mPD) - lay erosion control mat	0%	2	28-Oct-24	29-Oct-24
Slope SSP1 - Stage 3 (+19.5mPD to +12.8mPD) [Area 13]					
A26650	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - excavate for soil nail C1 to C16	0%	4	19-Oct-24	23-Oct-24
A26660	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - soil nail works for C1 to C16 @+18mPD [16 nos.]	0%	3	24-Oct-24	26-Oct-24
A26670	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - excavate for soil nail B1 to B18	0%	4	28-Oct-24	31-Oct-24
A26680	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - soil nail works for B1 to B18 @+16.5mPD [18 nos.]	0%	3	01-Nov-24	04-Nov-24
A26690	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - excavate for soil nail A1 to A14	0%	4	05-Nov-24	08-Nov-24
A26700	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - soil nail works for A1 to A14 @+15mPD [14 nos.]	0%	3	09-Nov-24	12-Nov-24
A26710	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - construct soil nail head for Row A, B, C	0%	9	11-Nov-24	20-Nov-24
A26720	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - construct Stepped channel & u-channel @+12.8mPD	0%	4	13-Nov-24	16-Nov-24
A26730	Slope SSP1 - Stage3 - area 13 (19.5mPD to 12.8mPD) - lay erosion control mat	0%	2	21-Nov-24	22-Nov-24
Slope SSP1 - Stage 2 (+25.9mPD to +19.5mPD) [Area 5]					
A27160	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - excavate for soil nail F15 to F33	100%	0	29-Jul-24 A	08-Oct-24 A
A27190	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - excavate for soil nail E15 to E39	100%	0	01-Aug-24 A	08-Oct-24 A



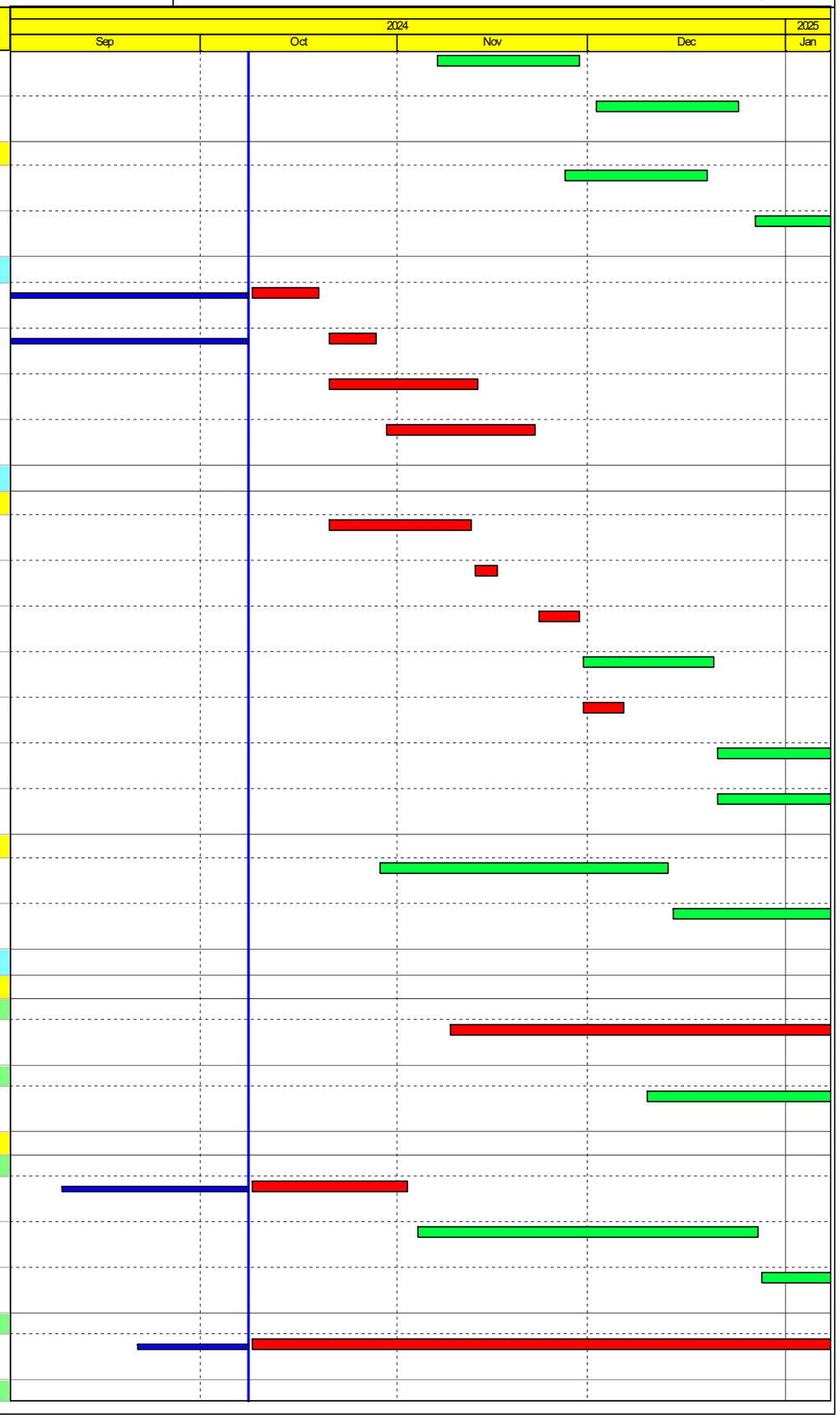
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A27220	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - excavate for soil nail D16 to D40	100%	0	01-Aug-24 A	08-Oct-24 A
A27250	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - construct u-channel & berm platform @+19.4mPD	50%	7	11-Sep-24 A	17-Oct-24
A27170	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - soil nail works for F15 to F33 @+25mPD [28 nos.]	100%	0	16-Sep-24 A	08-Oct-24 A
A27200	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - soil nail works for E15 to E39 @+23mPD [40 nos.]	100%	0	23-Sep-24 A	08-Oct-24 A
A27230	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - soil nail works for D16 to D40 @+21mPD [42 nos.]	100%	0	30-Sep-24 A	08-Oct-24 A
A27240	Slope SSP1 - Stage2 - area 5 (25.9 to 19.5mPD) - construct soil nail head for Row D, E, F	0%	9	09-Oct-24	19-Oct-24
A27252	Slope SSP1 - Stage1&2 - area 5 (25.9 to 19.5mPD) - lay erosion control mat	0%	2	21-Oct-24	22-Oct-24
Slope SSP1 - Stage 1 & 2 (+19.5mPD to +15mPD) [Area 6]					
A26080	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - excavate for soil nail C17 to C55	85%	1	03-May-24 A	18-Oct-24
A26090	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - soil nail works for C17 to C55 @+18mPD [39 nos.]	45%	6	07-May-24 A	19-Oct-24
A26110	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - construct soil nail head for C17 to C55	0%	9	14-Oct-24	23-Oct-24
A26120	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - excavate for soil nail B19 to B38	0%	4	24-Oct-24	28-Oct-24
A26130	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - soil nail works for B19 to B38 @+16.5mPD [20 nos.]	0%	6	28-Oct-24	02-Nov-24
A26140	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - construct soil nail head for B19 to B38	0%	6	01-Nov-24	07-Nov-24
A26150	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - construct u-channel @15.15mPD	0%	5	01-Nov-24	06-Nov-24
A26160	Slope SSP1 - Stage1&2 - area 6 (19.5 to 15mPD) - lay erosion control mat	0%	2	08-Nov-24	09-Nov-24
Secondary Portal Area - Remaining Site Formation Works					
A21170	Secondary Portal Area - excavate to formation level for handover (area abut to MTLRd)	50%	10	29-Feb-24 A	21-Oct-24
A21180	Secondary Portal Area - excavate to formation level for handover (both sides of temp blast door)	20%	14	18-Sep-24 A	25-Oct-24
A21142	Design of temp haul road layout	0%	4	19-Sep-24 A	14-Oct-24
A21150	Haul road from Portion 10 to 13A	0%	12	15-Oct-24	28-Oct-24
Secondary Access Tunnel (SAT)					
SAT - Hard Rock Excavation (Drill & Blast) (Ch187 - 388) - Bottom Bench					
B10100	SAT - Bottom bench Permanent Bolt & Permanent Sprayed Concrete	13%	20	17-Jul-24 A	01-Nov-24
SAT - Permanent Lining					
A12206	SAT - Permanent lining formwork fabrication	50%	26	09-Jan-24 A	08-Nov-24
A12202	SAT - Design submission of permanent lining formwork	62%	9	09-Apr-24 A	19-Oct-24
A12220-02	SAT - mechanical breaking of remaining benching (ch139 - 150)	0%	30	09-Oct-24	13-Nov-24
A12204	SAT - Design approval of permanent lining formwork	0%	18	19-Oct-24	09-Nov-24
A12210	SAT - Make good shotcrete, blinding & preparation works	0%	18	09-Nov-24	29-Nov-24
A12220-10	SAT - Construct Permanent Lining with base slab (Ch140-150) Type 19b	0%	30	30-Nov-24	07-Jan-25
SAT - OHVD footings					



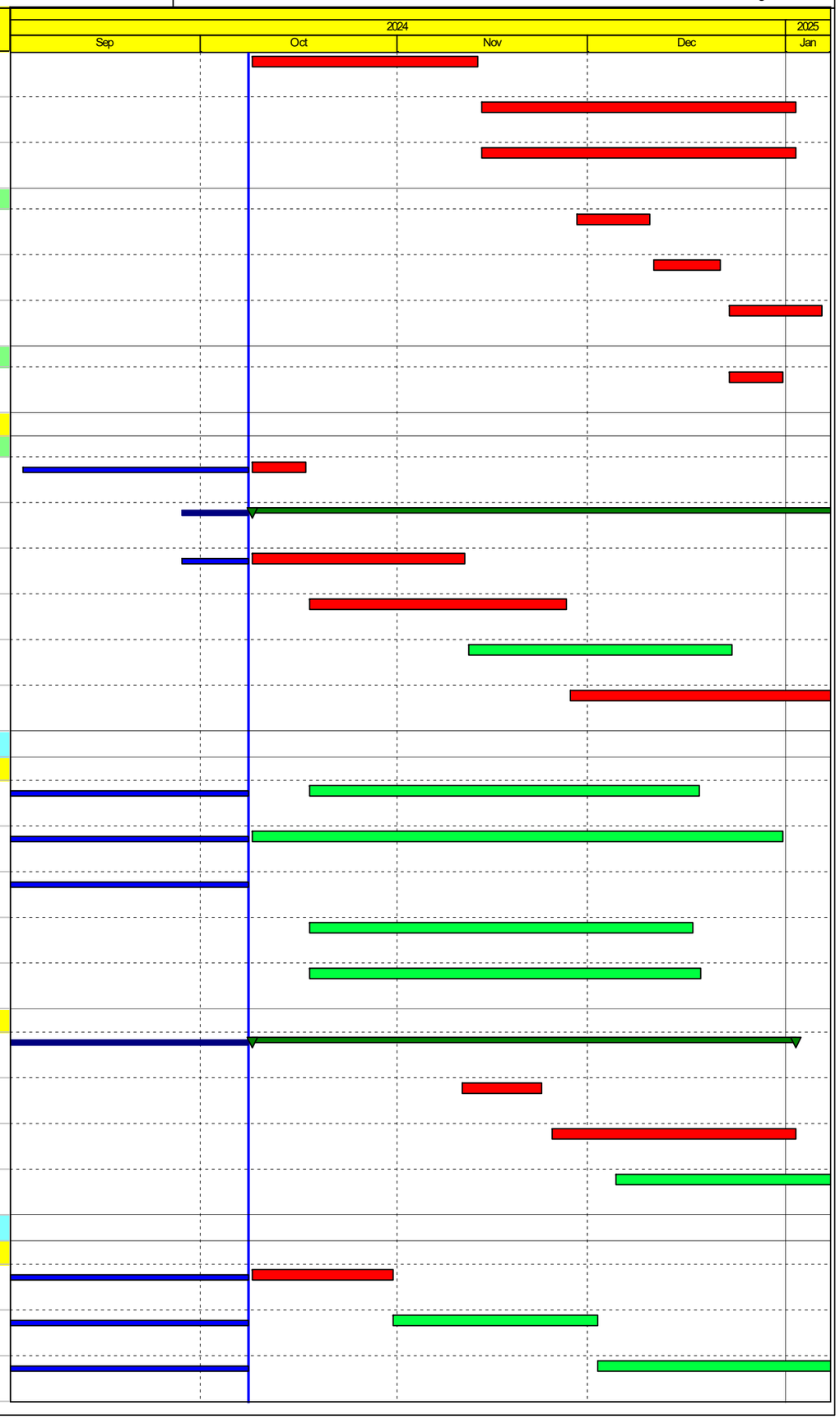
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A17020-010	SAT - temp rock stockpile & remove of rock stockpile in SAT	0%	28	09-Sep-24 A	11-Nov-24
A17020-100	-----SAT - OHVD footings (ch380-340, near Press. Duct)	0%	40	12-Nov-24	30-Dec-24
A17020-120	-----SAT - OHVD footings (ch380-340, opposite Press. Duct)	0%	40	05-Dec-24	23-Jan-25
Cavern Complex					
Cavern Complex - Procurement for Internal R.C. Structures & OHVD					
Procurement - Installation of OHVD, Protected Corridor and Associated Civil Structure					
A27050	Procurement - Installation of OHVD, Protected Corridor & Ass. Civil Structure - target award of sub-contract	93%	6	08-May-24 A	14-Oct-24
Procurement - Drainage & Roadwork in Cavern & Tunnel					
A27080	Procurement - Drainage & Roadwork in Cavern Complex - target sub-contract tender out	0%	0		10-Oct-24*
A27090	Procurement - Drainage & Roadwork in Cavern Complex - target award of sub-contract	0%	27	11-Oct-24	06-Nov-24
Cavern Complex - Design for Overhead Ventilation Duct (OHVD)					
Design - Junctions of SD/BDs					
PMI364-100	PMI364 - deletion of partion wall - liaison with design consultant for new design	0%	12	09-Oct-24	23-Oct-24
PMI364-110	PMI364 - deletion of partion wall - designer revise design	0%	21	24-Oct-24	16-Nov-24
PMI364-120	PMI364 - deletion of partion wall - liaison with C3 contractor for design change	0%	28	18-Nov-24	19-Dec-24
PMI364-130	PMI364 - deletion of partion wall - final review of design after liaise with C3	0%	14	20-Dec-24	08-Jan-25
Design - OHVD Design Final Review					
A16510	Design for OHVD - PM comment and accept final design review	100%	22	17-Aug-24 A	30-Oct-24
A16482	Design for OHVD - internal structure and OHVD installation contractor on-board	0%	0	14-Oct-24	
A17020	Design for OHVD - commencement of internal structural works (above ground)	0%	0	31-Oct-24	
Main Access Tunnel, MAT (R103, ch100-288)					
MAT - OHVD Footing					
A16542-10	----- MAT - OHVD footings & pedestals - (ch100 - 260) - (row near Press. Duct)	78%	10	08-Mar-24 A	21-Oct-24
A16542-30	----- MAT - OHVD footings & pedestals - (ch100 - 260) - (row near Em. Bypass)	90%	10	15-Apr-24 A	21-Oct-24
A16542-20	----- MAT - OHVD footings & pedestals - (ch150 - 260) - (middle row, 15 nos.) in TTA phase 1	45%	6	20-Aug-24 A	28-Oct-24
A16542-60	----- MAT - OHVD footings & pedestals - (ch100 - 130) - after blast door remove & in TTA phase 2	50%	15	23-Sep-24 A	26-Oct-24
MAT - Emergency Bypass					
A20940	MAT - *Emergency Bypass - (Ch220 - 260) - construct box culvert structure	0%	20	09-Oct-24	01-Nov-24
A20930	MAT - *Emergency Bypass - (Ch180 - 223) - construct box culvert structure	0%	25	02-Nov-24	30-Nov-24
A20920	MAT - *Emergency Bypass - (Ch140 - 180) - construct box culvert structure	0%	25	02-Dec-24	02-Jan-25
MAT - Sewage Rising Main					
A17820	#MAT - Sewage Rising Mains - installation Ch220 - 260, R103	0%	21	02-Nov-24	26-Nov-24
A17810	#MAT - Sewage Rising Mains - installation Ch180 - 220, R103	0%	20	02-Dec-24	24-Dec-24
MAT - Ground Water Drainage					
A20870	#MAT - Ground Water Drainage - (Ch220 - 260, R103) - construct manhole & pipe	0%	24	09-Oct-24	06-Nov-24



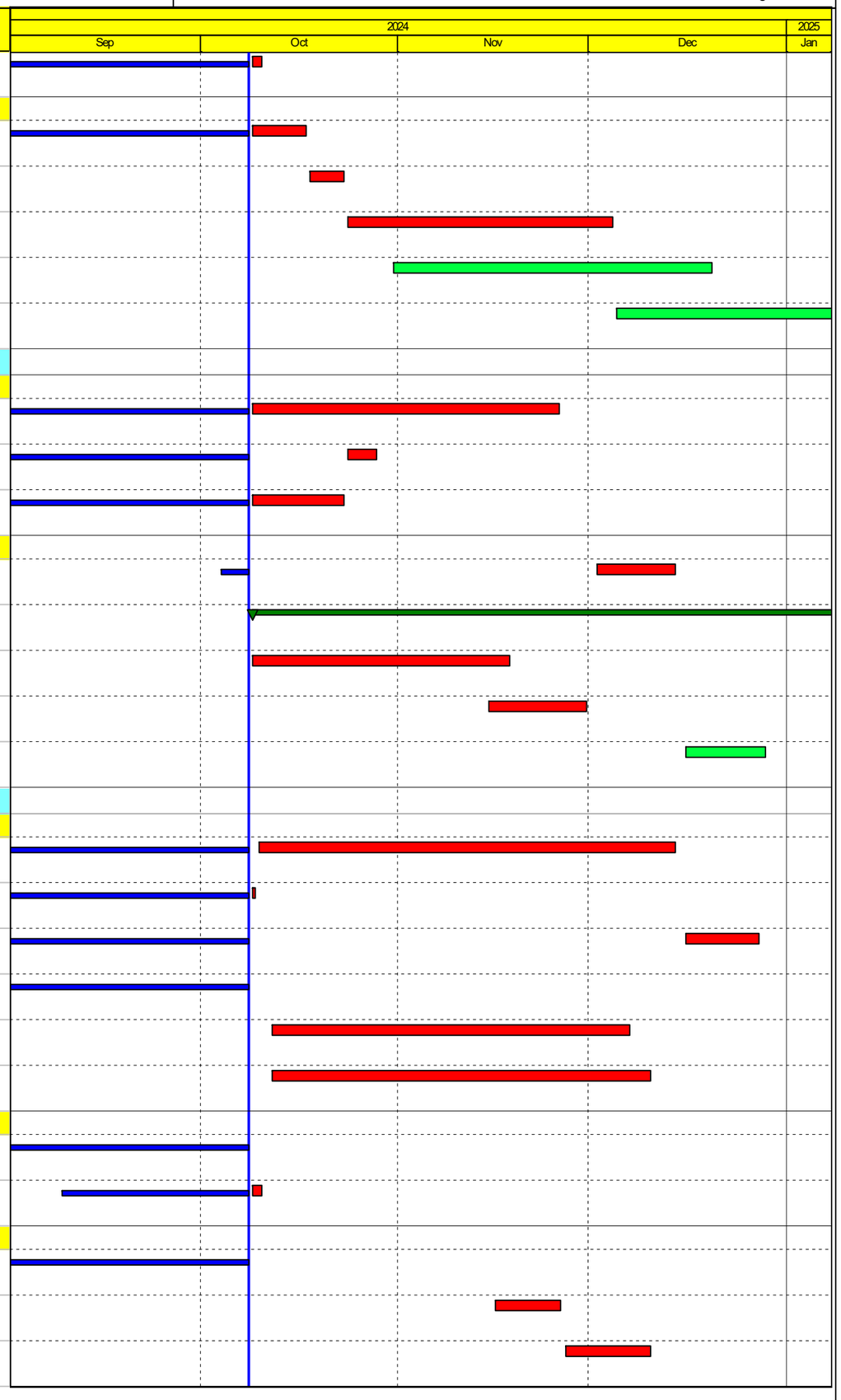
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A20860	#MAT - Ground Water Drainage - (Ch180 - 220, R103) - construct manhole & pipe	0%	20	07-Nov-24	29-Nov-24
A20850	#MAT - Ground Water Drainage - (Ch140 - 180, R103) - construct manhole & pipe	0%	20	02-Dec-24	24-Dec-24
MAT - Waste Water Drainage					
A17450	#MAT - Waste Water Drainage - (Ch220 - 260, R103) - construct manhole & pipe	0%	20	27-Nov-24	19-Dec-24
A17440	#MAT - Waste Water Drainage - (Ch180 - 220, R103) - construct manhole & pipe	0%	20	27-Dec-24	20-Jan-25
Sub-letting of Lining Shutter for Cavern Complex					
A20335	Lining subletting (T056) - Subletting period	91%	9	08-Dec-23 A	19-Oct-24
A20340	Lining Shutter - Design preparation, review and accept by PM	15%	7	18-Mar-24 A	28-Oct-24
A20350	Lining Shutter - Place Order, Factory Fabrication and Delivery	0%	21	21-Oct-24	13-Nov-24
A20360	Lining Shutter - Assembling on site	0%	21	30-Oct-24	22-Nov-24
Main Access Tunnel West, MATW (R101, ch100-320)					
MATW - Permanent Lining					
A12340	MATW - Permanent Lining - make good shotcrete, blinding & preparation works	0%	20	21-Oct-24	12-Nov-24
A12340-10	MATW - Permanent Lining - construct base slab (ch175-178)	0%	4	13-Nov-24	16-Nov-24
A12340-20	MATW - Permanent Lining - construct side walls (ch175-178)	0%	6	23-Nov-24	29-Nov-24
A12350	MATW - Permanent Lining - Construct base slab (Ch185-200) - Type 7b	0%	18	30-Nov-24	20-Dec-24
A12340-30	MATW - Permanent Lining - construct roof slab (ch175-178)	0%	6	30-Nov-24	06-Dec-24
A12360	MATW - Permanent Lining - Construct side walls (Ch185-200) - Type 7b	0%	14	21-Dec-24	09-Jan-25
A12380	MATW - Permanent Lining - Construct base slab (Ch200-225) - Type 7b	0%	20	21-Dec-24	16-Jan-25
MATW - OHVD Footings					
A16590-10	----- MATW - OHVD footings & pedestals (ch225 - 300) - (row near Press. Duct) - in TTA phase 1	0%	40	29-Oct-24	13-Dec-24
A16590-20	----- MATW - OHVD footings & pedestals (ch225 - 240) - (row opposite to Press. Duct)	0%	24	14-Dec-24	14-Jan-25
Main Driveway MD					
Main Driveway MD - Zone 1 (ch123 - 213)					
MD - Zone 1 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14502-10	MD - Zone 1 - Top Permanent Support - (ch190-213 remaining 20%) - bolt & spray concrete	0%	66	09-Nov-24	28-Jan-25
MD - Zone 1 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14511	MD - Zone 1 - Bottom Permanent Support - (MD, ch123 - 213) - Bolt and spray concrete [90m] - Stage 2	0%	57	10-Dec-24	24-Feb-25
Main Driveway MD - Zone 2 (ch213 - 392)					
MD - Zone 2 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14520-12	MD - Zone 2 - Top Permanent Support - (ch239 - 281; 42m) - Bolt and spray concrete - final patch up & inspection	0%	21	09-Sep-24 A	02-Nov-24
PA14520-22	MD - Zone 2 - Top Permanent Support - (ch281 - 337; 56m) - Bolt and spray concrete - final patch up & inspection	0%	45	04-Nov-24	27-Dec-24
PA14520-40	MD - Zone 2 - Top Permanent Support - (ch337 - 392; 55m) - Bolt and spray concrete - final patch up & inspection	0%	42	28-Dec-24	22-Feb-25
MD - Zone 2 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14531	MD - Zone 2 - Bottom Permanent Support - (MD, ch226 - 392) - Bolt and spray concrete [165.3m] - Stage 2	15%	96	21-Sep-24 A	08-Feb-25
MD - Zone 2 - OHVD Footings					



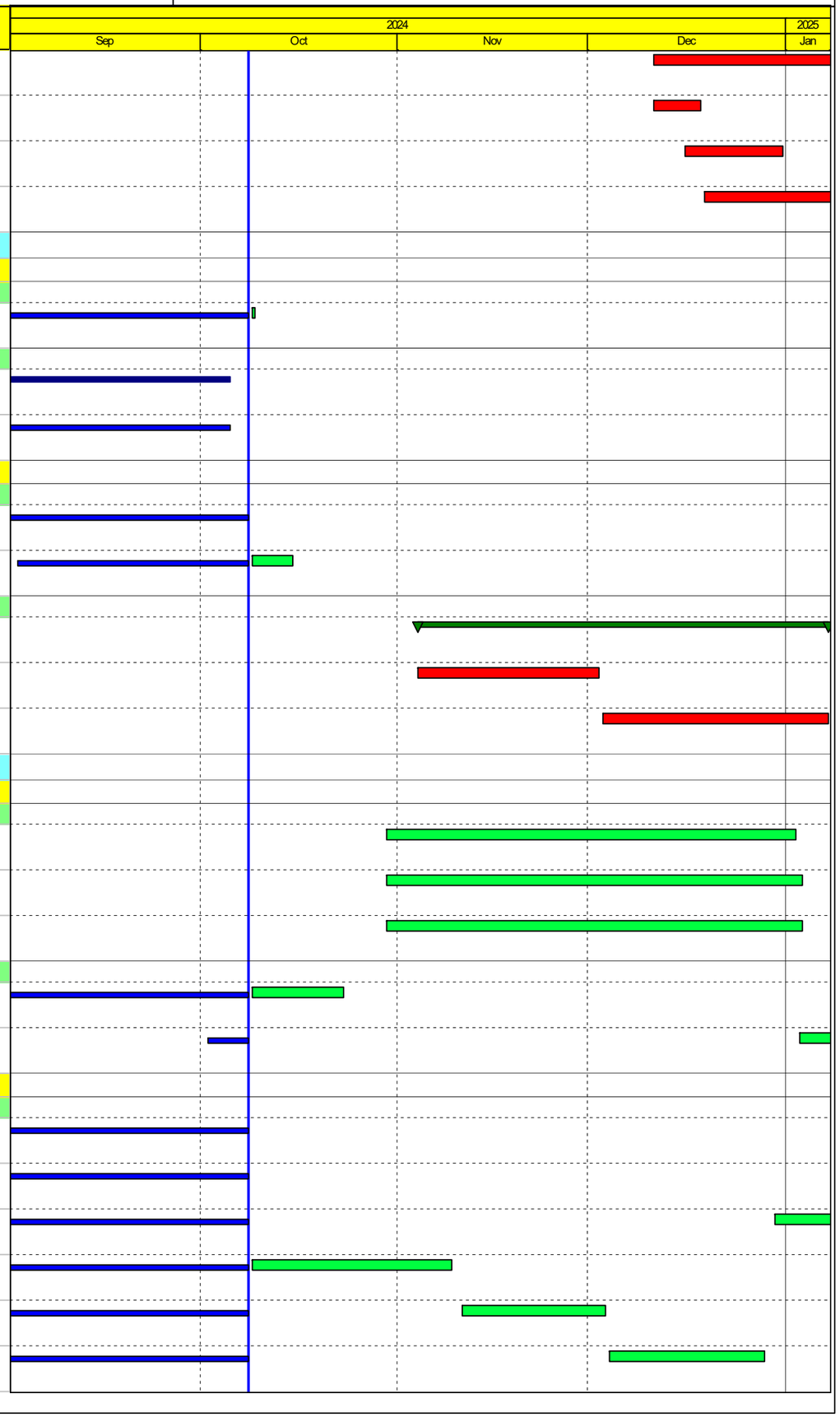
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A16642-10	----- MD - Zone 2 - OHVD footings & pedestals (ch340-213) (near Press. Duct) (~30 nos.)	0%	30	09-Oct-24	13-Nov-24
A16642-20	----- MD - Zone 2 - OHVD footings & pedestals (ch340-213) (near Em. Bypass) (~30 nos.)	0%	40	14-Nov-24	02-Jan-25
A16642-30	----- MD - Zone 2 - OHVD footings & pedestals (ch340-213) (middle row) (~30 nos.)	0%	40	14-Nov-24	02-Jan-25
MD - Zone 2 - Ground Water Drainage					
A20570	#MD - Zone 2 - Ground Water Drainage - (4-5: Ch283-323, 40m) - construct manholes, pipe	0%	10	29-Nov-24	10-Dec-24
A20560	#MD - Zone 2 - Ground Water Drainage - (6-7: Ch243-283, 40m) - construct manholes, pipe	0%	10	11-Dec-24	21-Dec-24
A20550	#MD - Zone 2 - Ground Water Drainage - (8: Ch213-243, 20m) - construct manholes, pipe	0%	10	23-Dec-24	06-Jan-25
MD - Zone 2 - Emergency Bypass					
A20970	MD - Zone 2 - *Emergency Bypass - (4-5: Ch283-323, 40m) - Emergency Bypass Floor slab and Step	0%	6	23-Dec-24	31-Dec-24
Main Driveway MD - Zone 3 (ch392 - 480)					
MD - Zone 3 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
NT11030	MD(B RHS) - Zone 3 - Ch379.4 - 409.4, 14 blasts (11A1)^	95%	7	03-Sep-24 A	17-Oct-24
PA14550	MD - Zone 3 - Bottom Permanent Support - (MD, ch408 - 480) - Bolt and spray concrete [72m] - Stage 1	0%	116	28-Sep-24 A	04-Mar-25
NT11010	MD(B LHS) - Zone 3 - Ch409.9 - 439.9, 13 blasts (10A3)^	20%	28	28-Sep-24 A	11-Nov-24
NT11040	MD(B RHS) - Zone 3 - Ch409.4 - 430.4, 14 blasts (11A2)^	0%	35	18-Oct-24	27-Nov-24
NT11020	MD(B LHS) - Zone 3 - Ch439.9 - 478.9, 14 blasts (10A4)^	0%	36	12-Nov-24	23-Dec-24
NT11050	MD(B RHS) - Zone 3 - Ch430.4 - 454.4, 14 blasts (11A3)^	0%	35	28-Nov-24	10-Jan-25
Branch Driveway BD4					
BD4 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14420-40	BD4 - Top Permanent Support - Bolt and spray concrete (ch419-ch430) [11m] - Stage 2	84%	53	19-Jun-23 A	18-Dec-24
PA14420-30	BD4 - Top Permanent Support - Bolt and spray concrete (ch358-ch419) [61m] - Stage 2	20%	69	26-Feb-24 A	31-Dec-24
PA14420-22	BD4 - Top Permanent Support - Bolt and spray concrete (ch250-ch358) [108m] - Stage 2	27%	53	26-Feb-24 A	18-Mar-25
PA14420-14	BD4 - Top Permanent Support - Bolt and spray concrete (ch180-200) [20m] - final patch up & inspection	0%	51	18-Oct-24	17-Dec-24
PA14420-21	BD4 - Top Permanent Support - Bolt and spray concrete (ch200-ch250) [50m] - final patch up & inspection	0%	53	18-Oct-24	18-Dec-24
BD4 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14430	BD4 - Bottom Permanent Support - Bolt and spray concrete - Stage 1	30%	70	30-Jan-24 A	02-Jan-25
NT10150	BD4(B) - Ch430 - 420, 4 blasts (4B1)^	0%	12	11-Nov-24	23-Nov-24
NT10140	BD4(B) - Ch420 - 360, 10 blasts (4B2)^	0%	31	25-Nov-24	02-Jan-25
NT10110	BD4(B) - Ch205 - 250, 9 blasts (2A)^	0%	28	05-Dec-24	09-Jan-25
Branch Driveway BD3					
BD3 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14440-20	BD3 - Top Permanent Support - Bolt and spray concrete (ch205-ch300) [95m] - Stage 2	44%	18	15-May-23 A	31-Oct-24
PA14440-22	BD3 - Top Permanent Support - Bolt and spray concrete (ch300-ch318, ch350-358) [26m] - Stage 2	78%	27	15-May-23 A	02-Dec-24
PA14440-24	BD3 - Top Permanent Support - Bolt and spray concrete (ch318-ch350) [32m] - Stage 2	38%	34	15-May-23 A	14-Jan-25



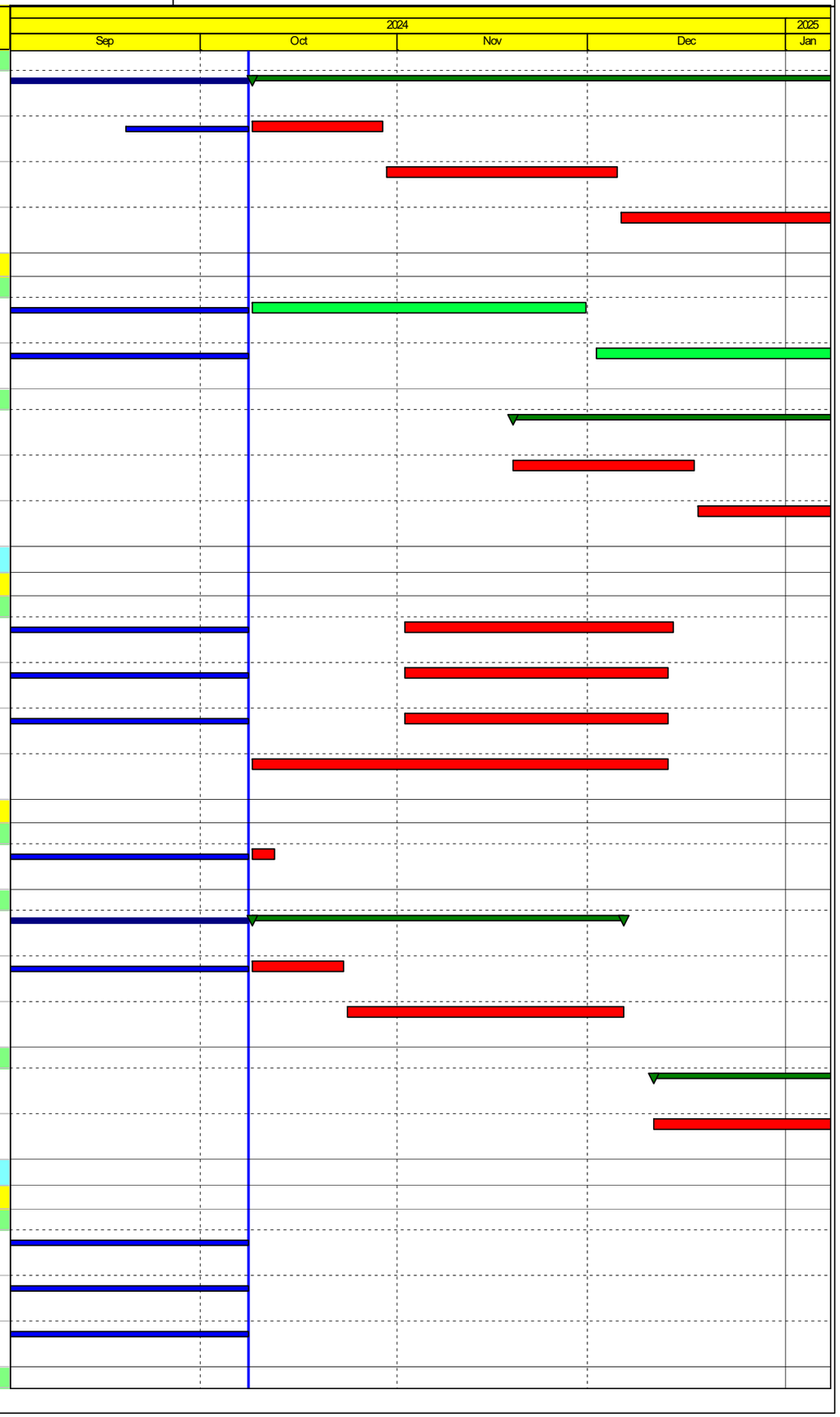
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
PA14440-32	BD3 - Top Permanent Support - Bolt and spray concrete (ch412-ch444) [32m] - Stage 2	95%	2	04-Sep-23 A	10-Oct-24
BD3 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
NT10260-20	BD3(B) - remove rock stockpile in junction between BD3/STC/ELC2	50%	7	12-Aug-24 A	17-Oct-24
NT10260-10	BD3(B) - ch235 - 250, 2 blasts (12A)^	0%	5	18-Oct-24	23-Oct-24
NT10270-10	BD3(B) - ch250 - 335, 18 blasts (3C)^	0%	36	24-Oct-24	04-Dec-24
PA14920-10	BD3 - Bottom Permanent Support (Bolt and spray concrete) (BD3 - Bottom) (Part 1 of 2) [172m] - Stage 2	0%	43	31-Oct-24	20-Dec-24
PA14920-20	BD3 - Bottom Permanent Support (Bolt and spray concrete) (BD3 - Bottom) (Part 2 of 2) [172m] - Stage 2	0%	43	05-Dec-24	27-Jan-25
Branch Driveway BD2					
BD2 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14460-12	BD2 - Top Permanent Support - Bolt and spray concrete (ch150-250) [100m] - Stage 2	81%	41	19-Feb-24 A	26-Nov-24
PA14460-20	BD2 - Top Permanent Support - Bolt and spray concrete (ch358-444) [86m] - Stage 2	75%	4	24-Jul-24 A	28-Oct-24
PA14460-14	BD2 - Top Permanent Support - Bolt and spray concrete (ch250-260, ch292-358) [76m] - Stage 2	23%	12	24-Jul-24 A	23-Oct-24
BD2 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
NT10430	BD2(B) - Ch420 - 365, 10 blasts (2B2)^	39%	12	04-Oct-24 A	14-Dec-24
PA14470	BD2 - Bottom Permanent Support - Bolt and spray concrete - Stage 1	0%	141	09-Oct-24	02-Apr-25
NT10380	BD2(B) - ch150 - 100, ch175 - 250; 24 blasts (1A)^	0%	34	09-Oct-24	18-Nov-24
NT10440	BD2(B) - Ch430 - 420, 7 blasts (2B1)^	0%	14	15-Nov-24	30-Nov-24
PA14470-10	BD2 - Bottom Permanent Support - Bolt and spray concrete (Part 1 of 2) [172m]- Stage 2	0%	10	16-Dec-24	28-Dec-24
Branch Driveway BD1					
BD1 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14980	BD1 - Top Permanent Support - Bolt and spray concrete (Ch234-340 LHS; 106m) - Stage 2	69%	56	20-Dec-23 A	14-Dec-24
PA15002	BD1 - Top Permanent Support - Bolt and spray concrete (Ch340-384 RHS; 44m) - Stage 2	95%	1	29-Jan-24 A	09-Oct-24
PA15050	BD1 - Top Permanent Support - Bolt and spray concrete (Ch234-340 RHS; 106m) - Stage 2	69%	9	19-Feb-24 A	27-Dec-24
PA15030	BD1 - Top Permanent Support - Bolt and spray concrete (Ch384-444; 60m) - Stage 2	92%	1	20-Aug-24 A	13-Mar-25
PA14482	BD1 - Top Permanent Support - Bolt and spray concrete (Ch100-150; 50m) BD1/MD junction- Stage 2	0%	48	12-Oct-24	07-Dec-24
PA14482-10	BD1 - Top Permanent Support - Bolt and spray concrete (Ch150-234; 84m) - Stage 2	0%	51	12-Oct-24	10-Dec-24
BD1 - Trimming Blast Excavation above MD - Top Heading					
NT10790	BD1-SD(Trim) - Ch425 - 443.5, -4.54m Pull, 21 blasts	90%	21	28-Jun-24 A	12-Mar-25
NT10780	BD1(TH Trim) - Ch180.5 - 135.5, 7 blasts (8A2)^	85%	2	09-Sep-24 A	10-Oct-24
BD1 - Hard Rock Excavation (Drill & Blast) - Middle Bench					
NT12620	BD1(MB RHS) - Ch370.65 - 402.15, -4.5m Pull, 7 blasts [SF]	30%	15	28-May-24 A	15-Feb-25
NT10565	BD1(MB) - mucking out at PST1 & BD1 junction ^	0%	9	16-Nov-24	26-Nov-24
NT10570	BD1(MB) - Ch180 - 150 (direction from PST1 ch100 to BD1), 3 blasts ^	0%	12	27-Nov-24	10-Dec-24



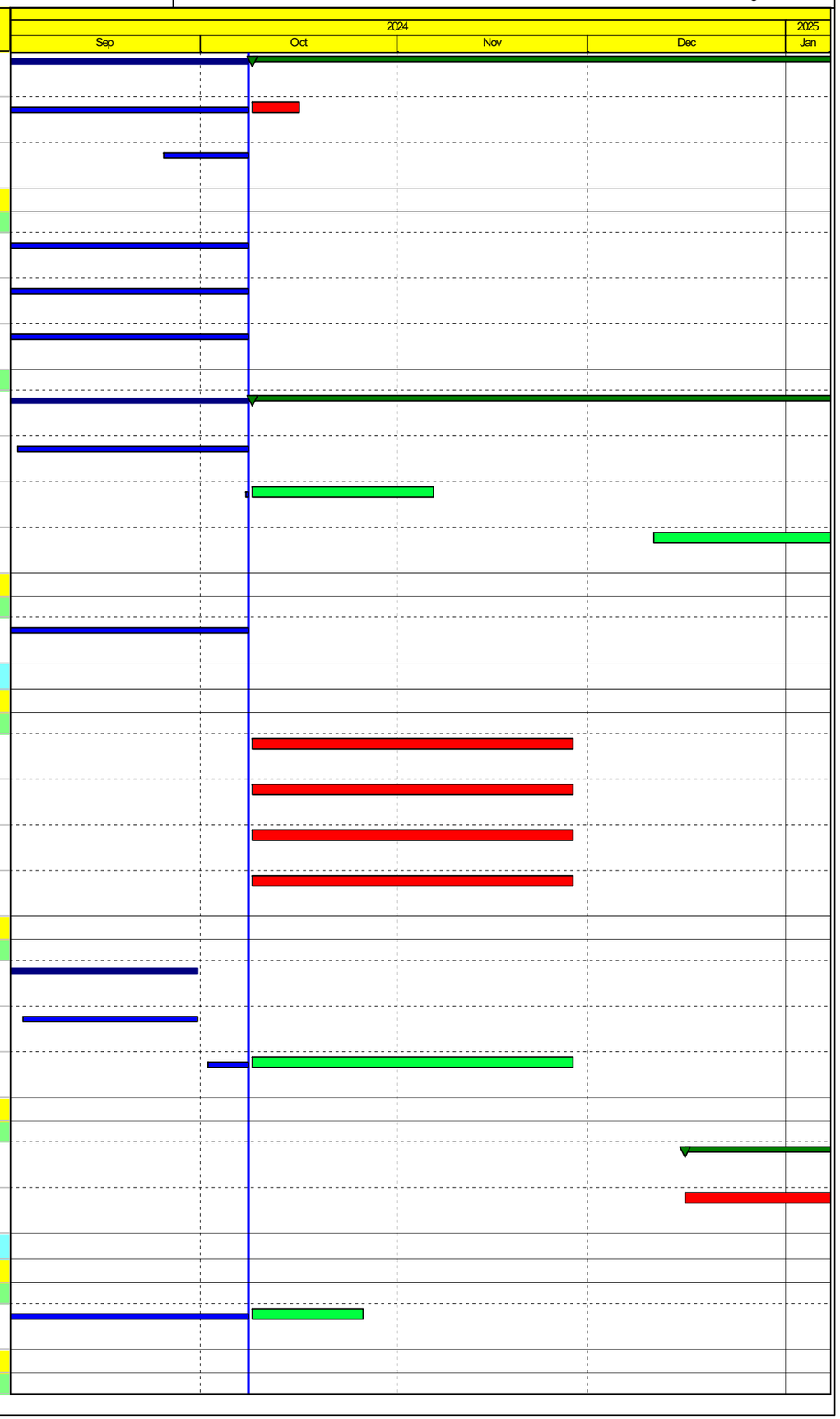
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
NT10570-10	BD1(MB) - ch150 - 100, 23 blasts ^	0%	69	11-Dec-24	11-Mar-25
NT10570-20	BD1(MB) - mucking out ch270-350 toward SD ^	0%	7	11-Dec-24	18-Dec-24
NT12600	BD1(MB RHS) - Ch429.8 - 443.5, -4.57m Pull, 3 blasts [SF]	0%	12	16-Dec-24	31-Dec-24
NT10570-30	BD1(MB) - ch260 - ch180, 17 blasts ^	0%	51	19-Dec-24	26-Feb-25
Cavern 1 - DAF1, MBBR1, PST1					
Cavern 1 - MBBR1					
Cavern 1 - MBBR1 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14580-10	CAV1 - MBBR1 - Top Permanent Support - Bolt and spray concrete (ch100-ch150) [50m] - stage 2	99%	1	18-Dec-23 A	09-Oct-24
Cavern 1 - MBBR1 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14590	CAV1 - MBBR1 - Bottom Permanent Support - Bolt and spray concrete - stage 1	100%	0	10-Apr-24 A	05-Oct-24 A
NT11200	CAV1 - MBBR1(B) - Ch137.05 - 100 & BD2 ch150 - 175; 10 blasts (4A)^	100%	0	31-Jul-24 A	05-Oct-24 A
Cavern 1 - PST1					
Cavern 1 - PST1 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14600-20	CAV1 - PST1 - Top Permanent Support - Bolt and spray concrete (ch120-ch168) [48m] - stage 2	94%	1	03-Jun-24 A	12-Mar-25
PA14600-10	CAV1 - PST1 - Top Permanent Support - Bolt and spray concrete (ch100-ch120) [20m] - stage 2	94%	5	02-Sep-24 A	15-Oct-24
Cavern 1 - PST1 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14610	CAV1 - PST1 - Bottom Permanent Support - Bolt and spray concrete [68m] - Stage 1	0%	53	04-Nov-24	07-Jan-25
NT11210	CAV1 - PST1(B) - Ch167.7 - 136.2, 7 blasts (6A1)^	0%	25	04-Nov-24	02-Dec-24
NT11220	CAV1 - PST1(B) - Ch136.2 - 100, 8 blasts (6A2)^	0%	28	03-Dec-24	07-Jan-25
Cavern 2 - DAF2, MBBR2, PST2					
Cavern 2 - DAF2					
Cavern 2 - DAF2 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14620-50	CAV2 - DAF2 - Top Permanent Support - Bolt and spray concrete (ch118-ch100) [18m]- Stage 2	0%	53	30-Oct-24	02-Jan-25
PA14620-32	CAV2 - DAF2 - Top Permanent Support - Bolt and spray concrete (ch154-ch136) [18m]- patch up & inspection	0%	54	30-Oct-24	03-Jan-25
PA14620-42	CAV2 - DAF2 - Top Permanent Support - Bolt and spray concrete (ch154-ch136) [18m]- patch up & inspection	0%	54	30-Oct-24	03-Jan-25
Cavern 2 - DAF2 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
NT11320	CAV2 - DAF2(B) - Ch146 - 190, 9 blasts (3A)^	77%	12	03-Aug-24 A	23-Oct-24
PA14631	CAV2 - DAF2 - Bottom Permanent Support - Bolt and spray concrete [90.2m] - Stage 2	7%	40	02-Oct-24 A	25-Feb-25
Cavern 2 - MBBR2					
Cavern 2 - MBBR2 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14640-10	CAV2 - MBBR2 - Top Permanent Support - Bolt and spray concrete (ch100-ch144 LHS) [44m]- Stage 2	83%	20	26-Feb-24 A	17-Mar-25
PA14640-12	CAV2 - MBBR2 - Top Permanent Support - Bolt and spray concrete (ch100-ch144 RHS) [44m]- Stage 2	83%	20	26-Feb-24 A	21-Feb-25
PA14640-20	CAV2 - MBBR2 - Top Permanent Support - Bolt and spray concrete (ch144-ch168.8) [24.8m]- Stage 2	90%	20	19-Mar-24 A	22-Jan-25
PA14640-50	CAV2 - MBBR2 - Top Permanent Support - Bolt and spray concrete (ch237.6-ch272.2) [34.4m]- Stage 2	89%	27	03-Jun-24 A	09-Nov-24
PA14640-40	CAV2 - MBBR2 - Top Permanent Support - Bolt and spray concrete (ch203.2-ch237.6) [34.4m]- Stage 2	96%	20	02-Jul-24 A	03-Dec-24
PA14640-30	CAV2 - MBBR2 - Top Permanent Support - Bolt and spray concrete (ch168.8-ch203.2) [34.4m]- Stage 2	91%	20	17-Jul-24 A	28-Dec-24



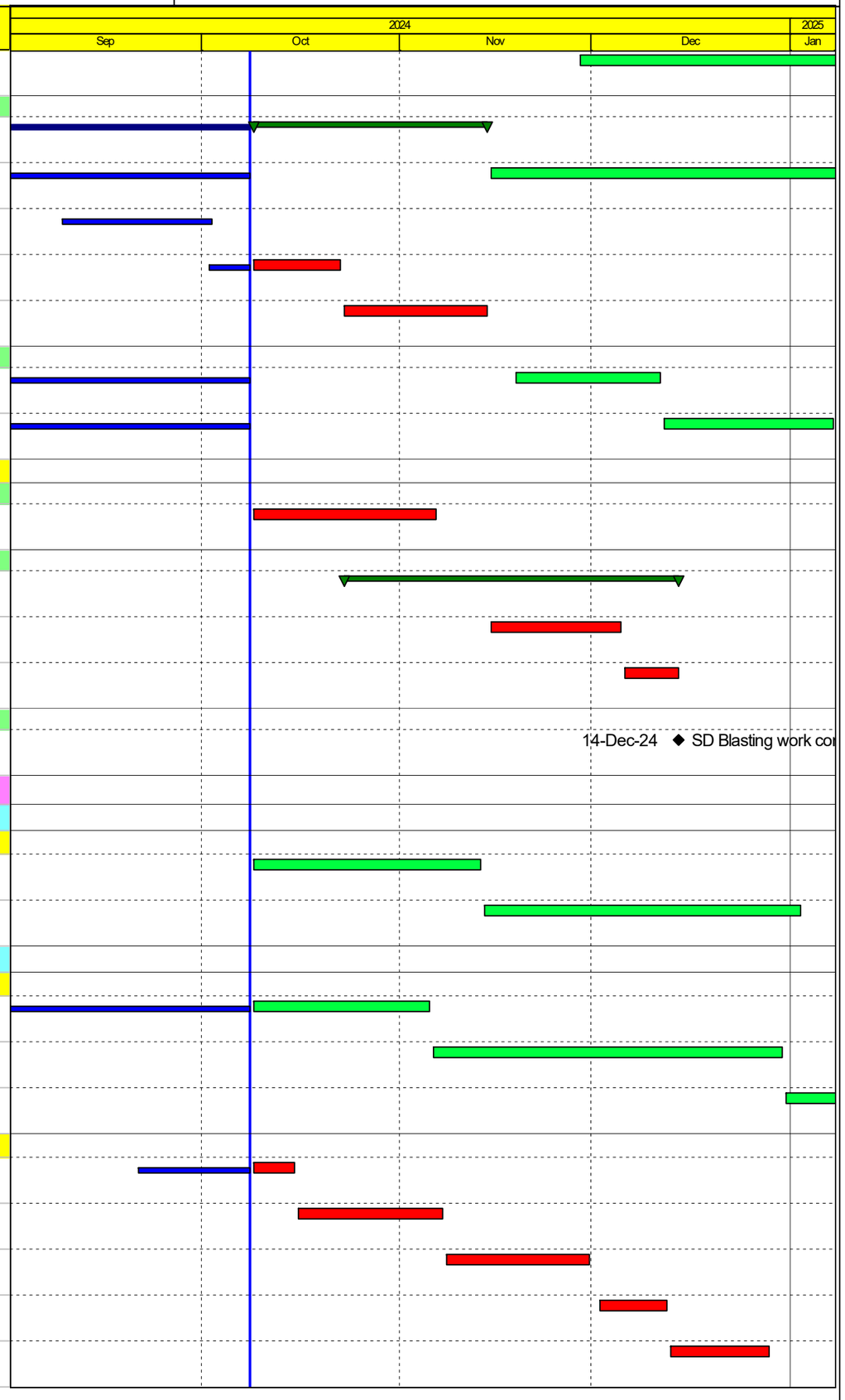
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
	Cavern 2 - MBBR2 - Hard Rock Excavation (Drill & Blast) - Bottom Bench				
PA14650	CAV2 - MBBR2 - Bottom Permanent Support - Bolt and spray concrete [172m]- Stage 1	0%	79	18-Jul-24 A	13-Jan-25
NT11350	CAV2 - MBBR2(B) - Ch227.05 - 182.05, 8 blasts (5A2)^	47%	17	19-Sep-24 A	29-Oct-24
NT11360	CAV2 - MBBR2(B) - Ch182.05 - 137.05, 8 blasts (5A3)^	0%	32	30-Oct-24	05-Dec-24
NT11370	CAV2 - MBBR2(B) - Ch137.05 - 100, 6 blasts (5A4)^	0%	30	06-Dec-24	13-Jan-25
	Cavern 2 - PST2				
	Cavern 2 - PST2 - Hard Rock Excavation (Drill & Blast) - Top Heading				
PA14660-10	CAV2 - PST2 - Top Permanent Support - Bolt and spray concrete (ch100-ch134) [34m]- Stage 2	28%	45	08-Apr-24 A	30-Nov-24
PA14660-20	CAV2 - PST2 - Top Permanent Support - Bolt and spray concrete (ch134-ch168) [34m]- Stage 2	83%	33	08-Apr-24 A	11-Jan-25
	Cavern 2 - PST2 - Hard Rock Excavation (Drill & Blast) - Bottom Bench				
PA14670	CAV2 - PST2 - Bottom Permanent Support - Bolt and spray concrete [68m]- Stage 1	0%	51	19-Nov-24	20-Jan-25
NT11380	CAV2 - PST2(B) - Ch167.7 - 136.2, 7 blasts (7A1)^	0%	25	19-Nov-24	17-Dec-24
NT11390	CAV2 - PST2(B) - Ch136.2 - 100, 8 blasts (7A2)^	0%	26	18-Dec-24	20-Jan-25
	Cavern 3 - ELC2, STC, ELC1				
	Cavern 3 - ELC2				
	Cavern 3 - ELC2 - Hard Rock Excavation (Drill & Blast) - Top Heading				
PA14680-10	CAV3 - ELC2 - Top Permanent Support - Bolt and spray concrete (ch190-167.5) [22.5m]- Stage 2	75%	36	27-Mar-23 A	14-Dec-24
PA14680-20	CAV3 - ELC2 - Top Permanent Support - Bolt and spray concrete (ch167.5-ch145) [22.5m]- Stage 2	75%	36	15-May-23 A	13-Dec-24
PA14680-30	CAV3 - ELC2 - Top Permanent Support - Bolt and spray concrete (ch145-ch122.5) [22.5m]- Stage 2	60%	36	15-May-23 A	13-Dec-24
PA14680-40	CAV3 - ELC2 - Top Permanent Support - Bolt and spray concrete (ch122.5-100) [22.5m]- Stage 2	0%	56	09-Oct-24	13-Dec-24
	Cavern 3 - STC				
	Cavern 3 - STC - Hard Rock Excavation (Drill & Blast) - Trim				
NT12580	Cav3-STC - Removal of temp. backfill from Ch 292.2 to 171	60%	3	05-Aug-24 A	12-Oct-24
	Cavern 3 - STC - Hard Rock Excavation (Drill & Blast) - Middle Bench				
PA15010	CAV3 - STC - Top Permanent Support - Bolt and spray concrete - Stage 1	0%	50	19-Jan-24 A	06-Dec-24
NT11540	Cav3-STC(MB Inc) - Ch171 - 238.5, 11 blasts (7C1)^	73%	12	30-Jul-24 A	23-Oct-24
NT11530	Cav3-STC(MB Inc) - Ch238.5 - 283.5, 10 blasts (7C2)^	0%	38	24-Oct-24	06-Dec-24
	Cavern 3 - STC - Hard Rock Excavation (Drill & Blast) - Bottom Bench				
PA14710	CAV3 - STC - Bottom Permanent Support - Bolt and spray concrete - Stage 1	0%	105	11-Dec-24	26-Apr-25
NT11610	Cav3-STC(B) - Ch292.2 - 256.5, 3.57m Pull, 8 blasts (8C1)^	0%	22	11-Dec-24	08-Jan-25
	Cavern 4 - DAF3, MBBR3, PST3				
	Cavern 4 - DAF3				
	Cavern 4 - DAF3 - Hard Rock Excavation (Drill & Blast) - Top Heading				
PA14740-10	CAV4 - DAF3 - Top Permanent Support - Bolt and spray concrete (ch190-ch160) [30m] - Stage 2	80%	59	10-Feb-23 A	11-Jun-25
PA14740-20	CAV4 - DAF3 - Top Permanent Support - Bolt and spray concrete (ch160-ch130) [30m] - Stage 2	64%	56	17-Apr-23 A	11-Jun-25
PA14740-30	CAV4 - DAF3 - Top Permanent Support - Bolt and spray concrete (ch130-ch100) [30m] - Stage 2	89%	8	12-Jun-23 A	11-Jun-25
	Cavern 4 - DAF3 - Hard Rock Excavation (Drill & Blast) - Bottom Bench				



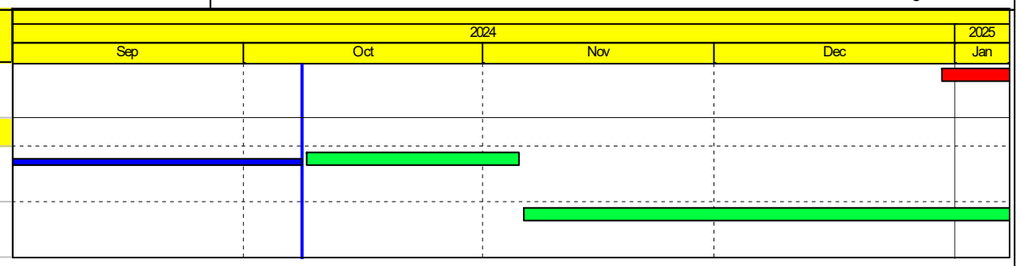
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
PA14750	CAV4 - DAF3 - Bottom Permanent Support - Bolt and spray concrete [90m] - Stage 1	0%	114	19-Jul-24 A	01-Mar-25
NT11750	Cav4-DAF3(B) RHS - ch100 - 190, 13 blasts (10C)^	83%	6	19-Jul-24 A	16-Oct-24
PA14920	CAV4 - DAF3 - Bottom Permanent Support - Bolt and spray concrete [90m] - Stage 2	47%	30	25-Sep-24 A	07-Apr-25
Cavern 4 - MBBR3					
Cavern 4 - MBBR3 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14760-30	CAV4 - MBBR3 - Top Permanent Support - Bolt and spray concrete (ch253-ch272) [19m] - Stage 2	89%	47	14-Nov-23 A	22-Oct-25
PA14760-10	CAV4 - MBBR3 - Top Permanent Support - Bolt and spray concrete (ch100-ch150) [50m] - Stage 2	47%	47	27-Dec-23 A	22-Oct-25
PA14760-20	CAV4 - MBBR3 - Top Permanent Support - Bolt and spray concrete (ch150-ch253) [103m] - Stage 2	64%	47	27-Dec-23 A	22-Oct-25
Cavern 4 - MBBR3 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14770	CAV4 - MBBR3 - Bottom Permanent Support - Bolt and spray concrete - Stage 1	0%	152	17-Jun-24 A	16-Apr-25
NT11780	Cav4-MBBR3(B) RHS - Ch182.05 - 137.05, 8 blasts (11C2)^	100%	0	02-Sep-24 A	08-Oct-24 A
NT11790	Cav4-MBBR3(B) RHS - Ch137.05 - 100, 8 blasts (11C3)^	0%	24	08-Oct-24 A	06-Nov-24
NT11790-10	Cav4-MBBR3(B) LHS - ch100 - 137, 8 blasts (12C1)^	0%	22	11-Dec-24	08-Jan-25
Cavern 4 - PST3					
Cavern 4 - PST3 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14780-20	CAV4 - PST3 - Top Permanent Support - Bolt and spray concrete (ch120-100) [20m] - Stage 2	29%	17	29-Apr-24 A	18-Sep-25
Cavern 5 - DAF4, MBBR4, PST4					
Cavern 5 - DAF4					
Cavern 5 - DAF4 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA14800-11	CAV5 - DAF4 - Top Permanent Support - Bolt &spray concrete (ch100-ch105) [5m] - patch up & inspection	0%	43	09-Oct-24	28-Nov-24
PA14800-14	CAV5 - DAF4 - Top Permanent Support - Bolt&spray concrete (ch105-ch130) [25m] - patch up & inspection	0%	43	09-Oct-24	28-Nov-24
PA14800-22	CAV5 - DAF4 - Top Permanent Support - Bolt&spray concrete (ch130-ch160) [30m] - patch up & inspection	0%	43	09-Oct-24	28-Nov-24
PA14800-32	CAV5 - DAF4 - Top Permanent Support - Bolt&spray concrete (ch160-ch190) [30m] - patch up & inspection	0%	43	09-Oct-24	28-Nov-24
Cavern 5 - MBBR4					
Cavern 5 - MBBR4 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14830	CAV5 - MBBR4 - Bottom Permanent Support - Bolt and spray concrete [172m] - Stage 1	100%	0	22-May-24 A	30-Sep-24 A
NT11950	Cav5-MBBR4(B) - Ch137.05 - 100, 8 blasts (6B2)^	100%	0	03-Sep-24 A	30-Sep-24 A
PA14831	CAV5 - MBBR4 - Bottom Permanent Support - Bolt and spray concrete [172m] - Stage 2	12%	43	02-Oct-24 A	28-Nov-24
Cavern 5 - PST4					
Cavern 5 - PST4 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14850	CAV5 - PST4 - Bottom Permanent Support - Bolt and spray concrete [68m] - Stage 1	0%	64	16-Dec-24	10-Mar-25
NT11960	Cav5-PST4(B) - Ch167.7 - 136.2, 4.5m Pull, 8 blasts (7B1)^	0%	32	16-Dec-24	24-Jan-25
Secondary Driveway (SD)					
Secondary Driveway (SD) - Zone 1 (ch418 - 488)					
SD - Zone 1 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14871	SD - Zone 1 - Bottom Permanent Support - (SD ch418-488 - Bottom) - Bolt and spray concrete [70m] - Stage 2	4%	15	28-Aug-24 A	26-Oct-24
Secondary Driveway (SD) - Zone 2 (ch488 - 675)					
SD - Zone 2 - Hard Rock Excavation (Drill & Blast) - Top Heading					



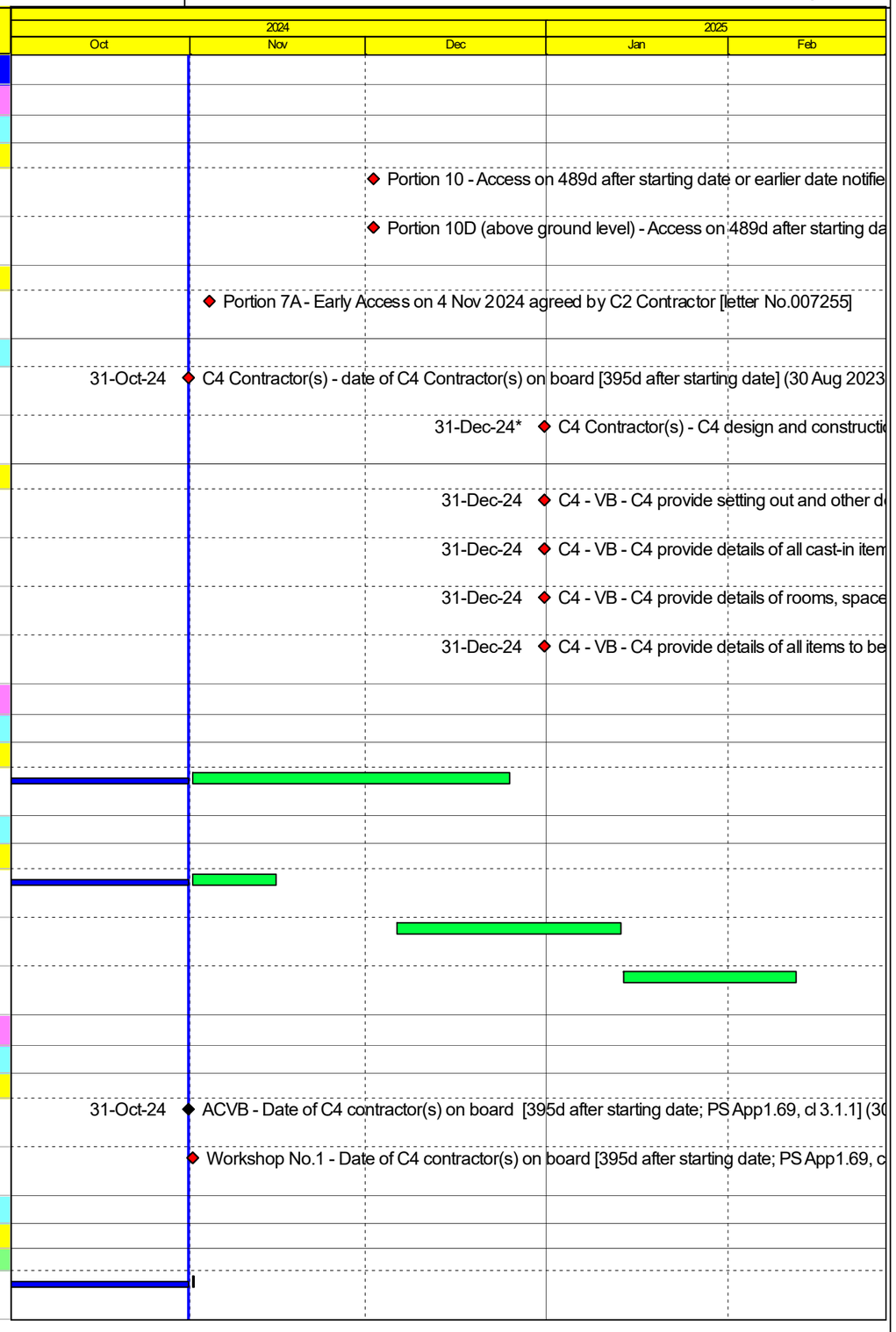
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
PA14962	SD - Zone 2 - Top Permanent Support - (SD ch567 - 669) - Bolt and spray concrete [102m] - patch up & inspection	0%	52	29-Nov-24	07-Feb-25
SD - Zone 2 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14890	SD - Zone 2 - Bottom Permanent Support - (SD ch488 - 673) - Bolt and spray concrete [149.8m] - Stage 1	50%	31	18-Mar-24 A	14-Nov-24
PA14891	SD - Zone 2 - Bottom Permanent Support - (SD ch488 - 673) - Bolt and spray concrete [149.8m] - Stage 2	24%	83	17-Jul-24 A	01-Mar-25
NT12120-05	SD - (B) - Zone 2 - removal of rock stockpile	100%	0	09-Sep-24 A	02-Oct-24 A
NT12120-10	SD - (B) - Zone 2 - Ch648 - 672.7, 7 blasts (1B1)^	35%	11	02-Oct-24 A	22-Oct-24
NT12130	SD - (B) - Zone 2 - Ch672.7 - 702.7, 8 blasts (1B2)^	0%	20	23-Oct-24	14-Nov-24
SD - Zone 2 - OHVD Footing & Pedestals					
A17115-120	----- SD - Zone 2 - OHVD footings & pedestals (ch500-580) (oppose Press. Duct)	5%	20	28-Jun-24 A	11-Dec-24
A17115-140	----- SD - Zone 2 - OHVD footings & pedestals (ch500-580) (near Press. Duct)	0%	20	28-Jun-24 A	07-Jan-25
Secondary Driveway (SD) - Zone 3 (ch675 - 792)					
SD - Zone 3 - Hard Rock Excavation (Drill & Blast) - Top Heading					
PA15020	SD - Zone 3 - Top Permanent Support - (SD ch710 - 760) - Bolt and spray concrete [50m] - Stage 2	0%	24	09-Oct-24	06-Nov-24
SD - Zone 3 - Hard Rock Excavation (Drill & Blast) - Bottom Bench					
PA14910	SD - Zone 3 - Bottom Permanent Support - (SD ch673 - 764) - Bolt and spray concrete [64m] - Stage 1	0%	46	23-Oct-24	14-Dec-24
NT12140	SD - (B) - Zone 3 - Ch702.7 - 747.7, 9 blasts (1B3)^	0%	18	15-Nov-24	05-Dec-24
NT12150	SD - (B) - Zone 3 - Ch747.7 - 763.932, 4 blasts (1B4)^	0%	8	06-Dec-24	14-Dec-24
SD - Zone 3 - OHVD Footings & Pedestals					
A17085	SD Blasting work complete	0%	0		14-Dec-24
Ventilation Shaft and Ventilation Adit					
Ventilation Shaft (VS)					
VS - Off-site Fabrication of Travelling Formworks for Ventilation Shaft					
A20365	Sub-letting for Traveling formork	0%	30	09-Oct-24	13-Nov-24
A20370	Travelling Formwork - Design preparation, review and accept by PM	0%	40	14-Nov-24	02-Jan-25
Ventilation Adit (VA)					
VA - Design and Approval of Permanent Lining Formwork					
A20165	VA - subletting for VA lining works	30%	23	03-Jul-24 A	05-Nov-24
A20170	VA - Design submission of permanent lining formwork	0%	45	06-Nov-24	30-Dec-24
A20180	VA - Design approval of permanent lining formwork	0%	18	31-Dec-24	21-Jan-25
VA - Hard Rock Excavation (Drill & Blast)					
NT12370	V-Adit(F) - Ch411.5 - 466.5, -5.5m Pull, 10 blasts	60%	5	21-Sep-24 A	15-Oct-24
NT12380	V-Adit(F) - Ch466.5 - 521.5, -5.5m Pull, 10 blasts	0%	20	16-Oct-24	07-Nov-24
NT12390	V-Adit(F) - Ch521.5 - 576.5, -5.5m Pull, 10 blasts	0%	20	08-Nov-24	30-Nov-24
NT12400	V-Adit(F) - Ch576.5 - 604, -5.5m Pull, 5 blasts	0%	10	02-Dec-24	12-Dec-24
NT12400-10	V-Adit(F) - Ch604 - 631.5, -5.5m Pull, 5 blasts	0%	12	13-Dec-24	28-Dec-24



Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
NT12410	V-Adit(F) - Ch631.5 - 686.5, -5.5m Pull, 10 blasts	0%	20	30-Dec-24	22-Jan-25
VA - Internal and External Wall & Slab					
A14732	VA - subletting for VA & VS internal structural works	0%	23	03-Jul-24 A	05-Nov-24
A14742	VA - preparation, submission, acceptance of method statement, temporary work design	0%	100	06-Nov-24	12-Mar-25



Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
DC/2023/12 Relocation of STSTW - Ancillary Buildings, Cavern Ventilation System & Associated Works					
═══ Contract Particulars ═══					
Access Dates					
Access on 489d after Starting Date or earlier date notified by PM [2 Dec 2024]					
AC1200	Portion 10 - Access on 489d after starting date or earlier date notified by Project Manager	0%	0	02-Dec-24*	
AC1280	Portion 10D (above ground level) - Access on 489d after starting date or earlier date notified by Project Manager	0%	0	02-Dec-24*	
Access on 609d after Starting Date or earlier date notified by PM [1 Apr 2025]					
AC1340-10	Portion 7A - Early Access on 4 Nov 2024 agreed by C2 Contractor [letter No.007255]	0%	0	04-Nov-24*	
Interface with C4 Contractor(s)					
A17520	C4 Contractor(s) - date of C4 Contractor(s) on board [395d after starting date] (30 Aug 2023)	0%	0		31-Oct-24
A17560	C4 Contractor(s) - C4 design and construction info.for VB available to C3[518d] (31Dec2024) [PSA1.69, cl 3.6.3]	0%	0		31-Dec-24*
VB - Design and Construction Information from C4 Contractor(s)					
A26400	C4 - VB - C4 provide setting out and other details of all openings and trenches .... [PSA1.69, cl 3.6.3a]	0%	0		31-Dec-24
A26420	C4 - VB - C4 provide details of all cast-in items .... [PSA1.69, cl.3.6.3b]	0%	0		31-Dec-24
A26440	C4 - VB - C4 provide details of rooms, spaces loading and other elements .... [PSA1.69, cl 3.6.3c]	0%	0		31-Dec-24
A26460	C4 - VB - C4 provide details of all items to be constructed/installed by C3 .... [PSA1.69, cl 3.6.3d]	0%	0		31-Dec-24
═══ Works in Works Area WA2 ═══					
── Major Sub-letting & Procurement for Works in WA2 ──					
WA2 - Procurement for MiC Fabrication and Delivery					
A28130	WA2 - MiC Fabrication & Delivery - MiC fabrication for GF to 2F	30%	55	02-Sep-24 A	25-Dec-24
── Construction Works in Works Area WA2 ──					
Construction of Site Accommodation for PM & Client					
A10240	Site Accommodation for PM & Client - site formation and construct footing	80%	13	12-Aug-24 A	15-Nov-24
A10260	Site Accommodation for PM & Client - construct superstructure	0%	30	06-Dec-24	13-Jan-25
A10280	Site Accommodation for PM & Client - ABWF & BS	0%	20	14-Jan-25	12-Feb-25
═══ Main Portal Area ═══					
── Interface Requirement with C4 Contractor(s)					
Main Portal Area - Date of C4 Contractor(s) onboard					
A11700	ACVB - Date of C4 contractor(s) on board [395d after starting date; PS App1.69, cl 3.1.1] (30 Aug 2024)	0%	0		31-Oct-24
A11760	Workshop No.1 - Date of C4 contractor(s) on board [395d after starting date; PS App1.69, cl 3.2.1] (30 Aug 2024)	0%	0	01-Nov-24	
── Main Portal Area - Design Submission ──					
----- ACVB - Design for Administration Cum Ventilation Building ----					
ACVB - Design of Building Plan					
A10680	ACVB - Building Plan - DDA - prepare and submit to design checker	95%	1	16-Aug-24 A	01-Nov-24



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Crit. Milestone

Project File: C3-P9-31Oct24
Layout: C3 - MPR - 3M Rolling Prog (submission)
Data Date: 31-Oct-24
Page 1 of 12

Contract No. DC/2023/12 Relocation of STST to Caverns - Ancillary Buildings, Cavern Ventilation System and Associated Works

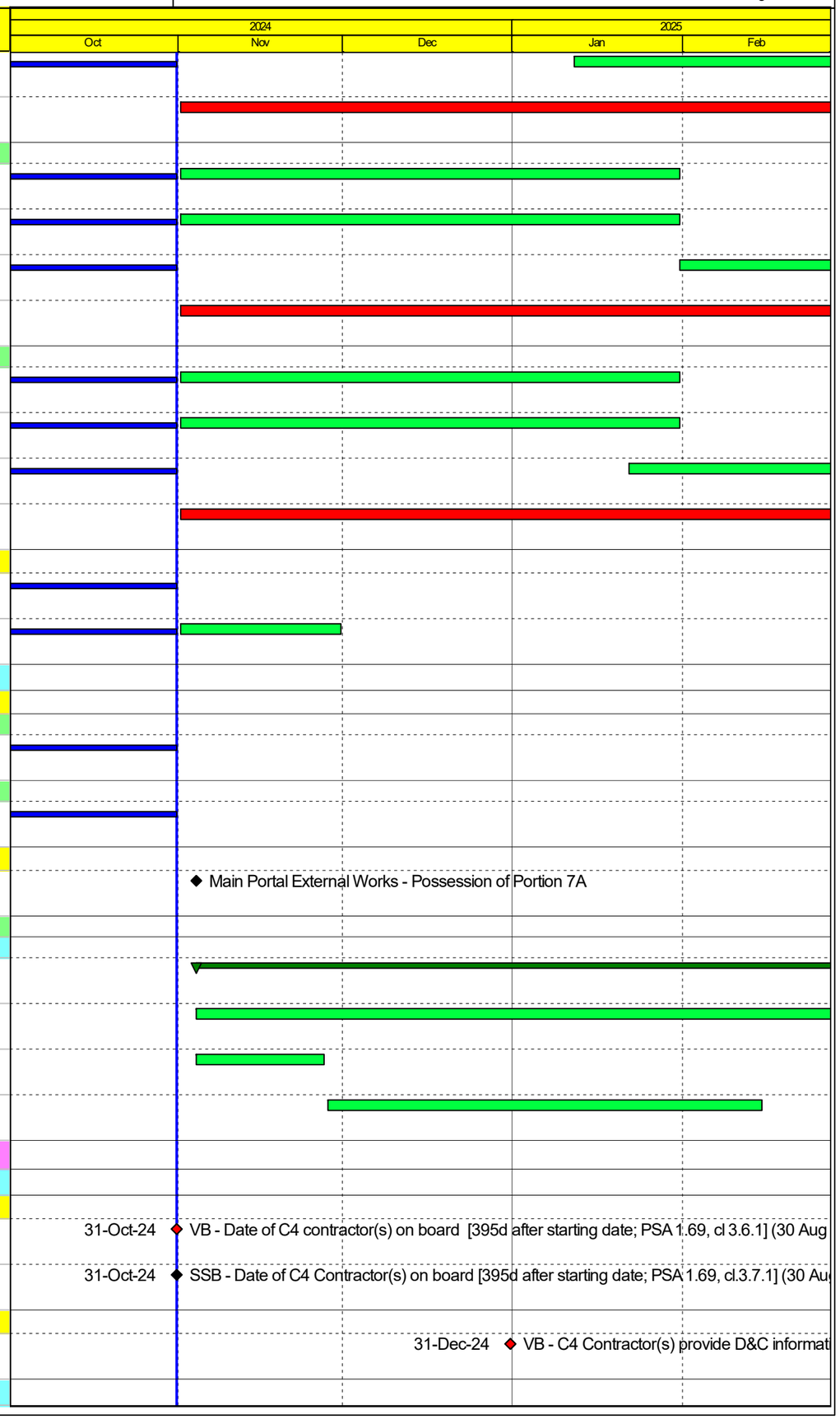
3 Months Rolling Programme (Nov 2024 to Jan 2025)

China State – Alchmex Joint Venture

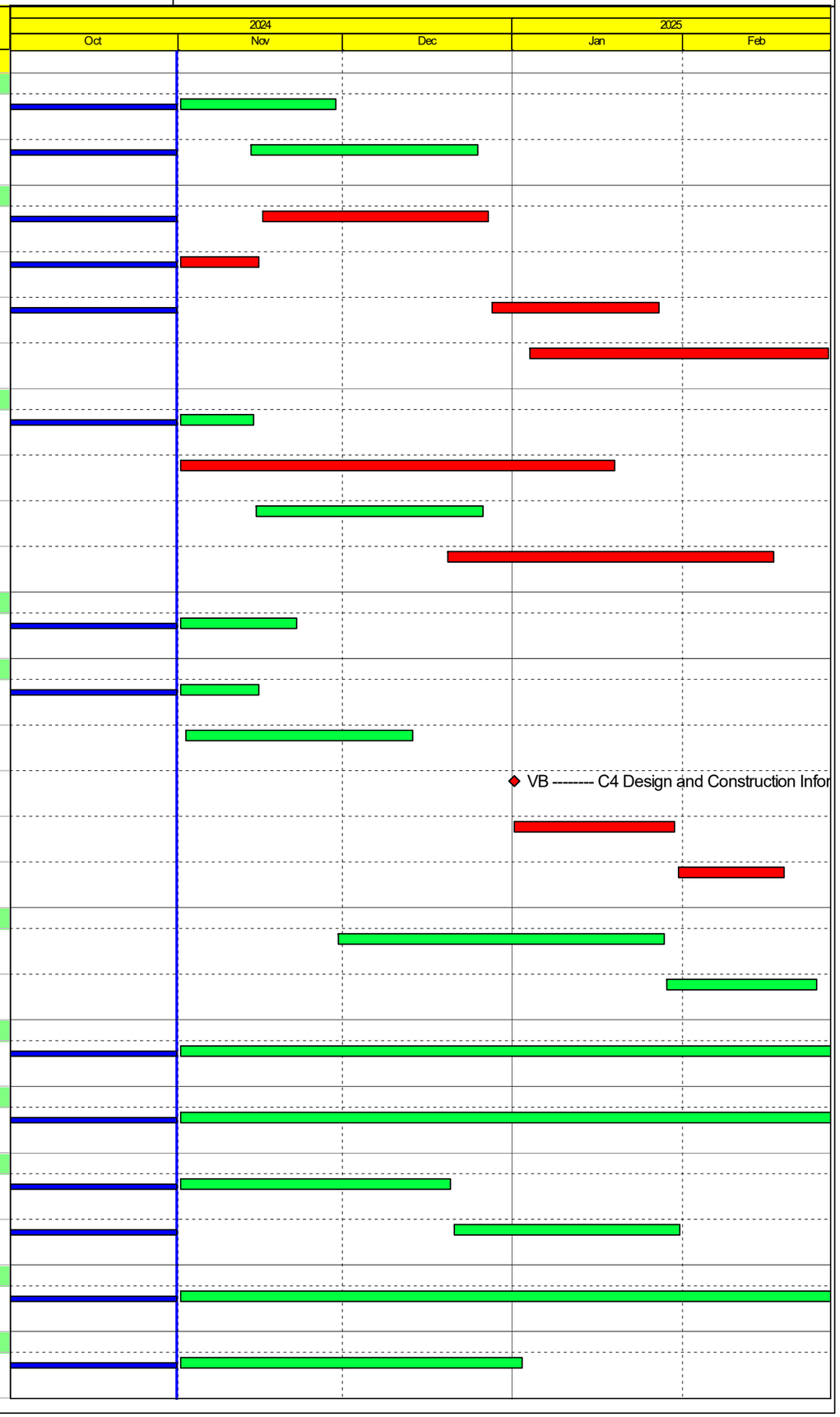
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A10700	ACVB - Building Plan - DDA - authority & design checker reveiw, issue check certificate	0%	60	02-Nov-24	31-Dec-24
A10720	ACVB - Building Plan - DDA - submit to PM, PM review and gives consent to proceed construction	0%	28	01-Jan-25	28-Jan-25
ACVB - Design of Foundation Plan					
A10180	ACVB - Foundation Plan - DDA - authority & design checker reveiw, issue check certificate	25%	46	13-Aug-24 A	01-Feb-25
A10175	ACVB - Foundation Plan - DDA - review design according to additional GI report	72%	40	13-Aug-24 A	17-Dec-24
A10200	ACVB - Foundation Plan - DDA - submit to PM, PM review and gives consent to proceed construction	25%	21	23-Aug-24 A	22-Feb-25
ACVB - Design of Lightning Protection System					
A11600	ACVB - Lightning / Earthing Protection System - AIP - authority & design checker reveiw, issue check certificate	25%	29	31-Aug-24 A	29-Nov-24
A11620	ACVB - Lightning / Earthing Protection System - AIP - submit to PM, PM review and gives consent to proceed DDA	25%	63	31-Aug-24 A	31-Jan-25
A11640	ACVB - Lightning / Earthing Protection System - DDA - prepare and submit to design checker	0%	210	01-Nov-24	29-May-25
ACVB - Design of ELS for Foundation Works					
A10080	ACVB - design of ELS for foundation - submit to PM, PM review and accept	20%	24	28-Jun-24 A	24-Nov-24
ACVB - Design of Structural Plan					
A10800	ACVB - Structural Plan - DDA - prepare and submit to design checker	25%	46	31-Jul-24 A	16-Dec-24
A10820	ACVB - Structural Plan - DDA - design checker reveiw and issue check certificate	0%	60	17-Dec-24	14-Feb-25
ACVB - Design of Architectural Finishing Works					
A10860	ACVB - ABWF Design - AIP - prepare and submit to design checker	0%	60	29-Jan-25	29-Mar-25
ACVB - Design of Cavern Ventilation System (CVS) Installation (MFSD, silencer, Fan, etc.)					
A32960	ACVB - CVS Design - DDA - prepare and submit to design checker	15%	769	07-Aug-24 A	09-Dec-26
ACVB - Design of CMCS					
A11400	ACVB - CMCS Design - DDA - prepare and submit to design checker	15%	749	01-Jun-24 A	19-Nov-26
ACVB - Design ofTemp. MVAC					
A11120	ACVB - Temp. MVAC Design - AIP - FSD & design checker reveiw and issue check certificate	15%	29	31-Aug-24 A	29-Nov-24
A11140	ACVB - Temp. MVAC Design - AIP - submit to PM, PM review and gives consent to proceed DDA	15%	63	31-Aug-24 A	31-Jan-25
ACVB - Design of HV & LV System for Electrical Plant Room					
A11520	ACVB - Design of HV & LV Installation for Room - DDA - prepare and submit to design checker	5%	792	27-Apr-24 A	01-Jan-27
ACVB - Design of Drainage System					
A29620	ACVB - Drainage Systems - AIP - prepare and submit to design checker	48%	34	03-Jun-24 A	04-Dec-24
A29640	ACVB - Drainage Systems - AIP - authorities & design checker reveiw, issue check certificate	0%	30	05-Dec-24	03-Jan-25
A29660	ACVB - Drainage Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	04-Jan-25	31-Jan-25
----- SUB1 - Designs for 132kV Substation No.1 -----					
SUB1 - Issue CLP Design Brief					
A28600	SUB1 - AECOM address CLP comments on SUB1 design for CLP start to prepare E&M design brief (by AECOM)	95%	0	18-Sep-23 A	01-Nov-24
A28640	SUB1 - CLP issue design brief for E&M works (by CLP)	0%	1	28-Feb-24 A	01-Nov-24
A28660	SUB1 - ready to start E&M design after CLP design brief complete	0%	0	02-Nov-24	
SUB1 - Preparation works for Design of Lightning / Earthing Protection System (CLP requirement)					

Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A28230	SUB1 - Machine setting up	0%	21	01-Nov-24	21-Nov-24
A28250	SUB1 - Trial pit / Drill bore hole (approx.4nos)	0%	45	22-Nov-24	05-Jan-25
A28270	SUB1 - Install equipment and take initial reading of soil resistivity testing	0%	30	06-Jan-25	04-Feb-25
SUB1 - Design of ELS for Foundation Works					
A23500	SUB1 - Design ELS for Foundation Works - prepare and submit to design checker	0%	60	25-Nov-24	23-Jan-25
A23520	SUB1 - Design ELS for Foundation Works - design checker review and issue check certificate	0%	28	24-Jan-25	20-Feb-25
SUB1 - Design of Lightning Protection System					
A24220	SUB1 - Lightning / Earthing Systems - DDA - prepare and submit to design checker	0%	300	10-Oct-24 A	01-Dec-25
SUB1 - Design of MVAC					
A23580	SUB1 - MVAC Design - AIP - authorities & design checker reveiw, issue check certificate	20%	64	20-Aug-24 A	03-Jan-25
A23600	SUB1 - MVAC Design - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	28	20-Aug-24 A	31-Jan-25
SUB1 - Design of FS System					
A23700	SUB1 - FS Installation System - AIP - authorities & design checker reveiw, issue check certificate	35%	64	20-Aug-24 A	03-Jan-25
A23720	SUB1 - FS Installation System - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	04-Jan-25	31-Jan-25
SUB1 - Design of Plumbing Systems					
A23820	SUB1 - Plumbling Systems - AIP - authorities & design checker reveiw, issue check certificate	10%	64	20-Aug-24 A	03-Jan-25
A23840	SUB1 - Plumbling Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	04-Jan-25	31-Jan-25
SUB1 - Design of Drainage System					
A23940	SUB1 - Drainage Systems - AIP - authorities & design checker reveiw, issue check certificate	10%	64	20-Aug-24 A	03-Jan-25
A23960	SUB1 - Drainage Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	04-Jan-25	31-Jan-25
SUB1 - Design of HV & LV System					
A24060	SUB1 - HV & LV Systems - AIP - authorities & design checker reveiw, issue check certificate	10%	64	20-Aug-24 A	03-Jan-25
A24080	SUB1 - HV & LV Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	04-Jan-25	31-Jan-25
SUB1 - Design of Indoor Lighting & Emergency Lighting					
A28780	SUB1 - Indoor Lighting & Emergency Lighting - AIP - authorities & design checker reveiw, issue check certificate	0%	30	21-Aug-24 A	30-Nov-24
A28800	SUB1 - Indoor Lighting & Emergency Lighting - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	01-Dec-24	28-Dec-24
A28820	SUB1 - Indoor Lighting & Emergency Lighting - DDA - prepare and submit to design checker	0%	470	29-Dec-24	12-Apr-26
SUB1 - Design of Outdoor Lighting					
A29080	SUB1 - Outdoor Lighting - AIP - authorities & design checker reveiw, issue check certificate	0%	30	21-Aug-24 A	30-Nov-24
A29100	SUB1 - Outdoor Lighting - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	01-Dec-24	28-Dec-24
A29120	SUB1 - Outdoor Lighting - DDA - prepare and submit to design checker	0%	470	29-Dec-24	12-Apr-26
----- MSR1 - Designs for DSD Main Switchroom No.1 in Workshop No.1 -----					
MSR1 - Design of MVAC System					
A24440-10	MSR1 - MVAC Systems - AIP - remaining design submission, PM review and accept	35%	92	20-Apr-24 A	31-Jan-25
A24480	MSR1 - MVAC Systems - DDA - Remaining design, address comments, design checker reveiw, issue check certificate	60%	92	08-May-24 A	31-Jan-25

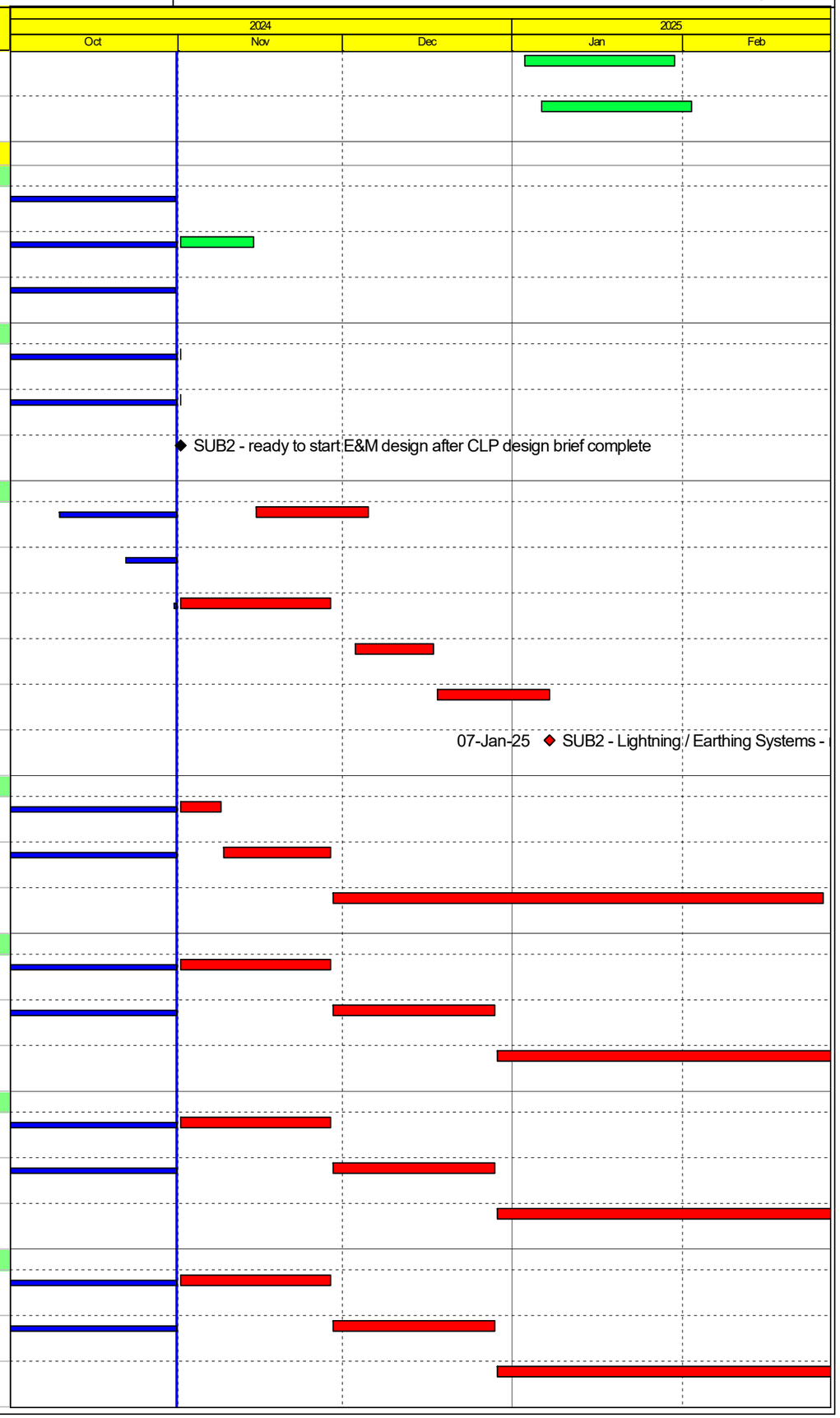
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A24500	MSR1 - MVAC Systems - DDA - submit to PM, PM review and gives consent to proceed construction	30%	56	08-May-24 A	08-Mar-25
A24540	MSR1 - MVAC - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC & C4	0%	170	01-Nov-24	19-Apr-25
MSR1 - Design of CMCS					
A31480-10	MSR1 - CMCS Design for CVS system - AIP - remaining design submission, PM review & accept	35%	92	20-Apr-24 A	31-Jan-25
A31520	MSR1 - CMCS Design for CVS system - DDA - Remaining design, address comments,design checker reveiw and issue certificate	50%	92	03-May-24 A	31-Jan-25
A31540	MSR1 - CMCS Design for CVS system - DDA - submit to PM, PM review and gives consent to proceed construction	20%	40	03-May-24 A	12-Mar-25
A31580	MSR1 - CMCS - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC & C4	0%	170	01-Nov-24	19-Apr-25
MSR1 - Design of HV & LV System					
A24320-10	MSR1 - HV & LV Systems - AIP - remaining design submission, PM review & accept	35%	92	09-Feb-24 A	31-Jan-25
A24360	MSR1 - HV & LV Systems - DDA - Remaining design, address comments, design checker reveiw and issue check certificate	55%	92	27-Apr-24 A	31-Jan-25
A24380	MSR1 - HV & LV Systems - DDA - submit to PM, PM review and gives consent to proceed construction	35%	50	27-Apr-24 A	12-Mar-25
A24620	MSR1 - HV & LV - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC & C4	0%	170	01-Nov-24	19-Apr-25
Main Portal Area - Submission of Inspection and Test Plans (ITPs)					
A28480	ITPs for Main Portal Area - Prepare and submit ITPs to PM [PS13.01G (1)]	100%	0	19-Jul-23 A	31-Oct-24 A
A28500	ITPs for Main Portal Area - PM accept	12%	30	17-Feb-24 A	30-Nov-24
—— Main Portal Area - Construction					
----- Main Portal Area - General Works -----					
Main Portal Area - Condition Survey					
A15380	Main Portal Area - condition survey for Portion 7, 7A, 7C	65%	24	29-May-24 A	03-May-25
Main Portal Area - Instrumentation Monitoring					
A15460	Main Portal Area - install Instrumentation Monitoring for Portion 7, 7A, 7C	0%	50	29-May-24 A	04-Jul-25
----- Main Portal Area External Works -----					
A17470	Main Portal External Works - Possession of Portion 7A	100%	0	04-Nov-24 A	
Main Portal Area External Works (Portion 7A - along Access in front of ACVB)					
Portion 7A UU Works Stage 1					
A70000	===== Main Portal External Works - Portion 7A UU Stage 1 - Construction period =====	0%	286	04-Nov-24	24-Oct-25
A70020	Main Portal External Works - Portion 7A - UU Stage 1 - Watermain Design WW046 Submission and acceptance	0%	120	04-Nov-24	02-Apr-25
A70040	Main Portal External Works - Portion 7A - UU Stage 1 - Plant mobilization	0%	21	04-Nov-24	27-Nov-24
A70060	Main Portal External Works - Portion 7A - UU Stage 1 - Construction of temporary work	0%	60	28-Nov-24	15-Feb-25
====== Secondary Portal Area ======					
—— Interface Requirement with C4 Contractor(s) ——					
Date of C4 Contractor(s) onboard					
A11720	VB - Date of C4 contractor(s) on board [395d after starting date; PSA 1.69, cl 3.6.1] (30 Aug 2024)	0%	0		31-Oct-24
A11820	SSB - Date of C4 Contractor(s) on board [395d after starting date; PSA 1.69, cl.3.7.1] (30 Aug 2024)	0%	0		31-Oct-24
Design Interface with C4 Contractor(s)					
A11800	VB - C4 Contractor(s) provide D&C information to C3 [518d after starting date; PSA1.69, cl3.6.3] (31 Dec 2024)	0%	0		31-Dec-24
—— Sec. Portal Area - Design Submission ——					



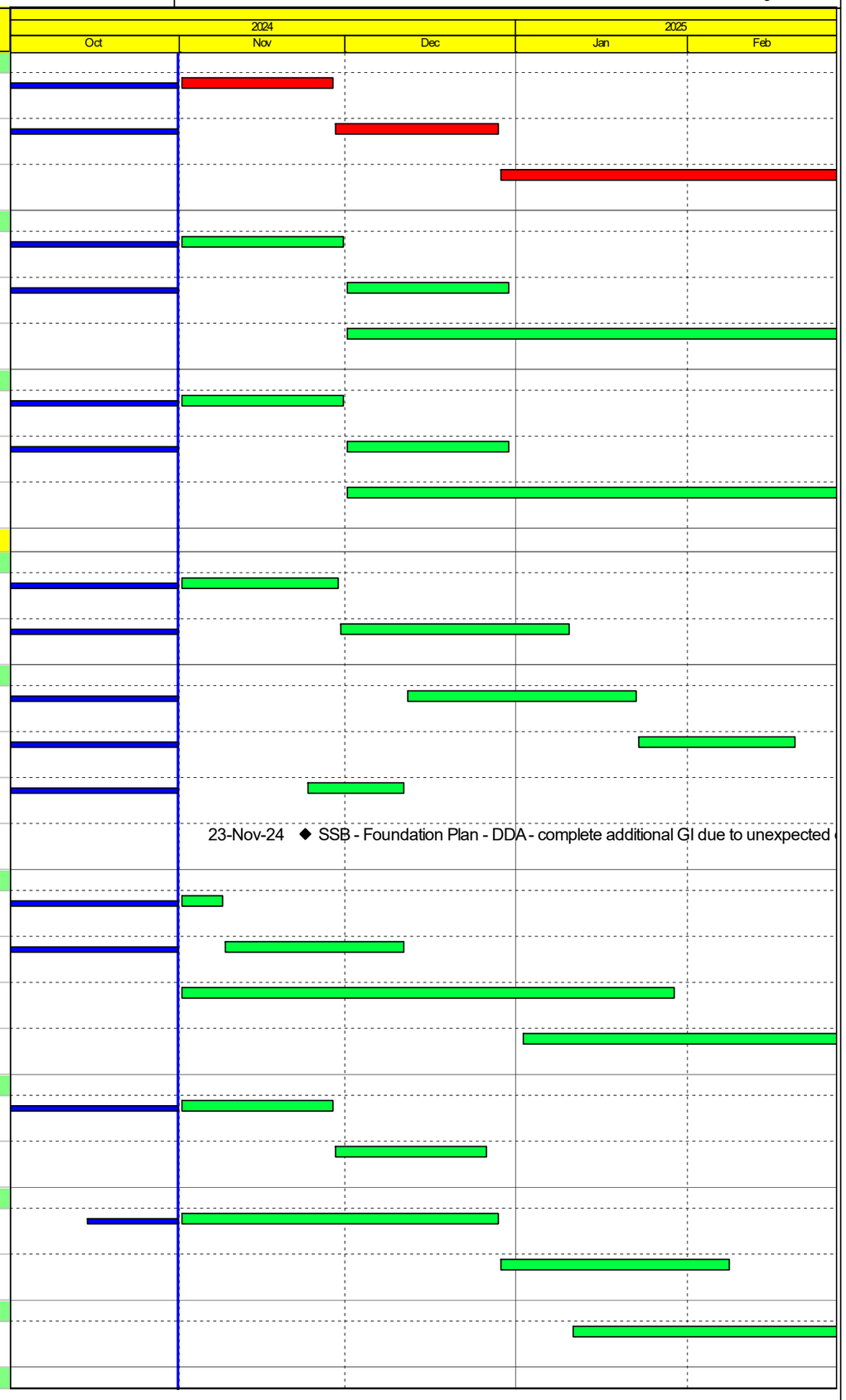
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
----- VB - Design for Ventilation Building -----					
VB - Design of Building Plan					
A12240	VB - Building Plan - DDA - authority & design checker reveiw, issue check certificate	25%	29	13-Sep-24 A	29-Nov-24
A12260	VB - Building Plan - DDA - submit to PM, PM review and gives consent to proceed construction	15%	42	17-Sep-24 A	25-Dec-24
VB - Design of Foundation Plan					
A12120	VB - Foundation Plan - DDA - authority & design checker reveiw, issue check certificate	40%	42	17-Jul-24 A	27-Dec-24
A12100-20	VB - Foundation Plan - DDA - review design according to additional GI report	35%	15	17-Jul-24 A	15-Nov-24
A12140	VB - Foundation Plan - DDA - submit to PM, PM review and gives consent to proceed construction	35%	31	08-Aug-24 A	27-Jan-25
A12520	VB - Foundation Plan - DDA - final review and accept design after C4 provide D&C information	0%	55	04-Jan-25	27-Feb-25
VB - Design of Lightning Protection System					
A13020	VB - Lightning / Earthing Protection System - AIP - authority & design checker reveiw, issue check certificate	85%	14	31-Aug-24 A	14-Nov-24
A13060	VB - Lightning / Earthing Protection System - DDA - prepare and submit to design checker	0%	80	01-Nov-24	19-Jan-25
A13040	VB - Lightning / Earthing Protection System - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	42	15-Nov-24	26-Dec-24
A13080	VB - Lightning / Earthing Protection System - DDA - authority & design checker reveiw, issue check certificate	0%	60	20-Dec-24	17-Feb-25
VB - Design of ELS for Foundation Works					
A12020	VB - design of ELS for foundation - submit to PM, PM review and accept	25%	22	09-Jul-24 A	22-Nov-24
VB - Design of Structural Plan					
A12360	VB - Structural Plan - DDA - authority & design checker reveiw, issue check certificate	20%	15	02-Sep-24 A	15-Nov-24
A12380	VB - Structural Plan - DDA - submit to PM, PM review and gives consent to proceed construction	0%	42	02-Nov-24	13-Dec-24
A13120	VB -------- C4 Design and Construction Information available [518d after starting date][31 Dec 2024) [PSA1.69,cl 3.6.3]	0%	0	01-Jan-25	
A13140	VB - Structural Plan - DDA design review - prepare and submit to design checker & C4	0%	30	01-Jan-25	30-Jan-25
A13160	VB - Structural Plan - DDA design review - design checker & C4 review, issue check certificate	0%	20	31-Jan-25	19-Feb-25
VB - Design of Architectural Finishing Works					
A12400	VB - ABWF Design - AIP - prepare and submit to design checker	0%	60	30-Nov-24	28-Jan-25
A12420	VB - ABWF Design - AIP - design checker reveiw and issue check certificate	0%	28	29-Jan-25	25-Feb-25
VB - Design of Cavern Ventilation System (CVS) Installation (MFSD, silencer, Fan, etc.)					
A32840	VB - CVS Design - DDA - prepare and submit to design checker	20%	549	31-May-24 A	03-May-26
VB - Design of CMCS for CVS system					
A12820	VB - CMCS Design for CVS system - DDA - prepare and submit to design checker	15%	369	31-May-24 A	04-Nov-25
VB - Design of Temp.MVAC					
A12660	VB - Temp. MVAC Design - AIP - authority & design checker reveiw, issue check certificate	10%	50	31-Aug-24 A	20-Dec-24
A12680	VB - Temp. MVAC Design - AIP - submit to PM, PM review and gives consent to proceed DDA	10%	42	31-Aug-24 A	31-Jan-25
VB - Design of HV & LV System for Electrical Plant Room					
A12940	VB - Design of HV & LV Installation for Room - DDA - prepare and submit to design checker	50%	329	01-Jun-24 A	25-Sep-25
VB - Design of Drainage System					
A29740	VB - Drainage Systems - AIP - prepare and submit to design checker	45%	63	01-Jun-24 A	02-Jan-25



Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A29760	VB - Drainage Systems - AIP - authorities & design checker reveiw, issue check certificate	0%	28	03-Jan-25	30-Jan-25
A29780	VB - Drainage Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	06-Jan-25	02-Feb-25
----- SUB2 - Designs for 132kV Substation No.2 -----					
SUB2 - Design of ELS for Foundation Works					
A13200	SUB2 - Design ELS for Foundation Works - prepare and submit to design checker	100%	0	05-Apr-24 A	31-Oct-24 A
A13240	SUB2 - Design ELS for Foundation Works - submit to PM, PM review and gives consent to proceed DDA	85%	14	16-Sep-24 A	14-Nov-24
A13220	SUB2 - Design ELS for Foundation Works - design checker reveiw and issue check certificate	100%	0	16-Sep-24 A	31-Oct-24 A
SUB2 - Issue CLP Design Brief					
A28680	SUB2 - AECOM address CLP comments on SUB2 design for CLP start to prepare E&M design brief (by AECOM)	100%	0	18-Sep-23 A	01-Nov-24
A28720	SUB2 - CLP issue design brief for E&M works (4M) (by CLP)	0%	0	03-Mar-24 A	01-Nov-24
A28740	SUB2 - ready to start E&M design after CLP design brief complete	0%	0	01-Nov-24	
SUB2 - Design of Lightning Protection System					
A13980	SUB2 - Lightning / Earthing Systems - DDA - prepare and submit to design checker	0%	21	10-Oct-24 A	05-Dec-24
A13960-40	SUB2 - Lightning / Earthing Systems - Prepare & submit earthing system schematic design to Aecom for CLP review	100%	0	22-Oct-24 A	31-Oct-24 A
A13960-50	SUB2 - Lightning / Earthing Systems - CLP review and accept earthing system schematic design	10%	28	31-Oct-24 A	28-Nov-24
A14000	SUB2 - Lightning / Earthing Systems - DDA - design checker reveiw and issue check certificate	0%	15	03-Dec-24	17-Dec-24
A14020	SUB2 - Lightning / Earthing Systems - DDA - submit to PM, PM review and gives consent to proceed construction	0%	21	18-Dec-24	07-Jan-25
A14518	SUB2 - Lightning / Earthing Systems - ready to start earthing mat installation	0%	0		07-Jan-25
SUB2 - Design of Drainage System					
A13700	SUB2 - Drainage Systems - AIP - design checker reveiw and issue check certificate	35%	8	20-Aug-24 A	08-Nov-24
A13720	SUB2 - Drainage Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	20	20-Aug-24 A	28-Nov-24
A13740	SUB2 - Drainage Systems - DDA - prepare and submit to design checker	0%	90	29-Nov-24	26-Feb-25
SUB2 - Design of MVAC					
A13340	SUB2 - MVAC Design - AIP - design checker reveiw and issue check certificate	20%	28	20-Aug-24 A	28-Nov-24
A13360	SUB2 - MVAC Design - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	30	20-Aug-24 A	28-Dec-24
A13380	SUB2 - MVAC Design - DDA - prepare and submit to design checker	0%	180	29-Dec-24	26-Jun-25
SUB2 - Design of FS System					
A13460	SUB2 - FS Installation System - AIP - design checker reveiw and issue check certificate	20%	28	20-Aug-24 A	28-Nov-24
A13480	SUB2 - FS Installation System - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	30	20-Aug-24 A	28-Dec-24
A13500	SUB2 - FS Installation System - DDA - prepare and submit to design checker	0%	135	29-Dec-24	12-May-25
SUB2 - Design of Plumbing Systems					
A13580	SUB2 - Plumbing Systems - AIP - design checker reveiw and issue check certificate	20%	28	20-Aug-24 A	28-Nov-24
A13600	SUB2 - Plumbing Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	30	20-Aug-24 A	28-Dec-24
A13620	SUB2 - Plumbing Systems - DDA - prepare and submit to design checker	0%	180	29-Dec-24	26-Jun-25

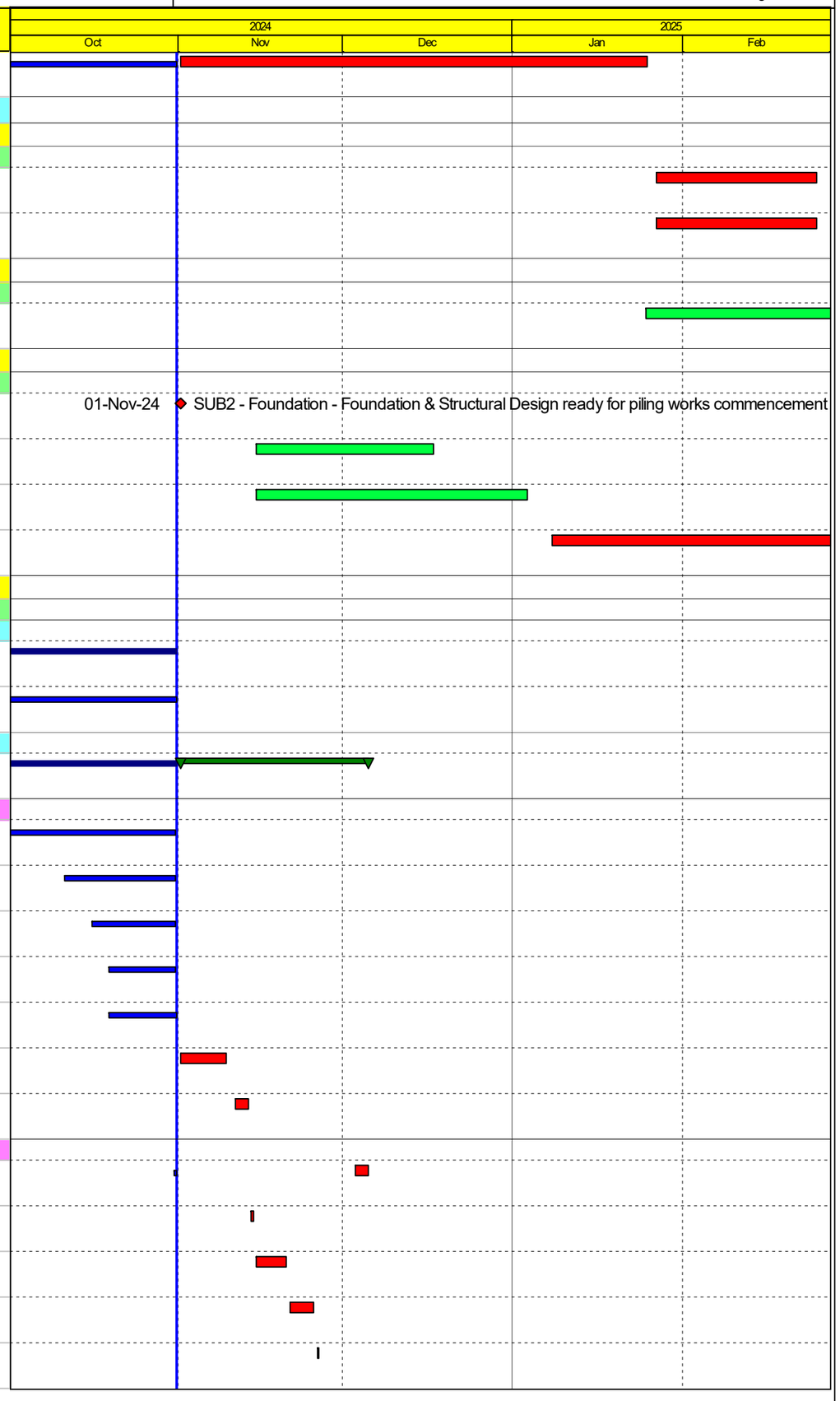


Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
SUB2 - Design of HV & LV System					
A13820	SUB2 - HV & LV Systems - AIP - design checker reveiw and issue check certificate	20%	28	20-Aug-24 A	28-Nov-24
A13840	SUB2 - HV & LV Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	30	20-Aug-24 A	28-Dec-24
A13860	SUB2 - HV & LV Systems - DDA - prepare and submit to design checker	0%	95	29-Dec-24	02-Apr-25
SUB2 - Design of Indoor Lighting & Emergency Lighting					
A29200	SUB2 - Indoor Lighting & Emergency Lighting - AIP - authorities & design checker reveiw, issue check certificate	20%	30	20-Aug-24 A	30-Nov-24
A29220	SUB2 - Indoor Lighting & Emergency Lighting - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	30	20-Aug-24 A	30-Dec-24
A29240	SUB2 - Indoor Lighting & Emergency Lighting - DDA - prepare and submit to design checker	0%	90	01-Dec-24	28-Feb-25
SUB2 - Design of Outdoor Lighting					
A29320	SUB2 - Outdoor Lighting - AIP - authorities & design checker reveiw, issue check certificate	20%	30	20-Aug-24 A	30-Nov-24
A29340	SUB2 - Outdoor Lighting - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	30	20-Aug-24 A	30-Dec-24
A29360	SUB2 - Outdoor Lighting - DDA - prepare and submit to design checker	0%	90	01-Dec-24	28-Feb-25
----- SSB - Design for Skip Storage Building -----					
SSB - Design of Building Plan					
A25000	SSB - Building Plan - DDA - authority & design checker reveiw, issue check certificate	25%	29	03-Sep-24 A	29-Nov-24
A25020	SSB - Building Plan - DDA - submit to PM, PM review and gives consent to proceed construction	15%	42	19-Sep-24 A	10-Jan-25
SSB - Design of Foundation Plan					
A24880	SSB - Foundation Plan - DDA - authority & design checker reveiw, issue check certificate	45%	42	17-Jul-24 A	22-Jan-25
A24900	SSB - Foundation Plan - DDA - submit to PM, PM review and gives consent to proceed construction	45%	29	08-Aug-24 A	20-Feb-25
A24860-20	SSB - Foundation Plan - DDA - review design according to additional GI report	60%	18	13-Aug-24 A	11-Dec-24
A24860-10	SSB - Foundation Plan - DDA - complete additional GI due to unexpected deep rock head	0%	0		23-Nov-24
SSB - Design of Lightning Protection System					
A25780	SSB - Lightning / Earthing Protection System - AIP - authority & design checker reveiw, issue check certificate	55%	8	31-Aug-24 A	08-Nov-24
A25800	SSB - Lightning / Earthing Protection System - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	33	31-Aug-24 A	11-Dec-24
A25820	SSB - Lightning / Earthing Protection System - DDA - prepare and submit to design checker	0%	90	01-Nov-24	29-Jan-25
A25840	SSB - Lightning / Earthing Protection System - DDA - authority & design checker reveiw, issue check certificate	0%	60	02-Jan-25	02-Mar-25
SSB - Design of ELS for Foundation Works					
A24760	SSB - design of ELS for foundation - design checker review and issue check certificate	93%	28	09-Jul-24 A	28-Nov-24
A24780	SSB - design of ELS for foundation - submit to PM, PM review and accept	0%	28	29-Nov-24	26-Dec-24
SSB - Design of Structural Plan					
A25120	SSB - Structural Plan - DDA - authority & design checker reveiw, issue check certificate	5%	58	15-Oct-24 A	28-Dec-24
A25140	SSB - Structural Plan - DDA - submit to PM, PM review and gives consent to proceed construction	0%	42	29-Dec-24	08-Feb-25
SSB - Design of Architectural Finishing Works					
A25160	SSB - ABWF Design - AIP - prepare and submit to design checker	0%	90	11-Jan-25	10-Apr-25
SSB - Design of Temp.MVAC					

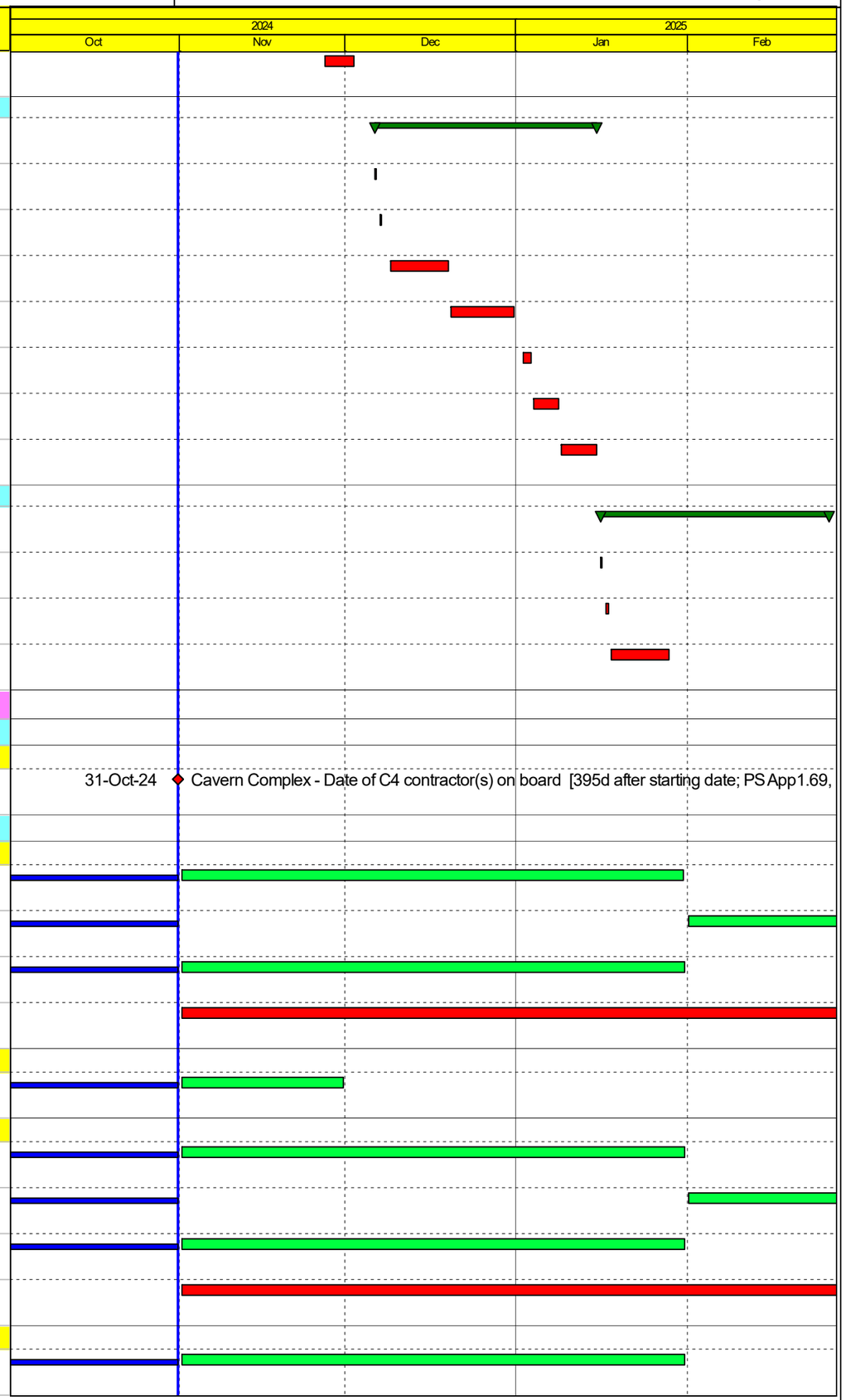


Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A25420	SSB -Temp. MVAC Design - AIP - authority & design checker reveiw, issue check certificate	20%	30	31-Aug-24 A	30-Nov-24
A25440	SSB -Temp. MVAC Design - AIP - submit to PM, PM review and gives consent to proceed DDA	20%	62	31-Aug-24 A	31-Jan-25
A25460	SSB -Temp. MVAC Design - DDA - prepare and submit to design checker	0%	440	01-Dec-24	13-Feb-26
SSB - Design of CMCS for CVS system					
A25580	SSB - CMCS Design in MSR no.2 - DDA - prepare and submit to design checker	20%	37	01-Jun-24 A	07-Dec-24
A25600	SSB - CMCS Design in MSR no.2 - DDA - authority & design checker reveiw, issue check certificate	0%	60	08-Dec-24	05-Feb-25
SSB - Design of HV & LV System for Electrical Plant Room					
A25700	SSB - Design of HV & LV Installation for Room - DDA - prepare and submit to design checker	25%	469	01-Jun-24 A	12-Feb-26
SSB - Design of Drainage System (including switch room No.2)					
A29860	SSB - Drainage Systems - AIP - prepare and submit to design checker	80%	63	03-Jun-24 A	02-Jan-25
A29880	SSB - Drainage Systems - AIP - authorities & design checker reveiw, issue check certificate	0%	30	03-Jan-25	01-Feb-25
A29900	SSB - Drainage Systems - AIP - submit to PM, PM review and gives consent to proceed DDA	0%	28	13-Jan-25	09-Feb-25
Secondary Portal Area - Submission of Inspection and Test Plans (ITPs)					
A28520	ITPs for Secondary Portal Area - Prepare and submit ITPs to PM [PS13.01G (1)]	100%	0	19-Jul-23 A	31-Oct-24 A
A28540	ITPs for Secondary Portal Area - PM accept	65%	30	17-Feb-24 A	30-Nov-24
—— Secondary Portal Area - Major Procurement for Long Lead Items ——					
----- VB - Procurement for Major Equipment -----					
VB - Procurement for MiC Installation					
A26920	VB - Procurement - MiC Installation - prepare document, tender out & returning tender, tender assessment	20%	53	26-Aug-24 A	23-Dec-24
A26940	VB - Procurement - MiC Installation - award sub-contract	0%	0		23-Dec-24
VB - Procurement for MiC Fabrication and Delivery					
A26960	VB - Procurement - MiC fabrication & delivery - prepare document, tender out & returning tender, tender assessment	20%	53	26-Aug-24 A	23-Dec-24
A26980	VB - Procurement - MiC fabrication & delivery - award sub-contract	0%	0		23-Dec-24
A27000	VB - MiC Fabrication & Delivery - prepare shop drawings, formwork design and factory setup	0%	90	24-Dec-24	23-Mar-25
----- SSB - Procurment of Major Equipment -----					
SSB - Procurement for CMCS in main switch room no,2					
A37980	SSB - Procurement of CMCS - equipment, material submission and acceptance	0%	365	08-Dec-24	07-Dec-25
SSB - Procurement for MiC Installation					
A27820	SSB - Procurement - MiC Installation - prepare document, tender out & returning tender, tender assessment	0%	120	09-Jan-25	08-May-25
SSB - Procurement for MiC Fabrication and Delivery					
A25950	SSB - Procurement - MiC fabrication & delivery - prepare document, tender out & returning tender, tender assessment	0%	120	09-Jan-25	08-May-25
—— SAT Portal Area - General Works					
Sec. Portal Area - Additional Ground Investigation					
Sec. Portal Area - Additional Ground Investigation SSB					
A37522-PMI	PMI - Sec Portal Area - Additional GI / Predrill for SSB (9nos) - 2nd batch	0%	20	01-Nov-24	23-Nov-24
Sec. Portal Area - Condition Survey					
A14460	Sec Portal Area - pre-construction condition survey	45%	44	02-Apr-24 A	24-Jan-25
Sec. Portal Area - Instrumentation & Monitoring					

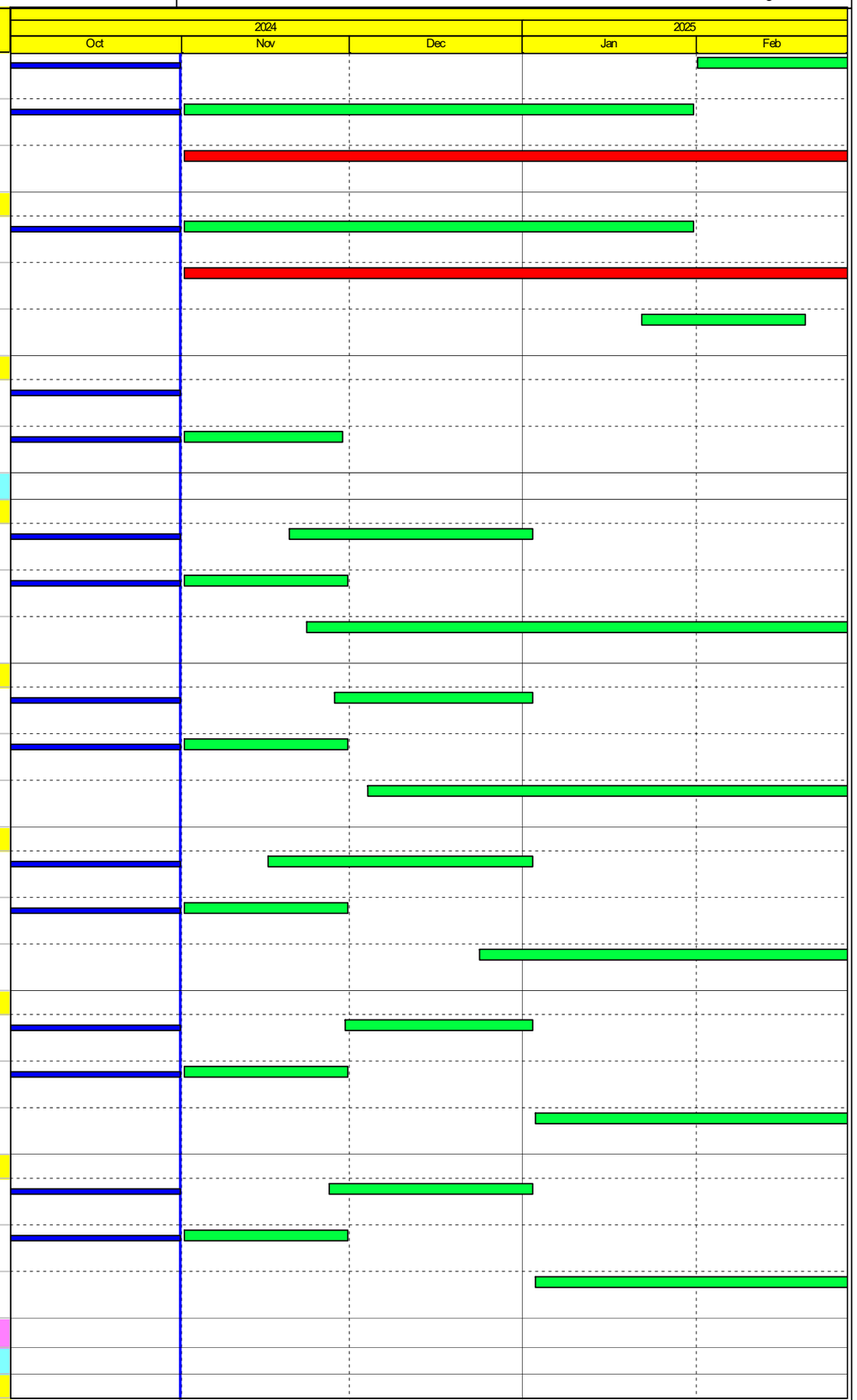
Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A14320	Sec Portal Area - install instrumentation monitoring points	10%	71	02-Apr-24 A	25-Jan-25
—— Sec. Portal Area - Construction ——					
----- Construction of Ventilation Building -----					
VB - Foundation Works					
A17740	VB - Footing - Zone 2 - excavation	0%	20	27-Jan-25	25-Feb-25
A17710	VB - Footing - Zone 1 - excavation [200m3 @4m3/d/wf; 2wf]	0%	20	27-Jan-25	25-Feb-25
----- Construction of Skip Storage Building -----					
SSB - Foundation Works					
A20520	SSB - Raft Footing - open cut excavation [6700m3 @300m2/d]	0%	50	25-Jan-25	31-Mar-25
----- Construction of 132kV Substation No.2 -----					
SUB2 - Foundation Works					
A14290	SUB2 - Foundation - Foundation & Structural Design ready for piling works commencement (by Aecom)	0%	0		01-Nov-24
A14540	SUB2 - Pile Cap - install temp pipe pile wall (152 nos.; @2d/nos./wf, 6WF)	0%	28	15-Nov-24	17-Dec-24
A14560	SUB2 - Pile Cap - open cut excavation [6700m3 @300m2/d], excavate additional 500mm dep. for earthing mat installation	0%	40	15-Nov-24	03-Jan-25
A14580	SUB2 - Pile Cap - install earthing rods and earthing mat [45nos. of rods,3WF]	0%	40	08-Jan-25	01-Mar-25
----- SAT Portal Area External Works -----					
Sec. Portal Area External Works - Mui Tsz Lam Road Portion 8, 12					
MTL Road - Stage 7 : WMH1607 to 1608 (19m)					
A21720	[LOA] Mui Tsz Lam Rd - TTA Stage 7 - waste water drainage and watermains (19m)	100%	0	14-Aug-24 A	31-Oct-24 A
A36020	Mui Tsz Lam Rd - Stage 7 - Backfilling & Reinstatement	100%	0	30-Sep-24 A	31-Oct-24 A
MTL Road - Stage 8 : WMH1608 to 1609 (45m)					
A21760	[LOA] Mui Tsz Lam Rd - TTA Stage 8 - waste water drainage and watermains (45m)	50%	30	26-Sep-24 A	05-Dec-24
Stage 8 Phase 1 (for watermain test between stage 1 to 8)					
A36040	Mui Tsz Lam Rd - Stage 8 Phase 1 - Implementation of TTA	100%	0	28-Sep-24 A	31-Oct-24 A
A36060	Mui Tsz Lam Rd - Stage 8 Phase 1 - Excavation & Shoring	100%	0	11-Oct-24 A	31-Oct-24 A
A36080	Mui Tsz Lam Rd - Stage 8 Phase 1 - Wastewater works	100%	0	16-Oct-24 A	31-Oct-24 A
A36100	Mui Tsz Lam Rd - Stage 8 Phase 1 - Bedding laying	100%	0	19-Oct-24 A	31-Oct-24 A
A36120	Mui Tsz Lam Rd - Stage 8 Phase 1 - Watermain works	100%	0	19-Oct-24 A	31-Oct-24 A
A36120-10	Mui Tsz Lam Rd - Stage 8 Phase 1 - preparation & testing of watermain between Stage 1 and Stage 8	0%	8	01-Nov-24	09-Nov-24
A36140	Mui Tsz Lam Rd - Stage 8 Phase 1 - Backfilling & Reinstatement	0%	3	11-Nov-24	13-Nov-24
Stage 8 Phase 2 (after watermain test)					
A36140-10	Mui Tsz Lam Rd - Stage 8 Phase 2 - Backfilling & Reinstatement	5%	3	31-Oct-24 A	05-Dec-24
A36040-10	Mui Tsz Lam Rd - Stage 8 Phase 2 - Implementation of TTA	0%	1	14-Nov-24	14-Nov-24
A36060-10	Mui Tsz Lam Rd - Stage 8 Phase 2 - Excavation & Shoring	0%	5	15-Nov-24	20-Nov-24
A36080-10	Mui Tsz Lam Rd - Stage 8 Phase 2 - Wastewater works	0%	4	21-Nov-24	25-Nov-24
A36100-10	Mui Tsz Lam Rd - Stage 8 Phase 2 - Bedding laying	0%	1	26-Nov-24	26-Nov-24



Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A36120-20	Mui Tsz Lam Rd - Stage 8 Phase 2 - Watermain works	0%	5	27-Nov-24	02-Dec-24
MTL Road - Stage 9 : WMH1609 to 1610 (39m)					
A21800	[LOA] Mui Tsz Lam Rd - TTA Stage 9 - waste water drainage and watermains (39m)	0%	32	06-Dec-24	15-Jan-25
A36155	Mui Tsz Lam Rd - Stage 9 - Preparation works	0%	1	06-Dec-24	06-Dec-24
A36160	Mui Tsz Lam Rd - Stage 9 - Implementation of TTA	0%	1	07-Dec-24	07-Dec-24
A36180	Mui Tsz Lam Rd - Stage 9 - Excavation & Shoring	0%	10	09-Dec-24	19-Dec-24
A36200	Mui Tsz Lam Rd - Stage 9 - Wastewater works	0%	8	20-Dec-24	31-Dec-24
A36220	Mui Tsz Lam Rd - Stage 9 - Bedding laying	0%	2	02-Jan-25	03-Jan-25
A36240	Mui Tsz Lam Rd - Stage 9 - Watermain works	0%	4	04-Jan-25	08-Jan-25
A36260	Mui Tsz Lam Rd - Stage 9 - Backfilling & Reinstatement	0%	6	09-Jan-25	15-Jan-25
MTL Road - Stage 10 : WMH1610 to 1611 (22m)					
A21840	[LOA] Mui Tsz Lam Rd - TTA Stage 10 - waste water drainage and watermains (22m)	0%	30	16-Jan-25	26-Feb-25
A36275	Mui Tsz Lam Rd - Stage 10 - Preparation works	0%	1	16-Jan-25	16-Jan-25
A36280	Mui Tsz Lam Rd - Stage 10 - Implementation of TTA	0%	1	17-Jan-25	17-Jan-25
A36300	Mui Tsz Lam Rd - Stage 10 - Excavation & Shoring	0%	9	18-Jan-25	28-Jan-25
═══ Cavern Complex ═══					
── Interface Requirement with C4 Contractor(s)					
Cavern Complex - Date of C4 Contractor(s) onboard					
A11860	Cavern Complex - Date of C4 contractor(s) on board [395d after starting date; PS App1.69, cl 3.9.1] (30 Aug 2024)	0%	0		31-Oct-24
── Design for Cavern Complex ──					
Cavern Complex - Design of Cavern Ventilation System (CVS) (MFSD, AQMS,etc.)					
A14135	Cavern Complex - CVS - AIP - Remaining design submission, PM review and accept	78%	92	29-Dec-23 A	31-Jan-25
A14180	Cavern Complex - CVS - DDA - submit to PM, PM review and gives consent to proceed construction	68%	37	09-Feb-24 A	09-Mar-25
A14160	Cavern Complex - CVS - DDA - Remaining design, address comments, FSD & design checker reveiw	58%	92	30-Mar-24 A	31-Jan-25
A14220	Cavern Complex - CVS - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC &C4	0%	174	01-Nov-24	23-Apr-25
Cavern Complex - Design of FSD Submission of Motorized Fire & Smoke Damper (MFSD)					
A26260	Cavern Complex - MFSD design report - design approved by FSD	65%	30	03-Jun-24 A	30-Nov-24
Cavern Complex - Design of CMCS for Switch Rooms, HV/LV switchboard					
A31945	Cavern Complex - CMCS - AIP - Remaining design submission, PM review and accept	78%	92	29-Dec-23 A	31-Jan-25
A32000	Cavern Complex - CMCS - DDA - submit to PM, PM review and gives consent to proceed construction	60%	37	09-Feb-24 A	09-Mar-25
A31980	Cavern Complex - CMCS - DDA - Remaining design, address comments, FSD and design checker reveiw and issue certificate	50%	92	30-Mar-24 A	31-Jan-25
A32060	Cavern Complex - CMCS - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC&C4	0%	174	01-Nov-24	23-Apr-25
Cavern Complex - Pressurization System for protected corridor in cavern Pressurization System					
A28945	Cavern Complex - PS - AIP - Remaining design submission, PM review and accept	78%	92	29-Dec-23 A	31-Jan-25



Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A29020	Cavern Complex - PS - DDA - submit to PM, PM review and gives consent to proceed construction	60%	37	09-Feb-24 A	09-Mar-25
A29000	Cavern Complex - PS - DDA - Remaining design, address comments,FSD and design checker reveiw and issue cert.	50%	92	30-Mar-24 A	31-Jan-25
A37370	Cavern Complex - PS - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC&C4	0%	174	01-Nov-24	23-Apr-25
Cavern Complex - Design of Temp. MVAC system					
A37410	Cavern Complex - MVAC - DDA - Remaining deisign, address comments,FSD and design checker reveiw	88%	92	30-Mar-24 A	31-Jan-25
A37430	Cavern Complex - MVAC - final DDA review - liaise & obtain design info. from C4; Prepare & submit design review to DC&C4	0%	165	01-Nov-24	14-Apr-25
A37420	Cavern Complex - MVAC - DDA - submit to PM, PM review and gives consent to proceed construction	0%	30	22-Jan-25	20-Feb-25
Cavern Complex - Submission of Inspection & Test Plans (ITPs)					
A28560	Cavern Complex - ITPs - prepare and submit ITPs to PM	100%	0	19-Jul-23 A	31-Oct-24 A
A28580	Cavern Complex - ITPs - PM accept	0%	29	17-Feb-24 A	29-Nov-24
—— Cavern Complex - Major Procurement for Long Lead Items ——					
Cavern Complex - Procurement for Motorized fire and smoke damper (MFSD) and AQMS					
A30000	Cavern Complex - Procurement of MFSD and AQMS - material & equipment submission and acceptance	60%	44	02-May-24 A	02-Jan-25
A29980	Cavern Complex - Procurement of MFSD and AQMS - prepare documents, source supplier and award	50%	30	01-Jun-24 A	30-Nov-24
A30020	Cavern Complex - Procurement of MFSD and AQMS - purchase ordering of material and manufacture	0%	220	23-Nov-24	30-Jun-25
Cavern Complex - Procurement for CVS Axial Fan					
A30120	Cavern Complex - Procurement of CVS Axial Fan - material & equipment submission and acceptance	30%	36	02-May-24 A	02-Jan-25
A30100	Cavern Complex - Procurement of CVS Axial Fan - prepare documents, source supplier and award	50%	30	01-Jun-24 A	30-Nov-24
A30140	Cavern Complex - Procurement of CVS Axial Fan - purchase ordering of material and manufacture	0%	500	04-Dec-24	17-Apr-26
Cavern Complex - Procurement for Pressurization Fan (PF)					
A30480	Cavern Complex - Procurement of Pressurization Fan - material & equipment submission and acceptance	30%	48	02-May-24 A	02-Jan-25
A30460	Cavern Complex - Procurement of Pressurization Fan - prepare documents, source supplier and award	50%	30	01-Jun-24 A	30-Nov-24
A30500	Cavern Complex - Procurement of Pressurization Fan - purchase ordering of material and manufacture	0%	480	24-Dec-24	17-Apr-26
Cavern Complex - Procurement for CMCS and HV/LV switchboard					
A32160	Cavern Complex - Procurement of CMCS and HV/LV switchboard - material & equipment submission and acceptance	50%	34	02-May-24 A	02-Jan-25
A32140	Cavern Complex - Procurement of CMCS and HV/LV switchboard - prepare documents, source supplier and award	50%	30	01-Jun-24 A	30-Nov-24
A32180	Cavern Complex - Procurement of CMCS and HV/LV switchboard - purchase ordering of material and manufacture	0%	210	03-Jan-25	31-Jul-25
Cavern Complex - Procurement for Temp. MVAC system					
A37320	Cavern Complex - Procurement of Temp. MVAC system - material & equipment submission and acceptance	30%	37	02-May-24 A	02-Jan-25
A37310	Cavern Complex - Procurement of Temp. MVAC system - prepare documents, source supplier and award	50%	30	01-Jun-24 A	30-Nov-24
A37330	Cavern Complex - Procurement of Temp. MVAC system - purchase ordering of material and manufacture	0%	210	03-Jan-25	31-Jul-25
═══ Emergency Bypass ═══					
—— Designs for Emergency Bypass ——					
Emergency Bypass - Submission of CIA to MTRC					



Activity ID	Activity Name	% Complete	Remaining Duration	Start	Finish
A28880	Emergency Bypass - MTRC review and accept CIA report & no comment to bypass alignment & construction method	75%	17	29-Dec-23 A	17-Nov-24
Emergency Bypass - Design of Civil Provision Works					
A22660	Emergency Bypass - Design of Alignment & Profile - AIP - submit to PM, PM review and gives consent to proceed DDA	80%	3	01-Jun-24 A	03-Nov-24
A22680	Emergency Bypass - Design of Alignment & Profile - DDA - prepare and submit to design checker	0%	90	01-Nov-24	29-Jan-25
A22755	Emergency Bypass ----- PM determine the final pipe jacking depth for shaft piling works commencement -----	0%	0		04-Nov-24
A22700	Emergency Bypass - Design of Alignment & Profile - DDA - design checker reveiw and issue check certificate	0%	28	30-Jan-25	26-Feb-25
—— Construction of Emergency Bypass ——					
Emergency Bypass - Permit Application for Works in STSTP					
A37470	EB - application of working permit for work in STSTP for pipe rehabilitation	0%	120	01-Nov-24	28-Feb-25
Emergency Bypass - Order, Fabrication and Delivery of TBM					
A27520	EB - sub-contract of pipe jacking works - order, fabricate and delivery of pipe jacking equipment	55%	32	20-Apr-24 A	07-Dec-24
Emergency Bypass - Section from Pit E3 to E4					
E3 to E4 - Construct Retrieving Shaft E4					
A22760	EB - Retrieving shaft E4 - drive temp pipe pile [11 nos. @3d/wf; 2wf]	70%	6	04-Oct-24 A	09-Nov-24
A22760-30	EB - Retrieving shaft E4 - drive remaining temp pipe pile [64 nos. @3d/wf; 2wf]	5%	95	29-Oct-24 A	01-Mar-25
A22543	EB ----- Final pipe jacking depth for shaft piling works determined (by Aecom) -----	0%	0		04-Nov-24
E3 to E4 - Construct Launching Shaft E3					
A22880-20	PMI - EB - Launching shaft E3 - Suspension due to unforeseen ground condition of cavity	65%	3	27-Oct-24 A	06-Nov-24
A22880-10	PMI - EB - Launching shaft E3 - Multi-Channel Analysis of Surface Wave Survey (MASW) due to unforeseen ground condition	100%	5	30-Oct-24 A	06-Nov-24
A22825	EB ----- Final pipe jacking depth for shaft piling works determined (by Aecom) -----	0%	0		04-Nov-24
A22880-30	EB - Launching shaft E3 - drive remaining temp pipe pile [54 nos. @3d/wf; 2wf]	0%	85	07-Nov-24	24-Feb-25
Emergency Bypass - Section from Pit E3 to E2					
E3 to E2 - Construct Retrieving Shaft E2					
A23040	EB ----- Temp pipe pile for E3 completed -----	0%	0		04-Nov-24