



Lam Environmental Services Limited

Service Contract No: EDO/01/2017
Environmental Team for
Development of Anderson Road Quarry Site
Road Improvement Works
Monthly EM&A Report (May 2021)

SERVICE CONTRACT NO: EDO/01/2017

**ENVIRONMENTAL TEAM FOR
DEVELOPMENT OF
ANDERSON ROAD QUARRY SITE -
ROAD IMPROVEMENT WORKS**

UNDER ENVIRONMENTAL PERMIT NO. EP-513/2016

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

MAY 2021

CLIENTS:

**Civil Engineering and Development
Department**

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DATE:

11 June 2021



Civil Engineering and Development Department
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11 Hoi Ting Road
Yau Ma Tei
Kowloon

Your reference:

Our reference: HKCEDD12/50/107371

Date: 11 June 2021

Attention: Mr Sam S W Lam

BY POST

Dear Sirs

Agreement No. EDO/04/2017
Independent Environmental Checker (IEC) for Development of Anderson Road Quarry Site
– Road Improvement Works
Monthly Environmental Monitoring & Audit Report (May 2021)

We refer to email dated 9 June 2021 from Environmental Team, Lam Environmental Services Limited attaching a Monthly Environmental Monitoring and Audit Report (May 2021) for the captioned project.

We have no comment and hereby verify the abovementioned report in accordance with Clause 3.4 of the Environmental Permit no. EP-513/2016.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Frankie Yuen on 2618 2831.

Yours faithfully
ANewR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/YCFF/lsm

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EXECUTIVE SUMMARY

i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – [May 2021](#) of Development of Anderson Road Quarry Site – Road Improvement Works under Environmental Permit no. EP-513/2016 (Hereafter as “the Project”). The construction works of the Project was commenced on 2 November 2018 and the tentative completion date is end of 2023. This is the [31st](#) EM&A report presenting the environmental monitoring findings and information recorded during the period of [1 May 2021 to 31 May 2021](#). The cut-off date of reporting is at the end of each reporting month.

ii. In the reporting month, the principal work activities conducted are as follow:

Works in Road Improvement Works 1 (RIW1)

- Earth works (such as temporary soil nail, form working platform etc), RC works and no-fine concrete construction at RWC2 in-progress;
- Backfilling works at west side of KS27 subway extension is in progress;
- RC works for noise barrier in-progress;

Works in Road Improvement Works 2 (RIW2)

- Earth works (such as temporary soil nail, form working platform etc), RC works at Slope C3 is in progress;
- Utilities works at SE2 is in-progress;

Works in Road Improvement Works 3 (RIW3)

- Mini-pile construction at RWD1 along Sau Mau Ping Road was completed. RC works for RWD1 Bay 1 – 10 was in progress. ELS works for RWD1 Bay 11 – 14 was in progress.
- Construction of retaining wall RWD2 at Slope D2 was in-progress.
- Rock excavation works using drill and split method at Slope D3 along Lin Tak Road was in-progress;
- Construction of mass concreting retaining wall at slope crest of Slope D3 was in-progress;
- No-fines concrete construction at slope crest of Slope D3 is in progress;
- Inspection Pit for UU at Sau Mau Ping Road is in progress.

Air Quality Monitoring

- iii. 1-hour Total Suspended Particulates (TSP) monitoring was conducted at eight monitoring stations. The sampling frequency is 3 times in every 6 days in the reporting month.
- iv. [No action or limit level exceedance was recorded in this reporting period.](#)



Noise Monitoring

- v. Noise monitoring was conducted at five noise monitoring stations once per week in the reporting month.
- vi. Ad- hoc noise monitoring for NMC05 was conducted on 05, 06, 13, 20 and 27 May 2021.
- vii. One limit level exceedance was recorded at NMC05 on 05 May 2021. After investigation, drilling and splitting works at RIW3 were conducted under Contract NE/2017/03 around the concerned location during the time of measurement. The drilling works at Link Tak Road was identified as the major noise source causing the exceedance by the observation during measurement on 05 May 2021. The working area of the driller was not fully covering by noise barrier or other mitigation measures for minimising the construction noise so that it was the major causes of the exceedance. As such, the exceedance was considered as project related.
- viii. Two action level exceedances at RIW2 were recorded on 27 April 2021. The complainant, reported to AECOM through the hotline dated on 27 April 2021 that the construction activities were commenced around 7:00 am, making big noise “boom boom” from the construction site under Contract NE/2017/03 at Clear Water Bay Road. Nearby residents were affected by the noise nuisance and the complainant asked Contractor to commence the construction activities after 9:00 am. According to the information provided by the Contractor, and recent site inspections, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source. The action level exceedance was considered as project related.
- ix. One action level exceedance at RIW2 were recorded on 08 May 2021 in this reporting period. The complainant, resident of No.8 Fei Ha Road, reported to AECOM through the hotline dated on 08 May 2021 that they were severely affected by the noise nuisance from the construction site under Contract NE/2017/03 at Clear Water Bay Road. According to the information provided by Contractor, and recent site inspection, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source. The action level exceedance was considered as project related.

Water Quality Monitoring

- x. Water quality monitoring was conducted at four monitoring stations three days per week in the reporting month.
- xi. No water can be collected at Station AC1 during this reporting period as the station was dried out during the monitoring scheduled in the reporting month.



- xii. No water can be collected at Station E during this reporting period as the station was dried out during the monitoring scheduled in the reporting month.
- xiii. One limit level exceedance of suspended solid and one limit level exceedance of Turbidity were recorded at Station F on 28 April 2021. After investigation, silty water slightly grey in colour was observed at monitoring station F during water quality monitoring. Slope trimming and hand-digging excavation were commenced at RIW2 construction site area under Contract NE/2017/03 on 28 April 2021. However, no surface runoff was observed discharging into nearby gullies during monitoring. The weather was rainy from 27 to 28 April 2021, runoff from unknown sources may also affect the water quality of station F. Thus, it is considered that the exceedances were not related to Project works at RIW2.
- xiv. No exceedance was recorded in the May 2021 reporting period.

Site Inspections and Audit

- xv. The Environmental Team (ET) conducted weekly site inspections for the Contract on 07, 14, 21, and 28 May 2021. IEC attended the joint site inspection on 07 May 2021. No non-compliance was found during the site inspection while reminders on environmental measures were recommended.
- xvi. The Environmental Team (ET) conducted biweekly landscape site inspections for the Contract on 06 and 20 May 2021. No non-compliance was found during the site inspection while reminders on environmental measures were recommended.
- xvii. The Environmental Team (ET) conducted monthly ecological monitoring for the Contract on 06 May 2021. No non-compliance was found during the monitoring while reminders on environmental measures were recommended.

Complaints, Notifications of Summons and Successful Prosecutions

- xviii. One environmental complaint regarding the construction noise and air at Clear Water Bay Road were received by ET on 12 May 2021.
- xix. Investigation summary are attached in [Appendix 8.1](#).

Reporting Changes

- xx. There are no particular reporting changes.

Future Key Issues

- xxi. In coming reporting 2 months, the scheduled construction activities and the recommended mitigation measures are listed as follows:

Key Construction Works	Recommended Mitigation Measures
<ul style="list-style-type: none"> • Site formation, ELS works & RC works 	<ul style="list-style-type: none"> • Dust control during dust generating works;



Key Construction Works	Recommended Mitigation Measures
<p>at RWC2;</p> <ul style="list-style-type: none">• Backfilling works at KS27; and• ELS at Zone 6 & 7;• Retaining wall construction for Bay 2 to 8;• Remove piling platform at CT4 and utilities diversion works;• Predrilling works at SE2.• Construction of retaining wall RWD1 Bay 1 – 10 at Slope D1;• ELS construction for RWD1 Bay 11 – 14 at Slope D1;• ELS construction for footings of noise barrier VB1 SE1 at Slope D1;• Construction of retaining wall RWD2 at Slope D2;• Backfilling works at Slope D2;• Stage 1 rock excavation at Slope D3;• Soil nail installation at Slope D3; and• Watermain works at Sau Mau Ping Road.	<ul style="list-style-type: none">• Implementation of proper noise pollution control; and• Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system.



1 Introduction

1.1 Scope of the Report

- 1.1.1. Lam Environmental Services Limited (LES) has been appointed to work as the Environmental Team (ET) under Environmental Permit (EP) no. EP-513/2016 to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Development of Anderson Road Quarry site - Road Improvement Works (Register No.: AEIAR-195/2016).
- 1.1.2. In accordance with Clause 3.4 stated in EP-513/2016, four hard copy and one electronic copy 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 11.3.1 of the Project EM&A Manual, the first Monthly EM&A Report should be prepared and submitted to EPD within a month after the major construction works commences with the subsequently Monthly EM&A Reports due in 10 works day of the end of each reporting month.

1.2 Structure of the Report

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

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

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

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

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

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



- Section 7** **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 8** ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution
- Section 9** ***Conclusion***

2 Project Background

2.1 Background

- 2.1.1. The Development of Anderson Road Quarry (ARQ) Site is to provide land and the associated infrastructures for the proposed land uses at the existing ARQ site at the north-eastern of East Kowloon.
- 2.1.2. In addition to the site formation and infrastructure works within the ARQ site, a new bus-to-bus interchange (BBI) at the toll plaza of Tseung Kwan O Tunnel and a series of associated off-site road improvement works and pedestrian connectivity facilities are also proposed to mitigate the potential cumulative traffic impact arising from the proposed ARQ development.
- 2.1.3. The Project under Environmental Permit (EP) (EP No. EP-513/2016) is for the three associated of-site road improvement works which comprises: (i) improvement of junction of (J/O) Lin Tak Road / Sau Mau Ping Road (RIW3) (ii) widening and improvement of sections of Clear Water Bay Road and On Sau Road (RIW2); and (iii) widening and improvement of sections of New Clear Water Bay Road and Shun Lee Tsuen Road (RIW1). The location of the Project is shown [Figure 2.1](#).

2.2 Scope of the Project and Site Description

- 2.2.1. The project contains various Schedule 2 Designated Projects (DPs) that, under the EIAO, require EPs to be granted by the DEP before they may be either constructed or operated. **Table 2.1** summarises the DPs under this Project.

Table 2.1 Schedule 2 Designated Projects under this Project

Item	Designated Project	EIAO Reference
DP2	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road	Schedule 2, Part I, A.1

2.3 Project Organization and Contact Personnel

- 2.3.1 Civil Engineering and Development 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 are summarized in **Table 2.2**:

Table 2.2 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Brad Chan	5506 0068	2473 3221
Chun Wo – China Metallurgical Group Corporation Joint Venture	Contractor	Site Agent	Mr. Chris Lam	9801 9974	3965 9854
		Environmental Officer	Ms. King Lam	9570 6187	
ANewR Consulting Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. James Choi	2618 2836	3007 8648
Lam Environmental Services Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Henry Lau	9617 4670	2882 3331

2.4 Construction Activities

2.4.1 In the reporting month, the principal work activities conducted are as follow.

Works in Road Improvement Works 1 (RIW1)

- Earth works (such as temporary soil nail, form working platform etc), RC works and no-fine concrete construction at RWC2 in-progress;
- Backfilling works at west side of KS27 subway extension is in progress;
- RC works for noise barrier in-progress;

Works in Road Improvement Works 2 (RIW2)

- Earth works (such as temporary soil nail, form working platform etc), RC works at Slope C3 is in progress;
- Utilities works at SE2 is in-progress;

Works in Road Improvement Works 3 (RIW3)

- Mini-pile construction at RWD1 along Sau Mau Ping Road was completed. RC works for RWD1 Bay 1 – 10 was in progress. ELS works for RWD1 Bay 11 – 14 was in progress.
- Construction of retaining wall RWD2 at Slope D2 was in-progress.



- Rock excavation works using drill and split method at Slope D3 along Lin Tak Road was in-progress;
- Construction of mass concreting retaining wall at slope crest of Slope D3 was in-progress;
- No-fines concrete construction at slope crest of Slope D3 is in progress;
- Inspection Pit for UU at Sau Mau Ping Road is in progress.

2.4.2 In coming reporting 2 months, the scheduled construction activities are listed as follows:

- Site formation, ELS works & RC works at RWC2;
- Backfilling works at KS27; and
- ELS at Zone 6 & 7;
- Retaining wall construction for Bay 2 to 8;
- Remove piling platform at CT4 and utilities diversion works;
- Predrilling works at SE2.
- Construction of retaining wall RWD1 Bay 1 – 10 at Slope D1;
- ELS construction for RWD1 Bay 11 – 14 at Slope D1;
- ELS construction for footings of noise barrier VB1 SE1 at Slope D1;
- Construction of retaining wall RWD2 at Slope D2;
- Backfilling works at Slope D2;
- Stage 1 rock excavation at Slope D3;
- Soil nail installation at Slope D3; and
- Watermain works at Sau Mau Ping Road.

3 Status of Regulatory Compliance

3.1 Status of Environmental Licensing and Permitting under the Project

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

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

Permits and/or Licences	Permit. No. / Account No.	Valid From	Expiry Date	Status
Notification pursuant to Air Pollution Control (Construction Dust) Regulation	Form NA submitted to EPD on 29 May 2018.			
Environmental Permit	EP-513/2016	20 Jul 2016	N/A	Valid
Billing Account for Disposal				
Billing Account for Disposal of Construction Waste	7031075	20 Jul 2018	End of the Project	Valid
Chemical Waste Registration				
Registration as a Waste Producer for Sau Mau Ping Road to Lin Tak Road	5213-294-C4239-04	6 Aug 2018	N/A	Valid
Registration as a Waste Producer for Sau Mau Ping Area between Him Tat House and Sau Mau Ping Salt Water Service Reservoir	5213-293-C4239-05	6 Aug 2018	N/A	Valid
Registration as a Waste Producer for New Clear Water Bay Road (Start from 46 Clear Water Bay Road, End at Shun Lee Tsuen Road and San Lee Street	5213-291-C4239-02	13 Aug 2018	N/A	Valid
Registration as a Waste Producer for South Part of Hiu Ming Street Playground	5213-294-C4239-03	6 Aug 2018	N/A	Valid
Registration as a Waste Producer for Clear Water Bay Road and New Clear Water Bay Road (From the intersection of Fei Ngo Shan Road to Tai Pan Court) and on Sau Road (From the intersection of New Clear Water Bay Road to 9 Anderson Road	5213-831-C4239-08	6 Aug 2018	N/A	Valid
Registration as a Waste Producer for Sau Mau Ping Area Between Anderson Road and On Sau Road, next to Oi Tat House	5213-292-C4239-06	6 Aug 2018	N/A	Valid
Water Discharge Licence				
Water Pollution Ordinance Licence for Lin Tak Road to Sau Mau Ping Road including Tseung Kwan O Tunnel Toll Plaza	WT00032742-2018	18 Jan 2019	31 Jan 2024	Valid

Permits and/or Licences	Permit. No. / Account No.	Valid From	Expiry Date	Status
Water Pollution Ordinance Licence for Sau Mau Ping Area between Anderson Road and On Sau Road, next to Oi Tat House	WT00033223-2019	31 Jan 2019	31 Jan 2024	Valid
Water Pollution Ordinance Licence for Sau Mau Ping Area at south part of Hiu Ming Street playground	WT00033224-2019	21 Mar 2019	31 Mar 2024	Valid
Water Pollution Ordinance Licence for intersection of Fei Ngo Shan Road to Tai Pan Court and on Sau Road (From the intersection of New Clear Water Bay Road to 9 Anderson Road	WT00033299-2019	5 Mar 2019	31 Mar 2024	Valid
Water Pollution Ordinance Licence for Sau Mau Ping area between Him Tat House and Sau Mau Ping Salt Water service Reservoir	WT00033229-2019	24 Jun 2019	30 Jun 2024	Valid
Construction Noise Permit				
CNP for a section of Hiu Yuk Path in Area E8 for Installation of Steel Structure for Escalator	GW-RE0483-21	18 May 2021	27 Jun 2021	Valid
CNP for a section of New Clear Water Bay Road in Area RIW1 for Pipe Diversion Works	GW-RE0316-21	12 Apr 2021	19 Jun 2021	Valid
CNP for a section of Sau Mau Ping Road in Area E11 for Loading and unloading of steel structure	GW-RE0390-21	4 May 2021	30 Jun 2021	Valid

3.2 Status of Submission under the EP-513/2016

3.2.1. A summary of the current status on submission under EP-513/2016 is shown in **Table 3.2**.

Table 3.2 Summary of submission status under EP-513/2016

EP Condition	Submission	Date of Submission
Condition 1.12	Notification of Commencement Date of Works	24 September 2018
Condition 2.10	Management Organization of Main Construction Companies	27 September 2018
Condition 2.11	Submission of Design Drawing(s) of the Project	28 September 2018
Condition 2.12	Submission of Landscape and Visual Mitigation Plan(s)	28 September 2018
Condition 2.14 (a) and 2.15	Submission of Detailed Vegetation Survey Report (2nd submission)	7 December 2018
Condition 2.14 (b) and 2.15	Submission of Transplantation Proposal	7 December 2018



EP Condition	Submission	Date of Submission
Condition 3.3	Submission of Baseline Environmental Monitoring Report (2nd submission)	18 December 2018
Condition 2.14 (c)	Transplantation Completion Report	3 May 2019
Condition 3.4	Monthly EM&A Report (April 2021)	14 May 2021

4 Monitoring Requirements

4.1 Noise Monitoring

NOISE MONITORING STATIONS

4.1.1. The noise monitoring stations for the Project are listed and shown in **Table 4.1** and [Figure 4.1](#) & [4.2](#).

Table 4.1 Noise Monitoring Station

Monitoring Station ID	Monitoring Location	Measurement Type	Level (in terms of no. of floor)
NMC01	Kei Shun Special School	Façade	G/F
NMC02	Shun Lee Disciplined Services Quarters Block 6	Façade	3/F podium
NMC03	Sienna Garden Block 6	Free-field	G/F
NMC04	Po Tat Estate Tat Kai House	Free-field	3/F podium
NMC05	Hong Wah Court Block B Yee Hong House	Façade	G/F

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

4.1.2. 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 (six consecutive Leq/5min readings);
- 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 (three consecutive Leq/5min readings).

4.1.3. For the latter 3 sets of measurements specified in Section 4.1.2 above, one set of measurements shall at least include 3 consecutive Leq (5min) results.

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

4.1.5. 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

4.1.6. 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 4.2**.

Table 4.2 Noise Monitoring Equipment

Equipment	Brand and Model	Series Number
Integrated Sound Level Meter	Larson Davis LxT	0006307
Acoustic Calibrator	Larson Davis CAL200	13437

4.1.7. The calibration certificates of the noise monitoring equipment are attached in [Appendix 4.2](#).

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

4.1.8. 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:
- (e) Frequency weighting: A, Time weighting: Fast, Measurement time set: continuous 5 mins
- (f) 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.
- (g) 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.

4.1.9. 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

4.1.10. Noise Standards for Daytime Construction Activities are specified under EIAO-TM. The Action and Limit levels for construction noise are defined in **Table 4.3** and [Appendix 4.1](#). Should non-compliance of the criteria occurs, action in accordance with the Event and Action Plan in [Appendix 6.1](#) shall be carried out.

Table 4.3 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
NMC01	When one documented complaint is received	65 / 70 ¹	60 / 65 / 70 ³	45 / 50 / 55 ³
NMC02		75		
NMC03		75		
NMC04		75		
NMC05		75		

Remark 1: Limit level of NMC01 - Kei Shun Special School 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.

4.2 Air Monitoring

AIR QUALITY MONITORING STATIONS

4.2.1. The air monitoring stations for the Project are listed and shown in **Table 4.4** and [Figure 4.3](#) & [4.4](#).

Table 4.4 Air Monitoring Station

Monitoring Station ID	Monitoring Location	Level (in terms of no. of floor)
NCWBR_AMS-1	Shun Lee Fire Station	2/F Roof
NCWBR_AMS-2	Shun Lee Estate Lee Hang House	G/F
NCWBR_AMS-3	Shun Lee Disciplined Services Quarters (Block 6)	4/F podium
NCWBR_AMS-4	Sienna Garden	G/F
NCWBR_AMS-5	Shun Chi Court Shun Fung House	Roof
LTR_AMS-1	St Edward's Catholic Primary School	G/F
LTR_AMS-2	Environmental Protection Department's Restored Landfill Site Office	G/F
LTR_AMS-3	Po Tat Estate Tat Kai House	3/F podium

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

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

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

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

4.2.4. 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

4.2.5. 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.

4.2.6. 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 4.5**.

Table 4.5 Air Quality Monitoring Equipment

Equipment	Brand and model	Series Number
Portable direct reading dust meter	Met One BT- 645	X19295 X19296 X19297 X19298 R22586
	Met One AEROCET 831	Y23153 Y23154 W16848 W15448 Y23160

4.2.7. The calibration certificates of the air quality monitoring equipment are attached in [Appendix 4.2](#).

WIND DATA

4.2.8. The representative wind data from Tate’s Cairn HKO Automatic Weather Station and Tseung Kwan O HKO Automatic Weather Station were obtained covering the 1-hr TSP monitoring periods. The wind data were extracted and shown in [Appendix 4.3](#).

EVENT AND ACTION PLAN

4.2.9. The Action and Limit levels for construction air quality are defined in **Table 4.6** and [Appendix 4.1](#). Should non-compliance of the air quality criteria occur, action in accordance with the Event and Action Plan in [Appendix 6.1](#) shall be carried out.

Table 4.6 Action and Limit Level for Air Quality Monitoring

Monitoring Locations	1-hour TSP Level in µg/m3	
	Action Level	Limit Level
NCWBR_AMS-1	284.4	500.0
NCWBR_AMS-2	282.4	500.0
NCWBR_AMS-3	287.9	500.0
NCWBR_AMS-4	281.6	500.0
NCWBR_AMS-5	270.0	500.0
LTR_AMS-1	272.1	500.0
LTR_AMS-2	281.1	500.0
LTR_AMS-3	285.1	500.0

4.3 Water Quality Monitoring

WATER QUALITY MONITORING STATIONS

4.3.1. Water quality monitoring was undertaken at 7 monitoring stations in the reporting month. The proposed water quality monitoring stations of the Project are shown in **Table 4.7** and [Figure 4.5 & 4.6](#).

Table 4.7 Marine Water Quality Stations for Water Quality Monitoring

Inland Water	Stations	Description	Easting	Northing
Channelized nullah across the Project site	E	Upstream Control Station	841329	821753
	F	Downstream Impact Station	841469	821635
	AC1	Upstream Reference Station	-	-
	AC2	Upstream Reference Station	-	-
	AC3	Upstream Reference Station	-	-
Ma Yau Tong Stream	H	Upstream Control Station	843008	819880
	I	Downstream Impact Station	842652	819573

WATER QUALITY PARAMETERS, FREQUENCY AND DURATION

- 4.3.2. The levels of dissolved oxygen (DO), turbidity and pH shall be measured in situ while suspended solids (SS) is determined by laboratory analysis at all the designated monitoring stations.
- 4.3.3. In association with the water quality parameters, other relevant data shall also be recorded, such as monitoring location / position, time, water temperature, salinity, DO saturation, weather conditions, and any special phenomena underway near the monitoring station.
- 4.3.4. The sampling frequency of at least three days per week should be undertaken when the highest dust impact occurs. Upon completion of the construction works, the monitoring exercise at the designated monitoring locations should be continued for four weeks in the same manner as the impact monitoring.
- 4.3.5. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit Levels, in which case the monitoring frequency will be increased.
- 4.3.6. Replicate in-situ measurements should be carried out in each sampling event.

SAMPLING PROCEDURES AND MONITORING EQUIPMENT

Dissolved Oxygen And Temperature Measuring Equipment

- 4.3.7. The instrument should be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and use a DC power source. It should be capable of measuring:
- a dissolved oxygen level in the range of 0-20 mg/l and 0-200% saturation
 - a temperature of 0-45 degree Celsius
- 4.3.8. It should have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary. (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).
- 4.3.9. Should salinity compensation not be build-in in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

Turbidity Measurement Instrument

- 4.3.10. The instrument should be a portable, weatherproof turbidity-measuring instrument complete with comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. Hach model 2100P or an approved similar instrument).

Sampler

- 4.3.11. Due to low water level as mentioned in Section 6.4.3 of the EIA report, bucket sampler (Approximate 1L) will be use instead of water sampler in order to obtain surface water sample without disturb the stream sediment and collect representative results.

Salinity

- 4.3.12. A portable salinometer capable of measuring salinity in the range of 0-70 ppt shall be provided for measuring salinity of the water at each of monitoring location.

MONITORING METHODOLOGY

4.3.13. Monitoring Procedure

- (a) The condition near the monitoring stations shall be observed and recorded on the data log sheet.
- (b) Check of sensors and electrodes with certified standard solutions before each use.
- (c) Wet bulb calibration for a DO meter should be carried out before measurement.
- (d) Sample would be taken using bucket sampler at surface level.
- (e) Transfer the sampled water carefully into cleaned water bottles (2x 1000ml) provided by the laboratory at the spot after the collection of the water sample for the subsequent laboratory Suspended Solid testing.
- (f) Transfer the sampled water from the bucket sampler to the rinsed water container for in-situ measurement (In case of the in-situ measurement cannot be carried at spot due to safety and adverse weather condition, sampled water from the bucket sampler will be transfer to cleaned water bottles provided by laboratory. Then, In-situ measurement will be conducted at a safe location which sampled water inside cleaned water bottle will be transfer to the rinsed water container for in-situ measurement) In-situ measurement shall be measured in duplicate.
- (g) Parameters including Water Temperature ($^{\circ}\text{C}$), pH (units), Salinity (ppt), DO (mg/L), DO saturation (%) will be measured by the Multifunctional Meter and Turbidity (NTU) will be measured by turbid meter. (Water Temperature and Salinity will be measured as reference parameters)
- (h) Record the result on the data log sheet and record any special finding during / after in-situ measurement.
- (i) The water sample bottles will be stored in a cool box (at cooled to 4°C without being frozen), which shall be delivered to HOKLAS laboratory (ALS Technichem (HK) Pty Ltd) for further testing to determine the level of SS.

4.3.14. Maintenance and Calibration

- (a) The responses of sensors and electrodes of the water quality monitoring equipment were cleaned and checked at regular intervals.
- (b) DO meter (Multifunctional Meter) and turbid meter was certified by a laboratory

accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at three monthly intervals.

4.3.15. Brand and model of the equipment are given in **Table 4.8**.

Table 4.8 Water Quality Monitoring Equipment

Equipment	Brand and model	Series Number
Multifunctional Meter	YSI Professional Plus	17F100236 14E100105
Turbid meter	Xin Rui WGZ-3B	2005060 1807063

4.3.16. The calibration certificates of the water quality monitoring equipment are attached in [Appendix 4.2](#).

LABORATORY MEASUREMENT / ANALYSIS

4.3.17. Analysis of suspended solids has been carried out in a HOKLAS accredited laboratory, which is ALS Technichem (HK) Pty Ltd.

EVENT AND ACTION PLAN

4.3.18. The Action and Limit levels for construction water quality are defined in **Table 4.9** and [Appendix 4.1](#). Should the monitoring results of the water quality parameters at any designated monitoring station exceed the water quality criteria, action in accordance with the Event and Action Plan in [Appendix 6.1](#) shall be carried out.

Table 4.9 Action and Limit Level for Water Quality Monitoring

Monitoring Station	Surface pH		Surface DO (mg/L)		Surface Turbidity (NTU)		Surface SS (mg/L)	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
E	-	-	-	-	-	-	-	-
F	Beyond the range of 6.6-8.4	Beyond the range of 6.5-8.5	5.8	5.5	24.4	32.7	17.0	23.8
AC1	-	-	-	-	-	-	-	-
AC2	-	-	-	-	-	-	-	-
AC3	-	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-	-
I	Beyond the range of 6.6-8.4	Beyond the range of 6.5-8.5	5.5	5.4	206.9	214.2	172.8	201.4

***Remarks:**

The value of 1.0mg/L was taken as the value for measurement with suspended solid level of <1.0mg/L for Action and Limit level calculation.

It is recommended that upstream monitoring station (monitoring station E, AC1, AC2, AC3 and H) would be taken as control reference for exceedance investigation only. Action and limit level would not be establish using the baseline data.

5. Monitoring Results

- 5.0.1 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 – 4.6 respectively.
- 5.0.2 The environment monitoring schedules for reporting month and coming month are presented in [Appendix 5.1](#).

5.1 Noise Monitoring Results

- 5.1.1 [Ad- hoc noise monitoring for NMC05 was conducted on 05, 06, 13, 20 and 27 May 2021.](#)
- 5.1.2 [One limit level exceedance was recorded at NMC05 on 05 May 2021. After investigation, drilling and splitting works at RIW3 were conducted under Contract NE/2017/03 around the concerned location during the time of measurement. The drilling works at Link Tak Road was identified as the major noise source causing the exceedance by the observation during measurement on 05 May 2021. The working area of the driller was not fully covering by noise barrier or other mitigation measures for minimising the construction noise so that it was the major causes of the exceedance. As such, the exceedance was considered as project related.](#)
- 5.1.3 [Two action level exceedances at RIW2 were recorded on 27 April 2021. The complainant, reported to AECOM through the hotline dated on 27 April 2021 that the construction activities were commenced around 7:00 am, making big noise “boom boom” from the construction site under Contract NE/2017/03 at Clear Water Bay Road. Nearby residents were affected by the noise nuisance and the complainant asked Contractor to commence the construction activities after 9:00 am. According to the information provided by the Contractor, and recent site inspections, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source. The action level exceedance was considered as project related.](#)
- 5.1.4 [One action level exceedance at RIW2 were recorded on 08 May 2021 in this reporting period. The complainant, resident of No.8 Fei Ha Road, reported to AECOM through the hotline dated on 08 May 2021 that they were severely affected by the noise nuisance from the construction site under Contract NE/2017/03 at Clear Water Bay Road. According to the information provided by Contractor, and recent site inspection, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source. The action level exceedance was considered as project related.](#)

5.1.5 Noise monitoring results measured in this reporting period are reviewed and summarized. Details of noise monitoring results and graphical presentation can be referred in [Appendix 5.2](#).

5.2 Air Monitoring Results

5.2.1 All 1-hour TSP monitoring was conducted as scheduled in the reporting month.

5.2.2 No action or limit level exceedance was recorded in this reporting month.

5.2.3 Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in [Appendix 5.3](#).

5.3 Water Quality Monitoring Results

5.3.1 No water can be collected at Station AC1 during this reporting period as the station was dried out during the monitoring scheduled in the reporting month.

5.3.2 No water can be collected at Station E during this reporting period as the station was dried out during the monitoring scheduled in the reporting month.

5.3.3 One limit level exceedance of suspended solid and one limit level exceedance of Turbidity were recorded at Station F on 28 April 2021. After investigation, silty water slightly grey in colour was observed at monitoring station F during water quality monitoring. Slope trimming and hand-digging excavation were commenced at RIW2 construction site area under Contract NE/2017/03 on 28 April 2021. However, no surface runoff was observed discharging into nearby gullies during monitoring. The weather was rainy from 27 to 28 April 2021, runoff from unknown sources may also affect the water quality of station F. Thus, it is considered that the exceedances were not related to Project works at RIW2.

5.3.4 No exceedance was recorded in the May 2021 reporting period.

5.3.5 Water quality monitoring results measured in this reporting period are reviewed and summarized. Details of water quality monitoring results and graphical presentation can be referred in [Appendix 5.4](#).

5.4 Waste Management

5.4.1 The quantities of waste for disposal in the Reporting Period are summarized in **Table 5.1** and **Table 5.2**. The Monthly Summary Waste Flow Table is shown in [Appendix 5.5](#). Whenever possible, materials were reused on-site as far as practicable.



Table 5.1 Summary of Quantities of Inert C&D Materials

Waste Type	Quantity (this month)	Quantity (Project commencement to the end of last month)	Cumulative Quantity-to-Date	Disposal Location
Hard Rock and Large Broken Concrete (Inert) (in '000m ³)	0	0	0	Nil
Reused in this Contract (Inert) (in '000m ³)	0	3.343	3.343	Nil
Reused in other Projects (Inert) (in '000m ³)	0.126	18.846	18.972	Nil
Disposal as Public Fill (Inert) (in '000m ³)	1.047	52.089	53.136	TKO137

Table 5.2 Summary of Quantities of C&D Wastes

Waste Type	Quantity (this month)	Quantity (Project commencement to the end of last month)	Cumulative Quantity-to-Date	Disposal Location
Metals (in '000kg)	0	0.146	0.146	Nil (waste recycle was arranged)
Paper / Cardboard Packing (in '000kg)	0.055	3.173	3.228	Nil (waste recycle was arranged)
Plastics (in '000kg)	0.776	11.008	11.784	Nil (waste recycle was arranged)
Chemical Wastes (in '000kg)	0	1.0	1.0	Nil
General Refuses (in '000m ³)	0.027	1.131	1.158	SENT



6. Compliance Audit

6.0.1. The Event Action Plan for construction noise, air quality and water quality are presented in [Appendix 6.1.](#)

6.0.2. The summary of exceedance is presented in [Appendix 6.2.](#)

6.1 Noise Monitoring.

6.1.1 Two action level exceedances at RIW2 were recorded on 27 April 2021. After investigation, the exceedances were considered project related.

6.1.2 One action level exceedance at RIW2 were recorded on 08 May 2021 in this reporting period. After investigation, the exceedance was considered project related.

6.1.3 One limit level exceedance was recorded at NMC05 on 05 May 2021. After investigation, the exceedance was considered project related.

6.2 Air Quality Monitoring

6.2.1 No action or limit level exceedance was recorded in this reporting period.

6.3 Water Quality Monitoring

6.3.1 No water can be collected at Station AC1 during this reporting period as the station was dried out during the monitoring scheduled in the reporting month.

6.3.2 No water can be collected at Station E during this reporting period as the station was dried out during the monitoring scheduled in the reporting month.

6.3.3 One limit level exceedance of suspended solid and one limit level exceedance of Turbidity was recorded at Station F on 28 April 2021. After investigation, the exceedance was considered not related to project.

6.3.4 No action or limit level exceedance was recorded in this reporting period.

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

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

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

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

7. Environmental Site Audit

- 7.0.1. Within this reporting month, weekly environmental site audits were conducted on **07, 14, 21, and 28 May 2021**. IEC attended the joint site inspection on **07 May 2021**.
- 7.0.2. No non-compliance was found during the site inspection while reminders on environmental measures were recommended. Results and findings of these inspections in this reporting month are listed below in Table 7.1.

Table 7.1 Summary of Environmental Inspections

Item	Date	Reminder(s)/ Observation(s)	Action taken by Contractor	Outcome
20210507_1	7 May 2021	Treatment tank should be maintained regularly. (D3 Slope)	Treatment tank was maintained regularly	Item was rectified on 21 May 2021
20210521_1	21 May 2021	Chemical should be stored properly	Pending	Pending
20210528_1	28 May 2021	Damaged label should be replaced on the generator (D1 slope)	Pending	Pending
20210528_2	28 May 2021	Chemical container should be stored properly (D1 slope)	Pending	Pending
20210528_3	28 May 2021	The damaged bunds should be replaced (D1 slope)	Pending	Pending

- 7.0.3. Within this reporting month, biweekly landscape site audits were conducted on **06 and 20 May 2021**.
- 7.0.4. No non-compliance was found during the landscape site inspection. Results and findings of these inspections in this reporting month are listed below in Table 7.2.

Table 7.2 Summary of Landscape site inspections

Item	Date	Reminder(s)/ Observation(s)	Action taken by Contractor	Outcome
20210506_1	6 May 2021	Mikania sp. should be removed in tree protection zone. (RIW1)	Mikania sp was removed in tree protection zone	Item has been rectified on 20 May 2021
20210506_2	6 May 2021	Large gravel should be removed. (RIW3)	Large gravel has been removed.	Item has been rectified on 20 May 2021
20210506_3	6 May 2021	Regular weeding should be undertaken. (RIW3)	General weeding has been carried out.	Item has been rectified on 20 May 2021
20210520_1	20 May 2021	Tree protection zone should be well established and	Pending	Pending



		construction material should be placed outside the protection zone. (RIW1)		
--	--	--	--	--

- 7.0.5. Within this reporting month, monthly ecological monitoring was conducted on 06 May 2021.
- 7.0.6. No non-compliance was found during the ecological monitoring. Results and finding of the inspection in this reporting month is listed below in Table 7.3

Table 7.3 Summary of Ecological Monitoring

Date	Item	Reminder(s)/ Observation(s)	Action taken by Contractor	Outcome
-	-	-	-	-

8. Complaints, Notification of Summons and Prosecution

- 8.0.1. One environmental complaint regarding the construction noise and air at Clear Water Bay Road were received by ET on 12 May 2021.
- 8.0.2. Investigation summary are attached in [Appendix 8.1](#).
- 8.0.3. The details of cumulative complaint log and updated summary of complaints are presented in [Appendix 8.1](#).
- 8.0.4. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 8.1** and **Table 8.2** respectively.

Table 8.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
May 2021	1
Project commencement to the end of last reporting month	33
Total	34

Table 8.2 Cumulative Statistics on Successful Prosecutions

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

- 8.0.5. QPME was observed on site at the slope of Lin Tak Road at RIW3. In view of this, the contractor was recommended to review the implementation of QPMEs from time to time and considering using quieter PME's whenever possible. Details of QPMEs are as shown in Table 8.4.



Table 8.4 QPME used for construction works

Type of construction equipment	Brand	Model no.	QPME ID	SWL [dB(A)]
Excavator, Tracked	CATERPILLAR	335FLCR	QPME, EPD-08379	104
Excavator, Tracked	DOOSAN	DX140LCR	QPME, EPD-04675	101
Generator	DENYO	DCA-100LSIE	QPME, EPD-07719	91
Generator	NIPPON SHARYO	NES125TI2	QPME, EPD-07124	93

9. Conclusion

- 9.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.
- 9.0.2. The performance of the environmental management system of the previous three months (quarter) was generally satisfied. Mitigation measures according to the environmental mitigation implementation schedule and the EIA were generally implemented by the Contractor. Hence, the EM&A programme was considered effective and shall be maintained. The status of the water quality station shall be kept in view, as station E usually was dried out.
- 9.0.3. The scheduled construction activities and the recommended mitigation measures for the coming 2 months are listed in **Table 9.1**. The construction programmes of the Project are provided in [Appendix 9.1](#).

Table 9.1 Construction Activities and Recommended Mitigation Measures in Coming Reporting 2 Months

Key Construction Works	Recommended Mitigation Measures
<ul style="list-style-type: none"> • Site formation, ELS works & RC works at RWC2; • Backfilling works at KS27; and • ELS at Zone 6 & 7; • Retaining wall construction for Bay 2 to 8; • Remove piling platform at CT4 and utilities diversion works; • Predrilling works at SE2. • Construction of retaining wall RWD1 Bay 1 – 10 at Slope D1; • ELS construction for RWD1 Bay 11 – 14 at Slope D1; • ELS construction for footings of noise barrier VB1 SE1 at Slope D1; • Construction of retaining wall RWD2 at Slope D2; • Backfilling works at Slope D2; • Stage 1 rock excavation at Slope D3; • Soil nail installation at Slope D3; and 	<ul style="list-style-type: none"> • Dust control during dust generating works; • Implementation of proper noise pollution control; and • Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system.

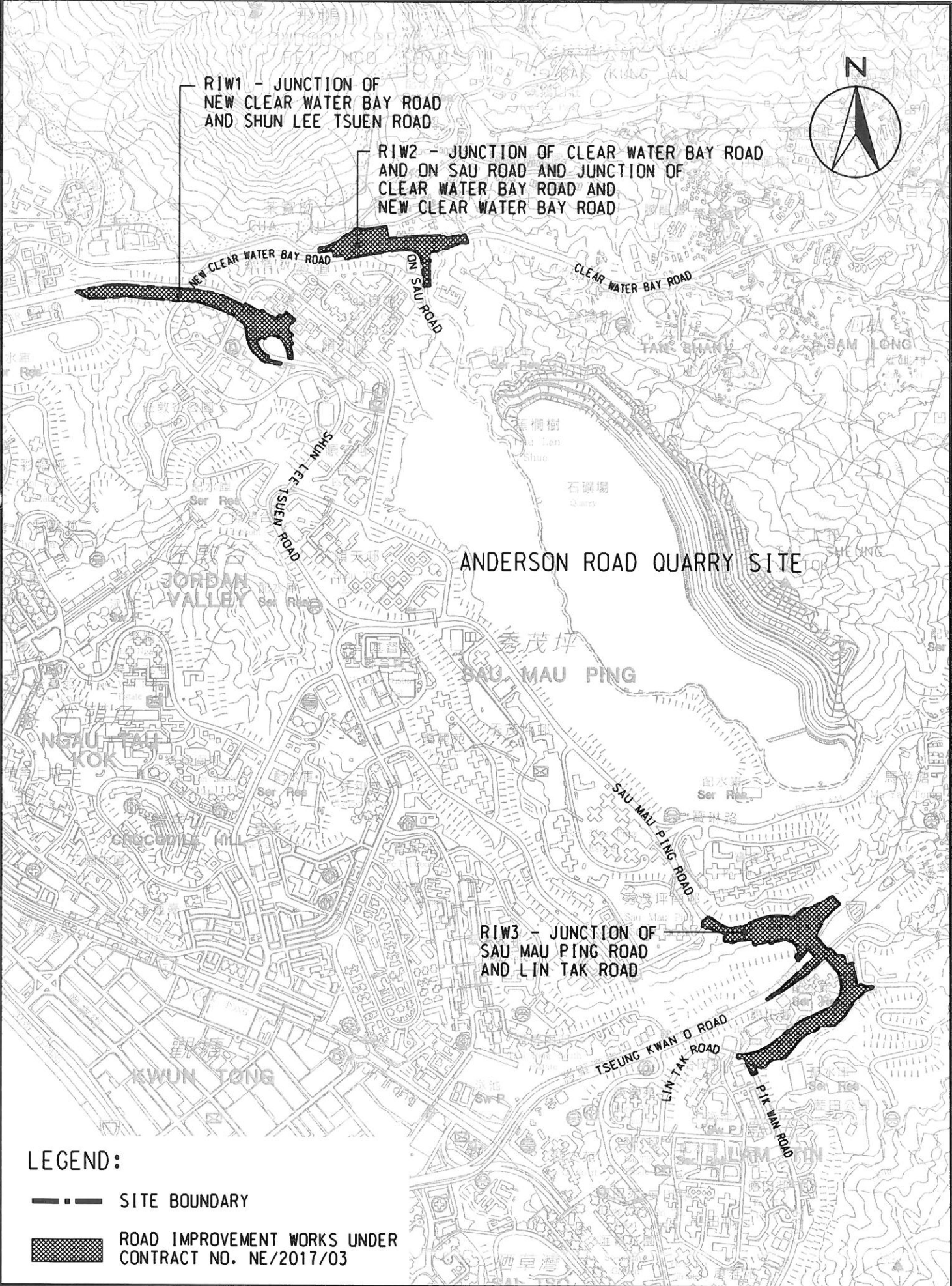


Key Construction Works	Recommended Mitigation Measures
<ul style="list-style-type: none">Watermain works at Sau Mau Ping Road.	



Figure 2.1

Project Layout



LEGEND:

- SITE BOUNDARY
- ▨ ROAD IMPROVEMENT WORKS UNDER CONTRACT NO. NE/2017/03

GENERAL LAYOUT PLAN OF
ROAD IMPROVEMENT WORKS
UNDER CONTRACT NO. NE/2017/03

Figure 2.1
Project Layout



Figure 2.2

Project Organization Chart



Project Organization Chart

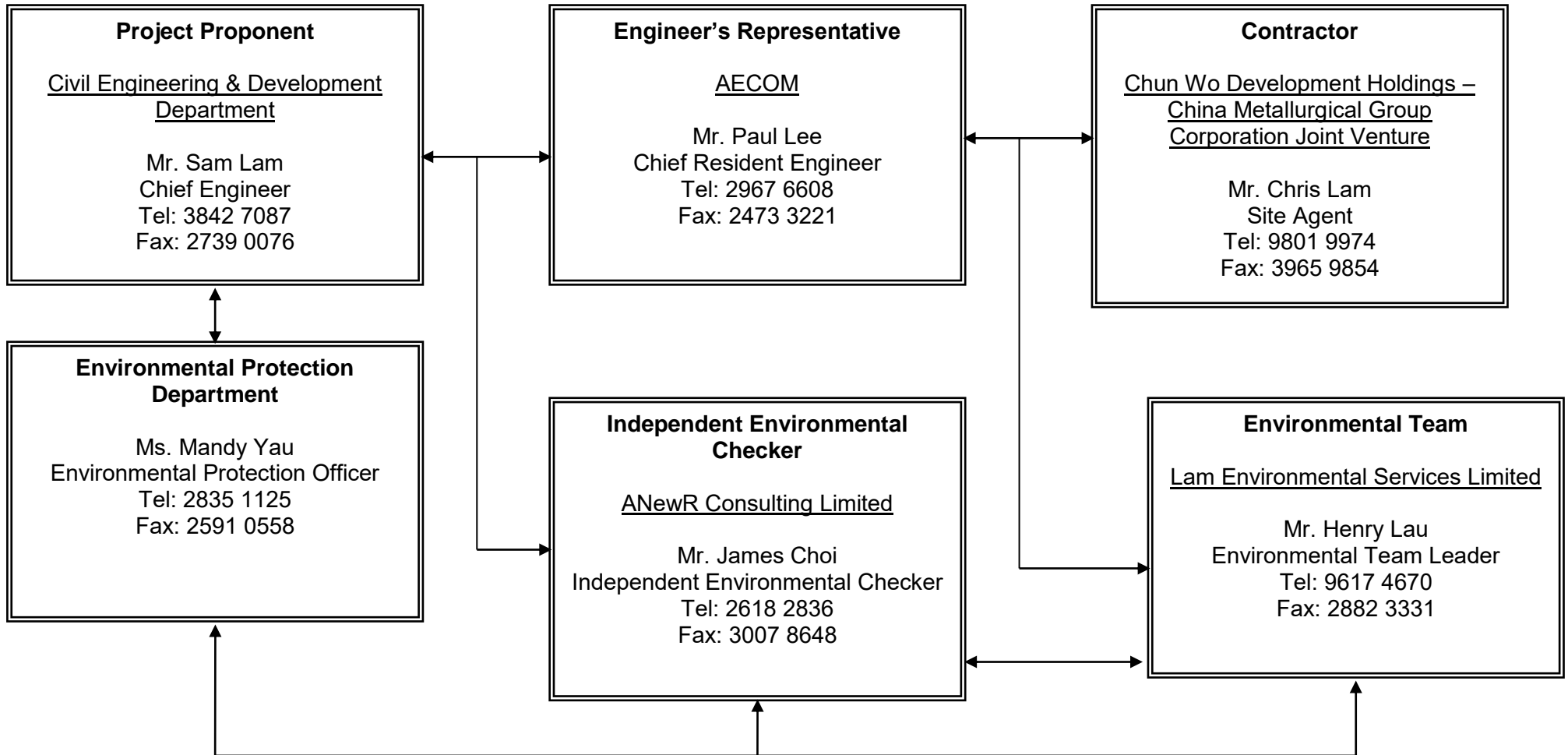
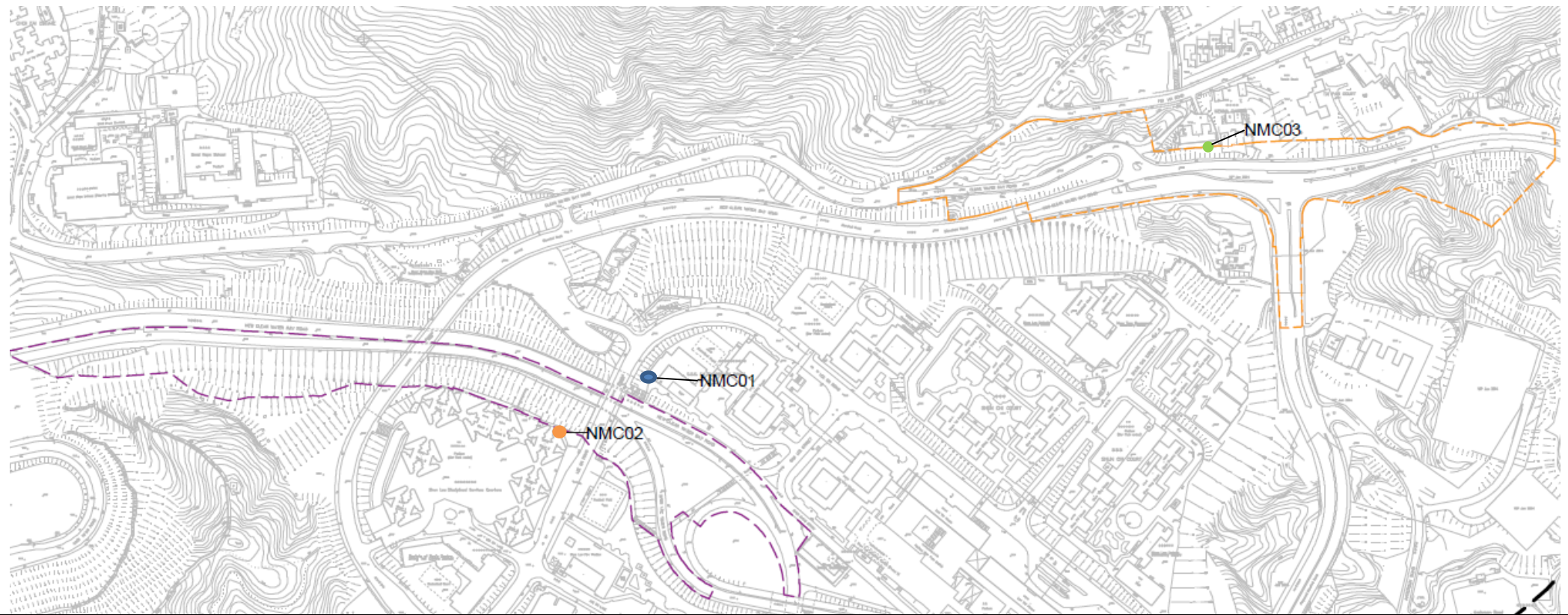


Figure 2.2



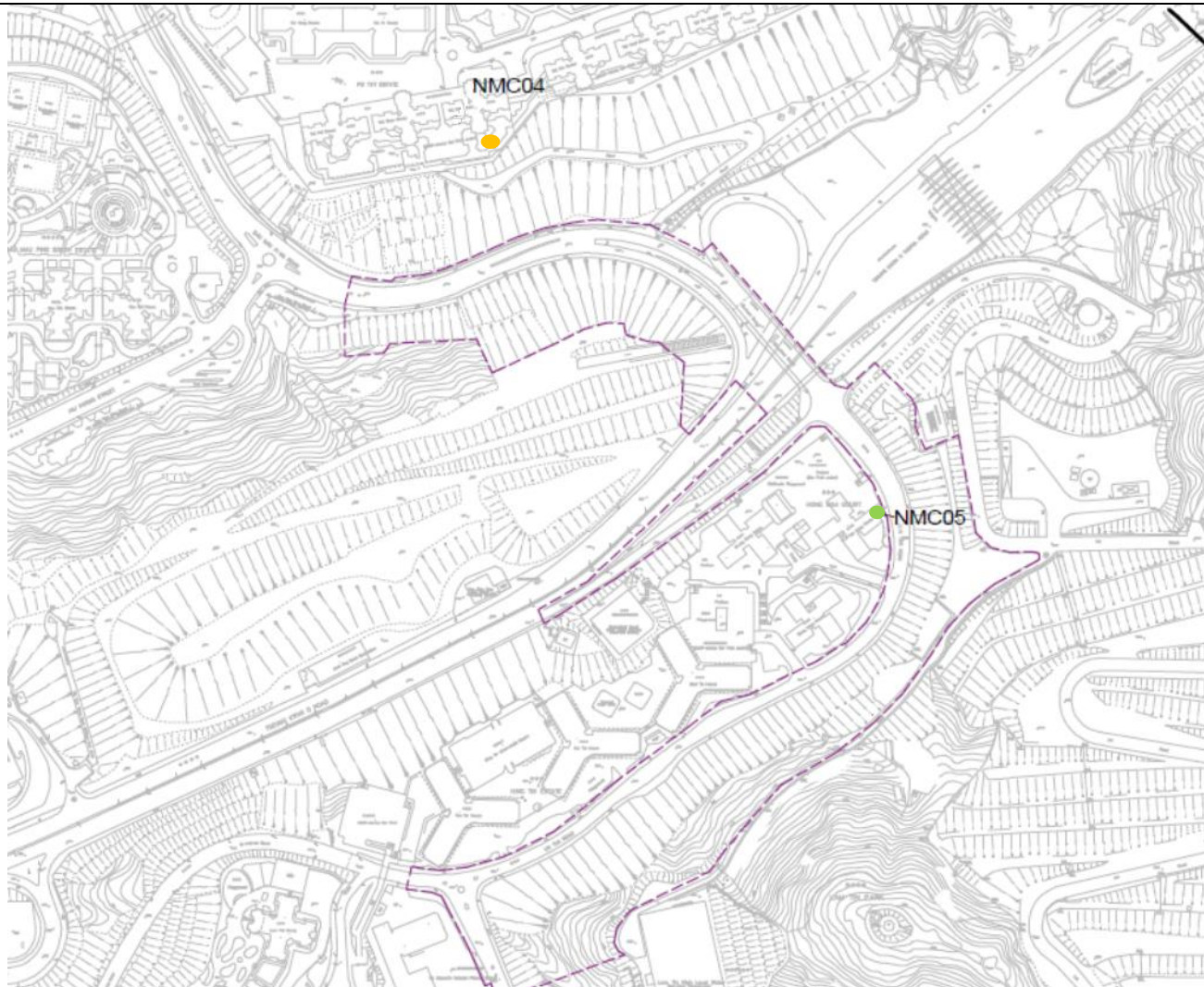
Figure 4.1 to Figure 4.6

Locations of Monitoring Stations



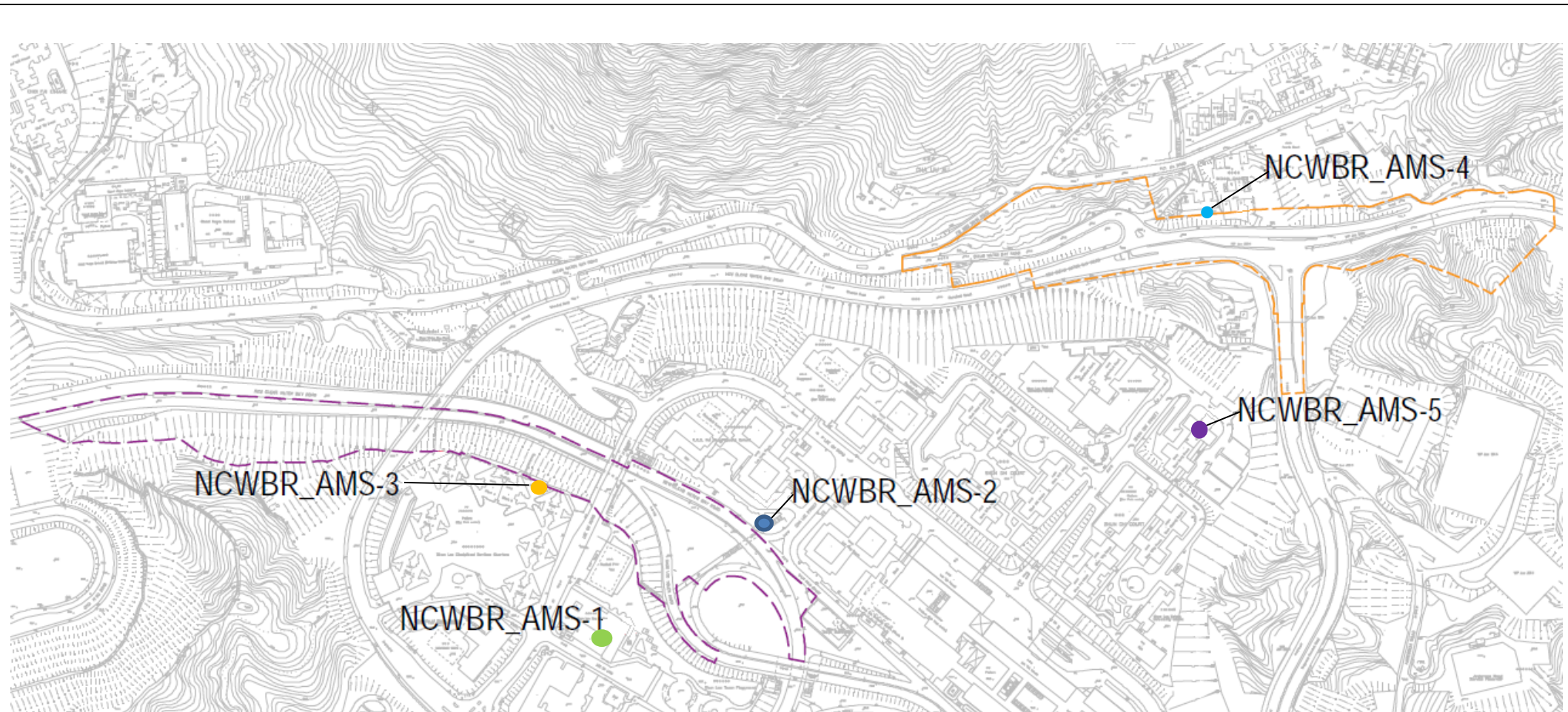
Monitoring Location ID	Description
<i>Noise Monitoring Station (Construction Phase)</i>	
NMC01	Kei Shun Special School
NMC02	Shun Lee Disciplined Services Quarters Block 6
NMC03	Sienna Garden Block 6

Figure 4.1
 Location of Noise Monitoring Station
 (Construction Phase)
 (for Road Improvement Work 1 & 2)



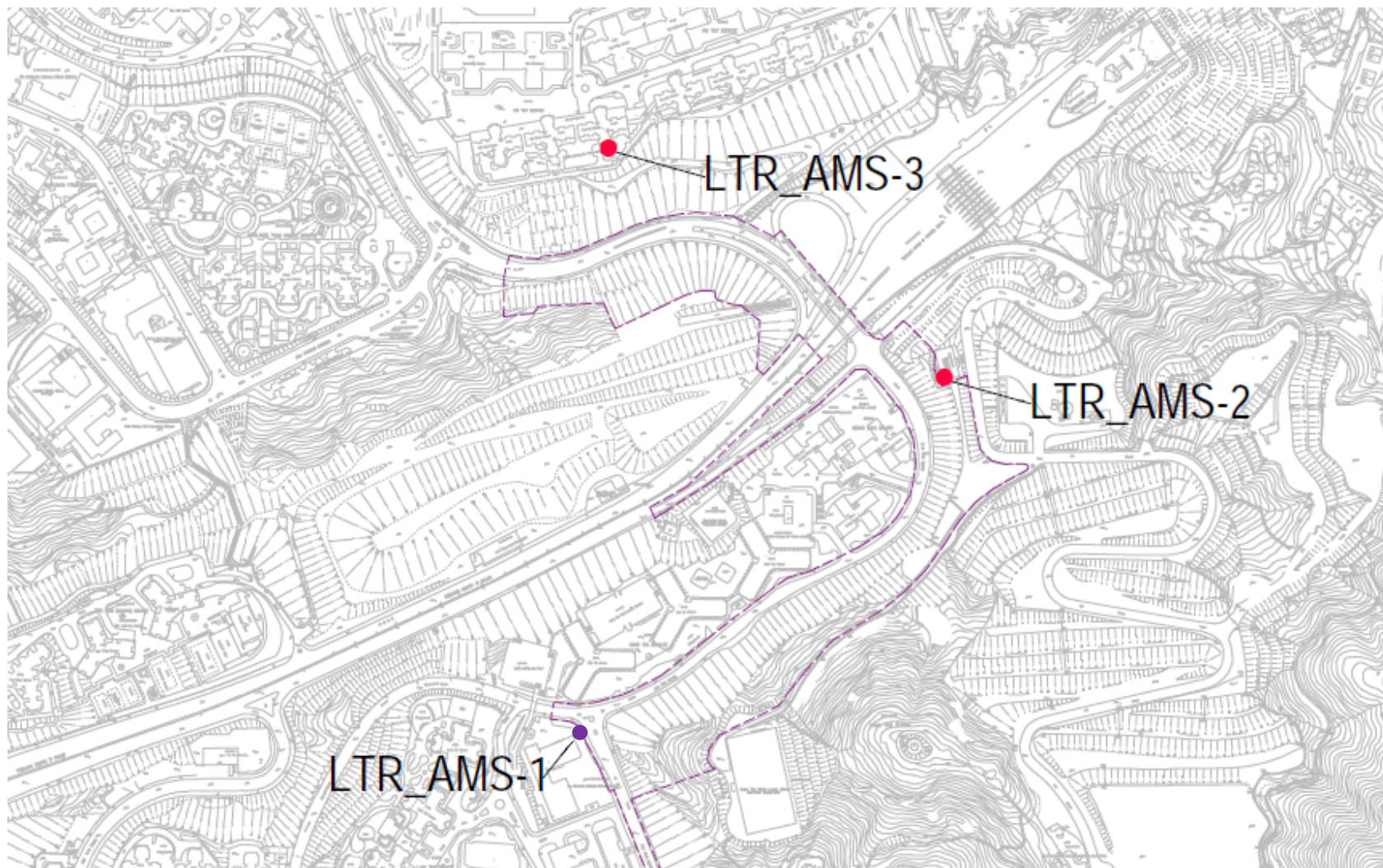
Monitoring Location ID	Description
NMC04	Po Tat Estate Tat Kai House
NMC05	Hong Wah Court Block B Yee Hong House

Figure 4.2
 Location of Noise Monitoring Station
 (Construction Phase)
 (for Road Improvement Work 3)



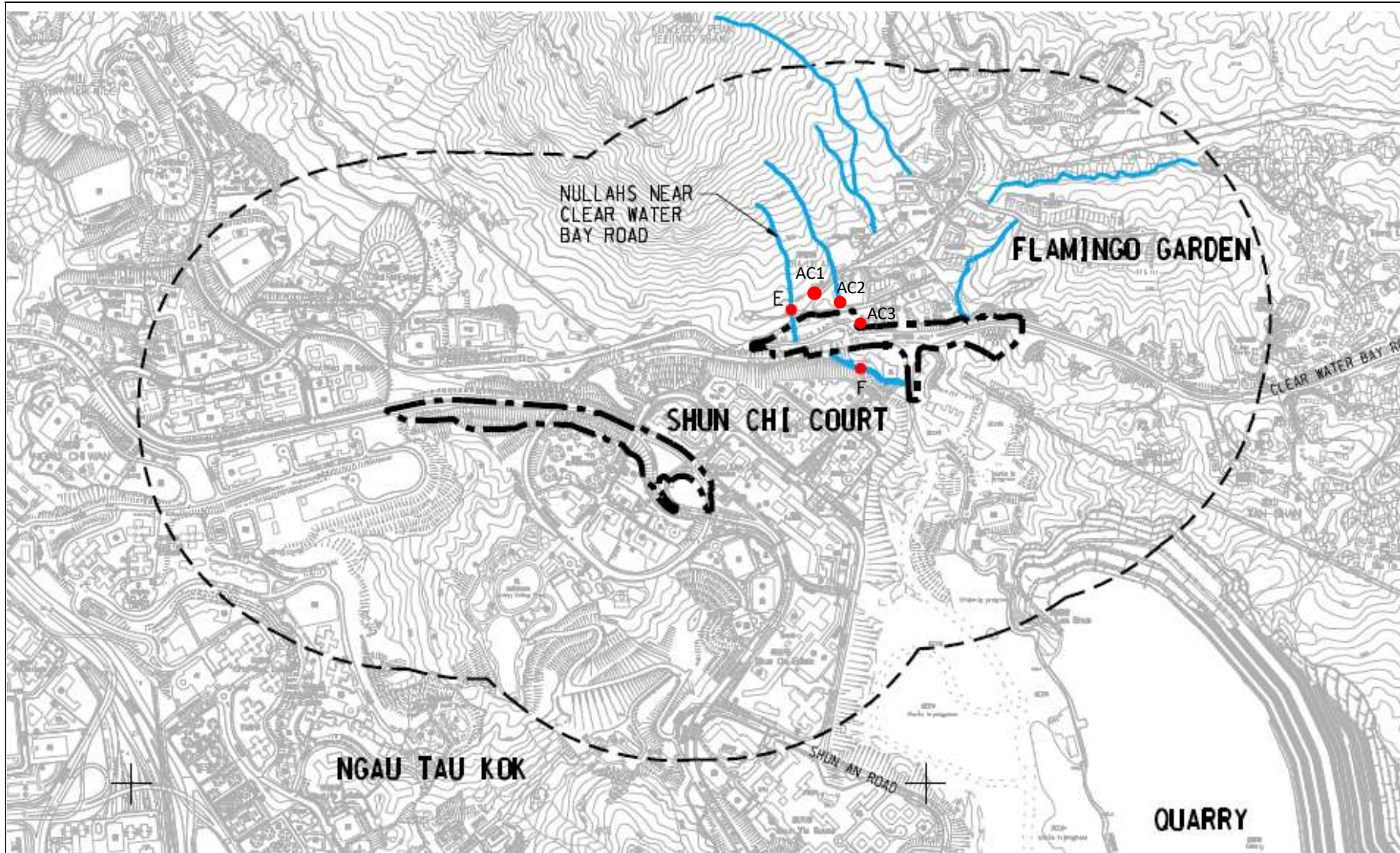
Monitoring Station ID	EIA ID	Location
NCWBR RIW		
NCWBR_AMS-1	ASLF-1	Shun Lee Fire Station
NCWBR_AMS-2	ASLE-21	Shun Lee Estate Lee Hang House
NCWBR_AMS-3	ASLD-10	Shun Lee Disciplined Services Quarters (Block 6)
NCWBR_AMS-4	AFNS-3	Sienna Garden
NCWBR_AMS-5	ASCC-05	Shun Chi Court Shun Fung House

Figure 4.3
Location of Air Quality Monitoring Station
(for Road Improvement Work 1 & 2)



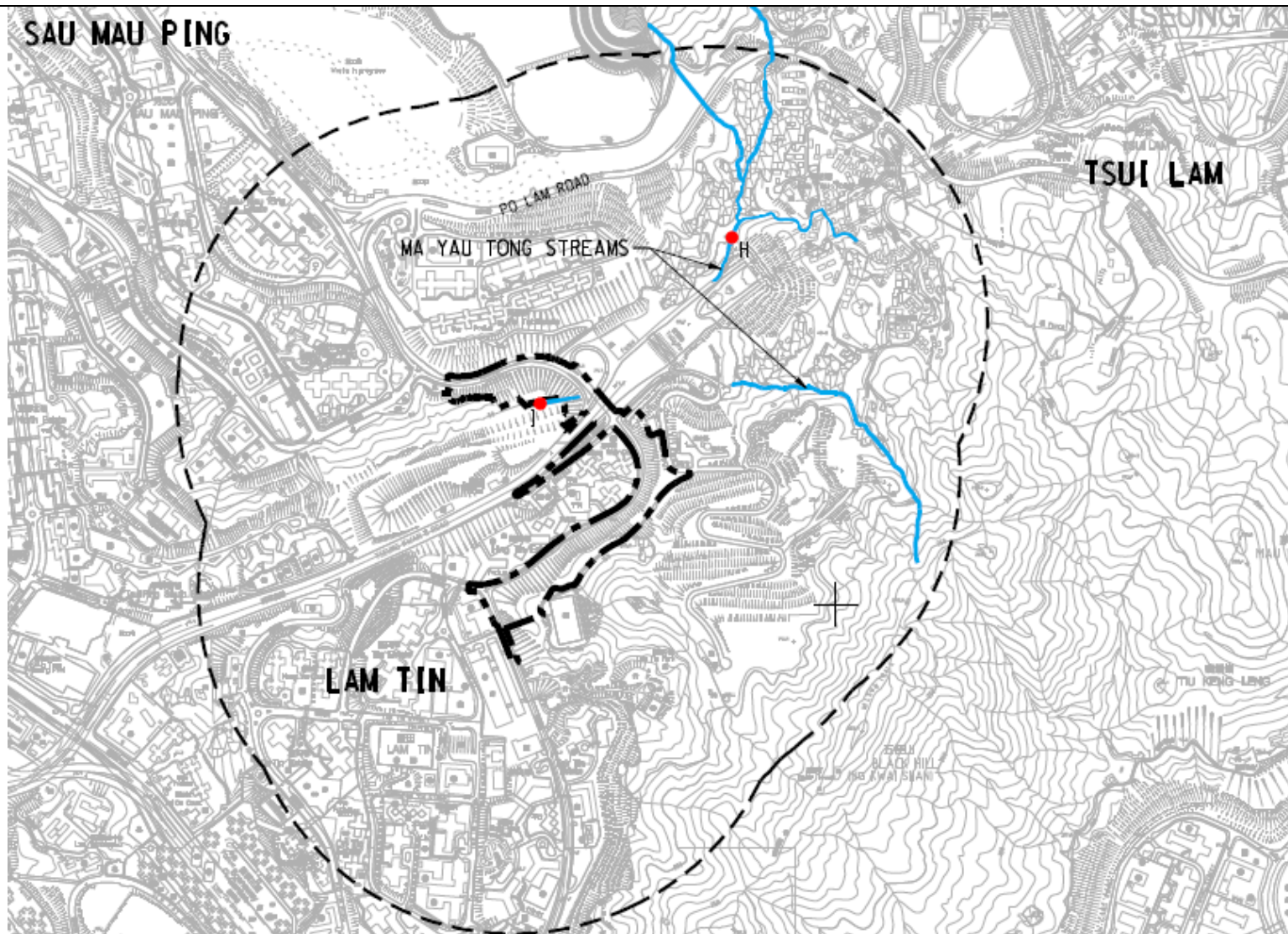
Monitoring Station ID	EIA ID	Location
LTR RIW		
LTR_AMS-1	ASECP-2	St Edward's Catholic Primary School
LTR_AMS-2	AEPD-01	Environmental Protection Department's Restored Landfill Site Office
LTR_AMS-3	APTE-14	Po Tat Estate Tat Kai House

Figure 4.4
Location of Air Quality Monitoring Station
(for Road Improvement Work 3)



Inland Water	Stations	Description
Channelized nullah across the Project site	E	Upstream Control Station
	F	Downstream Impact Station
	AC1	Upstream Reference Station
	AC2	Upstream Reference Station
	AC3	Upstream Reference Station

Figure 4.5
 Location of Water Quality Monitoring Station
 (for Road Improvement Work 1 & 2)



Inland Water	Stations	Description
Ma Yau Tong Stream	H	Upstream Control Station
	I	Downstream Impact Station

Figure 4.6
Location of Water Quality Monitoring Station
(for Road Improvement Work 3)



Appendix 3.1

Environmental Mitigation Implementation Schedule

APPENDIX C - IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

Introduction

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

Table C.1 Implementation Schedule of Mitigation Measures

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Air Quality Impact (Construction Phase)								
4.7.1	Hourly watering with intensity of 0.0455 L/m ² (tentatively) on the active construction area so as to achieve a dust removal efficiency of 87.5%.	Active works areas	CEDD/Contractor		✓			EIAO-TM, AQOs
4.7.2	<ul style="list-style-type: none"> • To minimize the dust impact to the surrounding ASRs, dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation should be incorporated to control dust emission from the site. Major control measures relevant to this Project are listed below, and they are recommended to be included in relevant contract documents. - Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; - Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; - A stockpile of dusty material should not extend beyond the pedestrian barriers, fencing or traffic cones; - The load of dusty materials on a vehicles leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak form the vehicle; 	All works areas	CEDD/Contractor		✓			Air Pollution Control (Construction Dust) Regulation

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				Des	C	O	Dec	
	<ul style="list-style-type: none"> - Where practicable, vehicles washing facilities including a high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; - When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; - The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; - Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; - Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; - Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; - Any skip hoist for material transport should be totally enclosed by impervious sheeting; - Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the three sides; 							

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	<ul style="list-style-type: none"> - Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; and - Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 							
Air Quality Impact (Operational Phase)								
N/A	N/A	N/A	N/A					N/A
Noise Impact (Construction Phase)								
5.8.1 – 5.8.4	<u>Adoption of Quiet PMEs</u> <ul style="list-style-type: none"> • To reduce the noise impacts at the affected NSRs during normal daytime working hours, mitigation measures such as adopting quiet PME and construction noise barriers are recommended. <u>Construction Noise Barriers</u> <ul style="list-style-type: none"> • To alleviate the construction noise impact on the affected NSRs, construction noise barriers or enclosures would be erected to provide screening from the construction plant. 	All works areas	CEDD/Contractor		✓			EIAO-TM
Noise Impact (Operational Phase)								
5.8.5	Direct mitigation measures in the form of Vertical Noise Barriers, Cantilevered Noise Barriers, Semi-Enclosures and Full Enclosures are proposed on the Project Roads such that the noise level would be reduced to fulfil the EIAO requirements for RIW sites at: <ul style="list-style-type: none"> • Sau Mau Ping Road and Lin Tak Road, • J/O Clear Water Bay Road and On Sau Road and • New Clear Water Bay Road and Shun Lee Tsuen Road 	Project roads	CEDD/Contractor			✓		EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
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Water Quality Impact (Construction Phase)								
6.9.1 - 6.9.13	<p><u>Construction Site Run-off and General Construction Activities</u></p> <p><i>Boring and Drilling Water</i></p> <ul style="list-style-type: none"> 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. <p><i>Wheel Washing Water</i></p> <ul style="list-style-type: none"> All vehicles and plant should be cleaned before they leave a construction site to minimize 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. <p><i>Rubbish and Litter</i></p> <ul style="list-style-type: none"> 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. <p><i>Construction Site Run-off</i></p> <ul style="list-style-type: none"> The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable to minimise surface run-off and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impact. Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities 	All works areas	CEDD/Contractor		✓			<p>ProPECC PN 1/94 Construction Site Drainage</p> <p>TM-DSS</p> <p>Water Pollution Control Ordinance</p>

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.</p> <ul style="list-style-type: none"> • Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distance of 100m should be maintained between the discharge points of construction site run-off and the existing saltwater intakes. No effluent will be discharged into typhoon shelter. • Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. • Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary. • Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater 							

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	<p>pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</p> <ul style="list-style-type: none"> Construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. 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. <p><i>Site Effluent</i></p> <ul style="list-style-type: none"> 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 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 regional office (RO) of EPD. 							
6.9.14 - 6.9.16	<p><u>Accidental Spillage and Potential Contamination of Surface Water and Groundwater</u></p> <ul style="list-style-type: none"> Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations 	All works areas	CEDD/Contractor		✓			<p>Waste Disposal Ordinance</p> <p>Waste Disposal (Chemical Waste)</p>

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
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	<p>in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.</p> <ul style="list-style-type: none"> Any service shop and maintenance facilities should be located on hard standings within a bunded 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. 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 details the requirements to deal with chemical wastes. General requirements are given as follows: <ul style="list-style-type: none"> Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 							<p>(General) Regulation</p> <p>The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</p>
6.9.17 - 6.9.18	<p><u>Sewage Effluent from Construction Workforce</u></p> <ul style="list-style-type: none"> The construction workforce on site will generate sewage. It is recommended to provide sufficient chemical toilets in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water 	All works areas	CEDD/Contractor		✓			Water Pollution Control Ordinance

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	pollution problem after undertaking all required measures.							
6.9.19	<p><u>Construction Works in Close Proximity of Inland Waters</u></p> <ul style="list-style-type: none"> 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 minimize the water quality impacts upon any natural streams or surface water systems. Relevant mitigation measures from the ETWB TC (Works) No. 5/2005 are listed below: <ul style="list-style-type: none"> Construction works close to the inland waters should be carried out in dry season as far as practicable where the flow in the surface channel or stream is low. The use of less or smaller construction plants may be specified in areas close to the water courses to reduce the disturbance to the surface water. Temporary storage of materials (e.g. equipment, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. Proper shoring may need to be erected in order to prevent soil or mud from slipping into the watercourses. 	All works areas	CEDD/Contractor		✓			Water Pollution Control Ordinance
Water Quality Impact (Operational Phase)								
6.9.20 - 6.9.23	<ul style="list-style-type: none"> Best Management Practices (BMPs) to reduce storm water and non-point source pollution have been proposed for the RIW as follows: <p><i>Design Measures</i></p> <ul style="list-style-type: none"> Exposed surface shall be avoided within the RIW sites to minimize soil erosion. The development site shall be either hard paved or 	All works areas	CEDD/HyD	✓		✓		Water Pollution Control Ordinance

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				Des	C	O	Dec	
	<p>covered by landscaping area where appropriate.</p> <ul style="list-style-type: none"> The streams and channelized nullahs near the RIW sites will be retained to maintain the original flow path. The drainage system will be designed to avoid flooding. Green areas / tree / shrub planting etc. will be introduced along roadside amenity strips and central dividers as far as possible, which can help to reduce soil erosion. Evergreen trees species, which in general generate relatively smaller amount of fallen leaves, should be selected where possible. <p><i>Devices/ Facilities to Control Pollution</i></p> <ul style="list-style-type: none"> 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 and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff, where appropriate. <p><i>Administrative Measures</i></p> <ul style="list-style-type: none"> 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 sites should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall. 							
Waste Management Implication (Construction Phase)								
7.6.1 – 7.6.3	<p><u>Good Site Practices</u></p> <ul style="list-style-type: none"> 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 	All works areas	CEDD/Contractor		✓			<p>Waste Disposal Ordinance</p> <p>DEVB TCW No. 6/2010, ETWB TCW No. 19/2005</p>

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>construction site, provided that good site practices are strictly followed. Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> - 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. - 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 <i>ETWB TCW No. 19/2005</i> for details. <ul style="list-style-type: none"> • In order to monitor the disposal of C&D materials 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 requirements to be implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. One may take reference to <i>DEVB TCW No.6/2010</i> for details. 							
7.6.4 – 7.6.5	<p><u>Waste Reduction Measures</u></p> <ul style="list-style-type: none"> • Good management and control of construction site activities/ 	All works areas	CEDD/Contractor	✓	✓			Waste Disposal Ordinance

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				Des	C	O	Dec	
	<p>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:</p> <ul style="list-style-type: none"> - 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 materials. - Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill. - 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 waste generated. - Minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering. <ul style="list-style-type: none"> • In addition to the above measures, other specific mitigation measures are recommended below to minimise environmental impacts during handling, transportation and disposal of wastes. 							ETWB TCW No. 19/2005
7.6.6 – 7.6.8	<p><u>Construction and Demolition Materials</u></p> <ul style="list-style-type: none"> • The C&D materials generated from site clearance, demolition of existing roads, slope excavation works, and construction of new 	All works areas	CEDD/Contractor		✓			Waste Disposal Ordinance Waste Disposal

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>roads, retaining wall and piling works should be sorted on-site into inert C&D materials (that is, public fill) and C&D waste. To minimise the impact resulting from collection and transportation of C&D materials as far as practicable. C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed to landfill. A suitable area should be designated within the site for temporary stockpiling of C&D materials and to facilitate the sorting process. Within the stockpile areas, the following measures should be taken to control potential environmental impacts or nuisance:</p> <ul style="list-style-type: none"> - Waste such as soil should be handled and stored well to ensure secure containment; - Covering material during heavy rainfall; - Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; - Locating stockpiles to minimise potential visual impacts; and - Minimising land intake of stockpile areas as far as possible. <p><u>General Refuse</u></p> <ul style="list-style-type: none"> • General refuse should be stored in enclosed bins or compaction units separate from C&D materials. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D materials. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. <p><u>Chemical Wastes</u></p> <ul style="list-style-type: none"> • If chemical wastes were to be produced at the construction site, the Contractor would 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 						<p>(Chemical Waste) (General) Regulation</p> <p>Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation</p> <p>Land (Miscellaneous Provisions) Ordinance</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</p> <p>Packaging, Labelling and Storage of Chemical Wastes</p>	

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
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	corresponding chemical characteristics of the waste such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport the chemical wastes. The licensed collector shall deliver the waste to the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.							
Waste Management Implication (Operational Phase)								
N/A	N/A	N/A	N/A					
Land Contamination (Construction Phase)								
N/A	N/A	N/A	N/A					
Land Contamination (Operational Phase)								
N/A	N/A	N/A	N/A					
Ecological Impact (Terrestrial) (Construction Phase)								
9.13.2-9.13.5	<p>Measures to Avoid/ Minimize Impacts to Flora Species of Conservation Importance</p> <ul style="list-style-type: none"> • Within the Project Site boundary, two flora species of conservation importance (Incense Tree and Luofushan Joint-fir) would be subject to direct impacts. A detailed vegetation survey should be conducted by a qualified ecologist / botanist within the Project Site boundary. • A Transplantation Proposal should be prepared by a qualified ecologist / botanist with detailed findings of the vegetation survey (i.e. number and locations of the affected individuals, assessment of the suitability and / or practicality of the transplantation) and locations of receptor site(s), transplantation methodology, implementation programme of transplantation, post-transplantation monitoring and maintenance programme. The proposal should be submitted to and approved by AFCD prior to commencement of any works (including ground investigation. The approved transplantation works should be supervised by a qualified botanist / horticulturist / Certified Arborist with relevant experience in transplanting flora species of conservation importance. After transplantation, a 3-year monitoring and maintenance programme 	All works areas	CEDD/Contractor		✓			EIAO-TM

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	<p>of the transplanted species should be conducted to ensure the establishment of the transplanted trees.</p> <ul style="list-style-type: none"> Hoarding or fencing should be erected around the works areas during the construction phase to restrict access, to adjacent habitats supporting flora species of conservation importance, by site workers and to reduce human disturbance. 							
9.13.6-9.13.8	<p>Measures to Avoid/ Minimize Habitat Loss to Woodland and Plantation</p> <ul style="list-style-type: none"> Habitat loss could be avoided in the first instance by retaining existing vegetation wherever possible, particularly mature and semi-mature trees present within the works areas. Any trees retained should be adequately protected during construction phase to promote their health and longevity. Areas which would be temporarily affected by construction activities (i.e. slope works) should be reinstated after completing the construction works. Hoarding or fencing should be erected around the works areas during construction phase to restrict access to natural habitats adjacent to works areas by site workers. 	All works areas	CEDD/Contractor	✓	✓			EIAO-TM
9.13.9-9.13.12	<p>Measures to Minimise Disturbance from Construction Activities</p> <ul style="list-style-type: none"> Construction dust should be suppressed to avoid and minimize the dust covering leaves of plants that would affect their photosynthesis, and thus their health and growth: <ul style="list-style-type: none"> Regular spraying of haul roads. Proper storage of construction materials. Covering trucks or transporting wastes in enclosed containers to minimize windblown litter and dust during transportation of waste. Noise impact during construction phase should be avoided and minimized to reduce the disturbance to the habitats adjacent to the works areas: <ul style="list-style-type: none"> Machines and plant (e.g. trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. Machines and plants known to emit strong directional noise 	All works areas	CEDD/Contractor		✓			EIAO-TM

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	<p>should, wherever possible, be orientated so that the noise is directed away from the nearby habitats.</p> <ul style="list-style-type: none"> - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. - Using Quiet Mechanical Plant (QMP) to limit noise emissions at source. - QMP and other machines and plants (e.g. air compressors, concrete pumps) should be covered by noise enclosure to further reduce noise impact. <ul style="list-style-type: none"> • Through night-time lighting control during construction phase, glare disturbance to wildlife would be controlled. 							
9.13.13	<p>Measures to Minimise Pollution to Watercourses</p> <ul style="list-style-type: none"> • Good site practices should be adopted to avoid any pollution from entering the watercourses. Practices to minimize surface runoff and to reduce suspended solid levels should be undertaken. - Drainage arrangements should include sediment traps to collect and control construction run-off. - All works and storage area should be restricted to the site boundary. - General refuse and construction wastes should be collected and disposed of in a timely and appropriate manner. - Regular check of the construction boundary to avoid unmitigated impacts imposed on nearby watercourse. 	All works areas	CEDD/Contractor		✓			EIAO-TM
Ecological Impact (Terrestrial) (Operational Phase)								
9.13.14	<p>Measures to Minimize Impacts from Noise Barriers</p> <ul style="list-style-type: none"> • During the operational phase, the road networks and associated noise barriers may result in bird collision and mortality. Mitigation measures such as use of tinted materials and superimposing dark patterns or strips on the barrier, as per EPD / Highways Department requirements would be employed to minimise incidents 	All works areas	CEDD/Contractor			✓		EIAO-TM

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	of mortality from collision.							
Landscape and Visual (Construction Phase)								
10.10.4 (Table 10.9)	All existing trees to be retained shall be carefully protected during construction.	All works areas	CEDD/Contractor	✓	✓			DEVB TC (W) No.10/2013
10.10.4 (Table 10.9)	Tree Transplantation Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWB TCW No. 29/2004, DEVB TC (W) No.7/2015 and “ Guidelines on Tree Transplanting ”, GLTMS of DEVB.	All works areas	CEDD/Contractor	✓	✓			ETWB TCW No. 29/2004 DEVB TC (W) No.7/2015 Guidelines on Tree Transplanting, GLTMS of DEVB
10.10.4 (Table 10.9)	Erection of decorative screen hoarding for reducing visual impacts	All works areas	CEDD/Contractor		✓			EIAO-TM
10.10.4 (Table 10.9)	Measures to avoid / minimize impacts to flora species of conservation importance.	All works areas	CEDD/Contractor	✓	✓			EIAO-TM
Landscape and Visual (Operational Phase)								
10.10.4 (Table 10.10)	Compensatory tree planting for loss of existing trees (Compensation for loss of road side amenity)	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD/LCSD	✓	✓	✓		DEVB TC (W) No.7/2015 GEO publication No. 1/2011
10.10.4 (Table 10.10)	Compensatory woodland planting	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD/ArchSD	✓	✓	✓		DEVB TC (W) No.7/2015 GEO publication No. 1/2011

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
10.10.4 (Table 10.10)	Compensatory shrub mix planting	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD	✓	✓	✓		DEVB TC (W) No.7/2015 GEO publication No. 1/2011
10.10.4 (Table 10.10)	Hydro-seeding planting with shrub seed mix	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD	✓	✓	✓		DEVB TC (W) No.7/2015 GEO publication No. 1/2011
10.10.4 (Table 10.10)	Tall buffer advance screen tree / shrub / climber planting	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD	✓	✓	✓		DEVB TC (W) No.7/2015 GEO publication No. 1/2011
10.10.4 (Table 10.10)	Planting of road verges, central divider and around structures	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD, LCSD	✓	✓	✓		ETWB(W) No. 2/2004 Subject to ACABAS approval
10.10.4 (Table 10.10)	Reinstate modified watercourse	All works areas	Design and Construction Stage - CEDD Operational Stage - DSD	✓	✓	✓		EIAO-TM
10.10.4 (Table 10.10)	Provision of visually pleasing aesthetic treatment on noise barriers (with climbers provided if space available) and enclosures	All works areas	Design and Construction Stage - CEDD Operational Stage - HyD	✓	✓	✓		ETWB(W) No. 2/2004 Subject to ACABAS approval
10.10.4 (Table 10.10)	Hard Landscape Treatment Carriageway, Structures and Roadside Furniture (for example, pleasing aesthetic finishing of retaining wall)	All works areas	Design and Construction Stage - CEDD	✓	✓	✓		ETWB(W) No. 10/2005 Subject to

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
			Operational Stage – HyD/LCSD/ArchSD					ACABAS approval
10.10.4 (Table 10.10)	Planting of toe planters for slope enhancement	All works areas	Design and Construction Stage - CEDD Operational Stage – LCSD	✓	✓	✓		EIAO-TM GEO publication No. 1/2011
10.10.4 (Table 10.10)	Planting of berm planters/ planting strips for slope enhancement	All works areas	Design and Construction Stage - CEDD Operational Stage – HyD	✓	✓	✓		EIAO-TM GEO publication No. 1/2011
Landfill Gas Hazard (Construction Phase)								
11.9.2 - 11.9.4	<ul style="list-style-type: none"> Contractors shall note the possible presence of landfill gas in the ground (even if it is unlikely) and shall take this into account in the design, construction of the proposed works. A Safety Officer or an appropriately qualified person, trained in the use of gas detection equipment, landfill gas related hazards and the appropriate actions to take in the event of adverse circumstances, shall be present on site throughout the works, in particular, when works are undertaken below ground. The contractor shall take cognizance of the presence of surface water and leachate management system and landfill gas management systems near the proposed works area. The contractor shall take all reasonable care to avoid any damage, loss, injury, interruption or impairment of the integrity of the landfill facilities within the works limits, storage area and across road area. The contractor shall also liaise and seek EPD and their landfill contractor – Hong Kong Landfill Restoration Group Limited (HKLRG) agreement on site arrangement before carrying out the proposed work. 	Works areas within landfill consultation zones	CEDD/Contractor		✓	✓		EPD's Landfill Gas Hazard Assessment Guidance Note
11.9.5 - 11.9.11	<u>Safety Measures</u> <ul style="list-style-type: none"> The contractor shall be aware of, and inform all workers accordingly, that methane and carbon dioxide is always likely to be 	Works areas within landfill consultation zones	CEDD/Contractor		✓			EPD's Landfill Gas Hazard Assessment

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>present in the soil voids.</p> <ul style="list-style-type: none"> All personnel working on site and all visitors to the site be informed of the nearby landfill site and the possibility of landfill gas in the vicinity of the proposed works area. Safety warning notices shall be posted. No worker shall be allowed to work alone at any time inside the trenches or joint bays or near to any excavation. At least one other worker shall be available to assist in a rescue in an emergency case. Smoking and naked flames shall be strictly prohibited within the site or confined space if any. 'No Smoking' and 'No Naked Flame' notices shall be posted prominently at the site entrance and other conspicuous locations. All electrical equipment, such as motors and extension cords, shall be intrinsically safe. Adequate safety equipment shall be available at all times. This includes but is not limited to fire extinguishing equipment, breathing apparatus and personal protective equipment. In the event of working inside a confined space is required, sufficient approved resuscitation equipment, breathing apparatus and safety torches shall be available. Persons involved in or supervising such work shall be trained and practiced for the use of such equipment. A permit-to-work system for entry into confined space shall be established by an approved qualified person and consistently enforced. All relevant Ordinances, Legislations, Guidelines and Codes of Practice pertaining to work in confined space must be strictly adhered to. 							<p>Guidance Note</p> <p>Labour Department's Code of Practice for Safety and Health at Work in Confined Space</p>
11.9.12-11.9.16	<p><u>Monitoring</u></p> <ul style="list-style-type: none"> The works area shall be monitored periodically during construction for the presence of methane, carbon dioxide and oxygen using gas detection equipment. The gas detection equipment shall be an intrinsically safe portable instrument, appropriately calibrated and capable of measuring the following gases in the ranges indicated below: <p>– Methane 0 – 100% LEL and 0 – 100% v/v;</p>	Works areas within landfill consultation zones	CEDD/Contractor		✓			EPD's Landfill Gas Hazard Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<ul style="list-style-type: none"> – Carbon dioxide 0 – 100%; and – Oxygen 0 – 21%. • During construction, monitoring of excavations shall be undertaken as follows: • For excavation deeper than 1 m, measurements shall be made: <ul style="list-style-type: none"> – At the ground surface before excavation commences; – Immediately before any worker enters an excavation; – At the beginning of each working day for the entire period the excavation remains open; and – Periodically through the working day whilst workers are in the excavation. • For excavation between 300 mm and 1 m deep, measurements shall be made: <ul style="list-style-type: none"> – Directly after the excavation has been completed; and – Periodically whilst the excavation remains open. • For excavation less than 300 mm, monitoring may be omitted at the discretion of the Safety Officer or other appropriate qualified person. • The monitoring frequency and area to be monitored shall be set down prior to commencement of ground works either by the Safety Officer or by an appropriately qualified person. • Monitoring should be undertaken by the Safety Officer or by an appropriately qualified person. The monitoring results shall be recorded and kept on site and shall be readily available at all times for inspection by the relevant authority. • Depending upon the results of measurements, actions will vary. Actions shall be set down by the Safety Officer or other appropriately qualified person prior to commencement of occupancy of the proposed works area. 							
Landfill Gas Hazard (Operational Phase)								

EIA Ref.	Recommended Mitigation Measures	Location of the Measures	Implementation Agent	Implementation Stage ⁽¹⁾				Relevant Legislation and Guidelines
				Des	C	O	Dec	
11.10.2 – 11.10.3	<ul style="list-style-type: none"> • The presence of landfill gas should be assumed at all times by maintenance workers. • All maintenance workers inspecting any manhole should be fully trained in the issue of landfill gas hazard. • Any manhole which is large enough to permit to access to personnel should be subject to safe entry procedures. • Working in confined spaces is controlled by the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance. Following the Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong) maintains compliance with the above regulations. • A strictly regulated “work permit procedure” should be implemented and the relevant safety procedures must be rigidly followed. • Adequate communication with maintenance staff should be maintained with respect to landfill gas hazard. • Utility companies should undertake a landfill gas surveillance exercise at the utility manholes/inspection chambers. • Undertaken using an intrinsically safe portable instrument, appropriately calibrated and capable of measuring the following gases in the ranges indicated: <ul style="list-style-type: none"> – Methane 0 – 100% LEL and 0 – 100% v/v; – Carbon dioxide 0 – 100%; and – Oxygen 0 – 21%. • Undertaken for the duration of the site occupancy, or until such time that EPD agrees that surveillance is no longer required. • Depending on the results of the measurements, actions required will vary and should be set down by appropriately qualified person. 	Works areas within landfill consultation zones	Maintenance contractor/Utility companies			✓		<p>EPD’s Landfill Gas Hazard Assessment Guidance Note</p> <p>Labour Department’s Code of Practice for Safety and Health at Work in Confined Space</p>

Note:

(1) Des = Design; C = Construction; O = Operation; Dec = Decommissioning



Appendix 4.1

Action and Limit Level

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
NMC01	When one documented complaint is received	65 / 70 ¹	60 / 65 / 70 ³	45 / 50 / 55 ³
NMC02		75		
NMC03		75		
NMC04		75		
NMC05		75		

Remark 1: Limit level of NMC01 - Kei Shun Special School 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.

Baseline Level for Noise Monitoring

(For reference and calculation of Construction Noise Levels (CNLs))

Monitoring Station	Action Level	Baseline Level (dB(A))		
		0700-1900 hrs on normal weekdays	0700-2300 hrs on holidays (including Sundays); and 1900-2300 hrs on all days	2300-0700 hrs of all days
NMC01	When one documented complaint is received	69.3	69.0	66.6
NMC02		72.0	66.3	68.6
NMC03		78.2	77.9	73.8
NMC04		66.6	64.0	62.1
NMC05		61.8	59.8	57.9

All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured Leq – Baseline Leq = CNL), in order to facilitate the interpretation of the noise exceedance.

**Action and Limit Level for Air Quality Monitoring**

Monitoring Locations	1-hour TSP Level in $\mu\text{g}/\text{m}^3$	
	Action Level	Limit Level
NCWBR_AMS-1	284.4	500.0
NCWBR_AMS-2	282.4	500.0
NCWBR_AMS-3	287.9	500.0
NCWBR_AMS-4	281.6	500.0
NCWBR_AMS-5	270.0	500.0
LTR_AMS-1	272.1	500.0
LTR_AMS-2	281.1	500.0
LTR_AMS-3	285.1	500.0

Action and Limit Level for Water Monitoring

Monitoring Station	Surface pH		Surface DO (mg/L)		Surface Turbidity (NTU)		Surface SS (mg/L)	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
E	-	-	-	-	-	-	-	-
F	Beyond the range of 6.6-8.4	Beyond the range of 6.5-8.5	5.8	5.5	24.4	32.7	17.0	23.8
H	-	-	-	-	-	-	-	-
I	Beyond the range of 6.6-8.4	Beyond the range of 6.5-8.5	5.5	5.4	206.9	214.2	172.8	201.4

***Remarks:**

The value of 1.0mg/L was taken as the value for measurement with suspended solid level of <1.0mg/L for Action and Limit level calculation.

It is recommended that upstream monitoring station (monitoring station E and H) would be taken as control reference for exceedance investigation only. Action and limit level would not be establish using the baseline data.



Appendix 4.2

Copies of Calibration Certificates

Calibration Certificate

Certificate Number 2020014198

Customer:

Lam Geotechnics Ltd

Model Number	LxT SE	Procedure Number	D0001.8384
Serial Number	0006307	Technician	Ron Harris
Test Results	Pass	Calibration Date	28 Dec 2020
Initial Condition	As Manufactured	Calibration Due	
Description	Sound Expert LxT Class 1 Sound Level Meter Firmware Revision: 2.404	Temperature	23.25 °C ± 0.25 °C
		Humidity	51.6 %RH ± 2.0 %RH
		Static Pressure	85.71 kPa ± 0.13 kPa

Evaluation Method **Tested with:** **Data reported in dB re 20 µPa.**

Larson Davis PRMLxT1L. S/N 070008
PCB 377B02. S/N 325638
Larson Davis CAL200. S/N 9079
Larson Davis CAL291. S/N 0108

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017.

Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

LARSON DAVIS - A PCB PIEZOTRONICS DIV.

1681 West 820 North
Provo, UT 84601, United States
716-684-0001



Certificate Number 2020014198

For 1/4" microphones, the Larson Davis ADP024 1/4" to 1/2" adaptor is used with the calibrators and the Larson Davis ADP043 1/4" to 1/2" adaptor is used with the preamplifier.

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part3.

No Pattern approval for IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 available.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3 cover only a limited subset of the specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1.

Standards Used			
Description	Cal Date	Cal Due	Cal Standard
Larson Davis CAL291 Residual Intensity Calibrator	2020-09-18	2021-09-18	001250
Hart Scientific 2626-S Humidity/Temperature Sensor	2020-05-12	2021-05-12	006943
Larson Davis CAL200 Acoustic Calibrator	2020-07-21	2021-07-21	007027
Larson Davis Model 831	2020-03-02	2021-03-02	007182
PCB 377A13 1/2 inch Prepolarized Pressure Microphone	2020-03-05	2021-03-05	007185
SRS DS360 Ultra Low Distortion Generator	2020-04-14	2021-04-14	007635
Larson Davis 1/2" Preamplifier for Model 831 Type 1	2020-10-06	2021-10-06	PCB0004783

Acoustic Calibration

Measured according to IEC 61672-3:2013 10 and ANSI S1.4-2014 Part 3: 10

Measurement	Test Result [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
1000 Hz	114.01	113.80	114.20	0.14	Pass

Loaded Circuit Sensitivity

Measurement	Test Result [dB re 1 V / Pa]	Lower Limit [dB re 1 V / Pa]	Upper Limit [dB re 1 V / Pa]	Expanded Uncertainty [dB]	Result
1000 Hz	-27.74	-29.61	-26.24	0.14	Pass

-- End of measurement results--



Acoustic Signal Tests, C-weighting

Measured according to IEC 61672-3:2013 12 and ANSI S1.4-2014 Part 3: 12 using a comparison coupler with Unit Under Test (UUT) and reference SLM using slow time-weighted sound level for compliance to IEC 61672-1:2013 5.5; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Expected [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
125	-0.18	-0.20	-1.20	0.80	0.23	Pass
1000	0.16	0.00	-0.70	0.70	0.23	Pass
8000	-3.19	-3.00	-5.50	-1.50	0.32	Pass

-- End of measurement results--

Self-generated Noise

Measured according to IEC 61672-3:2013 11.1 and ANSI S1.4-2014 Part 3: 11.1

Measurement	Test Result [dB]
A-weighted	40.20

-- End of measurement results--

-- End of Report--

Signatory: Ron Harris





CERTIFICATE OF CALIBRATION

Certificate No.: 20CA1119 02-01

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Larson Davis
Type/Model No.: CAL200
Serial/Equipment No.: 13437
Adaptors used: -

Item submitted by

Customer: Lam Environmental Services Limited.
Address of Customer: -
Request No.: -
Date of receipt: 19-Nov-2020

Date of test: 20-Nov-2020

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	11-May-2021	SCL
Preamplifier	B&K 2673	2743150	03-Jun-2021	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Jun-2021	CEPREI
Signal generator	DS 360	33873	19-May-2021	CEPREI
Digital multi-meter	34401A	US36087050	19-May-2021	CEPREI
Audio analyzer	8903B	GB41300350	18-May-2021	CEPREI
Universal counter	53132A	MY40003662	18-May-2021	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 55 ± 10 %
Air pressure: 1005 ± 5 hPa

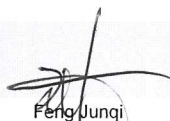
Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

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

Approved Signatory:


Feng Junqi

Date: 21-Nov-2020

Company Chop:



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



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 20CA1119 02-01 Page: 2 of 2

1, Measured Sound Pressure Level

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

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	(Output level in dB re 20 μ Pa)
			Estimated Expanded Uncertainty dB
1000	94.00	93.66	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

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

At 1000 Hz STF = 0.013 dB
Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

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

At 1000 Hz Actual Frequency = 1000.1 Hz
Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

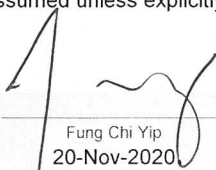
4, Total Noise and Distortion


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

At 1000 Hz TND = 0.5%
Estimated expanded uncertainty 0.7 %

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

- End -

Calibrated by: 
Date: 20-Nov-2020

Checked by: 
Date: 21-Nov-2020

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



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : 831
Serial Number : Y23153
Performance Check Date : 29-Dec-20

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS000
Last Calibration Date : 28-Dec-20

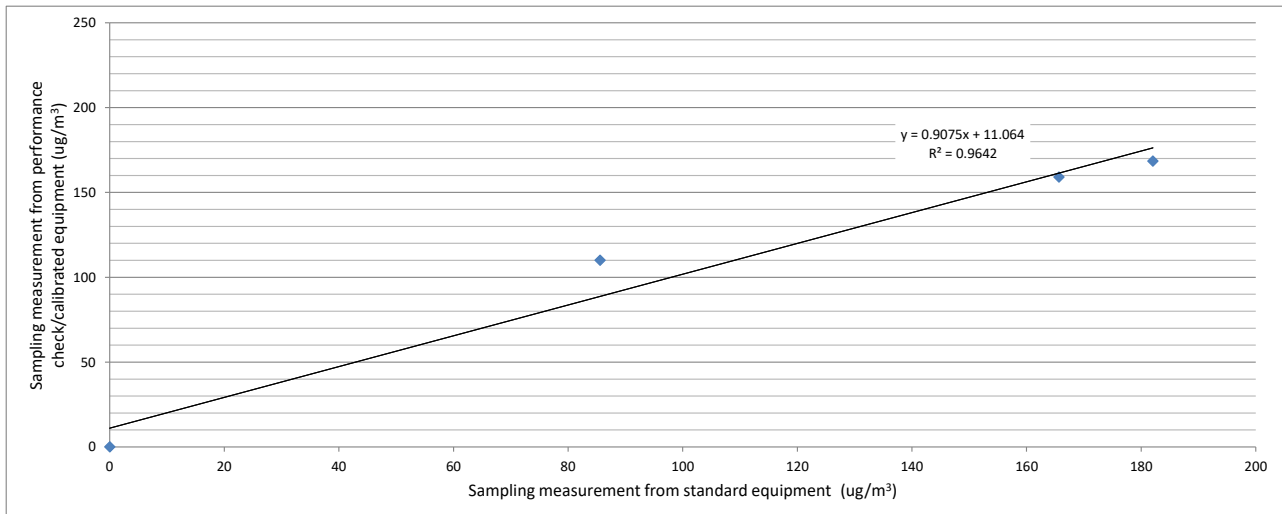
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment), Concentration in ug/m³ (Performance Check / Calibrated equipment). Rows include Zero Check and three trials.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.1000
Correlation Coefficient : 0.9819
Validity of Performance Check / Calibration Record : 29/12/2021



Operator: Henry Lau

Date: 29-Dec-20

Checked by: James Chu

Date: 30-Dec-20



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
 Manufacturer : Metone AEROCET 831
 Model Number : 831
 Serial Number : Y23154
 Performance Check Date : 29-Dec-20

Standard Equipment

Type : High Volume Sampler
 Manufacturer : TISCH
 Model Number : TE-5170
 Equipment Number : HVS000
 Last Calibration Date : 28-Dec-20

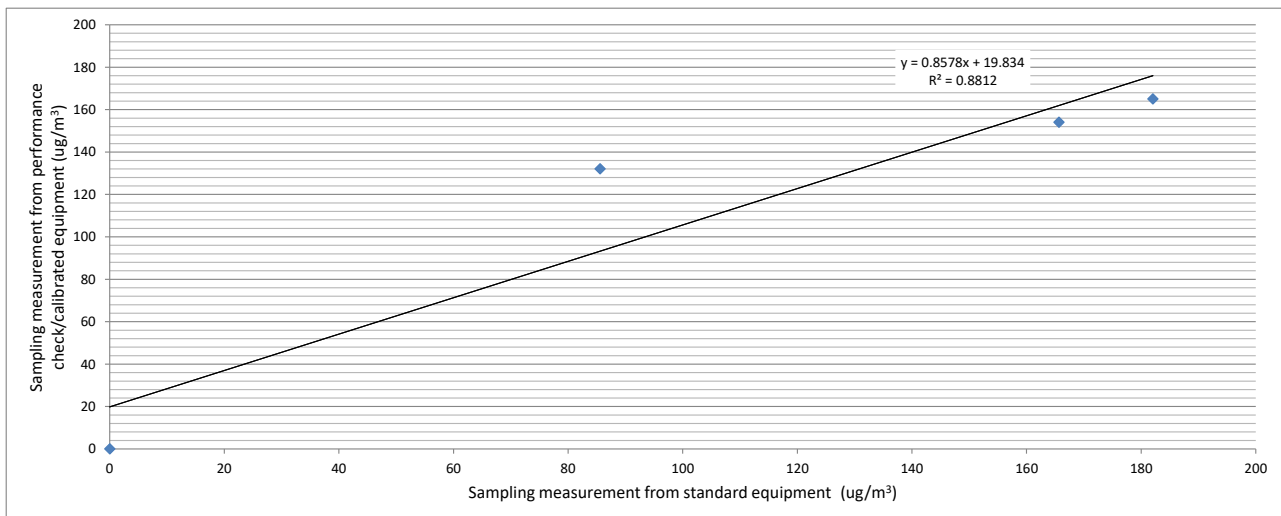
Portable Dust Meter Performance Check Results

Trial no. in 1-hr period	Time	Mean Pressure (hPa)	Mean Temp (°C)	Concentration in ug/m ³ (Standard equipment) (X - Axis)	Concentration in ug/m ³ (Performance Check / Calibrated equipment) (Y - Axis)
Zero Check	28/12/2020 08:00	0	0	0	0
1	29/12/2020 08:04	1015	21	182	165
2	29/12/2020 09:05	1015	21	166	154
3	29/12/2020 10:06	1015	21	86	132

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.1000
 Correlation Coefficient : 0.9387
 Validity of Performance Check / Calibration Record : 29/12/2021



Operator: Henry Lau

Date: 29-Dec-20

Checked by: James Chu

Date: 30-Dec-20



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : 831
Serial Number : W16848
Performance Check Date : 29-Dec-20

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS000
Last Calibration Date : 28-Dec-20

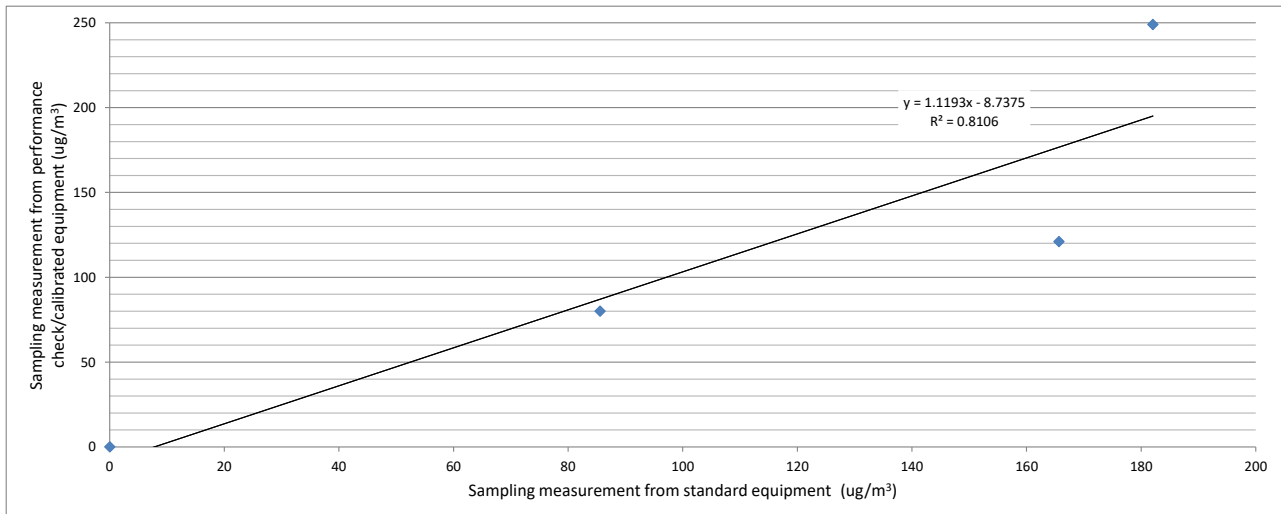
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment), Concentration in ug/m³ (Performance Check / Calibrated equipment). Rows include Zero Check and trials 1, 2, 3.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 0.8000
Correlation Coefficient : 0.9003
Validity of Performance Check / Calibration Record : 29/12/2021



Operator: Henry Lau

Date: 29-Dec-20

Checked by: James Chu

Date: 30-Dec-20



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
 Manufacturer : Metone AEROCET 831
 Model Number : 831
 Serial Number : W15448
 Performance Check Date : 03-Nov-20

Standard Equipment

Type : High Volume Sampler
 Manufacturer : TISCH
 Model Number : TE-5170
 Equipment Number : HVS018
 Last Calibration Date : 08-Sep-20

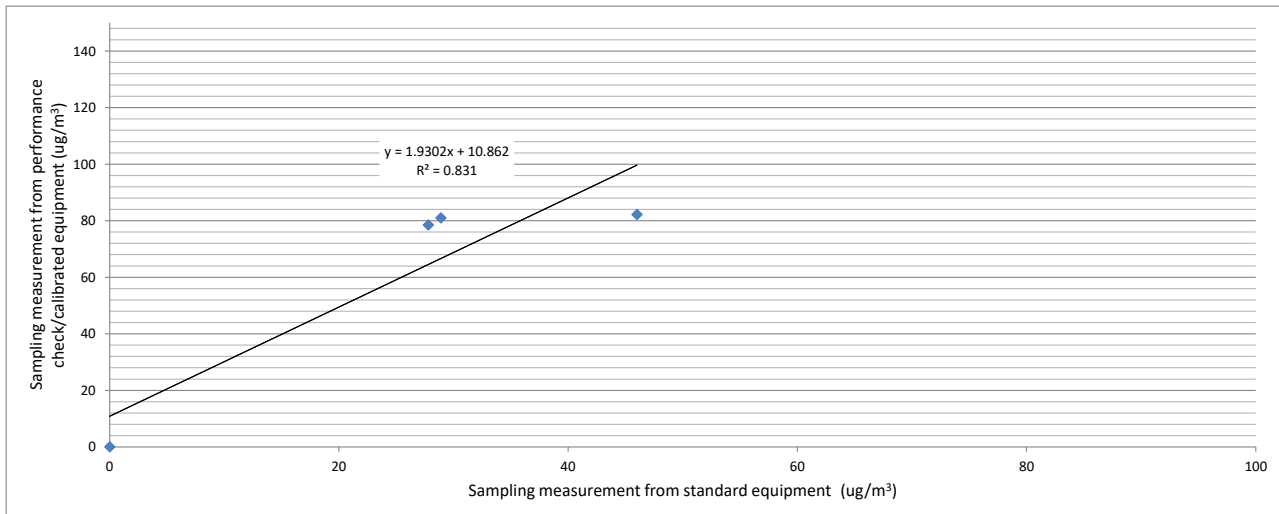
Portable Dust Meter Performance Check Results

Trial no. in 1-hr period	Time	Mean Pressure (hPa)	Mean Temp (°C)	Concentration in ug/m ³ (Standard equipment) (X - Axis)	Concentration in ug/m ³ (Performance Check / Calibrated equipment) (Y - Axis)
Zero Check	2/11/2020 08:00	1015	25	0	0
1	3/11/2020 08:24	1017	24	29	81
2	3/11/2020 09:25	1017	24	28	79
3	3/11/2020 10:26	1017	24	46	82

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 0.5000
 Correlation Coefficient : 0.9116
 Validity of Performance Check / Calibration Record : 3/11/2021



Operator: Alan Ng Date: 03-Nov-20
 Checked by: James Chu Date: 04-Nov-20



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : BT-645
Serial Number : X19295
Performance Check Date : 20-Apr-21

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS018
Last Calibration Date : 20-Apr-21

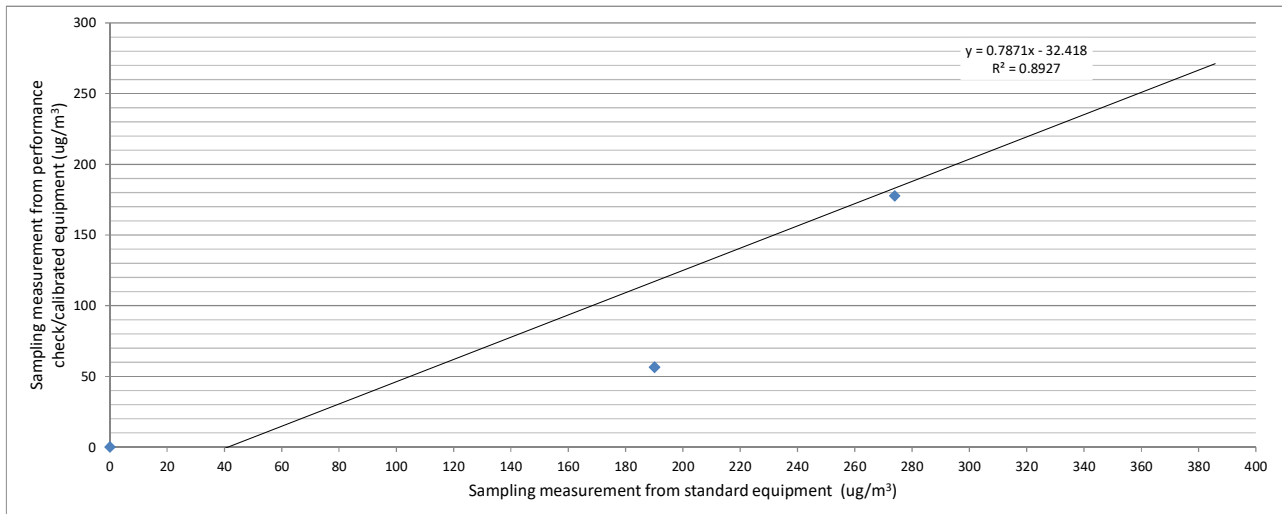
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment) (X - Axis), Concentration in ug/m³ (Performance Check / Calibrated equipment) (Y - Axis). Rows include Zero Check and trials 1, 2, 3.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.2000
Correlation Coefficient : 0.9448
Validity of Performance Check / Calibration Record : 20/4/2022



Operator: Alan Ng Date: 20-Apr-21
Checked by: James Chu Date: 21-Apr-21



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : BT-645
Serial Number : X19296
Performance Check Date : 16-Sep-20

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS000
Last Calibration Date : 17-Aug-20

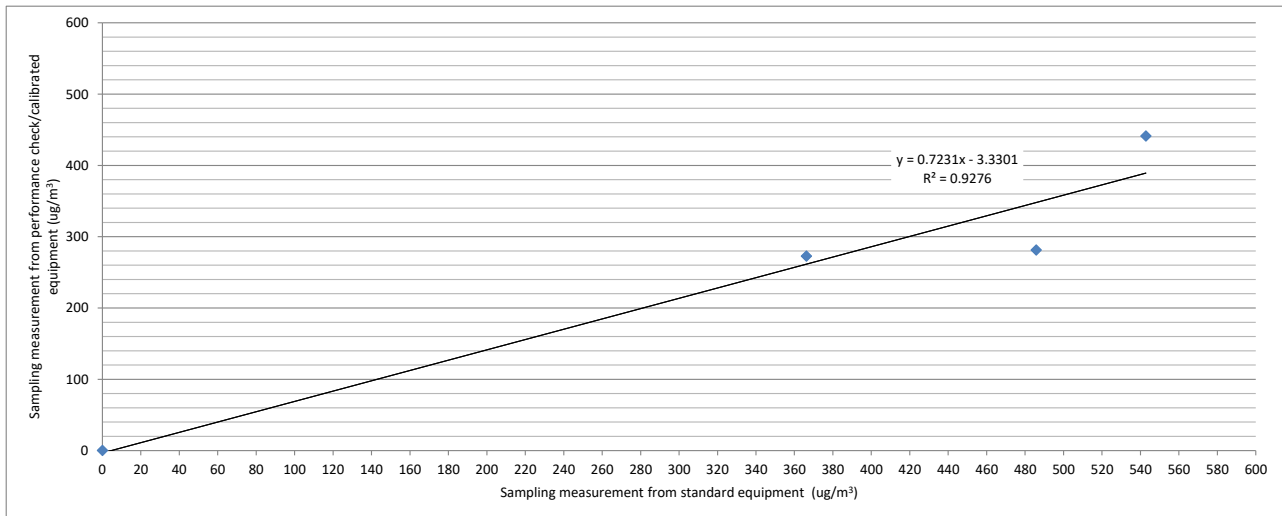
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment) (X - Axis), Concentration in ug/m³ (Performance Check / Calibrated equipment) (Y - Axis). Rows include Zero Check and three trials on 16/9/2020.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.3000
Correlation Coefficient : 0.9631
Validity of Performance Check / Calibration Record : 16/9/2021



Operator: Henry Lau

Date: 16-Sep-20

Checked by: James Chu

Date: 17-Sep-20



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : BT-645
Serial Number : X19297
Performance Check Date : 20-Apr-21

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS018
Last Calibration Date : 20-Apr-21

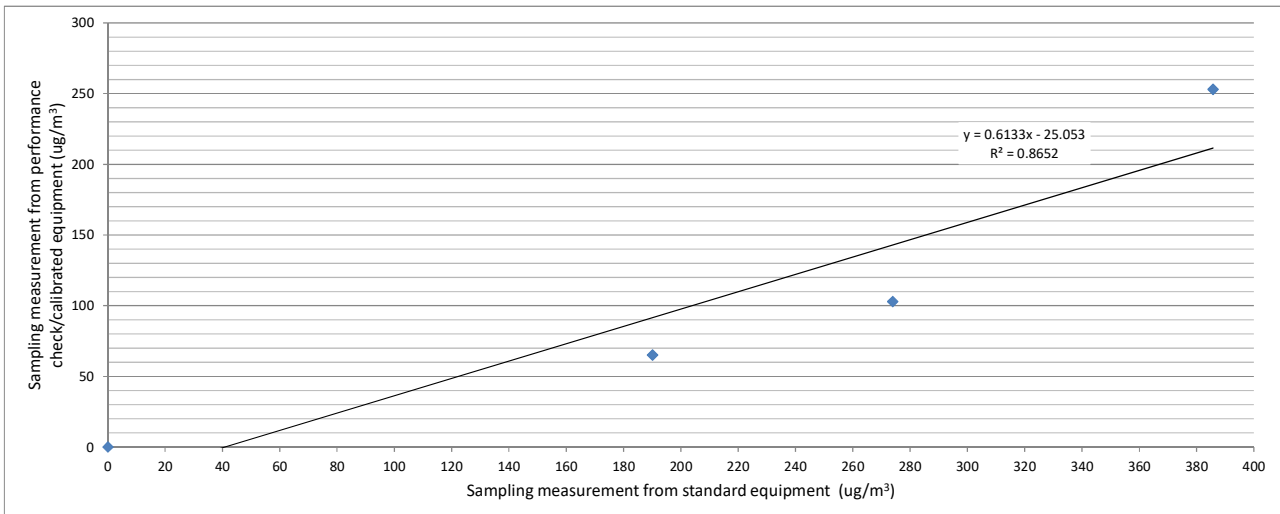
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment) (X - Axis), Concentration in ug/m³ (Performance Check / Calibrated equipment) (Y - Axis). Rows include Zero Check and trials 1, 2, 3.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.5000
Correlation Coefficient : 0.9302
Validity of Performance Check / Calibration Record : 20/4/2022



Operator: Alan Ng

Date: 20-Apr-21

Checked by: James Chu

Date: 21-Apr-21



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : BT-645
Serial Number : X19298
Performance Check Date : 22-Mar-21

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS018
Last Calibration Date : 08-Mar-21

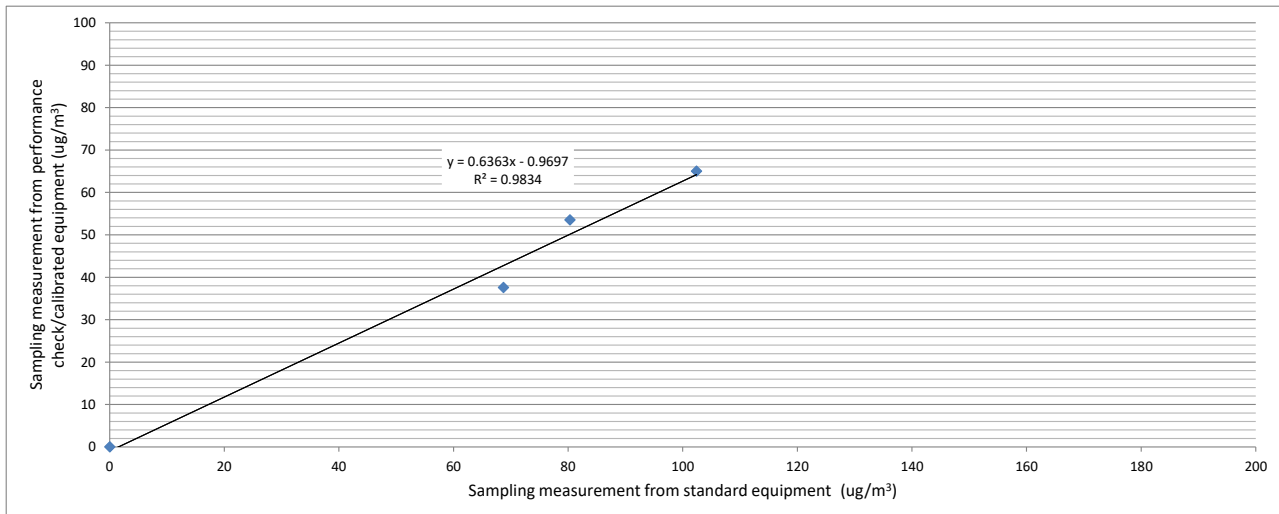
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment) (X - Axis), Concentration in ug/m³ (Performance Check / Calibrated equipment) (Y - Axis). Rows include Zero Check and trials 1, 2, 3.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.6000
Correlation Coefficient : 0.9917
Validity of Performance Check / Calibration Record : 22/3/2022



Operator: Alan Ng

Date: 22-Mar-21

Checked by: James Chu

Date: 23-Mar-21



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulare Monitor
 Manufacturer : Metone AEROCET 831
 Model Number : 831
 Serial Number : Y23160
 Performance Check Date : 29-Dec-20

Standard Equipment

Type : High Volume Sampler
 Manufacturer : TISCH
 Model Number : TE-5170
 Equipment Number : HVS000
 Last Calibration Date : 28-Dec-20

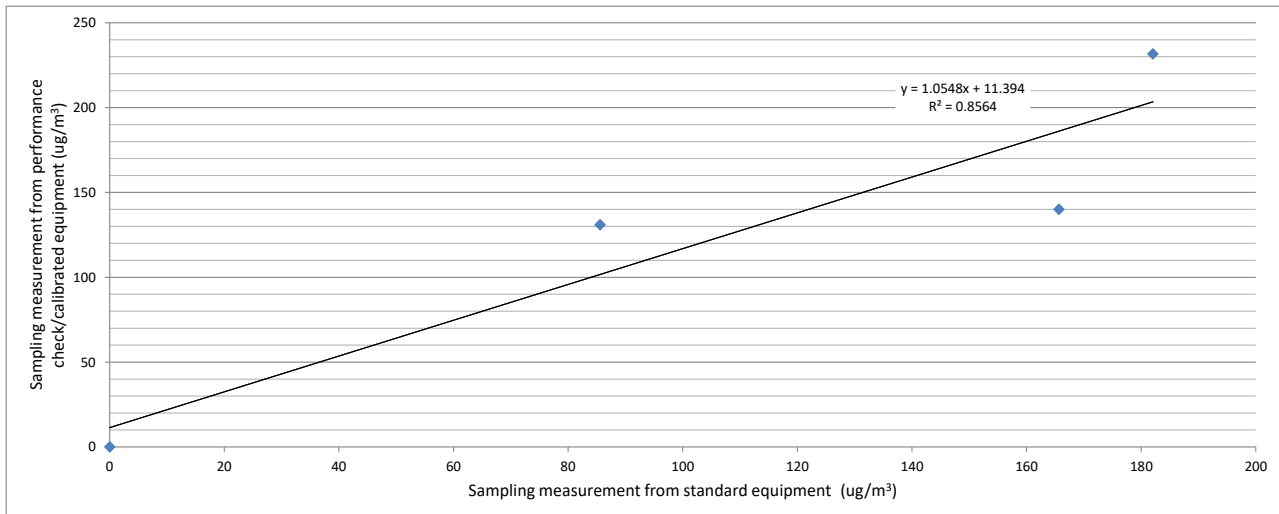
Portable Dust Meter Performance Check Results

Trial no. in 1-hr period	Time	Mean Pressure (hPa)	Mean Temp (°C)	Concentration in ug/m ³ (Standard equipment) (X - Axis)	Concentration in ug/m ³ (Performance Check / Calibrated equipment) (Y - Axis)
Zero Check	28/12/2020 08:00	0	0	0	0
1	29/12/2020 08:04	1015	21	182	232
2	29/12/2020 09:05	1015	21	166	140
3	29/12/2020 10:06	1015	21	86	131

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 0.9000
 Correlation Coefficient : 0.9254
 Validity of Performance Check / Calibration Record : 29/12/2021



Operator: Henry Lau

Date: 29-Dec-20

Checked by: James Chu

Date: 30-Dec-20



Portable Dust Meter Performance Check Record

Portable Dust Meter

Type : Particulate Monitor
Manufacturer : Metone AEROCET 831
Model Number : BT-645
Serial Number : X19298
Performance Check Date : 22-Mar-21

Standard Equipment

Type : High Volume Sampler
Manufacturer : TISCH
Model Number : TE-5170
Equipment Number : HVS018
Last Calibration Date : 08-Mar-21

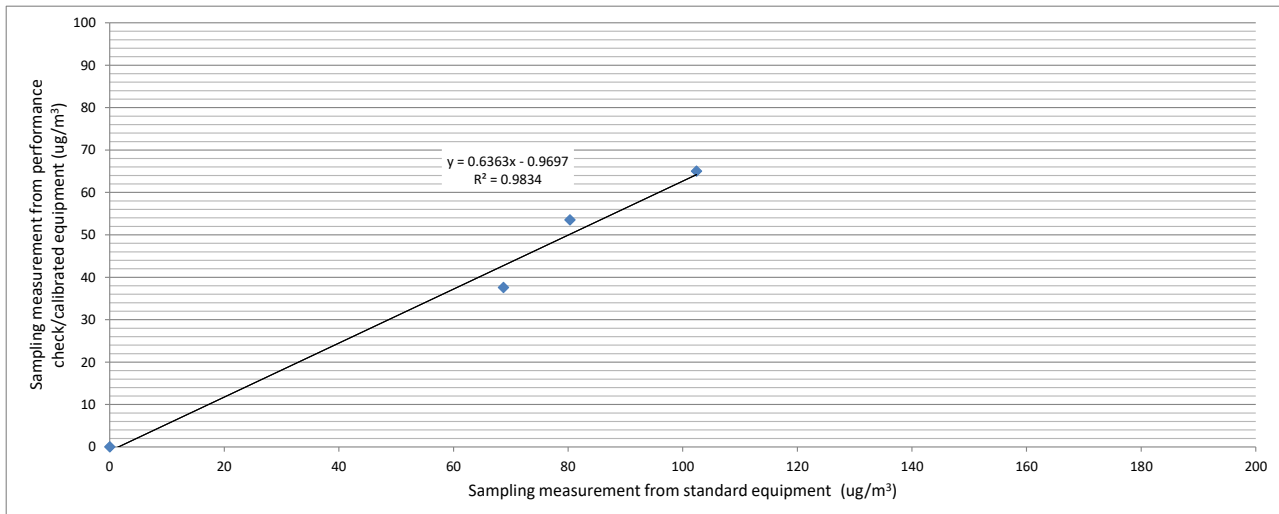
Portable Dust Meter Performance Check Results

Table with 6 columns: Trial no. in 1-hr period, Time, Mean Pressure (hPa), Mean Temp (°C), Concentration in ug/m³ (Standard equipment), Concentration in ug/m³ (Performance Check / Calibrated equipment). Rows include Zero Check and trials 1, 2, 3.

* Filter paper weighting was conducted by HOKLAS accredited laboratory.

Linear Regression of Y on X

Slope (K- factor) : 1.6000
Correlation Coefficient : 0.9917
Validity of Performance Check / Calibration Record : 22/3/2022



Operator: Alan Ng

Date: 22-Mar-21

Checked by: James Chu

Date: 23-Mar-21



Certificate of Calibration

*BT-645
 Particulate Monitor*

Recommended calibration interval is 24 months from first day of use.

Unit Info	Model:	<u>BT-645</u>	81865	Firmware Rev:	<u>1.2.0</u>
	Serial Number:	<u>R22586</u>		81113	<u>0.2.5</u>
	Calibrated By:	<u>J. Chester</u>	<i>AT1</i>	Cal. Date:	<u>04/13/2021</u>
	Quality Inspector:	<u><i>AT6</i></u>		Date:	<u>APR 15 2021</u>
	Calibration Hz/μg/m³:	<u>6.06</u>			

Final Test	Flow (2.0 L/min):	<u>Pass</u>	Ambient Temp (C):	<u>23</u>
	Serial Communication:	<u>Pass</u>	RH (%):	<u>24</u>
	Concentration:	<u>370</u>	Standard:	<u>372</u>

Calibration Standards

Standards	Manufacturer	Model	SN	Cal Due Date
DMM	Fluke	189	92130180	10/26/2021
Temp/Humidity	Met One Instruments	083E-1-6	R20313	09/17/21
Flow Meter	TSI	4000	40419545007	11/21/2021
LD-3B	SIBATA	LD-3B	476795	06/29/2021

The standards used for this calibration have accuracy equal to or greater than the instrument tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated, all instruments are calibrated to meet the manufacturer's published specifications. The Calibration system complies with MIL-STD-45662A.



REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: HENRY LAU
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 19/F, REMEX CENTRE,
42 WONG CHUK HANG ROAD
HONG KONG

WORK ORDER: HK2115810
SUB- BATCH: 0
LABORATORY: HONG KONG
DATE RECEIVED: 21-Apr-2021
DATE OF ISSUE: 28-Apr-2021

SPECIFIC COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source. The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards. The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards. The validity of equipment/ meter performance only applies to the result(s) stated in the report.

Equipment Type: Multifunctional Meter
Service Nature: Performance Check
Scope: Dissolved Oxygen, pH Value, Salinity and Temperature
Brand Name/ Model No.: [YSI]/ [Professional Plus]
Serial No./ Equipment No.: [17G100383/ 17F100236]/ [N/A]
Date of Calibration: 27- April- 2021

GENERAL COMMENTS

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

Mr Chan Siu Ming, Vico
Manager - Inorganic

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2115810
SUB- BATCH: 0
DATE OF ISSUE: 28- Apr- 2021
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type: Multifunctional Meter
Brand Name/ [YSI]/ [Professional Plus]
Model No.:
Serial No./ [17G100383/ 17F100236]/ [N/A]
Equipment No.:
Date of Calibration: 27- April- 2021 **Date of Next Calibration:** 27- July- 2021

PARAMETERS:

Dissolved Oxygen Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.52	3.46	- 0.06
5.94	5.83	- 0.11
7.12	7.01	- 0.11
	Tolerance Limit (mg/L)	± 0.20

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

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.16	+ 0.16
7.0	7.12	+ 0.12
10.0	9.89	- 0.11
	Tolerance Limit (pH unit)	± 0.20

Calibration Solution*: pH4 buffer, Fluka, ENV 11637
 pH7 buffer, Fluka, ENV 11638
 pH10 buffer, Fluka, ENV 11639

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.02	--
10	9.97	- 0.3
20	19.89	- 0.5
30	30.08	+ 0.3
	Tolerance Limit (%)	± 10.0

Reference Thermometer: 10268

* The calibration solutions do not have Certificate of Analysis.

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

Mr Chan Siu Ming, Vico
 Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2115810
SUB- BATCH: 0
DATE OF ISSUE: 28- Apr- 2021
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: [YSI]/ [Professional Plus]
Serial No./ Equipment No.: [17G100383/ 17F100236]/ [N/A]
Date of Calibration: 27- April- 2021 Date of Next Calibration: 27- July- 2021

PARAMETERS:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.5	10.3	- 0.2
21.0	20.7	- 0.3
40.5	40.2	- 0.3
	Tolerance Limit (°C)	± 2.0

Reference Thermometer: 1250

* The calibration solutions do not have Certificate of Analysis.

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

Mr Chan Siu Ming, Vico
Manager - Inorganic



REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: HENRY LAU
CLIENT: LAM ENVIRONMENTAL SERVICES LTD
ADDRESS: 19/F, REMEX CENTRE,
42 WONG CHUK HANG ROAD,
HONG KONG

WORK ORDER: HK2107488
SUB-BATCH: 0
LABORATORY: HONG KONG
DATE RECEIVED: 24-Feb-2021
DATE OF ISSUE: 05-Mar-2021

SPECIFIC COMMENTS

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

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

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

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

Equipment Type: Multifunctional Meter
Service Nature: Performance Check
Scope: Dissolved Oxygen, pH Value, Salinity and Temperature
Brand Name/ Model No.: YSI Professional Plus
Serial No./ Equipment No.: 14E100105
Date of Calibration: 05-March-2021

GENERAL COMMENTS

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

Mr Chan Siu Ming, Vico
Manager - Inorganic

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2107488
 SUB-BATCH: 0
 DATE OF ISSUE: 05-Mar-2021
 CLIENT: LAM ENVIRONMENTAL SERVICES LTD

Equipment Type: Multifunctional Meter
 Brand Name/ Model No.: YSI Professional Plus
 Serial No./ Equipment No.: 14E100105
 Date of Calibration: 05-March-2021

Date of Next Calibration: 05-June-2021

PARAMETERS:

Dissolved Oxygen Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.50	2.67	+0.17
5.24	5.18	-0.06
8.32	8.37	+0.05
	Tolerance Limit (mg/L)	±0.20

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

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.06	+0.06
7.0	6.96	-0.04
10.0	9.93	-0.07
	Tolerance Limit (pH unit)	±0.20

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.02	--
10	9.95	-0.5
20	19.96	-0.2
30	29.89	-0.4
	Tolerance Limit (%)	±10.0

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

Mr Chan Siu Ming, Vico
 Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



WORK ORDER: HK2107488
SUB-BATCH: 0
DATE OF ISSUE: 05-Mar-2021
CLIENT: LAM ENVIRONMENTAL SERVICES LTD

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: YSI Professional Plus
Serial No./ Equipment No.: 14E100105
Date of Calibration: 05-March-2021

Date of Next Calibration: 05-June-2021

PARAMETERS:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.2	+0.2
21.0	20.8	-0.2
39.0	38.6	-0.4
	Tolerance Limit (°C)	±2.0

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

A handwritten signature in black ink, appearing to read 'Chan Siu Ming'.

Mr Chan Siu Ming, Vico
Manager - Inorganic



REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT: MR. JAMES CHU **JOB REFERENCE NO.:** 22777053-D15B5302
CLIENT: LAM ENVIRONMENTAL SERVICES
DATE RECEIVED: 15/04/2021
DATE OF ISSUE: 23/04/2021
ADDRESS: 19/F, REMAX CENTRE, 42 WONG CHUK HANG ROAD, HONG KONG
PROJECT: ---

METHOD OF PERFORMANCE CHECK/ CALIBRATION:

Ref: APHA22nd ed 2130B

COMMENTS

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.

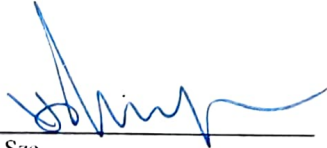
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of FT Laboratories Ltd will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	2005060
Equipment No.:	---
Date of Calibration:	23/04/2021

Remarks:

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

Certified By:


Ho Lai Sze
Senior Chemist

Issue Date:

23/04/2021



REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: 22777053-D15B5302
DATE OF ISSUE: 23/04/2021
CLIENT: LAM ENVIRONMENTAL SERVICES

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	2005060
Equipment No.:	---
Date of Calibration:	23/04/2021
Date of next Calibration:	24/07/2021
Lab I.D.:	H210036-02

Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance
0	0.00	---
4	4.00	0.0%
10	9.98	-0.2%
40	39.99	0.0%
100	99.99	0.0%
400	403	0.7%
1000	1005	0.5%
	Tolerance Limit (\pm)	10%

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



REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT: MR. JAMES CHU JOB REFERENCE NO.: 22777053-D28B4001
CLIENT: LAM ENVIRONMENTAL SERVICES
DATE RECEIVED: 28/04/2021
DATE OF ISSUE: 17/05/2021
ADDRESS: 19/F, REMAX CENTRE, 42 WONG CHUK HANG ROAD, HONG KONG
PROJECT: ---

METHOD OF PERFORMANCE CHECK/ CALIBRATION:

Ref: APHA22nd ed 2130B

COMMENTS

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.


Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of FT Laboratories Ltd will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1807063
Equipment No.:	---
Date of Calibration:	17/05/2021

Remarks:

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

Certified By:


Ho Lai Sze
Senior Chemist

Issue Date:

17/05/2021

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Form No.: HG022-002 Rev 0 20190101

Page 1 of 2



REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: 22777053-D28B4001
DATE OF ISSUE: 17/05/2021
CLIENT: LAM ENVIRONMENTAL SERVICES

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1807063
Equipment No.:	---
Date of Calibration:	17/05/2021
Date of next Calibration:	17/08/2021
Lab I.D.:	H210042-01

Parameters:

Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance
0	0.00	---
4	3.94	-1.5%
10	9.89	-1.1%
40	39.99	0.0%
100	100.00	0.0%
400	400	0.0%
1000	1000	0.0%
	Tolerance Limit (\pm)	10%

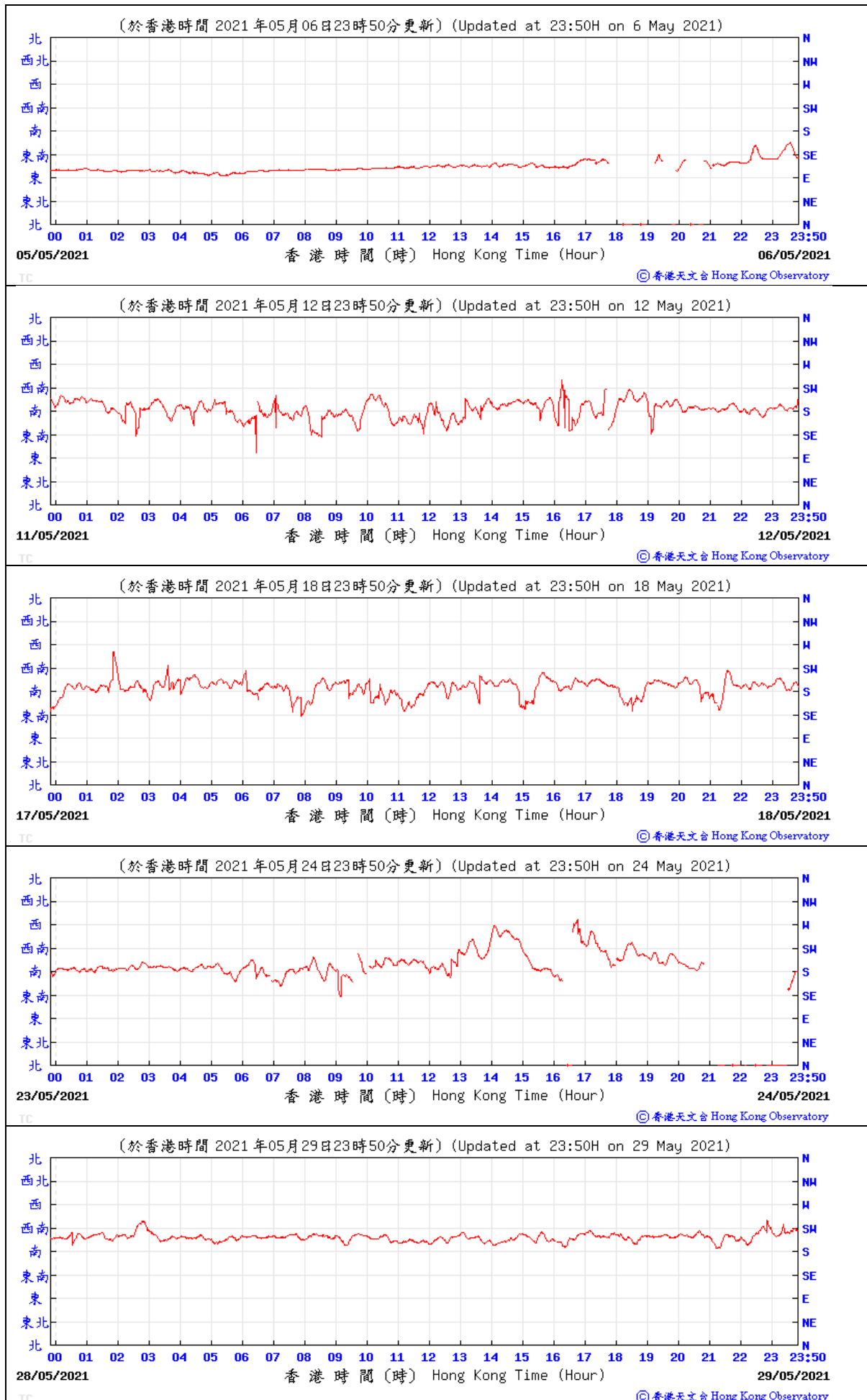
Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.



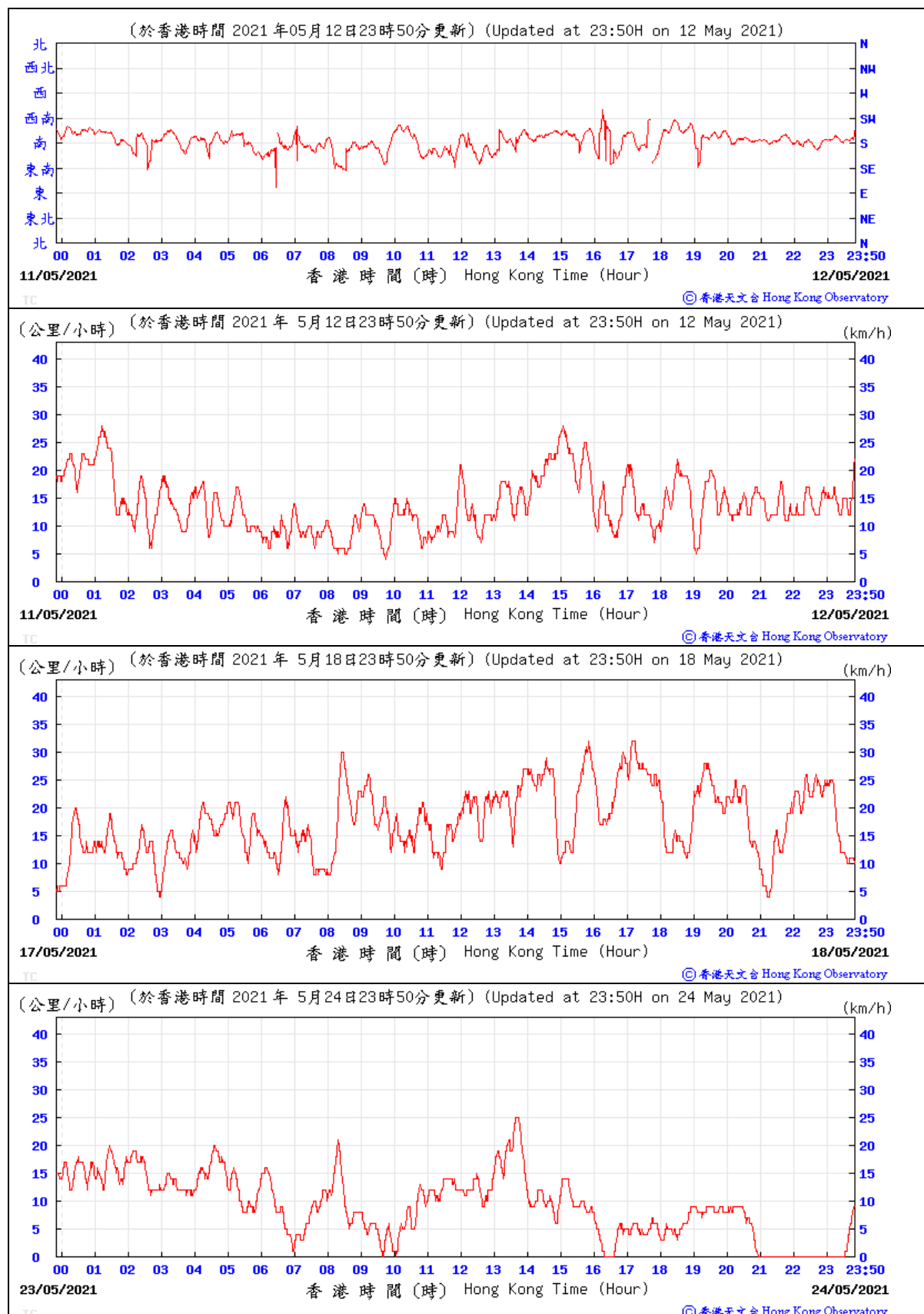
Appendix 4.3

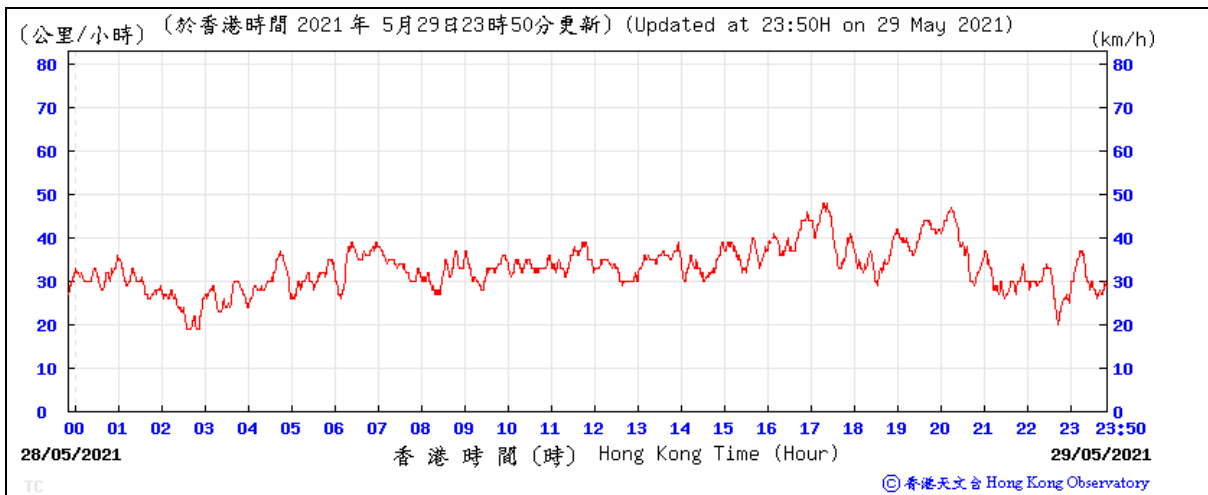
Wind data extracted from HKO Automatic Weather Station

A. Wind Direction extracted from Tate's Cairn HKO Automatic Weather Station

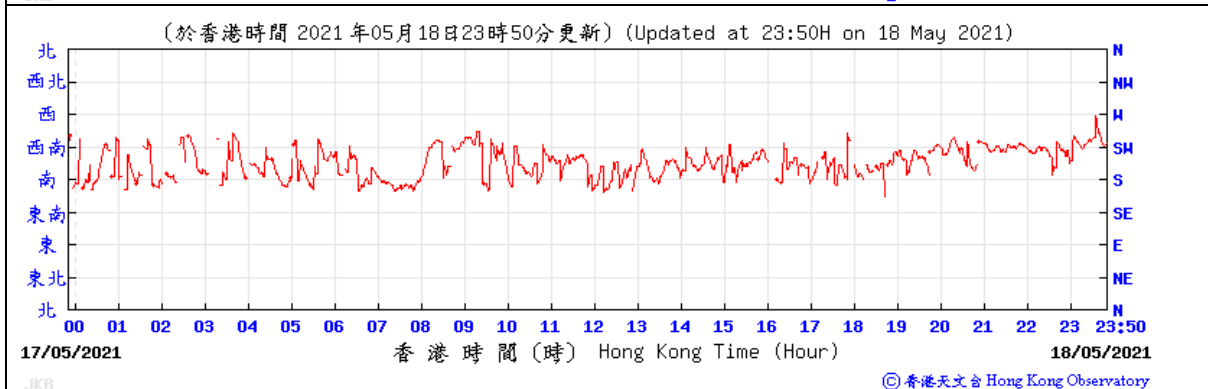
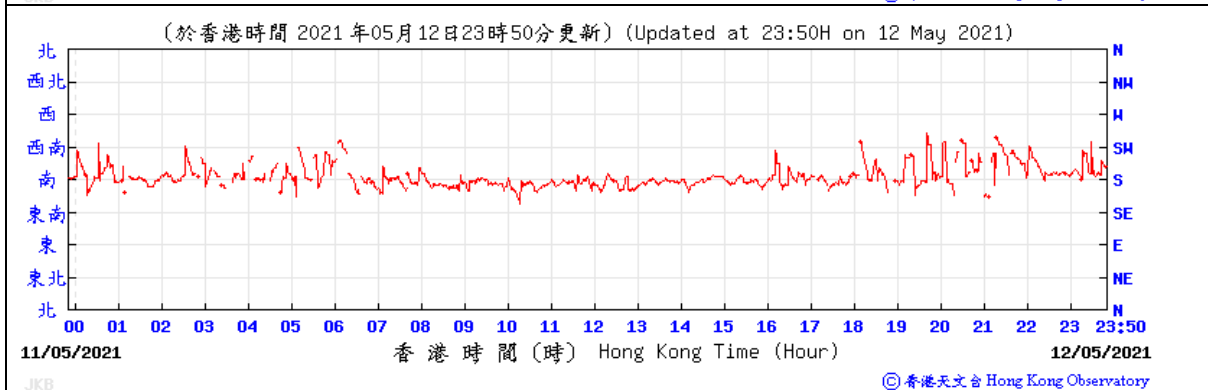
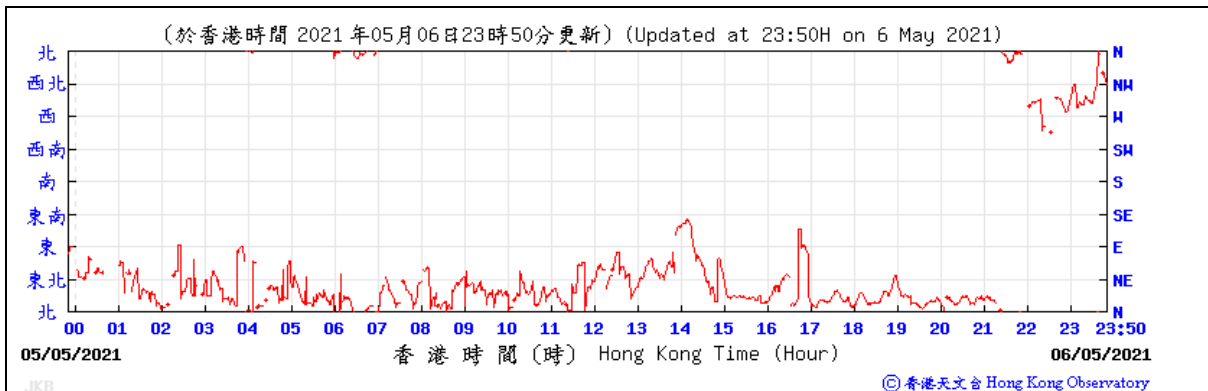


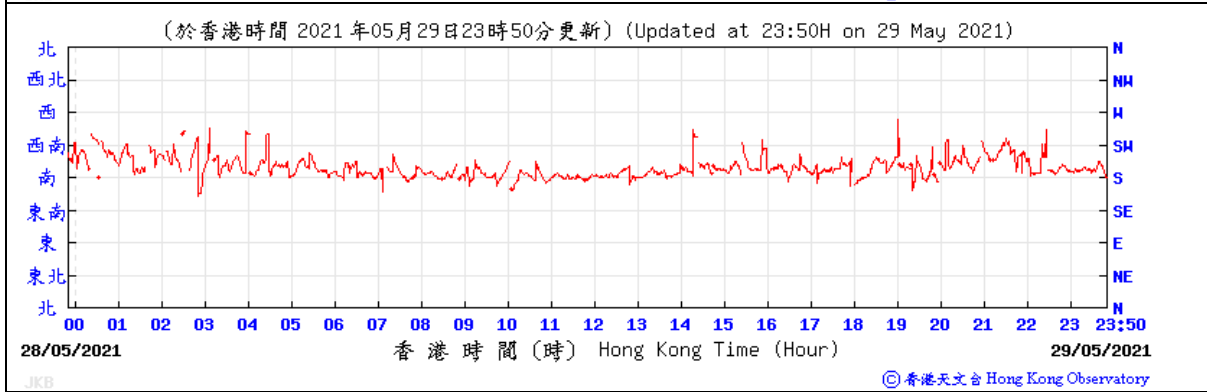
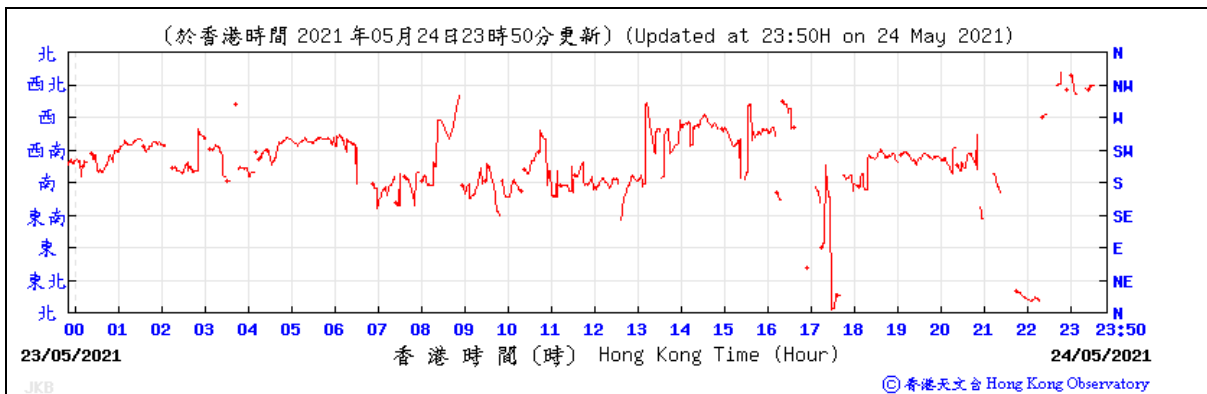
B. Wind Speed extracted from Tate's Cairn HKO Automatic Weather Station



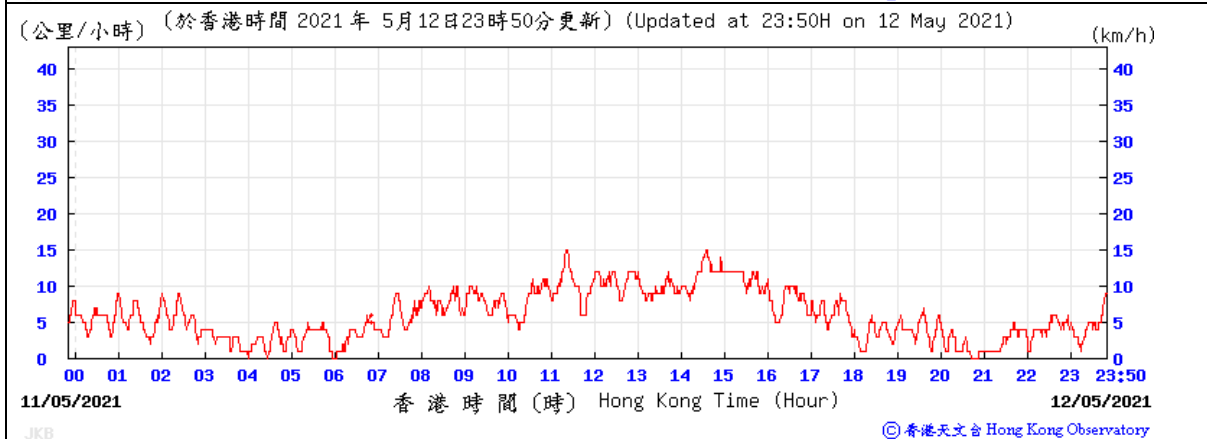
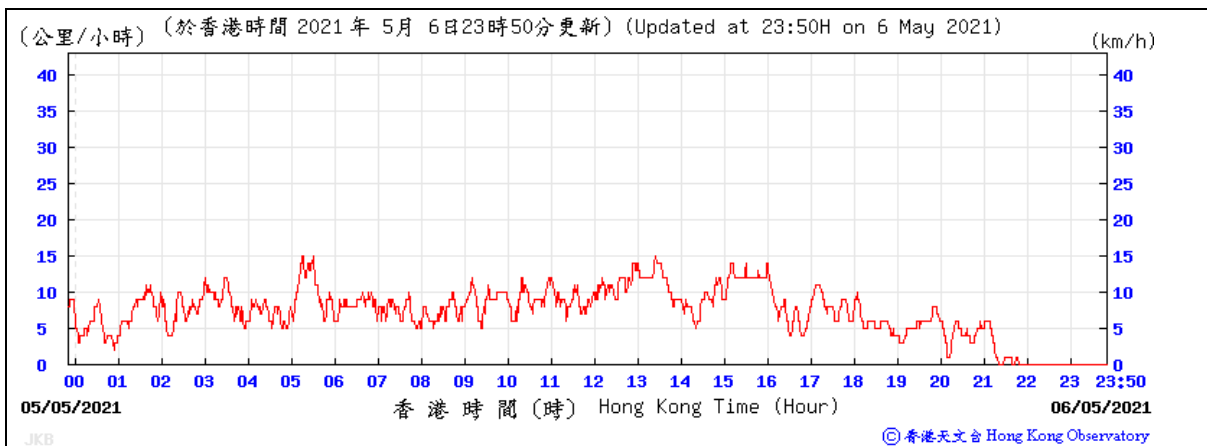


C. Wind Direction extracted from Tseung Kwan O HKO Automatic Weather Station

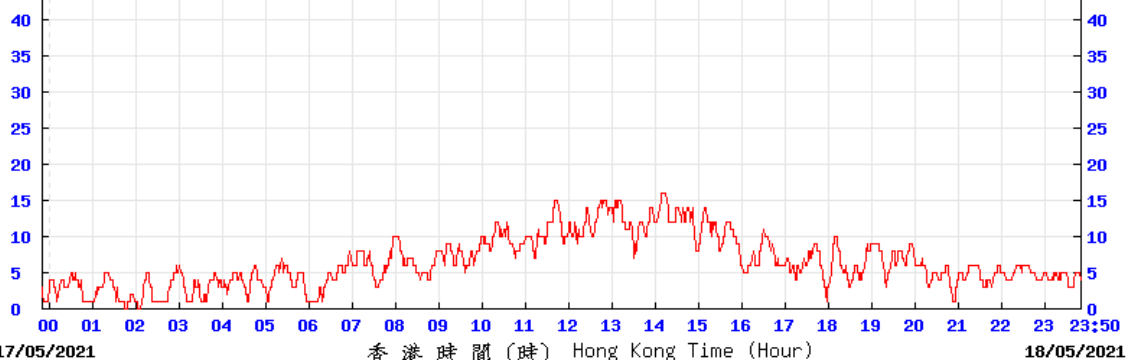




D. Wind Speed extracted from Tseung Kwan O HKO Automatic Weather Station

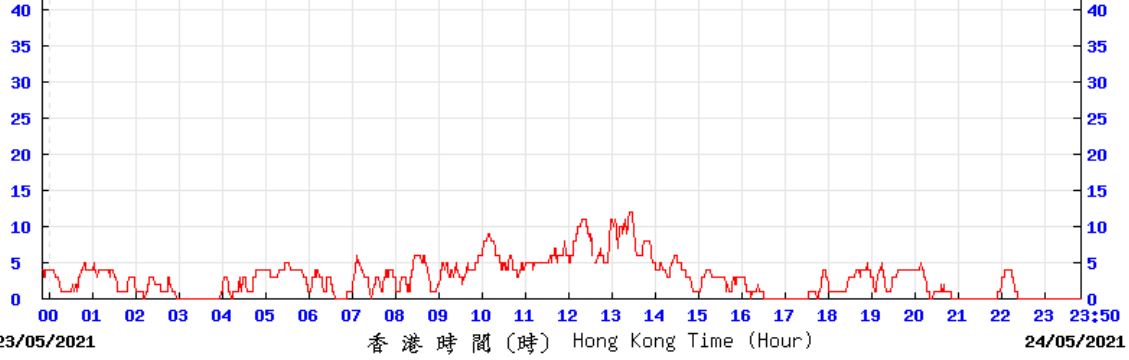


(公里/小時) (於香港時間 2021 年 5 月 18 日 23 時 50 分更新) (Updated at 23:50H on 18 May 2021) (km/h)



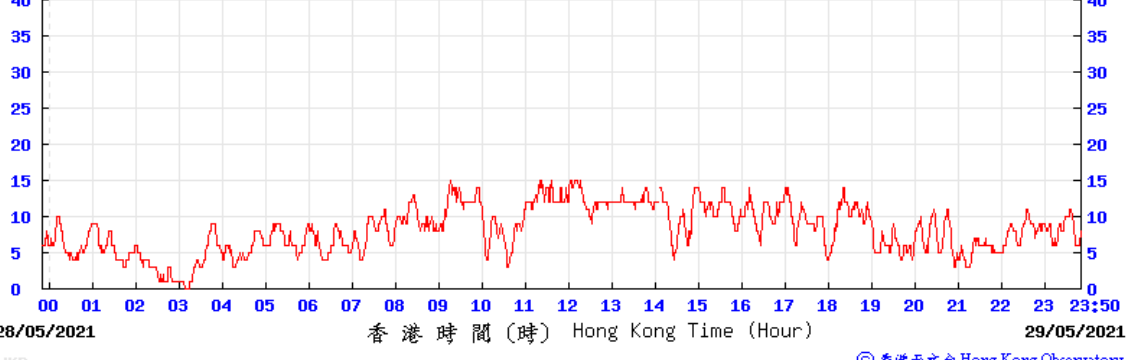
JKO © 香港天文台 Hong Kong Observatory

(公里/小時) (於香港時間 2021 年 5 月 24 日 23 時 50 分更新) (Updated at 23:50H on 24 May 2021) (km/h)



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(公里/小時) (於香港時間 2021 年 5 月 29 日 23 時 50 分更新) (Updated at 23:50H on 29 May 2021) (km/h)



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Appendix 5.1

Monitoring Schedules for Reporting Month



SERVICE CONTRACT NO. EDO/01/2017
ENVIRONMENTAL TEAM FOR DEVELOPMENT OF
ANDERSON ROAD QUARRY SITE - ROAD IMPROVEMENT WORKS
Tentative Impact Water Quality, Air Quality and Noise Monitoring Schedule
May 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2-May	3-May WQM NM	4-May	5-May WQM NM	6-May NM AQM	7-May WQM NM	8-May
9-May	10-May WQM	11-May NM	12-May WQM NM AQM	13-May NM	14-May WQM	15-May
16-May	17-May WQM NM	18-May AQM	19-May	20-May WQM NM	21-May	22-May WQM
23-May	24-May WQM NM AQM	25-May	26-May WQM	27-May NM	28-May WQM	29-May AQM
30-May	31-May WQM NM					

Remark:

- WQM: Water Quality Monitoring
 AQM: Air Quality Monitoring
 NM: Noise monitoring is scheduled at the beginning of each week

2. Monitoring Location:

Inland Water	Station	Description
Channelized nullah across the project site	E	Upstream Control Station
	F	Downstream Impact Station
	AC1	Upstream Control Station
	AC2	Upstream Control Station
	AC3	Upstream Control Station
Ma Yau Tong Stream	H	Upstream Control Station
	I	Downstream Impact Station

- The interval between 2 sets of monitoring should not be less than 36 hours



SERVICE CONTRACT NO. EDO/01/2017
ENVIRONMENTAL TEAM FOR DEVELOPMENT OF
ANDERSON ROAD QUARRY SITE - ROAD IMPROVEMENT WORKS
Tentative Impact Water Quality, Air Quality and Noise Monitoring Schedule
June 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jun	2-Jun WQM	3-Jun	4-Jun WQM AQM	5-Jun
6-Jun	7-Jun WQM NM	8-Jun	9-Jun WQM	10-Jun AQM	11-Jun WQM	12-Jun
13-Jun	14-Jun	15-Jun WQM NM	16-Jun AQM	17-Jun WQM	18-Jun	19-Jun WQM
20-Jun	21-Jun WQM NM	22-Jun AQM	23-Jun WQM	24-Jun	25-Jun WQM	26-Jun
27-Jun	28-Jun WQM NM AQM					

Remark:

1. WQM: Water Quality Monitoring

AQM: Air Quality Monitoring

NM: Noise monitoring is scheduled at the beginning of each week

2. Monitoring Location:

Inland Water	Station	Description
Channelized nullah across the project site	E	Upstream Control Station
	F	Downstream Impact Station
	AC1	Upstream Control Station
	AC2	Upstream Control Station
	AC3	Upstream Control Station
Ma Yau Tong Stream	H	Upstream Control Station
	I	Downstream Impact Station

3. The interval between 2 sets of monitoring should not be less than 36 hours



Appendix 5.2

Noise Monitoring Results and Graphical Presentations



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: NMC-01 - G/F, Kei Shun Special School

Date	Weather	Time	Measurement Noise Level			Average Noise Level	Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq	Leq
			Unit: dB(A), (5-min)			Unit: dB(A), (30-min)			
3 May 2021	Cloudy	10:15	70.0	72.7	64.8	71	69.3	65	70
		10:20	70.1	71.9	67.1				
		10:25	71.3	73.3	67.0				
		10:30	71.0	72.7	68.3				
		10:35	71.3	73.1	68.9				
		10:40	70.3	72.3	66.6				
11 May 2021	Fine	08:15	75.5	81.0	68.5	75	69.3	73	70
		08:20	75.3	80.6	68.7				
		08:25	74.5	80.1	68.6				
		08:30	74.5	80.0	68.4				
		08:35	73.7	79.9	69.0				
		08:40	73.5	79.5	68.7				
17 May 2021	Fine	09:00	69.9	71.8	66.2	70	69.3	59	70
		09:05	69.3	71.4	66.3				
		09:10	69.6	71.7	65.2				
		09:15	69.5	71.5	65.0				
		09:20	69.9	71.5	67.6				
		09:25	69.7	71.4	65.8				
24 May 2021	Fine	10:30	68.6	71.4	64.1	70	69.3	63	70
		10:35	69.8	71.6	66.8				
		10:40	70.4	72.2	68.2				
		10:45	70.2	72.2	68.4				
		10:50	70.2	72.2	68.5				
		10:55	71.3	73.4	69.0				
31 May 2021	Cloudy	09:46	70.3	72.4	67.3	71	69.3	65	70
		09:51	69.5	71.4	66.4				
		09:56	71.5	73.5	68.3				
		10:01	71.0	72.7	68.0				
		10:06	70.1	72.2	67.4				
		10:11	70.6	72.4	68.2				



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: NMC-02 - 3/F podium, Shun Lee Disciplined Services Quarters Block 6

Date	Weather	Time	Measurement Noise Level			Average Noise Level	Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq	Leq
			Unit: dB(A), (5-min)			Unit: dB(A), (30-min)			
3 May 2021	Cloudy	14:30	72.9	74.9	69.6	72	72.0	55	75
		14:35	68.8	72.7	75.3				
		14:40	72.0	74.7	67.4				
		14:45	72.1	74.2	67.6				
		14:50	72.9	75.1	69.0				
		14:55	72.6	75.0	68.6				
11 May 2021	Fine	09:00	72.4	79.8	70.0	72	72.0	57	75
		09:05	72.5	79.6	69.6				
		09:10	72.6	79.5	68.5				
		09:15	71.0	78.0	68.4				
		09:20	72.1	78.4	68.3				
		09:25	72.0	78.9	68.7				
17 May 2021	Fine	09:40	67.4	68.6	66.1	75	72.0	72	75
		09:45	72.0	74.7	67.4				
		09:50	72.7	75.2	68.2				
		09:55	74.0	76.1	67.6				
		10:00	79.0	83.8	68.7				
		10:05	75.8	80.0	67.5				
24 May 2021	Cloudy	15:20	71.5	74.0	66.3	72	72.0	<Baseline Level	75
		15:25	71.7	74.4	67.1				
		15:30	71.7	74.3	67.1				
		15:35	71.0	73.6	66.5				
		15:40	71.6	74.0	67.0				
		15:45	71.6	74.0	67.1				
31 May 2021	Cloudy	08:59	72.7	74.7	68.4	73	72.0	65	75
		09:04	72.3	74.5	68.6				
		09:09	73.1	75.2	70.3				
		09:14	72.7	74.7	69.3				
		09:19	72.6	74.6	68.5				
		09:24	73.1	75.0	69.6				



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: NMC-03 - G/F, Sienna Garden Block 6

Date	Weather	Time	Measurement Noise Level			Average Noise Level	Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq	Leq
			Unit: dB(A), (5-min)			Unit: dB(A), (30-min)			
3 May 2021	Cloudy	11:30	76.6	79.8	67.8	77	78.2	<Baseline Level	75
		11:35	77.7	80.6	69.6				
		11:40	76.5	80.3	70.2				
		11:45	78.6	81.2	70.6				
		11:50	78.9	81.4	70.5				
		11:55	75.2	78.5	64.5				
7 May 2021	Fine	14:04	78.6	77.7	70.5	78	78.2	<Baseline Level	75
		14:09	78.5	81.0	75.7				
		14:14	79.5	81.9	75.4				
		14:19	77.2	79.4	74.6				
		14:24	77.1	80.0	71.8				
		14:29	77.1	80.4	72.3				
11 May 2021	Fine	09:50	78.5	81.0	78.1	78	78.2	<Baseline Level	75
		09:55	78.0	80.5	77.5				
		10:00	77.8	80.6	71.2				
		10:05	77.6	80.6	71.3				
		10:10	77.5	80.4	71.0				
		10:15	77.5	80.3	71.2				
12 May 2021	Fine	11:25	78.8	80.9	73.6	79	78.2	71	75
		11:30	78.3	81.1	73.7				
		11:35	78.8	82.3	73.6				
		11:40	79.9	82.2	73.8				
		11:45	79.1	81.4	73.6				
		11:50	79.0	81.0	74.1				
17 May 2021	Fine	11:55	77.3	80.2	68.1	77	78.2	<Baseline Level	75
		12:00	77.6	80.7	68.2				
		12:05	75.1	76.9	67.7				
		12:10	76.8	79.5	66.8				
		12:15	76.3	79.3	67.1				
		12:20	76.9	80.5	67.7				
24 May 2021	Fine	12:25	76.6	79.4	65.7	78	78.2	<Baseline Level	75
		12:30	76.8	80.3	67.4				
		12:35	76.6	79.2	65.9				
		12:40	77.0	80.9	66.8				
		12:45	79.0	81.2	74.5				
		12:50	78.9	81.0	74.8				
31 May 2021	Cloudy	10:47	77.5	80.5	71.4	77	78.2	<Baseline Level	75
		10:52	77.3	79.9	70.6				
		10:57	77.1	80.7	69.7				
		11:02	75.8	79.1	69.9				
		11:07	77.4	80.6	70.6				
		11:12	77.5	80.6	70.4				



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: NMC-04 - 3/F Podium, Po Tat Estate Tat Kai House

Date	Weather	Time	Measurement Noise Level			Average Noise Level	Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq	Leq
			Unit: dB(A), (5-min)			Unit: dB(A), (30-min)			
3 May 2021	Cloudy	15:15	64.5	65.7	63.3	64	66.6	<Baseline Level	75
		15:20	63.9	65.0	62.8				
		15:25	63.9	65.2	62.7				
		15:30	65.6	68.1	63.8				
		15:35	64.2	65.0	62.9				
		15:40	64.1	65.0	63.0				
11 May 2021	Fine	10:35	65.0	68.0	62.5	66	66.6	<Baseline Level	75
		10:40	64.5	68.5	63.0				
		10:45	64.6	68.7	62.6				
		10:50	66.0	68.3	62.3				
		10:55	66.5	68.9	62.4				
		11:00	67.0	68.7	62.5				
17 May 2021	Fine	10:00	65.5	68.5	62.5	65	66.6	<Baseline Level	75
		10:05	64.8	68.0	61.5				
		10:10	64.5	67.9	62.0				
		10:15	64.5	67.8	62.5				
		10:20	64.3	67.9	62.1				
		10:25	64.7	67.8	61.8				
24 May 2021	Cloudy	14:25	67.8	69.3	65.1	68	66.6	60	75
		14:30	67.6	69.3	64.3				
		14:35	66.7	69.4	62.9				
		14:40	67.8	69.5	64.5				
		14:45	67.4	68.7	65.2				
		14:50	67.7	68.9	66.2				
31 May 2021	Cloudy	13:07	65.9	67.3	63.9	66	66.6	<Baseline Level	75
		13:12	65.7	67.0	63.6				
		13:17	66.6	67.3	65.1				
		13:22	66.3	67.1	65.4				
		13:27	66.5	67.4	65.1				
		13:32	65.9	66.7	64.8				



Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

Location: NMC-05 - G/F, Hong Wah Court Block B Yee Hong House

Date	Weather	Time	Measurement Noise Level			Average Noise Level Leq	Baseline Level Leq	Construction Noise Level Leq	Limit Level Leq
			Leq	L10	L90				
			Unit: dB(A), (5-min)						
3 May 2021	Cloudy	11:20	79.6	81.8	73.4	75	61.8	75	75
		11:25	80.0	82.4	72.1				
		11:30	70.1	75.8	59.8				
		11:35	62.1	64.0	59.0				
		11:40	61.8	63.8	59.0				
		11:45	63.7	65.6	59.0				
5 May 2021	Cloudy	13:55	79.8	81.1	78.0	78	61.8	78	75
		14:00	78.8	80.8	69.5				
		14:05	77.1	79.9	68.1				
		14:10	76.0	79.7	68.1				
		14:15	78.8	80.6	69.0				
		14:20	79.0	80.3	77.3				
6 May 2021	Fine	14:10	68.0	70.3	67.0	68	61.8	67	75
		14:15	68.6	70.1	66.6				
		14:20	68.0	69.3	66.4				
		14:25	68.3	69.6	66.7				
		14:30	68.4	69.8	66.8				
		14:35	69.2	70.6	67.5				
11 May 2021	Fine	11:15	77.3	79.3	64.7	72	61.8	72	75
		11:20	76.2	79.5	64.2				
		11:25	64.8	68.1	60.6				
		11:30	61.9	64.1	57.4				
		11:35	62.2	64.2	59.0				
		11:40	62.6	64.6	59.4				
13 May 2021	Fine	10:10	69.4	71.3	66.6	75	61.0	75	75
		10:15	76.0	79.0	68.5				
		10:20	79.0	79.9	77.7				
		10:25	78.0	79.1	76.0				
		10:30	69.8	71.0	67.9				
		10:35	70.7	72.4	68.4				
17 May 2021	Fine	11:13	76.1	77.8	67.0	74	61.0	74	75
		11:18	75.5	77.2	67.2				
		11:23	75.2	77.4	62.8				
		11:28	75.2	76.8	63.8				
		11:33	63.1	65.2	58.4				
		11:38	61.8	63.8	58.6				
20 May 2021	Fine	10:40	69.1	70.6	67.1	69	61.0	69	75
		10:45	68.6	69.8	66.7				
		10:50	68.9	70.5	67.1				
		10:55	69.6	71.4	67.5				
		11:00	70.1	71.0	68.7				
		11:05	69.9	71.1	68.4				
24 May 2021	Cloudy	13:30	67.4	69.1	62.6	67	61.0	65	75
		13:35	67.3	69.3	62.7				
		13:40	65.4	66.7	62.1				
		13:45	65.5	67.4	62.6				
		13:50	66.1	68.6	62.4				
		13:55	67.1	69.0	63.2				
27 May 2021	Fine	14:24	71.6	74.4	67.3	71	61.0	70	75
		14:29	71.5	73.6	68.2				
		14:34	71.8	74.2	68.0				
		14:39	70.3	71.7	66.7				
		14:44	68.2	69.8	66.5				
		14:49	68.2	69.3	66.8				
31 May 2021	Fine	14:24	65.5	66.8	63.3	65	61.0	63	75
		14:29	66.2	66.5	62.5				
		14:34	65.6	66.4	62.1				
		14:39	65.2	66.9	62.9				
		14:44	65.1	66.5	61.4				
		14:49	64.3	65.8	62.0				

* Noise monitoring conducted on 5, 6, 20 and 27 May 2021 was measured at 34/F, middle level of Block B

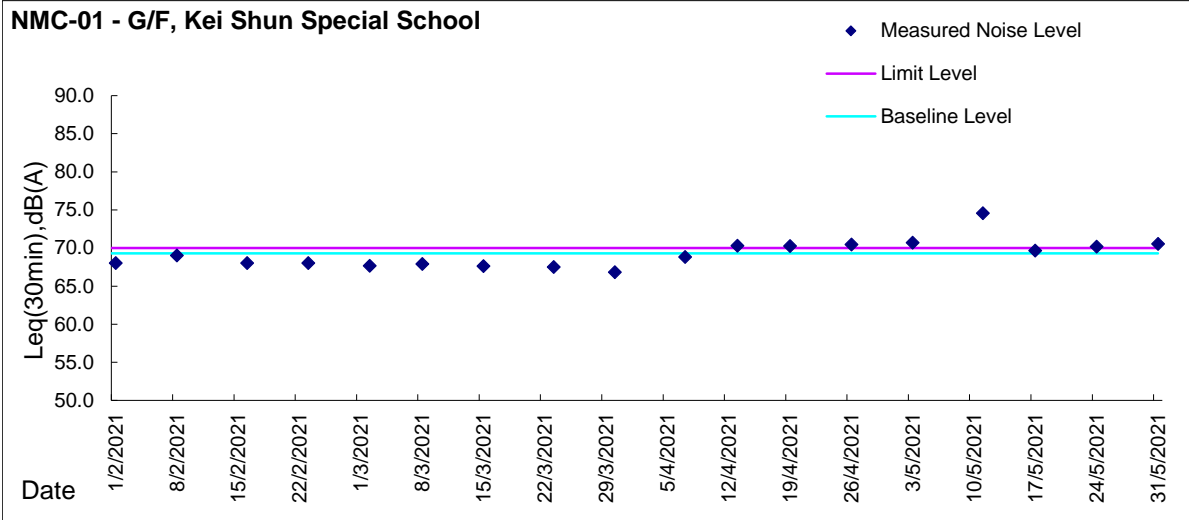
* Noise monitoring conducted on 13 May 2021 was measured at 20/F, middle level of Block B



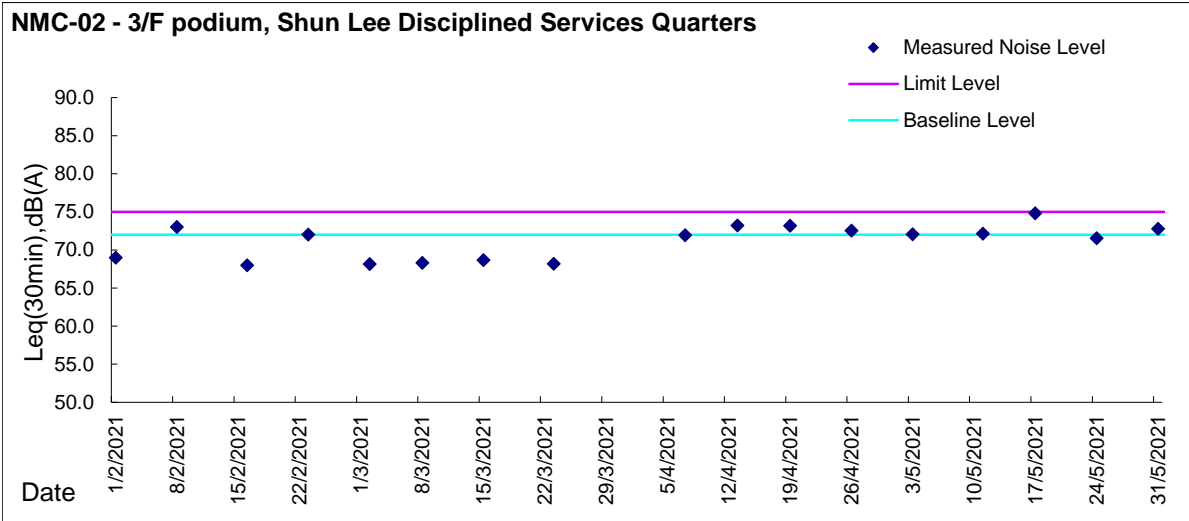
Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

NMC-01 - G/F, Kei Shun Special School



NMC-02 - 3/F podium, Shun Lee Disciplined Services Quarters

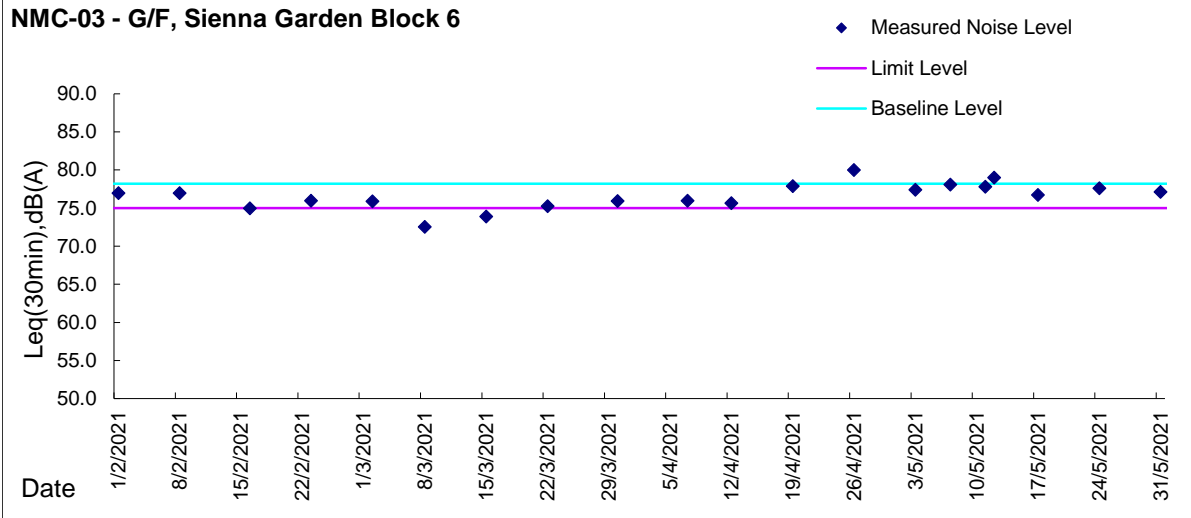




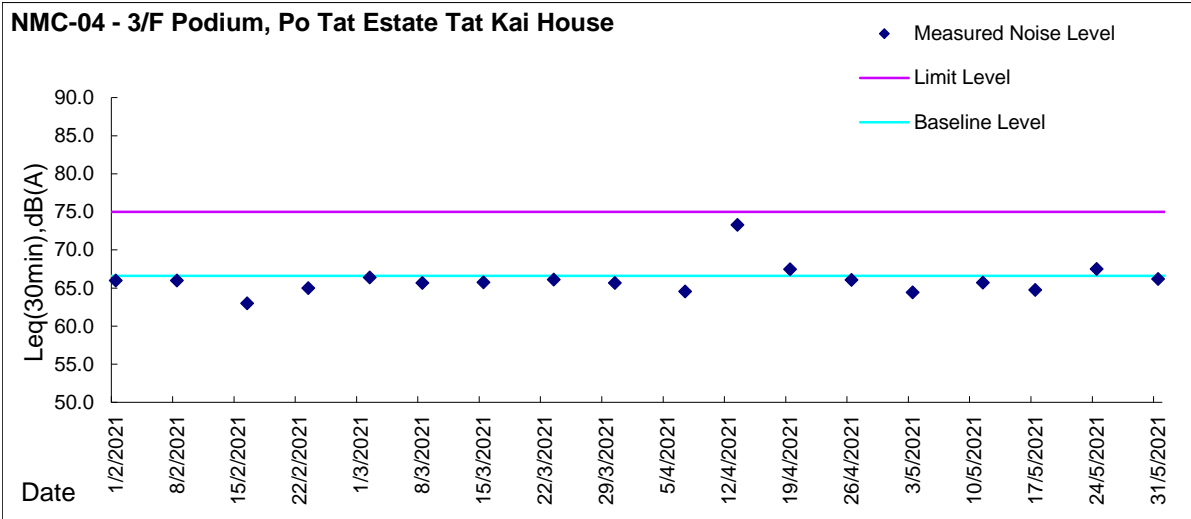
Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)

NMC-03 - G/F, Sienna Garden Block 6



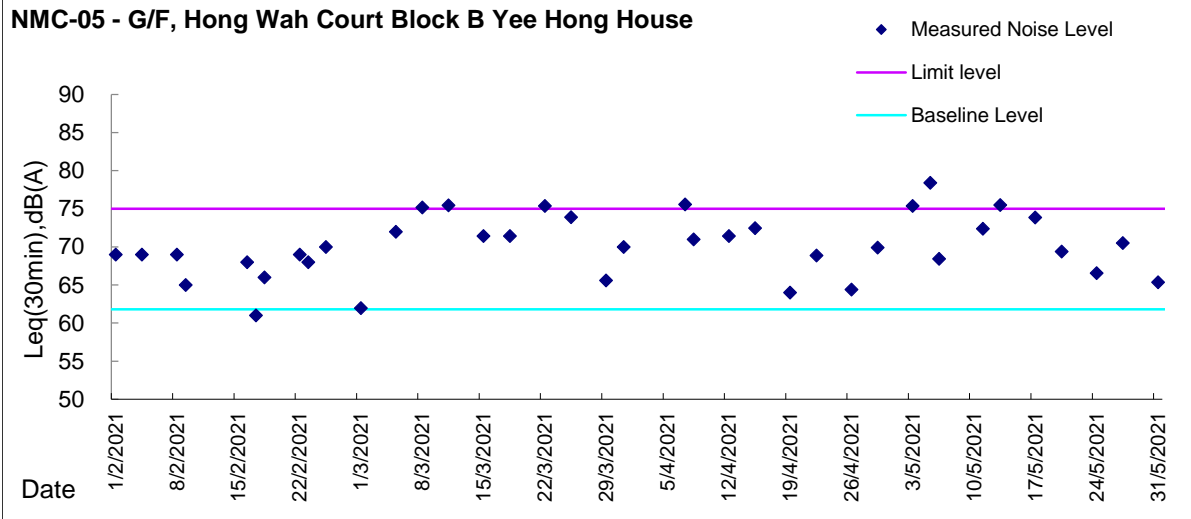
NMC-04 - 3/F Podium, Po Tat Estate Tat Kai House





Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)





Appendix 5.3

Air Quality Monitoring Results and Graphical Presentations



Report on 1-hour TSP monitoring at NCWBR_AMS-1 - Shun Lee Fire Station

Action Level ($\mu\text{g}/\text{m}^3$) - 284.4
Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	10:23	143.7
6-May-21	Fine	13:00	84.5
6-May-21	Fine	14:01	57.7
12-May-21	Fine	10:09	32.0
12-May-21	Fine	13:00	19.5
12-May-21	Fine	14:01	21.8
18-May-21	Fine	10:31	14.0
18-May-21	Fine	13:00	11.6
18-May-21	Fine	14:01	11.5
24-May-21	Fine	9:32	85.2
24-May-21	Fine	10:33	33.3
24-May-21	Fine	13:00	22.5
29-May-21	Fine	8:46	94.8
29-May-21	Fine	9:47	60.4
29-May-21	Fine	10:48	55.6



Report on 1-hour TSP monitoring at NCWBR_AMS-2 - Shun Lee Estate Lee Hang House

Action Level ($\mu\text{g}/\text{m}^3$) - 282.4
Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	8:43	75.7
6-May-21	Fine	9:44	57.5
6-May-21	Fine	10:45	53.9
12-May-21	Fine	9:35	18.6
12-May-21	Fine	10:36	18.6
12-May-21	Fine	13:01	16.2
18-May-21	Fine	9:45	14.8
18-May-21	Fine	10:46	20.7
18-May-21	Fine	13:00	18.1
24-May-21	Fine	8:43	9.9
24-May-21	Fine	9:44	12.0
24-May-21	Fine	10:45	10.9
29-May-21	Fine	8:41	10.8
29-May-21	Fine	9:42	12.4
29-May-21	Fine	10:43	9.1

Report on 1-hour TSP monitoring at NCWBR_AMS-3 - Shun Lee Disciplined Services
 Quarters (Block 6)
 Action Level ($\mu\text{g}/\text{m}^3$) - 287.9
 Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	10:42	45.1
6-May-21	Fine	13:00	31.9
6-May-21	Fine	14:01	24.8
12-May-21	Fine	8:42	11.0
12-May-21	Fine	9:43	12.2
12-May-21	Fine	10:44	13.1
18-May-21	Fine	10:21	7.4
18-May-21	Fine	13:00	8.6
18-May-21	Fine	14:01	8.9
24-May-21	Fine	9:27	11.7
24-May-21	Fine	10:28	10.1
24-May-21	Fine	13:00	8.0
29-May-21	Fine	8:46	12.1
29-May-21	Fine	9:47	13.4
29-May-21	Fine	10:48	12.3



Report on 1-hour TSP monitoring at NCWBR_AMS-4 - Sienna Garden

Action Level ($\mu\text{g}/\text{m}^3$) - 281.6
Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	10:21	48.1
6-May-21	Fine	13:00	45.9
6-May-21	Fine	14:00	38.2
12-May-21	Fine	9:53	13.4
12-May-21	Fine	10:54	24.9
12-May-21	Fine	13:00	31.6
18-May-21	Fine	8:37	8.2
18-May-21	Fine	9:38	14.9
18-May-21	Fine	10:39	16.6
24-May-21	Fine	9:21	15.5
24-May-21	Fine	10:22	23.8
24-May-21	Fine	13:00	10.0
29-May-21	Fine	8:52	20.9
29-May-21	Fine	9:53	19.2
29-May-21	Fine	10:54	30.4

Report on 1-hour TSP monitoring at NCWBR_AMS-5 - Shun Chi Court Shun Fung

House

Action Level ($\mu\text{g}/\text{m}^3$) - 270.0

Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	10:48	73.5
6-May-21	Fine	13:00	49.6
6-May-21	Fine	14:01	39.1
12-May-21	Fine	10:10	17.1
12-May-21	Fine	13:00	13.1
12-May-21	Fine	14:01	15.4
18-May-21	Fine	9:53	43.6
18-May-21	Fine	10:54	27.7
18-May-21	Fine	13:00	34.6
24-May-21	Fine	9:37	98.7
24-May-21	Fine	10:38	28.4
24-May-21	Fine	13:00	31.1
29-May-21	Fine	8:48	19.7
29-May-21	Fine	9:49	92.9
29-May-21	Fine	10:50	89.9



Report on 1-hour TSP monitoring at LTR_AMS-1 - St Edward's Catholic Primary School

Action Level ($\mu\text{g}/\text{m}^3$) - 272.1
Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	9:56	35.7
6-May-21	Fine	13:00	19.9
6-May-21	Fine	14:02	17.0
12-May-21	Fine	9:31	40.0
12-May-21	Fine	10:32	36.1
12-May-21	Fine	13:00	35.6
18-May-21	Fine	9:29	54.6
18-May-21	Fine	10:30	26.1
18-May-21	Fine	13:00	33.1
24-May-21	Fine	9:01	11.5
24-May-21	Fine	10:03	10.7
24-May-21	Fine	13:00	18.9
29-May-21	Fine	8:33	20.7
29-May-21	Fine	9:34	14.7
29-May-21	Fine	10:35	13.2



Report on 1-hour TSP monitoring at LTR_AMS-2 - Environmental Protection
Department's Restored Landfill Site Office
Action Level ($\mu\text{g}/\text{m}^3$) - 281.1
Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	9:28	142.2
6-May-21	Fine	10:29	73.4
6-May-21	Fine	13:00	65.9
12-May-21	Fine	9:53	52.3
12-May-21	Fine	10:54	32.1
12-May-21	Fine	13:00	38.8
18-May-21	Fine	8:50	33.5
18-May-21	Fine	9:51	15.3
18-May-21	Fine	10:52	13.0
24-May-21	Fine	8:59	93.5
24-May-21	Fine	10:00	28.8
24-May-21	Fine	11:01	24.3
29-May-21	Fine	8:28	28.1
29-May-21	Fine	9:29	42.8
29-May-21	Fine	10:30	44.7



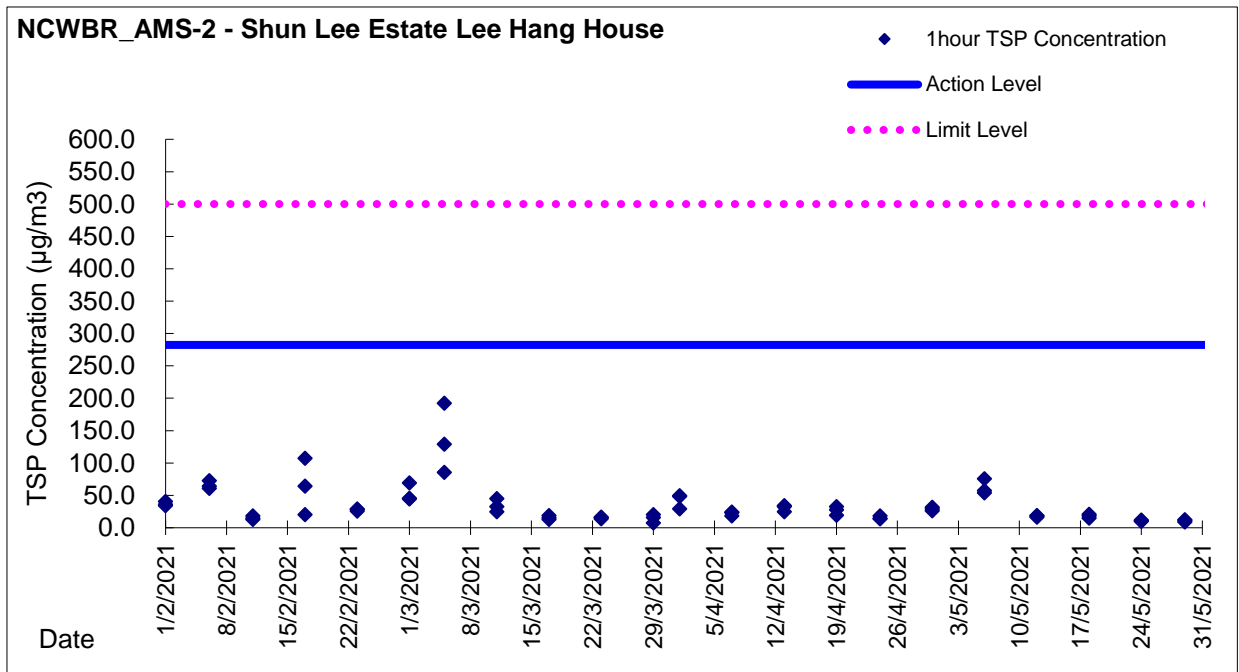
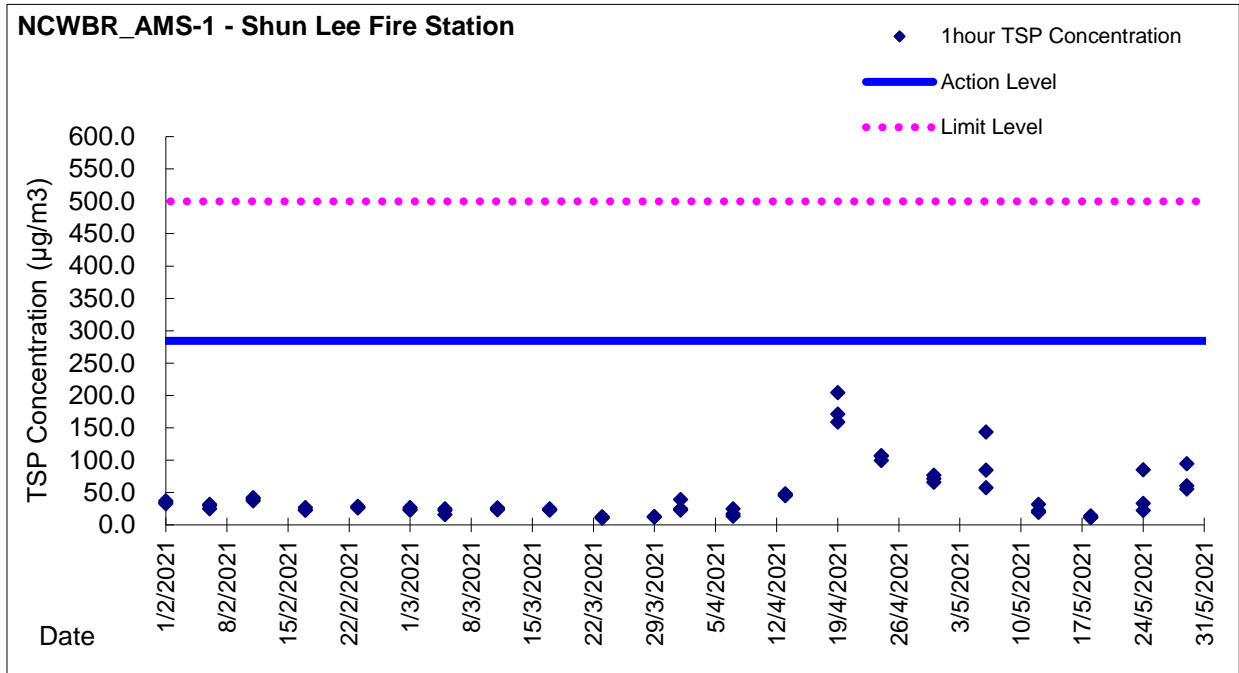
Report on 1-hour TSP monitoring at LTR_AMS-3 - Po Tat Estate Tat Kai House

Action Level ($\mu\text{g}/\text{m}^3$) - 285.1
Limit Level ($\mu\text{g}/\text{m}^3$) - 500.0

Date	Weather Condition	Time	Mass Concentration ($\mu\text{g}/\text{m}^3$)
6-May-21	Fine	9:39	34.8
6-May-21	Fine	10:40	34.2
6-May-21	Fine	13:00	22.6
12-May-21	Fine	9:44	12.1
12-May-21	Fine	10:45	10.6
12-May-21	Fine	13:00	9.1
18-May-21	Fine	9:47	10.1
18-May-21	Fine	10:48	9.3
18-May-21	Fine	13:00	10.3
24-May-21	Fine	8:59	11.1
24-May-21	Fine	10:00	8.2
24-May-21	Fine	11:01	8.3
29-May-21	Fine	8:21	7.0
29-May-21	Fine	9:22	5.3
29-May-21	Fine	10:23	6.2

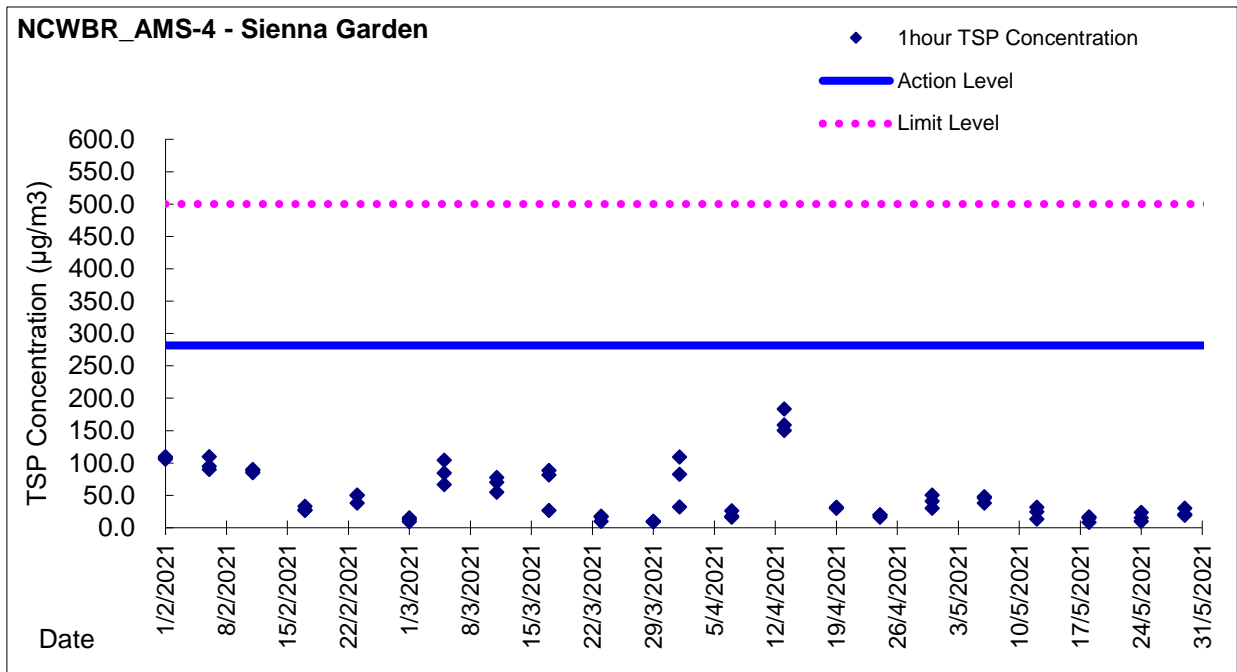
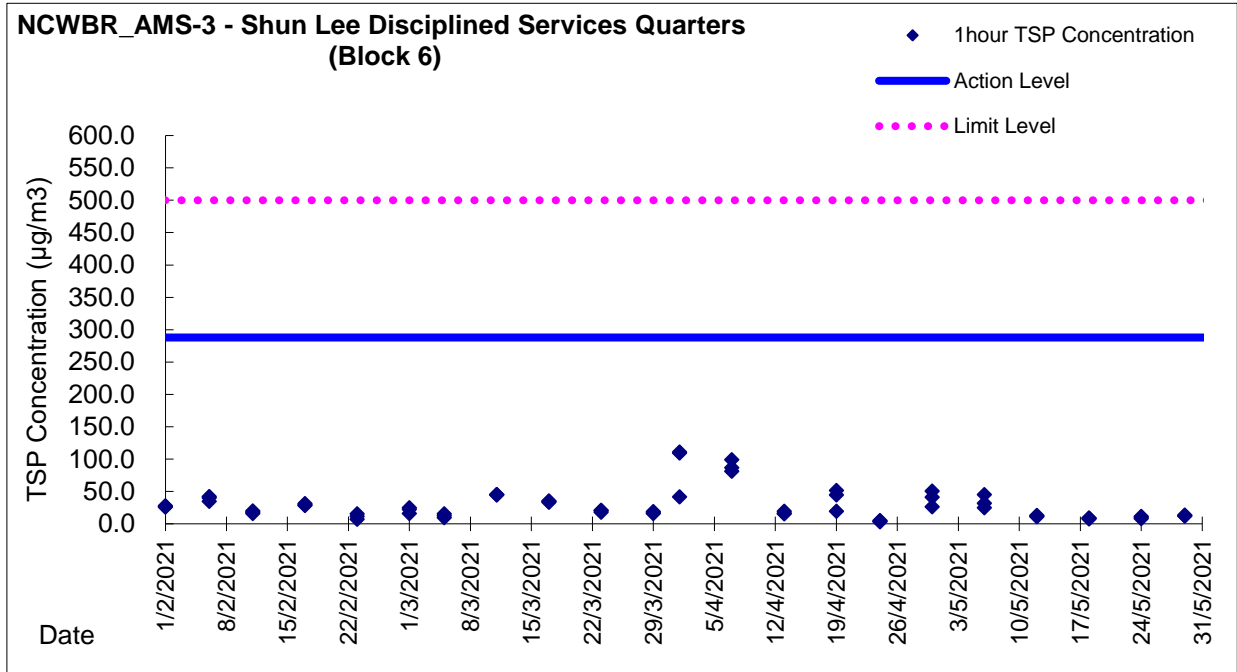


Graphic Presentation of TSP Result



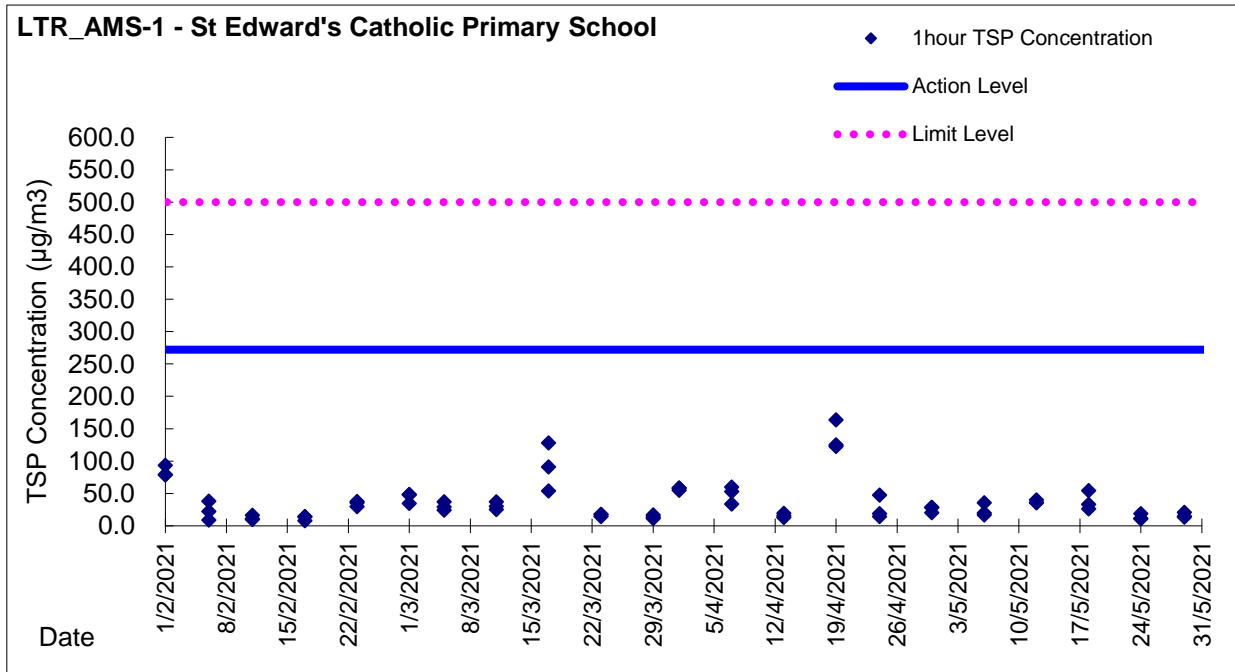
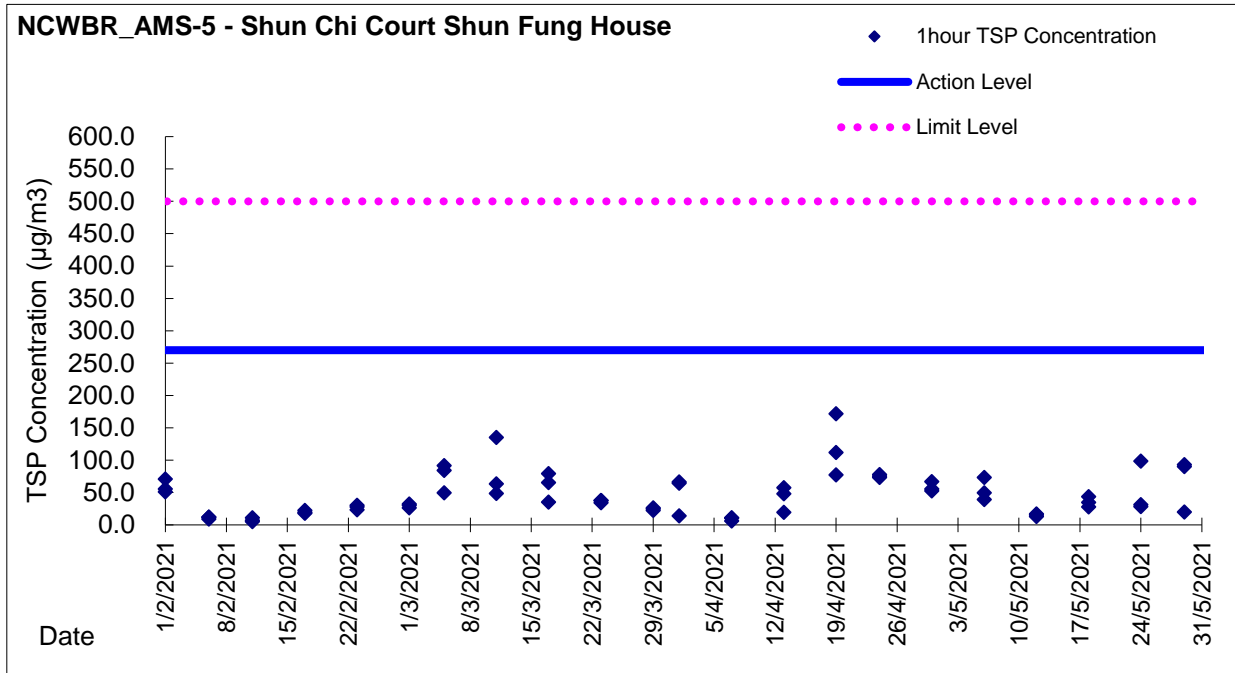


Graphic Presentation of TSP Result



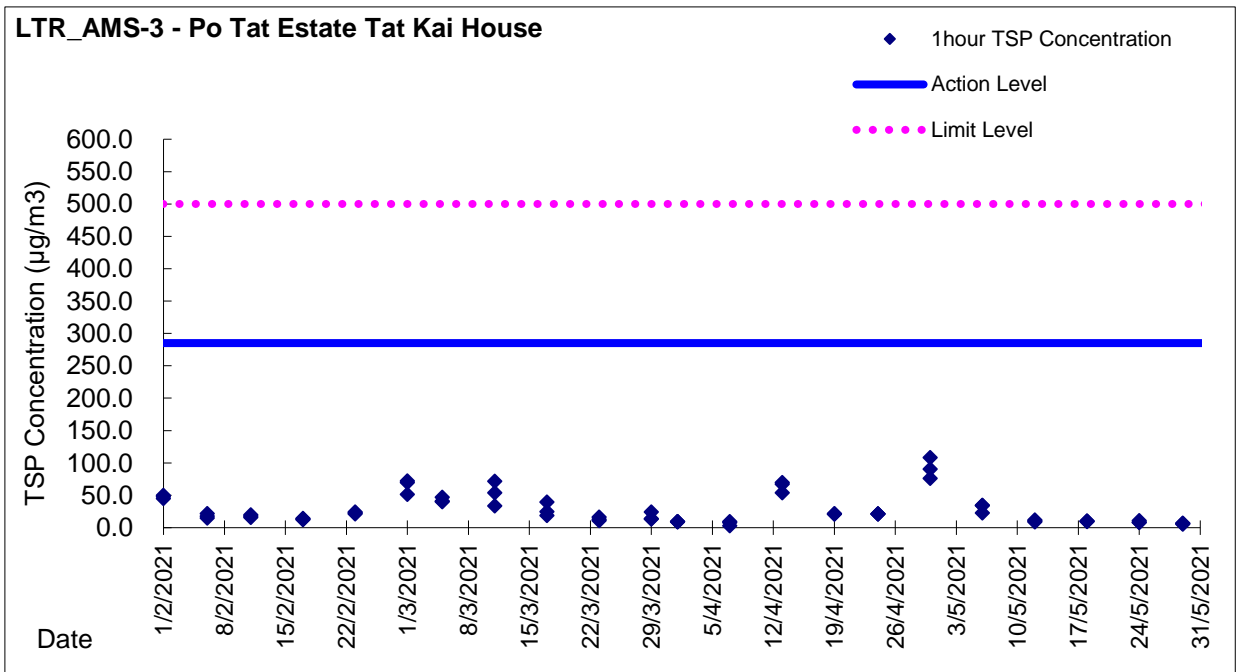
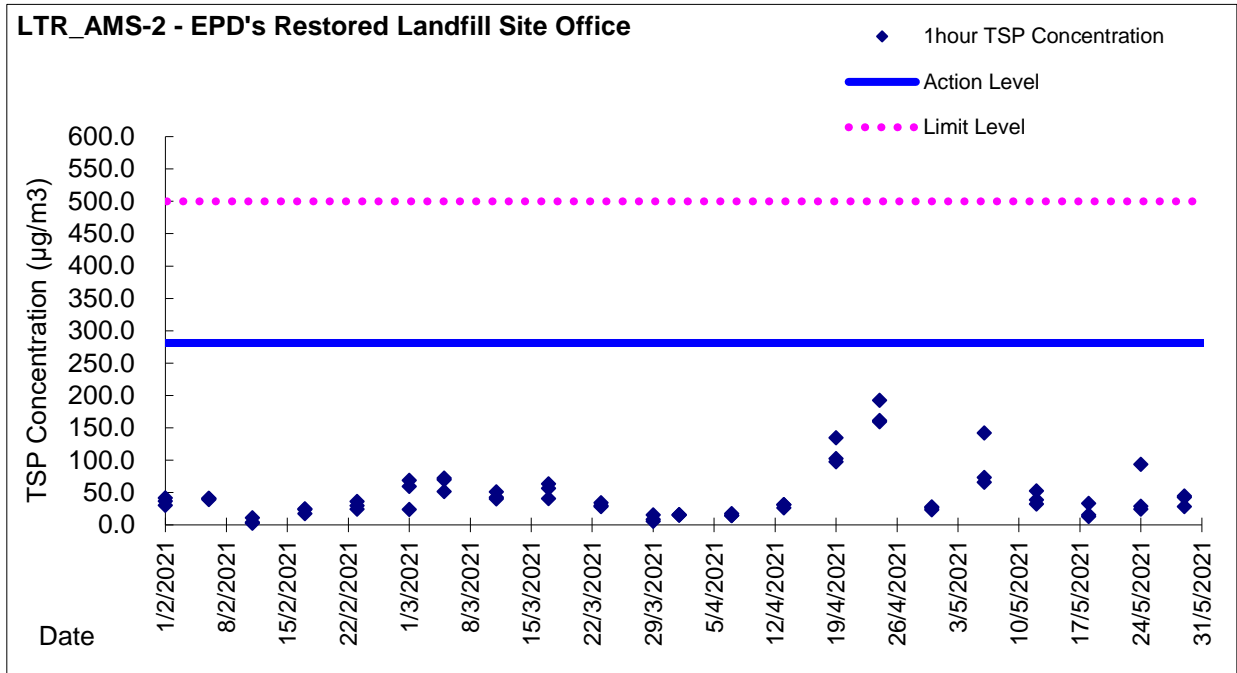


Graphic Presentation of TSP Result





Graphic Presentation of TSP Result





Appendix 5.4

Water Quality Monitoring Results and Graphical Presentations



Water Monitoring Result at Monitoring Station E - Channelized nullah across the Project site (Upstream Control Station)

Date	Time	Weater Condition	Sampling Depth m	Water Temperature °C			pH			Salinity ppt			DO Saturation %			DO mg/L			Turbidity NTU			Suspended Solids mg/L		
				Value	Average		Value	Average		Value	Average		Value	Average		Value	Average		Value	Average		Value	Average	
3/5/2021	- -	Cloudy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26/5/2021	- -	Cloudy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31/5/2021	- -	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Remarks:
 Single underline denotes exceedance over Action Level.
 Double underline denotes exceedance over Limit Level.
 Upstream Monitoring Station (Monitoring Station E) would be taken as control reference for exceedance investigation only.



Water Monitoring Result at Monitoring Station F - Channelized nullah across the Project site (Downstream Impact Station)

Date	Time	Weather Condition	Sampling Depth m	Water Temperature °C			pH			Salinity ppt			DO Saturation %			DO mg/L			Turbidity NTU			Suspended Solids mg/L		
				Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average
3/5/2021	12:00	Cloudy	Surface	23.90	23.90	23.90	7.86	7.86	7.8	0.12	0.12	0.12	111.5	111.9	111.83	9.37	9.46	9.4	4.68	4.58	4.6	8.0	7.6	
	12:02			23.90	23.90		7.81	7.81		0.12	0.12		112.1	111.8		9.50	9.46		4.61	4.66		7.1		
5/5/2021	12:57	Fine	Surface	24.90	24.90	24.95	7.67	7.67	7.7	0.14	0.14	0.14	90.6	90.9	90.58	7.49	7.51	7.5	8.26	8.17	8.2	7.8	8.2	
	12:59			25.00	25.00		7.63	7.63		0.14	0.14		90.7	90.1		7.49	7.44		8.15	8.17		8.6		
7/5/2021	11:12	Fine	Surface	23.40	23.40	23.45	7.64	7.64	7.6	0.13	0.13	0.13	91.0	92.6	92.00	7.73	7.87	7.8	3.67	3.58	3.6	1.4	1.3	
	11:14			23.50	23.50		7.63	7.63		0.13	0.13		92.7	91.7		7.88	7.79		3.56	3.50		1.2		
10/5/2021	16:56	Fine	Surface	26.40	26.40	26.50	8.14	8.14	8.1	0.19	0.19	0.19	79.7	79.4	79.18	6.40	6.37	6.4	2.41	2.39	2.4	1.2	1.2	
	16:58			26.60	26.60		8.13	8.13		0.19	0.19		79.0	78.6		6.33	6.30		2.38	2.38		1.1		
12/5/2021	11:32	Fine	Surface	26.80	26.80	26.85	7.65	7.65	7.7	0.17	0.17	0.17	91.2	91.5	91.50	7.29	7.34	7.3	4.28	4.29	4.3	2.4	2.6	
	11:34			26.90	26.90		7.65	7.65		0.17	0.17		91.6	91.7		7.34	7.35		4.29	4.29		2.7		
14/5/2021	11:30	Fine	Surface	25.40	25.40	25.45	7.53	7.53	7.5	0.19	0.19	0.19	86.0	87.2	85.85	7.05	7.14	7.0	2.74	2.74	2.5	1.5	1.5	
	11:32			25.50	25.50		7.53	7.53		0.19	0.19		85.0	85.2		6.97	6.99		2.24	2.24		1.4		
17/5/2021	11:15	Fine	Surface	28.00	28.00	28.00	7.32	7.32	7.3	0.18	0.18	0.19	109.9	110.0	109.60	8.55	8.57	7.8	5.35	5.55	5.5	4.0	3.9	
	11:17			28.00	28.00		7.32	7.32		0.19	0.19		109.0	109.5		8.48	8.54		5.54	5.58		3.7		
20/5/2021	12:45	Fine	Surface	26.10	26.10	26.20	7.72	7.72	7.7	0.17	0.17	0.17	92.9	94.0	93.38	7.50	7.59	7.5	2.16	2.17	2.2	1.6	1.6	
	12:47			26.30	26.30		7.72	7.72		0.17	0.17		93.8	92.8		7.57	7.49		2.20	2.21		1.6		
22/5/2021	10:25	Fine	Surface	27.10	27.10	27.10	7.84	7.84	7.8	0.10	0.18	0.16	103.4	103.0	102.98	8.16	8.14	8.1	6.54	6.46	6.5	4.9	4.7	
	10:27			27.10	27.10		7.85	7.85		0.18	0.18		102.9	102.6		8.14	8.12		6.41	6.42		4.5		
24/5/2021	11:50	Fine	Surface	27.50	27.50	27.50	7.66	7.66	7.7	0.16	0.16	0.16	94.8	94.6	94.15	7.50	7.47	7.4	7.70	7.70	7.7	4.7	5.0	
	11:52			27.50	27.50		7.66	7.66		0.16	0.16		93.9	93.3		7.42	7.37		7.70	7.70		5.3		
26/5/2021	12:05	Cloudy	Surface	26.30	26.30	26.40	7.32	7.32	7.3	0.19	0.19	0.19	96.7	97.5	97.05	7.77	7.83	7.8	5.70	5.70	5.7	3.8	3.7	
	12:07			26.50	26.50		7.33	7.33		0.19	0.19		97.3	96.7		7.82	7.77		5.61	5.67		3.6		
28/5/2021	11:45	Fine	Surface	26.80	26.80	26.85	7.67	7.67	7.7	0.20	0.20	0.20	92.0	91.5	90.90	7.33	7.19	7.2	18.77	17.58	17.9	1.8	1.6	
	11:47			26.90	26.90		7.67	7.67		0.20	0.20		90.1	90.0		7.17	7.17		17.56	17.56		1.3		
31/5/2021	14:53	Fine	Surface	27.40	27.40	27.45	7.70	7.70	7.7	0.20	0.20	0.20	92.7	92.4	92.00	7.32	7.30	7.3	11.19	11.19	11.2	6.0	5.6	
	14:55			27.50	27.50		7.69	7.69		0.2	0.2		92	90.9		7.27	7.27		11.19	11.19		5.1		

Remarks:
 Single underline denotes exceedance over Action Level.
 Double underline denotes exceedance over Limit Level.



Water Monitoring Result at Monitoring Station H - Ma Yau Tong Stream (Upstream Control Station)

Date	Time	Weather Condition	Sampling Depth m	Water Temperature °C			pH -			Salinity ppt			DO Saturation %			DO mg/L			Turbidity NTU			Suspended Solids mg/L	
				Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Average
				3/5/2021	10:40	Cloudy	Surface	22.70	22.70	22.70	7.64	7.64	7.6	1.38	1.38	1.38	66.4	67.7	67.20	5.68	5.74	5.7	23.12
	10:42	22.70	22.70	7.64	7.64			1.38	1.38		67.6	67.1		5.78	5.74		23.12	23.12		4.5			
5/5/2021	10:45	Fine	Surface	25.00	25.00	25.05	7.31	7.31	7.3	0.82	0.82	0.82	82.8	83.9	83.13	7.49	7.51	7.5	20.41	20.41	20.4	9.4	9.0
	10:47			25.10	25.10		7.31	7.31		0.82	0.82		83.4	82.4		7.49	7.44		20.41	20.41		8.5	
7/5/2021	09:50	Fine	Surface	24.30	24.30	24.35	7.03	7.03	7.0	1.81	18.81	6.06	67.9	68.0	67.78	5.62	5.63	5.6	22.76	22.69	22.7	5.6	5.2
	09:52			24.40	24.40		7.03	7.03		1.81	1.81		67.9	67.3		5.62	5.57		22.67	22.72		4.7	
10/5/2021	14:50	Fine	Surface	29.60	29.60	29.70	7.47	7.47	7.5	1.75	1.75	1.75	56.8	56.6	56.43	4.26	4.27	4.2	7.27	7.27	7.3	3.7	3.8
	14:52			29.80	29.80		7.44	7.44		1.75	1.75		56.4	55.9		4.23	4.17		7.27	7.27		3.9	
12/5/2021	12:00	Fine	Surface	28.10	28.10	28.15	7.23	7.23	7.2	1.51	1.51	1.51	72.4	72.2	71.90	5.60	5.58	5.6	13.20	13.26	13.3	4.8	4.7
	12:02			28.20	28.20		7.24	7.24		1.51	1.51		71.7	71.3		5.55	5.52		13.27	13.28		4.6	
14/5/2021	10:05	Fine	Surface	26.60	26.60	26.15	7.57	7.57	7.6	1.54	1.54	1.54	59.5	60.2	59.68	4.24	4.29	4.3	16.45	16.45	16.5	5.0	4.7
	10:07			25.70	25.70		7.56	7.56		1.54	1.54		59.6	59.4		4.24	4.23		16.46	16.45		4.3	
17/5/2021	10:55	Fine	Surface	28.10	28.10	28.15	7.50	7.50	7.5	1.67	1.67	1.67	65.2	66.7	65.63	5.05	5.16	5.1	17.54	17.54	17.5	6.2	6.4
	10:57			28.20	28.20		7.49	7.49		1.67	1.67		65.7	64.9		5.08	5.02		17.54	17.54		6.5	
20/5/2021	12:00	Fine	Surface	28.60	28.60	28.65	7.16	7.16	7.2	1.57	1.57	1.57	60.8	61.7	61.15	4.66	4.73	4.7	11.72	11.72	11.7	4.8	4.9
	12:02			28.70	28.70		7.16	7.16		1.57	1.57		61.3	60.8		4.70	4.66		11.73	11.73		4.9	
22/5/2021	09:30	Fine	Surface	29.70	29.70	29.73	6.55	6.55	6.6	1.39	1.39	1.39	75.4	75.7	75.13	6.69	5.70	5.9	12.13	12.16	12.1	6.7	6.4
	09:32			29.70	29.80		6.56	6.56		1.39	1.39		74.9	74.5		5.64	5.61		12.14	12.14		6.1	
24/5/2021	12:20	Fine	Surface	29.00	29.00	29.05	7.32	7.32	7.3	1.25	1.25	1.25	85.5	85.1	84.15	6.53	6.50	6.4	11.19	11.19	11.2	3.4	3.6
	12:22			29.10	29.10		7.33	7.33		1.25	1.25		83.0	83.0		6.34	6.34		11.19	11.19		3.7	
26/5/2021	11:15	Cloudy	Surface	27.60	27.60	27.75	8.04	8.04	8.0	0.46	0.46	0.46	91.9	91.9	92.18	7.19	7.20	7.2	41.95	41.92	41.9	26.6	26.6
	11:17			27.90	27.90		8.00	8.00		0.46	0.46		92.7	92.2		7.26	7.20		41.91	41.90		26.6	
28/5/2021	10:35	Fine	Surface	29.00	29.00	29.00	7.52	7.52	7.5	2.03	2.03	2.03	66.8	67.9	67.08	5.09	5.17	5.1	47.91	47.56	47.5	11.7	11.3
	10:37			29.00	29.00		7.52	7.52		2.03	2.03		67.2	66.4		5.12	5.05		47.32	47.26		10.9	
31/5/2021	13:40	Fine	Surface	27.60	27.60	27.60	7.47	7.47	7.5	1.30	1.30	1.30	74.4	74.4	74.35	5.82	5.82	5.8	42.02	42.03	41.9	17.6	18.3
	13:42			27.60	27.60		7.46	7.46		1.3	1.3		74.2	74.4		5.81	5.83		41.71	41.67		18.9	

Remarks:

Single underline denotes exceedance over Action Level.

Double underline denotes exceedance over Limit Level.

Upstream Monitoring Station (Monitoring Station H) would be taken as control reference for exceedance investigation only.



Water Monitoring Result at Monitoring Station I - Ma Yau Tong Stream (Downstream Impact Station)

Date	Time	Weather Condition	Sampling Depth	Water Temperature			pH			Salinity			DO Saturation		DO		Turbidity		Suspended Solids				
				°C			-			ppt			%		mg/L		NTU		mg/L				
				Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average		
3/5/2021	11:00	Cloudy	Surface	23.00	23.00	23.00	7.87	7.87	7.9	0.33	0.33	0.33	96.0	97.5	94.55	8.22	8.36	8.3	5.92	5.94	6.0	2.7	2.7
	11:12			23.00	23.00		7.86	7.86		0.33	0.33		87.9	96.8		8.39	8.29		5.95	5.99		2.6	
5/5/2021	11:10	Fine	Surface	25.70	25.70	25.75	7.64	7.64	7.6	0.33	0.33	0.33	97.9	97.6	97.80	7.94	7.92	7.9	11.84	11.72	11.6	4.4	4.1
	11:12			25.80	25.80		7.63	7.63		0.33	0.33		97.7	98.0		7.93	7.95		11.47	11.41		3.8	
7/5/2021	10:20	Fine	Surface	24.70	24.70	24.65	7.72	7.72	7.7	0.19	0.19	0.20	97.7	96.7	96.23	8.13	8.05	8.0	4.40	4.38	4.4	2.3	2.8
	10:22			24.60	24.60		7.72	7.72		0.20	0.20		95.9	94.6		7.98	7.87		4.35	4.34		3.2	
10/5/2021	15:09	Fine	Surface	27.90	27.90	28.00	8.09	8.09	8.1	0.37	0.37	0.37	85.4	84.9	85.15	6.67	6.64	6.7	2.05	2.02	1.8	1.6	1.9
	15:11			28.10	28.10		8.08	8.08		0.37	0.37		84.6	85.7		6.61	6.71		2.02	1.18		2.1	
12/5/2021	12:25	Fine	Surface	27.80	27.80	27.85	7.71	7.71	7.7	0.30	0.30	0.30	94.0	93.3	93.63	7.36	7.30	7.3	3.75	3.75	3.7	1.6	1.8
	12:27			27.90	27.90		7.71	7.71		0.30	0.30		93.7	93.5		7.32	7.31		3.73	3.73		1.9	
14/5/2021	10:45	Fine	Surface	26.60	26.60	26.65	7.80	7.80	7.8	0.26	0.26	0.26	99.5	99.4	98.70	7.96	7.95	7.9	3.25	3.26	3.3	2.5	2.7
	10:47			26.70	26.70		7.80	7.80		0.26	0.26		98.2	97.7		7.86	7.81		3.26	3.26		2.8	
17/5/2021	11:55	Fine	Surface	28.20	28.20	28.30	7.87	7.87	7.9	0.25	0.25	0.25	94.6	94.4	93.53	7.35	7.33	7.3	4.80	4.86	4.8	2.6	2.6
	11:57			28.40	28.40		7.84	7.84		0.25	0.25		93.5	91.6		7.26	7.11		4.87	4.81		2.6	
20/5/2021	11:40	Fine	Surface	28.10	28.10	28.15	7.62	7.62	7.6	0.24	0.24	0.24	99.8	100.1	99.85	7.79	7.81	7.8	4.65	4.68	4.7	4.0	3.8
	11:42			28.20	28.20		7.62	7.62		0.24	0.24		99.7	99.8		7.80	7.79		4.72	4.94		3.6	
22/5/2021	09:50	Fine	Surface	29.20	29.20	29.20	7.26	7.26	7.3	0.26	0.26	0.26	103.1	103.0	102.83	7.84	7.83	7.8	4.67	4.68	4.7	13.5	13.4
	09:52			29.20	29.20		7.26	7.26		0.26	0.26		102.8	102.4		7.82	7.76		4.66	4.69		13.2	
24/5/2021	12:55	Fine	Surface	28.80	28.80	28.90	7.66	7.66	7.7	0.37	0.37	0.37	97.7	96.6	96.30	7.50	7.42	7.4	3.30	3.34	3.4	1.6	1.6
	12:57			29.00	29.00		7.66	7.66		0.37	0.37		95.5	95.4		7.33	7.33		3.54	3.50		1.6	
26/5/2021	11:35	Cloudy	Surface	27.40	27.40	27.45	7.95	7.95	7.9	0.23	0.23	0.23	96.8	97.7	96.90	7.64	7.71	7.6	12.48	12.49	12.5	6.5	6.8
	11:37			27.50	27.50		7.87	7.87		0.23	0.23		96.6	96.5		7.63	7.61		12.47	12.48		7.0	
28/5/2021	11:00	Fine	Surface	28.50	28.50	28.60	8.04	8.04	8.0	0.42	0.42	0.42	93.5	95.4	94.40	7.28	7.36	7.3	2.61	2.75	4.0	2.2	2.3
	11:02			28.70	28.70		8.03	8.03		0.42	0.42		93.7	95.0		7.29	7.30		2.74	2.73		2.3	
31/5/2021	14:05	Fine	Surface	27.60	27.60	27.60	7.90	7.90	7.9	0.26	0.26	0.26	95.7	96.1	95.30	7.54	7.57	7.5	32.89	32.89	32.9	28.1	29.0
	14:07			27.60	27.60		7.89	7.89		0.25	0.25		95	94.4		7.48	7.43		32.89	32.89		29.9	

Remarks:
 Single underline denotes exceedance over Action Level.
 Double underline denotes exceedance over Limit Level.



Water Monitoring Result at Monitoring Station AC1 - Channelized nullah across the Project site (Upstream Reference Station)

Date	Time	Weather Condition	Sampling Depth m	Water Temperature °C		pH		Salinity ppt		DO Saturation %		DO mg/L		Turbidity NTU		Suspended Solids mg/L	
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average		
3/5/2021	-	Cloudy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
24/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/5/2021	-	Cloudy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-
31/5/2021	-	Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:

Upstream Monitoring Station (Monitoring Station AC1) would be taken as reference for exceedance investigation only.



Water Monitoring Result at Monitoring Station AC2 - Channelized nullah across the Project site (Upstream Reference Station)

Date	Time	Water Condition	Sampling Depth m	Water Temperature °C			pH			Salinity ppt			DO Saturation %			DO mg/L			Turbidity NTU			Suspended Solids mg/L	
				Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value
3/5/2021	12:20	Cloudy	Surface	23.40	23.40	23.65	7.59	7.59	7.6	0.15	0.15	0.15	110.3	110.2	110.40	9.39	9.39	9.4	2.36	2.38	2.4	36.8	21.0
	12:22			23.90	23.90		7.59	7.59		0.15	0.15		110.1	111.0		9.34	9.45		2.34	2.34		5.2	
5/5/2021	11:40	Fine	Surface	25.50	25.50	25.65	7.71	7.71	7.7	0.11	0.11	0.11	96.8	99.4	98.00	7.90	8.11	8.0	11.19	11.21	11.4	44.2	43.4
	11:42			25.80	25.80		7.71	7.71		0.11	0.11		98.8	97.0		8.04	7.91		11.56	11.61		42.6	
7/5/2021	10:50	Fine	Surface	24.30	24.30	24.25	7.67	7.67	7.7	0.10	0.10	0.10	92.3	92.0	92.70	7.74	7.72	7.8	12.03	12.00	12.0	95.3	98.7
	10:52			24.20	24.20		7.66	7.66		0.10	0.10		93.3	93.2		7.93	7.82		11.99	11.95		102	
10/5/2021	17:30	Fine	Surface	25.00	25.00	25.05	8.21	8.21	8.2	0.17	0.17	0.17	83.4	82.8	82.50	6.87	6.82	6.8	4.89	4.86	4.9	24.7	18.1
	17:32			25.10	25.10		8.18	8.18		0.17	0.17		82.0	81.8		6.74	6.73		4.85	4.84		11.5	
12/5/2021	11:15	Fine	Surface	27.70	27.70	27.70	7.50	7.50	7.5	0.10	0.10	0.10	92.3	91.7	91.13	7.28	7.23	7.2	14.21	14.22	14.3	20.5	22.0
	11:17			27.70	27.70		7.50	7.50		0.10	0.10		90.6	89.9		7.14	7.08		14.31	14.36		23.4	
14/5/2021	11:15	Fine	Surface	26.40	26.40	26.45	7.70	7.70	7.7	0.10	0.10	0.10	85.0	86.2	85.75	6.84	6.93	6.9	33.81	33.89	33.9	92.6	94.2
	11:17			26.50	26.50		7.69	7.69		0.10	0.10		84.5	87.3		6.80	7.02		33.99	33.99		95.7	
17/5/2021	12:35	Fine	Surface	28.10	28.10	28.10	7.58	7.58	7.6	0.11	0.11	0.11	101.2	101.5	100.73	7.91	7.93	7.9	7.52	7.50	7.5	3.4	9.1
	12:37			28.10	28.10		7.58	7.58		0.11	0.11		100.2	100.0		7.84	7.83		7.49	7.48		14.7	
20/5/2021	12:25	Fine	Surface	28.20	28.20	28.25	7.93	7.93	7.9	0.13	0.13	0.13	87.9	89.5	88.65	6.85	6.97	6.9	8.08	8.08	7.7	33.0	34.1
	12:27			28.30	28.30		7.93	7.93		0.13	0.13		89.0	88.2		6.93	6.86		7.38	7.17		35.1	
22/5/2021	10:40	Fine	Surface	26.40	26.40	26.40	7.98	7.98	8.0	0.13	0.13	0.13	91.7	90.9	91.25	7.38	7.32	7.3	3.77	3.79	3.8	5.5	5.2
	10:42			26.40	26.40		7.96	7.96		0.13	0.13		91.3	91.1		7.35	7.33		3.78	3.78		4.9	
24/5/2021	11:30	Fine	Surface	28.80	28.80	28.90	7.71	7.71	7.7	0.11	0.11	0.11	90.2	89.5	89.03	6.96	6.90	6.9	191.70	190.10	189.9	279	281.5
	11:32			29.00	29.00		7.72	7.72		0.11	0.11		88.2	88.2		6.79	6.79		189.20	188.50		284	
26/5/2021	12:20	Cloudy	Surface	27.20	27.20	27.25	7.27	7.27	7.3	0.12	0.12	0.12	87.7	88.1	88.80	6.95	6.98	7.0	86.64	86.61	86.6	86.3	88.4
	12:22			27.30	27.30		7.27	7.27		0.12	0.12		89.6	89.8		7.09	7.11		86.68	86.60		90.4	
28/5/2021	11:30	Fine	Surface	27.70	27.70	27.65	7.78	7.78	7.8	0.12	0.12	0.12	93.5	93.5	92.90	7.37	7.37	7.3	57.89	58.97	56.5	80.2	84.0
	11:32			27.60	27.60		7.73	7.73		0.12	0.12		92.9	91.7		7.32	7.22		55.91	53.42		87.8	
31/5/2021	14:35	Fine	Surface	27.00	27.00	27.00	7.74	7.74	7.7	0.12	0.12	0.12	92.3	92.3	91.78	7.35	7.35	7.3	82.60	82.45	82.4	135.0	197.0
	14:37			27.00	27.00		7.72	7.72		0.12	0.12		91.6	90.9		7.29	7.24		82.30	82.15		259	

Remarks:

Upstream Monitoring Station (Monitoring Station AC2) would be taken as reference for exceedance investigation only.



Water Monitoring Result at Monitoring Station AC3 - Channelized nullah across the Project site (Upstream Reference Station)

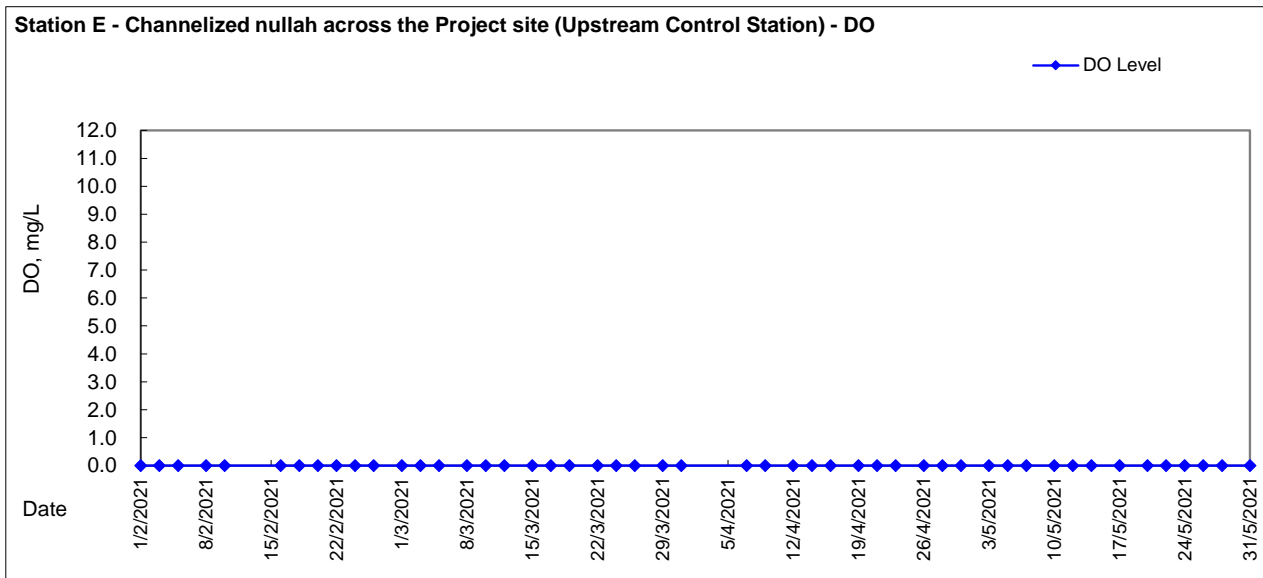
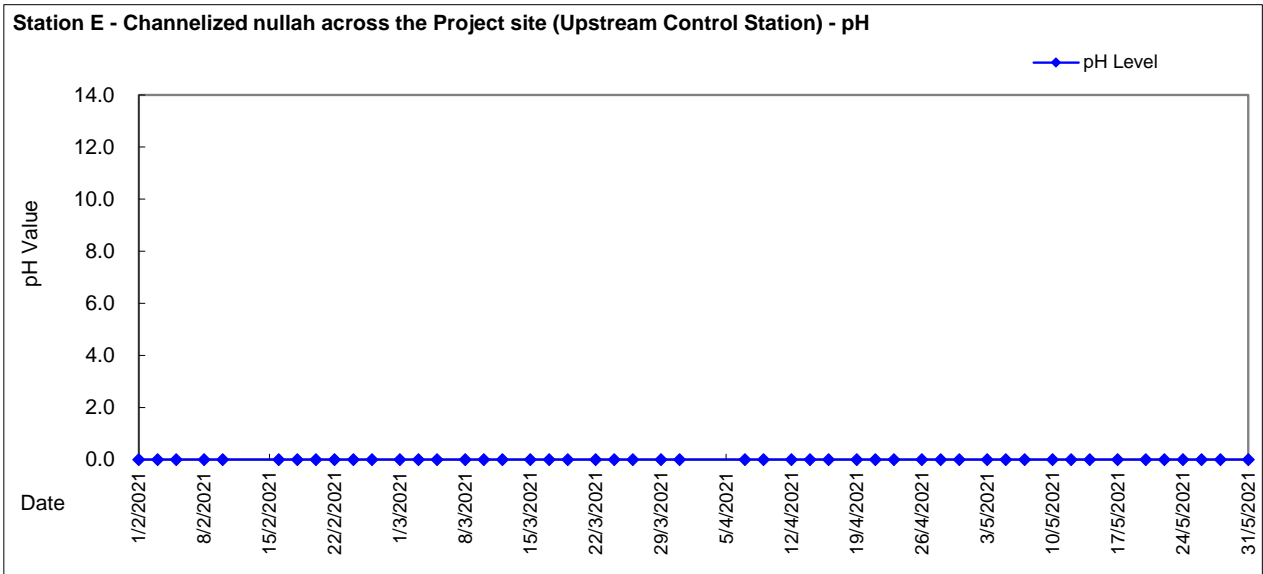
Date	Time	Weather Condition	Sampling Depth m	Water Temperature °C			pH			Salinity ppt			DO Saturation %			DO mg/L			Turbidity NTU			Suspended Solids mg/L	
				Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Value	Average	Value	Average
				3/5/2021	12:10	Cloudy	Surface	23.80	23.80	23.80	7.50	7.50	7.5	0.24	0.24	0.24	110.6	110.0	110.48	9.41	9.35	9.4	6.52
	12:10	23.80	23.80	7.52	7.52			0.24	0.24		110.4	110.9		9.33	9.44		6.49	6.46		2.4			
5/5/2021	11:47	Fine	Surface	25.00	25.00	25.05	7.60	7.60	7.6	0.11	0.11	0.11	89.7	89.8	87.93	7.34	7.40	7.3	6.31	6.18	6.2	3.4	4.0
	11:49			25.10	25.10		7.59	7.59		0.11	0.11		89.8	82.4		7.39	7.20		6.07	6.07		4.5	
7/5/2021	11:05	Fine	Surface	23.70	23.70	23.75	7.56	7.56	7.6	0.22	0.22	0.22	84.1	86.2	85.65	7.10	7.28	7.2	11.37	11.31	11.3	6.4	6.4
	11:07			23.80	23.80		7.55	7.55		0.22	0.22		86.5	85.8		7.31	7.25		11.27	11.30		6.3	
10/5/2021	17:02	Fine	Surface	25.40	25.40	25.50	8.04	8.04	8.0	0.26	0.26	0.26	78.7	78.7	78.58	6.43	6.43	6.4	10.21	10.21	10.2	24.4	25.0
	17:04			25.60	25.60		8.05	8.05		0.26	0.26		78.3	78.6		6.40	6.42		10.16	10.14		25.6	
12/5/2021	11:23	Fine	Surface	27.00	27.00	27.00	7.59	7.59	7.6	0.15	0.15	0.15	97.4	98.4	97.00	7.77	7.84	7.7	6.18	6.19	6.2	2.7	3.1
	11:25			27.00	27.00		7.59	7.59		0.15	0.15		96.8	95.4		7.71	7.60		6.20	6.20		3.4	
14/5/2021	11:20	Fine	Surface	26.00	26.00	26.10	7.54	7.54	7.5	0.31	0.31	0.31	86.1	85.0	85.93	6.97	6.87	6.9	8.02	8.07	8.0	5.5	5.8
	11:22			26.20	26.20		7.50	7.50		0.31	0.31		86.5	86.1		6.90	6.97		8.02	8.02		6.1	
17/5/2021	11:25	Fine	Surface	27.30	27.30	27.35	7.57	7.57	7.6	0.31	0.31	0.33	98.9	98.7	98.45	7.81	7.79	7.8	4.26	4.20	4.2	7.7	8.0
	11:27			27.40	27.40		7.53	7.53		0.34	0.34		98.2	98.0		7.76	7.73		4.18	4.19		8.2	
20/5/2021	12:35	Fine	Surface	27.20	27.20	27.30	7.82	7.82	7.7	0.16	0.16	0.25	88.3	89.2	93.43	7.02	7.09	7.4	2.17	2.18	3.2	2.4	5.3
	12:37			27.20	27.80		7.83	7.82		0.16	0.16		89.0	86.9		7.07	6.90		2.21	2.22		2.4	
22/5/2021	10:35	16:48	Surface	26.50	26.50	26.93	8.22	8.22	8.0	0.18	0.18	0.17	99.1	98.9	93.49	7.95	7.93	7.5	4.56	4.52	3.4	4.7	3.6
	10:37			26.50	26.50		8.20	8.20		0.18	0.18		98.6	97.9		7.91	7.86		4.51	4.49		4.9	
24/5/2021	11:40	Fine	Surface	27.50	27.50	27.50	7.67	7.67	7.7	0.12	0.12	0.12	90.2	91.0	90.90	7.12	7.18	7.2	7.84	7.82	7.8	4.7	4.6
	11:42			27.50	27.50		7.68	7.68		0.12	0.12		91.4	91.0		7.21	7.18		7.81	7.81		4.5	
26/5/2021	12:15	Cloudy	Surface	26.80	26.80	26.85	7.28	7.28	7.3	0.23	0.23	0.23	95.7	95.7	95.30	7.64	7.64	7.6	10.74	10.68	10.7	8.0	8.1
	12:17			26.90	26.90		7.28	7.28		0.23	0.23		95.2	94.6		7.59	7.62		10.69	10.72		8.2	
28/5/2021	11:35	Fine	Surface	27.00	27.00	27.00	7.65	7.65	7.7	0.18	0.18	0.18	87.7	87.7	87.58	6.98	6.99	7.0	15.55	15.54	15.3	2	2.4
	11:37			27.00	27.00		7.65	7.65		0.18	0.18		87.5	87.4		6.97	6.86		15.02	15.01		2.8	
31/5/2021	14:43	Fine	Surface	27.40	27.40	27.40	7.72	7.72	7.7	0.11	0.11	0.11	93.1	93.3	92.83	7.36	7.37	7.3	56.62	56.62	56.6	30.0	29.1
	14:45			27.40	27.40		7.71	7.71		0.11	0.11		92.9	92.0		7.34	7.27		56.62	56.60		28.2	

Remarks:

Upstream Monitoring Station (Monitoring Station AC3) would be taken as reference for exceedance investigation only.

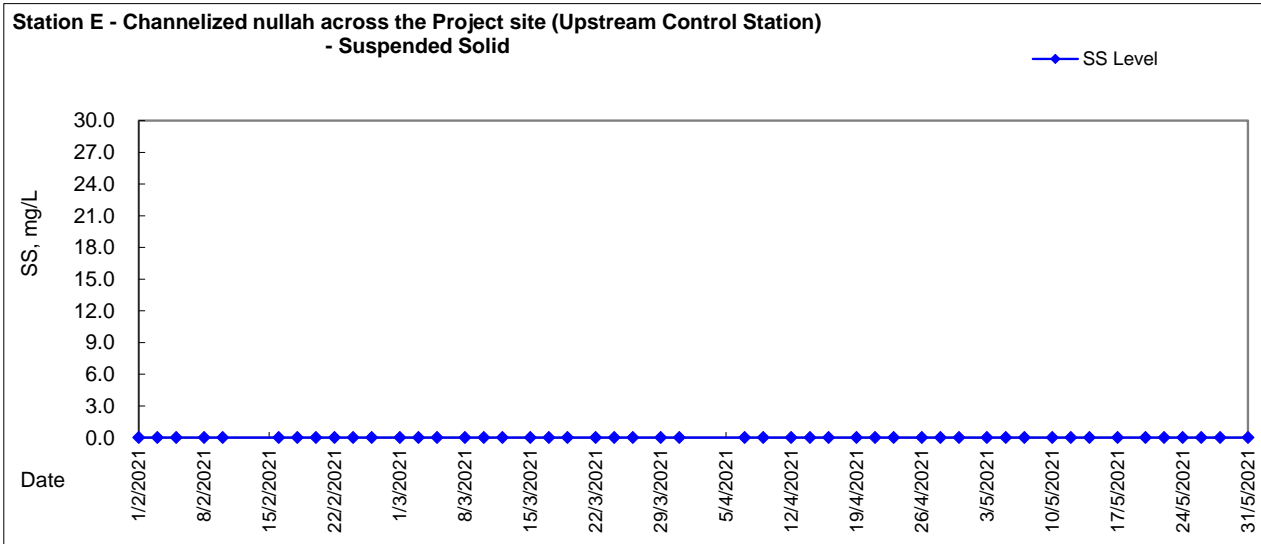
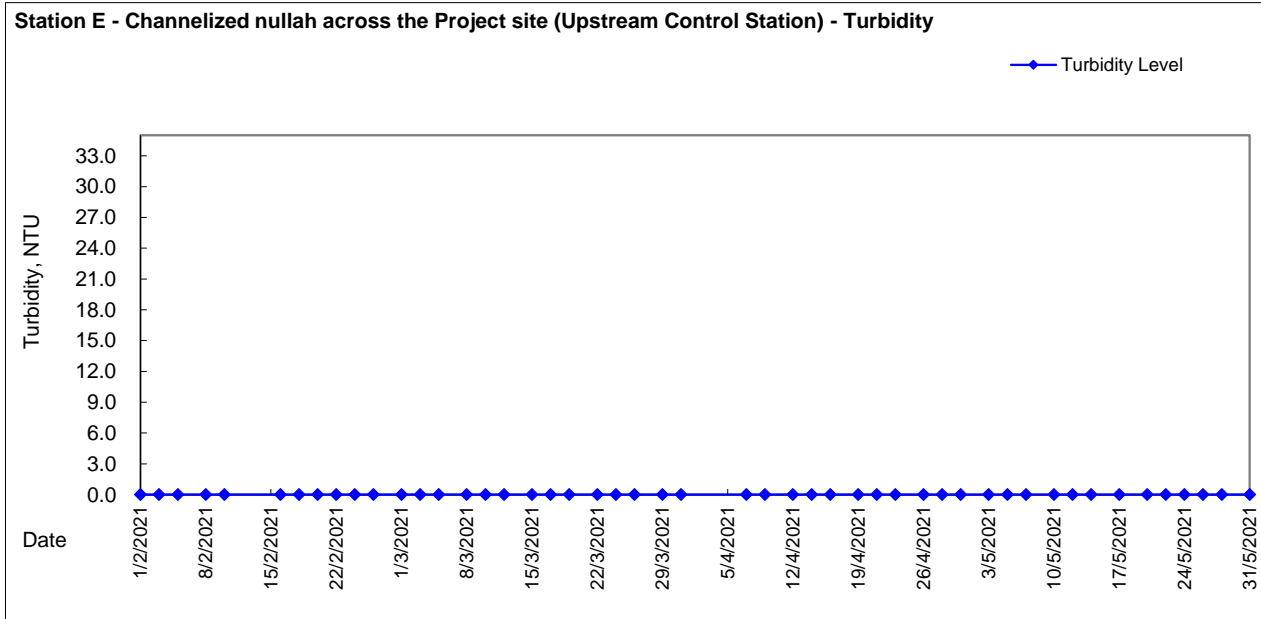


Graphic Presentation of WQM Result



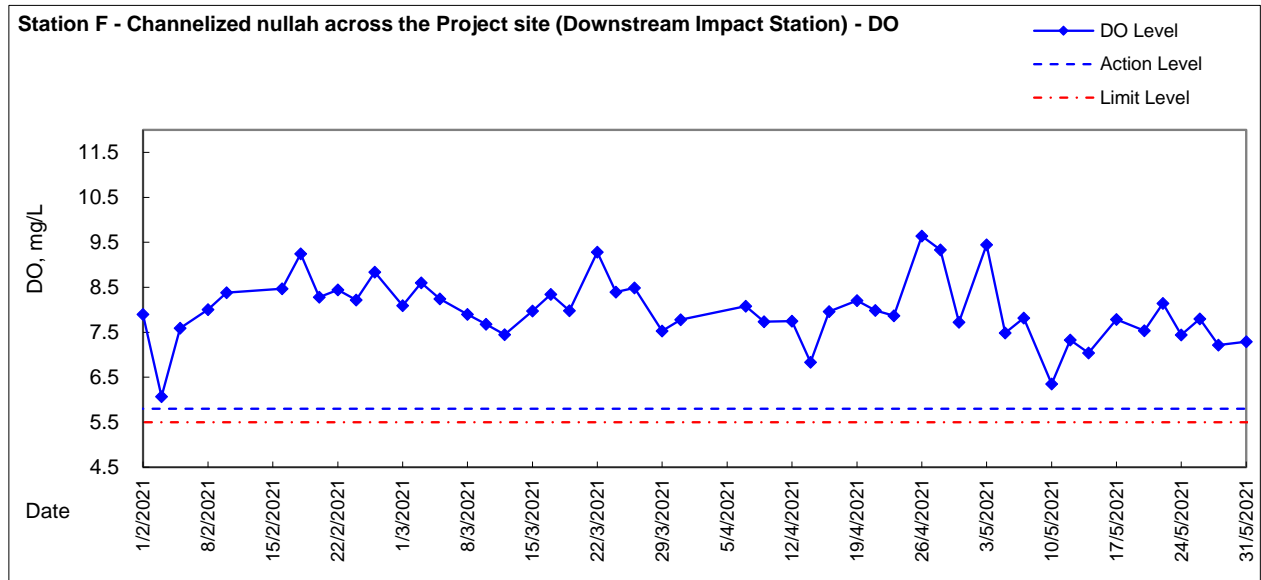
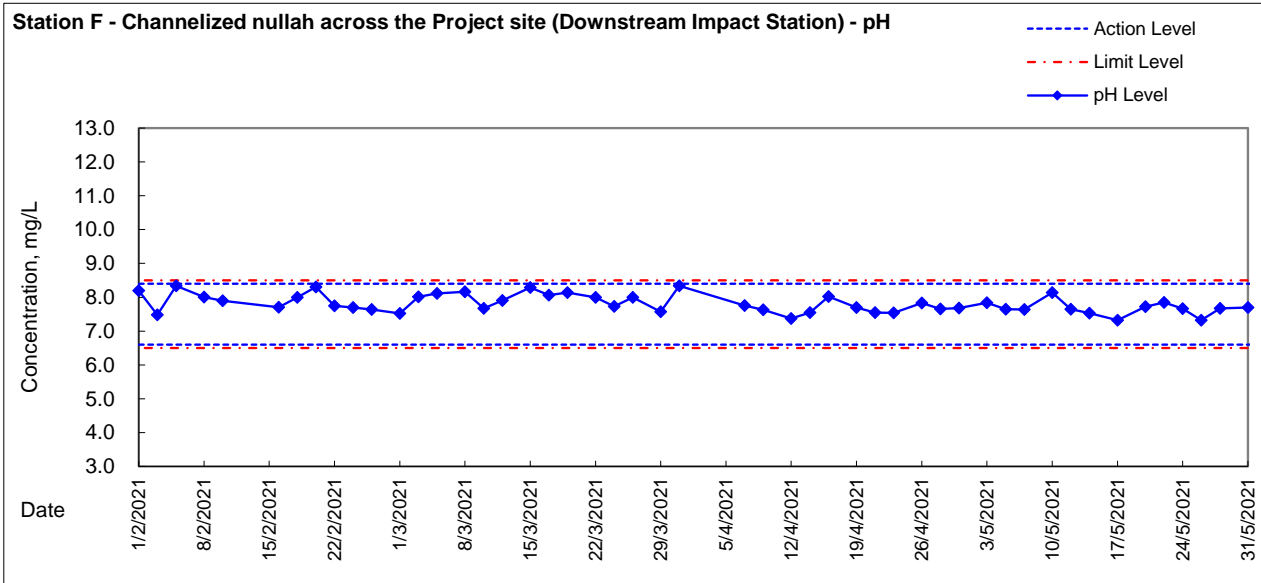


Graphic Presentation of WQM Result



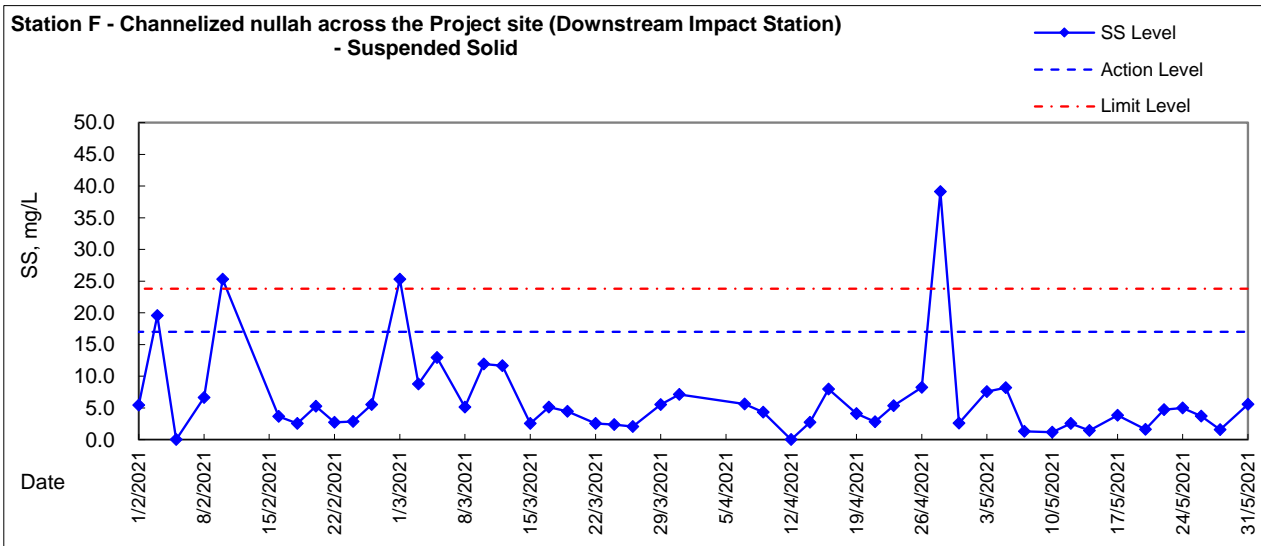
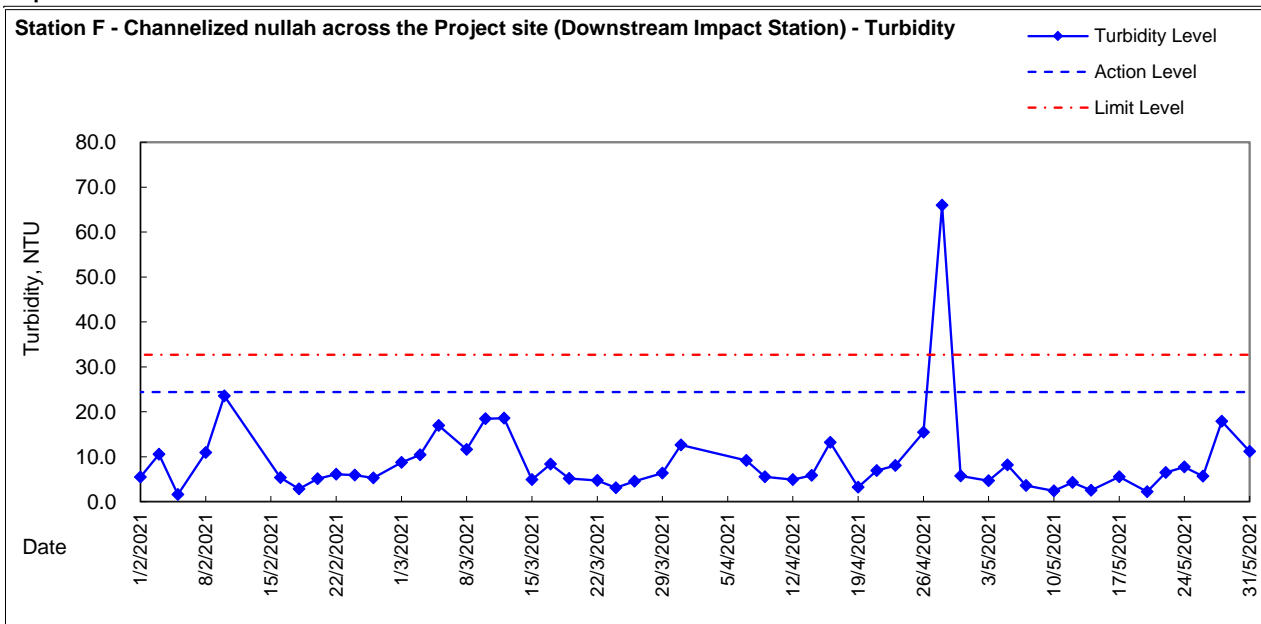


Graphic Presentation of WQM Result



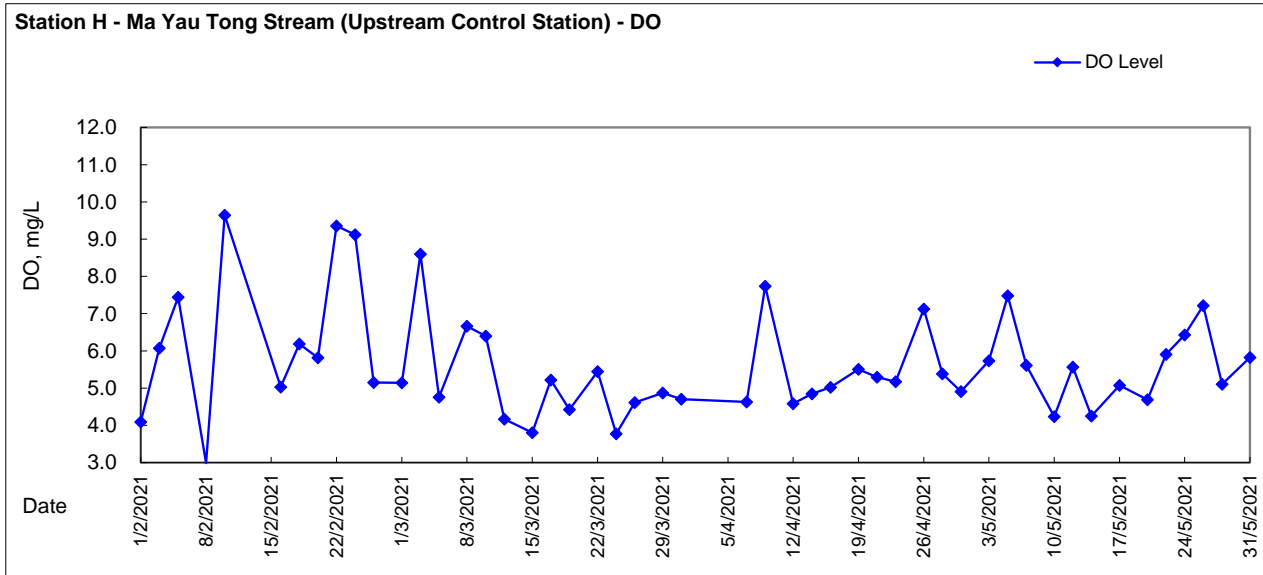
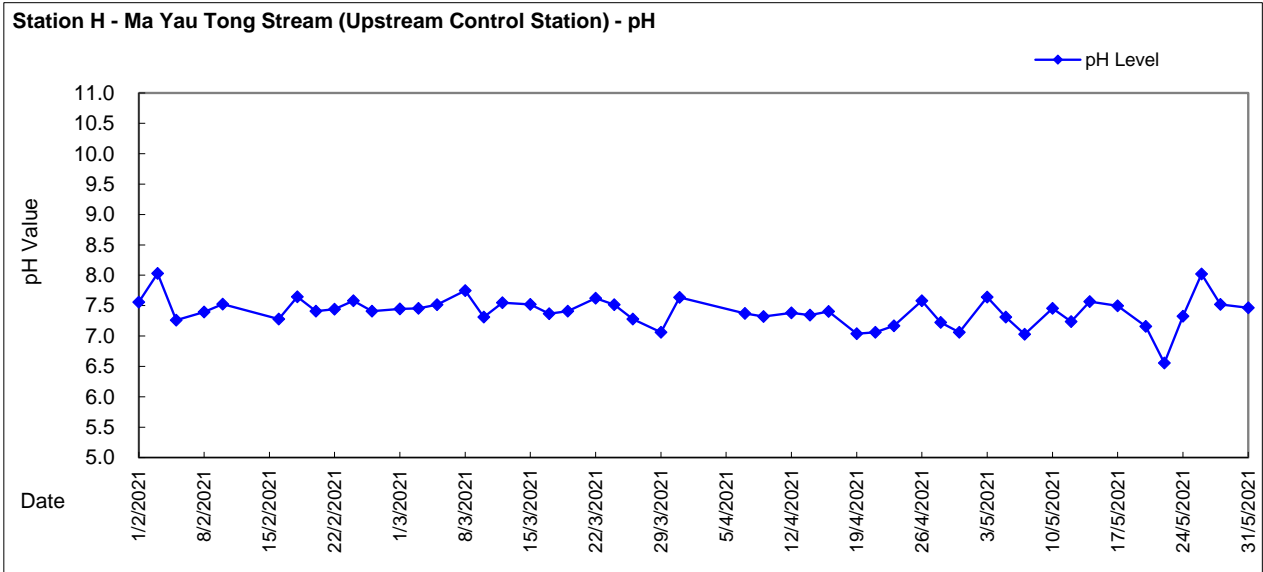


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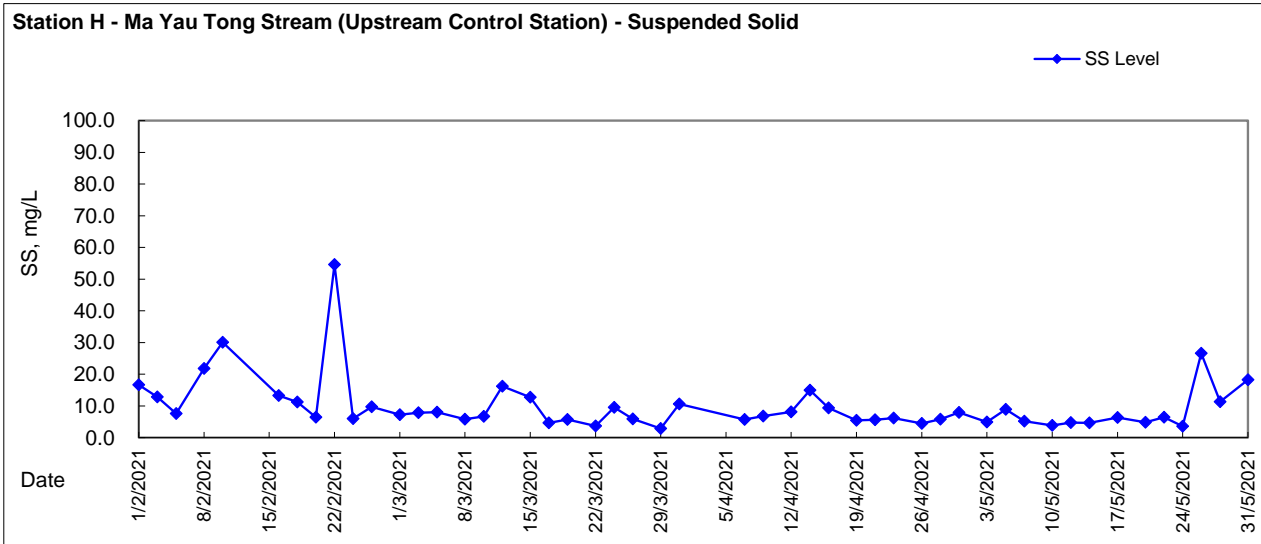
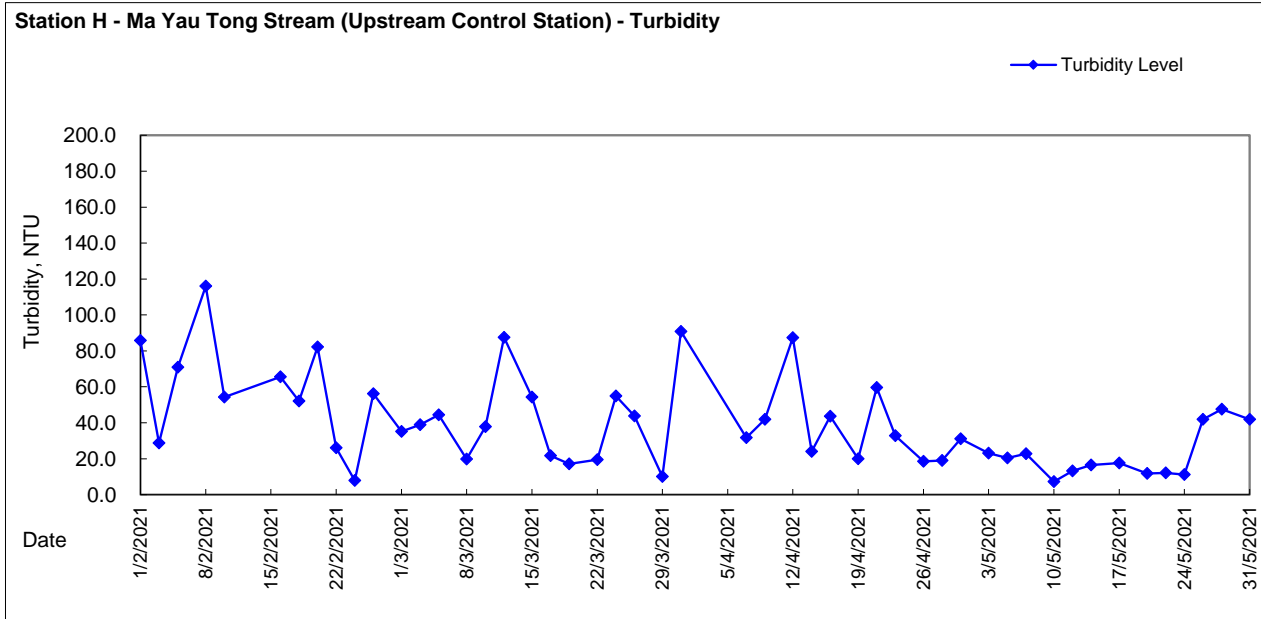


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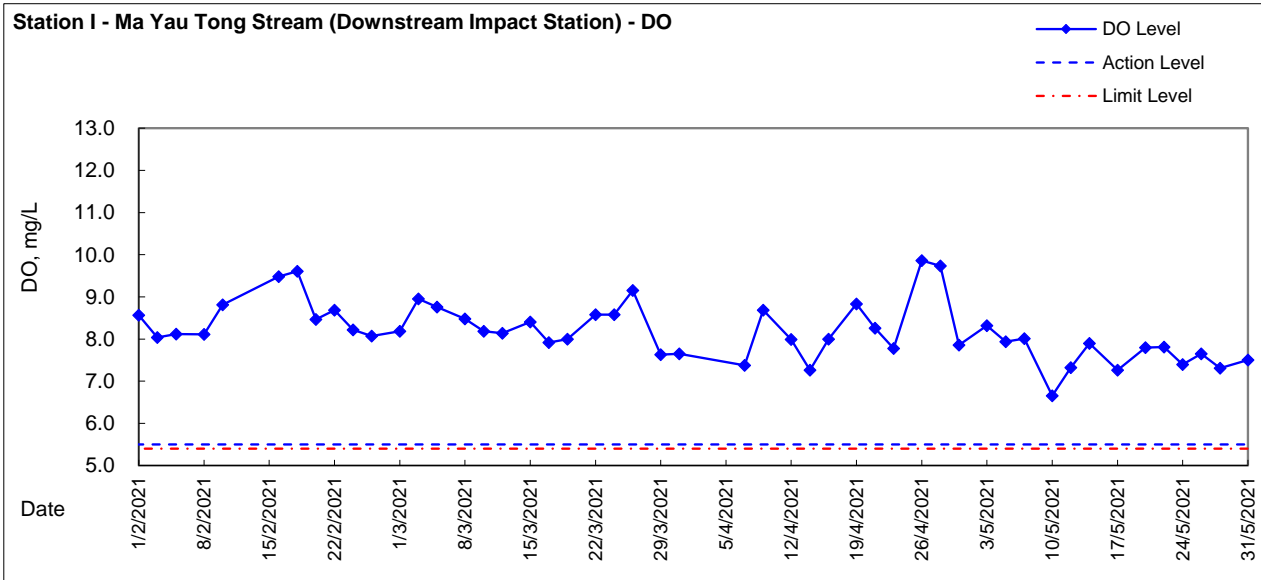
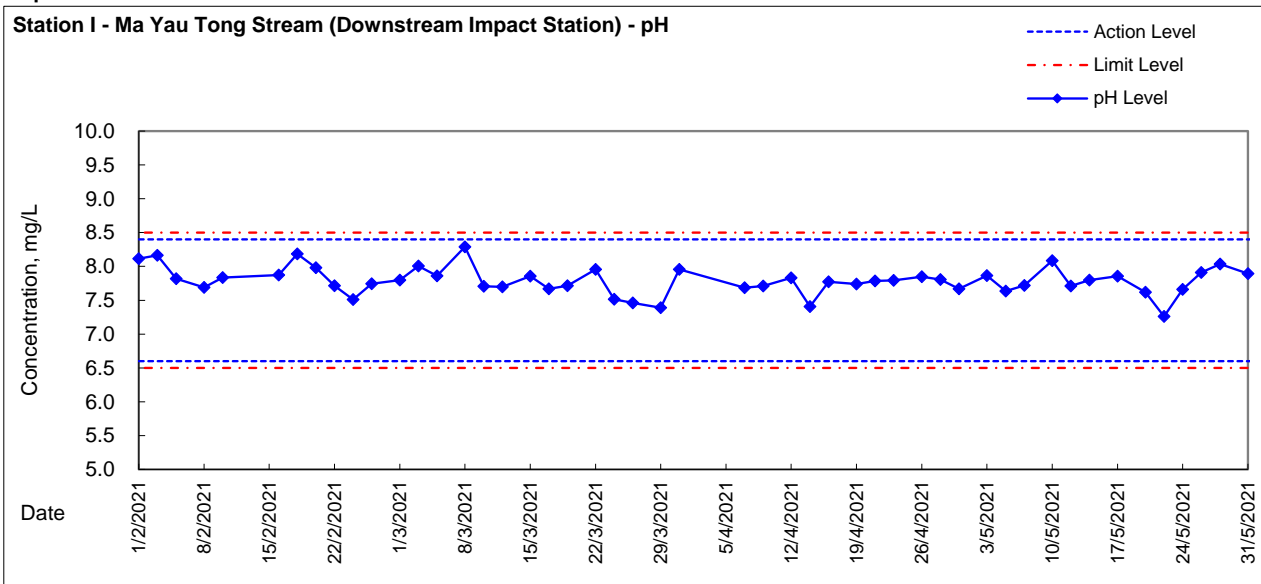


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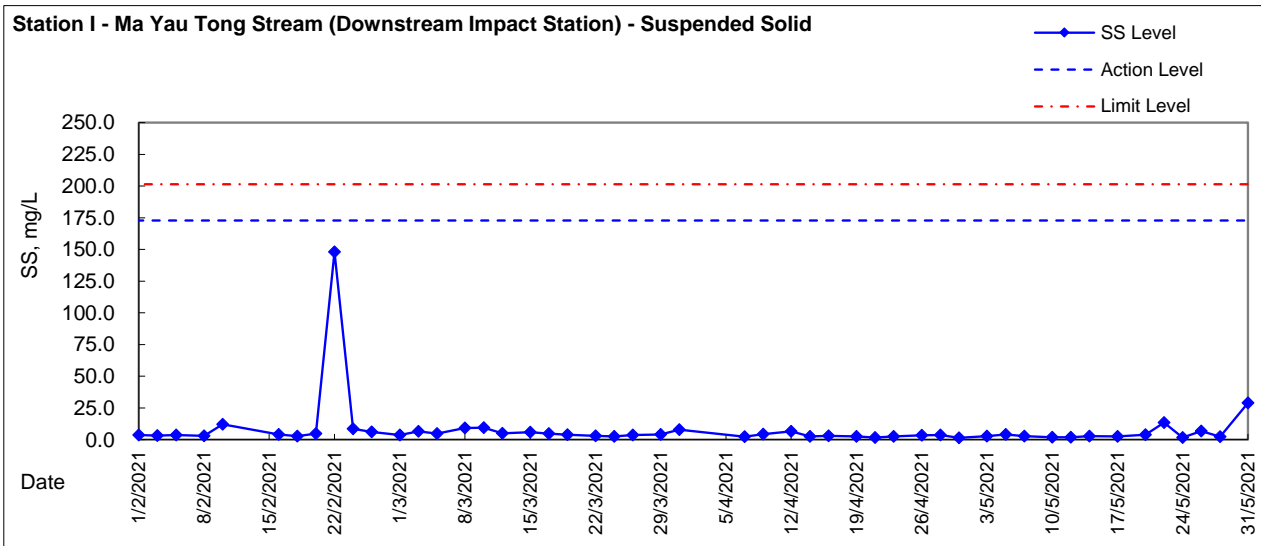
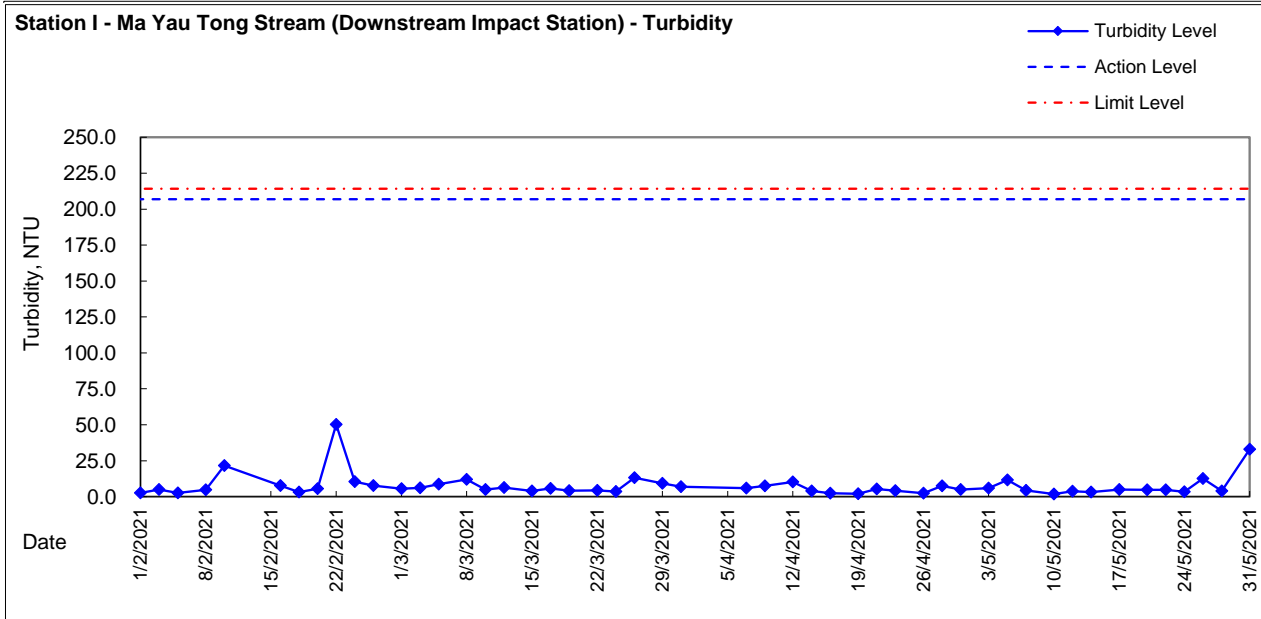


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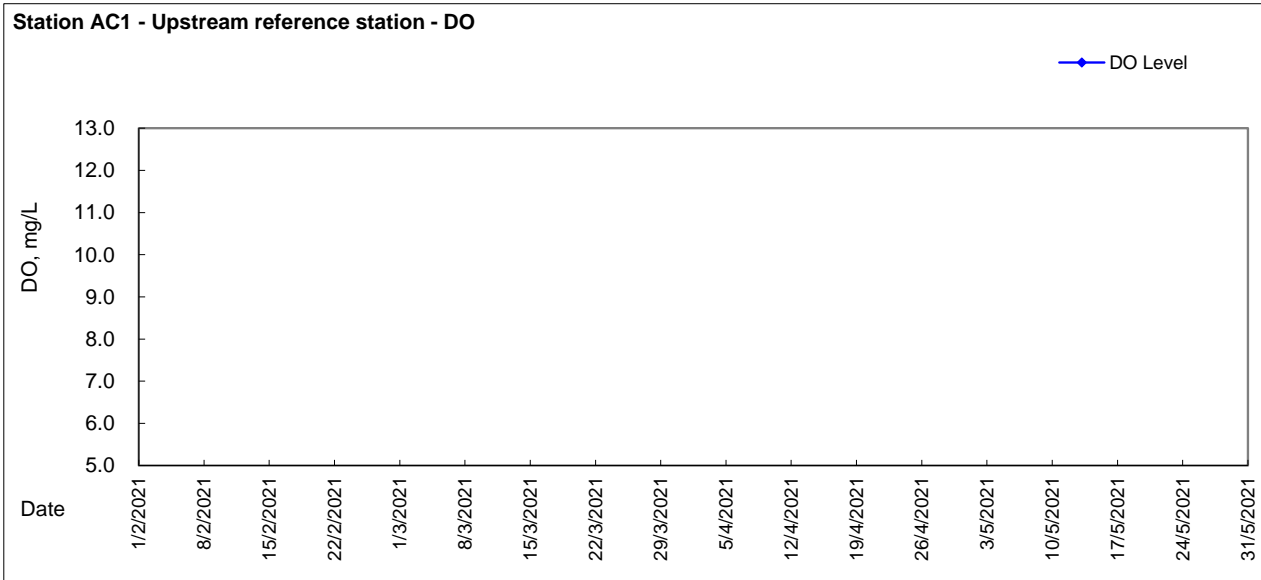
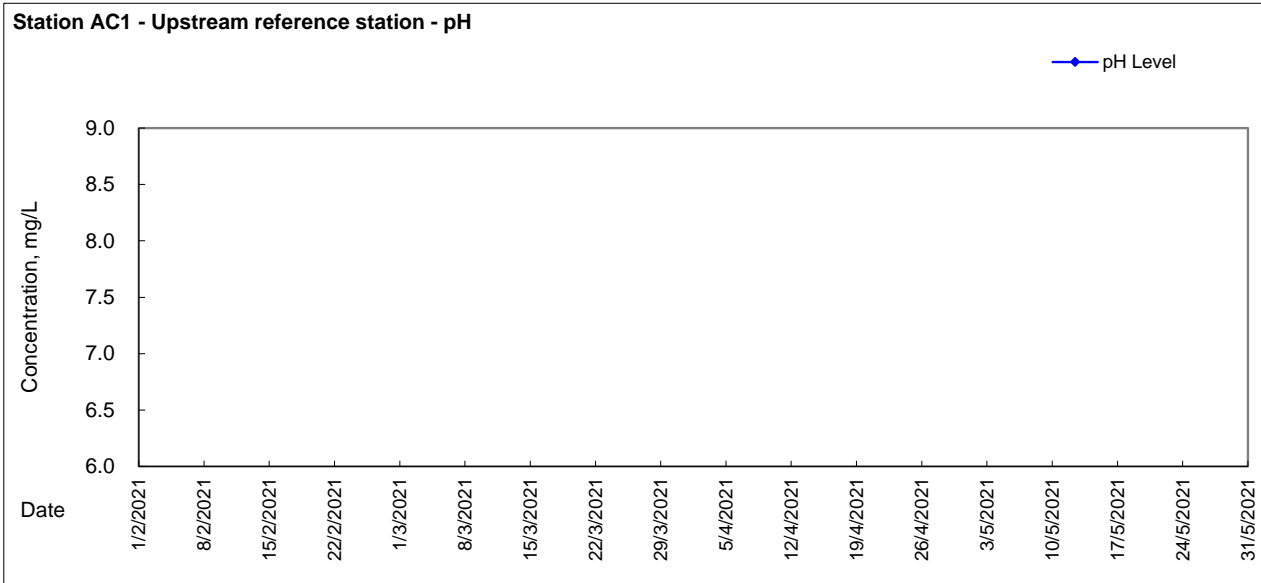


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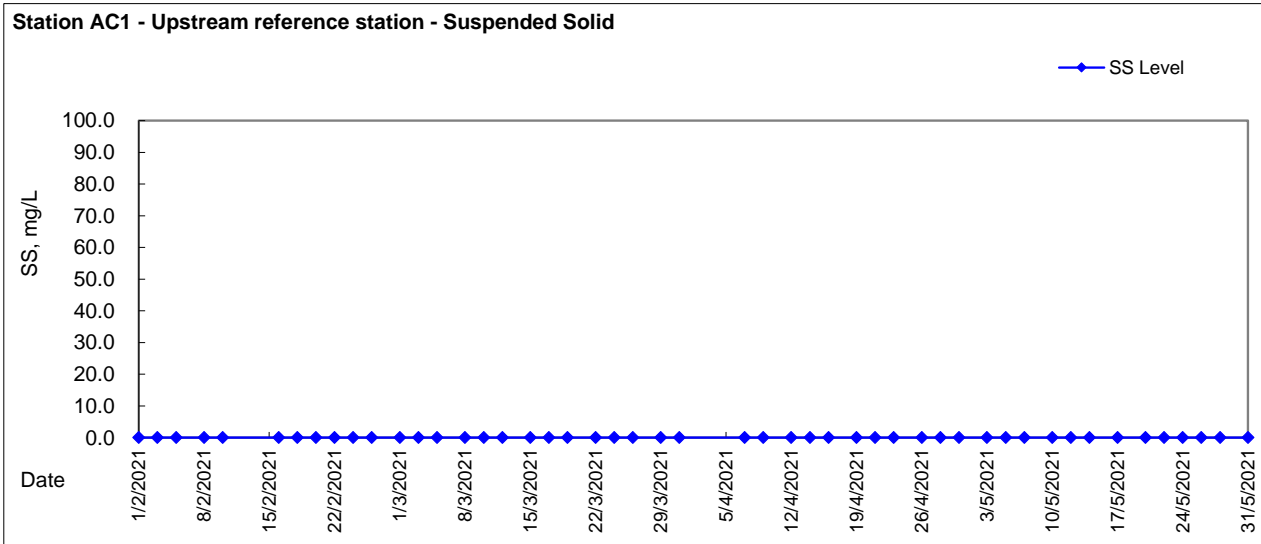
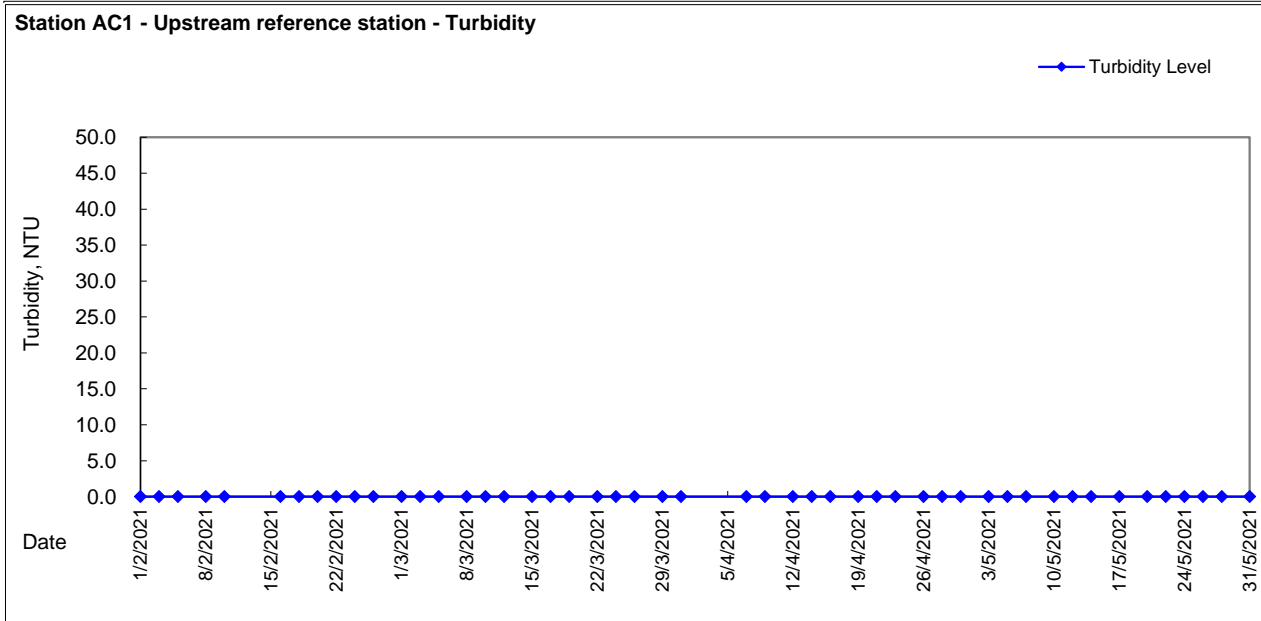


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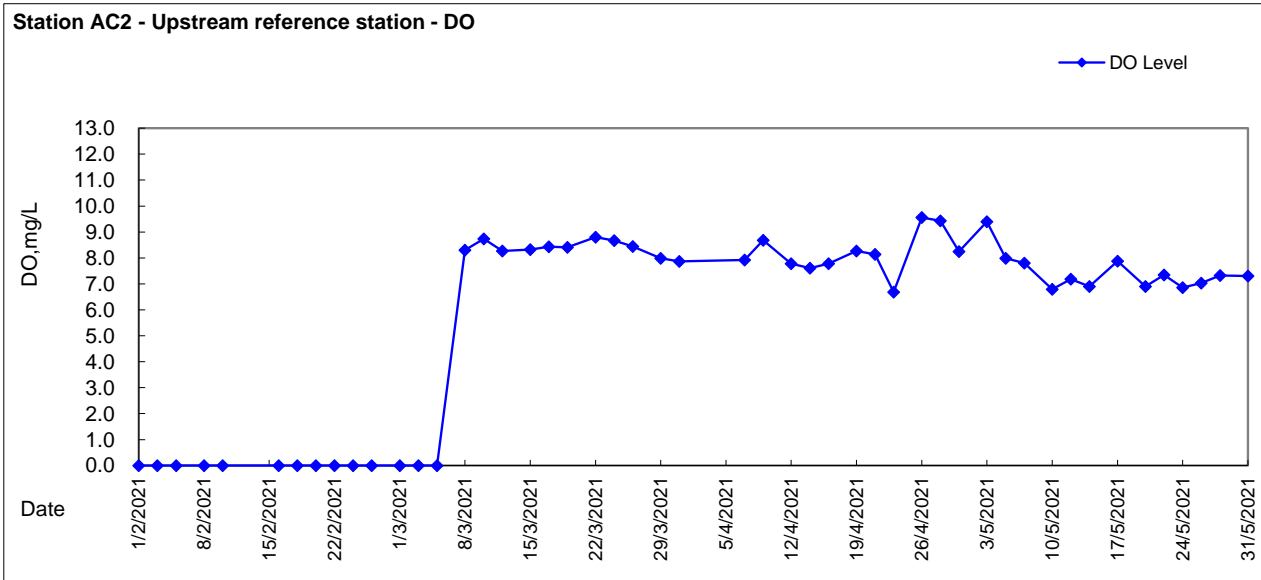
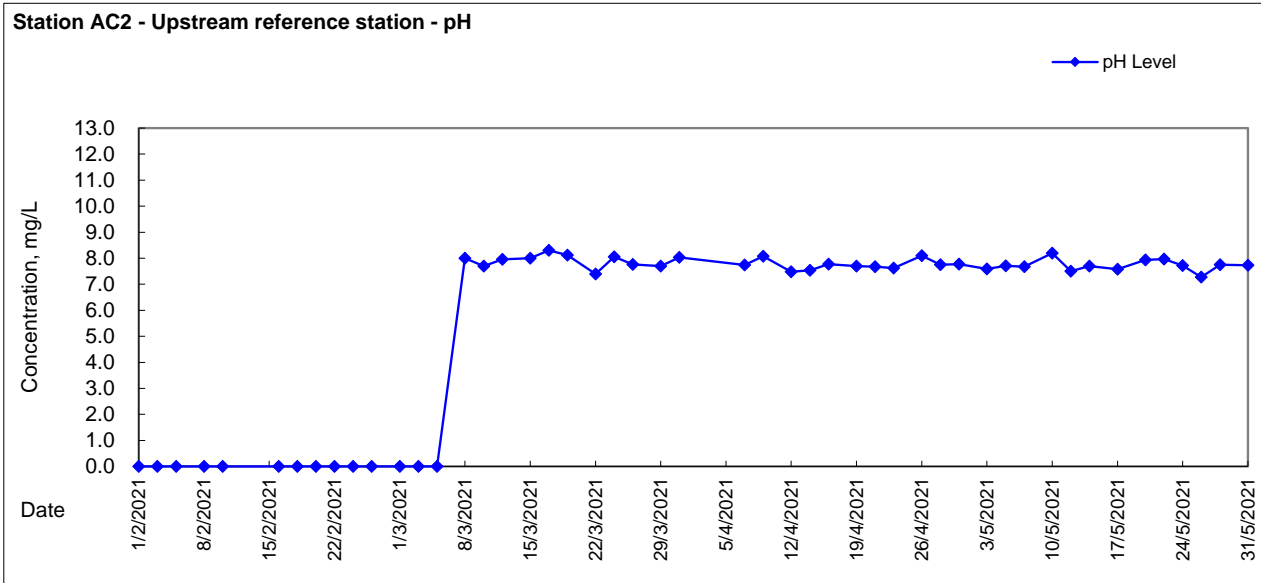


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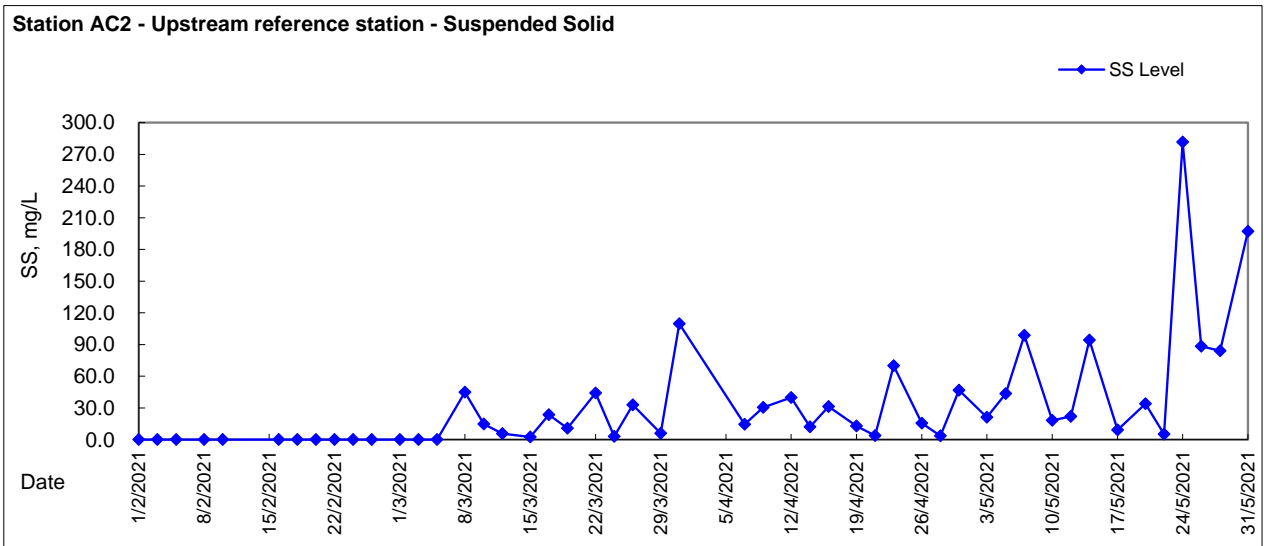
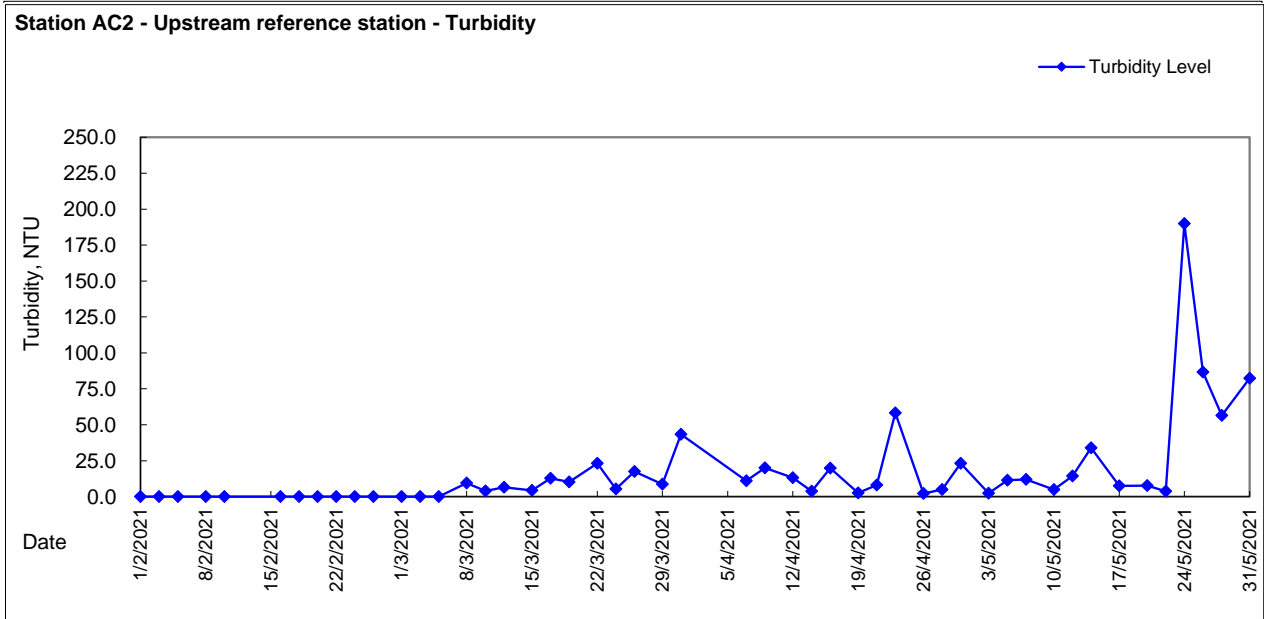


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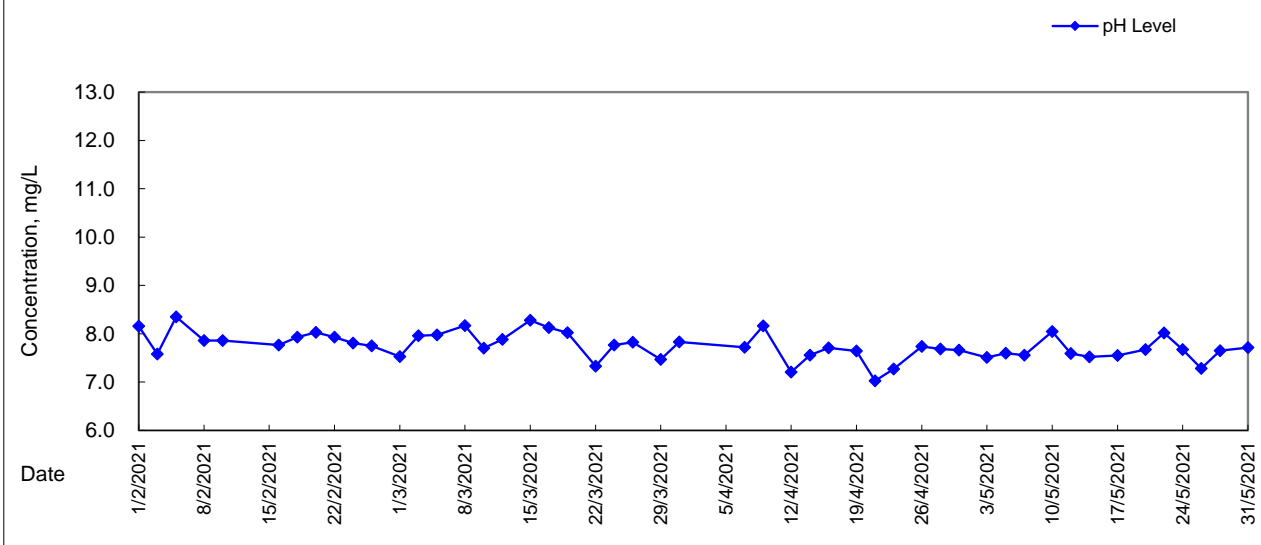
Graphic Presentation of WQM Result



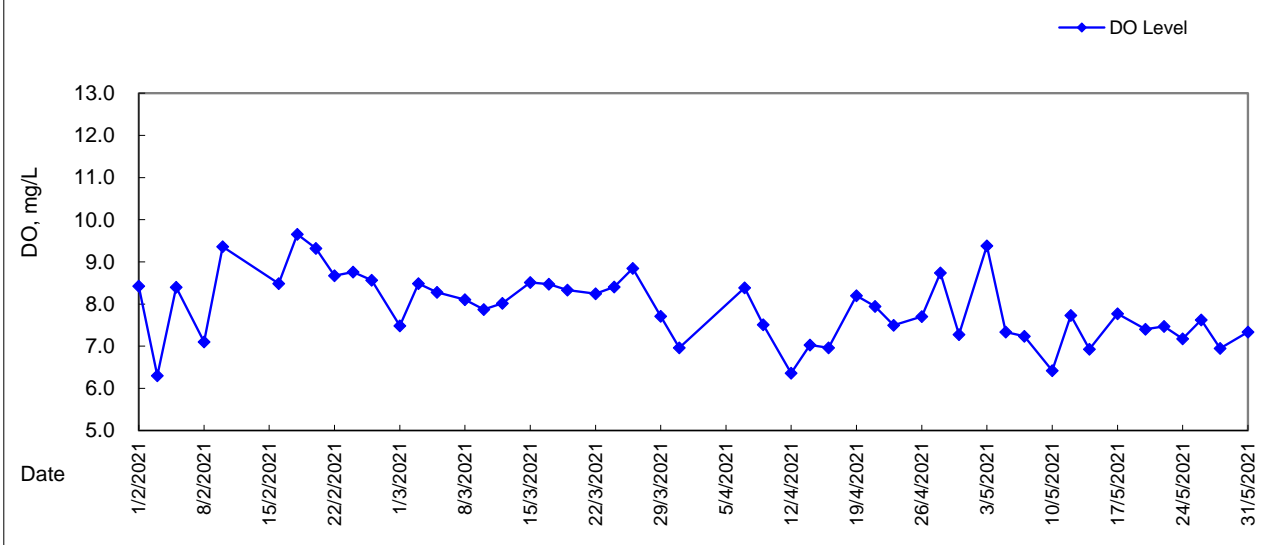


Graphic Presentation of WQM Result

Station AC3 - Upstream reference station - pH

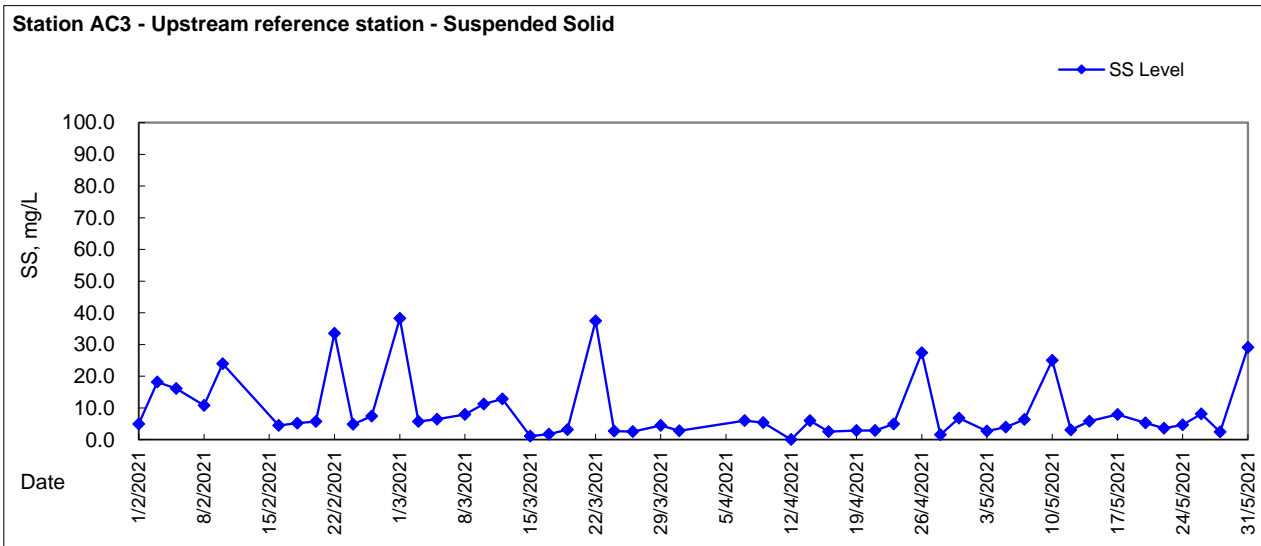
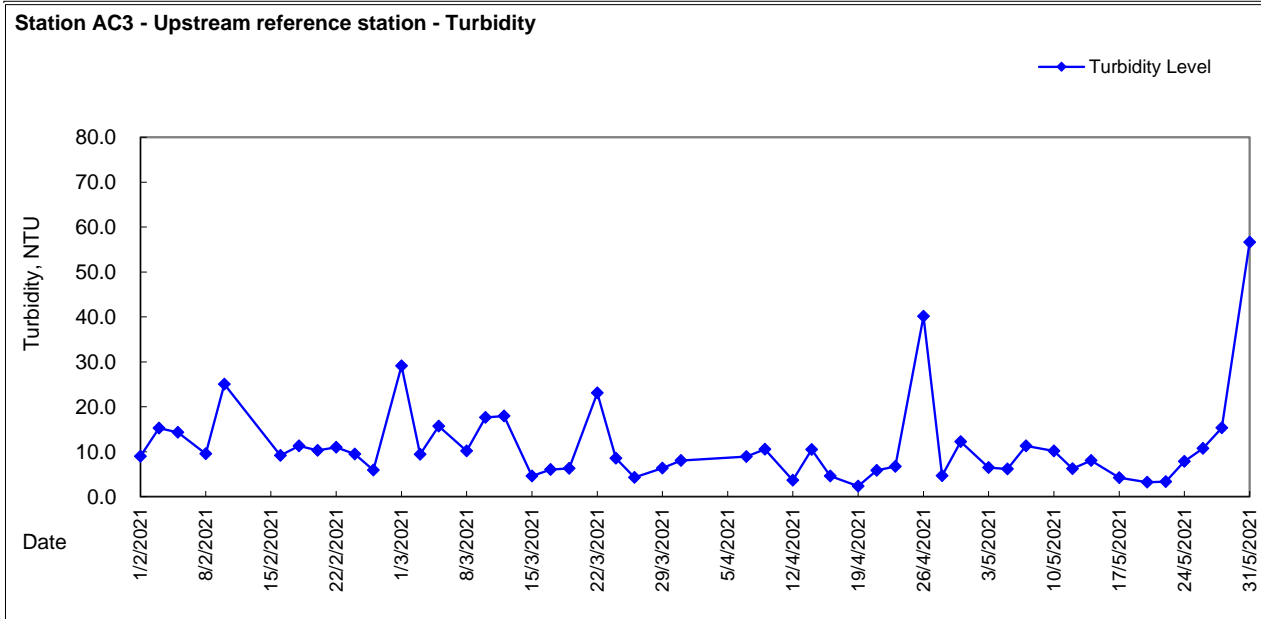


Station AC3 - Upstream reference station - DO





Graphic Presentation of WQM Result





Appendix 5.5

Monthly Summary Waste Flow Table

Contract No.: NE/2017/03

Development of Anderson Road Quarry Site – Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract (see Note 6)	Reused in other Projects (see Note 6)	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste (see Note 5)	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	1.858	0.000	0.000	0.349	1.509	0.000	0.000	0.057	0.006	0.000	0.159
Feb	2.713	0.000	0.023	0.253	2.438	0.000	0.000	0.000	3.472	0.000	0.057
Mar	3.793	0.000	0.143	0.746	2.905	0.000	0.000	0.000	0.210	0.000	0.102
Apr	0.869	0.000	0.000	0.000	0.869	0.000	0.000	0.000	0.238	0.000	0.032
May	1.173	0.000	0.000	0.126	1.047	0.000	0.000	0.055	0.776	0.000	0.027
Jun											
Sub-total	10.408	0.000	0.165	1.474	8.769	0.000	0.000	0.112	4.702	0.000	0.377
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	10.408	0.000	0.165	1.474	8.769	0.000	0.000	0.112	4.702	0.000	0.377

Notes:

- (1) The performance targets are given in PS Clause 1.119 (14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and waste will be collected by recycler for recycling.
- (4) Use the conversion factor, density of general refuse (1 t/m³) and inert C&D materials (2 t/m³).
- (5) Use the conversion factor for chemical waste (0.88kg/L).
- (6) Assume a dump truck delivers 7.5 m³ material in 1 trip.



Appendix 6.1

Event Action Plans



Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analyzed noise problem; 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to ET Leader / ER; 2. Implement noise mitigation proposals.
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. 	<ol style="list-style-type: none"> 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. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.



Event and Action Plan for Construction Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform Contractor, IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; and Review and advise the ET and ER on the effectiveness of the proposed remedial measures. 	<ol style="list-style-type: none"> Notify Contractor. 	<ol style="list-style-type: none"> Identify source(s), investigate the causes of exceedance and propose remedial measures; Implement remedial measures; and Amend working methods agreed with the ER as appropriate
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Identify source; Inform Contractor, IEC and ER; Advise the Contractor and ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with Contractor, IEC and ER; If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET, ER and Contractor on possible remedial measures; Advise the ET and ER on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 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. 	<ol style="list-style-type: none"> Identify source and investigate the causes of exceedance; Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; Implement the agreed proposals; and Amend proposal as appropriate.



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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for one sample	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; 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. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of 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. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. 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 Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> Repeat in situ measurement to confirm findings; Identify reasons for noncompliance and source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> Discuss with ET, ER and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Discuss with ET, IEC and Contractor on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> Inform the ER and confirm notification of the noncompliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, ER and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures.
Action level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> Repeat in situ measurement to confirm findings; Identify reasons for noncompliance and source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> Discuss with ET, ER and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Discuss with ET, IEC and Contractor on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> Inform the ER and confirm notification of the noncompliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, ER and IEC and propose mitigation measures to IEC and ER within three working days; Implement the agreed mitigation measures.



Event and Action Plan for Water Quality (cont'd)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> Repeat in situ measurement to confirm findings; Identify reasons for noncompliance and source(s) of impact; Inform IEC Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level. 	<ol style="list-style-type: none"> Discuss with ET, ER and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> Inform the ER and confirm notification of the noncompliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within three working days; Implement the agreed mitigation measures.
Limit level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> Repeat in situ measurement to confirm findings; Identify reasons for noncompliance and source(s) of impact; Inform IEC Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. 	<ol style="list-style-type: none"> Discuss with ET, ER and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Supervise the implementation of remedial measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level. 	<ol style="list-style-type: none"> Inform the ER and confirm notification of the noncompliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within three working days; Implement the agreed mitigation measures; As directed by the ER, to slow down or to stop all or part of the construction activities.



Event and Action Plan for Landscape and Visual

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
Nonconformity on one occasion	<ol style="list-style-type: none"> 1. Identify source(s); 2. Inform the Contractor, IEC and ER; 3. Discuss remedial actions with IEC, ER and Contractor; 4. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check inspection report; 2. Check contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise ER on effectiveness of proposed remedial measures; 5. Check implementation of remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial 	<ol style="list-style-type: none"> 1. Identify source and investigate the non- conformity 2. Implement remedial measures 3. Amend working methods agreed with ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Nonconformity	<ol style="list-style-type: none"> 1. Identify source(s) 2. Inform the Contractor, IEC and ER; 3. Discuss inspection frequency 4. Discuss remedial actions with IEC, ER and Contractor 5. Monitor remedial actions until rectification has been completed; 6. If non- conformity stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check inspection report 2. Check Contractor's working method 3. Discuss with ET, ER and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures 	<ol style="list-style-type: none"> 1. Identify source and investigate the non- conformity 2. Implement remedial measures 3. Amend working methods agreed with ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by ER until the non- conformity is abated.



Appendix 6.2

Summary for Notification of Exceedance



Lam Environmental Services Limited

Service Contract No. EDO/01/2017
 Environmental Team for Development of Anderson Road Quarry Site
 Road Improvement Works
 Summary for Notification of Exceedance

Ref no.	Date	Location	Parameters (Unit)	Measured	Action Level	Limit Level	Follow-up action	
X_21RIW2_078	28-Apr-21	F	Turbidity (NTU)	66.6	24.4	32.7	Possible reason:	Natural variation in water quality due to rainy weather on 27 and 28 April 2021 in the vicinity of the water quality monitoring station.
			pH	7.7	6.6-8.4	6.5-8.5		
			SS (mg/L)	39.1	17.0	23.8	Action taken/ to be taken:	A repeated in-situ measurement had been conducted immediately to confirm the exceedances. Checking with contractor for the construction activities conducted on 28 April 2021. Increased the monitoring frequency to daily on 29 April 2021, no exceedance was recorded, for suspended solid, no exceedance was recorded on 30 April 2021.
			DO(mg/l)	9.3	5.8	5.5		



Ref. No.	Date	Time	Location	Construction Noise Level, dB(A)	Parameter	Action Level	Limit Level dB(A)	Follow-up action
X_N006	5-May-21		NMC05 - 34/F, Hong Wah Court Block B Yee Hong House	77	Leq(30-min)	when one documented complaint was received.	75	<p>Possible reason: Drilling works at the edge of the slope with partially coverage of noise barrier at the slope of Lin Tak Road</p> <p>Action taken / to be taken: Repeat measurement to confirm result and reviewed the trend of noise measurement. Analysis of contractor's working procedure. Additional monitoring was conducted on 06 May 2021 and no exceedance was recorded.</p> <p>Remarks / Other Obs: Drilling and splitting works at RIW3 were conducted under Contract NE/2017/03 around the concerned location during the time of measurement. The drilling works at Lin Tak Road was identified as the major noise source causing the exceedance by the observation during measurement on 05 May 2021. The working area of the driller was not fully covering by noise barrier or other mitigation measures for minimising the construction noise so that it was the major causes of the exceedance. As such, the exceedance was considered as project related.</p>



Appendix 8.1

Complaint Log



Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
20190902	2 September 2019	DSD	A portion of Clear Water Bay Road, near the junction of Fei Ngo Shan Road	The complainant reported that muddy water was improperly overflowed from the construction site under Contract NE/2017/03 at Clear Water Bay Road and eventually to the downstream public storm water drainage system on 02 September 2019	<p>The investigation report from contractor has revealed that the gaps between sand bags at site boundary would be the potential source of muddy water leakage.</p> <p>Remedial action taken according to the investigation report conducted by Contractor:</p> <ol style="list-style-type: none">1. The sand bags were replaced by cement sand mortar which filled the gaps between water-filled barriers along the site boundary to block the leakage point.2. Additional sedimentation tank has been added to increase buffer for further treatment by the wastewater treatment facility.3. Concrete ramp was provided at the site entrance to mitigate against potential surface runoff related impact.4. Specific training for the subcontractor and front-line staff has been provided to enhance their knowledge on the requirements of discharge license. <p>ET recorded WQM exceedance on SS on 06 Sept 2019 and 09 Sept 2019, effectiveness of remedial measures under rainy days requires close monitoring. Regular joint site inspections on 06 & 19 September 2019 had observed that wastewater treatment facilities required further improvement particularly in rainy days.</p> <p>ET and IEC recommended contractor to provide proper protection to the nearby gullies like membrane or sandbags.</p> <p>ET reminded Contractor/RSS to inform ET and IEC upon the receipt of environmental complaint to allow timely investigation.</p>	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
20200315	15 March 2020	Resident of Hong Wah Court	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, resident of Hong Wah Court, reported to CEDD by email dated on 15 March 2020 that the resident at Hong Wah Court was affected by the noise nuisance from the construction site under Contract NE/2017/03 at Lin Tak Road since the construction activities started for approximately one year especially for the period under the attack of coronavirus-19 recently.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none">1. Noise barriers have been setup along the haul road and working area as much as possible.2. The head of the drillers and breakers has been wrapped with noise absorption materials during operation.3. The contractor has made different combination of group of plants to avoid multiple noisy works operating at the same time.4. Moveable noise barrier was observed in place for breaking works.	Closed
20200403	3 April 2020	Resident of Hong Wah Court	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, a resident of Hong Wah Court, reported to AECOM through the hotline dated on 3 April 2020 that the resident at Hong Wah Court was affected by the noise nuisance from the construction site under Contract NE/2017/03 at Lin Tak Road. She claimed that the slope cutting works have been carried out from 8:00 to 18:00, which was very annoying and made her anxious especially under the situation that the government called citizen to stay at home avoiding the infection of coronavirus-19.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 7 April 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitorings, slope cutting with breaker and driller were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none">1. Noise barriers have been setup along the haul road and working area, and only partially covered the works area and plants due to limited site conditions.2. The head of the drillers and breakers had been wrapped with noise absorption materials during operation.	Closed



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20200420	20 April 2020	Resident of Hong Wah Court	Slope at Lin Tak Road, Opposite to Hong Wah Court	The complainant, a resident of Hong Wah Court, reported to AECOM through the hotline dated on 20 April 2020 that the noise level generated from the construction site at the slope of Lin Tak Road reached 80-90 dB consecutively from 8:00 to 18:30 and affecting their health. Moreover, the district councilor has reflected the complaint from resident of Hong Wah Court and query about the implementation of the noise barrier.	Remedial action taken according to the observations by ET: 1. Sequencing of works to avoid the operation of breaker and driller at the same time 2. No remedial action was taken by contractor on improving the setting up of noise barriers for the covering of working area and the plant. 3. No remedial action was taken by contractor on deploying movable noise barrier at drilling works or wrapping noise reductive materials at the head of the driller.	Closed
0200518	18 May 2020	Public	New Clear Water Bay Road from the construction site at the slope under Shun Lee Disciplined Services Quarters	The complainant reported through the 1823 electronic form dated on 18 May 2020 that silty water was discharged to public road, New Clear Water Bay Road, from the construction site at the slope under Shun Lee Disciplined Services Quarters. The complaint concerned on the silty runoff at New Clear Water Bay Road was referred by AECOM to ET on 21 May 2020. According to the information provided by the contractor, silty runoff to public road was due to the damaged pipe at the top of the slope Shun Lee Disciplined Services Quarters, water leaked from the pipe flew along the exposed down slope and became silty.	Remedial action taken according to the observations by ET: 1. Placing sand bags at the perimeter of the site and the site exit as bunds. 2. Repairing the damaged pipe to stop the water leakage.	Closed
20200525	25 May 2020	Public	New Clear Water Bay Road from the construction site at the slope under Shun Lee Disciplined Services Quarters	The complainant reported through the 1823 electronic form dated on 25 May 2020 that silty water was discharged to public road, New Clear Water Bay Road from the construction site at the slope under Shun Lee Disciplined Services Quarters. The complaint concerned on the silty runoff at New Clear Water Bay Road was referred by AECOM to ET on 3 June 2020 respectively. According to the observation and inspection,	Remedial action taken according to the observations by ET: 1. Placing sand bags at the site boundary and the site exit as bunds. 2. Deployed one more set of sedimentation tank and wastewater treatment facilities. 3. Diversion of part of the runoff from the top of the slope to avoid flowing through soil surface.	Closed



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				the silty runoff should be caused by the large volume of water flow through the soil surface of the construction site after heavy rainfall.		
202007007	7 July 2020	Resident of Hong Wah Court	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, District Councilor, reported to AECOM through the hotline dated on 7 July 2020 that the resident complaint the construction noise generated from the construction site at the slope of Lin Tak Road was annoying and no mitigation measures for the construction noise was implemented.</p> <p>The complaints regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 7 July 2020 respectively.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, slope cutting with breaker and driller were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> Setting up of noise barriers for the covering of working area and the plant was observed since 15 June 2020. Quieter breaker, claimed by the contractor, was observed installed. The plant and working area were covered by noise barrier most of the time during the monitoring and inspections. 	Closed
20200718	18 July 2020	Public	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, District Councilor, reported to AECOM through the hotline dated on 18 July 2020 that no water spraying was carried out by contractor during dusty construction works at the slope of Lin Tak Road and fugitive dust was observed and cause dust impact to the complainant's property.</p> <p>The complaints regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 20 July 2020 respectively.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> Facilities for water spraying was observed being setup at the slope of Lin Tak Road. 	Closed



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				starting from August 2019. Based on the observation of recent monitoring, slope cutting with breaker and driller were the major sources of dust emissions.		
20200718	18 July 2020	Public	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, District Councilor, reported to AECOM through the hotline dated on 18 July 2020 that the resident of block C complained the construction noise generated from the construction site at the slope of Lin Tak Road was causing noise nuisance.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 20 July 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, slope cutting with breaker and driller were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. Setting up of noise barriers for the covering of working area and the plant was observed since 15 June 2020. 2. Quieter breaker, claimed by the contractor, was observed installed. 3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 4. Sequencing of works was observed that the driller and breaker were operated alternatively to avoid concurrent noisy works. 	Closed
20200724	24 July 2020	Public	New Clear Water Bay Road near Sienna Garden	<p>The complainant, resident of Sienna Garden, reported to AECOM through the hotline dated on 24 July 2020 that the noise generated from the air compressor at the construction site of New Clear Water Bay Road Road was annoying.</p> <p>The complaints regarding the construction noise at New Clear Water Bay Road referred by AECOM was received by ET on 27 July 2020 respectively.</p> <p>According to the observation on-site and information provided by the contractor, piling work was conducting near Sienna Garden at New Clear Water Bay Road.</p>	<p>Remedial action taken according to the observation during inspection conducted by ET:</p> <ol style="list-style-type: none"> 1. Setting up of noise barriers for screening up the air compressor was observed since 30 July 2020. 	Closed



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20200729	29 July 2020	Public	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, Resident of Hong Wah Court, reported to AECOM through the hotline dated on 29 July 2020 that the construction noise generated from the construction site at the slope of Lin Tak Road was causing noise nuisance to upper level of the building and the phone call of the complainant was influenced.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 30 July 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, slope cutting with breaker and driller were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. Setting up of noise barriers for the covering of working area and the plant was observed since 15 June 2020. 2. Quieter breaker, claimed by the contractor, was observed installed. 3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 4. Sequencing of works was observed that the driller and breaker were operated alternatively to avoid concurrent noisy works. 	Closed
20200825	25 August 2020	Public	New Clear Water Bay Road near Choi Wan Estate	<p>The complainant reported to 1823 online dated on 25 August 2020 that the construction noise generated from the construction site at New Clear Water Bay Road adjacent to Choi Wan Estate was causing noise nuisance to complainant's apartment. Construction activities starting from 8:30 to dusk and even on Sunday. The construction activities have been conducted for a year especially for drilling works. The complainant has measured the construction noise with mobile app and obtained 64dB in average for one driller. The complainant said the condition was worse when two to three drillers operated at the same time. The complainant asked the completion date of the construction works and whether the construction noise would affect the health of people as the complainant was</p>	<p>Remedial action taken according to the observations by ET:</p> <p>No further mitigation measure for construction noise was implemented at the moment as no drilling works were observed recently.</p>	Closed



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				<p>seriously influenced by the noise and causing insomnia.</p> <p>The complaint regarding the construction noise at New Clear Water Bay Road referred by CEDD and AECOM was received by ET on 30 August 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that ELS to RW pile cap and construct RW footing were the major construction works conducted under contract NE/2017/03 at the photo record provided by the complaint at RIW1 near New Clear Water Bay Road adjacent to Choi Wan Estate starting from June 2020 to August 2020. Based on the observation of recent monitoring, excavation, grouting, welding and loading and unloading of materials were the major sources of the construction noise. Pre-drilling works have been conducted at the section near New Clear Water Bay Road adjacent to the Shun Lee Disciplined Services Quarters which is distance from the area that the complainant mentioned.</p>		
20200831	31 August 2020	Public	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, Resident of Hong Wah Court, reported to AECOM through the hotline dated on 31 August 2020 that the construction noise generated from the construction site at the slope of Lin Tak Road was causing noise nuisance and also causing air quality impact.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 2 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none">1. Setting up of noise barriers for the covering of working area and the plant was observed since 15 June 2020.2. Quieter breaker, claimed by the contractor, was observed installed.3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections.4. Sequencing of works was observed that the driller and breaker were operated alternatively	Closed



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				and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, slope cutting with breaker and driller were the major sources of the construction noise. Besides, breaking, drilling and loading and unloading of dusty materials were the major sources spreading dust.	5. Water spraying for breaking works was observed.	
20200925_1	25 Sep 2020	Public	Slope at Lin Tak Road, opposite to Hong Wah Court	<p>The complainant, district councillor, reported to AECOM through the hotline dated on 25 and 26 September 2020 that the residents from Block B and C have complaint the construction noise generated from the construction site at the slope of Lin Tak Road was causing noise nuisance and queried about the standard level of construction level and the limit level set for the project. The measurement from the resident reached 107dB.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 28 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The condition of noise barriers was improved on 30 September 2020 and extended the coverage on 8 October 2020. 2. Quieter breaker, claimed by the contractor, was observed installed. 3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 	Closed
20200925_2	25 Sep 2020	EPD	Slope at Lin Tak Road, opposite to Hong Wah Court	<p>The complainant reported to EPD dated on 25 September 2020 that the contractor did not comply with the commitment of using silent equipment and the noise barriers were not placed properly. The complainant complaint about the equipment generated noise reaching 60dB to 80dB, which has exceeded the limit stated in EIAO. The complainant was</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The condition of noise barriers was improved on 30 September 2020 and extended the coverage on 8 October 2020. 2. Quieter breaker, claimed by the contractor, was observed installed. 	Closed



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				<p>also unsatisfied with the improper use of noise barriers, for example, the plant was not covered by noise barrier and the noise barriers were not relocated according to the change in working area.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was received by ET on 28 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections.</p>	
20200926	26 Sep 2020	EPD	Slope at Lin Tak Road, opposite to Hong Wah Court	<p>The complainant reported to EPD dated on 26 September 2020 that the contractor did not comply with the commitment of paying extra effort in noise blocking and delay the starting time to 10:00 and end at 17:00. The construction noise generated reaching 80dB consecutively from 10:00 to 18:30.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was received by ET on 28 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The condition of noise barriers was improved on 30 September 2020 and extended the coverage on 8 October 2020. 2. Quieter breaker, claimed by the contractor, was observed installed. 3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 	Closed
20200927_1	27 Sep 2020	EPD	Slope at Lin Tak Road, opposite to Hong Wah Court	<p>The complainant reported to EPD dated on 27 September 2020 that the contractor did not comply with the commitment of paying extra</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The condition of noise barriers was improved 	Closed



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				<p>effort in noise blocking and delay the starting time to 10:00 and end at 17:00.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was received by ET on 28 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>on 30 September 2020 and extended the coverage on 8 October 2020.</p> <ol style="list-style-type: none"> Quieter breaker, claimed by the contractor, was observed installed. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 	
20200927_2	27 Sep 2020	EPD	Slope at Lin Tak Road, opposite to Hong Wah Court	<p>The complainant reported to EPD dated on 26 September 2020 that the contractor did not comply with the commitment of paying extra effort in noise blocking and delay the starting time to 10:00 and end at 17:00. The construction noise generated reaching 80dB consecutively from 10:00 to 18:30.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was received by ET on 28 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> The condition of noise barriers was improved on 30 September 2020 and extended the coverage on 8 October 2020. Quieter breaker, claimed by the contractor, was observed installed. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 	Closed
20200928	28 Sep 2020	EPD	Slope at Lin Tak Road, opposite to Hong Wah Court	<p>The complainant reported to EPD dated on 28 September 2020 that the construction noise level was within 50dB to 60dB and was acceptable from May 2020 to 21 September 2020. Starting from 21 September 2020, slope works have moved towards the estate to</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> The condition of noise barriers was improved on 30 September 2020 and extended the coverage on 8 October 2020. Quieter breaker, claimed by the contractor, 	Closed



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				<p>under 50m in distance. Moreover, the noise barriers were not erected properly by the workers and the construction noise level reached 80dB to 100dB. The restriction due to level difference of the construction site was understood by the considerate area was at relatively flat ground and should have enough space for setting up noise barrier. The contractor should follow the EIAO to minimize the construction noise and comply with the commitment of using quieter method or exploring other methods, hence, the residents do not have to suffer the high construction noise environment, The contractor may consider using quieter breaker and better materials for reducing the construction noise.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was received by ET on 28 September 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>was observed installed.</p> <p>3. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections.</p>	
20201105	5 Nov 2020	EPD	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, general public, reported to EPD dated on 5 November 2020 that noise nuisance was generated from the construction site of Chun Wo.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 10 November 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 2. Noise absorption material was observed installed at the upper level. 3. Additional noise barrier was observed installed at lower level on 9 November 2020. 4. Sequencing of noisy works to be not operating at the same time for most of the time during 	Closed



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				starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.	inspection. 5. Grouping of PME and scheduled working time have been set by the contractor shown on site.	
20201106	6 Nov 2020	EPD	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, general public, reported to EPD dated on 6 November 2020 that the incident of construction noise from Lin Tak Road have happened for more than two months. The residents at Hong Wah Court have complaint to the contractor, consultant and CEDD as well as the district councillor but no improvement was observed and the noise generated were very disturbing.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 10 November 2020.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 2. Noise absorption material was observed installed at the upper level since 20 October 2020. 3. Additional noise barrier was observed installed at lower level on 9 November 2020. 4. Sequencing of noisy works to be not operating at the same time for most of the time during inspection. 5. Grouping of PME and scheduled working time have been set by the contractor shown on site. 	Closed
20201109	9 Nov 2020	EPD	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, general public, reported to EPD dated on 9 November 2020 that the use of quiet equipment and the noise barriers were not installed properly. The noise generated by the plants using on site have reached 60dB to 80dB and exceeded the limit stated in EIAO. The improper installation of noise barriers was the most unsatisfactory for the resident that the plant always worked beyond the coverage of noise barriers and the noise barriers were not setup according to the working progress.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> 1. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 2. Noise absorption material was observed installed at the upper level since 20 October 2020. 3. Additional noise barrier was observed installed at lower level on 9 November 2020. 4. Sequencing of noisy works to be not operating at the same time for most of the time during inspection. 	Closed



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				received by ET on 9 November 2020. According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, breaking works and drilling works were the major sources of the construction noise.	5. Grouping of PME and scheduled working time have been set by the contractor shown on site.	
20201111	11 Nov 2020	EPD	Tseung Kwan O Road near Tseung Kwan O Tunnel	The complainant reported to EPD that effluent discharge was observed from the construction site of CEDD near the Tseung Kwan O Tunnel dated on 11 November 2020. The incident has been observed for 6 months. The complaint concerned on the effluent discharge at Tseung Kwan O Road was referred by EPD to ET on 16 November 2020. According to the observation and inspection, the incident was caused by the overflow of runoff due to the blockage of gully and no connection of temporary drainage system was observed between the site and the gully at Tseung Kwan O Road and no discharge was observed from the site to the nearby gully.	Remedial action taken according to the observations by ET: 1. No remedial action is needed	Closed
20210123	23 Jan 2021	EPD	Slope at Lin Tak Road, Opposite to Hong Wah Court	The complainant, general public, reported to EPD dated on 23 January 2021 that the construction noise was serious and the work period was predicted to be end in 2023 was considered to be long. The complainant has also mentioned the noise barrier was observed but not efficient in noise reduction. The complainant request the contractor to wrap the driller head during drilling works; cover the drilling area entirely by noise barrier till the line of sight of all levels could be blocked; setting up noise monitoring station at different floors at Hong Wah Court; increase number of inspection; setting up limit in length	Remedial action taken according to the observations by ET: 1. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections. 2. Noise absorption material was observed installed at the upper level since 20 October 2020. 3. Additional noise barrier was observed installed at lower level on 9 November 2020. 4. Cantilever was observed at middle level since 12 January 2021. 5. Sequencing of noisy works to be not operating	Closed



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				<p>of noisy works in future.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by EPD was received by ET on 11 February 2021.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, drilling works were the major sources of the construction noise.</p>	<p>at the same time for most of the time during inspection.</p> <p>6. Grouping of PME and scheduled working time have been set by the contractor shown on site.</p>	
20210205	05 Feb 2021	Public	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, district councillor, reported to AECOM through project hotline dated on 05 February 2021 that the residents reflected the noise mitigation measures were not efficient, around 70% of time the driller worked outside the noise barriers coverage, making noise.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 05 February 2021.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019. Based on the observation of recent monitoring, drilling works were the major sources of the construction noise.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none">1. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections.2. Noise absorption material was observed installed at the upper level since 20 October 2020.3. Additional noise barrier was observed installed at lower level on 9 November 2020.4. Cantilever was observed at middle level since 12 January 2021.5. Sequencing of noisy works to be not operating at the same time for most of the time during inspection.6. Grouping of PME and scheduled working time have been set by the contractor shown on site.	Pending



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
20210206	06 Feb 2021	Public	Slope at Lin Tak Road, Opposite to Hong Wah Court	<p>The complainant, resident of Hong Wah Court, reported to AECOM through project hotline dated on 06 February 2021 that the residents reflected that one excavator was in operation from 08:20 and one driller was in operation later from 08:40 on 06 February 2021.</p> <p>The complaint regarding the construction noise at Lin Tak Road referred by AECOM was received by ET on 01 March 2021.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that slope works using drill and split method were conducted under contract NE/2017/03 at RIW3 of Lin Tak Road starting from August 2019.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none">1. The plant and working area were covered by noise barrier in most of the time during noise monitoring and site inspections.2. Noise absorption material was observed installed at the upper level since 20 October 2020.3. Additional noise barrier was observed installed at lower level on 9 November 2020.4. Cantilever was observed at middle level since 12 January 2021.5. Sequencing of noisy works to be not operating at the same time for most of the time during inspection.6. Grouping of PME and scheduled working time have been set by the contractor shown on site.	Pending
20210310	10 Mar 2021	Public	New Clear Water Bay Road near Choi Wan Estate	<p>The complainant reported to 1823 online dated on 10 March 2021 that the construction noise generated from the construction site at New Clear Water Bay Road adjacent to Choi Wan Estate was causing noise nuisance to complainant's apartment.</p> <p>The complaint regarding the construction noise at New Clear Water Bay Road near Choi Wan Estate referred by CEDD and AECOM was received by ET on 15 March 2021.</p> <p>According to the information provided by the contractor, and also reported in EM&A monthly report, that earth works temporary soil nail, form working platform, reinforced concrete works and no-fine concrete construction were the major construction</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none">1. No further mitigation measure for construction noise was implemented at the moment.	Closed



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				works conducted under contract NE/2017/03 in the past three months at RIW1 near New Clear Water Bay Road. Based on the observation of recent monitoring, excavation and loading and unloading of materials were the major sources of the construction noise.		
210427_1	27 Apr 2021	Public	Clear Water Bay Road, near Sienna Garden block 6	<p>The complainant, resident of No.8 Fei Ha Road, reported to AECOM through the hotline dated on 27 April 2021 that the construction activities were commenced around 7:00 am, making big noise “boom boom” from the construction site under Contract NE/2017/03 at Clear Water Bay Road. Nearby residents were affected by the noise nuisance and the complainant asked Contractor to commence the construction activities after 9:00 am.</p> <p>In addition, the complainant also reflected that the windows need to be closed all the time due to the fugitive dust from the construction works at RIW2. Contractor was required to review and enhance the dust mitigation measures.</p> <p>The complaints regarding the construction noise and dust at Clear Water Bay Road referred by AECOM was received by ET on 27 April 2021.</p> <p>According to the information provided by the contractor, and recent site inspections, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> Noise barriers have been setup for noise mitigation measure. QPME was observed on site. Work sequence at Clear Water Bay Road near residential estate was re-arranged, piling works will be commenced after 09:00am in order to minimize the nuisance to the residents and commencement time of other site activities will be remained unchanged. Water spraying has been applied and cylindrical tarpaulin was used to enclose the piling area for dust suppression measures. 	Pending
210427_2	27 Apr 2021	Public	Clear Water Bay Road, near Sienna Garden	The complainant, reported to AECOM through the hotline dated on 27 April 2021 that they were affected by the noise nuisance from the	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> Noise barriers have been setup for noise 	Pending



Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
			block 6	<p>construction site under Contract NE/2017/03 at Clear Water Bay Road in the early morning.</p> <p>The complaints regarding the construction noise at Clear Water Bay Road referred by AECOM was received by ET on 27 April 2021.</p> <p>According to the information provided by the contractor, and recent site inspections, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source.</p>	<p>mitigation measure.</p> <ol style="list-style-type: none"> QPME was observed on site. Work sequence at Clear Water Bay Road near residential estate was re-arranged, piling works will be commenced after 09:00am in order to minimize the nuisance to the residents and commencement time of other site activities will be remained unchanged. 	
210508	08 & 10 May 2021	Public	Clear Water Bay Road, near Sienna Garden block 6	<p>The complainant, resident of No. 8 Fei Ha Road, reported to AECOM through the hotline dated on 08 and 10 May 2021 that they were severely affected by the noise nuisance and fugitive dust from the construction site under Contract NE/2017/03 at Clear Water Bay Road.</p> <p>The complaints regarding the construction noise and fugitive dust at Clear Water Bay Road referred by AECOM was received by ET on 12 May 2021.</p> <p>According to the information provided by the contractor, and recent site inspections, that breaking, excavation, and mini-pile works were conducted under contract NE/2017/03 at RIW2 of Clear Water Bay Road. Based on the observation of recent monitoring, breaking and piling were the major noise source.</p>	<p>Remedial action taken according to the observations by ET:</p> <ol style="list-style-type: none"> Noise barriers have been setup for noise mitigation measure. QPME was observed on site. Work sequence at Clear Water Bay Road near residential estate was re-arranged, piling works will be commenced after 09:00am in order to minimize the nuisance to the residents and commencement time of other site activities will be remained unchanged. Water spraying has been applied and cylindrical tarpaulin was used to enclose the piling area for dust suppression measures. 	Pending



Appendix 9.1

Construction Programme of Individual Contracts

Activity ID	Activity Name	Duration	Start	Finish	2021			
					May 41	Jun 42	Jul 43	Aug 44
NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (202105)-0_210524		934	01-Jun-20 A	10-Oct-22				
Road Improvement Works Location 1 (RIW1)		531	04-Nov-20 A	20-Aug-22				
Construction Works		531	04-Nov-20 A	20-Aug-22				
CON10650	Construct RW wall (RWC2 type 1a & 1)	225	04-Nov-20 A	16-Aug-21				
CON10652	Construct RW footing (RWC2 type 2)	225	04-Nov-20 A	16-Aug-21				
CON10310	Construct RW footing (RWC2 type 4, 6, 7, 8)	121	07-Nov-20 A	10-Jun-21				
CON10654	Construct RW wall (RWC2 type 2)	207	25-Nov-20 A	16-Aug-21				
CON10370	Construct RW wall (RWC2 type 4, 6, 7, 8)	213	14-Dec-20 A	06-Nov-21				
CON10410	Slope reinstatement works (RWC2 type 4, 6, 7, 8)	90	14-Dec-20 A	10-Jun-21				
CON10670	Slope reinstatement works (RWC2 type 1a, 1, 2)	96	28-Dec-20 A	03-Jun-21				
CON10232	Existing drainage pipe diversion	48	10-Mar-21 A	06-Jul-21				
CON12370	Site clearance & ELS works (KS27 east side)	90	30-Mar-21 A	21-Jul-21				
CON11510	Construct piling foundation at FE1 Type 1 (12nos, 5d/no, 1 team)	60	09-Apr-21 A	20-Jul-21				
CON11330	(NCE??) Construct CT5 Type 1 piling foundation (18nos, 5d/no, 1 team)	90	23-Apr-21 A	10-Aug-21				
CON10729B	(NCE130) Increment weather (21/3/2021 to 20/4/2021) on RIW1 RWC2	3	18-May-21 A	21-May-21				
CON10729C	Install pipe pile wall	60	22-May-21	02-Aug-21				
CON12170	Drainage & utilities works (RWC2 type 1a, 1, 2)	72	04-Jun-21	28-Aug-21				
CON10270	ELS to piling foundation pile cap (RWC2 type 5)	59	07-Jul-21	13-Sep-21				
CON11550	Construct piling foundation at FE1 Type 2 (12nos, 2d/no, 1 team)	24	21-Jul-21	17-Aug-21				
CON12390	ELS works & construct subway footing (KS27 east side)	90	22-Jul-21	06-Nov-21				
CON10730	Mobilization works for socket H-pile works (RWC2 type 3)	12	03-Aug-21	16-Aug-21				
CON11332	Construct CT5 Type 2 piling foundation (21nos, 2d/no, 1 team)	42	11-Aug-21	29-Sep-21				
CON10750	Pre-drill & construct socket H-pile works (RWC2 type 3; 400nos, 3d/no, 4 team)	300	17-Aug-21	20-Aug-22				
CON11552	ELS works for construct pile cap (FE1-PC1b, 32m, 1m/d)	36	18-Aug-21	29-Sep-21				
Road Improvement Works Location 2 (RIW2)		295	17-Dec-20 A	11-Oct-21				
Construction Works in Slope C3 (Portion B)		295	17-Dec-20 A	11-Oct-21				
CON20650A	(NCE067) Temporary works design change due to unforeseen ground conditions	78	17-Dec-20 A	03-Jun-21				
CON20910	Construct RW bay 14 to bay 16 base (L=19m)	42	21-May-21	10-Jul-21				
CON20670	ELS to RW bay 9 to bay 13 formation	41	04-Jun-21	23-Jul-21				
CON20930	Construct RW bay 14 to bay 16 wall (L=19m)	42	11-Jun-21	31-Jul-21				
CON20170	Fabrication of NB steel post - along slope side	70	14-Jul-21	21-Sep-21				
CON20790	Construct RW bay 9 to bay 13 base (L=30m)	66	24-Jul-21	11-Oct-21				
CON21010	Utilities & drainage works at Portion B (bay 3 to bay 8)	30	02-Aug-21	04-Sep-21				
Construction Noise Semi-Enclosure SE2 (Portion C)		206	28-Jan-21 A	09-Oct-21				
CON21960	ELS for SE2 (Bay 13 to Bay 21)	48	28-Jan-21 A	25-May-21				
CON21961	Further utilities diversion (Bay 13 to Bay 21)	72	28-Jan-21 A	25-May-21				
CON21650D	Construct piling fdn (SE2 Bay4 to Bay12)	55	04-Feb-21 A	27-May-21				
CON21962	Construct piling platform SE2 (Bay 13 to Bay 21)	30	26-May-21	30-Jun-21				
CON21650G	(NCE112) Increment weather (21/2/2021 to 20/3/2021) on RIW2 NB	1	28-May-21	28-May-21				
CON21650H	(NCE130) Increment weather (21/3/2021 to 20/4/2021) on RIW2 NB	3	29-May-21	01-Jun-21				
CON21650F	(EWN069) Shortage of concrete & aggregate supply @ RIW2	15	02-Jun-21	19-Jun-21				
CON21670	Install sheet piles (CT4, SE2 Bay4 to Bay12; 230m 5m/d, 1 team)	48	21-Jun-21	16-Aug-21				
CON21690	Excavate & install lateral support (CT4, SE2 Bay4 to Bay12; L=110m)	48	02-Jul-21	26-Aug-21				
CON21964	Predrill & construct piling fdn SE2 (Bay 13 to Bay 21)	84	02-Jul-21	09-Oct-21				
CON21710	Construct NB pile cap (CT4, SE2 Bay4 to Bay12; L=110m)	48	13-Jul-21	06-Sep-21				
CON21730	Construct NB tie beam (CT4, SE2 Bay4 to Bay12; L=110m)	48	23-Jul-21	16-Sep-21				
Road Improvement Works Location 3 (RIW3)		755	01-Jun-20 A	10-Oct-22				
Construction Works		755	01-Jun-20 A	10-Oct-22				
CON30654	(EWN 50, EWN52, EWN57, EWN58) JV Pending WSD confirm SMPR waterr	177	01-Jun-20 A	06-Jul-21				
CON30870	Construct slip road 4 road works	72	15-Sep-20 A	03-Jun-21				
CON31310	Utilities works, drainage works & watermain (CH0 to CH115)	72	22-Feb-21 A	03-Jun-21				
CON31330	Road works (CH0 to CH115)	60	12-Mar-21 A	18-Jun-21				
CON30150	Slope works at slope D1 (stage 3, 40% completed)	72	23-Apr-21 A	20-Jul-21				
CON30350	Construct RWD1 (bay 8 to bay 14) pile cap (2 teams)	60	05-May-21 A	16-Jul-21				
CON30370	Construct RWD1 (bay 8 to bay 14) wall (2 teams)	60	03-Jun-21	13-Aug-21				
CON30430	Construct RWD1-Type 4 pile cap (CH144-CH160, 16m)	60	03-Jun-21	13-Aug-21				
CON31730	Road re-alignment & TTA modification on SMPR	30	04-Jun-21	10-Jul-21				
CON31090	Install safety fencing, from haul road & hoarding (CH115 to CH275)	6	19-Jun-21	25-Jun-21				
CON31110	Trees felling (Sbpe D3, CH115 to CH275)	60	26-Jun-21	04-Sep-21				
CON30450	Construct RWD1-Type 4 (CH144-CH160) lay U/G utilities ducts & backfill	60	03-Jul-21	10-Sep-21				
CON30530	Drainage & utilities works (bay 1 to bay 7)	60	07-Jul-21	14-Sep-21				
CON30650	Construct Twin Fresh Watermain CH10 to CH50	120	07-Jul-21	26-Nov-21				
CON30656	Construct Twin Fresh Watermain CH50 to CH100	160	07-Jul-21	15-Jan-22				
CON30658	Construct Twin Fresh Watermain CH270 to CH320	184	07-Jul-21	16-Feb-22				
CON30662	Construct Fresh Watermain ACH320 to CH400 (EPD access)	180	07-Jul-21	11-Feb-22				
CON30490	Drainage & utilities works (bay 8 to bay 14)	60	10-Jul-21	17-Sep-21				
CON30570	Drainage & utilities works (Type 4 RW)	60	10-Jul-21	17-Sep-21				
CON30390	Construct RWD1 (bay 8 to bay 14) utilities works & backfill (2 teams)	60	10-Jul-21	17-Sep-21				
CON31130	Cut slope works (CH115 to CH275) (L=160m, 24058m3, 65m3/d)	371	12-Jul-21	10-Oct-22				
CON30170	Slope works at slope D1 (stage 4, 55% completed)	72	21-Jul-21	15-Oct-21				

- Actual Work
- Remaining Work
- Milestone

NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction
Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A
 3-Month Rolling Programme

Activity ID	Activity Name	Duration	Start	Finish	2021			
					May 41	Jun 42	Jul 43	Aug 44
CON30550	Road works (bay 1 to bay 7)	60	30-Jul-21	09-Oct-21				
CON30510	Road works (bay 8 to bay 14)	60	03-Aug-21	13-Oct-21				
CON30610	Road works (Type 4 RW)	60	03-Aug-21	13-Oct-21				
CON31150	Construct RWD3 (CH60 to CH152)	150	09-Aug-21	09-Feb-22				
Pedestrian Connectivity Facility (PC-E11)								
Construction Works								
CON42510	Erect roof steel frame, gutter, corrugated metal sheet & fall arrest system E11-F	48	22-Mar-21 A	22-May-21				
CON42490	Erect roof steel frame, gutter, corrugated metal sheet & fall arrest system E11-F	48	22-Mar-21 A	22-May-21				
CON42590	Erect roof steel frame, gutter, corrugated metal sheet & fall arrest system E11-F	48	22-Mar-21 A	22-May-21				
CON42610	Erect roof steel frame, gutter, corrugated metal sheet & fall arrest system E11-F	48	22-Mar-21 A	22-May-21				
CON42390	Construct lift tower 1 (2 teams)	60	14-Apr-21 A	25-Jun-21				
CON42690	ABWF works @E11-FB2 & E11-FB4	60	24-May-21	03-Aug-21				
CON42710	ABWF works @E11-FB3 & E11-FB5	60	24-May-21	03-Aug-21				
CON42630	Construct covered-walkway between PC-E11 & BBI toilet	102	31-May-21	29-Sep-21				
CON42790	E&M works to PC-E11 @E11-FB2 & E11-FB4	48	07-Jun-21	03-Aug-21				
CON42810	E&M works to PC-E11 @E11-FB3 & E11-FB5	48	07-Jun-21	03-Aug-21				
CON42670	Install glass & window to lift tower no 2	18	18-Jun-21	09-Jul-21				
CON42770	ABWF works @LT2 (inside 2nos lift shaft)	18	18-Jun-21	09-Jul-21				
CON42470	Erect steel frame E11-FB1, construct floor slab & side planter	48	26-Jun-21	21-Aug-21				
CON42650	Install glass & window to lift tower no 1	42	26-Jun-21	14-Aug-21				
CON42870	E&M works to PC-E11 @LT2 (inside 2nos lift shaft)	12	10-Jul-21	23-Jul-21				
CON42772	ABWF works @LT2 (Other than lift shaft area)	48	10-Jul-21	03-Sep-21				
CON42872	E&M works to PC-E11 @LT2 (Other than lift shaft area)	24	24-Jul-21	20-Aug-21				
CON42730	ABWF works @LT1 (inside 2nos lift shaft)	12	16-Aug-21	28-Aug-21				
Pedestrian Connectivity Facility (PC-E8)								
Construction Works								
CON41890	E&M works (P3 to P4)	60	08-Mar-21 A	22-May-21				
CON41190	Erect steel roof (steel frame) P1>P2	48	22-Mar-21 A	22-May-21				
CON41210	Erect steel roof (steel frame) P2>P3	48	22-Mar-21 A	22-May-21				
CON41670	4A_Install escalator (E8-E5 & E8-E6) (P2 to P3)	90	22-Mar-21 A	13-Jul-21				
CON41630	4B_Install escalator (E8-E3 & E8-E4) (P1 to P2)	90	22-Mar-21 A	13-Jul-21				
CON41790	E&M works (P1 to P2)	60	22-Mar-21 A	05-Jun-21				
CON41810	E&M works (P2 to P3)	60	22-Mar-21 A	05-Jun-21				
CON41830	E&M works (P6 to ABT)	60	28-Apr-21 A	10-Jul-21				
CON41730	3C_Install escalator (E8-E13 & E8-E14) (P6 to ABT)	90	18-May-21 A	17-Sep-21				
CON41290	Erect steel roof (steel frame) P6>ABT	48	21-May-21	17-Jul-21				
CON41250A	(EWN048C) Install roof cladding P4>P5	12	21-May-21*	03-Jun-21				
CON41270A	(EWN048C) Install roof cladding P5>P6	12	04-Jun-21*	18-Jun-21				
CON41190A	(EWN048C) Install roof cladding P1>P2	12	19-Jun-21*	03-Jul-21				
CON41210A	(EWN048C) Install roof cladding P2>P3	12	05-Jul-21*	17-Jul-21				
CON41870	E&M works (P4 to P5)	60	12-Jul-21	18-Sep-21				
CON41910	E&M works (External)	38	12-Jul-21	24-Aug-21				
CON41290A	(EWN048C) Install roof cladding P6>ABT	12	19-Jul-21*	31-Jul-21				
CON40630	Erect working platform (slope 326)	6	02-Aug-21	07-Aug-21				
CON41310	ABWF works (F9 & F1 to P1)	48	02-Aug-21	27-Sep-21				
CON41450	Landscaping works & reinstatement works	48	02-Aug-21	27-Sep-21				
CON41330	ABWF works (P1 to P2)	48	02-Aug-21	27-Sep-21				
CON41370	ABWF works (P2 to P3)	48	02-Aug-21	27-Sep-21				
CON41350	ABWF works (P3 to P4)	48	02-Aug-21	27-Sep-21				
CON41430	ABWF works (P4 to P5)	48	02-Aug-21	27-Sep-21				
CON41390	ABWF works (P5 to P6)	48	02-Aug-21	27-Sep-21				
CON41410	ABWF works (P6 to ABT)	48	02-Aug-21	27-Sep-21				
CON40650	Slope replacement works cycle 1 (slope 326)	18	09-Aug-21	28-Aug-21				
Pedestrian Connectivity Facility System A (SYA)								
Construction Works								
CON50490	Install E&M (ELE/M/AC/PDS) incl. Pillar Box	106	07-Apr-21 A	28-Aug-21				
CON50470	Application for power supply & energization (SYA)	120	07-Apr-21 A	28-Aug-21				
CON50290	Construct superstructure of lift tower to roof level (3m/pour, +165.7 to +178.45r	84	06-May-21 A	14-Aug-21				
CON50270	Erect bridge steel frame for SYA	48	16-Aug-21	12-Oct-21				
CON50330	ABWF works (lift tower & staircase)	96	16-Aug-21	08-Dec-21				
CON50390	Install window (phase 2)	90	16-Aug-21	01-Dec-21				
CON50370	Install window (phase 1)	90	16-Aug-21	01-Dec-21				
Pedestrian Connectivity Facility System B (SYB)								
Construction Works								
CON51070	Pre-drill & construct piling fdn at SYB-PC6	74	22-Mar-21 A	23-Jun-21				
CON51270	Pre-drill & construct socket H-pile works at SYB-PC1 (9nos, 8d/no, 1 team)	72	09-Apr-21 A	08-Jul-21				
CON52130	Construct pier SYB-P2 (2 pour)	42	12-Apr-21 A	01-Jun-21				
CON51150	Pre-drill & construct piling fdn at SYB-PC4	64	22-Apr-21 A	09-Jul-21				
CON51790	TBA	42	21-May-21	10-Jul-21				
CON51510	TBA	42	21-May-21	10-Jul-21				

- Actual Work
- Remaining Work
- Milestone

Activity ID	Activity Name	Duration	Start	Finish	2021			
					May 41	Jun 42	Jul 43	Aug 44
CON52170	Construct superstructure SYB-LT1	120	21-Jun-21	11-Nov-21				
CON51690	Construct pile cap SYB-PC6 (120m3)	48	24-Jun-21	19-Aug-21				
CON51450	Install sheet pile at SYB-PC1 (24m L, 4m/d, 1 team)	6	09-Jul-21	15-Jul-21				
CON51730	Construct pile cap SYB-PC4 (52m3)	39	10-Jul-21	24-Aug-21				
CON51470	Excavate & install support at SYB-PC1 (108m3, 25m3/d, 1 team + 12d)	18	16-Jul-21	05-Aug-21				
CON51770	Construct pile cap SYB-PC1 (35m3)	36	06-Aug-21	16-Sep-21				
Bus-Bus Interchange Public Toilet (BBI Toilet)		365	30-Sep-20 A	29-Sep-21				
Works related to section 10A - Establishment Works for Landscape Softworks in Section 10		365	30-Sep-20 A	29-Sep-21				
CON43370	Establishment Works for Landscape Softworks in Section 10 (Portion F)	365	30-Sep-20 A	29-Sep-21				

- Actual Work
- Remaining Work
- Milestone