

# FUGRO TECHNICAL SERVICES LIMITED

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## 75<sup>th</sup> CONSOLIDATED MONTHLY EM&A REPORT

January 2023

**Client** : Civil Engineering and Development Department, HKSAR

**EP No.** : EP-337/2009 –  
New Distributor Roads Serving the Planned Kai Tak  
Development Area

**Contract No.** : KLN/2016/05 –  
Independent Environmental Checker for  
Contract No. KL/2015/02 Kai Tak Development –  
Stage 5A Infrastructure at Former North Apron Area

**Report No.** : 0087/16/ED/1183

**Prepared by** : Wingo So

**Reviewed by** : Cyrus Lai

**Certified by** :   
Colin Yung  
Independent Environmental Checker  
Fugro Technical Services Limited

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**EXECUTIVE SUMMARY**

- i. This is 75<sup>th</sup> Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 January and 31 January 2023.
- ii. The construction activities undertaken in the reporting month are summarized as follow:

**Contract No. KL/2014/01:**

- Architectural features works at ground floor open space;
- Defect rectification works of pedestrian streets;
- Minor E&M works;
- Laying of paving blocks for footpath;
- Deck movement joint rectification, and;
- TTA implementation for minor works at Shing Fung Road.

**Contract No. KL/2015/02:**

- Carry out finishing works & E&M works inside subway
- Carry out reinstatement works at SKLR Playground
- Carry out road reinstatement works at Stage 4-2
- Re-connect the bundle of ducting for PCCW reimbursement at TTA stage 1
- Expose the suspended DN900 salt main for relaying works at TTA Stage 1

**Contract No. ED/2018/05:**

- Erection of falseworks and working platform for decking of Elevated Walkway LW-02
- ELS and excavation works for lift and staircase of LW-02
- ELS and excavation works at Sa Po Road
- RC construction at launching shaft for subway SB-01
- Construction of gantry footing at launching shaft for subway SB-01
- Construction works for Road L16
- Construction works for DCS
- Construction works for Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14
- Construction works for additional run-in at Road L7
- Dismantling of gantry crane at casting yard

**Breaches of the Action and Limit Levels**

- iii. No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- iv. No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- v. No Limit Level exceedance was recorded for noise monitoring in the reporting month.

**Complaint, Notification of Summons and Successful Prosecution**

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- 
- vi. No complaint, notification of summons or prosecution was received for Contract No. KL/2014/01, Contract No. KL/2015/02, and Contract No. ED/2018/05 in this reporting month.

### Reporting Changes

- vii. There was no reporting change in the reporting month.

**Future Key Issues**

viii. The potential environmental impacts for the coming month and the control measures are shown in **Table I**:

Table I Summary of Key Issues for the Coming Month and Control Measures

Major Impact Prediction	Control Measures
<b>Contract No. KL/2014/01:</b>	
Air quality impact (dust)	<ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>• Watering of any earth moving activities.</li> </ul>
Water quality impact (surface run-off)	<ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>
Noise Impact	<ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>• Controlling the number of plants use on site;</li> <li>• Regular maintenance of machines; and</li> <li>• Use of acoustic barriers if necessary.</li> </ul>
Waste/ Chemical Management	<ul style="list-style-type: none"> <li>• Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>• Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.</li> </ul>
<b>Contract No. KL/2015/02:</b>	
Air quality impact (dust)	<ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with impervious materials or maintained wet; and</li> <li>• Watering of any earth moving activities.</li> </ul>
Water quality impact (surface run-off)	<ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>
Noise Impact	<ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>• Controlling the number of plants use on site;</li> <li>• Regular maintenance of machines; and</li> <li>• Use of acoustic barriers if necessary.</li> </ul>
<b>Contract No. ED/2018/05:</b>	
Air Quality, Construction Noise, Water Quality, Chemical and	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities,</li> <li>• Limitation of the speed for vehicles on unpaved site roads,</li> <li>• Properly cover the stockpiles,</li> <li>• Good maintenance to the plant and equipment,</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME),</li> </ul>

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Major Impact Prediction	Control Measures
Waste Management, Landscape and Visual	<ul style="list-style-type: none"><li>• Provide movable noise barriers,</li><li>• Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,</li><li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,</li><li>• Onsite waste sorting and implementation of trip ticket system,</li><li>• Good management and control on construction waste reduction,</li><li>• Erection of decorative screen hoarding,</li><li>• Strictly following the Environmental Permits and Licenses, and</li><li>• Provide sufficient mitigation measures as recommended in Approved EIA Reports.</li></ul>

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## 1. INTRODUCTION

### 1.1 Background

- 1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.1.2 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 March 2009.
- 1.1.3 The EP-337/2009 was issued on 23 April 2009 for the new distributor roads serving the planned Kai Tak Development to the following scale and slope:
- Road D1 – a dual 2-lane carriageway of approximately 1.3 km long.
  - Road D2 – a dual 3-lane carriageway of approximately 1.1 km long.
  - Road D3 – a dual 2-lane carriageway of approximately 2.3 km long.
  - Road D4 – a dual 2-lane carriageway of approximately 0.9 km long.
- 1.1.4 The Civil Engineering and Development Department HKSAR has appointed Fugro Technical Services Limited (FTS) to undertake the role of Independent Environmental Checker (IEC) for the Contract No. KL/2015/02.
- 1.1.5 This is the 75<sup>th</sup> Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 January and 31 January 2023.

### 1.2 Summary of relevant Contract Information of Key Personnel

Party	Position	Name	Telephone	Fax/ E-mail
<b>Contract No. KL/2014/01:</b>				
Project Proponent (CEDD)	Engineer	Mr. Ricky Yu	3579 2124	3579 4516
Engineer's Representative (AECOM)	SRE	Mr. Anthony Lok	3746 1801	2798 0783
IEC (KSMC)	IEC	Mr. Happy Lee	2618 2166	2120 7752
ET (Cinotech)	ET Leader	Mr. K.S Lee	2151 2091	3107 1388
	Audit Team Leader	Ms. Betty Choi	2151 2072	
Main Contractor (CCJV)	EO	Mr. Simon Yau	2960 1398	2960 1399
<b>Contract No. KL/2015/02:</b>				
Project Proponent (CEDD)	Senior Engineer	Mr. Ricky Chan	2116 3753	2116 0714
Engineer's Representative (AECOM)	SRE	Mr. Vincent Lee	2798 0771	2210 6110
IEC (FTS)	IEC	Mr. Colin Yung	3565 4114	2450 8032
ET (Cinotech)	ET Leader	Mr. K.S Lee	2151 2091	3107 1388
	Audit Team Leader	Ms. Betty Choy	2151 2072	
Main Contractor	Site Agent	Mr. W. M. Wong	6386 3535	2398 8301

Party	Position	Name	Telephone	Fax/ E-mail
(PWHJV)				
<b>Contract No. ED/2018/05:</b>				
Project Proponent (CEDD)	Permit Holder	Mr. Lam Shing Tim	3842 7090	st_lam@cedd.gov.hk
Engineer's Representative (AECOM)	Supervisor's Delegate	Mr. Vincent Lee	2798 0771	sre2@ktd-stage5.com
IEC (Acuity)	IEC	Mr. Kevin Li	9779 2247	kevin.li@aurecongroup.com
ET (Ka Shing)	ET Leader	Mr. Pang Chan	6082 2973	stage5b@ka-shing.net
Main Contractor (BK- STEC)	EO	Mr. Rex Lau	6282 5154	rex.lau@buildking.hk

### 1.3 Summary of Construction Programme and Activities

1.3.1 The construction programme of each Contract is summarized in the appendices of the corresponding Monthly EM&A report.

1.3.2 The major construction activities undertaken in the reporting month are summarized as follow:

#### **Contract No. KL/2014/01:**

- Architectural features works at ground floor open space;
- Defect rectification works of pedestrian streets;
- Minor E&M works;
- Laying of paving blocks for footpath;
- Deck movement joint rectification, and;
- TTA implementation for minor works at Shing Fung Road.

#### **Contract No. KL/2015/02:**

- Carry out finishing works & E&M works inside subway
- Carry out reinstatement works at SKLR Playground
- Carry out road reinstatement works at Stage 4-2
- Re-connect the bundle of ducting for PCCW reimbursement at TTA stage 1
- Expose the suspended DN900 salt main for relaying works at TTA Stage 1

#### **Contract No. ED/2018/05:**

- Erection of falseworks and working platform for decking of Elevated Walkway LW-02
- ELS and excavation works for lift and staircase of LW-02
- ELS and excavation works at Sa Po Road
- RC construction at launching shaft for subway SB-01
- Construction of gantry footing at launching shaft for subway SB-01
- Construction works for Road L16
- Construction works for DCS
- Construction works for Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14
- Construction works for additional run-in at Road L7
- Dismantling of gantry crane at casting yard



**1.4 Summary of Inter-relationship with the environmental protection/ mitigation measures with the construction programme**

1.4.1 The summary of inter-relationship with environmental protection/mitigation measures are presented as follow:

Major Environmental Impact	Control Measures
<b>Contract No. KL/2014/01:</b>	
Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Provide mitigation measure to temporary use of chemicals;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.</li> </ul>
<b>Contract No. KL/2015/02:</b>	
Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Provide movable noise barrier;</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall;</li> <li>• Provide drip trays with adequate capacity and well maintained to chemicals;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.</li> </ul>
<b>Contract No. ED/2018/05:</b>	
The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities,</li> <li>• Limitation of the speed for vehicles on unpaved site roads,</li> <li>• Properly cover the stockpiles,</li> <li>• Good maintenance to the plant and equipment,</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME),</li> <li>• Provide movable noise barriers,</li> <li>• Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,</li> <li>• Onsite waste sorting and implementation of trip ticket system,</li> <li>• Good management and control on construction waste reduction,</li> <li>• Erection of decorative screen hoarding,</li> <li>• Strictly following the Environmental Permits and Licenses,</li> </ul>

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Major Environmental Impact	Control Measures
	and • Provide sufficient mitigation measures as recommended in Approved EIA Reports.

## 1.5 Summary Status of Environmental Licences, Notifications and Permits

1.5.1 Detailed relevant environmental licenses, permits and/or notifications on environmental protection for this EP are presented in the appendices of the corresponding Monthly EM&A report.

**2. ENVIRONMENTAL MONITORING AND AUDIT**

**2.1 Results and Observations**

Air Quality

- 2.1.1 The schedule of air quality monitoring in reporting month is provided in the appendices of the corresponding Monthly EM&A report.
- 2.1.2 The weather conditions during the monitoring are provided in the appendices of the corresponding Monthly EM&A report.
- 2.1.3 The monitoring data of 24-hr TSP and 1 hour TSP are summarized in **Table 2.1**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A report.

**Table 2.1 Summary of 24-hr and 1 hour TSP Monitoring Results**

Parameter	Monitoring Station	Average (µg/m <sup>3</sup> )	Range (µg/ m <sup>3</sup> )	Action Level (µg/ m <sup>3</sup> )	Limit Level (µg/ m <sup>3</sup> )
<b>Contract No. KL/2014/01:</b>					
N.A (No air quality monitoring is required for the Project)					
<b>Contract No. KL/2015/02:</b>					
1-hr TSP	AM2	66.6	30.4 – 112.0	346	500
24-hr TSP	AM2(A)	66.6	32.7 – 97.3	157	260
<b>Contract No. ED/2018/05:</b>					
24-hr TSP	AM2(A)	54	30 – 100	175	260
	AM3	65	35 – 98	172	
1-hr TSP	AM2(A)	48	28 – 85	302	500
	AM3	54	31 – 85	301	

- 2.1.4 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 2.1.5 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 2.1.6 The monitoring data of 24-hr TSP was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A report.
- 2.1.7 The Event and Action Plan for air quality is given in the appendices of the corresponding Monthly EM&A report.

Noise

- 2.1.8 The schedule of noise monitoring in reporting month is provided in in the appendices of the corresponding Monthly EM&A report.
- 2.1.9 The noise monitoring data are summarized in **Table 2.2**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A report.

**Table 2.2 Summary of Noise Impact Monitoring Results**

Monitoring Stations	Construction Noise Level Leq (30min) dB(A) (Range)	Action Level	Limit Level dB (A)
<b>Contract No. KL/2014/01:</b>		When one documented complaint is received.	
N.A (No Construction noise monitoring is required for the Project.)			NA
<b>Contract No. KL/2015/02:</b>			
M3(A)	60.2 – 75.6 #		75
M4	73.7 – 75.6 #		70*
M5(C)	61.6 – 81.0 #		75
<b>Contract No. ED/2018/05:</b>			
M4(A)	69.4 – 70.1		75
M5(A)	72.2 – 73.3		75

(\*) Noise Limit Level is 65 dB(A) during school examination periods.

(#) Measured noise level ≤ background / baseline noise level, detailed data refer to the corresponding Monthly EM&A report.

2.1.10 The noise monitoring data was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A report.

2.1.11 No Action / Limit Level exceedance was recorded for noise monitoring in the reporting month.

2.1.12 The Event and Action Plan for noise is given in in the appendices of the corresponding Monthly EM&A report.

Landscape and Visual

2.1.13 Site audits were carried out on a weekly basis to monitor and audit the landscape and visual mitigation measures within the site boundaries of this Project. Detailed of observations are presented in the appendices of the corresponding Monthly EM&A report.

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**3. SITE INSPECTION**

**3.1 Site Inspection**

- 3.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project.
- 3.1.2 Detailed of observation, recommendation of site inspections and summary of the mitigation measures implementation schedule is provided in the appendices of the corresponding Monthly EM&A Report.

**4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE****4.1 Complaints, Notification of Summons and Prosecution**

4.1.1 The summary of complaints, notification of summons and prosecution in the reporting month are shown as **Table 4.1**.

**Table 4.1 Summary of Complaints, Notification of Summons and Prosecution**

Event	No. of Event This Month	Remark
<b>Contract No. KL/2014/01:</b>		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
<b>Contract No. KL/2015/02:</b>		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA
<b>Contract No. ED/2018/05:</b>		
Complaint received	0	NA
Notifications of any summons & prosecutions received	0	NA

4.1.2 Detailed records are presented in the appendices of the corresponding Monthly EM&A report.

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**5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES**

**5.1 Implementation Status**

5.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month are presented in the appendices of the corresponding Monthly EM&A report.

**5.2 Waste Management**

5.2.1 The amount of wastes generated of this Project during the reporting month is shown in the appendices of the corresponding Monthly EM&A report.

**6. FUTURE KEY ISSUES**

**6.1 Construction Programme for the Next Two Months**

6.1.1 The major site activities undertaken for the coming two months are summarized in follow:

**Contract No. KL/2014/01:**

- Architectural features works at ground floor open space;
- Defect rectification works of pedestrian streets & at deck level;
- Minor E&M works;
- Installation of DCS louvres & Laying of paving blocks for footpath;
- Deck cladding rectification and modification;
- Deck movement joint rectification;
- Planting works along footpath, and;
- TTA implementation, minor works at Wang Chiu Road / Kai Cheung Road.

**Contract No. KL/2015/02:**

- Carry out finishing works & E&M works inside subway
- Laying DN800 salt main and reinstate the road pavement and surface drain at TTA Stage 1
- Implement TTA stage 4-1 and then carry out road and drain reinstatement works

**Contract No. ED/2018/05:**

- Erection of falsework and working platform for decking of Elevated Walkway LW-02
- RC construction of decking of LW-02
- ELS and excavation for foundation of LW02 lift and staircase
- Excavation and ELS works for retrieving shaft at Sa Po Road
- RC construction at Launching Shaft for SB-01
- Erection of gantry at launching shaft for SB-01
- Construction of Road L16
- Construction of DCS
- Construction of Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing Subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14

6.1.2 The potential environmental impacts arising from the above construction activities and the control measures are shown in **Table 6.1:**

**Table 6.1 Summary of Key Issues for the Coming Month and Control Measures**

Major Impact Prediction	Control Measures
<b><u>Contract No. KL/2014/01:</u></b>	
Air quality impact (dust)	<ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>• Watering of any earth moving activities.</li> </ul>
Water quality impact (surface run-off)	<ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>
Noise Impact	<ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> </ul>



Major Impact Prediction	Control Measures
	<ul style="list-style-type: none"> <li>Controlling the number of plants use on site;</li> <li>Regular maintenance of machines; and</li> <li>Use of acoustic barriers if necessary.</li> </ul>
Waste/ Chemical Management	<ul style="list-style-type: none"> <li>Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.</li> </ul>
<b>Contract No. KL/2015/02:</b>	
Air quality impact (dust)	<ul style="list-style-type: none"> <li>Frequent watering of haul road and unpaved/exposed areas;</li> <li>Frequent watering or covering stockpiles with impervious materials or maintained wet; and</li> <li>Watering of any earth moving activities.</li> </ul>
Water quality impact (surface run-off)	<ul style="list-style-type: none"> <li>Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>Provision of measures to prevent discharge into the stream.</li> </ul>
Noise Impact	<ul style="list-style-type: none"> <li>Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>Controlling the number of plants use on site;</li> <li>Regular maintenance of machines; and</li> <li>Use of acoustic barriers if necessary.</li> </ul>
<b>Contract No. ED/2018/05:</b>	
Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual	<ul style="list-style-type: none"> <li>Sufficient watering of the works site with the active dust emitting activities,</li> <li>Limitation of the speed for vehicles on unpaved site roads,</li> <li>Properly cover the stockpiles,</li> <li>Good maintenance to the plant and equipment,</li> <li>Use of quieter plant and Quality Powered Mechanical Equipment (QPME),</li> <li>Provide movable noise barriers,</li> <li>Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,</li> <li>Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,</li> <li>Onsite waste sorting and implementation of trip ticket system,</li> <li>Good management and control on construction waste reduction,</li> <li>Erection of decorative screen hoarding,</li> <li>Strictly following the Environmental Permits and Licenses, and</li> <li>Provide sufficient mitigation measures as recommended in Approved EIA Reports.</li> </ul>

**6.2 Monitoring Schedules for the Next Three Months**

6.2.1 The tentative schedules for environmental monitoring in the coming three months are provided in the appendices of the corresponding Monthly EM&A.

---

## **7. CONCLUSIONS**

- 7.1.1 No Action / Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 7.1.2 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 7.1.3 No Limit Level exceedance was recorded for noise monitoring in the reporting month.
- 7.1.4 No complaint, notification of summons or prosecution was received for Contract No. KL/2014/01, Contract No. KL/2015/02, and Contract No. ED/2018/05 in this reporting month.
- 7.1.5 The potential environmental impacts arising from the coming two months of major construction activities and the control measures are shown in **Table 6.1**.

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---



## Appendix A

### Monthly EM&A Report For

Contract No. KL/2014/01

**Kai Tak Development - Stage 2 Infrastructure works for Developments at Southern Part of  
the Former Runway**

# Civil Engineering and Development Department

**EP-337/2009 & EP-445/2013/B**

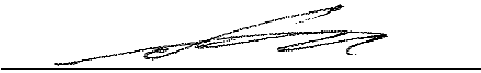
**Contract No. KL/2014/01**

**Kai Tak Development –  
Stage 2 Infrastructure works for Developments at  
Southern Part of the Former Runway**

Monthly EM&A Report

January 2023

(Version 1.1)

Approved By	 (Environmental Team Leader)
-------------	---

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

**CINOTECH CONSULTANTS LTD**

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Our ref: 6-2-2023

6-2-2023

By email: [clive.cheng@acom-ktd.com](mailto:clive.cheng@acom-ktd.com) and By hand

Supervising Officer Representative

Aecom Asia Co Ltd.

8/F Grand Central Plaza Tower 2

138 Shatin Rural Committee Road Sha Tin, N.T. Hong Kong

(Attn: Mr. Cheng Chi Hung)

Dear Mr. Cheng,

**Re: Contract No. KL/2014/01 (Environmental Permit Nos. EP-337/2009 and EP-445/2013/B)**

**Kai Tak Development –Stage 2 Infrastructure Works for Developments at Southern Part of the Former Runway**

**Monthly EM&A report for January 2023 v1.1**

Reference is made to the Environmental Team's submission of the draft Monthly EM&A Report (version 1.1) for January 2023 provided to Independent Environmental Checker (IEC) via an email on 6-2-2023 for review and comment.

Please be informed that IEC has no adverse comment on the captioned submission. IEC hereby verifies the captioned submission in accordance with Specific Condition 2.2 of the Environmental Permit No. 337/2009 and 445/2013/B.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,

For and on behalf of

Ka Shing Management Consultant Limited



Independent Environmental Checker

c.c.	CEDD	Mr. Jason Wong	(By email: <a href="mailto:kaichungwong@cedd.gov.hk">kaichungwong@cedd.gov.hk</a> )
	AECOM	Mr. Anthony Lok	(By email: <a href="mailto:anthony.lok@acom-ktd.com">anthony.lok@acom-ktd.com</a> )
	CEC-CCC	Mr. Eric Fong	(By email: <a href="mailto:eric-cs-fong@continental-engineering.com">eric-cs-fong@continental-engineering.com</a> )
	Cinotech	Mr. K.S Lee	(By email: <a href="mailto:ks.lee@cinotech.com.hk">ks.lee@cinotech.com.hk</a> )

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## EXECUTIVE SUMMARY

### Introduction

1. This is the 82<sup>nd</sup> Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2014/01 - Kai Tak Development – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway” (Hereafter referred to as “the Project”). This contract work comprises two Schedule 2 designated projects (DP), namely the new distributor road D4 (part) and roads D3A & D4A serving the planned KTD. The DPs are part of the designated projects under Environmental Permits (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) and EP-445/2013/B (“Kai Tak Development – Roads D3A & D4A”) respectively. This report documents the findings of EM&A Works conducted in January 2023.
2. With reference to the same principle of EIA report of the Project, air quality monitoring station should be provided at the Air Sensitive Receivers (ASR) within 500 m from the boundary of this Project while construction noise monitoring station should be provided at the Noise Sensitive Receivers (NSR) within 300 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children’s Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
3. The major site activities undertaken in the reporting month included:
  - Architectural features works at ground floor open space;
  - Defect rectification works of pedestrian streets;
  - Minor E&M works;
  - Laying of paving blocks for footpath;
  - Deck movement joint rectification, and;
  - TTA implementation for minor works at Shing Fung Road.

### Environmental Monitoring Works

4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table I**.



**Table I Non-compliance Recorded for the Project in the Reporting Month**

Parameter	No. of Project-related Exceedance		Action Taken
	Action Level	Limit Level	
Noise	0	0	N/A

*Environmental Monitoring for Air Quality and Construction Noise*

6. No monitoring for air quality and construction noise is required. No Action/Limit Level exceedance was recorded.

**Environmental Licenses and Permits**

7. Licenses/Permits granted to the Project include the Environmental Permits (EP) for the Project, EP-337/2009 issued on 23 April 2009 and EP-445/2013 issued on 3 May 2013 (Amended Environmental Permit (No.: EP-445/2013/A) issued on 13 August 2014; further amendment of Environmental Permit (No.: EP-445/2013/B) issued on 3 May 2022).
8. Billing Account for Disposal of Construction Waste (A/C No. 7024073).
9. Registration of Chemical Waste Producer (License: 5213-247-C4004-01).
10. Water Discharge License (License: WT0029931-2017).
11. Construction Noise Permits (Permit: GW-RE0442-20, GW-RE0639-20, GW-RE0045-21, GW-RE0717-21 & GW-RE0656-21).

**Key Information in the Reporting Month**

12. Summary of key information in the reporting month is tabulated in **Table II**.

**Table II Summary Table for Key Information in the Reporting Month**

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

### **Future Key Issues**

13. The future key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Silt, mud and sand along u-channels and sedimentation tanks;
- Noise from operation of the equipment, especially for rock-breaking activities, and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Dust generating activity and on haul road;
- Storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site.

### **Reporting Changes**

14. Since the major parts of Works under Contract no. KL/2014/03 has been completed, the environmental monitoring works of EM&A monitoring station, KTD1a, was then handed over to the ET of Contract no. ED/2018/04 in August, 2020. In order to obtain the environmental impact monitoring data with higher representativeness based on several factors, such as distance between monitoring location and the sensitive receiver, non-project related interference, obstruction to the construction works on site and the power supply problem, the monitoring location KTD1a was relocated to the original location as proposed in the EM&A manual (AEIAR-174/2013), and renamed as KTD1 on 3 August 2020.

## 1. INTRODUCTION

### Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 2 Infrastructure Works for Developments for Southern Part of the Former Runway is one of the construction stages of KTD. It contains two Schedule 2 DPs including new distributor roads serving the planned KTD and KTD Roads D3A & D4A. The general layout of the Project is shown in **Figure 1**.
- 1.2 One Environmental Permit (EP) No.: EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD and one Environmental Permit No.: EP-445/2013 was issued on 3 May 2013 for Kai Tak Development Roads D3A & D4A to Civil Engineering and Development Department (CEDD) as the Permit Holder. Pursuant to Section 13 of the EIAO, the Director of Environmental Protection Department amended the Environmental Permit No.: EP-445/2013 based on the Application No. VEP-449/2014 and the Environmental Permit (No.: EP-445/2013/A) was issued on 13 August 2014. The Environmental Permit (No.: EP-445/2013/A) was further amended and the Environmental Permit (No.: EP-445/2013/B) was issued on 3 May 2022.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Reports (Register No. AEIAR-130/2009 and AEIAR-170/2013) were approved by the Environmental Protection Department (EPD) on 4 March 2009 and 3 May 2013 respectively.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2014/01 – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway. The construction work under KL/2014/01 comprises the construction of part of the Road D4 under the EP (EP-337/2009) and the construction of Roads D3A & D4A under the EP (EP-445/2013/B).
- 1.5 Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract is on 13 April 2016. This is the 82<sup>nd</sup> Monthly EM&A report summarizing the EM&A works for the Project in January 2023.
- 1.6 All project information since the commencement of work under EPs including Monthly EM&A Reports is made available to the public via internet access at the website: [https://www.epd.gov.hk/eia/english/register/index8/vep4492014\\_content.html](https://www.epd.gov.hk/eia/english/register/index8/vep4492014_content.html)

## Project Organizations

- 1.7 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD).
  - The Supervising Officer and the Supervising Officer’s Representative (SO) – AECOM Asia Co. Ltd. (AECOM).
  - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
  - Independent Environmental Checker (IEC) – Ka Shing Management Consultant Ltd. (KSMC).
  - Contractor – Continental Engineering Corp. and Chit Cheung Construction Co. Ltd. Joint Venture (CCJV).
- 1.8 The key contacts of the Project are shown in **Table III**.

**Table III Key Project Contacts**

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Ricky Yu	Engineer	3579 2124	3579 4516
AECOM	Supervising Officer	Mr. Anthony Lok	SRE	3746 1801	2798 0783
Cinotech	Environmental Team	Mr. K S Lee	Environmental Team Leader	2151 2091	3107 1388
		Ms. Betty Choi	Audit Team Leader	2151 2072	
KSMC	Independent Environmental Checker	Mr. Happy Lee	IEC	2618 2166	2120 7752
CCJV	Contractor	Mr. Simon Yau	Environmental Officer	2960 1398	2960 1399

## Construction Activities undertaken during the Reporting Month

- 1.9 The site activities undertaken in the reporting month included:
- Architectural features works at ground floor open space;
  - Defect rectification works of pedestrian streets;
  - Minor E&M works;
  - Laying of paving blocks for footpath;
  - Deck movement joint rectification, and;
  - TTA implementation for minor works at Shing Fung Road.

- 1.10 The construction programme showing the inter-relationship with environmental protection/mitigation measures is presented in **Table IV**.

**Table IV Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures**

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• On-site waste sorting and implementation of trip ticket system;</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Provide mitigation measure to temporary use of chemicals;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.</li> </ul>

### Summary of EM&A Requirements

- 1.11 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of this report.

## 2. AIR QUALITY

### Monitoring Requirements

- 2.1 With reference to the same principle of EIA report of the Project, air quality monitoring station should be provided at the Air Sensitive Receivers (ASR) within 500 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
- 2.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1), the corresponding monitoring results for January 2023 should be accessed in the EM&A report for the reporting month. Appendix A shows the established Action and Limit Levels for the environmental monitoring works.

### Observations

- 2.3 No monitoring for air quality is required for this report. No Action/Limit Level exceedance at KTD1 was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.
- 2.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of air quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

### 3. NOISE

#### Monitoring Requirements

- 3.1 With reference to the same principle of EIA report of the Project, construction noise monitoring station should be provided at the Noise Sensitive Receivers (NSR) within 300 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
- 3.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1), the corresponding monitoring results for January 2023 should be accessed in the EM&A report for the reporting month. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Observations

- 3.3 No monitoring for construction noise is required for this report. No Action/Limit Level exceedance at KTD1 was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.
- 3.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of construction noise mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

#### **4. LANDSCAPE AND VISUAL**

##### **Monitoring Requirements**

- 4.1 According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

##### **Results and Observations**

- 4.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.
- 4.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 4.4 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix D** shall be performed.



## 5. ENVIRONMENTAL AUDIT

### Site Audits

- 5.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix C**.
- 5.2 Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 6, 11, 18 & 27 January 2023 in the reporting month. IEC joint site inspection was conducted on 18 January 2023. No non-compliance was observed during the site audits.

**Status of Environmental Licensing and Permitting**

5.3 All permits/licenses obtained for the Project are summarized in **Table V**.

**Table V Summary of Environmental Licensing and Permit Status**

Permit No.	Valid Period		Details	Status
	From	To		
<b>Environmental Permit (EP)</b>				
EP-337/2009	23 Apr 2009	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
EP-445/2013/A	13 Aug 2014	N/A	Construction of Kai Tak Development roads D3A and D4A	Valid
EP-445/2013/B	3 May 2022	N/A	Construction of Kai Tak Development roads D3A and D4A	Valid
<b>Effluent Discharge License</b>				
WT00023634-2016	--	31 Mar 2021	Wastewater from the construction site including effluent treated by screen and sedimentation tank; There are no more need for the license after 31 March 2021 as the project is close to completion and no significant waste water is being generated from site.	Expired on 31 Mar 2021
WT0029931-2017	--	31 December 2022	Wastewater from the construction site including effluent treated by screen and sedimentation tank; There are no more need for the license after 31 December 2022 as the project is close to completion and no significant waste water is being generated from site.	Expired on 31 December 2022
<b>Registration of Chemical Waste Producer</b>				
5213-247-C4004-01	--	N/A	Chemical Waste Types: Surplus paint, waste contaminated by paint, diesel, waste contaminated by diesel, spent lubricating oil and waste, soil contaminated by lubricating oil.	Valid
<b>Construction Noise Permit (CNP)</b>				
GW-RE0442-20	14 Jun 2020	13 Dec 2020	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive piling and performing prescribed construction work.	Expired on 13 Dec 2020
GW-RE0639-20	3 Aug 2020	19 Jan 2021		Construction Noise Permit for the use of powered mechanical

Permit No.	Valid Period		Details	Status
	From	To		
GW-RE0045-21	20 Jan 2021	19 Jul 2021	equipment for carrying out construction work other than percussive piling and performing prescribed construction work.	Expired on 19 Jul 2021
GW-RE0656-21	9 Jul 2021	30 Sep 2021		Expired on 30 Sep 2021
GW-RE0717-21	30 Jul 2021	19 Jan 2022		Expired on 19 Jan 2022

### Status of Waste Management

- 5.4 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix G**.
- 5.5 In respect of the dump truck cover, the Contractor is reminded to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

### Implementation Status of Environmental Mitigation Measures

- 5.6 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Table VI**.

**Table VI Observations and Recommendations of Site Inspections**

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	--	--	--
<i>Air Quality</i>	--	--	--
<i>Noise</i>	--	--	--
<i>Waste/ Chemical Management</i>	--	--	--
<i>Landscape and Visual</i>	--	--	--
<i>Permits/ Licenses</i>	--	--	--

### **Summary of Mitigation Measures Implemented**

- 5.7 An updated summary of the EMIS is provided in **Appendix E**.

### **Implementation Status of Event Action Plans**

- 5.8 The Event Action Plans for noise and landscape and visual are presented in **Appendix D**. No Event Action Plan for air quality is considered necessary.

#### Construction Dust

- 5.9 No Action/Limit Level exceedance was recorded in the reporting month.

#### Construction Noise

- 5.10 No Action/Limit Level exceedance was recorded in the reporting month.

#### Landscape and visual

- 5.11 No non-compliance was recorded in the reporting month.

### **Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution**

- 5.12 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix F**.

## 6. FUTURE KEY ISSUES

6.1 Major site activities undertaken for the coming two months include:

- Architectural features works at ground floor open space;
- Defect rectification works of pedestrian streets & at deck level;
- Minor E&M works;
- Installation of DCS louvres & Laying of paving blocks for footpath;
- Deck cladding rectification and modification;
- Deck movement joint rectification;
- Planting works along footpath, and;
- TTA implementation, minor works at Wang Chiu Road / Kai Cheung Road.

6.2 Key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Silt, mud and sand along u-channels and sedimentation tanks;
- Noise from operation of the equipment, especially for rock-breaking activities and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Dust generating activity;
- Storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site

6.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. February & March 2023 are summarized as follows:

<b>Construction Works</b>	<b>Major Impact Prediction</b>	<b>Control Measures</b>
As mentioned in Section 6.1	Air quality impact (dust)	<ul style="list-style-type: none"> <li>a) Frequent watering of haul road and unpaved/exposed areas;</li> <li>b) Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>c) Watering of any earth moving activities.</li> </ul>
	Water quality impact (surface run-off)	<ul style="list-style-type: none"> <li>a) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>b) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>c) Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>d) Provision of measures to prevent discharge into the stream.</li> </ul>
	Noise Impact	<ul style="list-style-type: none"> <li>a) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>b) Controlling the number of plants use on site;</li> <li>c) Regular maintenance of machines; and</li> <li>d) Use of acoustic barriers if necessary.</li> </ul>
	Waste/ Chemical Management	<ul style="list-style-type: none"> <li>a) Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>b) Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.</li> </ul>

## 7. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 7.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken in January 2023.

#### Air Quality and Construction Noise

- 7.2 No regular monitoring air quality and noise monitoring is required for the Project. No Action/Limit Level exceedance was recorded.

#### Landscape and visual

- 7.3 No non-compliance was recorded in the reporting month.

#### Complaint and Prosecution

- 7.4 No environmental complaints and environmental prosecution were received in the reporting month.
- 7.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

### Recommendations

- 7.6 According to the environmental audit performed in the reporting month, the following recommendations were made:

#### *Waste/ chemical management*

- To avoid the accumulation of general refuse, especially cigarette butt and other domestic waste.
- The construction/chemical material should be stoned at the proper place.
- The drip trays with adequate capacity and well maintained should be provided to chemicals

#### *Air Quality*

- The dusty material should be covered by impervious materials or maintained wet.

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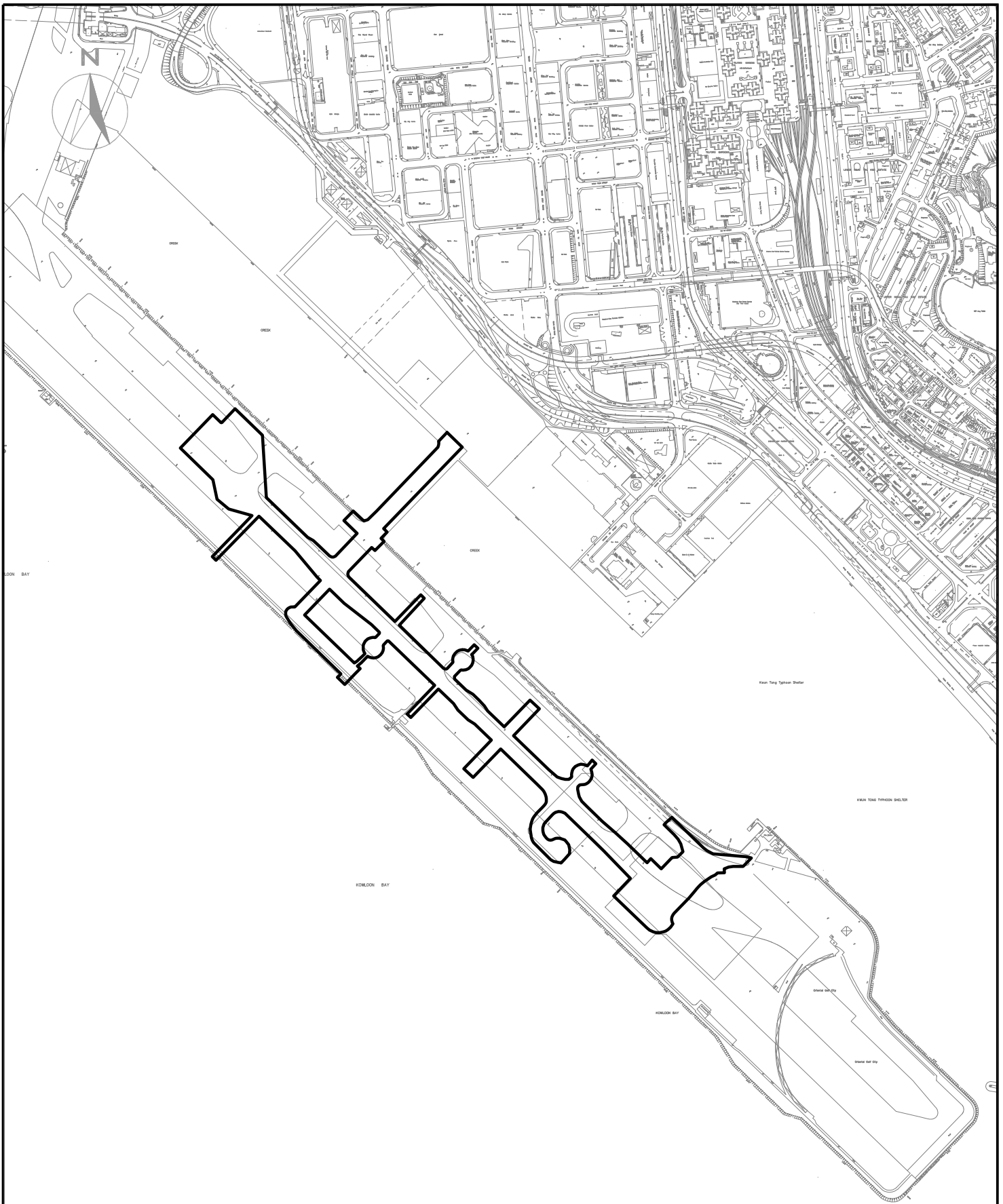
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## FIGURES

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LEGEND:	
	SITE BOUNDARY

**CINOTECH**  
Cinotech Consultants Limited

KL/2014/01 KAI TAK DEVELOPMENT - STAGE 2  
INFRASTRUCTURE WORKS FOR DEVELOPMENT AT  
SOUTHERN PART OF THE FORMER RUNWAY

**SITE LAYOUT PLAN**

SCALE	1:1000@A4	DATE	MAY 2016
CHECK	JL	DRAWN	JW
JOB No.	MA15046	FIGURE NO.	1
		REV	-

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**APPENDIX A  
ACTION AND LIMIT LEVELS**

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## Appendix A - Action and Limit Levels

**Table A-1 Action and Limit Levels for Air Quality Monitoring**

Monitoring Station	Parameter	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level <sup>(1)(2)</sup> ( $\mu\text{g}/\text{m}^3$ )
KTD1	24-hr TSP	177	260
KTD1*	1-hr TSP	285	500

\* 1-hr TSP monitoring should be required in case of complaints.

**Table A-2 Action and Limit Levels for Construction Noise Monitoring**

Time Period	Action Level	Limit Level <sup>(1)(2)</sup>
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: (1) If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.  
 (2) No regular noise impact monitoring station for this Contract. It is subject to the noise sensitive receiver(s) and additional monitoring work.  
 (\*) 70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods respectively.

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**APPENDIX B**  
**SUMMARY OF EXCEEDANCE**

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**Contract No. KL/2014/01**

**Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**

**Appendix B – Summary of Exceedance**

**Exceedance Record for Contract No. KL/2014/01**

Reporting Month: January 2023

**(A) Exceedance Record for Construction Dust**

**(NIL in the reporting month)**

**(B) Exceedance Record for Construction Noise**

**(NIL in the reporting month)**

**(C) Exceedance Record for Landscape and Visual**

**(NIL in the reporting month)**

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**APPENDIX C**  
**SITE AUDIT SUMMARY**

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**Contract No. KL/2014/01**

**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**



**EP-337/2009 & EP-445/2013/B**

**Weekly Site Inspection Record Summary**

**Inspection Information**

Checklist Reference Number	230106
Date	06 January 2023 (Friday)
Time	15:15 – 15:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	• <b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits /Licenses</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	No follow-up items are required from the previous site inspection (ref no.: 221228).	

	Name	Signature	Date
Recorded by	Charles Fung		06 January 2023
Checked by	Colman Wong		09 January 2023

**Contract No. KL/2014/01**

**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**



**EP-337/2009 & EP-445/2013/B**

**Weekly Site Inspection Record Summary**

**Inspection Information**

Checklist Reference Number	230111
Date	11 January 2023 (Wednesday)
Time	13:30 – 14:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	• <b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits /Licenses</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	No follow-up items are required from the previous site inspection (ref no.: 230106).	

	Name	Signature	Date
Recorded by	Charles Fung		11 January 2023
Checked by	Colman Wong		16 January 2023



**Contract No. KL/2014/01**



**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**

**EP-337/2009 & EP-445/2013/B**

**Weekly Site Inspection Record Summary**  
**Inspection Information**

Checklist Reference Number	230118
Date	18 January 2023 (Wednesday)
Time	14:30 – 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits /Licenses</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	No follow-up items are required from the previous site inspection (ref no.: 230111).	

	Name	Signature	Date
Recorded by	Charles Fung		18 January 2023
Checked by	Colman Wong		26 January 2023

**Contract No. KL/2014/01**



**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**

**EP-337/2009 & EP-445/2013/B**

**Weekly Site Inspection Record Summary**  
**Inspection Information**

Checklist Reference Number	230127
Date	27 January 2023 (Friday)
Time	11:00 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
	• No environmental deficiency was identified during site inspection	
	<b>C. Air Quality</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>D. Noise</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>E. Waste / Chemical Management</b>	
	• No environmental deficiency was identified during site inspection.	
	• <b>F. Visual and Landscape</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>G. Permits /Licenses</b>	
	• No environmental deficiency was identified during site inspection.	
	<b>H. Others</b>	
	No follow-up items are required from the previous site inspection (ref no.: 230118).	

	Name	Signature	Date
Recorded by	Charles Fung		27 January 2023
Checked by	Colman Wong		30 January 2023

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**APPENDIX D**  
**EVENT ACTION PLANS**

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## Appendix D - Event Action Plans

### Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> <li>4. Notify ER, IEC and Contractor;</li> <li>5. Carry out investigation;</li> <li>6. Report the results of investigation to the IEC, ER and Contractor;</li> <li>7. Discuss with the IEC and Contractor on remedial measures required;</li> <li>8. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>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.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>

# Appendix D - Event Action Plans

## Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	<ul style="list-style-type: none"> <li>Check final design conforms to the requirements of EP and prepare report.</li> </ul>	<ul style="list-style-type: none"> <li>Check report.</li> <li>Recommend remedial design if necessary</li> </ul>	<ul style="list-style-type: none"> <li>Undertake remedial design if necessary</li> </ul>	
Non-conformity on one occasion	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ul>	<ul style="list-style-type: none"> <li>Check report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>
Repeated Non-conformity	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If non-conformity stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Check monitoring report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>

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**APPENDIX E  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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**Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase**

EIA Ref.	Mitigation Measures	Status
<b>Construction Air Quality</b>		
S3.2 (AEIAR-130/2009)	8 times daily watering of the work site with active dust emitting activities.	^
S4.8 (AEIAR-170/2013)	Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.	^
S3.2 (AEIAR-130/2009) and S4.8 (AEIAR-170/2013)	<p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p> <ul style="list-style-type: none"> <li>● Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> <li>● Misting for the dusty material should be carried out before being loaded into the vehicle.</li> <li>● Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> <li>● Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</li> <li>● The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> <li>● The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.</li> <li>● Vehicle washing facilities should be provided at every vehicle exit point.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	<ul style="list-style-type: none"> <li>● The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>● Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</li> <li>● Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides; and</li> <li>● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
<b>Construction Noise</b>		
S3.3 (AEIAR-130/2009)	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S3.3 (AEIAR-130/2009)	<p>Good Site Practice:</p> <ul style="list-style-type: none"> <li>● Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.</li> <li>● Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.</li> <li>● Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>● Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.</li> <li>● Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>● Material stockpiles and other structures should be effectively utilized, wherever</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>



EIA Ref.	Mitigation Measures	Status
	practicable, in screening noise from on-site construction activities.	
S3.3 (AEIAR-130/2009)	Scheduling of Construction Works during School Examination Period	N/A
S3.8 (AEIAR-170/2013)	Provision of a landscaped deck along Roads D3A & D4A.	N/A
S3.8 (AEIAR-170/2013)	<ul style="list-style-type: none"> <li>● Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A &amp; D4A;</li> <li>● Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and</li> <li>● Provision of staircases with noise barriers next to Sites 4A1 and 4B1</li> </ul> <p>It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.</p>	N/A N/A N/A
S3.8 (AEIAR-170/2013)	Non-noise sensitive use areas within Sites 4A1 and 4B1.	N/A
S3.8 (AEIAR-170/2013)	Avoid sensitive façade with openable window facing Road D3A.	N/A
<b>Construction Water Quality</b>		
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<p><u>Construction Runoff</u></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> <li>● use of sediment traps</li> <li>● adequate maintenance of drainage systems to prevent flooding and overflow</li> </ul>	^ ^

EIA Ref.	Mitigation Measures	Status
	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^
	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	^
S5.8 (AEIAR-170/2013)	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 pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	^
S3.4 (AEIAR-130/2009)	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacity, are recommended as a general mitigation measure	^

EIA Ref.	Mitigation Measures	Status
	which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	^
	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	^
S3.4 (AEIAR-130/2009)	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	^
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting	^

EIA Ref.	Mitigation Measures	Status
	from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	
S5.8 (AEIAR-170/2013)	<p><u>Boring and Drilling Water</u> 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>	^
	<p><u>Acid Cleaning, Etching and Pickling Wastewater</u> Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers</p>	^
S3.4 (AEIAR-130/2009)	<p><u>Drainage</u> It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.</p>	^
S3.4 (AEIAR-130/2009)	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	^

EIA Ref.	Mitigation Measures	Status
S3.4 (AEIAR-130/2009)	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
S5.8 (AEIAR-170/2013)	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. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. 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.	^
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<u>Sewage Effluent</u>  Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	^
S5.8	Notices should be posted at conspicuous locations to remind the workers not to discharge	^

EIA Ref.	Mitigation Measures	Status
(AEIAR-170/2013)	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 pollution problem after undertaking all required measures.	
S3.4 (AEIAR-130/2009) and S5.8 (AEIAR-170/2013)	<u>Stormwater Discharges</u>  Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	^
	<u>Debris and Litter</u>  In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur.	^
S5.8 (AEIAR-170/2013)	<u>Accidental Spillage</u>  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 in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes. 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.	^

EIA Ref.	Mitigation Measures	Status
	<p>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:</p> <ul style="list-style-type: none"> <li>● Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>● Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>● Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
<b>Construction Waste Management</b>		
<p>S6.7 (AEIAR-170/2013)</p>	<p>Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC (W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites.</p>	<p>^</p>
<p>S3.5 (AEIAR-130/2009) and S6.7 (AEIAR-170/2013)</p>	<p><b>Good Site Practices</b> It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:</p> <ul style="list-style-type: none"> <li>● Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site Training of site personnel in proper waste management and chemical waste handling procedures</li> <li>● Provision of sufficient waste disposal points and regular collection for disposal</li> </ul>	<p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	<ul style="list-style-type: none"> <li>● Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>● A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)</li> <li>● Regular cleaning and maintenance systems, sumps and oil interceptors</li> <li>● Separation of chemical wastes for special handling and appropriate treatment</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount 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"> <li>● Sort C&amp;D waste from demolition of the remaining structures to recover recyclable portions such as metals</li> <li>● Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal</li> <li>● Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force</li> <li>● Any unused chemicals or those with remaining functional capacity should be recycled</li> <li>● Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> <li>● Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste</li> <li>● Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>



EIA Ref.	Mitigation Measures	Status
<p>S3.5 (AEIAR-130/2009)</p>	<p>Construction and Demolition Materials</p> <p>Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&amp;D material. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>● Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.</li> <li>● Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.</li> <li>● Skip hoist for material transport should be totally enclosed by impervious sheeting.</li> <li>● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.</li> <li>● The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>● The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.</li> <li>● All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.</li> <li>● The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.</li> </ul> <p>When delivering inert C&amp;D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&amp;D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

EIA Ref.	Mitigation Measures	Status
	System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirement sand implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	
S3.5 (AEIAR-130/2009)	<p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem</p>	^
<b>Construction Landscape and Visual</b>		
S3.8.12 (AEIAR-130/2009) and S7.9 (AEIAR-170/2013)	<ul style="list-style-type: none"> <li>● Minimized construction area and contractor’s temporary works areas.</li> <li>● All existing trees should be carefully protected during construction.</li> <li>● Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</li> <li>● Control of night-time lighting.</li> <li>● Erection of decorative screen hoarding.</li> <li>● Reduction of construction period to practical minimum.</li> <li>● Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas.</li> <li>● Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.</li> </ul>	^ ^ ^  ^ ^ ^ ^ ^

Remarks:	EIA Report (AEIAR-130/2009) – Kai Tak Development	
	EIA Report (AEIAR-170/2013) – Kai Tak Development – Roads D3A & D4A	
	^ Compliance of mitigation measure;	X Non-compliance of mitigation measure;
	N/A Not Applicable at this stage; N/A(1) Not observed;	• Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor.	# Recommendation was made during site audit but not yet improved/rectified by the contractor.	

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**APPENDIX F  
SUMMARIES OF ENVIRONMENTAL  
COMPLAINT, WARNING, SUMMON  
AND NOTIFICATION OF SUCCESSFUL  
PROSECUTION**

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**Contract No. KL/2014/01**

**Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**

**Appendix F – Summary of environmental complaint, warning, summon and notification of successful prosecution**

**Reporting Month:** January 2023

**Contract No. KL/2014/01**

<b>Log Ref.</b>	<b>Location</b>	<b>Received Date</b>	<b>Details of Complaint/warning/summon and prosecution</b>	<b>Investigation/Mitigation Action</b>	<b>Status</b>
N/A	N/A	N/A	N/A	N/A	N/A

**Remarks:** No environmental complaint/warning/summon and prosecution were received in the reporting period.

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**APPENDIX G**  
**WASTE GENERATED QUANTITY**

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### Appendix G. Monthly Summary Waste Flow Table

Name of Department: CEDD

Contract No: KL/2014/01

#### Monthly Summary Waste Flow Table for 2023

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	Reused in other Projects *	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in tonne)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in tonne)
Jan	82.86	0	0	0	0.00	0	0	0	0	27.15	
Feb											
Mar											
Apr											
May											
June											
<b>Sub-total</b>	<b>82.86</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27.15</b>	
July											
Aug											
Sept											
Oct											
Nov											
Dec											
<b>Total</b>	<b>82.86</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27.15</b>	

\* Transfer to alternative disposal ground at Lung Kwu Sheung Tan EPD approved recycler

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### **Appendix B**

**Monthly EM&A Report  
For  
Contract No. KL/2015/02  
Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**



# Civil Engineering and Development Department


**EP-337/2009 – New Distributor Roads Serving the  
Planned KTD**

**Contract No. KLN/2016/04  
Environmental Monitoring Works for  
Contract No. KL/2015/02  
Kai Tak Development – Stage 5A Infrastructure  
at Former North Apron Area**

Monthly EM&A Report

January 2023

(Version 1.0)

Certified By   
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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FUGRO TECHNICAL SERVICES LIMITED  
19/F, Fugro House – KCC2  
1 Kwai On Road, Kwai Chung  
New Territories, Hong Kong

Date 8 February 2023  
Our Ref. MCL/ED/0052/2023/C

Cinotech Consultants Limited  
Rm 1710, Technology Park,  
18 On Lai Street, Shatin,  
New Territories,  
Hong Kong

BY EMAIL

Attn.: Mr. K.S Lee

Dear Sir,

**Contract No. KL/2015/02**  
**Kai Tak Development –Stage 5A Infrastructure at Former North Apron**  
**Verification of Monthly EM&A Report for January 2023**

We refer to your emails dated 6 and 8 February 2023 for the captioned report prepared by the ET.

We have no further comment and hereby verify the Report in accordance with Clause 3.3 of Environmental Permit no. EP-337/2009.

Should you require further information, please do not hesitate to contact me on 3565 4114 or our Cyrus Lai on 3565 4442.

Assuring you of our best attention at all times.

Yours faithfully,  
For and on behalf of  
FUGRO TECHNICAL SERVICES LIMITED

---

Colin K. L. Yung  
Independent Environmental Checker

CY/cl

c.c. CEDD – Attn.: Mr. Ricky Chan  
Attn.: Mr. Andy Wong  
AECOM – Attn.: Mr. Vincent Lee  
Attn.: Mr. Teddy Shih

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## EXECUTIVE SUMMARY

### Introduction

1. This is the 73<sup>rd</sup> Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2015/02 - Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area” (Hereafter referred to as “the Project”). This contract comprises one Schedule 2 designated project (DP), namely the new distributor road D1 serving the planned KTD. The DP is part of the designated project under Environmental Permit (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) respectively. This report documents the findings of EM&A Works conducted during January 2023.
2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in **Table I** (see **Figure 2 and 3** for their locations).

**Table I – Air Quality and Noise Monitoring Stations for this Project**

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations
<b>Air Quality Monitoring Stations</b>		
AM2 - Lee Kau Yan Memorial School	Yes (1-hour TSP)	N/A
	No (24-hour TSP)	AM2(A) – Ng Wah Catholic Secondary School
<b>Noise Monitoring Stations</b>		
M3 - Cognitio College	No	M3(A) – The Bridge connecting The Latitude
M4 - Lee Kau Yan Memorial School	Yes	N/A
M5 – Nam Yuen	No	M5(C) – Mercy Grace’s Home

3. The major site activities undertaken in the reporting month included:
- Carry out finishing works & E&M works inside subway
  - Carry out reinstatement works at SKLR Playground
  - Carry out road reinstatement works at Stage 4-2
  - Re-connect the bundle of ducting for PCCW reimbursement at TTA stage 1
  - Expose the suspended DN900 salt main for relaying works at TTA Stage 1

### Environmental Monitoring Works

4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table II**.

**Table II Non-compliance Recorded for the Project in the Reporting Month**

Parameter	No. of Project-related Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

#### *1-hour & 24-hour TSP Monitoring*

6. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
7. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### *Construction Noise Monitoring*

8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

## Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, EP-337/2009 issued on 23 April 2009. All valid Licenses/Permits for this Project are shown in **Table 6.1**.

- Billing Account for Construction Waste Disposal (A/C# 7026164).
- Effluent Discharge License (WT00041367-2022).
- Registration of Chemical Waste Producer (WPN5213-286-P3271-01).

## Key Information in the Reporting Month

10. Summary of key information in the reporting month is tabulated in **Table III**.

**Table III Summary Table for Key Information in the Reporting Month**

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	---	---	N/A	N/A	---
Reporting Changes	---	---	N/A	N/A	---
Notifications of any summons & prosecutions received	---	---	N/A	N/A	---

## Future Key Issues

11. The future key environmental issues in the coming two months include:

- Dust generation from stockpiles of dusty materials, exposed site area, excavation
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment; and
- Wastewater and runoff discharge from site.

## 1 INTRODUCTION

### Background

- 1.1. The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 5A Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains one Schedule 2 DP including new distributor roads serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2. An Environmental Permit (EP) No. EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD to Civil Engineering and Development Department as the Permit Holder.
- 1.3. A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4. Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2015/02 – Stage 5A Infrastructure at Former North Apron Area. The construction work under KL/2015/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).
- 1.5. Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The commencement date of construction of Road D1 (part) under this Contract was on 16 January 2017.

### Project Organizations

- 1.6. Different parties with different levels of involvement in the project organization include:
  - Project Proponent – Civil Engineering and Development Department (CEDD).
  - The Engineer and the Engineer's Representative (ER) – AECOM Asia Co. Ltd (AECOM).
  - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech).
  - Independent Environmental Checker (IEC) – Fugro Technical Services Limited (FTS).
  - Contractor – Peako - Wo Hing Joint Venture (PWHJV).



1.7. The key contacts of the Project are shown in **Table 1.1**.

**Table 1.1 Key Project Contacts**

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. CHAN Wai Kit, Ricky	Senior Engineer	2116 3753	2116 0714
AECOM	Engineer's Representative	Mr. Vincent Lee	Senior Resident Engineer	2798 0771	2210 6110
Cinotech	Environmental Team	Mr. K.S Lee	Environmental Team Leader	2151 2091	3107 1388
		Ms. Betty Choi	Audit Team Leader	2151 2072	
FTS	Independent Environmental Checker	Mr. Colin Yung	Independent Environmental Checker	3565 4114	2450 8032
PWHJV	Contractor	Mr. W.M. Wong	Site Agent	6386 3535	2398 8301

### Construction Activities undertaken during the Reporting Month

1.8. The site activities undertaken in the reporting month included:

- Carry out finishing works & E&M works inside subway
- Carry out reinstatement works at SKLR Playground
- Carry out road reinstatement works at Stage 4-2
- Re-connect the bundle of ducting for PCCW reimbursement at TTA stage 1
- Expose the suspended DN900 salt main for relaying works at TTA Stage 1

1.9. The construction programme for the Project is shown in **Appendix N**.

1.10. The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 1.2**.

**Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures**

Construction Works	Major Environmental Impact	Control Measures
Refer to Section 1.8	Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles by impervious materials;</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Provide movable noise barrier to enclose the noisy plant;</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall;</li> <li>• Provide drip trays with adequate capacity and well maintained to chemicals</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.</li> </ul>

### Summary of EM&A Requirements

- 1.11. The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12. The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.13. This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project during the reporting month.

## 2 AIR QUALITY

### Monitoring Requirements

- 2.1. According to EM&A Manual under the EP, 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

### Monitoring Locations

- 2.2. 1-hour TSP impact dust monitoring was conducted at the air quality monitoring station, AM2 - Lee Kau Yan Memorial School and 24-hour TSP impact dust monitoring were conducted at the air quality monitoring station, AM2(A) - Ng Wah Catholic Secondary School in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.3. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

**Table 2.1 Locations for Air Quality Monitoring**

Monitoring Stations	Locations	Location of Measurement
AM2 (1-hour TSP)	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
AM2(A) (24-hour TSP)	Ng Wah Catholic Secondary School	Rooftop (about 8/F) Area

### Monitoring Equipment

- 2.4. **Table 2.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix B**.

**Table 2.2 Air Quality Monitoring Equipment**

Equipment	Model and Make	Quantity
Calibrator	• TISCH TE-5025A	1
1-hour TSP Dust Meter	• Sibata Scientific Technology LD-5R	2
HVS Sampler	• TE-5170 c/w of TSP sampling inlet	1
Wind Anemometer	• Davis Instruments 6152	1

### Monitoring Parameters, Frequency and Duration

- 2.5. **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

**Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration**

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

### Monitoring Methodology and QA/QC Procedure

#### *1-hour TSP Monitoring*

#### Measuring Procedures

- 2.6. The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:

*(Equipment: Sibata Scientific Technology; Model no. LD-3B, LD-5R)*

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display.
- Finally, push the start/stop switch to stop the measuring after 1 hour sampling.

- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

#### Maintenance/Calibration

- 2.7. The following maintenance/calibration was required for the direct dust meters:

Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

#### *24-hour TSP Monitoring*

#### Instrumentation

- 2.8. High volume (HVS) samplers (Model TE-5170), completed with appropriate sampling inlets, were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

#### Operating/Analytical Procedures

- 2.9. Operating/analytical procedures for the operation of HVS were as follows:

- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
- No two samplers were placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
- No furnaces or incineration flues were nearby.
- Airflow around the sampler was unrestricted.
- The sampler was more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

- 2.10. Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m<sup>3</sup>/min. and 1.4 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- 2.11. For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.
- 2.12. The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13. The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14. The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15. The shelter lid was closed and secured with the aluminium strip.
- 2.16. The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17. After sampling, the filter was removed and sent to the HOKLAS laboratory (High Precision Chemical Testing Ltd.) for weighing. The elapsed time was also recorded.
- 2.18. Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.19. The following maintenance/calibration was required for the HVS:
  - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
  - High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

**Results and Observations**

- 2.20. All 1-hour and 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 2.21. The weather information for the reporting month is summarized in **Appendix C**.
- 2.22. The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.
- 2.23. The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.
- 2.24. According to our field observations during the monitoring, the major dust source identified at the two designated air quality monitoring stations are road traffic dust, exposed site area and open stockpiles, excavation works and site vehicle movements.
- 2.25. The summary of 1-hour and 24-hour TSP air quality monitoring results during the reporting month are shown in **Appendix E** and **Appendix F** respectively.

### 3 NOISE

#### Monitoring Requirements

- 3.1. According to EM&A Manuals under the EP, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Monitoring Locations

- 3.2. Three designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M3(A), M4, and M5(C)). **Figure 3** shows the locations of these stations.

**Table 3.1 Noise Monitoring Stations**

Monitoring Stations	Locations	Location of Measurement
M3(A)	The Bridge connecting The Latitide	In the middle of the foot bridge connecting The Latitide
M4	Lee Kau Yan Memorial School	Rooftop (about 7/F) Area
M5(C)	Mercy Grace's Home	Ground in front of the building entrance facing Prince Edward Road East (noise monitoring is not allowed on the rooftop from 27 February 2020, due to the coronavirus countermeasure in Mercy Grace's Home)

#### Monitoring Equipment

- 3.3. **Table 3.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix B**.



**Table 3.2 Noise Monitoring Equipment**

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	• BSW Atech BSWA 308 & SVAN 957	2
Calibrator	• SOUNDTEK ST-120	1

**Monitoring Parameters, Frequency and Duration**

- 3.4. **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

**Table 3.3 Noise Monitoring Parameters, Frequency and Duration**

Monitoring Stations	Parameter	Period	Frequency	Measurement
M3(A) M4 M5(C)	L <sub>10</sub> (30 min.) dB(A) L <sub>90</sub> (30 min.) dB(A) L <sub>eq</sub> (30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

**Monitoring Methodology and QA/QC Procedures**

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L<sub>eq</sub>, L<sub>90</sub> and L<sub>10</sub> were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

### Maintenance and Calibration

- 3.5. The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.6. The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.7. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

### Results and Observations

- 3.8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix H**.
- 3.9. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.
- 3.10. Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.11. The major noise source identified at the designated noise monitoring stations are shown in **Table 3.4**.

**Table 3.4 Major Noise Source identified at the Designated Noise Monitoring Stations**

Monitoring Stations	Locations	Major Noise Source
M3(A)	The Bridge connecting The Latitude	Traffic Noise Site vehicle movement
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works Piling works Daily school activities
M5(C)	Mercy Grace's Home	Traffic Noise Site vehicle movement

**Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations**

Station	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M3(A)	N/A <sup>(1)</sup> (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)
M4	76.7 <sup>(2)</sup> (at 0700 – 1900 hrs on normal weekdays)	70 <sup>(*)</sup> (at 0700 – 1900 hrs on normal weekdays)
M5(C)	N/A <sup>(1)</sup> (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)

(\*) Noise Limit Level is 65 dB(A) during school examination periods.

Note (1): The background Noise Level was recorded during the Lunch Hour of Construction Site

(i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level.

Note (2): The noise level due to the construction work (CNL) was calculated by the following formula:

$$\text{CNL} = 10 \log (10^{\text{MNL}/10} - 10^{\text{BNL}/10})$$

Remarks: MNL = Measured Noise Level, BNL = Baseline Noise Level

## 4 COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

- 4.1. The EM&A data was compared with the EIA predictions as summarized in **Tables 4.1 to 4.3**.

**Table 4.1 Comparison of 1-hr TSP data with EIA predictions**

Station	Predicted 1-hr TSP conc.		Measured 1-hr TSP conc.	
	Scenario1 (Mid 2009 to Mid-2013), $\mu\text{g}/\text{m}^3$	Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	Reporting Month (January 2023), $\mu\text{g}/\text{m}^3$	
			Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	66.6	30.4 – 112.0

**Table 4.2 Comparison of 24-hr TSP data with EIA predictions**

Station	Predicted 24-hr TSP conc.		Measured 24-hr TSP conc.	
	Scenario1 (Mid 2009 to Mid-2013), $\mu\text{g}/\text{m}^3$	Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	Reporting Month (January 2023), $\mu\text{g}/\text{m}^3$	
			Average	Range
AM2(A) – Ng Wah Catholic Secondary School	145	169	66.6	32.7 – 97.3

**Table 4.3 Comparison of Noise Monitoring Data with EIA predictions**

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ( $L_{eq(30min)}$ dB(A))	Reporting Month (January 2023), $L_{eq(30min)}$ dB(A)
M3(A) – The Bridge connecting The Latitude	Not predicted in EIA Report	60.2 – 75.6 <sup>(2)</sup>
M4 – Lee Kau Yan Memorial School	47 – 74	73.7 – 75.6 <sup>(1)</sup>
M5(C) – Mercy Grace's Home	Not predicted in EIA Report	61.6 – 81.0 <sup>(2)</sup>

Remarks:

- (1) Since the baseline noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.
- (2) Since the background noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.

- 4.2. The average 1-hour TSP concentrations at AM2 in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.3. The average 24-hour TSP concentrations at AM2(A) in the reporting month were below the prediction in the approved EIA Report.
- 4.4. The noise monitoring results in the reporting month from M4 were slightly higher than the range of the predicted mitigated construction noise levels in the EIA Report.
- 4.5. Construction noise levels at M3(A) and M5(C) were not predicted in EIA Report.

## **5 LANDSCAPE AND VISUAL**

### **Monitoring Requirements**

- 5.1. According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

### **Results and Observations**

- 5.2. Site audits were conducted on a weekly basis to monitor the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.
- 5.3. No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.4. Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.

## 6 ENVIRONMENTAL INSPECTION

### Site Inspections

- 6.1. Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site inspections are attached in **Appendix I**.
- 6.2. Site inspections were conducted on 3, 11, 17 & 26 January 2023 in the reporting month. A joint site inspection with the representative of IEC, ER, the Contractor and the ET was conducted on 11 January 2023. The details of the observations during site inspection are summarized in **Table 6.2**.

### Review of Environmental Monitoring Procedures

- 6.3. The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

#### *Air Quality Monitoring*

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

#### *Noise Monitoring*

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

### Status of Environmental Licensing and Permitting

- 6.4. All permits/licenses obtained for the Project are summarized in **Table 6.1**.

**Table 6.1 Summary of Environmental Licensing and Permit Status**

Permit No.	Valid Period		Status
	From	To	
<b>Environmental Permit (EP)</b>			
EP-337/2009	23 Apr 2009	N/A	Valid
<b>Effluent Discharge License</b>			
WT00027495-2017	28 Mar 2017	31 Mar 2022	Expired
WT00041367-2022	20 Jun 2022	31 Mar 2027	Valid
<b>Billing Account for Construction Waste Disposal</b>			
A/C# 7026164	20 Oct 2016	N/A	Valid
<b>Registration of Chemical Waste Producer</b>			
WPN5213-229-P3271-01	14 Aug 2017	N/A	Valid
<b>Construction Noise Permit (CNP)</b>			
GW-RE0915-19	8 Nov 2019	4 May 2020	Expired
GW-RE0984-19	15 Dec 2019	24 Feb 2020	Expired
GW-RE0083-20	1 Mar 2020	1 June 2020	Expired
GW-RE0266-20	2 May 2020	31 Jul 2020	Expired
GW-RE0779-21	30 Jul 2021	30 Nov 2021	Expired
GW-RE0858-21	31 Jul 2021	30 Aug 2021	Expired

**Status of Waste Management**

- 6.5. The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.

**Implementation Status of Environmental Mitigation Measures**

- 6.6. During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Table 6.2**.



**Table 6.2 Observations and Recommendations of Site Inspections**

<b>Parameters</b>	<b>Date</b>	<b>Observations and Recommendations</b>	<b>Follow-up/Rectification</b>
<i>Water Quality</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Air Quality</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Noise</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Waste/ Chemical Management</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Landscape and Visual</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A
<i>Permits/ Licenses</i>	N/A	No environmental deficiency was identified in the reporting period.	N/A

### Summary of Mitigation Measures Implemented

- 6.7. An updated summary of the EMIS is provided in **Appendix K**.

### Implementation Status of Event Action Plans

- 6.8. The Event Action Plans for air quality, noise and landscape and visual are presented in **Appendix J**.

#### 1-hr TSP Monitoring

- 6.9. No Action/Limit Level exceedance was recorded in the reporting month.

#### 24-hr TSP Monitoring

- 6.10. No Action/Limit Level exceedance was recorded in the reporting month.

#### Construction Noise

- 6.11. No Action/Limit Level exceedance was recorded in the reporting month.

Landscape and visual

6.12. No non-compliance was recorded in the reporting month.

**Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution**

6.13. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix L**.

## **7 FUTURE KEY ISSUES**

### **7.1. Major site activities undertaken for the coming two months include:**

- Carry out finishing works & E&M works inside subway
- Laying DN800 salt main and reinstate the road pavement and surface drain at TTA Stage 1
- Implement TTA stage 4-1 and then carry out road and drain reinstatement works

### **7.2. Key environmental issues in the coming month include:**

- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
- Review and implementation of temporary drainage system for the surface runoff;
- Noise from operation of the equipment, especially for rock-breaking activities and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site; and
- Accumulation of general and construction waste on site.

7.3. The tentative major site activities is mentioned in Section 7.1 of this report. The impact prediction and control measures for the coming two months are summarized as follows:

Air quality impact (dust)

- Frequent watering of haul road and unpaved/exposed areas;
- Frequent watering or covering stockpiles with impervious materials or maintained wet; and
- Watering of any earth moving activities.

Water quality impact (surface runoff)

- Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;
- Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;
- Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and
- Provision of measures to prevent discharge into the stream.

Noise Impact

- Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;
- Controlling the number of plants use on site;
- Regular maintenance of machines; and
- Use of movable noise barriers if necessary.

**Monitoring Schedule for Next Month**

7.4. The tentative environmental monitoring schedules for next month are shown in **Appendix D**.

## **8 CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusions**

- 8.1. Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.

#### 1-hr TSP Monitoring

- 8.2. All 1-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### 24-hr TSP Monitoring

- 8.3. All 24-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### Construction Noise Monitoring

- 8.4. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### Landscape and visual

- 8.5. No non-compliance was recorded in the reporting month.

#### Complaint and Prosecution

- 8.6. No environmental complaint and environmental prosecution was received in the reporting month.

## **Recommendations**

8.7. According to the environmental audit performed in the reporting month, the following recommendations were made:

### *Water Quality*

- The public drainage gully within the construction site shall be bounded by sand bags.

### *Air Quality*

- The stockpile of dusty material should be covered by impervious materials or maintained wet.

### *Waste/Chemical Management*

- The drip trays with adequate capacity and well maintained should be provided to chemicals.
- The construction/chemical material should be stoned at the proper place.

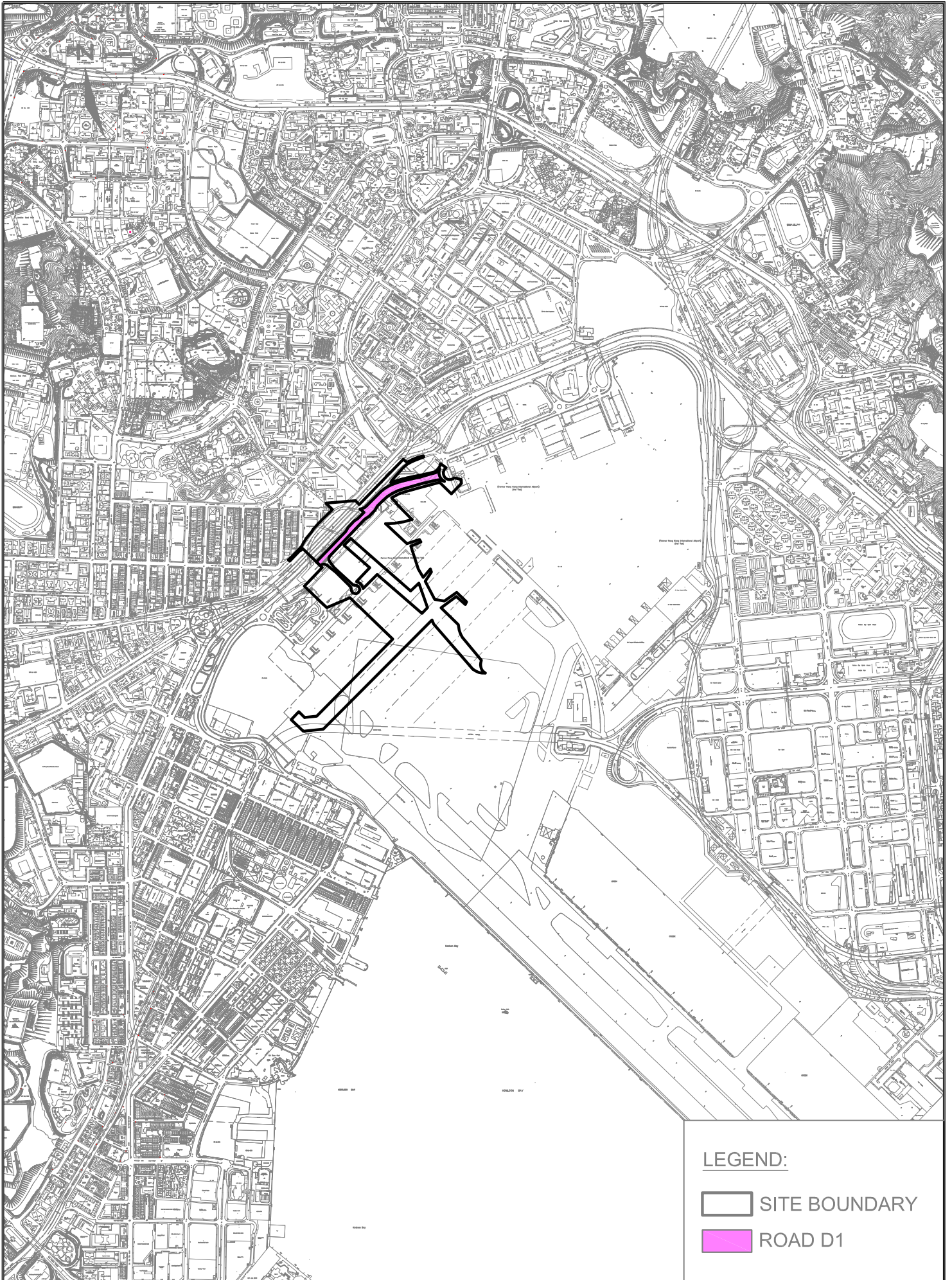
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## FIGURES

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**LEGEND:**

 SITE BOUNDARY

 ROAD D1

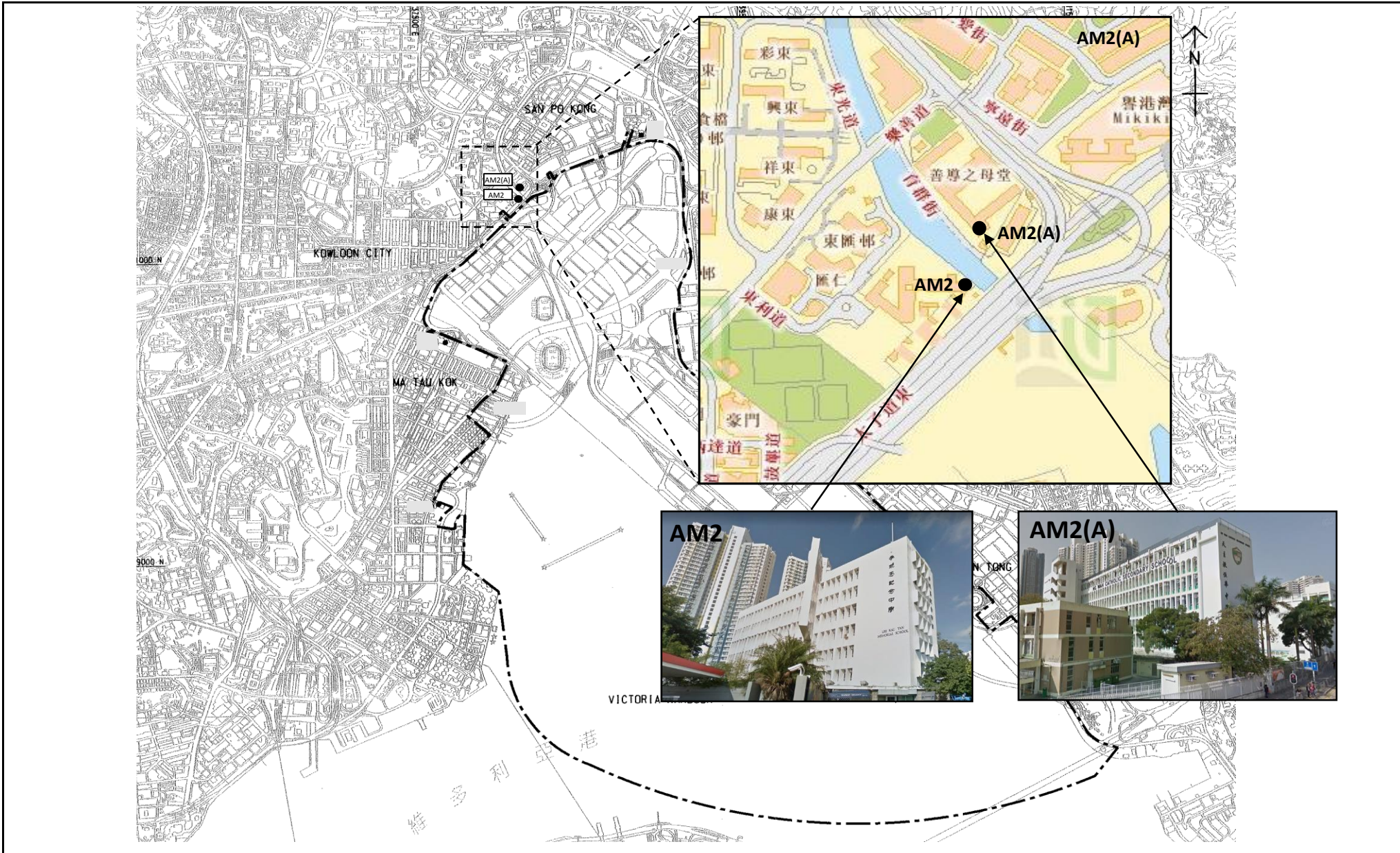


KL/2015/02 KAI TAK - STAGE 5A INFRASTRUCTURE  
AT FORMER NORTH APRON AREA

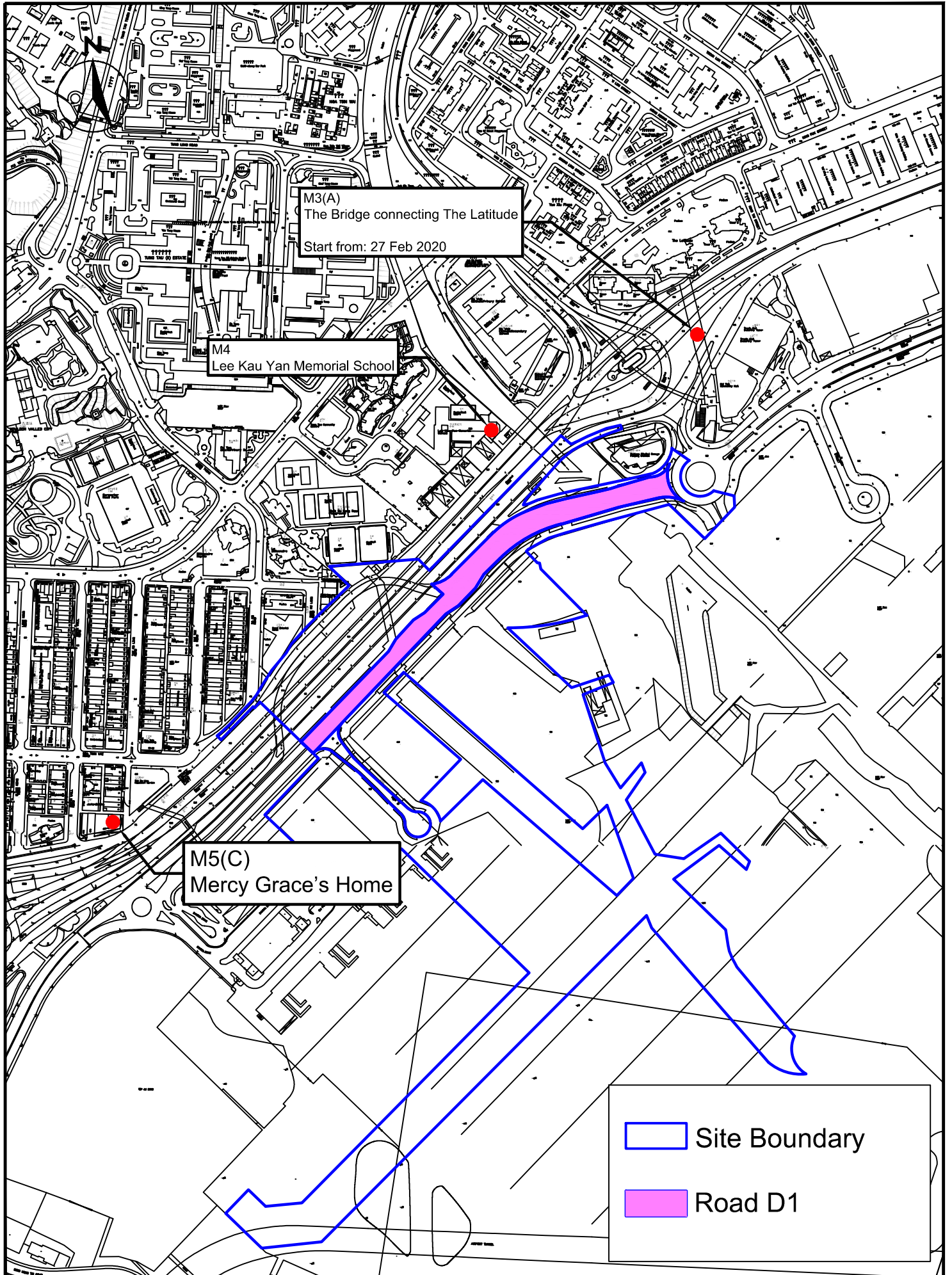
**SITE LAYOUT PLAN**

SCALE	1:1500@A4	DATE	DEC 2016
CHECK	KC	DRAWN	JW
JOB No.	MA16043	FIGURE NO.	1
		REV	-

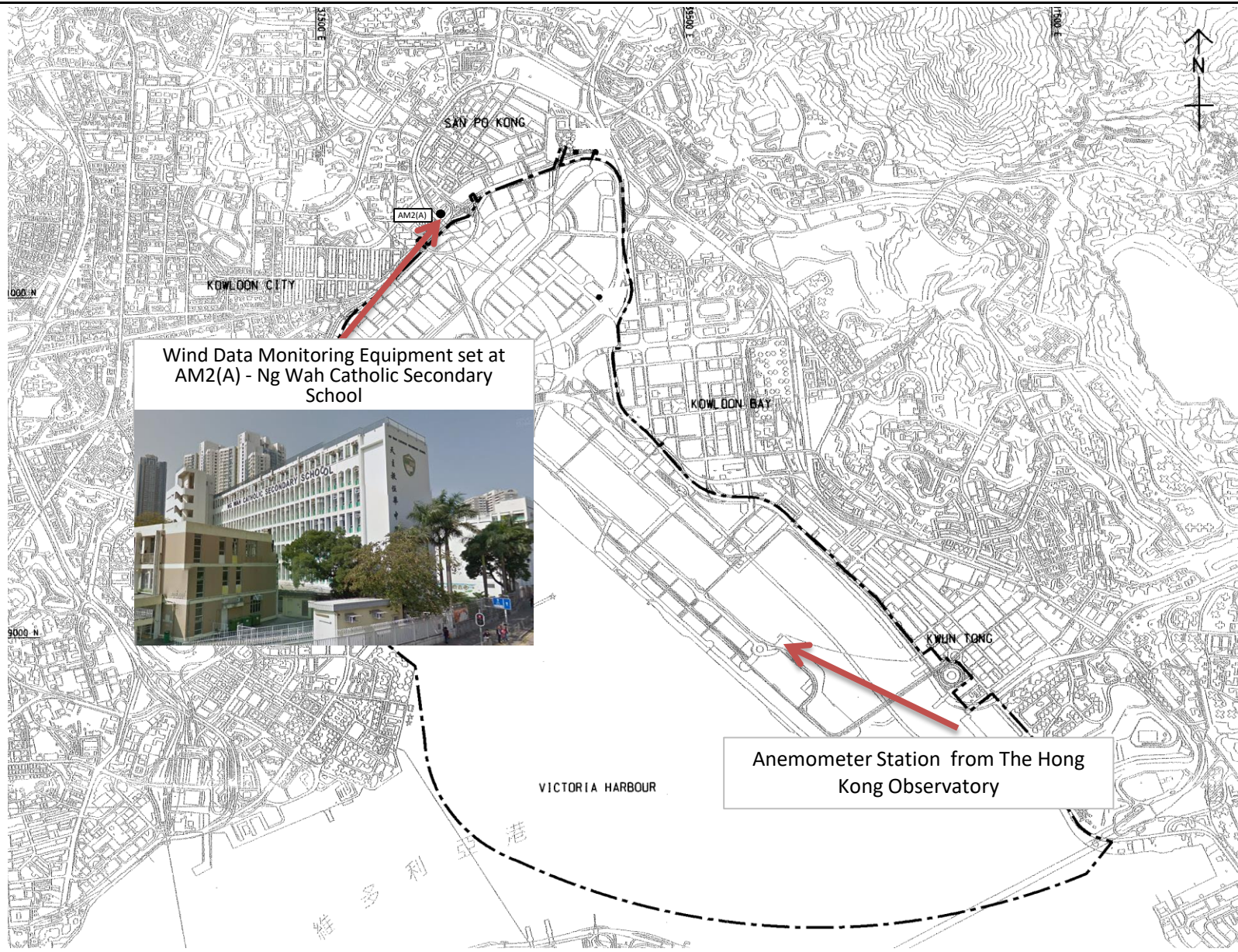




Title	Contract No. KLN/2016/04		Scale	Project	CINOTECH
	Environmental Monitoring Works for Contract No. KL/2015/02		N.T.S	No. MA16043	
Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area			Date	Figure	
Location of Air Quality Monitoring Stations			Aug-17	2	



SCALE	1:5000@A4	DATE	Mar 2020
CHECK	KC	DRAWN	CC
JOB No.	MA16043	FIGURE NO.	3
		REV	-



Wind Data Monitoring Equipment set at AM2(A) - Ng Wah Catholic Secondary School



Anemometer Station from The Hong Kong Observatory

Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area Location of Wind Data Monitoring Equipment	Scale	N.T.S	Project No.	MA16043
	Date	Aug-17	Figure	4



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**APPENDIX A  
ACTION AND LIMIT LEVELS FOR AIR  
QUALITY AND NOISE**

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## Appendix A - Action and Limit Levels

**Table A-1 Action and Limit Levels for 1-Hour TSP**

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2	346	500

**Table A-2 Action and Limit Levels for 24-Hour TSP**

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2(A)	157	260

**Table A-3 Action and Limit Levels for Construction Noise**

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. \*70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

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**APPENDIX B-1  
COPIES OF CALIBRATION  
CERTIFICATES (AIR)**

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# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA16043/13/0033

Project No. AM2(A) - Ng Wah Catholic Secondary School  
 Date: 4-Nov-22 Next Due Date: 4-Jan-23 Operator: SK  
 Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	<b>295.6</b>	Pressure, Pa (mmHg)	<b>762.1</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05922	Intercept, bc	-0.02420
Last Calibration Date:	31-Jan-22	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	31-Jan-23	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	DH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	DW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>12.8</b>	3.60	61.15	<b>10.6</b>	3.27
2	<b>10.8</b>	3.30	56.20	<b>8.2</b>	2.88
3	<b>8.0</b>	2.84	48.43	<b>5.6</b>	2.38
4	<b>5.4</b>	2.34	39.86	<b>3.3</b>	1.83
5	<b>3.0</b>	1.74	29.82	<b>1.7</b>	1.31

**By Linear Regression of Y on X**

Slope, mw = 0.0625 Intercept, bw = -0.6097

Correlation coefficient\* = 0.9976

\*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.27

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 4-Nov-22

Checked by: Henry Leung Signature:  Date: 4-Nov-22

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA16043/13/0034

Project No. AM2(A) - Ng Wah Catholic Secondary School  
 Date: 4-Jan-23 Next Due Date: 6-Mar-23 Operator: SK  
 Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

Ambient Condition			
Temperature, Ta (K)	<b>290.4</b>	Pressure, Pa (mmHg)	<b>767.6</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05922	Intercept, bc	-0.02420
Last Calibration Date:	31-Jan-22	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	31-Jan-23				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	DH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	DW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>13.0</b>	3.67	62.39	<b>10.8</b>	3.35
2	<b>10.9</b>	3.36	57.17	<b>8.3</b>	2.93
3	<b>8.1</b>	2.90	49.34	<b>5.7</b>	2.43
4	<b>5.5</b>	2.39	40.73	<b>3.5</b>	1.90
5	<b>3.2</b>	1.82	31.16	<b>1.9</b>	1.40

By Linear Regression of Y on X

Slope, mw = 0.0619 Intercept, bw = -0.5750

Correlation coefficient\* = 0.9978

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.19

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 4-Jan-23

Checked by: Henry Leung Signature:  Date: 4-Jan-23



**Certificate of Calibration**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 29-Nov-22  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 29-Jan-23  
 Model No.: LD-5R  
 Serial No.: 972779  
 Equipment No.: SA-01-08 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 744 CPM  
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 744 CPM

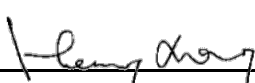
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m <sup>3</sup> ) X-axis	Mass concentration (µg/m <sup>3</sup> ) Y-axis
1	67.0	133.0
2	56.0	115.0
3	47.0	94.0
<b>Average</b>	<b>56.7</b>	<b>114.0</b>
<b>By Linear Regression of Y on X</b> Slope , mw = <u>1.9385</u> Intercept, bw = <u>4.1495</u> Correlation coefficient* = <u>0.9948</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m <sup>3</sup> )		114.0
Particulate Concentration by Dust Meter (µg/m <sup>3</sup> )		56.7
Measuring time, (min)		60.0
Set Correlation Factor , SCF		
SCF = [ K=High Volume Sampler / Dust Meter, (µg/m <sup>3</sup> ) ]		<u>2.0</u>

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

**Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)**

Calibrated by:   
 Technical Officer (Wong Shing Kwai)

Approved by:   
 Project Manager (Henry Leung)

**Certificate of Calibration**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 29-Nov-22  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 29-Jan-23  
 Model No.: LD-5R  
 Serial No.: 972780  
 Equipment No.: SA-01-09 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 739 CPM  
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 739 CPM

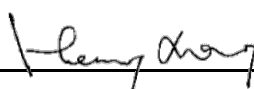
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m <sup>3</sup> ) X-axis	Mass concentration (µg/m <sup>3</sup> ) Y-axis
1	69.0	133.0
2	59.0	115.0
3	49.0	94.0
<b>Average</b>	<b>59.0</b>	<b>114.0</b>
<b>By Linear Regression of Y on X</b> Slope , mw = <u>1.9500</u> Intercept, bw = <u>-1.0500</u> Correlation coefficient* = <u>0.9990</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m <sup>3</sup> )		114.0
Particulate Concentration by Dust Meter (µg/m <sup>3</sup> )		59.0
Measureing time, (min)		60.0
Set Correlation Factor , SCF		
SCF = [ K=High Volume Sampler / Dust Meter, (µg/m <sup>3</sup> ) ]		<u>1.9</u>

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

**Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)**

Calibrated by:   
 Technical Officer (Wong Shing Kwai)

Approved by:   
 Project Manager (Henry Leung)

# Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 31, 2022	Rootsmeter S/N: 438320	Ta: 294	°K
Operator: Jim Tisch		Pa: 752.6	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: <b>3864</b>		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4490	3.2	2.00
2	3	4	1	1.0320	6.4	4.00
3	5	6	1	0.9160	7.9	5.00
4	7	8	1	0.8730	8.8	5.50
5	9	10	1	0.7230	12.7	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left( Ta/Pa \right)}$ (y-axis)
0.9995	0.6898	1.4169	0.9957	0.6872	0.8839
0.9952	0.9643	2.0037	0.9915	0.9608	1.2500
0.9932	1.0843	2.2402	0.9895	1.0802	1.3976
0.9920	1.1363	2.3496	0.9883	1.1321	1.4658
0.9868	1.3649	2.8337	0.9831	1.3598	1.7678
<b>QSTD</b>	m=	<b>2.09281</b>	<b>QA</b>	m=	<b>1.31048</b>
	b=	<b>-0.02426</b>		b=	<b>-0.01514</b>
	r=	<b>0.99993</b>		r=	<b>0.99993</b>

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

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

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

## Certificate of Calibration - Wind Monitoring Station

Description: Ng Wah Catholic Secondary School - Weather Stations  
 Manufacturer: Davis Instruments  
 Model No.: Davis 6152, Vantage Pro2  
 Serial No.: BC180522050  
 Equipment No.: SA-03-03  
 Date of Calibration: 7-Oct-2022  
 Next Due Date: 7-Apr-2023

### 1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V1)	$D = V1 - V2$
0.0	0.0	0.0
1.5	1.5	0.0
2.0	2.1	-0.1
3.5	3.5	0.0


### 2. Performance check of Wind Direction

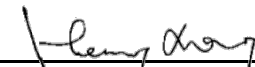
Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

### Test Specification:

**1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer**

**2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction**

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung

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**APPENDIX B-2  
COPIES OF CALIBRATION  
CERTIFICATES (NOISE)**

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## High Precision Chemical Testing Ltd.

Rm 1904, Technology Park  
18 On Lai Street, Shatin  
NT, Hong Kong  
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00164  
Application No. : HP00042

Issue Date : 25 Jan 2022

### Certificate of Calibration

Applicant : Cinotech Consultants Limited  
RM 1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-08-12

Manufacturer: : SVANTEK

Other information :

Model No.	SVAN 957
Serial No.	23851
Microphone No.	17204

Date Received : 19 Jan 2022

Test Period : 21 Jan 2022 to 21 Jan 2022

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius  
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.  
2. The result(s) relate only to the items tested or calibrated.

*For and on behalf of*  
**HIGH PRECISION CHEMICAL TESTING LIMITED**

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit  
Laboratory Manager

## High Precision Chemical Testing Ltd.

Rm 1904, Technology Park  
18 On Lai Street, Shatin  
NT, Hong Kong  
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00164  
Application No. : HP00042

Issue Date : 25 Jan 2022

### Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 1.5
114.0	114.2	+0.2	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.  
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

## High Precision Chemical Testing Ltd.

Rm 1904, Technology Park  
18 On Lai Street, Shatin  
NT, Hong Kong  
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00171  
Application No. : HP00046

Issue Date : 01 Apr 2022

### Certificate of Calibration

Applicant : Cinotech Consultants Limited  
RM 1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-05

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	580287
Microphone No.	570610

Date Received : 25 Mar 2022

Test Period : 30 Mar 2022 to 30 Mar 2022

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius  
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**  
**2. The result(s) relate only to the items tested or calibrated.**

*For and on behalf of*  
**HIGH PRECISION CHEMICAL TESTING LIMITED**

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit  
Laboratory Manager



## **High Precision Chemical Testing Ltd.**

Rm 1904, Technology Park  
18 On Lai Street, Shatin  
NT, Hong Kong  
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00171  
Application No. : HP00046

Issue Date : 01 Apr 2022

### **Certificate of Calibration**

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	0.0	± 1.5
114.0	114.2	+0.2	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.  
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

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**APPENDIX C**  
**WEATHER INFORMATION**

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APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023

Date	Mean Pressure (hPa)	Air Temperature	Mean Relative Humidity (%)	Precipitation (mm)
		Mean (°C)		
1-Jan-23	1023.3	16.9	65	0.1
2-Jan-23	1023.1	18.7	65	Trace
3-Jan-23	1023.7	17.3	69	Trace
4-Jan-23	1023.4	17.4	74	Trace
5-Jan-23	1023.4	18.5	77	0
6-Jan-23	1022.6	19.8	62	0
7-Jan-23	1020.5	19.1	59	0
8-Jan-23	1020.0	18.6	57	Trace
9-Jan-23	1019.5	19.7	72	0.1
10-Jan-23	1018.8	18.2	91	5.5
11-Jan-23	1017.6	18.1	87	3.2
12-Jan-23	1014.5	18.8	88	0.5
13-Jan-23	1011.0	21.7	93	4.5
14-Jan-23	1009.4	22.7	90	3.4
15-Jan-23	1014.4	18.4	80	Trace
16-Jan-23	1021.6	12.3	66	0
17-Jan-23	1023.6	13.2	71	0
18-Jan-23	1024.1	14.3	58	0
19-Jan-23	1022.3	16.1	63	0
20-Jan-23	1021.4	17.6	62	Trace
21-Jan-23	1019.5	16.9	79	Trace
22-Jan-23	1016.5	18.8	83	0.6
23-Jan-23	1016.2	18.8	86	0
24-Jan-23	1024.5	14.7	51	0.3
25-Jan-23	1023.1	12.5	54	0
26-Jan-23	1019.3	15.7	66	0
27-Jan-23	1022.5	15.4	46	0
28-Jan-23	1024.1	12.9	28	0
29-Jan-23	1023.7	12.8	35	0
30-Jan-23	1022.2	15.0	48	0
31-Jan-23	1017.9	16.9	61	0

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
1-Jan-23	0:00	0.4	W
1-Jan-23	1:00	0.4	W
1-Jan-23	2:00	1.8	NNW
1-Jan-23	3:00	1.8	NNW
1-Jan-23	4:00	1.8	NNW
1-Jan-23	5:00	1.3	WNW
1-Jan-23	6:00	0.9	NNW
1-Jan-23	7:00	1.3	WNW
1-Jan-23	8:00	1.3	NW
1-Jan-23	9:00	1.3	NNW
1-Jan-23	10:00	1.3	NNW
1-Jan-23	11:00	1.8	NNW
1-Jan-23	12:00	0.9	NNW
1-Jan-23	13:00	1.3	NNW
1-Jan-23	14:00	0.9	NW
1-Jan-23	15:00	0.9	WNW
1-Jan-23	16:00	0.4	NNW
1-Jan-23	17:00	0.9	NW
1-Jan-23	18:00	0.4	ENE
1-Jan-23	19:00	0.4	NW
1-Jan-23	20:00	0.4	ESE
1-Jan-23	21:00	0.0	NNW
1-Jan-23	22:00	0.0	NW
1-Jan-23	23:00	0.4	WNW
2-Jan-23	0:00	0.4	NNW
2-Jan-23	1:00	0.9	NNW
2-Jan-23	2:00	1.3	WNW
2-Jan-23	3:00	1.3	WNW
2-Jan-23	4:00	0.9	NNW
2-Jan-23	5:00	0.9	NNW
2-Jan-23	6:00	0.9	NNW
2-Jan-23	7:00	0.9	NNW
2-Jan-23	8:00	0.4	WNW
2-Jan-23	9:00	0.4	NW
2-Jan-23	10:00	0.0	NNW
2-Jan-23	11:00	0.4	NNW
2-Jan-23	12:00	0.0	S
2-Jan-23	13:00	0.4	S
2-Jan-23	14:00	0.4	S
2-Jan-23	15:00	0.0	S
2-Jan-23	16:00	0.0	S
2-Jan-23	17:00	0.4	S
2-Jan-23	18:00	0.4	WNW
2-Jan-23	19:00	0.4	NNW
2-Jan-23	20:00	0.4	NNW
2-Jan-23	21:00	0.9	NNW
2-Jan-23	22:00	1.8	NNW
2-Jan-23	23:00	2.7	WNW

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
3-Jan-23	0:00	3.1	NNW
3-Jan-23	1:00	1.8	WNW
3-Jan-23	2:00	1.3	NNW
3-Jan-23	3:00	1.8	WNW
3-Jan-23	4:00	1.8	WNW
3-Jan-23	5:00	1.3	WNW
3-Jan-23	6:00	1.8	WNW
3-Jan-23	7:00	1.3	WNW
3-Jan-23	8:00	1.3	WNW
3-Jan-23	9:00	0.9	NW
3-Jan-23	10:00	1.3	WNW
3-Jan-23	11:00	1.8	NNW
3-Jan-23	12:00	1.8	NW
3-Jan-23	13:00	2.2	NW
3-Jan-23	14:00	0.9	NNW
3-Jan-23	15:00	0.9	NNW
3-Jan-23	16:00	1.3	NNW
3-Jan-23	17:00	0.9	NNW
3-Jan-23	18:00	0.4	NNW
3-Jan-23	19:00	0.4	NNW
3-Jan-23	20:00	0.4	NNW
3-Jan-23	21:00	0.4	NNW
3-Jan-23	22:00	0.4	NNW
3-Jan-23	23:00	0.4	NNW
4-Jan-23	0:00	0.9	NNW
4-Jan-23	1:00	1.3	NNW
4-Jan-23	2:00	1.8	NNW
4-Jan-23	3:00	1.8	NNW
4-Jan-23	4:00	1.3	NNW
4-Jan-23	5:00	1.8	NW
4-Jan-23	6:00	1.8	NW
4-Jan-23	7:00	0.9	WNW
4-Jan-23	8:00	1.8	NW
4-Jan-23	9:00	1.3	WNW
4-Jan-23	10:00	1.3	WNW
4-Jan-23	11:00	0.9	WNW
4-Jan-23	12:00	0.9	WNW
4-Jan-23	13:00	1.3	WNW
4-Jan-23	14:00	1.8	WNW
4-Jan-23	15:00	0.4	NNW
4-Jan-23	16:00	0.4	NNW
4-Jan-23	17:00	0.9	NNW
4-Jan-23	18:00	0.9	NNW
4-Jan-23	19:00	0.9	NNW
4-Jan-23	20:00	1.3	NNW
4-Jan-23	21:00	1.8	NNW
4-Jan-23	22:00	1.8	NNW
4-Jan-23	23:00	2.7	SE

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
5-Jan-23	0:00	2.7	SE
5-Jan-23	1:00	2.7	ESE
5-Jan-23	2:00	2.2	ESE
5-Jan-23	3:00	2.7	SE
5-Jan-23	4:00	2.2	SE
5-Jan-23	5:00	2.2	ESE
5-Jan-23	6:00	2.7	ESE
5-Jan-23	7:00	1.8	ESE
5-Jan-23	8:00	1.8	SE
5-Jan-23	9:00	1.3	ESE
5-Jan-23	10:00	0.9	ESE
5-Jan-23	11:00	0.9	ESE
5-Jan-23	12:00	0.9	ESE
5-Jan-23	13:00	0.4	ESE
5-Jan-23	14:00	0.9	SE
5-Jan-23	15:00	0.4	ESE
5-Jan-23	16:00	0.4	ESE
5-Jan-23	17:00	0.4	ESE
5-Jan-23	18:00	0.9	ESE
5-Jan-23	19:00	0.9	SE
5-Jan-23	20:00	0.9	SE
5-Jan-23	21:00	1.3	NNW
5-Jan-23	22:00	1.8	NNW
5-Jan-23	23:00	2.7	WNW
6-Jan-23	0:00	3.6	SE
6-Jan-23	1:00	2.2	NW
6-Jan-23	2:00	2.2	NNW
6-Jan-23	3:00	1.8	WNW
6-Jan-23	4:00	1.3	WNW
6-Jan-23	5:00	0.9	SE
6-Jan-23	6:00	0.4	ESE
6-Jan-23	7:00	0.4	W
6-Jan-23	8:00	0.4	SE
6-Jan-23	9:00	0.9	WNW
6-Jan-23	10:00	0.9	SE
6-Jan-23	11:00	1.3	SE
6-Jan-23	12:00	0.9	SSE
6-Jan-23	13:00	1.3	E
6-Jan-23	14:00	1.3	E
6-Jan-23	15:00	0.9	NNW
6-Jan-23	16:00	1.3	WNW
6-Jan-23	17:00	1.8	ESE
6-Jan-23	18:00	1.8	NNW
6-Jan-23	19:00	1.3	NNW
6-Jan-23	20:00	2.7	NNW
6-Jan-23	21:00	1.8	NNW
6-Jan-23	22:00	1.8	WNW
6-Jan-23	23:00	2.2	WNW

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
7-Jan-23	0:00	1.8	WNW
7-Jan-23	1:00	2.2	WNW
7-Jan-23	2:00	1.3	NW
7-Jan-23	3:00	1.8	NW
7-Jan-23	4:00	1.8	WNW
7-Jan-23	5:00	0.4	NNW
7-Jan-23	6:00	0.4	NNW
7-Jan-23	7:00	0.4	WNW
7-Jan-23	8:00	0.9	WNW
7-Jan-23	9:00	0.4	WNW
7-Jan-23	10:00	0.4	WNW
7-Jan-23	11:00	0.4	SE
7-Jan-23	12:00	0.4	ESE
7-Jan-23	13:00	0.4	W
7-Jan-23	14:00	0.4	SE
7-Jan-23	15:00	0.0	WNW
7-Jan-23	16:00	0.9	SE
7-Jan-23	17:00	0.4	SE
7-Jan-23	18:00	0.4	SSE
7-Jan-23	19:00	0.4	E
7-Jan-23	20:00	0.9	E
7-Jan-23	21:00	0.9	NNW
7-Jan-23	22:00	0.9	WNW
7-Jan-23	23:00	0.9	ESE
8-Jan-23	0:00	1.3	NNW
8-Jan-23	1:00	1.3	NNW
8-Jan-23	2:00	1.3	NNW
8-Jan-23	3:00	1.8	NNW
8-Jan-23	4:00	0.9	WNW
8-Jan-23	5:00	0.9	WNW
8-Jan-23	6:00	0.9	WNW
8-Jan-23	7:00	0.9	WNW
8-Jan-23	8:00	0.4	NW
8-Jan-23	9:00	0.4	NW
8-Jan-23	10:00	0.4	WNW
8-Jan-23	11:00	1.3	NNW
8-Jan-23	12:00	0.9	NNW
8-Jan-23	13:00	0.4	WNW
8-Jan-23	14:00	0.4	WNW
8-Jan-23	15:00	0.4	NNW
8-Jan-23	16:00	0.4	WNW
8-Jan-23	17:00	0.4	WNW
8-Jan-23	18:00	0.4	NW
8-Jan-23	19:00	0.4	NW
8-Jan-23	20:00	1.8	NNW
8-Jan-23	21:00	0.9	NNW
8-Jan-23	22:00	0.9	WNW
8-Jan-23	23:00	0.9	WNW

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
9-Jan-23	0:00	1.3	NW
9-Jan-23	1:00	0.9	WNW
9-Jan-23	2:00	2.2	NNW
9-Jan-23	3:00	1.3	NW
9-Jan-23	4:00	1.3	NNW
9-Jan-23	5:00	1.8	NNW
9-Jan-23	6:00	1.8	NNW
9-Jan-23	7:00	1.3	NNW
9-Jan-23	8:00	0.9	NNW
9-Jan-23	9:00	1.3	NNW
9-Jan-23	10:00	0.4	NNW
9-Jan-23	11:00	1.3	NNW
9-Jan-23	12:00	0.9	NNW
9-Jan-23	13:00	1.3	WNW
9-Jan-23	14:00	1.8	WNW
9-Jan-23	15:00	1.8	WNW
9-Jan-23	16:00	1.8	SE
9-Jan-23	17:00	1.3	SE
9-Jan-23	18:00	0.9	SSE
9-Jan-23	19:00	0.9	E
9-Jan-23	20:00	0.4	E
9-Jan-23	21:00	0.4	NNW
9-Jan-23	22:00	0.9	WNW
9-Jan-23	23:00	1.8	ESE
10-Jan-23	0:00	1.3	NNW
10-Jan-23	1:00	2.2	NNW
10-Jan-23	2:00	1.8	NNW
10-Jan-23	3:00	1.8	NNW
10-Jan-23	4:00	1.3	WNW
10-Jan-23	5:00	1.3	WNW
10-Jan-23	6:00	1.3	WNW
10-Jan-23	7:00	0.9	WNW
10-Jan-23	8:00	1.3	WNW
10-Jan-23	9:00	0.9	WNW
10-Jan-23	10:00	0.9	WNW
10-Jan-23	11:00	1.3	WNW
10-Jan-23	12:00	0.0	SSW
10-Jan-23	13:00	0.0	SSW
10-Jan-23	14:00	0.0	SSW
10-Jan-23	15:00	0.0	S
10-Jan-23	16:00	0.0	SSW
10-Jan-23	17:00	0.0	SSW
10-Jan-23	18:00	0.0	NW
10-Jan-23	19:00	0.0	WSW
10-Jan-23	20:00	0.0	SW
10-Jan-23	21:00	0.4	WNW
10-Jan-23	22:00	0.0	W
10-Jan-23	23:00	0.4	W

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
11-Jan-23	0:00	0.4	W
11-Jan-23	1:00	0.4	SW
11-Jan-23	2:00	0.9	WNW
11-Jan-23	3:00	0.9	WNW
11-Jan-23	4:00	0.9	WNW
11-Jan-23	5:00	0.9	WNW
11-Jan-23	6:00	0.4	WNW
11-Jan-23	7:00	0.9	WNW
11-Jan-23	8:00	0.9	NW
11-Jan-23	9:00	0.0	WNW
11-Jan-23	10:00	0.0	WNW
11-Jan-23	11:00	0.0	WNW
11-Jan-23	12:00	0.0	WNW
11-Jan-23	13:00	0.0	WNW
11-Jan-23	14:00	0.0	WNW
11-Jan-23	15:00	0.0	WSW
11-Jan-23	16:00	0.0	W
11-Jan-23	17:00	0.0	WNW
11-Jan-23	18:00	0.0	W
11-Jan-23	19:00	0.0	SSW
11-Jan-23	20:00	0.0	WSW
11-Jan-23	21:00	0.0	S
11-Jan-23	22:00	0.0	WSW
11-Jan-23	23:00	0.0	WNW
12-Jan-23	0:00	0.0	SSW
12-Jan-23	1:00	0.0	SW
12-Jan-23	2:00	0.0	SW
12-Jan-23	3:00	0.0	WSW
12-Jan-23	4:00	0.0	WSW
12-Jan-23	5:00	0.0	WNW
12-Jan-23	6:00	0.0	WNW
12-Jan-23	7:00	0.0	S
12-Jan-23	8:00	0.0	ESE
12-Jan-23	9:00	0.0	SE
12-Jan-23	10:00	0.0	SE
12-Jan-23	11:00	0.0	SSW
12-Jan-23	12:00	0.0	SSW
12-Jan-23	13:00	0.0	SSE
12-Jan-23	14:00	0.0	SSE
12-Jan-23	15:00	0.0	---
12-Jan-23	16:00	0.0	SSE
12-Jan-23	17:00	0.0	SSW
12-Jan-23	18:00	0.0	WNW
12-Jan-23	19:00	0.0	SE
12-Jan-23	20:00	0.0	SE
12-Jan-23	21:00	0.0	SSE
12-Jan-23	22:00	0.0	E
12-Jan-23	23:00	0.0	E

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
13-Jan-23	0:00	0.4	NNW
13-Jan-23	1:00	0.9	WNW
13-Jan-23	2:00	0.4	ESE
13-Jan-23	3:00	0.9	NNW
13-Jan-23	4:00	0.4	NNW
13-Jan-23	5:00	0.0	NNW
13-Jan-23	6:00	0.0	NNW
13-Jan-23	7:00	0.0	WNW
13-Jan-23	8:00	0.0	WNW
13-Jan-23	9:00	0.0	WNW
13-Jan-23	10:00	0.4	WNW
13-Jan-23	11:00	0.4	SSW
13-Jan-23	12:00	0.4	SSW
13-Jan-23	13:00	1.8	SSW
13-Jan-23	14:00	0.9	SSW
13-Jan-23	15:00	0.0	SW
13-Jan-23	16:00	1.3	SW
13-Jan-23	17:00	1.8	SW
13-Jan-23	18:00	0.4	NW
13-Jan-23	19:00	0.9	NW
13-Jan-23	20:00	1.3	NW
13-Jan-23	21:00	0.9	NW
13-Jan-23	22:00	0.9	NW
13-Jan-23	23:00	0.9	NW
14-Jan-23	0:00	1.3	NW
14-Jan-23	1:00	1.3	NW
14-Jan-23	2:00	2.2	WNW
14-Jan-23	3:00	1.3	NW
14-Jan-23	4:00	0.9	NW
14-Jan-23	5:00	0.4	SSW
14-Jan-23	6:00	1.3	SW
14-Jan-23	7:00	1.3	SE
14-Jan-23	8:00	1.3	SE
14-Jan-23	9:00	0.4	SE
14-Jan-23	10:00	0.4	SSE
14-Jan-23	11:00	0.0	SSW
14-Jan-23	12:00	0.0	SSW
14-Jan-23	13:00	0.0	SW
14-Jan-23	14:00	0.0	SW
14-Jan-23	15:00	0.0	WNW
14-Jan-23	16:00	0.0	WNW
14-Jan-23	17:00	0.0	W
14-Jan-23	18:00	0.0	W
14-Jan-23	19:00	0.0	W
14-Jan-23	20:00	0.0	W
14-Jan-23	21:00	0.0	W
14-Jan-23	22:00	0.0	W
14-Jan-23	23:00	0.4	WNW

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
15-Jan-23	0:00	0.4	WNW
15-Jan-23	1:00	0.4	WNW
15-Jan-23	2:00	0.4	WSW
15-Jan-23	3:00	0.9	WNW
15-Jan-23	4:00	0.9	WNW
15-Jan-23	5:00	0.4	WNW
15-Jan-23	6:00	2.2	WNW
15-Jan-23	7:00	1.3	SE
15-Jan-23	8:00	2.2	SE
15-Jan-23	9:00	1.8	SSE
15-Jan-23	10:00	2.2	E
15-Jan-23	11:00	2.7	E
15-Jan-23	12:00	1.8	NNW
15-Jan-23	13:00	0.9	WNW
15-Jan-23	14:00	0.9	ESE
15-Jan-23	15:00	1.3	NNW
15-Jan-23	16:00	1.3	NNW
15-Jan-23	17:00	0.9	NNW
15-Jan-23	18:00	0.9	NNW
15-Jan-23	19:00	1.3	WNW
15-Jan-23	20:00	1.8	WNW
15-Jan-23	21:00	0.9	WNW
15-Jan-23	22:00	1.8	WNW
15-Jan-23	23:00	1.3	SSW
16-Jan-23	0:00	1.3	SSW
16-Jan-23	1:00	1.3	SSW
16-Jan-23	2:00	1.3	SSW
16-Jan-23	3:00	1.3	SSW
16-Jan-23	4:00	0.9	SW
16-Jan-23	5:00	0.9	WNW
16-Jan-23	6:00	1.8	WNW
16-Jan-23	7:00	1.8	WNW
16-Jan-23	8:00	1.3	W
16-Jan-23	9:00	0.9	WSW
16-Jan-23	10:00	0.4	WSW
16-Jan-23	11:00	0.4	WSW
16-Jan-23	12:00	0.0	WNW
16-Jan-23	13:00	0.9	ENE
16-Jan-23	14:00	1.3	WNW
16-Jan-23	15:00	0.9	WNW
16-Jan-23	16:00	0.9	WNW
16-Jan-23	17:00	0.9	WNW
16-Jan-23	18:00	1.3	WNW
16-Jan-23	19:00	2.2	WNW
16-Jan-23	20:00	2.7	WNW
16-Jan-23	21:00	1.8	NNE
16-Jan-23	22:00	1.3	WNW
16-Jan-23	23:00	1.3	WNW

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
17-Jan-23	0:00	0.4	WNW
17-Jan-23	1:00	0.9	WNW
17-Jan-23	2:00	0.4	WNW
17-Jan-23	3:00	0.4	WNW
17-Jan-23	4:00	0.4	WNW
17-Jan-23	5:00	0.4	WNW
17-Jan-23	6:00	0.4	WNW
17-Jan-23	7:00	0.4	WNW
17-Jan-23	8:00	0.4	WNW
17-Jan-23	9:00	0.4	WNW
17-Jan-23	10:00	0.4	WNW
17-Jan-23	11:00	0.4	WNW
17-Jan-23	12:00	0.4	WNW
17-Jan-23	13:00	0.4	W
17-Jan-23	14:00	0.9	WNW
17-Jan-23	15:00	1.3	WNW
17-Jan-23	16:00	1.8	WNW
17-Jan-23	17:00	1.8	WNW
17-Jan-23	18:00	2.7	NW
17-Jan-23	19:00	1.8	ESE
17-Jan-23	20:00	1.3	ESE
17-Jan-23	21:00	1.8	NW
17-Jan-23	22:00	1.8	WNW
17-Jan-23	23:00	1.3	WNW
18-Jan-23	0:00	0.9	WNW
18-Jan-23	1:00	0.9	WNW
18-Jan-23	2:00	0.9	WNW
18-Jan-23	3:00	0.4	WNW
18-Jan-23	4:00	0.4	WNW
18-Jan-23	5:00	0.9	WNW
18-Jan-23	6:00	1.3	WNW
18-Jan-23	7:00	0.9	WSW
18-Jan-23	8:00	0.9	WSW
18-Jan-23	9:00	1.3	WNW
18-Jan-23	10:00	1.3	WNW
18-Jan-23	11:00	0.9	WNW
18-Jan-23	12:00	0.4	WSW
18-Jan-23	13:00	0.9	W
18-Jan-23	14:00	0.4	WNW
18-Jan-23	15:00	0.9	W
18-Jan-23	16:00	0.9	WNW
18-Jan-23	17:00	1.3	NNE
18-Jan-23	18:00	1.3	W
18-Jan-23	19:00	0.9	WNW
18-Jan-23	20:00	1.3	WNW
18-Jan-23	21:00	1.3	WNW
18-Jan-23	22:00	1.8	WNW
18-Jan-23	23:00	1.8	WNW

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
19-Jan-23	0:00	1.3	WNW
19-Jan-23	1:00	2.2	SE
19-Jan-23	2:00	4.0	SE
19-Jan-23	3:00	2.7	SSE
19-Jan-23	4:00	2.2	E
19-Jan-23	5:00	0.9	E
19-Jan-23	6:00	0.9	NNW
19-Jan-23	7:00	1.3	WNW
19-Jan-23	8:00	0.9	ESE
19-Jan-23	9:00	0.9	NNW
19-Jan-23	10:00	0.4	NNW
19-Jan-23	11:00	0.4	NNW
19-Jan-23	12:00	0.4	NNW
19-Jan-23	13:00	0.9	WNW
19-Jan-23	14:00	0.4	WNW
19-Jan-23	15:00	0.9	WNW
19-Jan-23	16:00	0.9	WNW
19-Jan-23	17:00	0.4	WSW
19-Jan-23	18:00	0.9	WSW
19-Jan-23	19:00	0.9	WSW
19-Jan-23	20:00	0.9	WNW
19-Jan-23	21:00	1.3	WNW
19-Jan-23	22:00	0.4	WSW
19-Jan-23	23:00	1.8	WNW
20-Jan-23	0:00	0.9	WSW
20-Jan-23	1:00	1.3	WNW
20-Jan-23	2:00	1.8	WNW
20-Jan-23	3:00	2.2	WNW
20-Jan-23	4:00	1.8	WNW
20-Jan-23	5:00	0.9	WNW
20-Jan-23	6:00	0.9	ENE
20-Jan-23	7:00	0.9	WSW
20-Jan-23	8:00	0.9	WSW
20-Jan-23	9:00	0.4	SW
20-Jan-23	10:00	0.4	E
20-Jan-23	11:00	0.9	ENE
20-Jan-23	12:00	1.3	ENE
20-Jan-23	13:00	0.9	ENE
20-Jan-23	14:00	1.8	E
20-Jan-23	15:00	1.3	ENE
20-Jan-23	16:00	1.3	ENE
20-Jan-23	17:00	1.3	ENE
20-Jan-23	18:00	1.3	ENE
20-Jan-23	19:00	0.9	E
20-Jan-23	20:00	0.9	ESE
20-Jan-23	21:00	2.2	E
20-Jan-23	22:00	1.3	ENE
20-Jan-23	23:00	2.2	ESE



APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
21-Jan-23	0:00	1.8	ENE
21-Jan-23	1:00	2.2	ESE
21-Jan-23	2:00	2.7	E
21-Jan-23	3:00	1.8	ENE
21-Jan-23	4:00	0.9	ESE
21-Jan-23	5:00	0.9	ENE
21-Jan-23	6:00	1.3	SE
21-Jan-23	7:00	1.3	ENE
21-Jan-23	8:00	0.9	ENE
21-Jan-23	9:00	0.9	ESE
21-Jan-23	10:00	1.3	E
21-Jan-23	11:00	1.8	ENE
21-Jan-23	12:00	0.9	ENE
21-Jan-23	13:00	1.8	ESE
21-Jan-23	14:00	1.3	SE
21-Jan-23	15:00	1.3	ENE
21-Jan-23	16:00	1.3	SW
21-Jan-23	17:00	1.3	ENE
21-Jan-23	18:00	1.3	E
21-Jan-23	19:00	0.9	SW
21-Jan-23	20:00	0.9	WNW
21-Jan-23	21:00	1.8	SE
21-Jan-23	22:00	1.8	SE
21-Jan-23	23:00	1.3	SSE
22-Jan-23	0:00	0.9	E
22-Jan-23	1:00	0.4	E
22-Jan-23	2:00	0.4	NNW
22-Jan-23	3:00	0.0	WNW
22-Jan-23	4:00	0.9	ESE
22-Jan-23	5:00	1.3	NNW
22-Jan-23	6:00	0.9	NNW
22-Jan-23	7:00	0.9	NNW
22-Jan-23	8:00	0.9	NNW
22-Jan-23	9:00	1.3	WNW
22-Jan-23	10:00	2.2	WNW
22-Jan-23	11:00	2.7	WNW
22-Jan-23	12:00	1.8	WNW
22-Jan-23	13:00	1.3	ENE
22-Jan-23	14:00	1.3	ENE
22-Jan-23	15:00	0.4	ENE
22-Jan-23	16:00	0.9	ENE
22-Jan-23	17:00	0.4	ENE
22-Jan-23	18:00	0.4	ENE
22-Jan-23	19:00	0.4	ENE
22-Jan-23	20:00	0.4	ENE
22-Jan-23	21:00	0.4	ENE
22-Jan-23	22:00	0.4	ENE
22-Jan-23	23:00	0.4	ENE

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
23-Jan-23	0:00	0.4	ENE
23-Jan-23	1:00	0.4	ENE
23-Jan-23	2:00	0.4	ENE
23-Jan-23	3:00	0.4	ENE
23-Jan-23	4:00	0.4	ENE
23-Jan-23	5:00	0.9	ENE
23-Jan-23	6:00	1.3	ENE
23-Jan-23	7:00	1.8	ENE
23-Jan-23	8:00	1.8	E
23-Jan-23	9:00	2.7	ESE
23-Jan-23	10:00	1.8	ENE
23-Jan-23	11:00	1.3	ENE
23-Jan-23	12:00	1.8	E
23-Jan-23	13:00	1.8	SE
23-Jan-23	14:00	1.3	ESE
23-Jan-23	15:00	0.9	E
23-Jan-23	16:00	0.9	ESE
23-Jan-23	17:00	0.9	ESE
23-Jan-23	18:00	0.4	ESE
23-Jan-23	19:00	0.4	ENE
23-Jan-23	20:00	0.9	ENE
23-Jan-23	21:00	1.3	ENE
23-Jan-23	22:00	0.9	ENE
23-Jan-23	23:00	0.9	SW
24-Jan-23	0:00	1.3	SW
24-Jan-23	1:00	1.3	WNW
24-Jan-23	2:00	0.9	SE
24-Jan-23	3:00	0.4	SE
24-Jan-23	4:00	0.9	SSE
24-Jan-23	5:00	0.4	E
24-Jan-23	6:00	0.9	E
24-Jan-23	7:00	0.9	NNW
24-Jan-23	8:00	1.3	WNW
24-Jan-23	9:00	1.3	ESE
24-Jan-23	10:00	0.9	NNW
24-Jan-23	11:00	1.3	NNW
24-Jan-23	12:00	1.3	NNW
24-Jan-23	13:00	2.2	NNW
24-Jan-23	14:00	1.3	WNW
24-Jan-23	15:00	2.2	WNW
24-Jan-23	16:00	1.8	WNW
24-Jan-23	17:00	2.2	WNW
24-Jan-23	18:00	2.7	SW
24-Jan-23	19:00	1.8	SW
24-Jan-23	20:00	0.9	SSW
24-Jan-23	21:00	0.9	SSW
24-Jan-23	22:00	1.3	SW
24-Jan-23	23:00	1.3	SW

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
25-Jan-23	0:00	0.9	SW
25-Jan-23	1:00	0.9	SW
25-Jan-23	2:00	1.3	SW
25-Jan-23	3:00	1.8	ENE
25-Jan-23	4:00	0.9	ESE
25-Jan-23	5:00	1.8	E
25-Jan-23	6:00	1.3	E
25-Jan-23	7:00	1.3	ESE
25-Jan-23	8:00	1.3	E
25-Jan-23	9:00	1.3	E
25-Jan-23	10:00	1.3	ENE
25-Jan-23	11:00	0.9	ENE
25-Jan-23	12:00	0.9	NNE
25-Jan-23	13:00	1.8	ENE
25-Jan-23	14:00	1.8	ENE
25-Jan-23	15:00	1.3	ENE
25-Jan-23	16:00	0.9	ENE
25-Jan-23	17:00	0.4	WNW
25-Jan-23	18:00	0.4	E
25-Jan-23	19:00	0.0	ENE
25-Jan-23	20:00	0.9	E
25-Jan-23	21:00	1.3	E
25-Jan-23	22:00	0.9	E
25-Jan-23	23:00	0.9	NW
26-Jan-23	0:00	0.9	W
26-Jan-23	1:00	1.3	W
26-Jan-23	2:00	2.2	NW
26-Jan-23	3:00	2.7	NW
26-Jan-23	4:00	1.8	NW
26-Jan-23	5:00	1.3	WNW
26-Jan-23	6:00	1.3	NW
26-Jan-23	7:00	0.4	W
26-Jan-23	8:00	0.9	ESE
26-Jan-23	9:00	0.4	E
26-Jan-23	10:00	0.4	WSW
26-Jan-23	11:00	0.4	E
26-Jan-23	12:00	0.4	ESE
26-Jan-23	13:00	0.4	W
26-Jan-23	14:00	0.4	WSW
26-Jan-23	15:00	0.4	W
26-Jan-23	16:00	0.4	ESE
26-Jan-23	17:00	0.4	ENE
26-Jan-23	18:00	0.4	NNE
26-Jan-23	19:00	0.4	ENE
26-Jan-23	20:00	0.4	NNW
26-Jan-23	21:00	0.9	W
26-Jan-23	22:00	1.3	W
26-Jan-23	23:00	1.8	NW

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
27-Jan-23	0:00	1.8	NW
27-Jan-23	1:00	2.7	NW
27-Jan-23	2:00	1.8	NW
27-Jan-23	3:00	1.3	W
27-Jan-23	4:00	1.8	NW
27-Jan-23	5:00	1.8	NW
27-Jan-23	6:00	1.3	W
27-Jan-23	7:00	0.9	W
27-Jan-23	8:00	0.9	NW
27-Jan-23	9:00	0.9	NW
27-Jan-23	10:00	0.4	NW
27-Jan-23	11:00	0.4	NW
27-Jan-23	12:00	0.9	NW
27-Jan-23	13:00	1.3	W
27-Jan-23	14:00	0.9	W
27-Jan-23	15:00	0.9	W
27-Jan-23	16:00	1.3	W
27-Jan-23	17:00	1.3	WSW
27-Jan-23	18:00	0.9	ESE
27-Jan-23	19:00	0.4	W
27-Jan-23	20:00	0.9	NE
27-Jan-23	21:00	0.4	NW
27-Jan-23	22:00	0.9	WNW
27-Jan-23	23:00	0.9	W
28-Jan-23	0:00	1.3	W
28-Jan-23	1:00	1.3	NW
28-Jan-23	2:00	0.9	WNW
28-Jan-23	3:00	1.3	WNW
28-Jan-23	4:00	1.3	NW
28-Jan-23	5:00	1.3	W
28-Jan-23	6:00	1.3	NW
28-Jan-23	7:00	0.9	WNW
28-Jan-23	8:00	0.9	WNW
28-Jan-23	9:00	1.3	WNW
28-Jan-23	10:00	1.3	WNW
28-Jan-23	11:00	0.4	NE
28-Jan-23	12:00	0.9	ENE
28-Jan-23	13:00	0.4	ENE
28-Jan-23	14:00	0.9	WNW
28-Jan-23	15:00	0.9	WSW
28-Jan-23	16:00	0.9	W
28-Jan-23	17:00	0.4	WSW
28-Jan-23	18:00	0.4	WNW
28-Jan-23	19:00	1.3	WNW
28-Jan-23	20:00	0.4	ESE
28-Jan-23	21:00	0.4	E
28-Jan-23	22:00	0.4	WNW
28-Jan-23	23:00	1.8	NW

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
29-Jan-23	0:00	0.9	W
29-Jan-23	1:00	1.3	W
29-Jan-23	2:00	0.9	NW
29-Jan-23	3:00	1.3	WNW
29-Jan-23	4:00	1.9	NNW
29-Jan-23	5:00	1.9	NNW
29-Jan-23	6:00	2.8	NNW
29-Jan-23	7:00	2.8	NNW
29-Jan-23	8:00	2.8	NNW
29-Jan-23	9:00	2.3	NNW
29-Jan-23	10:00	2.8	NNW
29-Jan-23	11:00	2.3	NNW
29-Jan-23	12:00	2.3	NNW
29-Jan-23	13:00	2.8	NNW
29-Jan-23	14:00	1.9	NNW
29-Jan-23	15:00	1.9	NNW
29-Jan-23	16:00	1.4	NNW
29-Jan-23	17:00	1.0	NNW
29-Jan-23	18:00	1.0	NW
29-Jan-23	19:00	1.0	NW
29-Jan-23	20:00	0.5	WNW
29-Jan-23	21:00	1.0	NW
29-Jan-23	22:00	0.5	WNW
29-Jan-23	23:00	0.5	WNW
30-Jan-23	0:00	0.5	WNW
30-Jan-23	1:00	1.0	WNW
30-Jan-23	2:00	1.0	WNW
30-Jan-23	3:00	1.0	WNW
30-Jan-23	4:00	1.4	NNW
30-Jan-23	5:00	1.9	NNW
30-Jan-23	6:00	2.8	NNW
30-Jan-23	7:00	3.7	NNW
30-Jan-23	8:00	2.3	NNW
30-Jan-23	9:00	2.3	NNW
30-Jan-23	10:00	1.9	NNW
30-Jan-23	11:00	1.4	NNW
30-Jan-23	12:00	1.0	SE
30-Jan-23	13:00	0.5	SE
30-Jan-23	14:00	0.5	ESE
30-Jan-23	15:00	0.5	ESE
30-Jan-23	16:00	1.0	SE
30-Jan-23	17:00	1.0	SE
30-Jan-23	18:00	1.4	ESE
30-Jan-23	19:00	1.0	ESE
30-Jan-23	20:00	1.4	ESE
30-Jan-23	21:00	1.4	SE
30-Jan-23	22:00	1.0	ESE
30-Jan-23	23:00	1.4	ESE

January 2023			
Table II: Wind Speed and Directions			
Date	Time	Wind Speed m/s	Direction
31-Jan-23	0:00	1.9	ESE
31-Jan-23	1:00	1.9	NNW
31-Jan-23	2:00	1.4	NNW
31-Jan-23	3:00	2.8	NNW
31-Jan-23	4:00	1.9	NW
31-Jan-23	5:00	1.9	WNW
31-Jan-23	6:00	2.3	NNW
31-Jan-23	7:00	1.9	NW
31-Jan-23	8:00	2.3	ENE
31-Jan-23	9:00	1.4	SE
31-Jan-23	10:00	1.9	NNW
31-Jan-23	11:00	1.9	NNW
31-Jan-23	12:00	0.5	WNW
31-Jan-23	13:00	0.5	SE
31-Jan-23	14:00	0.5	NW
31-Jan-23	15:00	1.0	NNW
31-Jan-23	16:00	0.5	WNW
31-Jan-23	17:00	0.5	WNW
31-Jan-23	18:00	0.5	SE
31-Jan-23	19:00	0.5	ESE
31-Jan-23	20:00	0.5	W
31-Jan-23	21:00	0.5	SE
31-Jan-23	22:00	0.9	NNE
31-Jan-23	23:00	0.9	E

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**APPENDIX D  
ENVIRONMENTAL MONITORING  
SCHEDULES**

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**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area**  
**Impact Air and Noise Monitoring Schedule for January 2023**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan
			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]		
8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan
		24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]			
15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan
	24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]
22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan
				24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]	
29-Jan	30-Jan	31-Jan				
		24-hr TSP [AM2(A)]				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

\* The noise level limit is 65dB(A) during the exam period

**Air Quality Monitoring Station**

AM2 - Lee Kau Yan Memorial School  
AM2(A) - Ng Wah Catholic Secondary School

**Noise Monitoring Station**

M3(A) - The Bridge connecting The Latitude  
M4 - Lee Kau Yan Memorial School  
M5(C) - Mercy Grace's Home

**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area**  
**Impact Air and Noise Monitoring Schedule for February 2023**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Feb	2-Feb	3-Feb	4-Feb
			1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]			
5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb
	24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]			24-hr TSP [AM2(A)]	
12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb	18-Feb
	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]	
19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb
			24-hr TSP [AM2(A)]	1-hr TSP x 3 [AM2]  Noise [M3(A), M4 & M5(C)]		
26-Feb	27-Feb	28-Feb				
		24-hr TSP [AM2(A)]				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

\* The noise level limit is 65dB(A) during the exam period

**Air Quality Monitoring Station**

AM2 - Lee Kau Yan Memorial School  
AM2(A) - Ng Wah Catholic Secondary School

**Noise Monitoring Station**

M3(A) - The Bridge connecting The Latitude  
M4 - Lee Kau Yan Memorial School  
M5(C) - Mercy Grace's Home

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**APPENDIX E  
1-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

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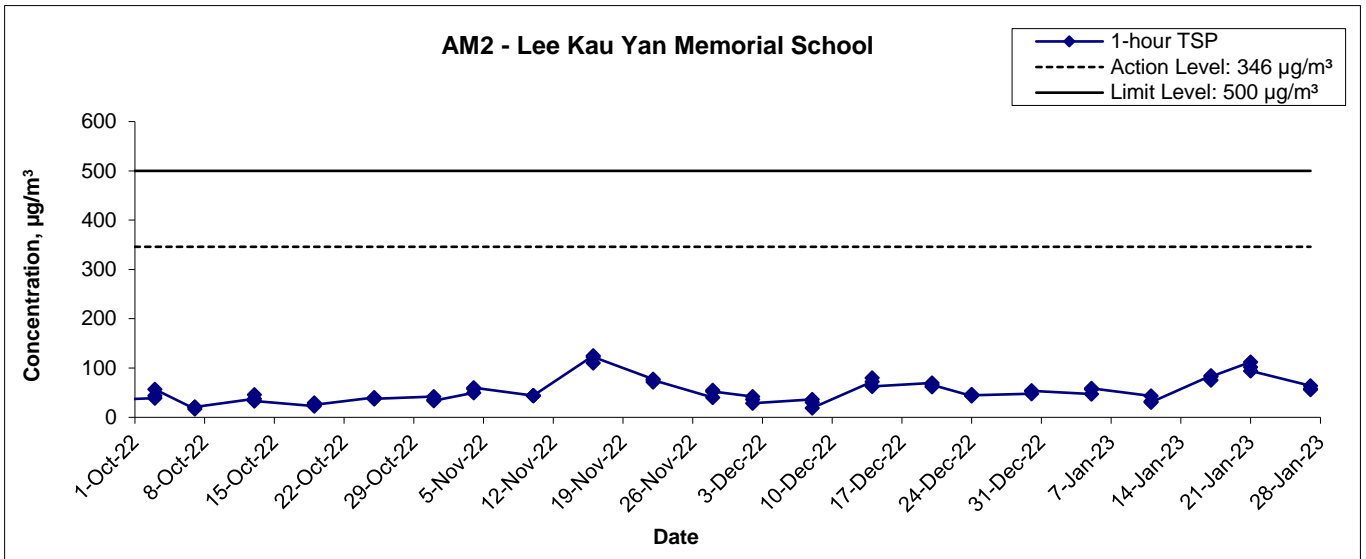
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## Appendix E - 1-hour TSP Monitoring Results

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
5-Jan-23	11:00	Fine	47.5
5-Jan-23	12:00	Fine	57.0
5-Jan-23	13:00	Fine	58.9
11-Jan-23	13:00	Cloudy	43.7
11-Jan-23	14:00	Cloudy	32.3
11-Jan-23	15:00	Cloudy	30.4
17-Jan-23	12:46	Fine	84.6
17-Jan-23	13:46	Fine	75.6
17-Jan-23	14:46	Fine	82.8
21-Jan-23	13:00	Sunny	112.0
21-Jan-23	14:00	Sunny	102.0
21-Jan-23	15:00	Sunny	94.0
27-Jan-23	13:00	Sunny	64.0
27-Jan-23	14:00	Sunny	58.0
27-Jan-23	15:00	Sunny	56.0
		Average	66.6
		Maximum	112.0
		Minimum	30.4



### 1-hr TSP Concentration Levels



Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area  Graphical Presentation of 1-hour TSP Monitoring Results	Scale	N.T.S	Project No.	MA16043	CINOTECH
	Date	Jan 23	Appendix	E	

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**APPENDIX F  
24-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

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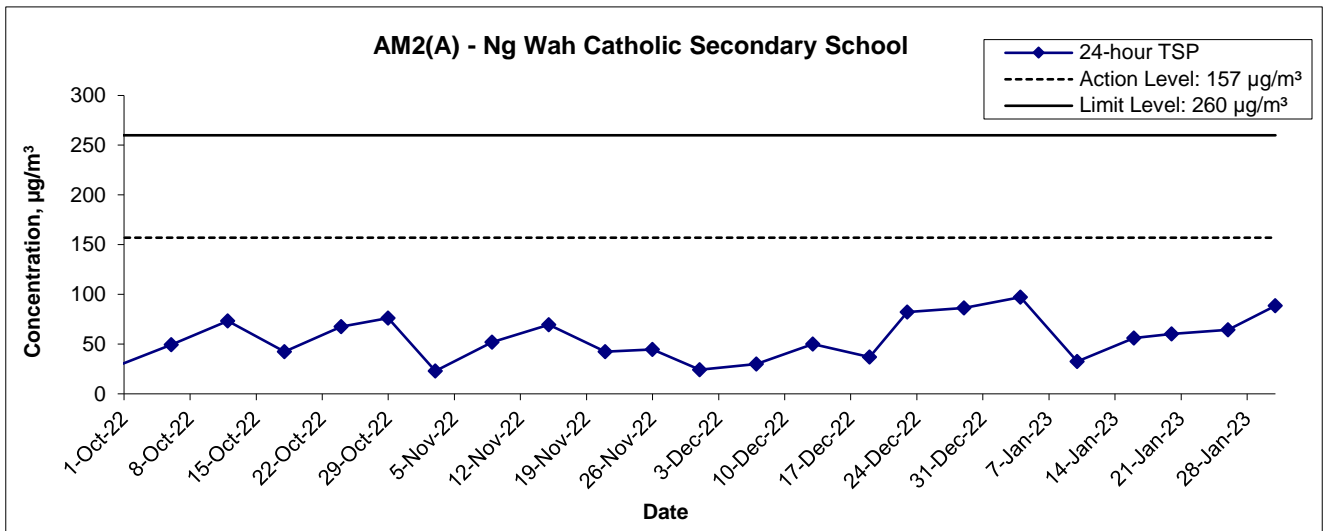
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## Appendix F - 24-hour TSP Monitoring Results

### Location AM2(A) - Ng Wah Catholic Secondary School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m <sup>3</sup> /min.)		Av. Flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
4-Jan-23	Fine	291.0	768.6	3.3148	3.4868	0.1721	10185.8	10209.8	24.0	1.23	1.23	1.23	1768.8	97.3
10-Jan-23	Rainy	291.2	764.7	3.3359	3.3930	0.0571	10209.8	10233.8	24.0	1.21	1.21	1.21	1746.1	32.7
16-Jan-23	Fine	285.8	768.0	3.3408	3.4397	0.0989	10233.8	10257.8	24.0	1.22	1.22	1.22	1761.9	56.2
20-Jan-23	Sunny	290.3	766.3	3.6229	3.7283	0.1054	10257.8	10281.8	24.0	1.21	1.22	1.22	1749.7	60.3
26-Jan-23	Sunny	288.6	766.7	3.5242	3.6373	0.1132	10281.8	10305.8	24.0	1.22	1.22	1.22	1754.1	64.5
31-Jan-23	Sunny	291.4	763.6	3.3657	3.5205	0.1548	10305.9	10329.9	24.0	1.21	1.21	1.21	1744.6	88.7
													Min	32.7
													Max	97.3
													Average	66.6

### 24-hr TSP Concentration Levels



Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA16043	<b>CINOTECH</b>
	Date Jan 23	Appendix F	

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**APPENDIX G  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATION**

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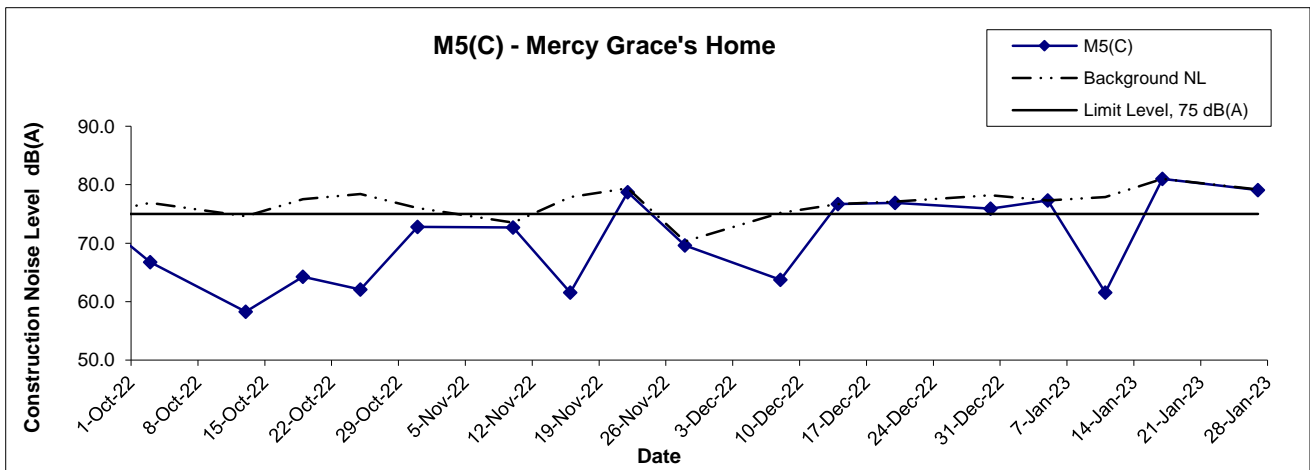
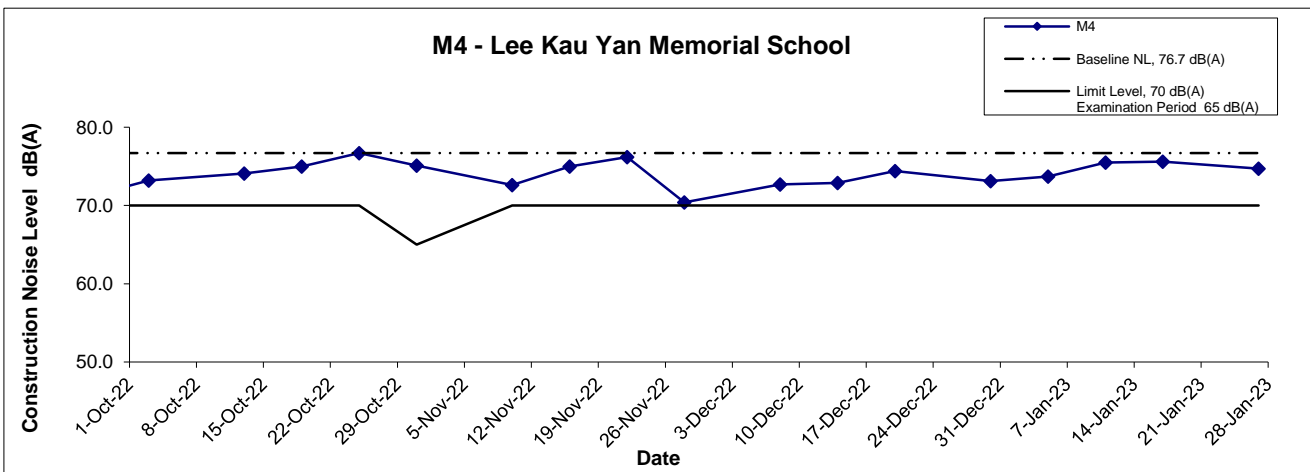
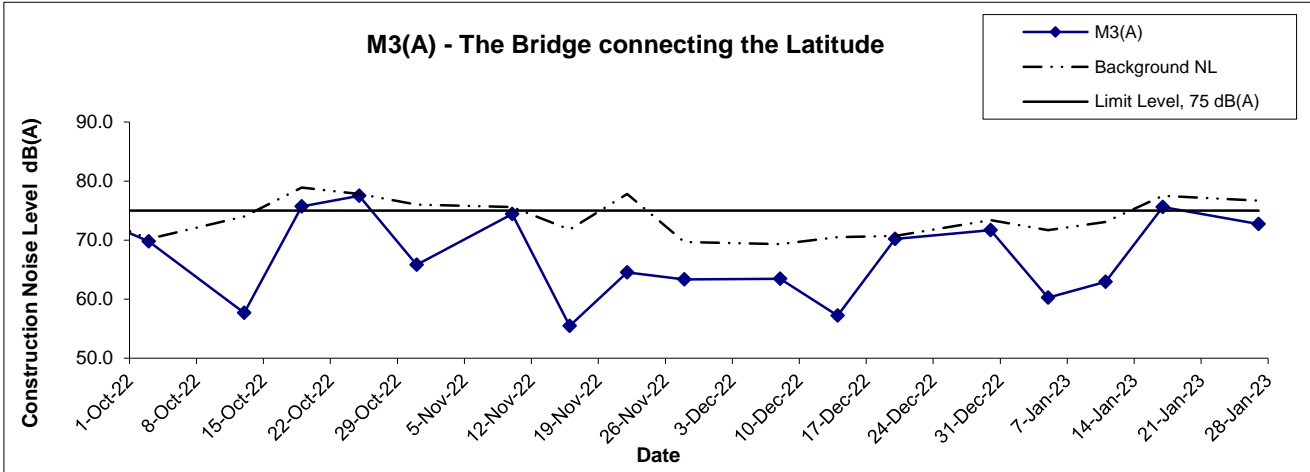
## Appendix G - Noise Monitoring Results

Location M3(A) - The Bridge connecting The Latitude								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Background Noise	Construction Noise Level	
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	
5-Jan-23	9:35	Sunny	72.0	73.5	69.9	71.7	60.2	
11-Jan-23	9:41	Cloudy	73.5	74.9	71.4	73.1	62.9	
17-Jan-23	14:04	Fine	75.6	77.2	73.5	77.5	75.6	Measured ≤ Background
27-Jan-23	11:37	Sunny	72.7	74.0	70.6	76.7	72.7	Measured ≤ Background

Location M4 - Lee Kau Yan Memorial School								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Baseline Level	Construction Noise Level	
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	
5-Jan-23	11:00	Fine	73.7	75.0	71.9	76.7	73.7	Measured ≤ Baseline
11-Jan-23	11:10	Cloudy	75.5	76.8	73.8		75.5	Measured ≤ Baseline
17-Jan-23	14:43	Sunny	75.6	78.6	67.9		75.6	Measured ≤ Baseline
27-Jan-23	12:57	Sunny	74.7	76.3	72.5		74.7	Measured ≤ Baseline

Location M5(C) - Mercy Grace's Home								
Date	Time	Weather	Unit: dB (A) (30-min)					
			Measured Noise Level			Background Noise	Construction Noise Level	
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	
5-Jan-23	13:00	Fine	77.3	79.6	73.8	77.3	77.3	Measured ≤ Background
11-Jan-23	14:02	Cloudy	78.0	80.2	74.4	77.9	61.6	
17-Jan-23	11:19	Fine	81.0	83.2	77.4	81.0	81.0	Measured ≤ Background
27-Jan-23	13:48	Sunny	79.1	81.4	72.9	79.2	79.1	Measured ≤ Background

## Noise Levels



Remarks: <sup>[1]</sup> The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title Contract No. KLN/2016/04 Environmental Monitoring Works for Contract No. KL/2015/02 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA16043	CINOTECH
	Date	Jan 2023	Appendix	G	

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**APPENDIX H**  
**SUMMARY OF EXCEEDANCE**

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## **Appendix H – Summary of Exceedance**

**Exceedance Record for Contract No. KL/2015/02**

**Reporting Month:** January 2023

**(A) Exceedance Record for Air Quality**  
(NIL in the reporting month)

**(B) Exceedance Record for Construction Noise**  
(NIL in the reporting month)

**(C) Exceedance Record for Landscape and Visual**  
(NIL in the reporting month)

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**APPENDIX I  
SITE AUDIT SUMMARY**

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**Contract No. KLN/2016/04**



**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

Checklist Reference Number	230103
Date	03 January 2023 (Tuesday)
Time	14:00 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Visual and Landscape</i></b>	
	• No environmental deficiency was identified during site inspection	
	<b><i>G. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Others</i></b>	
	No follow-up items are required from the previous site inspection (ref no.: 221228).	

	Name	Signature	Date
Recorded by	KK Kwan		03 January 2023
Checked by	Colman Wong		09 January 2023

**Contract No. KLN/2016/04**


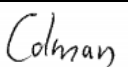
**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

Checklist Reference Number	230111
Date	11 January 2023 (Wednesday)
Time	09:30 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Visual and Landscape</i></b>	
	• No environmental deficiency was identified during site inspection	
	<b><i>G. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Others</i></b>	
	No follow-up items are required from the previous site inspection (ref no.: 230103).	

	Name	Signature	Date
Recorded by	Charles Fung		11 January 2023
Checked by	Colman Wong		16 January 2023

**Contract No. KLN/2016/04**



**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

Checklist Reference Number	230117
Date	17 January 2023 (Tuesday)
Time	14:00 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Visual and Landscape</i></b>	
	• No environmental deficiency was identified during site inspection	
	<b><i>G. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Others</i></b>	
	No follow-up items are required from the previous site inspection (ref no.: 230111).	

	Name	Signature	Date
Recorded by	KK Kwan		17 January 2023
Checked by	Colman Wong		26 January 2023

**Contract No. KLN/2016/04**



**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

Checklist Reference Number	230126
Date	26 January 2023 (Thursday)
Time	14:00 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Visual and Landscape</i></b>	
	• No environmental deficiency was identified during site inspection	
	<b><i>G. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Others</i></b>	
	No follow-up items are required from the previous site inspection (ref no.: 230117).	

	Name	Signature	Date
Recorded by	Serena Ng		26 January 2023
Checked by	Colman Wong		30 January 2023

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**APPENDIX J**  
**EVENT ACTION PLANS**

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## Appendix J - Event Action Plans

### Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contactor, IEC and ER;</li> <li>3. Repeat measurement to confirm finding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and ER;</li> <li>3. Increase monitoring frequency to daily;</li> <li>4. Discuss with IEC and Contractor on remedial actions required;</li> <li>5. Assess the effectiveness of Contractor's remedial actions;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. Conduct meeting with ET and IEC if exceedance continues.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with ET and IEC on proper remedial actions;</li> <li>2. Submit proposals for remedial actions to ER and IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC, ER, and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Assess effectiveness of Contractor's remedial actions and keep</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposals for remedial actions to ER and IEC within three</li> </ol>



## Appendix J - Event Action Plans

	<p>EPD, IEC and ER informed of the results.</p>	<p>4. Advise the ER on the effectiveness of the proposed remedial measures.</p>	<p>implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.</p>	<p>working days of notification; 4. Implement the agreed proposals.</p>
<p>Limit Level being exceeded by two or more consecutive sampling</p>	<p>1. Notify IEC, ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results; 7. If exceedance stops, cease additional monitoring.</p>	<p>1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</p>	<p>1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise 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.</p>	<p>1. Take immediate action to avoid further exceedance; 2. Discuss with ET, ER and IEC on proper remedial actions; 3. Submit proposals for remedial actions to IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</p>

## Appendix J - Event Action Plans

### Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> <li>1. Notify ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> </ol>

## Appendix J - Event Action Plans

	<p>5. Carry out analysis of Contractor's working procedures;</p> <p>6. Discuss with the IEC, Contractor and ER on remedial measures required;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>measures to be implemented;</p> <p>4. Supervise the implementation of remedial measures;</p> <p>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.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<p>4. Submit further proposal if problem still not under control;</p> <p>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
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## Appendix J - Event Action Plans

### Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary	1. Undertake remedial design if necessary	
Non-conformity on one occasion	1. Identify Source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	1. Notify Contractor 2. Ensure remedial measures are properly	1. Amend working methods 2. Rectify damage and

## Appendix J - Event Action Plans

	<p>ER</p> <p>2. Increase monitoring frequency</p> <p>3. Discuss remedial actions with IEC, ER and Contractor</p> <p>4. Monitor remedial actions until rectification has been completed</p> <p>5. If non-conformity stops, cease additional monitoring</p>	<p>2. Check Contractor's working method</p> <p>3. Discuss with ET and Contractor on possible remedial measures</p> <p>4. Advise ER on effectiveness of proposed remedial measures</p> <p>5. Supervise implementation of remedial measures.</p>	<p>implemented</p>	<p>undertake any necessary replacement</p>
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**APPENDIX K  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	Recommended Mitigation Measures	Implementation Status
<b><i>Construction Air Quality</i></b>		
S6.5	8 times daily watering of the work site with active dust emitting activities.	^
S6.8	<p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p> <ul style="list-style-type: none"> <li>• Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> <li>• Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> <li>• Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</li> <li>• The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> <li>• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. Onsite unpaved roads should be compacted and kept free of loose materials.</li> <li>• Vehicle washing facilities should be provided at every vehicle exit point.</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.</li> <li>• Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</li> <li>• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

<p>S6.8</p>	<ul style="list-style-type: none"> <li>• <u>DWFI compound for JVBC:</u> A DWFI compound is proposed at the downstream of JVC to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of JVBC and hence fully mitigate the potential odour emissions from the headspace of JVBC near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere.</li> <li>• <u>Desilting compound for KTN:</u> Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of KTN and hence fully mitigate the potential odour emissions from the headspace of KTN near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere.</li> <li>• <u>Decking or reconstruction of KTN within apron area:</u> It is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with nonodorous fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more than 16m.</li> <li>• <u>Localised maintenance dredging:</u> Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new development in the immediate vicinity of KTAC to avoid potential localized odour impacts at the future ASRs during the maintenance</li> </ul>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
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## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

	<p>dredging operation.</p> <ul style="list-style-type: none"> <li>• <u>Improvement of water circulation in KTAC and KTTS:</u> 600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased.</li> <li>• <u>In-situ sediment treatment by bioremediation:</u> Bioremediation would be applied to the entire KTAC and KTTS.</li> </ul>	N/A
<b>Construction Noise</b>		
S7.8	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	^
S7.9	<p>Good Site Practice:</p> <ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.</li> <li>• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.</li> <li>• Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.</li> <li>• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul>	^ ^ ^ ^ ^
S7.9	Scheduling of Construction Works during School Examination Period	^
S7.8	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A
S7.8	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S7.8	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and (ii) Setback of building about 5m from site boundary.	N/A N/A
S7.8	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
S7.8	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and Avoid the sensitive façade of class room facing Road L2 and L4; and (ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A N/A
S7.8	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or (ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground	N/A N/A
S7.8	(i) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road	^
S7.8	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot	N/A N/A N/A N/A
S7.8	Installation of retractable roof or other equivalent measures	N/A
<b><i>Construction Water Quality</i></b>		
S8.8	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: <ul style="list-style-type: none"> <li>• Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply;</li> <li>• Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps;</li> <li>• An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and</li> <li>• For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities</li> </ul>	N/A N/A N/A N/A

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S8.8	<p><b>Construction Phase</b></p> <p><u>Marine-based Construction</u></p> <p><i>Capital and Maintenance Dredging for Cruise Terminal</i></p> <p>Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.</p>	N/A
S8.8	<p><i>Fireboat Berth, Runway Opening and Road T2</i></p> <p>Silt curtains should be deployed around the close grab dredger to minimize release of sediment and other contaminants for any dredging and filling activities in open water.</p>	N/A
S8.8	<p>Dredging at and near the seawall area for construction of the public landing steps cum fireboat berth should be carried out at a maximum production rate of 1,000m<sup>3</sup> per day using one grab dredger.</p>	N/A
S8.8	<p>The proposed construction method for runway opening should adopt an approach where the existing seawall at the runway will not be removed until completion of all excavation and dredging works for demolition of the runway. Thus, excavation of bulk fill and majority of the dredging works will be carried out behind the existing seawall, and the sediment plume can be effectively contained within the works area. As there is likely some accumulation of sediments alongside the runway, there will be a need to dredge the existing seabed after completion of all the demolition works. Dredging alongside the 600m opening should be carried out at a maximum production rate of 2,000m<sup>3</sup> per day using one grab dredger.</p>	N/A
8.8	<p>Dredging for Road T2 should be conducted at a maximum rate of 8,000m<sup>3</sup> per day (using four grab dredgers) whereas the sand filling should be conducted at a maximum rate of 2,000m<sup>3</sup> per day (using two grab dredgers).</p>	N/A
8.8	<p>Silt screens shall be applied to seawater intakes at WSD seawater intake.</p>	N/A

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S8.8	<p><u>Land-based Construction</u></p> <p><i>Construction Runoff</i></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> <li>• use of sediment traps</li> <li>• adequate maintenance of drainage systems to prevent flooding and overflow</li> </ul>	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S8.8	<p>Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.</p>	<p style="text-align: center;">^</p>
S8.8	<p>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty</p>	<p style="text-align: center;">^</p>

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

	surface runoff during storm events.	
S8.8	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	N/A(1)
S8.8	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	^
S8.8	<i>Drainage</i>  It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea	^
S8.8	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	^
S8.8	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
S8.8	<i>Sewage Effluent</i>  Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	^

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S8.8	<i>Stormwater Discharges</i>  Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	^
S8.8	<i>Debris and Litter</i>  In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur	^
S8.8	<i>Construction Works at or in Close Proximity of Storm Culvert or Seafront</i>  The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	^
S8.8	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.	^
S8.8	Temporary storage of materials (e.g. equipment, filling materials, 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	^
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	^
S8.8	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.	^
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	^
S8.8	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts.  Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	^
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	^
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	N/A
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	N/A
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	N/A

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
S8.8	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	N/A
<b><i>Construction Waste Management</i></b>		
S9.5	<p>Good Site Practices</p> <p>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during the dredging activities include:</p> <ul style="list-style-type: none"> <li>• Nomination of an approved person, such as a site manager, be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.</li> <li>• Training of site personnel in proper waste management and chemical waste handling procedures.</li> <li>• Provision of sufficient waste disposal points and regular collection for disposal.</li> <li>• Appropriate measure to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
S9.5	<p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount 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"> <li>• Sort C&amp;D waste from demolition of the remaining structures to recover recyclable portions such as metals</li> <li>• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal</li> <li>• Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force</li> <li>• Any unused chemicals or those with remaining functional capacity should be recycled</li> <li>• Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S9.5	<p>Dredged Marine Sediment</p> <p>The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the Director of Environmental Protection (DEP)</p>	N/A
S9.5	<p>The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 - Open Sea Disposal. Contaminated sediment would require either Type 1 – Open Sea Disposal (Dedicated Sites), Type 2 - Confined Marine Disposal, or Type 3 – Special Treatment / Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment and disposed properly at the designated disposal site</p>	N/A
S9.5	<p>It will be the responsibility of the contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works should apply for allocation of marine disposal sites and all necessary permits from relevant authorities for the disposal of dredged sediment. During transportation and disposal of the dredged marine sediments requiring Type 1, Type 2, or Type 3 disposal, the following measures should be taken to minimise potential impacts on water quality:</p> <ul style="list-style-type: none"> <li>• Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved</li> <li>• Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic selfmonitoring devices as required under the Dumping at Sea Ordinance and as specified by the DEP</li> <li>• Barges or hopper barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation</li> </ul>	<p>N/A</p> <p>N/A</p> <p>N/A</p>
S9.5	<p>Construction and Demolition Material</p> <p>Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&amp;D material. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>• Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the</li> </ul>	^



## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

	<p>transient stockpiles should be located away from waterfront or storm drains as far as possible</p> <ul style="list-style-type: none"> <li>• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric</li> <li>• Skip hoist for material transport should be totally enclosed by impervious sheeting</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores</li> <li>• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle</li> <li>• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</li> <li>• The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading</li> </ul> <p>When delivering inert C&amp;D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&amp;D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
S9.5	<p>Chemical Waste</p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p>	<p>^</p>

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S9.5	<p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem</p>	^
<b><i>Construction Landscape and Visual</i></b>		
S13.9	<p>CM1 All existing trees should be carefully protected during construction.</p> <p>CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>CM3 Control of night-time lighting.</p> <p>CM4 Erection of decorative screen hoarding.</p>	<p>^</p> <p>^</p> <p>N/A(1)</p> <p>^</p>

### Remarks:

^	Compliance of mitigation measure
*	Recommendations were made during site audits but improved/rectified by the Contractor
#	Recommendations were made during site audits but has not yet been improved/rectified by the Contractor
●	Non-compliance but rectified by the Contractor
X	Non-compliance of mitigation measure
N/A	Not Applicable at this stage
N/A(1)	Not observed

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**APPENDIX L  
SUMMARIES OF ENVIRONMENTAL  
COMPLAINT, WARNING, SUMMON  
AND NOTIFICATION OF SUCCESSFUL  
PROSECUTION**

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**Contract No. KLN/2016/04  
 Environmental Monitoring Works for Contract No. KL/2015/02  
 Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area**

**Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution**

**Complaint Log**

EPD Complaint Ref No.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
17-34438	Dakota Drive and Olympic Avenue	23 October 2017	The complainant concerned about the dust emission when vehicle running on the dry surface outside Dakota Drive and Olympic Avenue. In addition, vehicles were not clear enough before leaving the construction site.	<p>In accordance with the information gathered in the investigation, construction activities were conducted with proper mitigation measures to minimize the dust impact arise from the construction site to the vicinity of this Project.</p> <p>Regular water spraying was provided to haul roads and unpaved areas within the site areas to reduce the dust impact arise from the construction site to the vicinity of this Project. The Contractor had also ensured vehicles and plants were wheel washed to be cleaned of mud and debris before leaving the construction site area. Therefore, the complaint is considered as non-project related.</p> <p>The following recommendations were made to further enhance the mitigation measures:</p> <ul style="list-style-type: none"> <li>● Where practicable, to provide sheltered area on the top and three sides for stockpiles of dusty materials, or perform frequent water spraying so as to maintain the entire surface wet;</li> <li>● Frequent checking and repair the gaps or broken tarpaulin sheets; and</li> <li>● To provide a hard-surfaced road between any cleaning facility and the public Road</li> </ul>	Closed

**Remarks:** No complaint was received in the reporting month.

**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area**

**Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution**

**Warnings / Summons and Successful Prosecutions received**

<b>Log Ref.</b>	<b>Received Date</b>	<b>Details of Warning / Summons and Successful Prosecutions</b>	<b>Investigation/Mitigation Action</b>	<b>Status</b>
N/A	N/A	N/A	N/A	N/A

**Remarks:** No warning/summon and prosecution was received in the reporting month.

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**APPENDIX M  
SUMMARY OF WASTE GENERATION  
AND DISPOSAL RECORDS**

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Department: CEDD  
 Contract No.: KL/2015/02  
 Project : Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area



**Monthly Summary Waste Flow Table for 2023**

As at 1 Feb 2023

Month	Quantities of Inert C & D Materials Generated Monthly						Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	0	0	0	0	0.306	0	0	0	0	0	0.007
Feb											
Mar											
Apr											
May											
June											
<b>Sub-total</b>	<b>68.229</b>	<b>0</b>	<b>0</b>	<b>0.406</b>	<b>68.535</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2.884</b>
July											
Aug											
Sept											
Oct											
Nov											
Dec											
<b>Total</b>	<b>68.229</b>	<b>0</b>	<b>0</b>	<b>0.406</b>	<b>68.535</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2.884</b>

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
72	0	0	1	69	0	0	0	0	0	3

- Notes:
- (1) The performance targets are given in PS clause 6(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.
  - (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,00 m<sup>3</sup>. (PS Clause 25.02A(7) refers).

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**APPENDIX N**  
**CONSTRUCTION PROGRAMME**

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KL/2015/02  
Construction Programme

Works	Commence	Finish	2016				2017				2018				2019				2020				2021				2022				2023													
			9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
Subways Construction	Dec-16	Mar-23	[Blue bar spanning from Dec-16 to Mar-23]																																									
Road Works (D1 and L7)	Feb-19	Mar-22	[Blue bar spanning from Feb-19 to Mar-22]																																									
Landscape	Mar-21	Sep-22	[Blue bar spanning from Mar-21 to Sep-22]																																									

## **FUGRO TECHNICAL SERVICES LIMITED**

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### **Appendix C**

**Monthly EM&A Report  
For**

**Contract No. ED/2018/05**

**Kai Tak Development – Stage 5B infrastructure works at the former north apron area**

**Environmental Monitoring and Audit Report**  
**for**  
**Contract No. ED/2018/05 –**  
**Kai Tak Development – Stage 5B infrastructure**  
**works at the former north apron area**

**Contract No.: EDO 2/2020**

January 2023

(Version 1.1)

Certified By:  \_\_\_\_\_

(Environmental Team Leader)

Date: 10 February 2023  
Your ref:  
Our ref: PL-202302012

AECOM Asia Company Limited  
12/F, Grand Central Plaza, Tower 2,  
138 Shatin Rural Committee Road,  
Shatin, New Territories,  
Hong Kong

**Attn.: Ms. Mavis Law, SRE**

Dear Ms. Law,

**Re: Agreement No. EDO 6/2019  
Independent Environmental Checker for Contract No. ED/2018/05 Kai Tak Development –  
Stage 5B Infrastructure Works at the Former North Apron Area  
Verification of Monthly EM&A Report (January 2023)**

Reference is made to the Monthly EM&A Report (January 2023) (Version 1.1) issued by the Environmental Team on 9 February 2023.

Please be informed that we have no adverse comment on the captioned submission. We hereby verify the Monthly EM&A Report (January 2023) in accordance with Condition 3.3 of Environmental Permit No. EP-337/2009.

Thank you for your attention.

Yours sincerely,  
For and on behalf of  
Acuity Sustainability Consulting Limited



Kevin Li  
Independent Environmental Checker

c.c.	CEDD	Attn.: Mr. Albert Tse	By email
	Ka Shing	Attn.: Mr. Chan Pang (ETL)	By email

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## EXECUTIVE SUMMARY

1. This is the 24<sup>th</sup> Monthly Environmental Monitoring & Audit (EM&A) report which summarises the findings of the EM&A Programme during the reporting period from 1 to 31 January 2023.

### **Breaches of Action and Limit Levels**

2. 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
3. 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
4. Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

*Table I Non-compliance Record in the Reporting Month*

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Construction noise	0	0	N/A

### **Complaint log**

6. No complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table II.

*Table II Summary of complaints in the Reporting Month*

Date of complaint received	Date of complaint	Description of complaint	Recommendations / Action taken	Close-out date / Status
No complaint was received in the reporting month.	NA	NA	NA	NA

**Notifications of summons and successful prosecutions**

7. No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table III.

*Table III Summary of summons and successful prosecutions in the Reporting Month*

Date of receiving notification of summons or prosecutions	Date of event	Description of event	Action taken	Close-out date / Status
No notification of summons and successful prosecutions were received in the reporting month.	NA	NA	NA	NA

**Report changes**

8. There was no reporting change in the reporting month.

**Key construction works in the reporting month**

9. Major construction activities undertake during the reporting month included:
- Erection of falseworks and working platform for decking of Elevated Walkway LW-02
  - ELS and excavation works for lift and staircase of LW-02
  - ELS and excavation works at Sa Po Road
  - RC construction at launching shaft for subway SB-01
  - Construction of gantry footing at launching shaft for subway SB-01
  - Construction works for Road L16
  - Construction works for DCS

- Construction works for Olympic Avenue
- RC construction for Subway KS10 Lift and Staircase
- Renovation works for existing subways KS9, KS32 and KS10
- Pre-bored socket H-pile construction works for Slip Road S14
- Construction works for additional run-in at Road L7
- Dismantling of gantry crane at casting yard

**Future key issues**

10. The future key issues and potential impact in the coming month are given in Table IV.

*Table IV Summary of future key issues and potential impact in the coming month*

Future key issues in the coming month	Potential impact
Erection of falsework and working platform for decking of Elevated Walkway LW-02	Noise and Air Quality
RC construction of decking of LW-02	Noise and Air Quality
ELS and excavation for foundation of LW02 lift and staircase	Noise and Air Quality
Excavation and ELS works for retrieving shaft at Sa Po Road	Noise and Air Quality
RC construction at Launching Shaft for SB-01	Noise and Air Quality
Erection of gantry at launching shaft for SB-01	Noise and Air Quality
Construction of Road L16	Noise and Air Quality
Construction of DCS	Noise and Air Quality
Construction of Olympic Avenue	Noise and Air Quality
RC construction for Subway KS10 Lift and Staircase	Noise and Air Quality
Renovation works for existing Subways KS9, KS32 and KS10	Noise and Air Quality
Pre-bored socket H-pile construction works for Slip Road S14	Noise and Air Quality

# 1. INTRODUCTION

## Project Background

- 1.1 The Kai Tak Development (KTD) is located in the southern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.2 Contract No. ED/2018/05 - Kai Tak Development – stage 5B infrastructure works at the former north apron area (The Project), comprises mainly the design and construction of a section of dual two-lane Road D1; single two-lane Road L9 and Road L16; a single-lane slip road S14; a pedestrian subway SB-01; an elevated walkway LW-02; renovation of the existing pedestrian subways KS9, KS10 and KS32, as well as modification of the southern end of the existing pedestrian subway KS10; associated footpaths, street lighting, traffic aids, drainage, sewerage, water mains, landscaping, electrical and mechanical works, and ancillary works. The proposed works are shown in Figure 1 and Figure 2. The proposed works and site boundary are shown in Figure 3 and Figure 4. Civil Engineering and Development Department (CEDD) had completed an Environmental Impact Assessment (EIA) and is the Permit Holder.
- 1.3 In accordance with the approved EIA Reports, Environmental Monitoring and Audit (EM&A) programmes are recommended to ensure compliance with the EIA study recommendations. The project proponent was the Civil Engineering and Development Department (CEDD). AECOM Asia Co. Ltd. (AECOM) was commissioned by CEDD as Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual). Acuity Sustainability Consulting Limited (Acuity) was commissioned as the Independent Environmental Checker (IEC). Build King – STEC Joint Venture (Build King) was appointed as the main Contractor for the construction works of Contract No. ED/2018/05. Ka Shing was commissioned by CEDD to undertake the role of the Environmental Team (ET) to implement the EM&A programme for The Project.
- 1.4 The construction work under ED/2018/05 comprises the EM&A Manual (EIA Register No. AEIAR-130/2009 for Kai Tak Development) and Environmental Permit No. EP- 337/2009.
- 1.5 Air quality and noise monitoring has been proposed in the EM&A Manual with EIA Register No. AEIAR-130/2009 for Kai Tak Development.

## **Project Organization**

1.6 The project organization chart and with respect to the EM&A programme is shown in Appendix A. Information of key personnel contact names and telephone numbers are summarized in Table 1.1.

*Table 1.1 Contact Information of Key Personnel*

Party	Role	Contact Person	Position	Phone No.	E-mail
Civil Engineering and Development Department (CEDD)	Project Proponent	Mr. Lam Shing Tim	Permit Holder	3842 7090	<a href="mailto:st_lam@cedd.gov.hk">st_lam@cedd.gov.hk</a>
AECOM Asia Co. Ltd. (AECOM)	Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual)	Mr. Vincent Lee	Supervisor's Delegate	2798 0771	<a href="mailto:sre2@ktd-stage5.com">sre2@ktd-stage5.com</a>
Acuity Sustainability Consulting Limited (Acuity)	Independent Environmental Checker (IEC)	Mr. Kevin Li	IEC	9779 2247	<a href="mailto:kevin.li@aurecongroup.com">kevin.li@aurecongroup.com</a>
Ka Shing Management Consultant Limited (Ka Shing)	Environmental Team (ET)	Mr. Pang Chan	ET Leader	6082 2973	<a href="mailto:stage5b@ka-shing.net">stage5b@ka-shing.net</a>
Build King – STEC Joint Venture (BK-STEC)	Contractor	Mr. Rex Lau	Contractor's Representative	6282 5154	<a href="mailto:rex.lau@buildking.hk">rex.lau@buildking.hk</a>

## **Works Area and Construction Programme**

1.7 The construction works commenced on 16 February 2021. The construction programme of the Project is given in Appendix B.

### **Construction works undertaken during reporting month**

1.8 Major construction works of the Project in the reporting month are summarized in Table 1.2:

*Table 1.2 Major activities of the Project during reporting month*

Erection of falseworks and working platform for decking of Elevated Walkway LW-02	Construction works for Olympic Avenue
ELS and excavation works for lift and staircase of LW-02	RC construction for Subway KS10 Lift and Staircase
ELS and excavation works at Sa Po Road	Renovation works for existing subways KS9, KS32 and KS10
RC construction at launching shaft for subway SB-01	Pre-bored socket H-pile construction works for Slip Road S14
Construction of gantry footing at launching shaft for subway SB-01	Construction works for additional run-in at Road L7
Construction works for Road L16	Dismantling of gantry crane at casting yard
Construction works for DCS	

### **Submission Status under the Environmental Permits**

1.9 The status of required submission under Environmental Permit (EP) conditions under EP-337/2009 are summarized in Table 1.3.

*Table 1.3 Summary of Status of Required Submission of EPs*

EP Condition EP-337/2009	Submission	Submission Date
Condition 1.11	Notification of Commencement Date of Construction of the Project	12 Jan 2021
Condition 2.3	Management Organization of Main Construction Companies	21 Sep 2020
Condition 2.3	Updated Management Organization of Main Construction Companies	4 July 2022
Condition 2.4	Design Drawings	12 Jan 2021
Condition 2.11	Landscape Mitigation Plans	17 Dec 2020
Condition 3.2	Baseline Monitoring Report	12 Jan 2021
Condition 3.3	Monthly EM&A Report (December 2022)	12 Jan 2023

## 2. AIR QUALITY MONITORING

### Monitoring Requirements

2.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), impact air quality monitoring shall be carried out during the construction phase of the Project. For regular impact monitoring, a sampling frequency of at least once in every six days will be strictly observed at all of the monitoring stations for 24-hour TSP. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days will be undertaken when the highest dust impact occurs.

### Monitoring Locations

2.2 Two designated monitoring stations were selected for air quality monitoring programme. Impact air quality monitoring was conducted at two air quality monitoring stations in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in Figure 5.

*Table 2.1 Locations of Air Quality Monitoring Stations*

Air Quality Monitoring Locations for the Project	Location of Measurement
AM2(A) – Ng Wah Catholic Secondary School	Rooftop
AM3 – Sky Tower	Podium floor near T7

### Monitoring Parameters, Frequency and Duration

2.3 The air quality monitoring locations and monitoring frequency are listed in Table 2.2.

*Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration*

Air Monitoring Station	Location for Measurement	Parameter	Duration	Frequency
AM2(A) – Ng Wah Catholic Secondary School	Rooftop	- 24-hour average TSP	- 24 hours	- Once every 6 days
AM3 – Sky Tower	Podium Floor near Tower 7	- 1-hour average TSP	- 1 hour	- Three times every 6 days

2.4 The monitoring schedule for reporting month and next month is presented in Appendix C.

2.5 Photographic records of the impact monitoring setup are shown in Appendix D.

### **Monitoring Equipment**

2.6 24-hour average TSP and 1-hour average TSP levels were measured for impact monitoring. 24-hour average TSP levels were measured by the High Volume Samplers (HVS) and 1-hour average TSP levels were measured by direct reading method to indicate short-term impacts. Wind data monitoring equipment was set up at conspicuous locations for logging wind speed and wind direction near to the dust monitoring locations. Table 2.3 summarizes the equipment to be used in the air quality monitoring.

*Table 2.3 Air Quality Monitoring Equipment*

Equipment	Model	Quantity	Calibration Interval
HVS Sampler	TE-5170 X c/w of TSP sampling inlet	2	2 months
HVS Calibrator	TISCH TE-5025A	1	1 year
1-hour TSP Dust Meter	TSI Model AM510 SidePak Personal Aerosol Monitor	2	1 year
Weather Station	Davis Vantage Pro2 Weather Station	1	6 months

2.7 High volume samplers (HVS) (TE-5170 X c/w of TSP sampling inlet) comprising with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

2.8 Calibration certificates, catalogue of equipment are given in Appendix E.

### **Monitoring Methodology and QA/QC Procedure**

#### ***24-hour TSP Monitoring***

#### **Operating/Analytical Procedures**

2.9 Setup criteria of HVS are shown as follows:



- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- No two samplers were placed less than 2m apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2m of separation from walls, parapets and penthouses was set for the rooftop samples.
- A minimum of 2m separation from any supporting structure, measured horizontally was set.
- No furnaces or incineration flues was nearby.
- Airflow around the sampler was unrestricted.
- Any wire fence and gate, to protect the samplers, was not caused any obstruction during monitoring.
- Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity was provided to operate the samplers.

2.10 Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m<sup>3</sup>/min. and 1.7 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.11 For TSP sampling, Glass Fiber Filter Media 8" x 10" having a collection efficiency of > 99 % for particles of 0.3 µm diameter were used.

2.12 The power supply was checked to ensure the sampler worked properly and then placed any filter media at the designated air monitoring station.

2.13 The filter holding frame was removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure was sufficient to avoid air leakage at the edges.

2.15 The shelter lid was closed and secured with the aluminium strip.

2.16 The timer was programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

2.17 After sampling, the filter was removed from the HVS and put into a clean and labeled seal plastic bag to avoid cross contamination. The elapsed time was also be recorded. The sampled filters were sent to the HOKLAS accredited or other internationally accredited laboratory for weighting.

#### Maintenance/Calibration

2.18 The following maintenance/calibration are required for the HVS:

- The HVS and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated with at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

#### *1-hour TSP Monitoring*

#### Measurement Procedures

2.19 The measurement procedures of the 1-hour TSP were conducted in accordance with the Manufacturer's Instruction Manual as follows:

- Set up the dust meter on a tripod at 1.2m level.
- Turned on the dust meter and check the battery, if too low, change new ones. Pointed the meter to the source area or the planned measurement area.
- The zero calibration of the instrument was conducted before and after each sampling.
- TSP levels were recorded for 1-hour with 5-minute data logging interval.
- Recorded down the general meteorological conditions, Test ID no., start/end time, spot check reading at each sampling location for data processing.
- Recorded any activities that may generate dust during measurement period.

#### Maintenance/Calibration

2.20 The following maintenance/calibration are required for the direct dust meters:

- To validate the accuracy of dust meter, compare the results measured by dust meter and HVS every 12 months throughout all stages of the air quality monitoring.

### **Wind Data Monitoring**

2.21 Wind Anemometer was installed at the roof-top of AM2(A) – Ng Wah Catholic Secondary School with 10m above ground and clear of constructions or turbulence caused by the buildings.

2.22 The wind data was captured by a data logger and the data was downloaded at least once per month for analysis.

2.23 The wind data monitoring equipment will be re-calibrated at least once every six months.

2.24 Wind direction is divided into 16 sectors of 22.5 degrees each.

2.25 Details of weather information during the monitoring period are shown in Appendix F.

### **Action and Limit Levels**

2.26 The Action and Limit Levels of 24-hour average TSP and 1-hour average TSP are summarized in Table 2.4 and Table 2.5 respectively.

*Table 2.4 Action and Limit Levels of 24-hour average TSP for Construction Dust Monitoring*

Parameter	Air Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
24-hour average TSP	AM2(A)	175	260
	AM3	172	260

*Table 2.5 Action and Limit Levels of 1-hour average TSP for Construction Dust Monitoring*

Parameter	Air Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
1-hour average TSP	AM2(A)	302	500
	AM3	301	500

## **Impact Air Quality Monitoring results**

2.27 Impact monitoring results for 24-hour average TSP and 1-hour average TSP levels at the designated air quality monitoring stations are summarized in Table 2.6 and Table 2.7 respectively.

*Table 2.6 Summary of 24-hour average TSP Monitoring Data during the reporting month*

Air Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2(A)	54	30 – 100	175	260
AM3	65	35 – 98	172	260

*Table 2.7 Summary of 1-hour average TSP Monitoring Data during the reporting month*

Air Monitoring Station	Average TSP Concentration, $\mu\text{g}/\text{m}^3$	Range, $\mu\text{g}/\text{m}^3$	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM2(A)	48	28 – 85	302	500
AM3	54	31 – 85	301	500

2.28 There was no Action and Limit Level exceedance of 24-hour average TSP and 1-hour average TSP levels recorded during the reporting month.

2.29 Graphical presentation and detailed monitoring results of 24-hour average TSP and 1-hour average TSP levels are shown in Appendix G and Appendix H respectively.

2.30 The Event and Action Plan is provided in Appendix I.

2.31 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

2.32 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.

### 3. NOISE MONITORING

#### Monitoring Requirements

- 3.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), impact noise monitoring shall be carried out during the construction phase of the Project.
- 3.2 Regular monitoring,  $L_{Aeq, 30\text{-minute}}$ , for each station will be on a weekly basis and conduct one set of measurements between 0700 – 1900 hrs on normal weekdays.
- 3.3 If construction works are extended to include works during 1900 – 0700 hrs as well as public holidays and Sundays, additional weekly impact monitoring will be carried out during the respective restricted hours periods.

#### Monitoring Locations

- 3.4 Two designated monitoring stations were selected for noise monitoring programme. Impact noise monitoring was conducted at two noise monitoring stations in the reporting month. Table 3.1 describes the noise monitoring locations, which are also depicted in Figure 6.

*Table 3.1 Locations of Noise Monitoring Stations*

Noise Monitoring Locations for the Project	Location of Measurement
M4(A) – Le Billionnaire	Podium (Façade)
M5(A) – Prince Ritz	Podium (Façade)

#### Monitoring Parameters, Frequency and Duration

- 3.5 The noise monitoring locations and monitoring frequency are listed in Table 3.2.

*Table 3.2 Noise Monitoring Parameters, Frequency and Duration*

Noise Monitoring Station	Location for Measurement	Parameter	Frequency and Duration
M4(A) – Le Billionnaire	Podium (Façade)	L <sub>Aeq</sub> , L <sub>A10</sub> and L <sub>A90</sub>	30-minute measurement at each monitoring station between 0700 – 1900 hrs on normal weekdays (Monday to Saturday) at frequency of once per week.
M5(A) – Prince Ritz	Podium (Façade)		

3.6 The monitoring schedule for reporting month and next month is presented in Appendix C.

3.7 Photographic records of the monitoring setup are shown in Appendix D.

### **Monitoring Equipment**

3.8 As referred to the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the IEC 61672-1 (Type 1) standard [this standard replaced the International Electrotechnical Commission Publications 60651:1979 (Type 1) and 60804:1985 (Type 1)] were used for noise monitoring. Table 3.3 summarizes the equipment to be used in the noise monitoring.

*Table 3.3 Noise Monitoring Equipment*

Equipment	Model	Quantity	Calibration Interval
Sound Level Meter	RION NL52	1	1 year
Sound Level Calibrator	RION NC74	1	1 year
Air Flowmeter	TSI TA440 Air Velocity	1	1 year

3.9 Calibration certificates, catalogue of equipment are given in Appendix J.

### **Monitoring Methodology and QA/QC Procedure**

3.10 The noise level measurement was conducted at 1m from the exterior of the nearby noise sensitive receivers building façade and at 1.2m above the ground and facing to the source area or the planned measurement area.

3.11 No noise measurement was conducted in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. Air flow was measured by air flow meter.

3.12 Turned on the sound level meter and check the battery, if too low, change new ones.

3.13 Calibration was conducted immediately prior to and after each noise measurement, the accuracy of the sound level meters was checked by using sound calibrator generating 1,000 Hz with 94dB. Measurement data was found to be valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.

3.14 Noise level was recorded.

3.15 Recorded any activities that may generate noise during measurement period.

### **Maintenance and Calibration**

3.16 The microphone of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.

3.17 The sound level meter and sound calibrator were calibrated annually.

3.18 Calibration for sound level meter was conducted immediately prior to and following each noise measurement by using sound calibrator generating a known sound pressure level at a known frequency (1,000 Hz with 94dB). Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

### **Action and Limit Levels**

3.19 The Baseline Noise Levels and Action and Limit Levels for construction noise is presented in Table 3.4.

*Table 3.4 Baseline Noise Level and Action and Limit Levels for Construction Noise Monitoring*

Time Period	Noise Monitoring Station	Baseline Noise Levels, dB (A)	Action Level	Limit Level <sup>^</sup>
0700 – 1900 hrs on normal weekdays	M4(A)	69.5	When one documented complaint is received.	75 dB(A)
	M5(A)	72.5		

Note: ^ If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

### **Impact Noise Monitoring results**

3.20 Impact noise monitoring results at the designated noise monitoring stations are summarized in Table 3.5 respectively.

*Table 3.5 Summary of Noise Monitoring Data during the reporting month*

Noise Monitoring Station	Measured $L_{Aeq, 30-min}$ , Average, dB(A)	Measured $L_{Aeq, 30-min}$ , Range, dB(A)	Action Level	Limit Level <sup>^</sup>
M4(A)	69.8	69.4 – 70.1	When one documented complaint is received	75 dB(A)
M5(A)	72.7	72.2 – 73.3		

Note: ^ If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

3.21 There was no Action and Limit Level exceedance of  $L_{Aeq, 30-min}$  recorded during the reporting month.

3.22 Graphical presentation and detailed monitoring results are shown in Appendix K.

3.23 The Event and Action Plan is provided in Appendix L.

3.24 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

3.25 Weather conditions during the monitoring periods were generally fine and did not affect the monitoring results.



## 4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The environmental impacts predictions were given in Agreement No. CE 35/2006(CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction - Kai Tak Development Environmental Impact Assessment Report, EIA Register No. AEIAR-130/2009 for Kai Tak Development (The EIA Report). The EM&A data was compared with the EIA predictions as summarized in Table 4.1 to Table 4.3.

*Table 4.1 Comparison of 24-hour average TSP Monitoring Data with EIA predictions*

Air Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 24-hour average TSP concentration		Measured 24-hr average TSP in Reporting Month (January 2023) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	30 – 100
AM3 - Sky Tower	A40 <sup>^</sup>	106 <sup>^</sup>	138 <sup>^</sup>	35 – 98

Note:

<sup>^</sup> Prediction results are given in the Table 3.13 of the EIA report EIA Register No. AEIAR-130/2009 for Kai Tak Development.

*Table 4.2 Comparison of 1-hour average TSP Monitoring Data with EIA predictions*

Air Monitoring Station	ASR No. in EIA report	Predicted Cumulative Maximum 1-hour average TSP concentration		Measured 1-hr average TSP in Reporting Month (January 2023) $\mu\text{g}/\text{m}^3$
		Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$	Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$	
AM2(A) - Ng Wah Catholic Secondary School	NA	NA	NA	28 – 85
AM3 - Sky Tower	A40 <sup>^</sup>	217 <sup>^</sup>	247 <sup>^</sup>	31 – 85

Note:

<sup>^</sup> Prediction results are given in the Table 3.13 of the EIA report EIA Register No. AEIAR-130/2009 for Kai Tak Development.

*Table 4.3 Comparison of Noise Monitoring Data with EIA predictions*

Noise Monitoring Station	NSR No. in EIA report	Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour L <sub>Aeq, 30min</sub> , dB(A)	Measured Noise Level in Reporting Month (January 2023) L <sub>Aeq, 30min</sub> , dB(A)
M4(A) – Le Billionnaire	NA	NA	69.4 – 70.1
M5(A) – Prince Ritz	NA	NA	72.2 – 73.3

- 4.2 No prediction in the EIA Report for 24-hour TSP monitoring results at AM2(A).
- 4.3 24-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 4.4 No prediction in the EIA Report for 1-hour TSP monitoring results at AM2(A).
- 4.5 1-hour TSP monitoring results at AM3 was recorded lower than the prediction in the EIA Report. Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.
- 4.6 No prediction in the EIA Report for noise monitoring results at M4(A) and M5(A).

## 5. LANDSCAPE AND VISUAL MONITORING

5.1 In accordance with EM&A Manual (EIA Register No. AEIAR-130/2009), Landscape and Visual Monitoring shall be carried out during the construction phase of the Project. Regular impact monitoring will be conducted at least once per week.

### **Results and Observations**

5.2 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

5.3 Site inspections were conducted on 5, 12, 19, and 26 January 2023 in the reporting month.

5.4 The summary of site audits is attached in Table 5.1.

*Table 5.1 Summary of observations of Landscape and Visual impact during the reporting month*

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
5 January 2023	No	NA	NA
12 January 2023	No	NA	NA
19 January 2023	No	NA	NA
26 January 2023	No	NA	NA

5.5 No non-compliance of the landscape and visual impact was recorded in the reporting month.

5.6 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in Appendix M shall be performed.

## 6. ENVIRONMENTAL SITE INSPECTION AND AUDIT




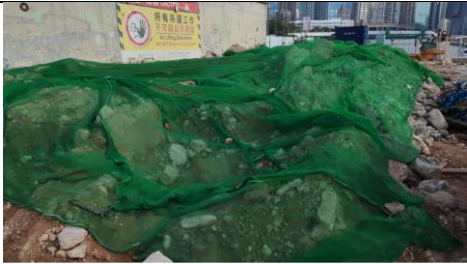
### Site Inspection


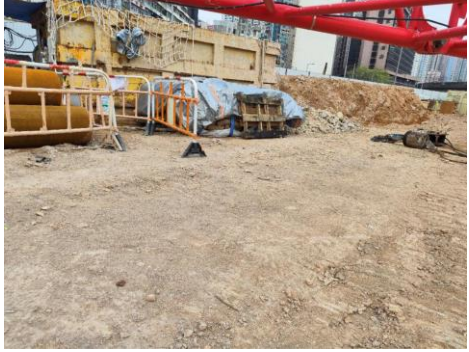


6.1 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

6.2 Site inspections were conducted 5, 12, 19, and 26 January 2023 in the reporting month.

6.3 The summaries of site audits are attached in Table 6.1.

*Table 6.1 Summary of site inspections observations during the reporting month*

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
5 January 2023	 <p>Observation: The QPME label for the generator was missing. Please ensure the label is properly demonstrated.</p>	 <p>Action Taken: The QPME label has been display for the generator.</p>	Closed out on 12 January 2023
12 January 2023	 <p>Observation: Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</p>	 <p>Action Taken: Stockpiles were fully covered by impermeable sheeting to reduce dust emission.</p>	Closed out on 19 January 2023

Inspection Date	Key Observations	Recommendations / Actions	Close-out Date / Status
19 January 2023	 <p>Observation: Opened cement shall be properly covered to prevent dust emission KS10 subway area.</p>	 <p>Action Taken: Every stock of more than 20 bags of cement were covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.</p>	Closed out on 26 January 2023
26 January 2023	 <p>Observation: Secondary container shall be provided for the plastic diesel engine oil to prevent soil contamination in LW02.</p>	 <p>Action taken: Plastic diesel engine oil has been removed.</p>	Closed out on 2 February 2023

**Status of Waste Management**

6.4 The amount of wastes generated by the major site activities of the work contracts within the Project during the reporting month is shown in Appendix N.

6.5 The Contractor was registered as a chemical waste producer for the Project. The Contractor was reminded that chemical waste containers should be properly treated and stored

temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

### **Status of Environmental Licenses, Notification and Permits**

6.6 A summary of the relevant permits, licenses and/or notifications on environmental protection for the Project is shown in Table 6.2.

*Table 6.2 Summary of Environmental Licenses, Notifications and Permits*

Environmental Licenses, Notifications and Permits	Ref. No.	Valid Form	Valid Till
Environmental Permit under EIAO	EP-337/2009	23 Apr 2009	N/A
Construction Dust Notification under APCO	HA/1826/1	29 Dec 2020	N/A
Waste Disposal Billing Account	7038086	21 Aug 2020	N/A
Registration as a Chemical Waste Producer	5111-286-B2596-01	15 Sep 2020	N/A
Wastewater Discharge License under WPCO	WT00037618-2021	29 Mar 2021	31 Mar 2026
	WT00037370-2021		
	WT00038562-2021	15 Jul 2021	31 Jul 2026
Construction Noise Permit	GW-RE1383-22	30 Dec 2022	19 Jun 2023
	GW-RE1385-22	23 Dec 2022	19 Jun 2023
	GW-RE1401-22	23 Dec 2022	19 Jun 2023
	GW-RE1939-22	30 Dec 2022	31 Jan 2023

### **Implementation Status of Environmental Mitigation Measures**

6.7 The Contractor has implemented environmental mitigation measures and requires as stated in the EIA report, the EP and the EM&A Manual. The implementation status of the mitigation measures is summarized in Appendix O.

### **Environmental Complaint and Non-compliance**

6.8 No complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table 6.3.

*Table 6.3 Summary of complaints in the Reporting Month*

Date of complaint received	Date of complaint	Description of complaint	Recommendations / Action taken	Close-out date / Status
No complaint was received in the reporting month.	NA	NA	NA	NA

6.9 Complaint log is shown in Appendix P.

**Notifications of summons and successful prosecutions**

6.10 No notification of summons and successful prosecutions was received in the reporting month.

Summary of summons and successful prosecutions in the reporting month is tabulated in Table 6.4.

*Table 6.4 Summary of summons and successful prosecutions in the Reporting Month*

Date of receiving notification of summons or prosecutions	Date of event	Description of event	Action taken	Close-out date / Status
No notification of summons and successful prosecutions were received in the reporting month.	NA	NA	NA	NA

6.11 The summaries of cumulative environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in Appendix P.

## 7. FUTURE KEY ISSUES

### Construction Programme in the coming month

7.1 The major construction activities and potential impacts in the next reporting month are as follows:

*Table 7.1 Summary of future key issues and potential impact in the coming month*

Future key issues in the coming month	Potential impact
Erection of falsework and working platform for decking of Elevated Walkway LW-02	Noise and Air Quality
RC construction of decking of LW-02	Noise and Air Quality
ELS and excavation for foundation of LW02 lift and staircase	Noise and Air Quality
Excavation and ELS works for retrieving shaft at Sa Po Road	Noise and Air Quality
RC construction at Launching Shaft for SB-01	Noise and Air Quality
Erection of gantry at launching shaft for SB-01	Noise and Air Quality
Construction of Road L16	Noise and Air Quality
Construction of DCS	Noise and Air Quality
Construction of Olympic Avenue	Noise and Air Quality
RC construction for Subway KS10 Lift and Staircase	Noise and Air Quality
Renovation works for existing Subways KS9, KS32 and KS10	Noise and Air Quality
Pre-bored socket H-pile construction works for Slip Road S14	Noise and Air Quality

7.2 The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:

- Sufficient watering of the works site with the active dust emitting activities,
- Limitation of the speed for vehicles on unpaved site roads,
- Properly cover the stockpiles,
- Good maintenance to the plant and equipment,
- Use of quieter plant and Quality Powered Mechanical Equipment (QPME),
- Provide movable noise barriers,
- Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,
- Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,
- Onsite waste sorting and implementation of trip ticket system,
- Good management and control on construction waste reduction,
- Erection of decorative screen hoarding,



- Strictly following the Environmental Permits and Licenses, and
- Provide sufficient mitigation measures as recommended in Approved EIA Report.

7.3 The recommended environmental measures proposed in the EM&A Manual (EIA Register No. AEIAR-130/2009) shall be effectively implemented to minimize the potential environmental impacts. The Contractor is reminded to implement the mitigation measures properly.

#### **Environmental Site Inspection and Monitoring Schedule for next month**

7.4 The tentative schedule for weekly site inspection and air quality and noise monitoring in the next month is provided in Appendix C.

## **8. CONCLUSIONS**

- 8.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 8.2 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.3 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.4 Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.5 No complaint was received in the reporting month.
- 8.6 No notification of summons and successful prosecutions was received in the reporting month.
- 8.7 Based on the site inspection and audits, impact air quality and noise monitoring results, it was considered that the mitigation measures were effective to control the potential environmental impacts from the Project during the reporting period.

**Figure**

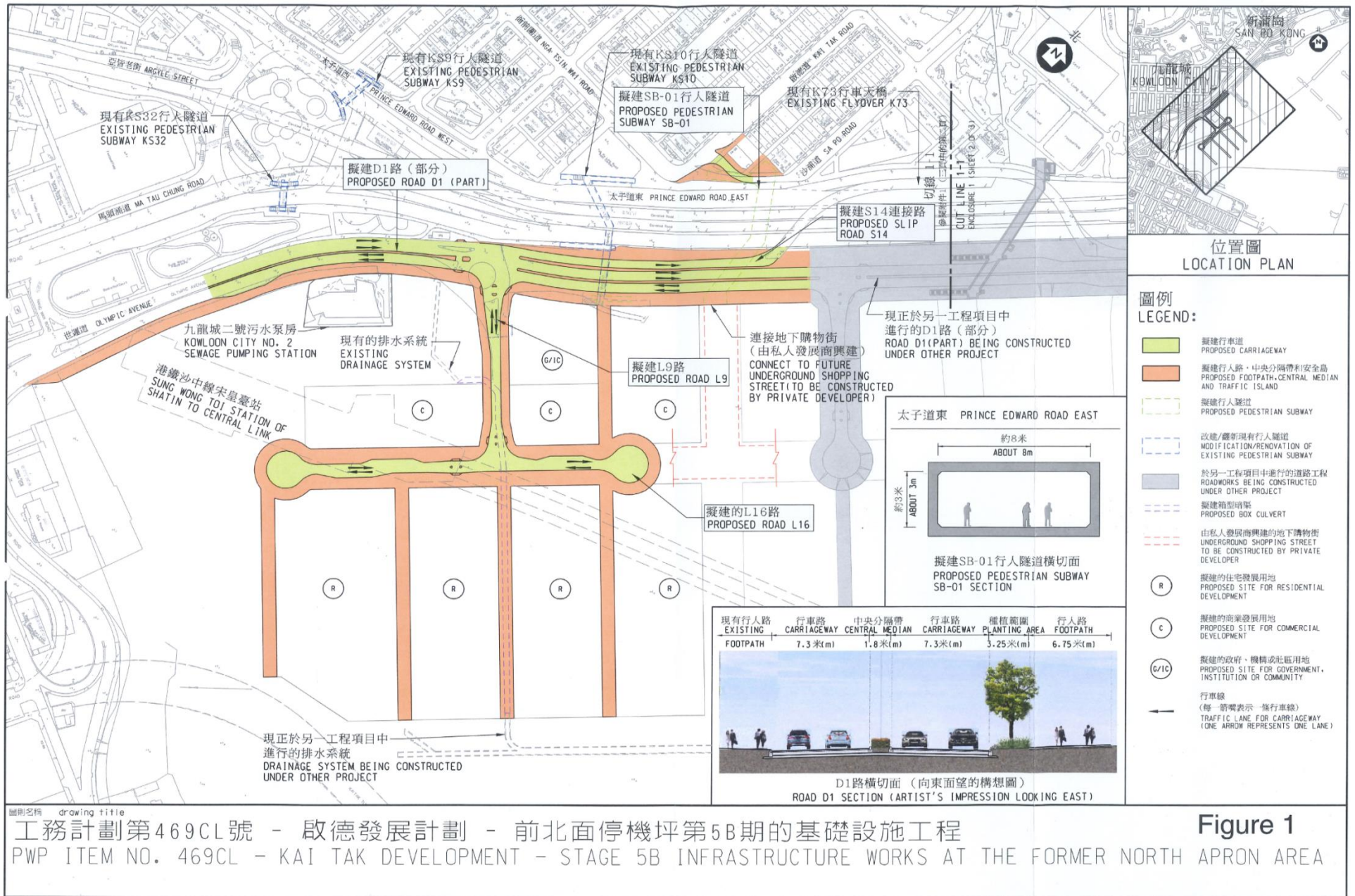


Figure 1 – Proposed works of Contract No. ED/2018/05

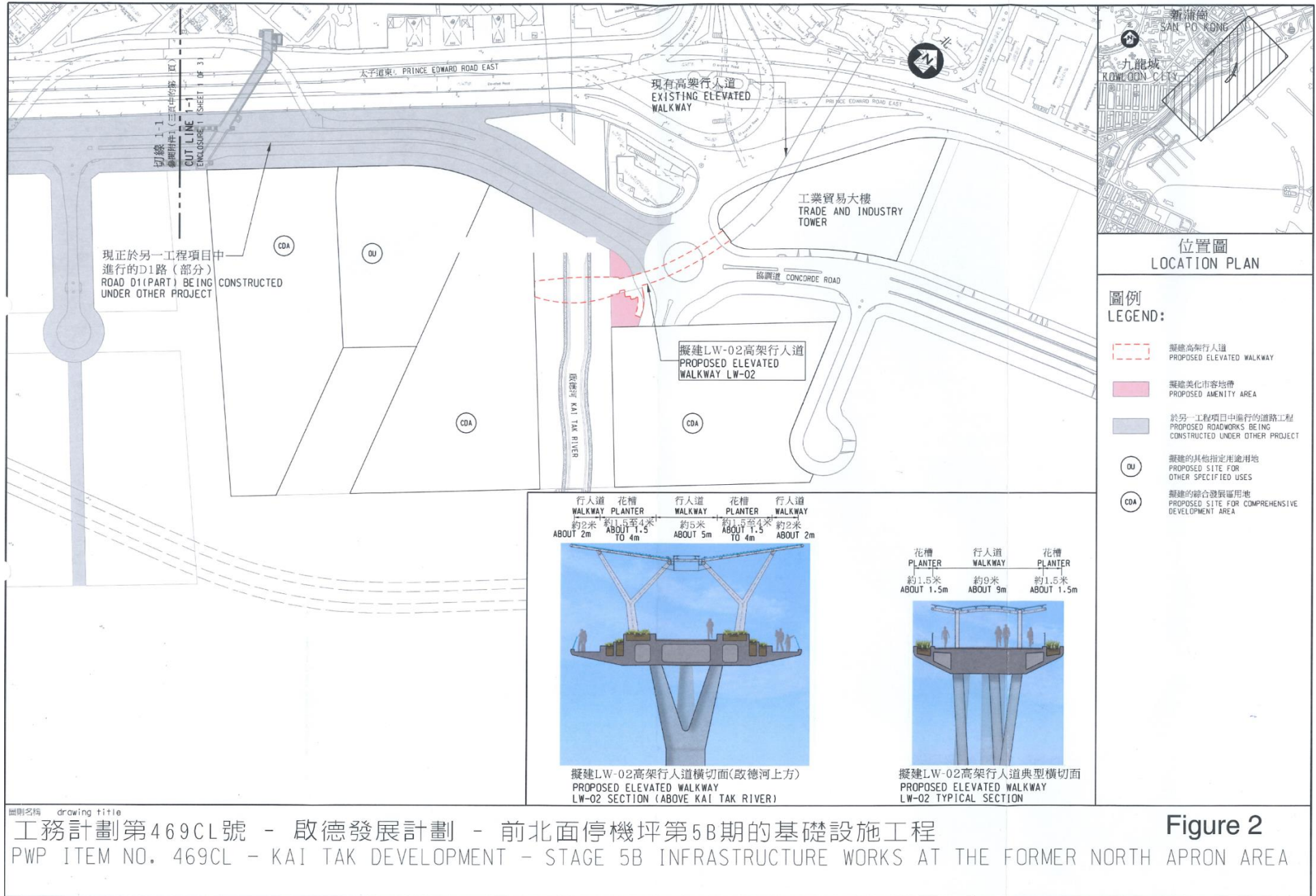
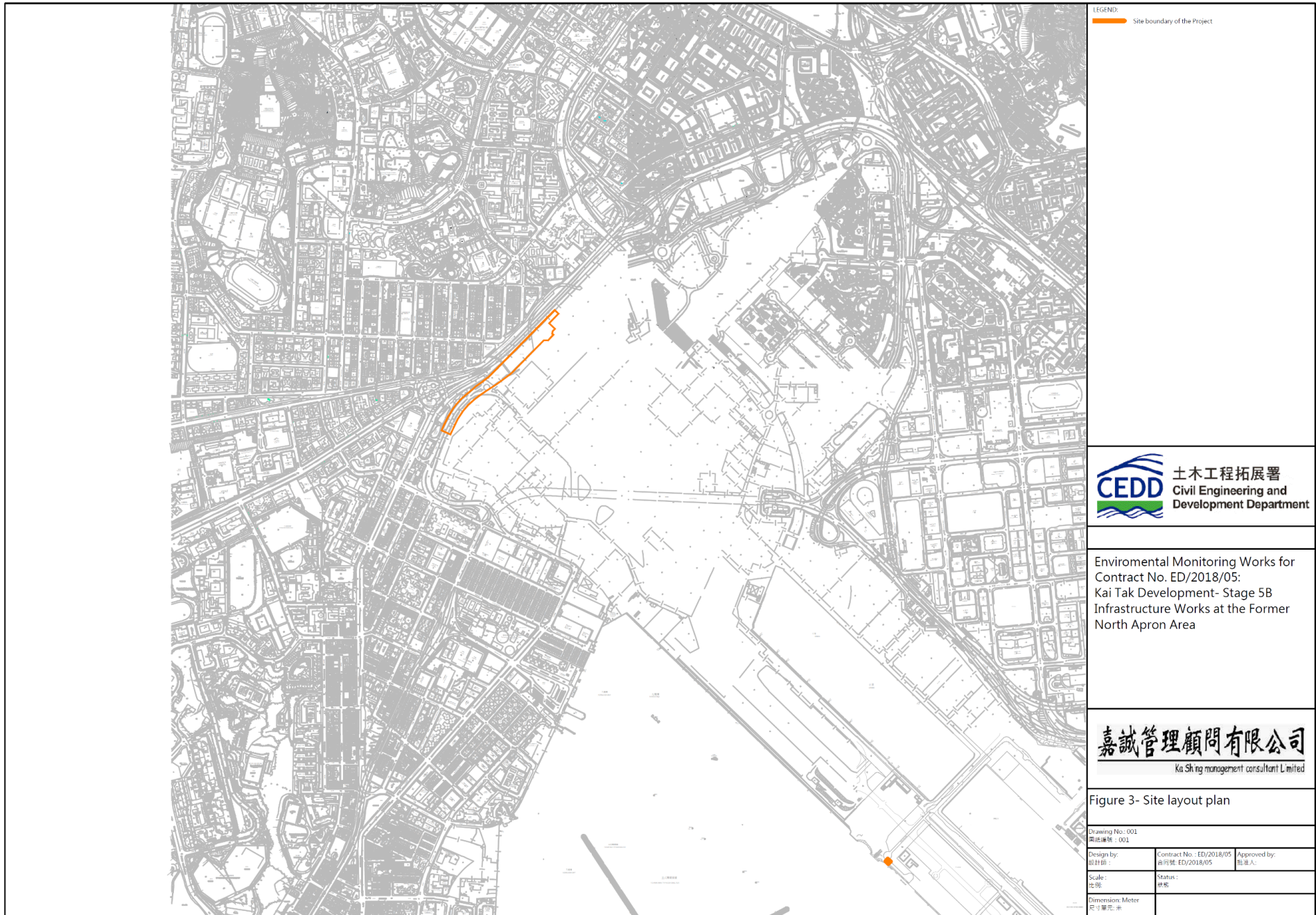


Figure 2

Figure 2 – Proposed works of Contract No. ED/2018/05



LEGEND:  
— Site boundary of the Project

**CEDD** 土木工程拓展署  
 Civil Engineering and Development Department

Environmental Monitoring Works for  
 Contract No. ED/2018/05:  
 Kai Tak Development- Stage 5B  
 Infrastructure Works at the Former  
 North Apron Area

**嘉誠管理顧問有限公司**  
 Ka Shing management consultant L limited

Figure 3- Site layout plan

Drawing No.: 001 圖則編號: 001		
Design by: 設計師:	Contract No.: ED/2018/05 合約號: ED/2018/05	Approved by: 批准人:
Scale: 比例:	Status: 狀態:	
Dimension: Meter 尺寸單位: 米		

Figure 3 – D1 Road Site Layout Plan

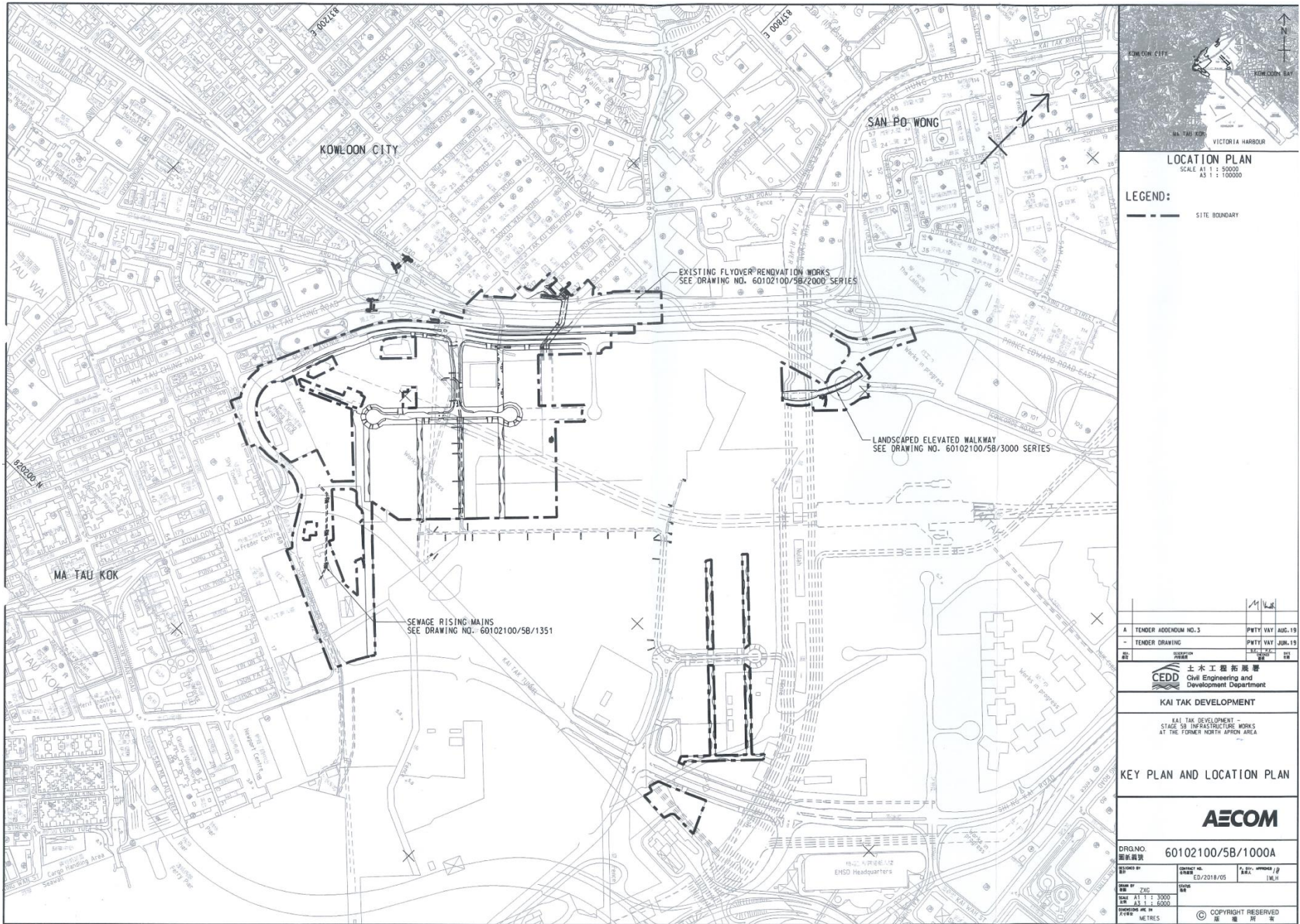
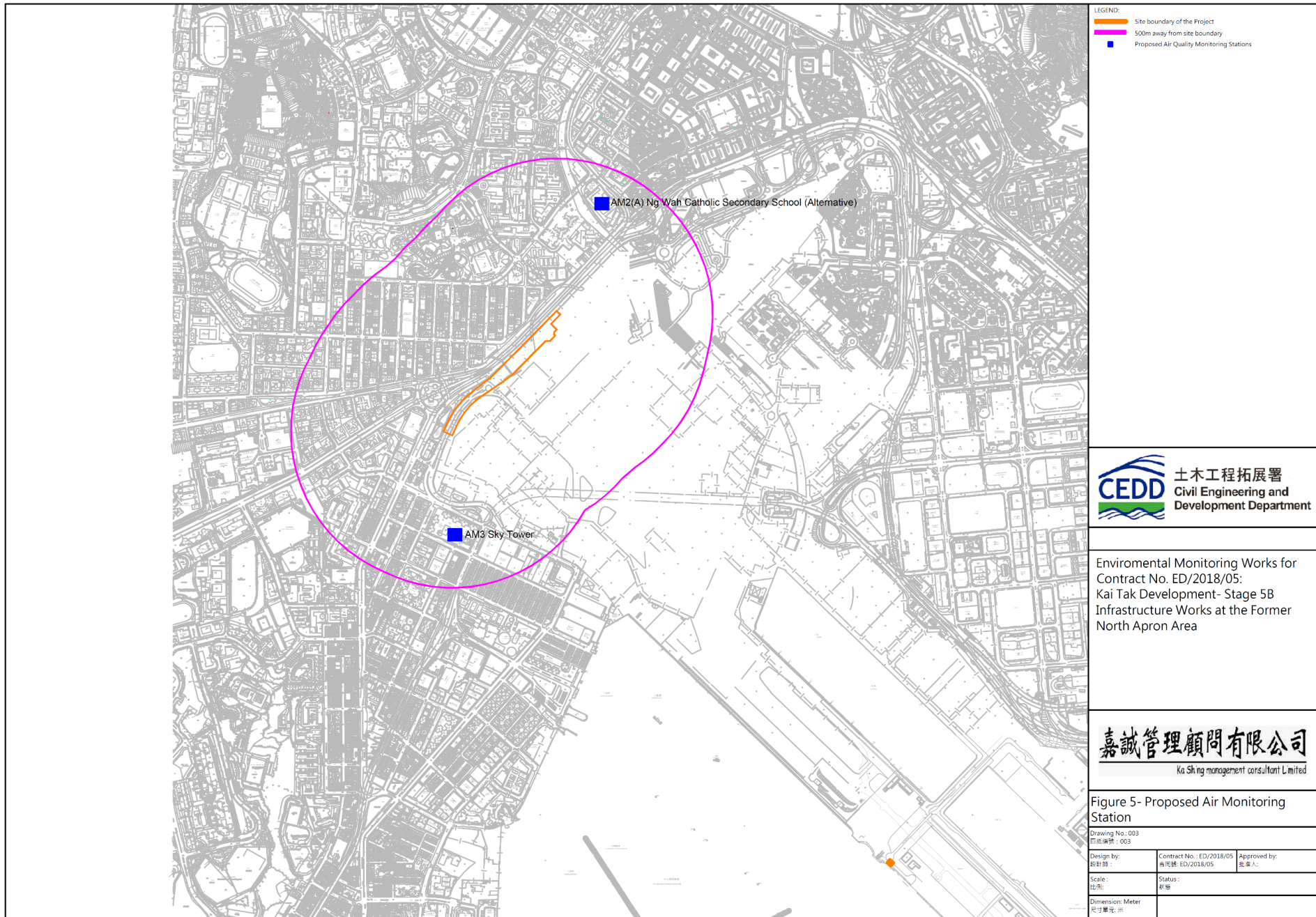


Figure 4 – Site Layout Plan



LEGEND:  
 Site boundary of the Project  
 500m away from site boundary  
 Proposed Air Quality Monitoring Stations

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 Development Department

Environmental Monitoring Works for  
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 Ka Sing management consultant Limited

Figure 5- Proposed Air Monitoring Station

Drawing No: 003 圖則編號: 003		
Design by: 設計師:	Contract No.: ED/2018/05 合同編號: ED/2018/05	Approved by: 批審人:
Scale: 比例:	Status: 狀態:	
Dimension: Meter 尺寸單位: 米		

Figure 5 – Air Quality Monitoring Stations



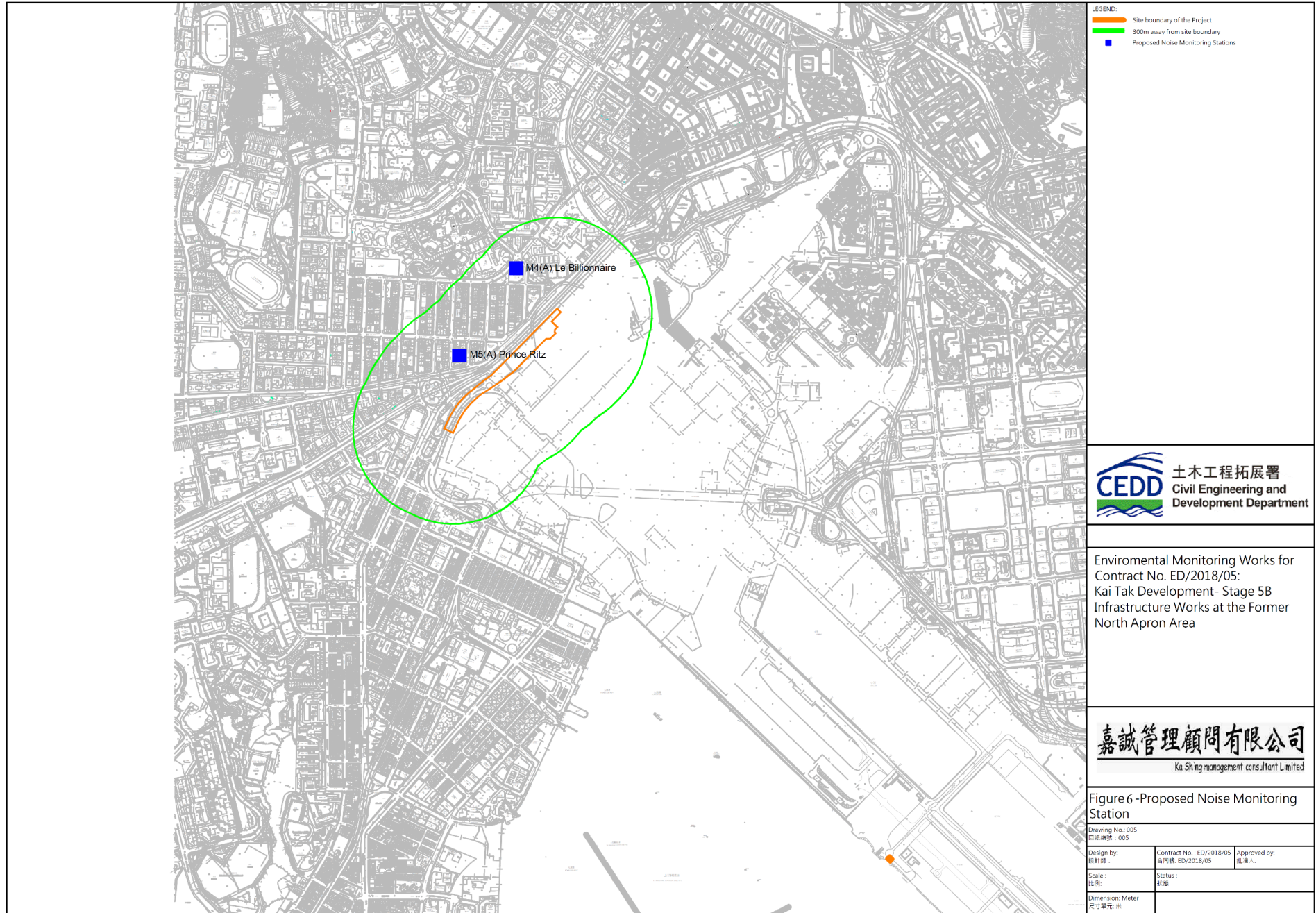
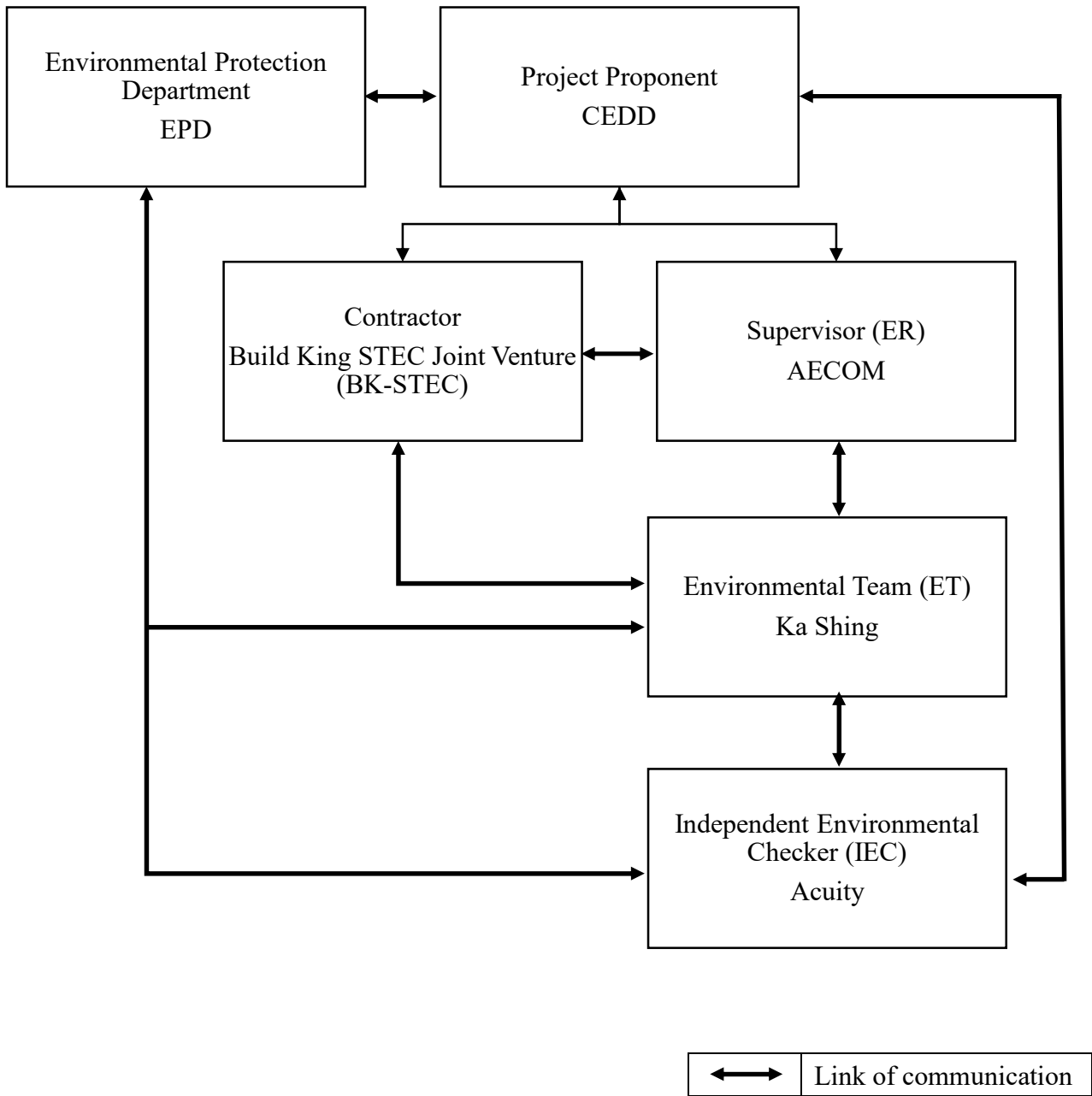


Figure 6 – Noise Monitoring Stations

**Appendix A – Organization Chart of EM&A Team**



# Appendix B – Construction Programme













**Appendix C – Environmental monitoring schedules**

Contract No. EDO 2/2020 Environmental Monitoring at Kai Tak Development – Stage 5B infrastructure works at the former north apron area  
 Environmental Monitoring and Weekly Site Inspection Schedule for January 2023

January 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	5 Weekly Site Inspection	6	7
8	9	10 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	11	12 Weekly Site Inspection	13	14
15	16 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	17	18	19 Weekly Site Inspection + SSMC meeting	20	21 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3
22	23	24	25	26 Weekly Site Inspection	27 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	28
29	30	31				

**Air Quality Monitoring Station**  
 AM2(A) Ng Wah Catholic Secondary School  
 AM3 - Sky Tower

**Noise Quality Monitoring Station**  
 M4(A) - Le Billionnaire  
 M5(A) - Prince Ritz

Contract No. EDO 2/2020 Environmental Monitoring at Kai Tak Development – Stage 5B infrastructure works at the former north apron area  
Tentative Environmental Monitoring and Weekly Site Inspection Schedule for February 2023

February 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 Weekly Site Inspection 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	3	4
5	6	7	8 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	9 Weekly Site Inspection	10	11
12	13	14 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	15	16 Weekly Site Inspection	17	18
19	20 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3 30-min Noise: M4(A), M5(A)	21	22	23 Weekly Site Inspection + SSMC meeting	24	25 24-hr TSP and 1-hrX3 TSP: AM2(A), AM3
26	27	28				

NOTE:

- 1) Site inspection schedule and Impact monitoring schedule may be changed due to unforeseen circumstance (e.g. adverse weather).

**Air Quality Monitoring Station**

AM2(A) Ng Wah Catholic Secondary School  
AM3 - Sky Tower

**Noise Quality Monitoring Station**

M4(A) - Le Billionnaire  
M5(A) - Prince Ritz

**Appendix D – Photographic records**

## Impact Air Quality Monitoring



Measurement setup at AM2(A)



Measurement setup at AM3



Weather Station at the rooftop of Ng Wah Catholic Secondary School

Impact Noise Monitoring



Measurement setup at M4(A)



Measurement setup at M5(A)

# **Appendix E – Calibration certificates, catalogue of air quality monitoring equipment**



## Catalogue of High Volume Sampler (HVS)



### TSP MFC

Total Suspended Particulate, Mass Flow Controlled



**MFC TSP**  
Ambient Air Sampler

The TE-5170 is a high volume ambient Total Suspended Particulate (TSP) air sampler featuring a mass flow controller (MFC) for accurate and consistent particulate sampling. The mass flow controller adjust the motor speed as the filter media collects particulate to maintain a constant flow rate throughout the entire sample duration. The system utilizes a stainless steel filter holder for use with standard 8" x 10" filter paper. The anodized aluminum shelter and robust electrical components allow the system to operate a continuous 24 hour sample.

**ABOUT US:** Tisch Environmental Inc. Tisch Environmental is the benchmark for high volume air sampling, particulate, metals, volatiles, and specialty monitoring equipment. Since the company's inception in 1953 as General Metal Works, our product line has expanded from the first high volume air sampler to include high-tech and custom samplers. Our clients are professionals from every sector of the regulatory and industrial markets.

- ✔ Meets EPA CFR, Appendix B to Part 50
- ✔ Total Suspended Particulate(TSP)
- ✔ Mass Flow Controlled
- ✔ 7-Day Mechanical Timer
- ✔ Elapsed Time Indicator
- ✔ Aluminum Outdoor Shelter
- ✔ Brush Style Motor
- ✔ Dickson Chart Recorder, 24 Hour
- ✔ Stainless Steel Filter Holder
- ✔ 36-60 CFM
- ✔ Made In USA

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sales@tisch-env.com



## TSP MFC

MFC TSP Ambient Air Sampler

### General System Specifications

**Particulate Size:**Total Suspended Particulate (TSP)  
**EPA Designation:** CFR 40 Part 50 Appendix B  
**Flow Controller:** Mass Flow Controller  
**Motor Style:**Brush Style Motor Assembly  
**Pressure Recorder:**Dickson Chart Recorder, 24 hour  
**Timer:**7 Day Mechanical  
**Elapsed Time Indicator:**Mechanical, Hours and Tenths  
**Flow Range:**39-60CFM, 1.09M<sup>3</sup>M-1.68M<sup>3</sup>M  
**Housing:**Anodized Aluminum  
**Filter Holder:**Stainless Steel, 8" x 10"  
**4" Recorder Charts:** Box of 100  
**Filter Holder:** 8" x 10" Stainless Steel with hold down frame

### Applications

US EPA Reference Method Sampling, CFR Appendix J Part 50 Regulatory Compliance  
 Institutional Studies  
 Construction Sites  
 Bridge and Water Tower Painting Sites  
 Fence Line Monitoring  
 Industrial Monitoring  
 Landfill Monitoring  
 Public Health Applications

### Optional Equipment

TE-3000 Filter Holder Cartridge  
 TE-G653 8" x 10" Glass Fiber Filter Media  
 TE-33384 Motor Brush Set (110volt)  
 TE-33378 Motor Brush Set (220volt)  
 TE-116311 Replacement Motor (110volt)  
 TE-116312 Replacement Motor (220volt)  
 TE-106 Recorder Charts  
 TE-160 Recorder Pen Points  
 TE-5018 Gasket 8" x 10"

### Available Models

TE-5170 TSP MFC, 110 Volt 60 Hertz, 8 Amps  
 TE-5170X TSP MFC, 220 Volt 50 Hertz 4 Amps  
 TE-5170XZ TSP MFC, 220 Volts 60 Hertz, 4 Amps

### Calibration Equipment

TE-5028 -Variable Flow Calibration Kit  
 TE-HVC-V Xcalibrator HiVol Calibrator

### Physical Specifications

**Weight:** 75lbs, Shelter  
**Shipping Dimensions:** 46"W x 23"L x 20" H, Shelter  
 19"W x 19"L x 20"H, Lid  
**Assembled Dimensions:** 28"W x 28"L x 61"H

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## Calibration Certificate of HVS

### Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2022122201      Date of calibration : 22/12/2022

Model no : Sky Tower      Sampler : TE-5170X  
 Serial Number : 4687

**Calibration Data**

Ambient barometric pressure, Pa = 762.1 ( mmHg )      Ambient temperature, Ta = 295.05 ( deg K )

**Calibration Orifice**

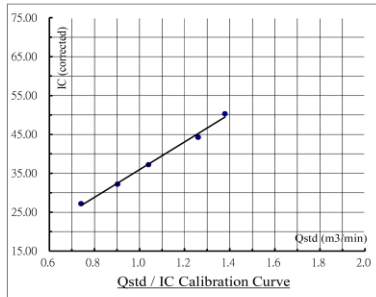
Model = TE-5025A      Qstd Slope, m = 2.06418  
 Serial No. = 0006      Qstd Intercept, b = -0.03593  
 Calibration Due Date: 16/05/2023      Qstd Corr. coeff., r = 0.99993

**Calibration Curve**

Plate No.	H <sub>2</sub> O ( in )	Qstd ( m <sup>3</sup> / min )	I ( chart )	IC ( corrected )
18	7.80	1.379	50.0	50.32
13	6.50	1.260	44.0	44.28
10	4.40	1.040	37.0	37.24
7	3.30	0.903	32.0	32.20
5	2.20	0.741	27.0	27.17

**Subsequent calculation of sampler flow**

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [ I ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$	35.614	0.3275	0.9972



Calibration curve requirements : (A).  $r > 0.990$ ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .  
 $IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .  
 $FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by : Ben Poon      22/12/2022      Checked by : Tommy Wong      22/12/2022  
 Name : ( Ben Poon )      Name : ( Tommy Wong )

Form No. INS-HVS-CAL dd 16 01 2020

### Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2022122204      Date of calibration : 22/12/2022

Model no : Ng Wah Catholic Secondary School      Sampler : TE-5170X  
 Serial Number : 4360

**Calibration Data**

Ambient barometric pressure, Pa = 762.1 ( mmHg )      Ambient temperature, Ta = 295.05 ( deg K )

**Calibration Orifice**

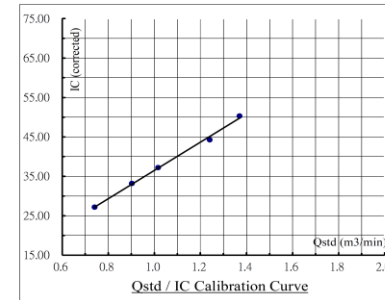
Model = TE-5025A      Qstd Slope, m = 2.06418  
 Serial No. = 0006      Qstd Intercept, b = -0.03593  
 Calibration Due Date: 16/05/2023      Qstd Corr. coeff., r = 0.99993

**Calibration Curve**

Plate No.	H <sub>2</sub> O ( in )	Qstd ( m <sup>3</sup> / min )	I ( chart )	IC ( corrected )
18	7.70	1.370	50.0	50.32
13	6.30	1.241	44.0	44.28
10	4.20	1.017	37.0	37.24
7	3.30	0.903	33.0	33.21
5	2.20	0.741	27.0	27.17

**Subsequent calculation of sampler flow**

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [ I ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$	35.833	0.6616	0.9983



Calibration curve requirements : (A).  $r > 0.990$ ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .  
 $IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .  
 $FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by : Ben Poon      22/12/2022      Checked by : Tommy Wong      22/12/2022  
 Name : ( Ben Poon )      Name : ( Tommy Wong )

Form No. INS-HVS-CAL dd 16 01 2020

# Calibration Certificate of HVS used for performance check of Dust Meter

# Orifice Transfer Standard Certification Worksheet TE-5025A

## Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2022061301 Date of calibration : 20/06/2022  
 Model no : GS2310 Serial number : 10346

**Calibration Data**  
 Ambient barometric pressure, Pa = 753.1 ( mmHg ) Ambient temperature, Ta = 303.35 ( deg K )

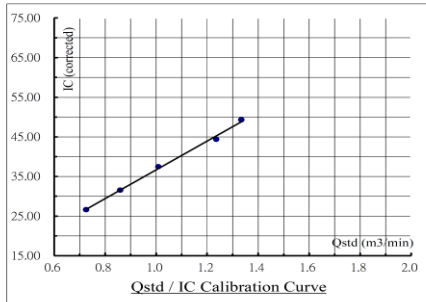
**Calibration Orifice**  
 Model = TE-5025A Qstd Slope, m = 2.06418  
 Serial No. = 0006 Qstd Intercept, b = -0.03593  
 Calibration Due Date: 16/05/2023 Qstd Corr. coeff., r = 0.99993

### Calibration Curve

Plate No.	H <sub>2</sub> O (in)	Qstd (m <sup>3</sup> /min)	I (chart)	IC (corrected)
18	7.60	1.335	50.0	49.33
13	6.50	1.236	45.0	44.40
10	4.30	1.009	38.0	37.49
7	3.10	0.859	32.0	31.57
5	2.20	0.726	27.0	26.64

### Subsequent calculation of sampler flow

Method	Calibration equation	Slope, m	Intercept, b	Corr. coeff., r
Dickson recorder	$Qstd = 1/m [ I ( \sqrt{ ( Pa / 760 ) ( 298 / Ta ) } ) - b ]$	36.268	0.4215	0.9982



Calibration curve requirements : (A).  $r > 0.990$  ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .  
 $IC ( \text{corrected} ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .  
 $FLOW ( \text{corrected} ) = \text{Sqrt} ( FLOW ( \text{mano} ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by : Ben Poon 20/06/2022 Checked by : Tommy Wong 20/06/2022  
 Name : ( Ben Poon ) Name : ( Tommy Wong )

Form No. INS-HVS-CAL-01 16 01 2020



<b>RECALIBRATION DUE DATE:</b>
<b>May 16, 2023</b>

## Certificate of Calibration

Calibration Certification Information			
Cal. Date: May 16, 2022	Rootsmer 5/N: 438320	Ta: 296 °K	
Operator: Jim Tisch		Pa: 746.8 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 0006		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4050	3.2	2.00
2	3	4	1	1.0020	6.4	4.00
3	5	6	1	0.8930	7.9	5.00
4	7	8	1	0.8550	8.7	5.50
5	9	10	1	0.7030	12.8	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H ( Pa / Pstd ) ( Tstd / Ta )}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H ( Ta / Pa )}$ (y-axis)
0.9850	0.7011	1.4066	0.9957	0.7087	0.8904
0.9807	0.9788	1.9892	0.9914	0.9895	1.2592
0.9788	1.0960	2.2240	0.9894	1.1080	1.4078
0.9777	1.1435	2.3325	0.9883	1.1560	1.4765
0.9723	1.3830	2.8131	0.9829	1.3981	1.7807
<b>QSTD</b>	<b>m=</b>	<b>2.06418</b>	<b>QA</b>	<b>m=</b>	<b>1.29255</b>
	<b>b=</b>	<b>-0.03593</b>		<b>b=</b>	<b>-0.02274</b>
	<b>r=</b>	<b>0.99993</b>		<b>r=</b>	<b>0.99993</b>

Calculations	
$Vstd = \Delta Vol ( ( Pa - \Delta P ) / Pstd ) ( Tstd / Ta )$	$Va = \Delta Vol ( ( Pa - \Delta P ) / Pa )$
$Qstd = Vstd / \Delta Time$	$Qa = Va / \Delta Time$
For subsequent flow rate calculations:	
$Qstd = 1/m ( \sqrt{ \Delta H ( Pa / Pstd ) ( Tstd / Ta ) } - b )$	$Qa = 1/m ( \sqrt{ \Delta H ( Ta / Pa ) } - b )$

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

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

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

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

## Catalogue of Dust Meter (TSI Sidepak AM510)

The SidePak AM510 monitor's easy-to-read display shows your data as both real-time aerosol mass-concentration and 8-hour time-weighted average (TWA). With its convenient data logging and long battery life, the AMS10 is also ideal for extended sampling. The easy-to-use TrakPro Data Analysis Software lets you create effective graphs and reports.

### User Friendly

- + Small, lightweight and quiet to maximize worker acceptance
- + Rugged design with secure belt clip
- + Easy-to-understand user interface with only four keys
- + Lockable keypad prevents tampering while sampling
- + User-adjustable sample flow rate
- + Define, label and store multiple calibration constants
- + Easy-to-read LCD display
- + Convenient, threaded tripod socket accommodates area sampling

### Advanced Features

- + Smart Battery Management System provides precise run time information, maximizes battery capacity and speeds charging
- + Integrated pump allows use of size-selective aerosol inlet conditioners
- + Built-in impactors let you choose "none," 1.0, 2.5 or 10-micron cut off
- + 10-mm Dorr-Oliver cyclone for respirable sampling
- + Display shows real-time concentrations (mg/m<sup>3</sup>) and "on-the-fly" TWA as you data log
- + Display statistics: max, min and average readings, elapsed time and 8-hour TWA

### Quick and Easy Reports

- + Convenient preprogramming for occupational exposure sampling
- + Data log for long periods and store multiple tests
- + Analyze data, print graphs and create reports with TrakPro Data Analysis Software
- + USB port lets you conveniently connect to your computer

### Power to Spare

- + Long-lasting NiMH rechargeable battery packs eliminate "memory" issues
- + Choice of rechargeable NiMH smart battery packs or AA-cell pack

### Model AMS10

#### SidePak Personal Aerosol Monitor

#### Sensitivity

Sensor Type 90° light scattering, 670 nm laser diode  
 Aerosol Concentration Range 0.001 to 20 mg/m<sup>3</sup> (calibrated to respirable fraction of ISO 12103-1, A1 test dust)  
 Particle Size Range 0.1 to 10 micrometer (µm)  
 Minimum Resolution 0.001 mg/m<sup>3</sup>  
 Zero stability ±0.001 mg/m<sup>3</sup> over 24 hours using 10-second time-constant  
 Temperature Coefficient Approximately +0.0005 mg/m<sup>3</sup> per °C (for variations from temperature at which instrument was last zeroed)

#### Flow Rate

Range User-adjustable, 0.7 to 1.8 liters/min (L/min)

#### Temperature Range

Operating Range 32 to 120°F (0 to 50°C)  
 Storage Range -4 to 140°F (-20 to 60°C)

#### Operational Humidity

0 to 95% RH, non-condensing

#### Time Constant (LCD display)

Range User-adjustable, 1 to 60 seconds

#### Data Logging

Data Points Approx. 31,000  
 Logging Interval User-adjustable, 1 second to 1 hour

#### User-Select Calibration Factors

Factory Setting 1.0 (non-adjustable)  
 User-defined Settings 3, with user-defined labels  
 Range 0.1 to 10.0, user-adjustable

#### Physical

External Dimensions 4.2 x 3.7 x 2.8 in. (106 x 92 x 70 mm) with 801723, 801724, 801729 or 801743 battery  
 5.1 x 3.7 x 2.8 in. (130 x 92 x 70 mm) with 801708, 801722, 801728, 801735, or 801736 battery  
 Weight 16 oz (0.46 kg) with 801723, 801724, 801729 or 801743 battery  
 19 oz (0.54 kg) with 801708, 01722, 801728, 801735, or 801736 battery  
 Display 2 line x 12 character LCD  
 Tripod Socket 1/4"-20 female thread

#### Power Supply/Charger (P/N 2613210)

Input Voltage Range 100 to 240 VAC, 50 to 60 Hz  
 Output Voltage 9 VDC @ 1.0 A

### Maintenance

Factory Clean/Calibrate Recommended annually  
 User Zero Calibration Before each use  
 User Flow Calibration As needed

### Communications Interface

Type USB 1.1  
 Connector, Instrument USB Mini-B (socket)

### Minimum Computer Requirements for TrakPro™ Data Analysis Software

Communications Port Universal Serial Bus (USB) v 1.1 or higher  
 Operating System Microsoft Windows® XP, or 7 (32-bit or 64-bit) operating systems

### Battery Performance

Battery Options	Charge Time (hrs)*	Intrinsic Safety Rating	Run Time (hrs @ 1.7 L/min)
1600 mAh NiMH Pack, 4.8 V (P/N 801723)	3.0	No	7.1
1650 mAh NiMH Pack, 4.8V (P/N 801724, 801729 or 801743)	3.5	CSA**	7.5
2700 mAh NiMH Pack, 4.8 V (P/N 801722 or 801728)	5.5	No	12.0
2700 mAh NiMH Pack, 4.8 V (P/N 801735)	5.5	No	12.0
6-Cell AA-size Alkaline Pack*** (P/N 801708 or 801736 with six user-supplied AA cells)	N/A	No	22.5

\*Of a fully depleted battery  
 \*\*All dust plugs and dust gaskets must be installed.  
 \*\*\*Using Energizer AA-size, E91 alkaline batteries.

### Battery Level Indicator

The Smart Battery Management System™ technology utilizes a built-in "gauge" in the SidePak™ battery packs. The gauge monitors battery capacity and calculates run time information by dividing capacity of the battery (mAh) by the instantaneous current consumed by the instrument (mA). This calculation is correct for current operating conditions and can change due to current (mA) consumption or changes in battery capacity.



# Calibration Certificate of Dust Meter (TSI Sidepak AM510)



**Cal Lab Limited** 校正實驗室有限公司  
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,  
 Tsuen Wan, NT, Hong Kong  
 Tel: +852 25680106 Email: info@callab.com.hk  
 Fax: +852 30116194 Website: www.callab.com.hk



**Calibration Certificate No.: CC0482208**

**Customer Information**

Customer: Castco Testing Centre Limited  
 Address: 33, On Kui Street, Fanling, N.T.

**Equipment Identification**

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Aerosol Monitor	TSI	SidePak AM510	11208032	AAST-RSP-01

**Certificate Information**

Date of Receipt:	30 August 2022	Calibration Condition:	24.1°C, 54%RH, 1001hPa
Date of Calibration:	2 September 2022	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	ISO 21501-4:2018	Remark:	N/A

**Reference Equipment Identification**

Equipment Description	Model	Serial No.	Expiration Date
Aerosol Monitor	8534	8534182605	6 September 2022

**Result of Calibration Indication**

Gas	Reference Setting (mg/m <sup>3</sup> )	Measured reading (mg/m <sup>3</sup> )	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
Dust - TSP	0.000	0.000	N/A	14.0	N/A	Mfr's Spec.
Dust - TSP	0.101	0.103	1.9	14.0	N/A	Mfr's Spec.
Dust - TSP	0.205	0.210	2.4	14.0	N/A	Mfr's Spec.
Dust - TSP	0.307	0.313	2.0	14.0	N/A	Mfr's Spec.

CT-GAS-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimate to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.  
 Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.  
 Note3: The result 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.  
 Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:   
 Wing Cheng

Checked and Approved By:   
 Warren Yeung

Company Chop:

Certificate Issue Date: 5 September 2022

CT-BEG-03

\*\*\* End of Certificate \*\*\*

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Calibration  
 2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

CC0482208  
 Page 1 of 1

## Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0220624-7 Report Issue Date 24/06/2022  
 Date of performance check 22/06/2022

**Objective:**

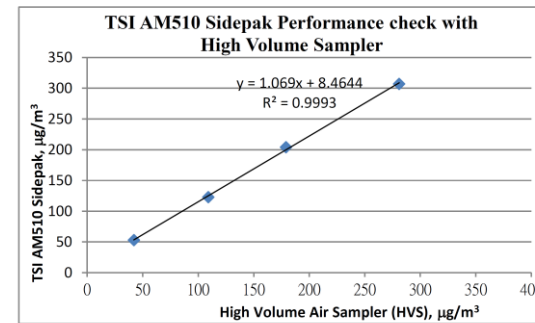
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

**Equipment Used:**

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11208032
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

**Result:**

Equipment	Measurement Result, µg/m <sup>3</sup>			
	53	123	204	307
TSI AM510 Sidepak	53	123	204	307
High Volume Air Sampler (HVS)	42	109	179	281



Tested by: 24/06/2022 Checked by: 24/06/2022  
 Name: ( Ben Poon ) Name: ( Tommy Wong )

Form No. ENV CAL SAMPLER/CC1 4412/12/2003

# Calibration Certificate of Dust Meter (TSI Sidepak AM510)

TSI  
CERTIFIED ANALYST

**CERTIFICATE OF CALIBRATION AND TESTING**  
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions			Model		AM510	
Temperature	74.7 (23.7)	°F (°C)	Serial Number		11306015	
Relative Humidity	29	%RH				
Barometric Pressure	29.31 (992.6)	inHg (hPa)				

As Left       In Tolerance  
 As Found       Out of Tolerance

**Concentration Linearity Plot**

System ID: DT1101-02

CONCENTRATION							Unit: mg/m <sup>3</sup>	
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE	
1	1.539	1.465	1.385-1.693	3	0.090	0.092	0.063-0.117	
2	0.218	0.221	0.185-0.251	4	10.681	10.742	9.613-11.749	

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 4:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E003314	01-11-22	01-31-23	Photometer	E003319	08-30-22	02-28-23
Microbalance	M001324	01-29-21	01-31-23	Pressure	E003511	10-26-21	10-31-22
Flowmeter	E004025	06-24-22	06-30-23	DC Voltage	E003315	01-11-22	01-31-23

\_\_\_\_\_  
 Calibrated

September 27, 2022  
 \_\_\_\_\_  
 Date

## Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0220624-1      Report Issue Date 24/06/2022  
 Date of performance check 23/06/2022

**Objective:**

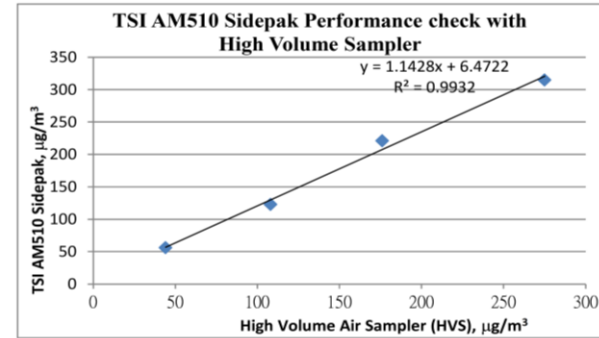
A dust meter and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

**Equipment Used:**

Equipment	Manufacturer and Model	Serial Number
Personal Aerosol Monitor	TSI AM510 Sidepak	11306015
Total Suspended Particulate High Volume Air Sampler	GS2310	10346

**Result:**

Equipment	Measurement Result, µg/m <sup>3</sup>			
TSI AM510 Sidepak	56	123	221	315
High Volume Air Sampler (HVS)	44	108	176	275



Tested by: 24/06/2022      Checked by: 24/06/2022  
 Name: ( Ben Poon )      Name: ( Tommy Wong )

Form No. ENV CAL SAMPLER CC1 d412/12/2003

# Catalogue of Weather Station

## Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations



**6152C  
6162C**  
**Vantage Pro2™**

The Vantage Pro2™ (# 6152C) and Vantage Pro2™ Plus (# 6162C) cabled weather stations include two components: the Integrated Sensor Suite (ISS) and the console. The ISS contains the sensor interface module (SIM), rain collector, an anemometer, and a passive radiation shield. The Vantage Pro2 console provides the user interface, data display, and calculations. The Vantage Pro2 Plus weather station includes two additional sensors that are optional on the Vantage Pro2 and purchased separately: the UV Sensor and the Solar Radiation Sensor. The console and ISS are powered by an AC-power adapter connected to the console. Batteries can be installed in the console to provide a backup power supply. Use WeatherLink® to let your weather station interface with a computer, log data, and upload weather information to the Internet. The 6152C and 6162C models rely on passive shielding to reduce solar-radiation induced temperature errors in the outside temperature sensor readings.

### Integrated Sensor Suite (ISS)

Operating Temperature	-40° to +150°F (-40° to +65°C)
Non-operating Temperature	-40° to +158°F (-40° to +70°C)
Current Draw	5 mA (average) at 4 to 6 VDC for ISS only. 10 mA average for both console and ISS
Connectors, Sensor	Modular RJ-11
Cable Type	4-conductor, 26 AWG
Cable Length, Anemometer	40' (12 m) (included); 240' (73 m) (maximum recommended)

Note: Maximum displayable wind decreases as the length of cable increases. At 140' (42 m) of cable, the maximum wind speed displayed is 135 mph (61 m/s); at 240' (73 m), the maximum wind speed displayed is 100 mph (34 m/s).

Wind Speed Sensor	Solid state magnetic sensor
Wind Direction Sensor	Wind vane with potentiometer
Rain Collector Type	Tipping bucket, 0.01" per tip (0.2 mm with metric rain adapter), 33.2 in <sup>2</sup> (214 cm <sup>2</sup> ) collection area
Temperature Sensor Type	PN Junction Silicon Diode
Relative Humidity Sensor Type	Film capacitor element
Housing Material	UV-resistant ABS, polypropylene
Sensor Inputs	
RF Filtering	RC low-pass filter on each signal line

ISS Dimensions(not including anemometer or bird spikes):

Vantage Pro2 with Standard Rad Shield	14.0" x 9.4" x 14.5" (356 mm x 239 mm x 368 mm)
Vantage Pro2 with Fan-Aspirated Rad Shield	20.8" x 9.4" x 16.0" (528 mm x 239 mm x 406 mm)
Vantage Pro2 Plus with Standard Rad Shield	14.3" x 9.7" x 14.5" (363 mm x 246 mm x 368 mm)
Vantage Pro2 Plus with Fan-Aspirated Rad Shield	21.1" x 9.7" x 16.0" (536 mm x 246 mm x 406 mm)

**DAVIS** **® Davis Instruments** 3465 Diablo Ave., Hayward, CA 94545-2778 USA  
(510) 732-9229 • FAX (510) 670-0589 • sales@davisinstruments.com • www.davisinstruments.com

DS6152C, 6162C Rev. W 12/7/18

1

**7**  
**Vantage Pro2™**

### Ultra Violet (UV) Radiation Index (requires UV sensor)

Resolution and Units	0.1 Index
Range	0 to 16 Index
Accuracy	±5% of full scale (Reference: Yankee UVB-1 at UV index 10 (Extremely High))
Cosine Response	±4% FS (0° to 90° zenith angle)
Update Interval	50 seconds to 1 minute (5 minutes when dark)
Current Graph Data	Instant Reading and Hourly Average; Daily, Monthly High
Historical Graph Data	Hourly Average, Daily, Monthly Highs
Alarm	High Threshold from Instant Calculation

### Wind

<b>Wind Chill (Calculated)</b>	
Resolution and Units	1°F or 1°C (user-selectable); °C is converted from °F and rounded to the nearest 1°C
Range	-110° to +135°F (-79° to +57°C)
Accuracy	±2°F (±1°C) (typical)
Update Interval	10 to 12 seconds
Source	United States National Weather Service (NWS)/NOAA
Equation Used	Osczevski (1995) (adopted by US NWS in 2001)
Variables Used	Instant Outside Temperature and 10-min. Avg. Wind Speed
Current Display Data	Instant Calculation
Current Graph Data	Instant Calculation; Hourly, Daily and Monthly Low
Historical Graph Data	Hourly, Daily and Monthly Lows
Alarm	Low Threshold from Instant Calculation
<b>Wind Direction</b>	
Range	1 - 360°
Display Resolution	16 points (22.5°) on compass rose, 1° in numeric display
Accuracy	±3°
Update Interval	2.5 to 3 seconds
Current Graph Data	Instant Reading (user adjustable); 10-min. Dominant; Hourly, Daily, Monthly Dominant
Historical Graph Data	Past 6 10-min. Dominants on compass rose only; Hourly, Daily, Monthly Dominants
<b>Wind Speed</b>	
Resolution and Units	1 mph, 1 km/h, 0.4 m/s, or 1 knot (user-selectable) Measured in mph; other units are converted from mph and rounded to nearest 1 km/hr, 0.1 m/s, or 1 knot.
Range	0 to 200 mph, 0 to 173 knots, 0 to 89 m/s, 0 to 322 km/h
Update Interval	Instant Reading: 2.5 to 3 seconds, 10-minute Average: 1 minute
Accuracy	±2 mph (2 kts, 3.2 km/h, 0.9 m/s) or ±5%, whichever is greater
Maximum Cable Length	540' (165 m) (Note that maximum wind speed reading decreases as length of cable from anemometer to ISS increases.)
Current Display Data	Instant
Current Graph Data	Instant Reading; 10-minute and Hourly Average; Hourly High; Daily, Monthly and Yearly High with Direction of High
Historical Graph Data	10-min. and Hourly Averages; Hourly Highs; Daily, Monthly and Yearly Highs with Direction of Highs
Alarms	High Thresholds from Instant Reading and 10-minute Average

# Calibration Certificate of Weather Station



**Cal Lab Limited 校正實驗室有限公司**  
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,  
 Tsuen Wan, NT, Hong Kong  
 Tel: +852 25680106 Email: info@callab.com.hk  
 Fax: +852 30116194 Website: www.callab.com.hk

**Calibration Certificate No.: CC0162207**

**Customer Information**  
 Customer: Castco Testing Centre Limited  
 Address: 33, On Kui Street, Fanling, N.T.

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.:
Weather Station	Davis Vantage PRO 2	6312CEU	AY170606003	N/A

Certificate Information		Calibration Condition:	
Date of Receipt:	19 July 2022	24.6°C, 52%RH, 1001hPa	
Date of Calibration:	5 August 2022	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	JJF 1183-2007, JJF 1076-2001, SOP-116	Remark:	N/A

Reference Equipment Identification			
Equipment Description	Model	Serial No.	Expiration Date
Platinum resistance thermometer	KPPRHT-A-1	KCI I-1095, KCI P-1095	28 June 2023
Humidity sensor	KPPRHT-A-1	KCI I-1095, KCI P-1095	3 March 2023
Hot Wire Anemometer	9535	T95351316004	10 July 2023

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.  
 Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.  
 Note3: The result 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.  
 Note4: The result shown in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Approved By:  
  
 Rex Tse



Company Chop:  
 Certificate Issue Date: 24 August 2022

CT-BEG-03

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CC0162207  
 Page 1 of 2



**Cal Lab Limited 校正實驗室有限公司**  
 Room 2103, Technology Plaza, 29-35 Sha Tsui Road,  
 Tsuen Wan, NT, Hong Kong  
 Tel: +852 25680106 Email: info@callab.com.hk  
 Fax: +852 30116194 Website: www.callab.com.hk

**Result of Calibration**

Temperature			
Reference reading (°C)	Reading (°C)	Error (°C)	Uncertainty (°C)
15.0	15	0.0	0.3
20.0	20	0.0	0.3
25.0	25	0.0	0.3
30.0	31	1.0	0.3

Relative Humidity			
Reference reading (%RH)	Reading (%RH)	Error (%RH)	Uncertainty (%RH)
40.0	42	2.0	1.9
50.0	52	2.0	1.9
70.0	69	-0.1	1.9

Wind Speed			
Reference reading (m/s)	Measured reading (m/s)	Error (%)	Uncertainty (%)
0.0	0.0	N/A	3.6
2.0	1.9	-5.0	3.6
5.0	5.2	4.0	3.6
8.0	8.2	2.5	3.6

Wind Direction			
Reference reading	Measured reading	Error	Uncertainty
0°	0°	0°	5°
45°	45°	0°	5°
90°	90°	0°	5°
135°	135°	0°	5°
180°	180°	0°	5°
225°	225°	0°	5°
270°	270°	0°	5°
315°	315°	0°	5°

\*\*\* End of Certificate \*\*\*

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**Appendix F – Weather information**

## General Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)	Total Rainfall (mm)	Mean Relative Humidity (%)
01/01/2023	14.5	19.3	0.1	65
02/01/2023	17.2	21.6	Trace	65
03/01/2023	16.1	19.2	Trace	69
04/01/2023	15.8	19.9	Trace	74
05/01/2023	16.8	21.4	0	77
06/01/2023	17	23.4	0	62
07/01/2023	17.9	21.3	0	59
08/01/2023	17	20	Trace	57
09/01/2023	18.2	21.4	0.1	72
10/01/2023	17.6	19	5.5	91
11/01/2023	17	19.1	3.2	87
12/01/2023	17.5	19.6	0.5	88
13/01/2023	18.9	23.9	4.5	93
14/01/2023	20	24.7	3.4	90
15/01/2023	13	21.6	Trace	80
16/01/2023	11.3	13.2	0	66
17/01/2023	11	15.2	0	71
18/01/2023	11.5	17.1	0	58
19/01/2023	13.3	18.7	0	63
20/01/2023	15.9	20.9	Trace	62
21/01/2023	16	18.8	Trace	79
22/01/2023	16.6	22.4	0.6	83
23/01/2023	16.9	21.1	0	86
24/01/2023	12	18.7	0.3	51
25/01/2023	10.6	14.4	0	54
26/01/2023	13	18.6	0	66
27/01/2023	12.4	17.3	0	46
28/01/2023	10.6	15.7	0	28
29/01/2023	9.8	16	0	35
30/01/2023	11.7	18.8	0	48
31/01/2023	13.8	20.1	0	61

NOTE1: The above weather information was obtained from manned weather station of Hong Kong Observatory.

NOTE2: Trace means rainfall less than 0.12 mm

<https://www.hko.gov.hk/en/cis/dailyExtract.htm?y=2023&m=01>

## Kai Tak Runway Park Information

Date	Absolute Daily Min Temperature (°C)	Absolute Daily Max Temperature (°C)
01/01/2023	14.6	20.2
02/01/2023	17.5	21.8
03/01/2023	16.2	19.6
04/01/2023	15.9	20.1
05/01/2023	16.6	20.8
06/01/2023	16.8	25.4
07/01/2023	18.1	21.4
08/01/2023	16.2	19.8
09/01/2023	18.0	21.4
10/01/2023	17.4	18.7
11/01/2023	16.9	19.2
12/01/2023	17.5	19.4
13/01/2023	18.6	23.7
14/01/2023	19.0	26.1
15/01/2023	12.7	22.3
16/01/2023	11.3	13.5
17/01/2023	11.0	15.5
18/01/2023	11.5	19.0
19/01/2023	13.3	20.0
20/01/2023	15.8	22.0
21/01/2023	15.8	18.0
22/01/2023	16.5	20.9
23/01/2023	16.6	21.1
24/01/2023	11.9	18.8
25/01/2023	10.0	14.2
26/01/2023	12.6	18.4
27/01/2023	12.2	17.4
28/01/2023	10.5	16.3
29/01/2023	9.4	16.8
30/01/2023	11.4	18.6
31/01/2023	13.6	20.2

NOTE1: The above weather information was obtained from manned weather station of Kai Tak Runway Park.

[https://i-lens.hk/hkweather/history\\_chart.php?date=2023-01-01&chart\\_type=DG\\_TEMP](https://i-lens.hk/hkweather/history_chart.php?date=2023-01-01&chart_type=DG_TEMP)

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
01/01/2023	0:00	1.3	90	02/01/2023	0:00	0.9	45	03/01/2023	0:00	1.3	22.5	04/01/2023	0:00	1.3	22.5
01/01/2023	1:00	1.3	112.5	02/01/2023	1:00	0.9	22.5	03/01/2023	1:00	1.3	135	04/01/2023	1:00	1.3	112.5
01/01/2023	2:00	1.3	135	02/01/2023	2:00	0.9	247.5	03/01/2023	2:00	1.3	90	04/01/2023	2:00	1.3	135
01/01/2023	3:00	1.3	90	02/01/2023	3:00	0.9	22.5	03/01/2023	3:00	1.8	112.5	04/01/2023	3:00	0.4	135
01/01/2023	4:00	0.9	67.5	02/01/2023	4:00	1.3	0	03/01/2023	4:00	1.3	90	04/01/2023	4:00	0.4	112.5
01/01/2023	5:00	1.3	112.5	02/01/2023	5:00	0.4	45	03/01/2023	5:00	1.3	112.5	04/01/2023	5:00	0.9	90
01/01/2023	6:00	0.9	90	02/01/2023	6:00	1.3	247.5	03/01/2023	6:00	0.4	112.5	04/01/2023	6:00	1.8	45
01/01/2023	7:00	0.9	90	02/01/2023	7:00	1.3	0	03/01/2023	7:00	0.4	112.5	04/01/2023	7:00	1.8	112.5
01/01/2023	8:00	1.3	135	02/01/2023	8:00	0.9	112.5	03/01/2023	8:00	0.4	247.5	04/01/2023	8:00	1.3	90
01/01/2023	9:00	0.9	112.5	02/01/2023	9:00	0.9	337.5	03/01/2023	9:00	0.9	247.5	04/01/2023	9:00	0.9	90
01/01/2023	12:00	0.9	112.5	02/01/2023	12:00	1.3	22.5	03/01/2023	12:00	0.9	180	04/01/2023	12:00	1.8	112.5
01/01/2023	12:00	0.9	90	02/01/2023	12:00	1.3	22.5	03/01/2023	12:00	0.9	247.5	04/01/2023	12:00	0.9	135
01/01/2023	12:00	0.9	90	02/01/2023	12:00	0.9	22.5	03/01/2023	12:00	1.3	270	04/01/2023	12:00	0.9	90
01/01/2023	13:00	0.4	112.5	02/01/2023	13:00	1.3	112.5	03/01/2023	13:00	1.3	247.5	04/01/2023	13:00	0.4	135
01/01/2023	14:00	0.4	112.5	02/01/2023	14:00	0.9	112.5	03/01/2023	14:00	0.9	67.5	04/01/2023	14:00	0.4	90
01/01/2023	15:00	0.4	112.5	02/01/2023	15:00	0.9	112.5	03/01/2023	15:00	0.9	90	04/01/2023	15:00	0.9	22.5
01/01/2023	16:00	0.4	112.5	02/01/2023	16:00	0.4	112.5	03/01/2023	16:00	0.9	90	04/01/2023	16:00	0.4	292.5
01/01/2023	17:00	0.9	90	02/01/2023	17:00	0.4	135	03/01/2023	17:00	1.3	45	04/01/2023	17:00	0.4	157.5
01/01/2023	18:00	0.4	90	02/01/2023	18:00	0.9	112.5	03/01/2023	18:00	0.9	67.5	04/01/2023	18:00	0.9	112.5
01/01/2023	19:00	0.9	90	02/01/2023	19:00	0.9	112.5	03/01/2023	19:00	0.4	22.5	04/01/2023	19:00	1.3	90
01/01/2023	20:00	0.9	112.5	02/01/2023	20:00	0.4	135	03/01/2023	20:00	1.3	292.5	04/01/2023	20:00	0.4	90
01/01/2023	21:00	0.9	90	02/01/2023	21:00	0.4	90	03/01/2023	21:00	0.9	337.5	04/01/2023	21:00	0.9	67.5
01/01/2023	22:00	0.9	90	02/01/2023	22:00	0.9	112.5	03/01/2023	22:00	1.3	337.5	04/01/2023	22:00	0.9	90
01/01/2023	23:00	0.9	90	02/01/2023	23:00	0.4	90	03/01/2023	23:00	0.4	247.5	04/01/2023	23:00	0.9	22.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
05/01/2023	0:00	0.4	22.5	06/01/2023	0:00	0.9	112.5	07/01/2023	0:00	1.3	135	08/01/2023	0:00	0.9	90
05/01/2023	1:00	0.4	337.5	06/01/2023	1:00	0.4	112.5	07/01/2023	1:00	0.9	135	08/01/2023	1:00	0.9	135
05/01/2023	2:00	0.9	225	06/01/2023	2:00	0.9	112.5	07/01/2023	2:00	1.3	135	08/01/2023	2:00	0.9	90
05/01/2023	3:00	0.4	22.5	06/01/2023	3:00	0.9	112.5	07/01/2023	3:00	1.3	112.5	08/01/2023	3:00	0.9	45
05/01/2023	4:00	0.4	22.5	06/01/2023	4:00	0.4	45	07/01/2023	4:00	1.3	112.5	08/01/2023	4:00	1.3	112.5
05/01/2023	5:00	0.4	202.5	06/01/2023	5:00	1.3	202.5	07/01/2023	5:00	0.9	112.5	08/01/2023	5:00	1.3	45
05/01/2023	6:00	0.4	202.5	06/01/2023	6:00	1.3	90	07/01/2023	6:00	0.9	112.5	08/01/2023	6:00	0.9	90
05/01/2023	7:00	0.4	112.5	06/01/2023	7:00	0.9	90	07/01/2023	7:00	1.3	202.5	08/01/2023	7:00	0.4	112.5
05/01/2023	8:00	0.4	90	06/01/2023	8:00	1.8	22.5	07/01/2023	8:00	1.3	112.5	08/01/2023	8:00	0.9	90
05/01/2023	9:00	0.9	22.5	06/01/2023	9:00	0.9	45	07/01/2023	9:00	1.3	112.5	08/01/2023	9:00	1.3	90
05/01/2023	12:00	0.9	112.5	06/01/2023	12:00	0.4	112.5	07/01/2023	12:00	0.9	67.5	08/01/2023	12:00	0.9	90
05/01/2023	12:00	0.4	112.5	06/01/2023	12:00	0.9	45	07/01/2023	12:00	0.9	112.5	08/01/2023	12:00	0.9	135
05/01/2023	12:00	0.4	112.5	06/01/2023	12:00	1.3	22.5	07/01/2023	12:00	1.8	112.5	08/01/2023	12:00	0.9	90
05/01/2023	13:00	1.3	135	06/01/2023	13:00	1.3	270	07/01/2023	13:00	1.3	90	08/01/2023	13:00	0.4	45
05/01/2023	14:00	0.4	135	06/01/2023	14:00	0.9	202.5	07/01/2023	14:00	1.3	90	08/01/2023	14:00	0.4	22.5
05/01/2023	15:00	0.4	112.5	06/01/2023	15:00	2.2	202.5	07/01/2023	15:00	0.9	67.5	08/01/2023	15:00	0.9	45
05/01/2023	16:00	0.4	112.5	06/01/2023	16:00	1.8	135	07/01/2023	16:00	1.3	90	08/01/2023	16:00	1.3	22.5
05/01/2023	17:00	0.9	112.5	06/01/2023	17:00	1.8	135	07/01/2023	17:00	1.8	112.5	08/01/2023	17:00	0.9	202.5
05/01/2023	18:00	0.4	112.5	06/01/2023	18:00	2.2	112.5	07/01/2023	18:00	2.2	112.5	08/01/2023	18:00	0.9	292.5
05/01/2023	19:00	0.4	112.5	06/01/2023	19:00	2.2	112.5	07/01/2023	19:00	1.3	112.5	08/01/2023	19:00	0.9	337.5
05/01/2023	20:00	0.4	202.5	06/01/2023	20:00	1.3	135	07/01/2023	20:00	1.3	112.5	08/01/2023	20:00	0.9	90
05/01/2023	21:00	0.4	112.5	06/01/2023	21:00	0.9	112.5	07/01/2023	21:00	1.3	202.5	08/01/2023	21:00	0.4	45
05/01/2023	22:00	0.4	135	06/01/2023	22:00	1.8	202.5	07/01/2023	22:00	1.3	45	08/01/2023	22:00	0.4	45
05/01/2023	23:00	0.9	112.5	06/01/2023	23:00	1.3	202.5	07/01/2023	23:00	1.3	90	08/01/2023	23:00	0.4	22.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
09/01/2023	0:00	1.3	135	10/01/2023	0:00	0.4	157.5	11/01/2023	0:00	0.9	112.5	12/01/2023	0:00	1.3	112.5
09/01/2023	1:00	0.9	45	10/01/2023	1:00	0.4	135	11/01/2023	1:00	0.9	67.5	12/01/2023	1:00	1.8	90
09/01/2023	2:00	1.3	45	10/01/2023	2:00	0.4	135	11/01/2023	2:00	0.9	112.5	12/01/2023	2:00	1.8	90
09/01/2023	3:00	0.9	45	10/01/2023	3:00	0.9	112.5	11/01/2023	3:00	1.3	112.5	12/01/2023	3:00	1.3	112.5
09/01/2023	4:00	0.9	135	10/01/2023	4:00	0.9	112.5	11/01/2023	4:00	1.3	67.5	12/01/2023	4:00	0.9	112.5
09/01/2023	5:00	0.4	112.5	10/01/2023	5:00	0.9	157.5	11/01/2023	5:00	0.9	67.5	12/01/2023	5:00	1.3	112.5
09/01/2023	6:00	0.4	90	10/01/2023	6:00	1.3	135	11/01/2023	6:00	0.9	90	12/01/2023	6:00	1.8	112.5
09/01/2023	7:00	0.9	112.5	10/01/2023	7:00	1.3	112.5	11/01/2023	7:00	0.4	180	12/01/2023	7:00	0.9	90
09/01/2023	8:00	0.4	292.5	10/01/2023	8:00	1.8	112.5	11/01/2023	8:00	0.4	180	2/01/2023	8:00	1.3	90
09/01/2023	9:00	0.4	292.5	10/01/2023	9:00	0.9	90	11/01/2023	9:00	0.9	112.5	12/01/2023	9:00	1.3	112.5
09/01/2023	12:00	0.9	180	10/01/2023	12:00	0.4	157.5	11/01/2023	12:00	0.4	202.5	12/01/2023	12:00	0.9	112.5
09/01/2023	12:00	0.9	180	10/01/2023	12:00	0.4	135	11/01/2023	12:00	0.4	112.5	12/01/2023	12:00	1.3	112.5
09/01/2023	12:00	1.3	22.5	10/01/2023	12:00	0.4	112.5	11/01/2023	12:00	0.4	180	12/01/2023	12:00	0.9	112.5
09/01/2023	13:00	0.9	112.5	10/01/2023	13:00	0.4	135	11/01/2023	13:00	0.4	112.5	12/01/2023	13:00	1.3	112.5
09/01/2023	14:00	0.4	90	10/01/2023	14:00	0.9	135	11/01/2023	14:00	0.4	112.5	12/01/2023	14:00	1.8	22.5
09/01/2023	15:00	0.4	112.5	10/01/2023	15:00	0.9	135	11/01/2023	15:00	0.4	112.5	12/01/2023	15:00	2.7	135
09/01/2023	16:00	0.9	135	10/01/2023	16:00	0.9	157.5	11/01/2023	16:00	0.9	90	12/01/2023	16:00	0.4	180
09/01/2023	17:00	0.9	135	10/01/2023	17:00	0.9	112.5	11/01/2023	17:00	1.3	112.5	12/01/2023	17:00	0.9	337.5
09/01/2023	18:00	1.3	112.5	10/01/2023	18:00	0.9	135	11/01/2023	18:00	1.3	90	12/01/2023	18:00	1.3	22.5
09/01/2023	19:00	1.3	135	10/01/2023	19:00	1.3	135	11/01/2023	19:00	1.8	90	12/01/2023	19:00	1.3	67.5
09/01/2023	20:00	1.3	90	10/01/2023	20:00	2.2	157.5	11/01/2023	20:00	1.8	90	12/01/2023	20:00	1.3	337.5
09/01/2023	21:00	0.9	90	10/01/2023	21:00	1.3	112.5	11/01/2023	21:00	1.8	90	12/01/2023	21:00	0.9	22.5
09/01/2023	22:00	0.9	112.5	10/01/2023	22:00	1.3	112.5	11/01/2023	22:00	0.4	112.5	12/01/2023	22:00	2.2	22.5
09/01/2023	23:00	1.3	1	10/01/2023	23:00	1.3	135	11/01/2023	23:00	0.4	157.5	12/01/2023	23:00	1.8	22.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
13/01/2023	0:00	0.4	67.5	14/01/2023	0:00	0.9	112.5	15/01/2023	0:00	1.3	90	16/01/2023	0:00	0.9	112.5
13/01/2023	1:00	0.9	45	14/01/2023	1:00	0.9	135	15/01/2023	1:00	1.3	135	16/01/2023	1:00	1.3	90
13/01/2023	2:00	0.4	67.5	14/01/2023	2:00	0.9	112.5	15/01/2023	2:00	0.9	112.5	16/01/2023	2:00	1.3	112.5
13/01/2023	3:00	0.4	67.5	14/01/2023	3:00	0.9	135	15/01/2023	3:00	1.3	112.5	16/01/2023	3:00	1.3	112.5
13/01/2023	4:00	0.4	67.5	14/01/2023	4:00	0.9	112.5	15/01/2023	4:00	1.3	112.5	16/01/2023	4:00	0.9	112.5
13/01/2023	5:00	0.9	90	14/01/2023	5:00	0.9	90	15/01/2023	5:00	1.3	90	16/01/2023	5:00	0.9	112.5
13/01/2023	6:00	0.9	112.5	14/01/2023	6:00	0.4	135	15/01/2023	6:00	1.3	90	16/01/2023	6:00	1.3	112.5
13/01/2023	7:00	1.3	90	14/01/2023	7:00	0.4	90	15/01/2023	7:00	0.9	90	16/01/2023	7:00	1.3	135
13/01/2023	8:00	1.3	67.5	14/01/2023	8:00	0.9	135	15/01/2023	8:00	0.9	135	16/01/2023	8:00	0.9	112.5
13/01/2023	9:00	0.4	67.5	14/01/2023	9:00	0.9	90	15/01/2023	9:00	0.9	135	16/01/2023	9:00	0.9	112.5
13/01/2023	12:00	0.4	67.5	14/01/2023	12:00	0.4	135	15/01/2023	12:00	0.9	22.5	16/01/2023	12:00	1.3	112.5
13/01/2023	12:00	0.4	45	14/01/2023	12:00	0.9	90	15/01/2023	12:00	0.4	157.5	16/01/2023	12:00	0.9	112.5
13/01/2023	12:00	1.3	112.5	14/01/2023	12:00	0.9	90	15/01/2023	12:00	0.4	67.5	16/01/2023	12:00	0.9	135
13/01/2023	13:00	1.3	112.5	14/01/2023	13:00	0.4	112.5	15/01/2023	13:00	0.9	112.5	16/01/2023	13:00	0.9	112.5
13/01/2023	14:00	0.4	135	14/01/2023	14:00	0.9	112.5	15/01/2023	14:00	0.9	112.5	16/01/2023	14:00	0.4	135
13/01/2023	15:00	0.4	135	14/01/2023	15:00	0.9	135	15/01/2023	15:00	0.9	112.5	16/01/2023	15:00	0.9	90
13/01/2023	16:00	0.9	112.5	14/01/2023	16:00	0.9	112.5	15/01/2023	16:00	0.9	112.5	16/01/2023	16:00	0.9	157.5
13/01/2023	17:00	0.9	112.5	14/01/2023	17:00	0.9	112.5	15/01/2023	17:00	1.3	90	16/01/2023	17:00	0.4	135
13/01/2023	18:00	0.4	112.5	14/01/2023	18:00	0.9	112.5	15/01/2023	18:00	0.9	135	16/01/2023	18:00	0.4	112.5
13/01/2023	19:00	0.9	90	14/01/2023	19:00	0.9	112.5	15/01/2023	19:00	0.9	135	16/01/2023	19:00	0.9	135
13/01/2023	20:00	0.9	112.5	14/01/2023	20:00	0.9	112.5	15/01/2023	20:00	0.9	112.5	16/01/2023	20:00	0.9	112.5
13/01/2023	21:00	0.9	90	14/01/2023	21:00	0.9	112.5	15/01/2023	21:00	0.4	112.5	16/01/2023	21:00	0.9	90
13/01/2023	22:00	0.9	112.5	14/01/2023	22:00	0.9	112.5	15/01/2023	22:00	0.9	112.5	16/01/2023	22:00	0.9	135
13/01/2023	23:00	0.9	180	14/01/2023	23:00	0.4	112.5	15/01/2023	23:00	0.4	112.5	16/01/2023	23:00	0.9	90

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
17/01/2023	0:00	0.9	112.5	18/01/2023	0:00	0.9	225	19/01/2023	0:00	0.9	247.5	20/01/2023	0:00	1.3	112.5
17/01/2023	1:00	1.3	90	18/01/2023	1:00	0.9	180	19/01/2023	1:00	0.9	270	20/01/2023	1:00	1.3	112.5
17/01/2023	2:00	1.3	90	18/01/2023	2:00	1.3	202.5	19/01/2023	2:00	0.9	270	20/01/2023	2:00	1.3	135
17/01/2023	3:00	0.9	112.5	18/01/2023	3:00	0.9	202.5	19/01/2023	3:00	0.4	247.5	20/01/2023	3:00	0.9	112.5
17/01/2023	4:00	0.9	90	18/01/2023	4:00	0.4	225	19/01/2023	4:00	0.9	247.5	20/01/2023	4:00	0.9	90
17/01/2023	5:00	0.9	112.5	18/01/2023	5:00	0.9	247.5	19/01/2023	5:00	0.9	247.5	20/01/2023	5:00	1.3	112.5
17/01/2023	6:00	1.3	90	18/01/2023	6:00	0.9	270	19/01/2023	6:00	0.9	135	20/01/2023	6:00	0.9	112.5
17/01/2023	7:00	1.3	67.5	18/01/2023	7:00	0.9	315	19/01/2023	7:00	0.9	112.5	20/01/2023	7:00	1.3	112.5
17/01/2023	8:00	1.8	135	18/01/2023	8:00	0.9	67.5	19/01/2023	8:00	0.9	112.5	20/01/2023	8:00	1.3	90
17/01/2023	9:00	1.8	135	18/01/2023	9:00	0.9	67.5	19/01/2023	9:00	1.3	112.5	20/01/2023	9:00	0.9	112.5
17/01/2023	12:00	1.8	90	18/01/2023	12:00	0.9	67.5	19/01/2023	12:00	1.3	112.5	20/01/2023	12:00	0.9	135
17/01/2023	12:00	2.2	135	18/01/2023	12:00	0.4	112.5	19/01/2023	12:00	0.4	90	20/01/2023	12:00	0.9	112.5
17/01/2023	12:00	1.8	135	18/01/2023	12:00	0.9	112.5	19/01/2023	12:00	0.4	112.5	20/01/2023	12:00	0.9	112.5
17/01/2023	13:00	0.9	135	18/01/2023	13:00	0.9	112.5	19/01/2023	13:00	0.4	112.5	20/01/2023	13:00	1.3	112.5
17/01/2023	14:00	0.9	90	18/01/2023	14:00	1.3	157.5	19/01/2023	14:00	0.9	247.5	20/01/2023	14:00	0.9	112.5
17/01/2023	15:00	1.3	180	18/01/2023	15:00	1.3	135	19/01/2023	15:00	1.3	270	20/01/2023	15:00	1.3	112.5
17/01/2023	16:00	1.3	157.5	18/01/2023	16:00	1.3	90	19/01/2023	16:00	0.9	270	20/01/2023	16:00	1.3	112.5
17/01/2023	17:00	1.3	90	18/01/2023	17:00	1.3	112.5	19/01/2023	17:00	0.9	225	20/01/2023	17:00	0.4	112.5
17/01/2023	18:00	1.3	90	18/01/2023	18:00	1.3	112.5	19/01/2023	18:00	0.4	112.5	20/01/2023	18:00	0.4	112.5
17/01/2023	19:00	1.3	135	18/01/2023	19:00	0.4	135	19/01/2023	19:00	0.9	112.5	20/01/2023	19:00	0.4	112.5
17/01/2023	20:00	1.3	112.5	18/01/2023	20:00	0.4	112.5	19/01/2023	20:00	0.4	112.5	20/01/2023	20:00	0.4	112.5
17/01/2023	21:00	1.3	112.5	18/01/2023	21:00	0.4	112.5	19/01/2023	21:00	0.9	135	20/01/2023	21:00	0.4	112.5
17/01/2023	22:00	0.9	112.5	18/01/2023	22:00	0.4	90	19/01/2023	22:00	0.4	135	20/01/2023	22:00	0.4	112.5
17/01/2023	23:00	0.9	135	18/01/2023	23:00	0.9	112.5	19/01/2023	23:00	0.9	247.5	20/01/2023	23:00	0.4	112.5



Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
21/01/2023	0:00	0.4	135	22/01/2023	0:00	0.4	22.5	23/01/2023	0:00	0.4	22.5	24/01/2023	0:00	0.9	112.5
21/01/2023	1:00	0.4	90	22/01/2023	1:00	0.4	270	23/01/2023	1:00	0	135	24/01/2023	1:00	0.4	135
21/01/2023	2:00	0.4	135	22/01/2023	2:00	0.9	45	23/01/2023	2:00	0.4	292.5	24/01/2023	2:00	0.9	135
21/01/2023	3:00	0.4	135	22/01/2023	3:00	0.9	157.5	23/01/2023	3:00	0	90	24/01/2023	3:00	0.4	112.5
21/01/2023	4:00	0.9	90	22/01/2023	4:00	0.4	67.5	23/01/2023	4:00	0.4	112.5	24/01/2023	4:00	0.9	90
21/01/2023	5:00	0.9	135	22/01/2023	5:00	0.9	67.5	23/01/2023	5:00	0.9	112.5	24/01/2023	5:00	0.9	90
21/01/2023	6:00	1.3	90	22/01/2023	6:00	0.9	22.5	23/01/2023	6:00	0.9	135	24/01/2023	6:00	0.9	67.5
21/01/2023	7:00	1.3	22.5	22/01/2023	7:00	0.9	67.5	23/01/2023	7:00	0.9	90	24/01/2023	7:00	0.9	67.5
21/01/2023	8:00	1.3	112.5	22/01/2023	8:00	0.4	112.5	23/01/2023	8:00	0.9	45	24/01/2023	8:00	0.4	135
21/01/2023	9:00	0.9	90	22/01/2023	9:00	0.9	292.5	23/01/2023	9:00	0.9	45	24/01/2023	9:00	0.9	90
21/01/2023	12:00	1.3	112.5	22/01/2023	12:00	0.4	112.5	23/01/2023	12:00	0.4	135	24/01/2023	12:00	0.9	112.5
21/01/2023	12:00	1.3	112.5	22/01/2023	12:00	0.4	135	23/01/2023	12:00	0.9	135	24/01/2023	12:00	0.9	135
21/01/2023	12:00	1.3	112.5	22/01/2023	12:00	0.9	270	23/01/2023	12:00	0.4	112.5	24/01/2023	12:00	0.4	112.5
21/01/2023	13:00	0.9	112.5	22/01/2023	13:00	0.9	225	23/01/2023	13:00	0.9	112.5	24/01/2023	13:00	0.4	135
21/01/2023	14:00	0.9	90	22/01/2023	14:00	1.8	135	23/01/2023	14:00	0.4	90	24/01/2023	14:00	0.9	112.5
21/01/2023	15:00	0.4	90	22/01/2023	15:00	0.9	112.5	23/01/2023	15:00	1.3	112.5	24/01/2023	15:00	1.3	67.5
21/01/2023	16:00	0.9	22.5	22/01/2023	16:00	1.3	67.5	23/01/2023	16:00	1.3	112.5	24/01/2023	16:00	1.3	225
21/01/2023	17:00	0.9	45	22/01/2023	17:00	1.3	90	23/01/2023	17:00	1.3	135	24/01/2023	17:00	0.9	90
21/01/2023	18:00	0.9	67.5	22/01/2023	18:00	0.9	90	23/01/2023	18:00	1.3	112.5	24/01/2023	18:00	1.8	112.5
21/01/2023	19:00	0.9	112.5	22/01/2023	19:00	1.3	45	23/01/2023	19:00	1.3	112.5	24/01/2023	19:00	1.8	90
21/01/2023	20:00	1.3	112.5	22/01/2023	20:00	1.3	135	23/01/2023	20:00	0.9	135	24/01/2023	20:00	0.9	112.5
21/01/2023	21:00	0.4	90	22/01/2023	21:00	1.3	135	23/01/2023	21:00	0.9	112.5	24/01/2023	21:00	0.9	22.5
21/01/2023	22:00	1.3	90	22/01/2023	22:00	1.8	90	23/01/2023	22:00	1.3	112.5	24/01/2023	22:00	1.3	90
21/01/2023	23:00	0.9	90	22/01/2023	23:00	1.8	135	23/01/2023	23:00	0.9	135	24/01/2023	23:00	0.9	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
25/01/2023	0:00	1.3	112.5	26/01/2023	0:00	0.9	112.5	27/01/2023	0:00	0.9	22.5	28/01/2023	0:00	0.9	112.5
25/01/2023	1:00	1.3	112.5	26/01/2023	1:00	0.4	135	27/01/2023	1:00	0.9	0	28/01/2023	1:00	0.9	135
25/01/2023	2:00	1.3	135	26/01/2023	2:00	0.9	135	27/01/2023	2:00	0.9	45	28/01/2023	2:00	1.3	67.5
25/01/2023	3:00	1.3	112.5	26/01/2023	3:00	0.4	112.5	27/01/2023	3:00	0.9	45	28/01/2023	3:00	0.9	90
25/01/2023	4:00	1.3	112.5	26/01/2023	4:00	0.9	90	27/01/2023	4:00	1.3	112.5	28/01/2023	4:00	0.9	112.5
25/01/2023	5:00	0.9	135	26/01/2023	5:00	0.9	90	27/01/2023	5:00	0.9	112.5	28/01/2023	5:00	1.3	112.5
25/01/2023	6:00	0.9	112.5	26/01/2023	6:00	0.9	67.5	27/01/2023	6:00	0.9	112.5	28/01/2023	6:00	0.9	112.5
25/01/2023	7:00	1.3	112.5	26/01/2023	7:00	0.9	67.5	27/01/2023	7:00	0.4	67.5	28/01/2023	7:00	1.8	90
25/01/2023	8:00	0.9	135	26/01/2023	8:00	0.4	135	27/01/2023	8:00	0.4	22.5	28/01/2023	8:00	1.3	112.5
25/01/2023	9:00	0.9	90	26/01/2023	9:00	0.9	90	27/01/2023	9:00	0.9	67.5	28/01/2023	9:00	1.8	90
25/01/2023	12:00	1.3	112.5	26/01/2023	12:00	0.9	112.5	27/01/2023	12:00	0.9	22.5	28/01/2023	12:00	1.8	90
25/01/2023	12:00	1.3	112.5	26/01/2023	12:00	0.9	135	27/01/2023	12:00	0.4	45	28/01/2023	12:00	1.3	90
25/01/2023	12:00	1.3	135	26/01/2023	12:00	0.4	112.5	27/01/2023	12:00	0.4	67.5	28/01/2023	12:00	1.3	112.5
25/01/2023	13:00	1.8	135	26/01/2023	13:00	0.9	112.5	27/01/2023	13:00	0.4	67.5	28/01/2023	13:00	1.3	112.5
25/01/2023	14:00	0.4	112.5	26/01/2023	14:00	0.4	112.5	27/01/2023	14:00	0.4	90	28/01/2023	14:00	0.9	112.5
25/01/2023	15:00	0.4	112.5	26/01/2023	15:00	1.3	135	27/01/2023	15:00	0.4	270	28/01/2023	15:00	0.9	90
25/01/2023	16:00	0.4	112.5	26/01/2023	16:00	0.9	90	27/01/2023	16:00	0.9	112.5	28/01/2023	16:00	0.9	90
25/01/2023	17:00	0.9	112.5	26/01/2023	17:00	0.9	112.5	27/01/2023	17:00	0.4	112.5	28/01/2023	17:00	0.9	180
25/01/2023	18:00	0.4	90	26/01/2023	18:00	0.9	112.5	27/01/2023	18:00	0.4	112.5	28/01/2023	18:00	0.4	45
25/01/2023	19:00	0.4	112.5	26/01/2023	19:00	0.9	112.5	27/01/2023	19:00	0.4	90	28/01/2023	19:00	0.9	22.5
25/01/2023	20:00	0.4	112.5	26/01/2023	20:00	0.9	90	27/01/2023	20:00	1.3	112.5	28/01/2023	20:00	0.9	67.5
25/01/2023	21:00	0.4	90	26/01/2023	21:00	1.3	112.5	27/01/2023	21:00	1.3	112.5	28/01/2023	21:00	0.4	45
25/01/2023	22:00	0.9	90	26/01/2023	22:00	0.9	90	27/01/2023	22:00	0.9	112.5	28/01/2023	22:00	0.4	112.5
25/01/2023	23:00	0.9	112.5	26/01/2023	23:00	0.9	90	27/01/2023	23:00	0.9	112.5	28/01/2023	23:00	0.4	112.5

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Ng Wah Catholic Secondary School

Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction	Date	Time	Wind Speed (m/s)	Wind Direction
29/01/2023	0:00	0.4	112.5	30/01/2023	0:00	0.4	225	31/01/2023	0:00	0.4	112.5				
29/01/2023	1:00	0.4	90	30/01/2023	1:00	0.4	112.5	31/01/2023	1:00	0.4	112.5				
29/01/2023	2:00	0.9	112.5	30/01/2023	2:00	0.4	90	31/01/2023	2:00	0.4	90				
29/01/2023	3:00	0.4	90	30/01/2023	3:00	0.9	112.5	31/01/2023	3:00	0.4	135				
29/01/2023	4:00	0.4	112.5	30/01/2023	4:00	0.4	90	31/01/2023	4:00	1.8	112.5				
29/01/2023	5:00	0.9	112.5	30/01/2023	5:00	0.4	112.5	31/01/2023	5:00	1.3	90				
29/01/2023	6:00	0.9	112.5	30/01/2023	6:00	0.9	112.5	31/01/2023	6:00	0.9	112.5				
29/01/2023	7:00	0.9	90	30/01/2023	7:00	0.9	112.5	31/01/2023	7:00	1.3	112.5				
29/01/2023	8:00	0.9	112.5	30/01/2023	8:00	0.9	90	31/01/2023	8:00	1.3	90				
29/01/2023	9:00	0.9	112.5	30/01/2023	9:00	0.9	112.5	31/01/2023	9:00	1.3	90				
29/01/2023	12:00	1.8	112.5	30/01/2023	12:00	0.9	112.5	31/01/2023	12:00	1.3	135				
29/01/2023	12:00	1.8	22.5	30/01/2023	12:00	1.8	112.5	31/01/2023	12:00	1.3	112.5				
29/01/2023	12:00	1.3	112.5	30/01/2023	12:00	1.8	22.5	31/01/2023	12:00	0.9	112.5				
29/01/2023	13:00	1.3	112.5	30/01/2023	13:00	1.3	112.5	31/01/2023	13:00	1.3	112.5				
29/01/2023	14:00	1.3	90	30/01/2023	14:00	0.9	90	31/01/2023	14:00	2.2	45				
29/01/2023	15:00	0.9	90	30/01/2023	15:00	1.3	202.5	31/01/2023	15:00	1.8	90				
29/01/2023	16:00	0.9	112.5	30/01/2023	16:00	0.9	112.5	31/01/2023	16:00	1.3	90				
29/01/2023	17:00	0.9	112.5	30/01/2023	17:00	0.9	112.5	31/01/2023	17:00	1.3	22.5				
29/01/2023	18:00	0.9	112.5	30/01/2023	18:00	0.4	90	31/01/2023	18:00	0.9	112.5				
29/01/2023	19:00	0.9	112.5	30/01/2023	19:00	0.4	112.5	31/01/2023	19:00	0.4	112.5				
29/01/2023	20:00	1.3	67.5	30/01/2023	20:00	0.9	135	31/01/2023	20:00	0.9	112.5				
29/01/2023	21:00	1.3	112.5	30/01/2023	21:00	0.9	67.5	31/01/2023	21:00	0.9	90				
29/01/2023	22:00	1.3	112.5	30/01/2023	22:00	0.4	112.5	31/01/2023	22:00	0.4	90				
29/01/2023	23:00	0.9	22.5	30/01/2023	23:00	0.4	112.5	31/01/2023	23:00	2.2	45				

# **Appendix G – 24-hr TSP monitoring results and graphical presentation**

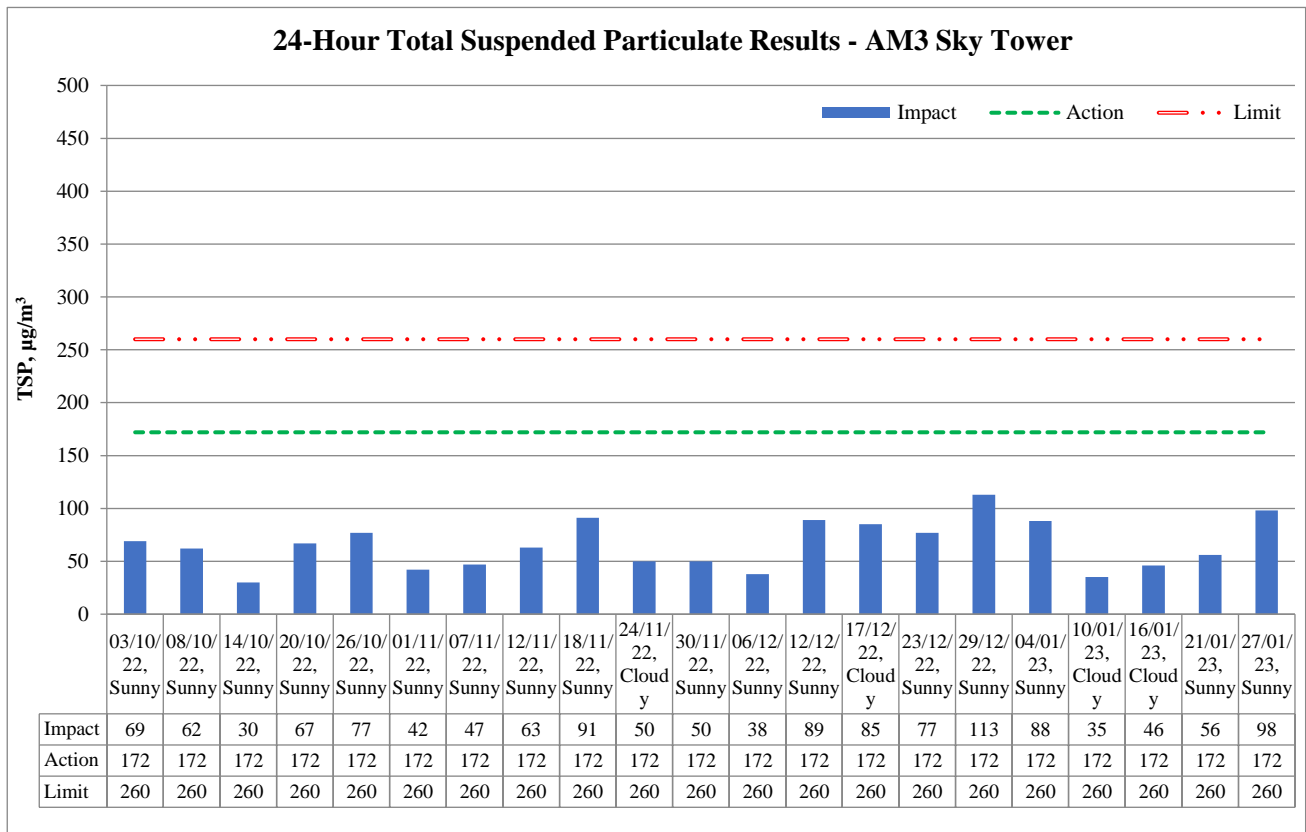
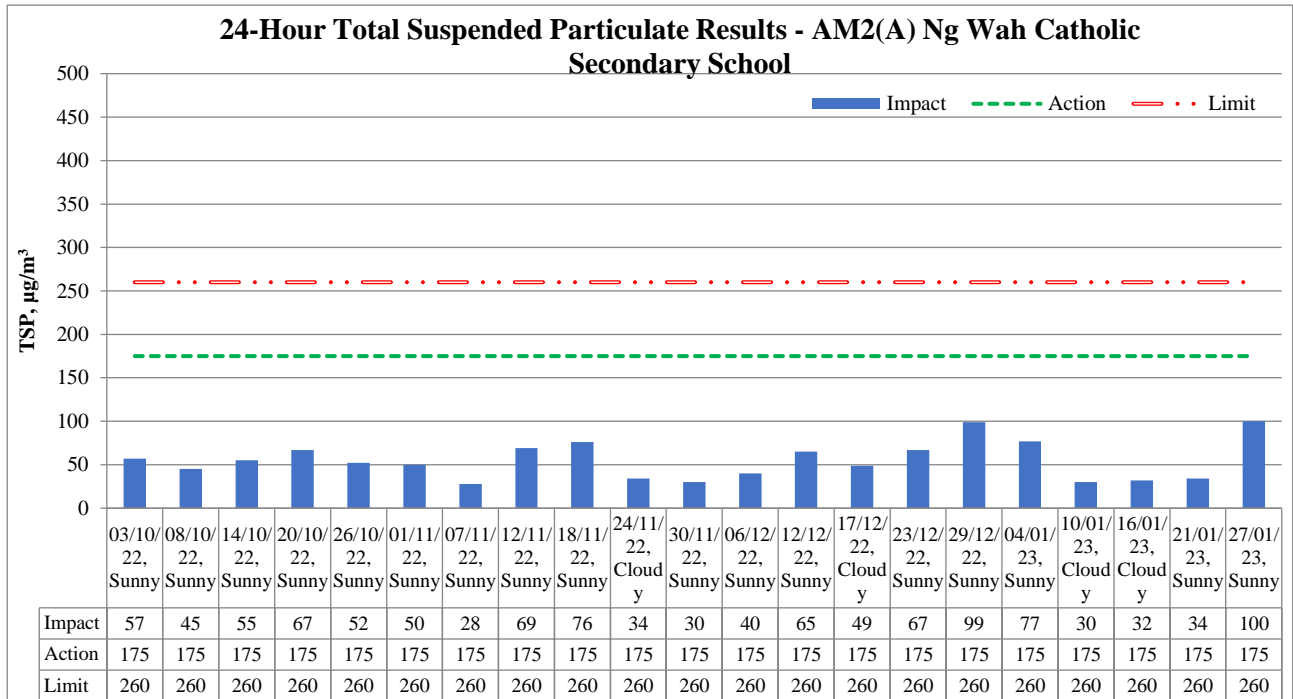
Location: AM2(A) – Ng Wah Catholic Secondary School

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
04/01/2023	Sunny	20.1	1023.4	15.4986	15.6532	0.1546	2023/1/4 13:15	2023/1/5 13:15	1440	50	50	1.40	2009	77
10/01/2023	Cloudy	18.7	1008.8	18.4295	18.4891	0.0596	2023/1/10 9:10	2023/1/11 9:10	1440	50	50	1.39	2000	30
16/01/2023	Cloudy	13.5	1021.6	18.5213	18.5854	0.0641	2023/1/16 9:05	2023/1/17 9:05	1440	50	50	1.41	2031	32
21/01/2023	Sunny	18.8	1019.5	14.9180	14.9857	0.0677	2023/1/21 13:10	2023/1/22 13:10	1440	50	50	1.40	2010	34
27/01/2023	Sunny	16.3	1022.5	15.1542	15.3571	0.2029	2023/1/27 9:05	2023/1/28 9:05	1440	50	50	1.40	2022	100
												Maximum	100	
												Minimum	30	
												Average	54	
												Action Level	175	
												Limit Level	260	

Location: AM3 – Sky Tower

Start Date	Weather	Air Temp. (°C)	Atmospheric Pressure (hPa)	Filter weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (min)	Flow Rate (cfm)		Av. Flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
04/01/2023	Sunny	20.1	1023.4	15.1174	15.2899	0.1725	2023/1/4 9:28	2023/1/5 9:28	1440	48	48	1.36	1953	88
10/01/2023	Cloudy	18.7	1008.8	15.8142	15.8819	0.0677	2023/1/10 13:32	2023/1/11 13:32	1440	48	48	1.35	1944	35
16/01/2023	Cloudy	13.5	1021.6	18.4401	18.5308	0.0907	2023/1/16 9:27	2023/1/17 9:27	1440	48	48	1.37	1974	46
21/01/2023	Sunny	18.8	1019.5	18.4587	18.5691	0.1104	2023/1/21 13:20	2023/1/22 13:20	1440	48	48	1.36	1954	56
27/01/2023	Sunny	16.3	1022.5	18.4583	18.6508	0.1925	2023/1/27 13:35	2023/1/28 13:35	1440	48	48	1.36	1965	98
												Maximum	98	
												Minimum	35	
												Average	65	
												Action Level	172	
												Limit Level	260	

**24-hour average TSP**



Major Construction Activities	Reporting Period			
	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Construction works at Crowd Dispersal Route	✓			
Construction of DCS	✓	✓	✓	✓
Construction works for Road L16	✓	✓	✓	✓
Construction works for Olympic Avenue	✓	✓	✓	✓
Construction works for additional run-in at Road L7		✓	✓	✓
Construction of gantry footing at launching shaft for subway SB-01				✓
Dismantling of gantry crane at casting yard			✓	✓
ELS and excavation works at Sa Po Road			✓	✓
ELS and excavation works for lift and staircase of LW-02				✓
Post-piling tests and proof drilling for LW02 lift and staircase		✓	✓	
Pre-bored socket H-pile construction works for Slip Road S14	✓	✓	✓	✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
UU diversion at Sa Po Road under TTA Stage 2A	✓			
RC construction at launching shaft for subway SB-01	✓	✓	✓	✓
Construction works for Pedestrian Street No. 2	✓	✓	✓	
RC construction for Subway KS10 Lift and Staircase	✓	✓	✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Mini pile construction works for LW-02 lift and staircase	✓	✓		
Ground improvement works at Sa Po Road	✓	✓		

Factors might affect the monitoring results	Reporting Period			
	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓



**Appendix H – 1-hr TSP monitoring results and graphical presentation**

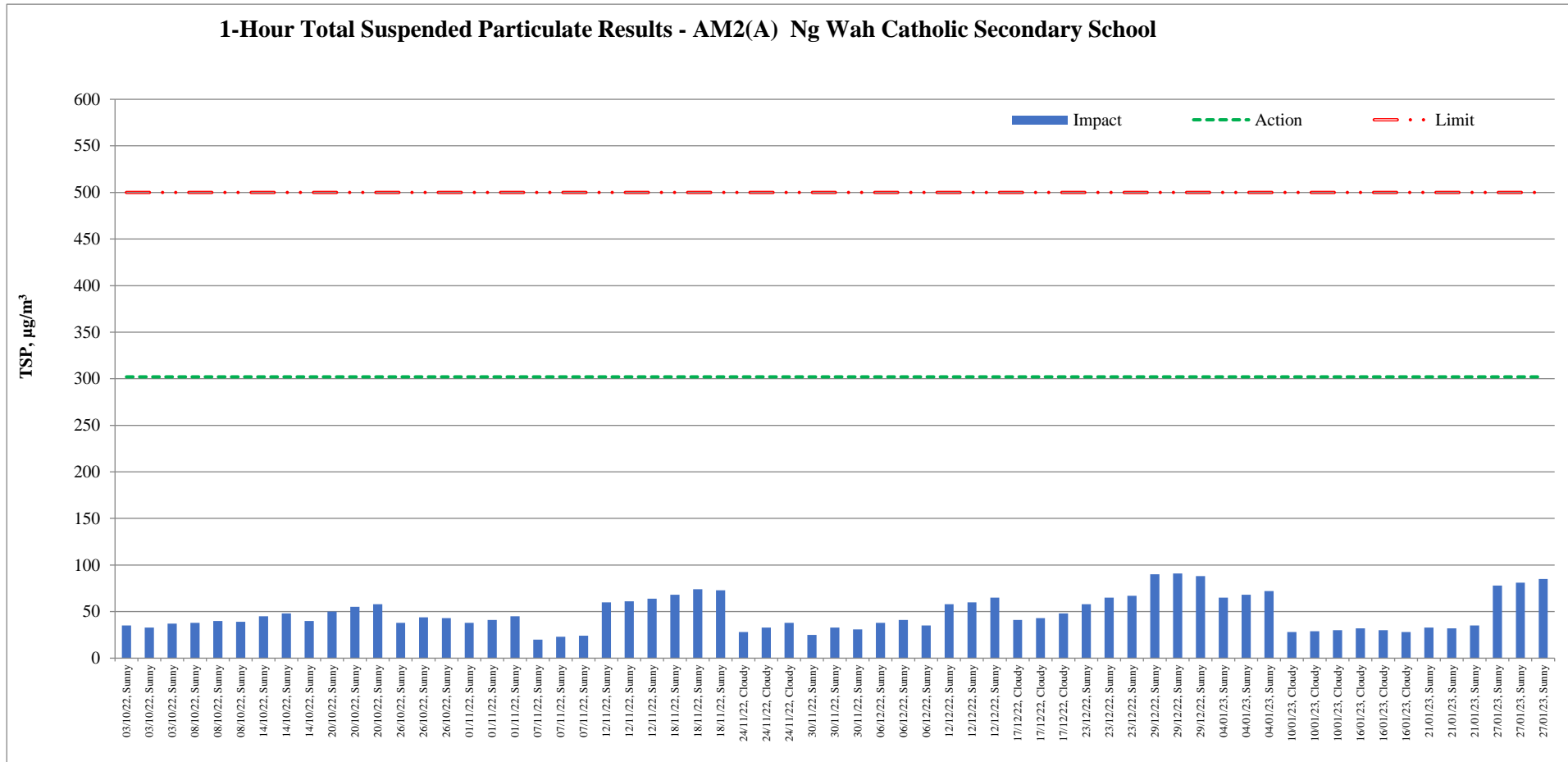
Location:  
**AM2(A) –  
 Ng Wah Catholic  
 Secondary School**

Date	Measurement Period			1-hr TSP concentration, $\mu\text{g}/\text{m}^3$	Weather
		-			
4/1/2023	13:00	-	14:00	65	Sunny
	14:00	-	15:00	68	
	15:00	-	16:00	72	
10/1/2023	9:00	-	10:00	28	Cloudy
	10:00	-	11:00	29	
	11:00	-	12:00	30	
16/1/2023	13:00	-	14:00	32	Cloudy
	14:00	-	15:00	30	
	15:00	-	16:00	28	
21/1/2023	9:00	-	10:00	33	Sunny
	10:00	-	11:00	32	
	11:00	-	12:00	35	
27/1/2023	9:00	-	10:00	78	Sunny
	10:00	-	11:00	81	
	11:00	-	12:00	85	
Maximum				85	
Minimum				28	
Average				48	
Action Level				302	
Limit Level				500	

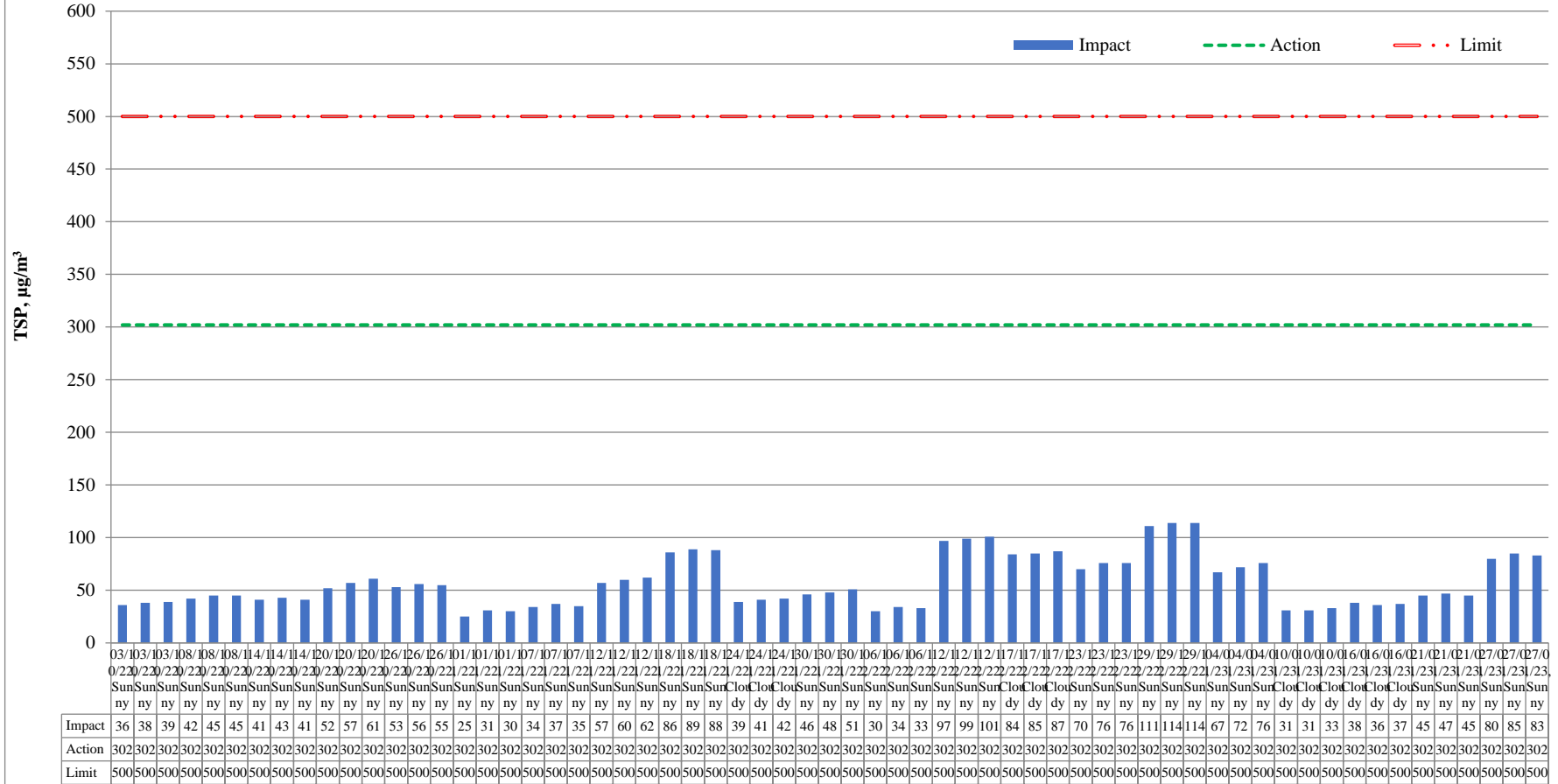
Location:  
**AM3 -  
 Sky Tower**

Date	Measurement Period			1-hr TSP concentration, μg/m <sup>3</sup>	Weather
	9:00	-	10:00		
4/1/2023	9:00	-	10:00	67	Sunny
	10:00	-	11:00	72	
	11:00	-	12:00	76	
10/1/2023	13:00	-	14:00	31	Cloudy
	14:00	-	15:00	31	
	15:00	-	16:00	33	
16/1/2023	9:00	-	10:00	38	Cloudy
	10:00	-	11:00	36	
	11:00	-	12:00	37	
21/1/2023	13:00	-	14:00	45	Sunny
	14:00	-	15:00	47	
	15:00	-	16:00	45	
27/1/2023	13:00	-	14:00	80	Sunny
	14:00	-	15:00	85	
	15:00	-	16:00	83	
Maximum				85	
Minimum				31	
Average				54	
Action Level				301	
Limit Level				500	

# 1-hour average TSP



### 1-Hour Total Suspended Particulate Results - AM3 Sky Tower



Major Construction Activities	Reporting Period			
	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Construction works at Crowd Dispersal Route	✓			
Construction of DCS	✓	✓	✓	✓
Construction works for Road L16	✓	✓	✓	✓
Construction works for Olympic Avenue	✓	✓	✓	✓
Construction works for additional run-in at Road L7		✓	✓	✓
Construction of gantry footing at launching shaft for subway SB-01				✓
Dismantling of gantry crane at casting yard			✓	✓
ELS and excavation works at Sa Po Road			✓	✓
ELS and excavation works for lift and staircase of LW-02				✓
Post-piling tests and proof drilling for LW02 lift and staircase		✓	✓	
Pre-bored socket H-pile construction works for Slip Road S14	✓	✓	✓	✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
UU diversion at Sa Po Road under TTA Stage 2A	✓			
RC construction at launching shaft for subway SB-01	✓	✓	✓	✓
Construction works for Pedestrian Street No. 2	✓	✓	✓	
RC construction for Subway KS10 Lift and Staircase	✓	✓	✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Mini pile construction works for LW-02 lift and staircase	✓	✓		
Ground improvement works at Sa Po Road	✓	✓		

Factors might affect the monitoring results	Reporting Period			
	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

**Appendix I – Event and Action Plan for air quality**

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and Supervisor /ER;</li> <li>3. Repeat measurement to confirm finding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and Supervisor /ER;</li> <li>3. Increase monitoring frequency to daily;</li> <li>4. Discuss with IEC and Contractor on remedial actions required;</li> <li>5. Assess the effectiveness of Contractor's remedial actions;</li> <li>6. If exceedance continues, arrange meeting with IEC and Supervisor /ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the Supervisor /ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. Conduct meeting with ET and IEC if exceedance continues.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with ET and IEC on proper remedial actions;</li> <li>2. Submit proposals for remedial actions to Supervisor /ER and IEC within three working day of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC, Supervisor /ER, and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Assess effectiveness of</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss possible remedial measures with ET and Contractor;</li> <li>4. Advise the Supervisor /ER</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposal for remedial actions to Supervisor /ER and IEC</li> </ol>



Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results.	on the effectiveness of the proposed remedial measures.	4. Implemented; Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	within three working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Notify IEC, Supervisor /ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Arrange meeting with IEC, Supervisor /ER and Contractor to discuss the remedial action to be taken;</li> <li>6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results;</li> <li>7. If exceedance stop, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with Supervisor /ER, ET, and Contractor on the potential remedial actions;</li> <li>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposal for remedial actions to Supervisor /ER and IEC within three working days of notification;</li> <li>4. Implement the agreed proposals;</li> <li>5. Submit further remedial actions if problem still not under control;</li> <li>6. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.</li> </ol>

# **Appendix J – Calibration certificates, catalogue of noise monitoring equipment**

# Catalogue of Sound Level Meter

## Specifications

		NL-52	NL-42
<b>Applicable standards</b>			
		IEC 61672-1: 2002 Class 1 ANSI S1.4-1983 Type 1 ANSI S1.4A-1985 Type 1 ANSI S1.43-1997 Type 1 JIS C 1509-1: 2005 Class 1	IEC 61672-1: 2002 Class 2 ANSI S1.4-1983 Type 2 ANSI S1.4A-1985 Type 2 ANSI S1.43-1997 Type 2 JIS C 1509-1: 2005 Class 2
<b>Measurement functions</b>			
Simultaneous measurement of the following items, with selected time weighting and frequency weighting			
<b>Processing (main ch)</b>		Instantaneous sound pressure level: $L_p$ Equivalent continuous sound pressure level: $L_{eq}$ Sound exposure level: $L_E$ Maximum sound pressure level: $L_{max}$ Minimum sound pressure level: $L_{min}$ Percentile sound levels: $L_N$ (0.1 to 99.9 %, 0.1-increment steps, max. 5 values)	
<b>Processing (sub ch)</b>		Instantaneous sound pressure level: $L_p$	
<b>Additional processing</b>			
In addition to main processing items, one of the following can be selected for simultaneous processing:			
C-weighted equivalent continuous sound level: $L_{Ceq}$			
C-weighted peak sound level: $L_{Cpeak}$			
Z-weighted peak sound level: $L_{Zpeak}$			
1-time-weighted equivalent continuous sound level: $L_{A1eq} \#2$			
Maximum 1-time-weighted equivalent continuous sound level: $L_{A1max} \#2$			
The power average of the maximum level of each 5 second interval: $L_{A1av} \#2$			
The frequency weighting for the additional processing synchronizes with the frequency weighting of the sub-channel, so when the sub-channel has A-weighting, $L_{A1av} \#2$ can be selected.			
When C-weighting (Z-weighting) is selected, the additional processing $L_{Ceq}$ and $L_{Cpeak}$ ( $L_{Zpeak}$ ) are selectable.			
<b>Measuring time</b>		10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h)	
<b>Microphone</b>		Type UC-59 UC-52 Sensitivity level -27 dB -33 dB	
<b>Measurement range</b>			
A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB Z-weighting: 38 dB to 138 dB C-weighting peak sound level: 55 dB to 141 dB Z-weighting peak sound level: 60 dB to 141 dB			
<b>Inherent noise</b>		A-weighting 17 dB or less C-weighting 25 dB or less Z-weighting 30 dB or less	
<b>Frequency range</b>		20 Hz to 20 kHz 20 Hz to 8 kHz	
<b>Frequency weighting</b>		A, C, and Z	
<b>Time weighting</b>		F (Fast) and S (Slow)	
<b>Level range</b>			
Single range (Linearity range: 113 dB) Bar graph display range max. Max. 110 dB (20 to 130 dB) Switching of bar graph display Set the upper/lower limit in 10 dB increments.			
<b>RMS detection circuit</b>			
Digital processing method			
<b>Sampling cycle</b>		20.8 $\mu$ s ( $L_p$ , $L_{eq}$ , $L_E$ , $L_{max}$ , $L_{min}$ , $L_{peak}$ : sampling frequency: 48 kHz) 100 ms ( $L_N$ )	
<b>Calibration</b>			
Measurement Law: electrical calibration performed according to IEC and JIS standards, using internally generated signals; acoustic calibration performed with the NC-74.			
<b>Correction functions</b>			
Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed. Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.			
<b>Delay time</b>			
The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.			
<b>Back erase function</b>			
When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.			
<b>Display</b>			
Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel) Numerical display update frequency: 1 s Bar graph update frequency: 100 ms			
<b>Store</b>			
<b>Manual</b>		Data for measurement results are stored manually in single address increments.	
<b>Auto #2</b>		Internal memory: max. 1000 sets SD Card: depends on the capacity of the SD Card #1 Instantaneous values ( $L_p$ mode) and processed values ( $L_{eq}$ mode) are stored continuously and automatically at preset intervals.	
<b><math>L_p</math> sampling cycle</b>		100 ms, 200 ms, 1 s, $L_{eq}$ 1s	
<b><math>L_{eq}</math> sampling cycle</b>		10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h	
<b>Measurement Time</b>		Max. 1000 h (depends on the capacity of the SD Card) #1	

- \* Windows is a trademark of Microsoft Corporation.
- \* Specifications subject to change without notice.

Distributed by:

This product is environment-friendly. It does not include toxic chemicals on our policy.  
This product is certified as an International Protection rating of IP54 (dust protected and resistant to splashing water).  
This leaflet is printed with environmentally friendly vegetable-based ink on recycled paper.

1011-4 212 P.D

<b>Data recall</b>	Allows viewing of stored data
<b>Setup memory</b>	Up to five setup configurations can be saved in internal memory, for later recall Start up via file settings previously stored on SD card possible
<b>Waveform recording #3</b>	
<b>File format</b>	Uncompressed waveform WAVE file
<b>Sampling frequency</b>	Select 48 kHz, 24 kHz or 12 kHz
<b>Data length</b>	Select 24 bit or 16 bit
<b>Outputs</b>	
<b>DC output</b>	Output DC signals using a frequency weighting characteristic selected by processing
<b>Output voltage</b>	2.5 V, 25 mV / dB at bar graph display full scale
<b>AC output</b>	Output AC signals using a frequency weighting characteristic selected by processing or by A, C, Z-weighting.
<b>Output voltage</b>	1 V (rms values) at bar graph display full scale
<b>Comparator output #2</b>	Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW)
<b>USB #3</b>	Allows USB to be connected to a computer and recognized as a removable disk Allows USB to be controlled via communication commands
<b>RS-232C communication</b>	Allows for RS-232C communication via use of a dedicated cable
<b>Data continuous output #2</b>	
<b>Type of data</b>	$L_p$ $L_{eq}$ , $L_{max}$ , $L_{min}$ , $L_{peak}$
<b>Output interval</b>	100 ms
<b>Print out</b>	Printing of measurement results on dedicated printer DPU-414
<b>Power requirements</b>	
<b>Battery life (23 °C)</b>	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply Alkaline battery LR6 (AA): 26 h * Ni-MH secondary battery: 25 h At the maximum: * Depends on the setting
<b>AC adapter</b>	NC-98C (NC-34 for previous models cannot be used)
<b>External power voltage</b>	5 to 7 V (rated voltage: 6 V)
<b>Current consumption</b>	Approximately 90 mA (normal operation, rated voltage)
<b>Ambient conditions</b>	Temperature: -10 to +50 °C Humidity: 10 to 90 % RH (non-condensing)
<b>Dustproof / water-resistant performance #4</b>	IP code: IP54 (except for microphone) See precautions regarding waterproofing
<b>Dimensions, weight</b>	Approx. 250 (H) x 76 (W) x 33 mm (D), approx. 400 g (with batteries)
<b>Supplied accessories</b>	Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MB x 1 (NX-42EX preinstalled model only)

## Options

	Product name	Product number
Extended function program (Inst. on 512 MB SD card)		NX-42EX
Waveform recording program #2 (Inst. on 2 GB SD card)		NX-42WR
Octave, 1/3 octave real-time analysis program #2 (Inst. on 512 MB SD card)		NX-42RT
FFT analysis program #2 (Inst. on 512 MB SD card)		NX-42FT
Data management software for environmental measurement (Includes the octave and 1/3 octave data management software)		AS-60
Data management software for environmental measurement (Includes the vibration level data management software)		AS-60RT
Waveform analysis software		CAT-WAVE
SD Card 512 MB		SD-512M
SD Card 2 GB		SD-2G
AC adapter (100 V to 240 V)		NC-98C
Battery pack		BP-21
Microphone extension cables		EC-04 (from 2 m)
BNC-Pin output code		CC-24
Comparator output cable		CC-42C
Printer		DPU-414
Printer cable		CC-42P
RS 232C serial I/O cable		CC-42R
USB cable		—
Sound calibrator		NC-74
All-weather windscreen		WS-15
Windscreen mounting adapter		WS-15006
Rain-protection windscreen		WS-16
Sound level meter tripod		ST-80
All-weather windscreen tripod		ST-81

#1 Use Rion fully guaranteed products. #2 NX-42EX required (sold separately). #3 NX-42WR required (sold separately).  
#4 Protection against harmful dust and water splashing from any direction.

### Precautions regarding waterproofing

Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.  
To maintain the water and dust proof rating, internal packing replacement is required every two years (at cost).



**RION CO., LTD.**  
http://www.rion.co.jp/english/

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan  
Tel: +81-42-359-7888 Fax: +81-42-359-7442

# Calibration Certificate of Sound Level Meter



中国赛宝实验室计量检测中心  
(工业和信息化部电子第五研究所计量检测中心)  
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

## 校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB22001076-0004  
Certificate No.



委托单位: Client	Castco Testing Centre Limited	
仪器名称: Description	Sound Level Meter	
型号规格: Model/Type	NL-52	
制造商: Manufacturer	RION	
机身号: Serial No.	01287681	
管理号: Asset No.	AAST-SLM-12	
接收日期: Rec. Date	2022-07-21	校准日期: Cal. Date
签发日期: App. Date	2022-08-04	建议校准周期: Reference Cal. Period
结论: Conclusion	所校准项目合格(Passed at Calibration Items)	

校准:  
Calibrated by 赵文钰

签发:  
Approved by 郑木力

核验:  
Inspected by 钟灏

印章:  
Stamp

赛宝计量检测中心  
广州总部地址: 广州市增城区东村街东村大道西78号  
客服电话: 020-87237633 传真: 020-87236189  
投诉电话: 020-87236896  
邮件: cal@ceprei.com  
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre  
HQ Addr: No.78 Zhucun Avenue West,Zengcheng District,Guangzhou,China  
Service Tel: 020-87237633 Fax: 020-87236189  
Complaint Tel: 020-87236896  
Email: cal@ceprei.com  
Website: www.ceprei-cal.com

证书编号(Certificate No.): 2HB22001076-0004

### 说明 DIRECTIONS

- 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求, 获得中国合格评定国家认可委员会(CNAS) 认可, 认可证书号为: CNAS L13344。  
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.
- 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):  
  - JJG 188-2017 声级计检定规程: Sound pressure level: (20~130)dB; Frequency Weighting: (20~130)dB@(10 Hz~20kHz).
  - 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可, 其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)
- 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):  

名称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
正弦信号发生器 304所	4GC21000496-0024/2022-11-01/赛宝(广州)	f: ±1mHz; 失真度 Distortion: <-70dB	f: 0.001Hz~200kHz; U : 100μV~5Vrms
标准传声器 304所	GFJGJL1001220311961/2023-03-27/航空	U=(0.05~0.20)dB (k=2)	10Hz~20kHz
前置放大器 304所	GFJGJL1001220311960/2023-03-27/航空	U=0.3dB (k=2)	(10~50000) Hz
步进衰减器	4GC22000181-0032/2023-04-18/赛宝(广州)	±3dB	(0~110) dB/10dB step @(DC~1GHz)
声校准器	4GC21000572-0101/2022-12-07/赛宝(广州)	1级 First Level	31.5Hz~16kHz
PULSE分析系统	4GC22000014-0140/2023-01-15/赛宝(广州)	频率:U <sub>ref</sub> =0.001%,k=2;电压: U <sub>ref</sub> =0.04%,k=2	频率:0.001Hz~51.2kHz; 电压:(1*10 <sup>-3</sup> ~30)V
数字多用表	4GC21000526-0026/2022-11-30/赛宝(广州)	DCV: ±0.0035%; ACV: ± 0.06%; DCI: ±0.05%; ACI: ±0.1%; R: ±0.01%; f: ±0.001%	DCV:(0~1000)V; ACV: 300kHz); DCI:(0~3)A; ACI:(0~3)A@(3Hz~ 5kHz); R:(0~100)MΩ; f:3Hz~300kHz
- 校准地点(The calibration place):  
广州市增城区朱村街朱村大道西78号9栋110室
- 环境条件(Environmental conditions):  
温度(Temperature): 23.2°C 相对湿度(Relative Humidity): 58%
- 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。  
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.
- 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。  
"P" and "Pass" in this certificate stand for "Low Limit:the measured value ≤High Limit", "F" and "Fail" stand for "the measured value >Low Limit or the measured value >High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc". The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.
- 建议校准周期是实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

# Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB22001076-0004

**1 外观与工作正常性检查 (Appearance and Function Check)**

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

**2 指示声级调整 (Indication SPL Calibration)**

频率(Frequency)=1000Hz

传声器型号 (Microphone Type)	传声器编号 (Microphone SN.)	放大器型号 (Preamplifier Type)	放大器编号 (Preamplifier SN.)
/	/	/	/

声校准器型号 (Calibrator Type)	标准声压级 (Reference SPL)	校准前示值 (Before Calibration)	校准后示值 (After Calibration)	U (k=2)
	(dB)	(dB)	(dB)	(dB)
4226	94.0	93.8	93.8	0.2

**3 级线性 (Level Linearity)**

**3.1 参考级量程 (Reference Range)**

频率(Frequency): 8000Hz

起始点指示声级(Sound Level Indication of Start Point):	90.0 dB
起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):	-0.2 dB
<i>U (k=2)</i>	0.6 dB
上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB):	-0.2 dB
<i>U (k=2)</i>	0.6 dB
起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):	-0.2 dB
<i>U (k=2)</i>	0.6 dB
下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB):	-0.2 dB
<i>U (k=2)</i>	0.6 dB

**3.2 其它级量程 (Other Range)**

频率(Frequency): 1000Hz

起始点指示声级(Sound Level Indication of Start Point):	90.0 dB
起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):	-0.1 dB
<i>U (k=2)</i>	0.4 dB
上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB):	-0.1 dB
<i>U (k=2)</i>	0.4 dB
起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):	-0.1 dB
<i>U (k=2)</i>	0.4 dB
下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB):	-0.1 dB
<i>U (k=2)</i>	0.4 dB

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证书编号(Certificate No.): 2HB22001076-0004

**4 A计权特性(A-Weighting Characteristic)**

频率 (Frequency)	实测值 (Actual)	理论值 (Theoretical value)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)	U (k=2)
(Hz)	(dB)	(dB)	(dB)	(dB)	(P/F)	(dB)
20	-50.7	-50.5	-0.2	±2.0	P	0.5
25	-45.0	-44.7	-0.3	+2.0 ~ -1.5	P	0.5
31.5	-39.6	-39.4	-0.2	±1.5	P	0.5
40	-34.6	-34.6	0.0	±1.0	P	0.5
50	-30.2	-30.2	0.0	±1.0	P	0.5
63	-26.1	-26.2	0.1	±1.0	P	0.5
80	-22.3	-22.5	0.2	±1.0	P	0.5
100	-19.1	-19.1	0.0	±1.0	P	0.5
125	-16.1	-16.1	0.0	±1.0	P	0.5
160	-13.2	-13.4	0.2	±1.0	P	0.5
200	-10.7	-10.9	0.2	±1.0	P	0.5
250	-8.7	-8.6	-0.1	±1.0	P	0.5
315	-6.8	-6.6	-0.2	±1.0	P	0.4
400	-4.7	-4.8	0.1	±1.0	P	0.4
500	-3.1	-3.2	0.1	±1.0	P	0.4
630	-1.8	-1.9	0.1	±1.0	P	0.4
800	-0.7	-0.8	0.1	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	0.6	0.6	0.0	±1.0	P	0.6
1600	1.0	1.0	0.0	±1.0	P	0.6
2000	1.1	1.2	-0.1	±1.0	P	0.6
2500	1.1	1.3	-0.2	±1.0	P	0.6
3150	1.0	1.2	-0.2	±1.0	P	0.6
4000	0.7	1.0	-0.3	±1.0	P	0.6
5000	0.4	0.5	-0.1	±1.5	P	0.6
6300	-0.2	-0.1	-0.1	+1.5 ~ -2.0	P	0.6
8000	-1.0	-1.1	0.1	+1.5 ~ -2.5	P	0.6
10000	-2.3	-2.5	0.2	+2.0 ~ -3.0	P	0.6
12500	-4.2	-4.3	0.1	+2.0 ~ -5.0	P	1.0
16000	-8.5	-6.6	-1.9	+2.5 ~ -16.0	P	1.0
20000	-18.4	-9.3	-9.1	+3.0 ~ -∞	P	1.0

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# Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB22001076-0004

5 C计权特性(C-Weighting Characteristic)

频率 (Frequency)	实测值 (Actual)	理论值 (Theoretical value)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)	U (k=2)
(Hz)	(dB)	(dB)	(dB)	(dB)	(P/F)	(dB)
20	-6.3	-6.2	-0.1	±2.0	P	0.5
25	-4.5	-4.4	-0.1	+2.0 ~ -1.5	P	0.5
31.5	-3.0	-3.0	0.0	±1.5	P	0.5
40	-2.0	-2.0	0.0	±1.0	P	0.5
50	-1.2	-1.3	0.1	±1.0	P	0.5
63	-0.7	-0.8	0.1	±1.0	P	0.5
80	-0.4	-0.5	0.1	±1.0	P	0.5
100	-0.2	-0.3	0.1	±1.0	P	0.5
125	-0.1	-0.2	0.1	±1.0	P	0.5
160	0.0	-0.1	0.1	±1.0	P	0.5
200	0.0	0.0	0.0	±1.0	P	0.5
250	0.0	0.0	0.0	±1.0	P	0.5
315	0.0	0.0	0.0	±1.0	P	0.4
400	0.0	0.0	0.0	±1.0	P	0.4
500	0.0	0.0	0.0	±1.0	P	0.4
630	0.0	0.0	0.0	±1.0	P	0.4
800	0.0	0.0	0.0	±1.0	P	0.4
1000(Ref.)	0.0	0.0	0.0	±0.7	P	0.4
1250	-0.1	0.0	-0.1	±1.0	P	0.6
1600	-0.2	-0.1	-0.1	±1.0	P	0.6
2000	-0.3	-0.2	-0.1	±1.0	P	0.6
2500	-0.5	-0.3	-0.2	±1.0	P	0.6
3150	-0.8	-0.5	-0.3	±1.0	P	0.6
4000	-1.1	-0.8	-0.3	±1.0	P	0.6
5000	-1.5	-1.3	-0.2	±1.5	P	0.6
6300	-2.1	-2.0	-0.1	+1.5 ~ -2.0	P	0.6
8000	-2.9	-3.0	0.1	+1.5 ~ -2.5	P	0.6
10000	-4.2	-4.4	0.2	+2.0 ~ -3.0	P	0.6
12500	-6.2	-6.2	0.0	+2.0 ~ -5.0	P	1.0
16000	-10.4	-8.5	-1.9	+2.5 ~ -16.0	P	1.0
20000	-20.4	-11.2	-9.2	+3.0 ~ ∞	P	1.0

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## Catalogue of Sound Calibrator

For microphone calibration **NC-74**

### How to use

Carefully insert the microphone all the way into the coupler of the NC-74. Then simply turn the power on to apply a constant sound pressure level to the diaphragm of the microphone.



Usage example (NL series)

The performance of the NC-74 is suitable for calibration of high-precision sound level meters. The unit is compact, lightweight, and easy to use. Two IEC LR6 (size AA) alkaline batteries will power the unit for more than 30 hours of continuous use at room temperature.

### Atmospheric pressure compensation principle

The NC-74 incorporates a sensor that detects atmospheric pressure. Based on the information provided by the sensor, the CPU controls the signal amplitude. This allows the unit to always provide the correct output for achieving constant sound pressure level, regardless of fluctuations in atmospheric pressure.



### Using the 1/2-inch adapter

To allow calibration of sound level meter microphones with 1 inch diameter, the 1/2-inch microphone adapter can be removed. 1/2-inch microphones are calibrated with the adapter in place.



### Specifications

Applicable standards	IEC 60942:2003 Class 1 JIS C 1515:2004 Class 1
Suitable microphones	1-inch microphones IEC 61094-1 Type L&1P LUC-27 LUC-28 LUC-34
	1/2-inch microphones IEC 61094-1 Type L&2aP LUC-69 LUC-67 LUC-65A LUC-62 LUC-26 LUC-30 LUC-31 LUC-33P
Nominal sound pressure level	94 dB
Sound pressure level tolerance	±0.3 dB
Nominal frequency	1 kHz
Frequency tolerance	±1.0 % or less
Power requirements	IEC LR6 (size AA) alkaline battery × 2
Dimensions, mass	Approx. 49 (H) × 50 (W) × 74 (D) mm Approx. 200 g (including batteries)
Supplied accessories	Case × 1 IEC LR6 (size AA) alkaline battery × 2 1/2-inch microphone adapter NC-74-002 × 1



\* Specification subject to change without notice.

**RION CO., LTD.**

3-20-41, Higashinomachi, Kokubunji, Tokyo 185-8533, Japan  
Tel: +81-42-359-7888 Fax: +81-42-359-7442  
<http://www.rion.co.jp/english/>

Distributed by:

Printed in Japan 0510-1 0807.P.MP

## Calibration Certificate of Sound Calibrator



中国赛宝实验室计量检测中心  
(工业和信息化部电子第五研究所计量检测中心)  
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

## 校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB22001358-0007  
Certificate No.



委托单位: Castco Testing Centre Limited  
Client  
仪器名称: Sound Level Calibrator  
Description  
型号规格: NC-74  
Model/Type  
制造商: RION  
Manufacturer  
机身号: 34678556  
Serial No.  
管理号: AAST-SLC-06  
Asset No.  
接收日期: 2022-08-24 校准日期: 2022-09-14  
Rec. Date Cal. Date  
签发日期: 2022-09-15 建议校准周期: 12个月(12 months)  
App. Date Reference Cal. Period  
结论: 所校准项目合格(Passed at Calibration Items)  
Conclusion

**CEPREI**

校准: 赵文钰  
Calibrated by

核验: 钟灏  
Inspected by

签发: 郑木力  
Approved by

印章:  
Stamp

赛宝计量检测中心  
广州总部地址: 广州市增城区朱村街朱村大道西78号  
客服电话: 020-87237633 传真: 020-87236189  
投诉电话: 020-87236896  
邮件: cal@ceprei.com  
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre  
HQ Addr: No. 78, Zhucun Avenue West, Zengcheng District, Guangzhou, China  
Service Tel: 020-87237633 Fax: 020-87236189  
Complaint Tel: 020-87236896  
Email: cal@ceprei.com  
Website: www.ceprei-cal.com

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# Calibration Certificate of Sound Calibrator

证书编号(Certificate No.): 2HB22001358-0007

## 说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求, 获得中国合格评定国家认可委员会 (CNAS) 认可, 认可证书号为: CNAS L13344.

This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

2. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):

\* JJG 176-2005 声校准器检定规程: Sound Pressure Level: 94dB、104dB、114dB、124dB(63Hz~8kHz); 94dB、104dB、114dB、(31.5Hz~16kHz); Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0~10%, (20Hz~20 kHz).

\* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可, 其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)

3. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

名称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
标准传声器(2246093)	GFJGJL1001220311961/2023-03-27/航空304所	$U=(0.05-0.20)$ dB ( $k=2$ )	10Hz~20kHz
前置放大器(2239843)	GFJGJL1001220311960/2023-03-27/航空304所	频率响应: $\pm 0.1$ dB	(10~50000) Hz
PULSE分析系统(3160-106540)	4GC22000014-0140/2023-01-15/赛宝(广州)	频率: $U_{rel}=0.001\%$ , $k=2$ ;电压: $U_{rel}=0.04\%$ , $k=2$	频率:0.001Hz~51.2kHz, 电压:( $1 \times 10^{-5}$ ~30)V

4. 校准地点(The calibration place):

广州市增城区朱村街朱村大道西78号9栋110室

5. 环境条件(Environmental conditions):

温度(Temperature): 23.8°C 相对湿度(Relative Humidity): 61%

6. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子 $k$ 得到。

The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor  $k$  which corresponding to the coverage probability about 95%.

7. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。

"P" and "Pass" in this certificate stand for "Low Limit≤the measured value ≤High Limit", "F" and "Fail" stand for "the measured value < Low Limit or the measured value > High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc". The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

8. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1.本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2.本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)

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证书编号(Certificate No.): 2HB22001358-0007

1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中校准结果准确度的因素和缺陷。

There are no factor and defect that affect the calibration result accuracy of the certificate.

2 声压级 (Sound Pressure Level)

规定声压级 (Prescribed SPL)	测量声压级 (Measured SPL)	声压级差的绝对值 (Absolute value of SPL)	允许范围 (Limit)	结论 (Pass/Fail)	$U$ (dB)
(dB)	(dB)	(dB)	(dB)	(Pass/Fail)	(dB)
94	93.93	0.07	≤0.40	P	0.10

3 频率 (Frequency)

规定频率 (Prescribed Fre.)	测量频率 (Measured Fre.)	频率误差的绝对值 (Absolute value of Fre.)	允许范围 (Limit)	结论 (Pass/Fail)	$U_{rel}$ (%)
(Hz)	(Hz)	(%)	(%)	(Pass/Fail)	(%)
1000	1003.7	0.37	≤1.00	P	0.10

4 总失真 (Distortion)

规定声压级 (Prescribed SPL)	规定频率 (Measured Fre.)	总失真 (Distortion)	允许范围 (Limit)	结论 (Pass/Fail)	$U_{rel}$ (%)
(dB)	(Hz)	(%)	(%)	(Pass/Fail)	(%)
94	1000	0.02	≤3.00	P	5.0

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# Catalogue of Air Flow Meter (TSI TA440)

## SPECIFICATIONS

### THERMAL ANEMOMETERS MODELS TA410, TA430 AND TA440

#### Velocity

Range (TA410)	0 to 20 m/s (0 to 4,000 ft/min)
Range (TA430, TA440)	0 to 30 m/s (0 to 6,000 ft/min)
Accuracy (TA410) <sup>1,2</sup>	±5% of reading or ±0.025 m/s (±5 ft/min), whichever is greater
Accuracy (TA430, TA440) <sup>1,2</sup>	±3% of reading or ±0.015 m/s (±3 ft/min), whichever is greater
Resolution	0.01 m/s (1 ft/min)

#### Duct Size (TA430, TA440)

Dimensions	1 to 635 cm in increments of 0.1 cm (1 to 250 inches in increments of 0.1 in.)
------------	--

#### Volumetric Flow Rate (TA430, TA440)

Range	Actual range is a function of velocity, and duct size
-------	---

#### Temperature

Range (TA410, TA430)	-18 to 93°C (0 to 200°F)
Range (TA440)	-10 to 60°C (14 to 140°F)
Accuracy <sup>3</sup>	±0.3°C (±0.5°F)
Resolution	0.1°C (0.1°F)

#### Relative Humidity (TA440 only)

Range	5 to 95% RH
Accuracy <sup>4</sup>	±3% RH
Resolution	0.1% RH

#### Wet Bulb Temperature (TA440 only)

Range	5 to 60°C (40 to 140°F)
Resolution	0.1°C (0.1°F)

#### Dew Point (TA440 only)

Range	-15 to 49°C (5 to 120°F)
Resolution	0.1°C (0.1°F)

#### Instrument Temperature Range

Operating (Electronics)	5 to 45°C (40 to 113°F)
Model TA410, TA430	-18 to 93°C (0 to 200°F)
Operating (Probe)	-18 to 93°C (0 to 200°F)
Model TA440	-10 to 60°C (14 to 140°F)
Operating (Probe)	-10 to 60°C (14 to 140°F)
Storage	-20 to 60°C (-4 to 140°F)

#### Data Storage Capabilities (TA430, TA440)

Range	12,700+ samples and 100 test IDs
-------	----------------------------------

#### Logging Interval (TA430, TA440)

1 second to 1 hour

Specifications subject to change without notice.

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Visit our website at [www.airflowinstruments.co.uk](http://www.airflowinstruments.co.uk) for more information.

UK Tel: +44 149 4 459209 Germany Tel: +49 241 523030  
France Tel: +33 491 11 87 64

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#### Time Constant (TA430, TA440)

User selectable

#### External Meter Dimensions

8.4 cm x 17.8 cm x 4.4 cm (3.3 in. x 7.0 in. x 1.8 in.)

#### Meter Weight with Batteries

0.27 kg (0.6 lbs.)

#### Meter Probe Dimensions

Probe Length	101.6 cm (40 in.)
Probe Diameter of Tip	7.0 mm (0.28 in.)
Probe Diameter of Base	13.0 mm (0.51 in.)

#### Articulating Probe Dimensions

Articulating Section Length	19.7 cm (7.8 in.)
Diameter of Articulating Knuckle	9.5 mm (0.38 in.)

#### Power Requirements

Four AA-size batteries or AC adapter

	TA410	TA430, TA430-A	TA440, TA440-A
Velocity range 0 to 20.00 m/s (0 to 4000 ft/min)	+		
Velocity range 0 to 30.00 m/s (0 to 6000 ft/min)		+	+
Temperature	+	+	+
Flow		+	+
Humidity, wet bulb, dew point			+
Probe	Straight	Straight or -A articulated	Straight or -A articulated
Variable time constant		+	+
Manual data logging		+	+
Auto save data logging			+
Statistics		+	+
Review data		+	+
LogData2 downloading software		+	+
Free Certificate of Calibration	+	+	+

<sup>1</sup> Temperature compensated over an air temperature range of 5 to 65°C (40 to 150°F).

<sup>2</sup> The accuracy statement begins at 30 ft/min through 4000 ft/min (0.15 m/s through 20 m/s) for the Model TA410, and 30 ft/min through 6,000 ft/min (0.15 m/s through 30 m/s) for Models TA430 and TA440.

<sup>3</sup> Accuracy with instrument case at 25°C (77°F), add uncertainty of 0.03°C/°C (0.05°F/°F) for change in instrument temperature.

<sup>4</sup> Accuracy with probe at 25°C (77°F). Add uncertainty of 0.2% RH/°C (0.1% RH/°F) for change in probe temperature. Includes 1% hysteresis.

# Calibration Certificate of Air Flow Meter

AAST-FLOW-03, Cal=25 Jan 2022



Cal Lab Limited 校正實驗室有限公司

Room 2103, Technology Plaza, 29-35 Sha Tsui Road,  
Tsuen Wan, NT, Hong Kong  
Tel: +852 25680106 Email: info@callab.com.hk  
Fax: +852 30116194 Website: www.callab.com.hk



Calibration Certificate No.: CC0332201

#### Customer Information

Customer: Castco Testing Centre Limited  
Address: 33 On Kui Street, Fanling, N.T., Hong Kong

#### Equipment Identification

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.:
Air Velocity Meter	TSI	TA440	TA4401706003	AAST-FLOW-03

#### Certificate Information

Date of Receipt:	21 January 2022	Calibration Condition:	24.3°C, 53%RH, 1008hPa
Date of Calibration:	25 January 2022	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	SOP-116	Remark:	N/A

#### Reference Equipment Identification

Equipment Description	Model	Serial No.	Expiration Date
Hot Wire Anemometer	9535	T95351316004	11 July 2022

#### Result of Calibration

Air Flow Rate					
Reference Reading (m/s)	Measured Reading (m/s)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
0.00	0.00	N/A	3.6	± 3%	Mfr's Spec.
0.51	0.50	-2.0	3.6	± 3%	Mfr's Spec.
5.02	4.89	-2.6	3.6	± 3%	Mfr's Spec.
10.03	10.05	2.0	3.6	± 3%	Mfr's Spec.

CT-AFR-01

Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.  
Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.  
Note3: The result 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.  
Note4: The result shown in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Rex Tse

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 25 January 2022

CT-BEG-03

\*\*\* End of Certificate \*\*\*

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Calibration  
2. The certificate is issued subject to the latest Terms and Conditions, available at our web site

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**Cal Lab Limited 校正實驗室有限公司**

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Tsuen Wan, NT, Hong Kong  
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**Calibration Certificate No.: CC0222301**

**Customer Information**

Customer: Castco Testing Centre Limited  
Address: 33, On Kui Street, Fanling, N.T.

**Equipment Identification**

Equipment Description	Manufacturer	Model No.	Serial No.	Assigned equipment No.
Air Velocity Monitor	TSI	AIRFLOW TA440	TA4401706003	AAST-FLOW-03

**Certificate Information**

Date of Receipt:	11 January 2023	Calibration Condition:	23.5°C, 58%RH, 1003hPa
Date of Calibration:	13 January 2023	Adjustment:	N/A
Due Date of Calibration:	N/A	Appearance:	Good
Calibration Procedure:	SOP-112	Remark:	N/A

**Reference Equipment Identification**

Equipment Description	Model	Serial No.	Expiration Date
Hot Wire Anemometer	9535	T95351316004	11 August 2024

**Result of Calibration**

**Air flow rate – Error of indication**

Reference reading (L/min)	Measured reading (L/min)	Error (%)	Uncertainty (%FS)	Technical Requirement	Technical Reference Doc.
0.5	0.51	2.0	3.6	± 5 %	JIG 956-2013
1.0	0.99	-1.0	3.6	± 5 %	JIG 956-2013
2.0	2.03	1.5	3.6	± 5 %	JIG 956-2013
5.0	5.07	1.4	3.6	± 5 %	JIG 956-2013

CT-AFR-01

- Note1: The estimated expanded uncertainties have been calculated in "Evaluation and expression of uncertainty in measurement" and give an internal estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
- Note2: The standard (s) and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
- Note3: The result 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.
- Note4: The result shows in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated By:

Wing Cheng

Checked and Approved By:

Warren Yeung

Company Chop:



Certificate Issue Date: 13 January 2023

CT-BEG-03

\*\*\* End of Certificate \*\*\*

1. The certificate shall not be reproduced except in full, without written approval of Cal Lab Calibration CC0222301  
2. The certificate is issued subject to the latest Terms and Conditions, available at our web site Page 1 of 1

**Appendix K – Noise monitoring results and graphical presentation**

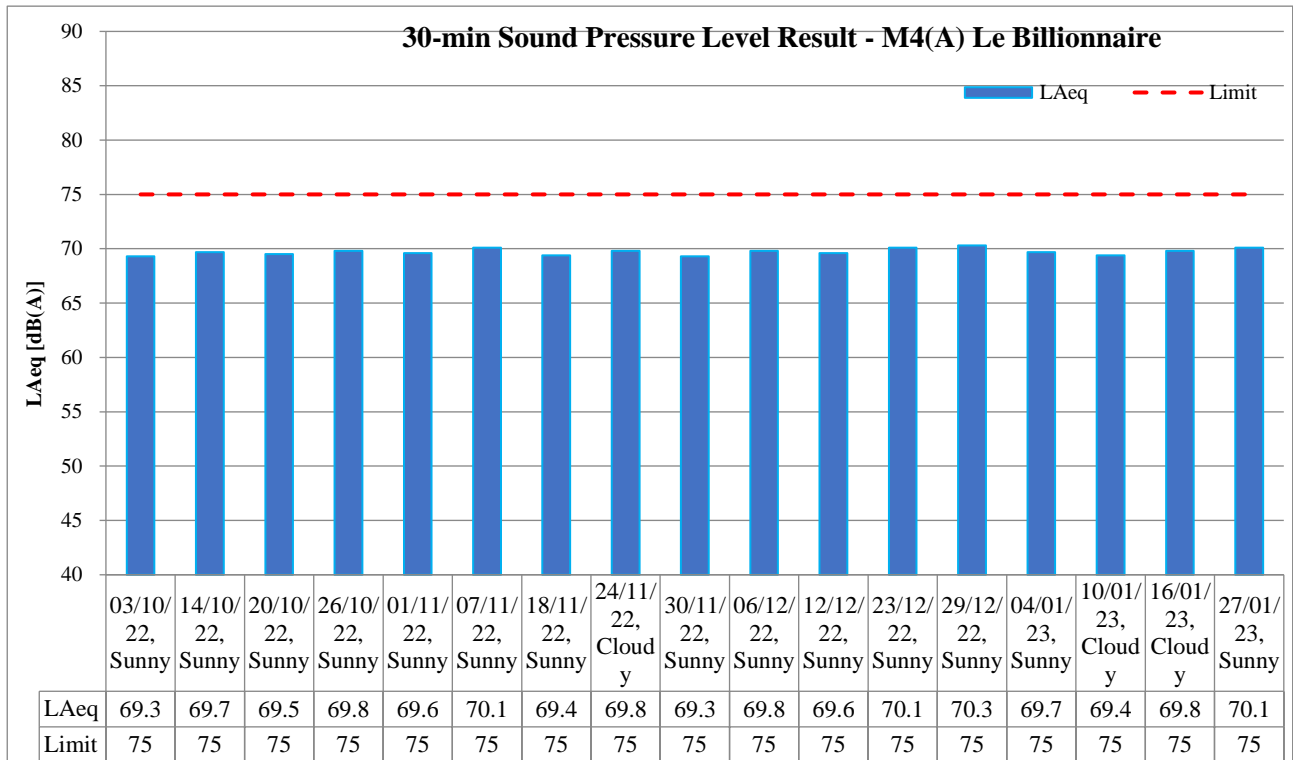
**M4(A) – Le Billionnaire**

Date	Temp (°C)	Weather	Measured Noise Level at M4(A), dB(A)							Limit
			Time		Baseline	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>		
04/01/2023	20.1	Sunny	9:30	-	10:00	69.5	69.7	71.1	68.3	75
10/01/2023	18.7	Cloudy	13:15	-	13:45	69.5	69.4	70.8	68.1	75
16/01/2023	13.5	Cloudy	13:10	-	13:40	69.5	69.8	71.3	68.5	75
27/01/2023	16.3	Sunny	9:26	-	9:56	69.5	70.1	71.4	68.7	75
							Maximum	70.1		
							Minimum	69.4		
							Average	69.8		

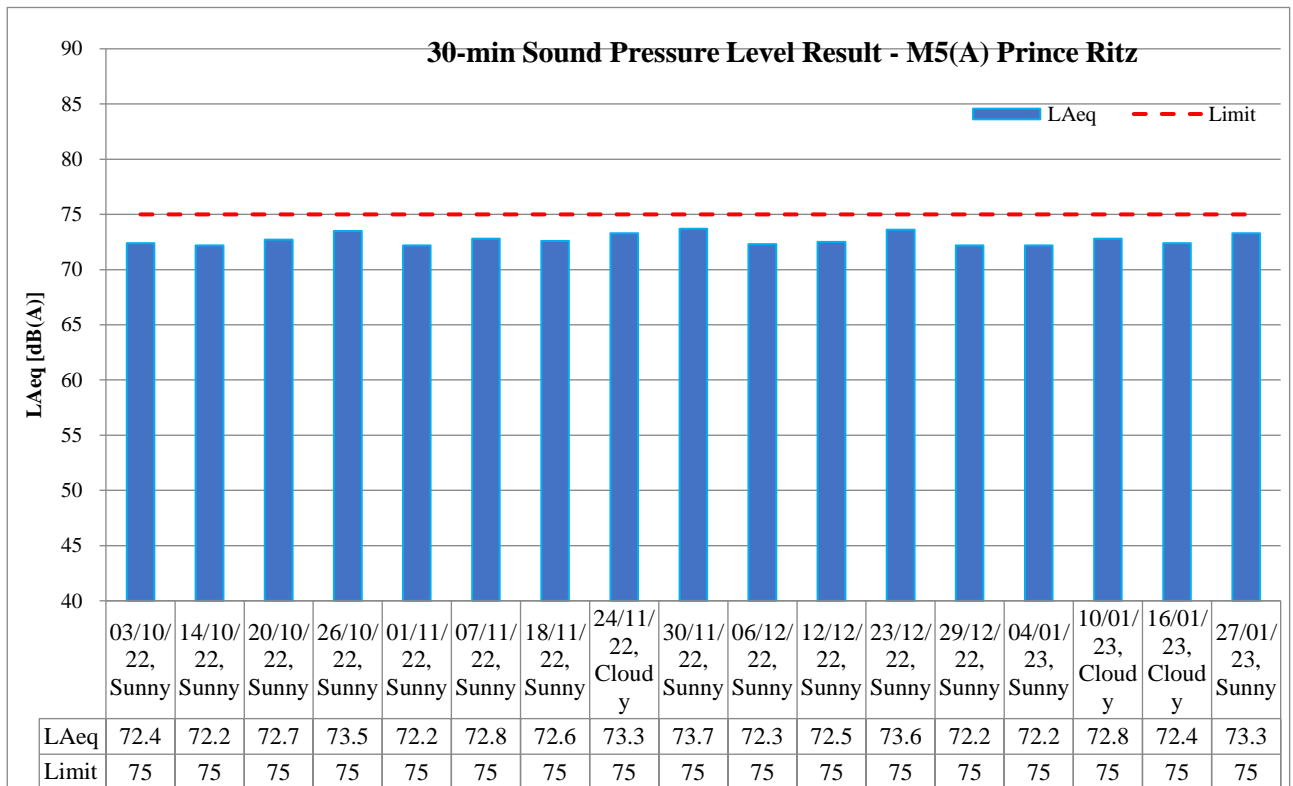
**M5(A) – Prince Ritz**

Date	Temp (°C)	Weather	Measured Noise Level at M5(A), dB(A)							Limit
			Time		Baseline	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>		
04/01/2023	20.1	Sunny	10:30	-	11:00	72.5	72.2	73.9	69.6	75
10/01/2023	18.7	Cloudy	14:30	-	15:00	72.5	72.8	74.7	70.3	75
16/01/2023	13.5	Cloudy	14:25	-	14:55	72.5	72.4	74.0	69.8	75
27/01/2023	16.3	Sunny	10:21	-	10:51	72.5	73.3	75.0	70.7	75
							Maximum	73.3		
							Minimum	72.2		
							Average	72.7		

**L<sub>Aeq</sub>, 30-min graphical results of M4(A) – Le Billionnaire**



**L<sub>Aeq</sub>, 30-min graphical results of M5(A) – Prince Ritz**



Major Construction Activities	Reporting Period			
	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Construction works at Crowd Dispersal Route	✓			
Construction of DCS	✓	✓	✓	✓
Construction works for Road L16	✓	✓	✓	✓
Construction works for Olympic Avenue	✓	✓	✓	✓
Construction works for additional run-in at Road L7		✓	✓	✓
Construction of gantry footing at launching shaft for subway SB-01				✓
Dismantling of gantry crane at casting yard			✓	✓
ELS and excavation works at Sa Po Road			✓	✓
ELS and excavation works for lift and staircase of LW-02				✓
Post-piling tests and proof drilling for LW02 lift and staircase		✓	✓	
Pre-bored socket H-pile construction works for Slip Road S14	✓	✓	✓	✓
Erection of falseworks and working platform for decking of Elevated Walkway LW-02	✓	✓	✓	✓
UU diversion at Sa Po Road under TTA Stage 2A	✓			
RC construction at launching shaft for subway SB-01	✓	✓	✓	✓
Construction works for Pedestrian Street No. 2	✓	✓	✓	
RC construction for Subway KS10 Lift and Staircase	✓	✓	✓	✓
Renovation works for existing subways KS9, KS32 and KS10	✓	✓	✓	✓
Mini pile construction works for LW-02 lift and staircase	✓	✓		
Ground improvement works at Sa Po Road	✓	✓		

Factors might affect the monitoring results	Reporting Period			
	Oct 2022	Nov 2022	Dec 2022	Jan 2023
Non-project related construction activities in the adjacent construction sites were observed.	✓	✓	✓	✓

**Appendix L – Event and Action Plan for noise**

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Action Level being exceeded	<ol style="list-style-type: none"> <li>1. Notify Supervisor / ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, Supervisor / ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Advise the Supervisor / ER on the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposal to IEC and Supervisor / ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> <li>1. Inform IEC, Supervisor /ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contract's working procedure;</li> <li>6. Discuss remedial measures required with the IEC, Contractor and Supervisor /ER;</li> <li>7. Assess effectiveness of</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss the potential remedial actions with Supervisor /ER, ET and Contractor;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and Supervisor /ER within 3 working days of notification;</li> <li>3. Implement the agreed proposal;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.</li> </ol> <p>(The above actions should be</p>



Event	Action			
	ET	IEC	Supervisor / ER	Contractor
	<p>Contractor's remedial actions and keep IEC, EPD, and Supervisor /ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified.)</p>		<p>exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified.)</p>	<p>taken within 2 working days after the exceedance is identified.)</p>

**Appendix M – Event and Action Plan for Landscape and Visual Impact**

Event	Action			
	ET	IEC	Supervisor / ER	Contractor
Design Check	<ol style="list-style-type: none"> <li>1. Check final design conforms to the requirements of EP and prepare report.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check report.</li> <li>2. Recommend remedial design if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Undertake remedial design if necessary.</li> </ol>	
Non-conformity on one occasion	<ol style="list-style-type: none"> <li>1. Identify Source.</li> <li>2. Inform IEC and Supervisor /ER.</li> <li>3. Discuss remedial actions with IEC, Supervisor /ER and Contractor.</li> <li>4. Monitor remedial actions until rectification has been completed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check report.</li> <li>2. Check Contractor's working method.</li> <li>3. Discuss with ET and Contractor on possible remedial measures.</li> <li>4. Advise Supervisor /ER on effectiveness of proposed remedial measures.</li> <li>5. Check implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> <li>2. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Amend working methods.</li> <li>2. Rectify damage and undertake any necessary replacement.</li> </ol>
Repeated Non-conformity	<ol style="list-style-type: none"> <li>1. Identify Source.</li> <li>2. Inform IEC and Supervisor /ER.</li> <li>3. Increase monitoring frequency.</li> <li>4. Discuss remedial actions with IEC, Supervisor /ER and Contractor.</li> <li>5. Monitor remedial actions until rectification has been completed.</li> <li>6. If non-conformity stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring report.</li> <li>2. Check Contractor's working method.</li> <li>3. Discuss with ET and Contractor on possible remedial measures.</li> <li>4. Advise Supervisor /ER on effectiveness of proposed remedial measures.</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> <li>2. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Amend working methods.</li> <li>2. Rectify damage and undertake any necessary replacement.</li> </ol>

**Appendix N – Waste Flow Table**

**MONTHLY SUMMARY WASTE FLOW TABLE FOR 2023 (YEAR)**

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated A + B	Broken Concrete Generated A	General fill Generated B	Broken Concrete Reused in the Contract	General Fill Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse
	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000m <sup>3</sup> ]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m <sup>3</sup> ]
JAN	0.67	0.00	0.67	0.00	0.09	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.01
FEB													
MAR													
APR													
MAY													
JUNE													
SUB-TOTAL	0.67	0.00	0.67	0.00	0.09	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.01
JULY													
AUG													
SEPT													
OCT													
NOV													
DEC													
TOTAL	0.67	0.00	0.67	0.00	0.09	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.01

**Appendix O – Environmental Mitigation Implementation Schedule  
(EMIS)**

EIA Ref	Recommended Mitigation Measures	Implementation			
		Not Observed	Yes	No	Remark
<b>Part B Water Quality</b>					
S8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. <del>Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow</del>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. <del>The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.</del>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. <del>The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.</del>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. Particular attention should be paid to the control of silty surface runoff during storm events.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. <del>An adequately designed and located wheel washing bay should be provided at every site exit, and wash water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Drainage</i> On-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Sewage Effluent</i> Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Stormwater Discharges</i> Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	<i>Debris and Litter</i> In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

EIA Ref	Recommended Mitigation Measures	Implementation			
	is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur				
S8.8	Construction Works at or in Close Proximity of Storm Culvert or Seafront The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Temporary storage of materials (e.g. equipment, filling materials, 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S8.8	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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Construction effluent, site run-off and sewage should be properly collected and/or treated.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S8.8	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Part C Construction Noise Impact</b>		Not Observed	Yes	No	Remark
S7.8	Use of quiet PME, movable barriers for <del>Asphalt Paver, Breaker, Excavator and Hand-held breaker</del> and full enclosure for <del>Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S7.9	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. <del>Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible.</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. <del>Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</del>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Part D Waste / Chemical Management</b>		Not Observed	Yes	No	Remark
S5.2	Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Provision of sufficient waste disposal points and regular collection for waste. Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. Separation of chemical wastes for special handling and appropriate treatment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S9.5	1)Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site 2)Training of site personnel in proper waste management and chemical waste handling procedures 3)Provision of sufficient waste disposal points and regular collection for disposal 4)Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers 5)A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



EIA Ref	Recommended Mitigation Measures	Implementation			
S9.5	Waste Reduction Measures 1) Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals 2) Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal 3) Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force 4) Any unused chemicals or those with remaining functional capacity should be recycled 5) Proper storage and site practices to minimize the potential for damage or contamination of construction materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S9.5	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: 1) <del>Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible</del> 2) <del>Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric</del> 3) <del>Skip hoist for material transport should be totally enclosed by impervious sheeting</del> 4) Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site 5) The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores 6) <del>The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle</del> 7) <del>All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S9.5	When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S9.5	Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Part E Landscape &amp; Visual</b>		Not Observed	Yes	No	Remark
S13.9	CM1 - All existing trees should be carefully protected during construction. <del>CM2 - Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</del> CM3 - Control of night-time lighting. CM4 - Erection of decorative screen hoarding.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Part F Air Quality</b>		Not Observed	Yes	No	Remark
S6.8	<del>Stockpiling site(s) should be lined with impermeable sheeting and bunded.</del> Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	Misting for the dusty material should be carried out before being loaded into the vehicle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	<del>The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	Vehicle washing facilities should be provided at every vehicle exit point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.8	<del>Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</del>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

EIA Ref	Recommended Mitigation Measures	Implementation			
S6.8	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S6.8	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S6.5	8 times daily watering of the work site with active dust emitting activities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Appendix P – Summaries of Environmental Complaint, Warning,  
Summon and Notification of Successful Prosecution**

**Reporting Month: January 2023**

<b>Contract No.</b>	<b>Record of Complaint (Yes/No)</b>	<b>Record of Warning (Yes/No)</b>	<b>Notification of Summons and Successful Prosecutions (Yes/No)</b>
ED/2018/05	No	No	No

**Cumulative Statistics on Complaints, Notification of Summons and Successful Prosecutions upto reporting month**

<b>Contract No.</b>	<b>Record of Complaint</b>	<b>Record of Warning</b>	<b>Notification of Summons and Successful Prosecutions</b>
ED/2018/05	1	0	0