Sun Fook Kong – Bestwise Joint Venture

Contract No. DC/2009/10 HATS Stage 2A – Upgrading Works at Stonecutters Island Sewage Treatment Works - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

Monthly Environmental Monitoring and Audit Report February 2021

(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.

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

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MOTT MACDONALD

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Attn: Mr. K K Kam

Agreement No. CE 8/2009(EP) Harbour Area Treatment Scheme Stage 2A Independent Environmental Checker for Construction Phase – Investigation

Our Reference
EC/AFK/DC/jl/T261332/
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Contract No. DC/2009/10 – Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities

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Condition 4.4 – Monthly EM&A Report for February 2021 (no. 119) Version 1.0

10 March 2021

By Post

Dear Sir,

I refer to the captioned Monthly EM&A Report for February 2021 (version 1.0) submitted by ET on 8 March 2021 via email. In accordance with Condition 4.4 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned Monthly EM&A Report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Ir Dr Anne F Kerr
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c.c.

Ove Arup & Partners HK Limited	Mr. Mark Ngan	Fax: 2370 4377
Sun Fook Kong – Bestwise Joint Venture	Mr. Keith Ho	By email
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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan
SCISTW	Stonecutters Island Sewage Treatment Works
HATS Stage 2A	Harbour Area Treatment Scheme Stage 2A
SBJV	Sun Fook Kong - Bestwise Joint Venture

EXECUTIVE SUMMARY

Introduction

1. This is the 119th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for DSD Contract No. DC/2009/10 "HATS Stage 2A – Upgrading Works at Stonecutters Island Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities" (The Project) which documents the key information of EM&A and environmental monitoring works undertaken by other Contracts at the SCISTW under HATS Stage 2A with the same Environmental Permit (Permit No. EP-322/2008/G).

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

MPS2
- Defects rectification (on-going)
- Pre-handover inspection and defects rectification for Valve Chamber

NaOCl Compound
- T&C for Washout Chamber, and Barge Unloading in progress

CEPT
- Preparation works and equipment trail run for opening of north Primary Sedimentation Tank (Stage 3 CEPT handover).
- Scraper removal and diffuser replacement Flocculation Tank 6 in progress

DOU3
- Replacement of Irrigation Pumps And pipework For Biotrickling Filter #4
- New Media in Biotrickling Filter #4

Environmental Monitoring Works

3. The environmental monitoring works of the Project were conducted by the ETs for Contract DC/2009/10, at the SCISTW under HATS 2A with the same Environmental Permit. The monitoring results were checked and reviewed and the site audits were conducted once per week. The implementation of the Environmental Mitigation Measures, Event Action Plans and Environmental Complaint Handling Procedures were also checked.

4. Summary of the non-compliance of the reporting month is tabulated in **Table I**.

Table I Summary Table for Non-compliance Recorded in the Reporting Month

Monitored By	Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
			Action Level	Limit Level	Action Level	Limit Level	
DC/2009/10	NM5	Noise	0	0	0	0	N/A
	NM6	Noise	0	0	0	0	N/A
	AM7	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	AM8	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A

Monitored By	Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
			Action Level	Limit Level	Action Level	Limit Level	
	AM6b	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Environmental Licenses and Permits

8. Licenses/Permits granted to the Project include the Environmental Permit (EP); Billing account for Disposal of Construction Waste, Registered as Chemical Waste Producer.

Environmental Mitigation Implementation Schedule

9. According to the EIA Report Section 3.74, 4.56 and 13.44, air quality, noise and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix J.**

Key Information in the Reporting Month

10. 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	---
Status of submissions under EP	1	Monthly EM&A Report for January 2021	Submitted on 15 February 2021	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

11. No environmental complaint and prosecution was received for the Project in the reporting month.

12. There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix K.**

Future Key Issues:

13. Major site activities for the coming two months include:

DOU3
- Reliability test for DOU3

MPS2
- Handover of Inlet Chamber and Valve Chamber
- Hand over for NaOCl Dosing System, Barge Unloading and Washout Chambers
- Defect rectification

CEPT Tank
- Handover of CEPT
- Corrective maintenance for Flocculation Tank 6

14. The environmental concerns in the coming months are mainly on construction waste and general refuse storage.

1. INTRODUCTION

Background

1.1 The Project 'HATS Stage 2A - Upgrading works at Stonecutters Island Treatment Works (SCISTW) – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities' under Contract No: DC/2009/10 mainly comprises the construction of a large underground pumping station with an internal diameter of 55 metres and a depth of more than 40 metres, the provision of additional double-tray sedimentation tanks, a new computer control system, the expansion and modification of existing installations of the SCISTW as well as the construction of other ancillary facilities. The general location plan of the Project is shown in **Figure 1**.

1.2 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project with Register No. : AEIAR-121/2008. The current works under the Project at SCISTW for HATS 2A are covered by the Environmental Permit (Permit No. EP-322/2008/G), which was issued on 9th May 2014 by the Environmental Protection Department (hereinafter called EPD) to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.

1.3 Sun Fook Kong - Bestwise Joint Venture (hereafter called the SBJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/10 "HATS 2A –Upgrading works at Stonecutters Island Treatment Works – Main Pumping, Sedimentation Tanks and Ancillary Facilities". The date of commencement of construction of the Project is 24th February 2011.

1.4 Wellab Limited was commissioned by SBJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP. The date of commencement of EM&A works is 14th April 2011. The Project cover the environmental monitoring works at monitoring stations AM6b, AM7, AM8, NM5 and NM6.

1.5 This is the 119th monthly EM&A report summarizing the EM&A works conducted for the Project in February 2021.

Project Organizations

1.6 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 2**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.
Ove Arup & Partners Hong Kong Ltd	Engineer's Representative	Mr. M P Gamini Ananda	Senior Resident Engineer	6049 5561
	Coordinator	Mr. Tony Yeung	Resident Engineer	6049 5562
Wellab	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Mr. Howard Chan	Project Coordinator & Audit Team	2151 2073

Party	Role	Name	Position	Phone No.
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Sun Fook Kong - Bestwise Joint Venture	Contractor	Mr. Keith Ho	Site Agent	2620 0070
		Mr. Albus Cheung	Environmental Officer	2620 0070

Summary of EM&A Requirements

1.7 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual 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 mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

1.8 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.

1.9 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely air quality, noise and audit works conducted for the Project in February 2021.

2. AIR QUALITY

Monitoring Requirements

2.1 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Three designated monitoring stations, AM6b, AM7 and AM8 were selected for impact dust monitoring for the Project. The pervious location of AM6a was not available for future monitoring due to no secured power supply for operation and therefore the previous location of AM6a was relocated to the monitoring station AM6b on 20th October 2020 after handover of part of Portion 7. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM6b(1)	DC/2009/10	Works site boundary
AM7		North West Kowloon Sewage Pumping Station
AM8		Block A of Government Dockyard

Remark:
(1) AM6b – The pervious location of AM6a was relocated after handover of part of Portion 7.

Monitoring Equipment

2.1 **Table 2.2** summarizes the air quality monitoring equipment and **Appendix B** shows the copies of calibration certificates for the equipment at AM6b, AM7 and AM8.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Laser Dust Monitor	Met One Instruments no. AEROCET-831	5
HVS Sampler	TISCH: Model no. TE-5170	3
Calibrator	TISCH: Model TE-5025A	1

Monitoring Parameters, Frequency and Duration

2.2 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for AM6b, AM7 and AM8 are shown in **Appendix C.**

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
All monitoring locations	1-hour TSP	0700-1900 hrs	3 times/ every 6 days
	24-hour TSP	0000-2400 hrs	once in every 6 days

Monitoring Methodology and QA/QC Procedure

2.3 The monitoring methodology and QA/QC procedures for monitoring station AM6b,

AM7 and AM8 are presented as follow:

2.4 The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's observation on the monitoring day.

TSP Monitoring with Laser Dust Monitor

Measuring Procedures

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

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Remove the red rubber cap from the AEROCET-831 inlet nozzle.
- Turn on the power switch that is located on the right side of the AEROCET-831.
- On power up the product intro screen is displayed for 3 seconds. The intro screen displays the product name and firmware version.
- Then the main counter screen will be displayed.
- Press the START button. Internal vacuum pump start running. After 1 minute the pump will stop and the 0.5µm and 5µm channels will show the cumulative counts of particles larger than 0.5µm and 5µm per cubic foot.
- The AEROCET-831 is now checked out and ready for use.
- To switch off the AEROCET-831 power to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, and display value and site condition were recorded during the monitoring period.

Maintenance/Calibration

2.6 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.

TSP Monitoring with High Volume Sampler

Instrumentation

2.7 High Volume Sampler (HVS) completed with appropriate sampling inlets was employed for air quality monitoring. Each sampler comprised of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

HVS Installation

2.8 The following guidelines were adopted during the installation of HVS:

- Sufficient support was provided 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 samplers were more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

2.9 Fibre glass filters, which have a collection efficiency of larger than 99% of particles of 0.3 μm in diameter, were used. A HOKLAS accredited laboratory, Wellab Ltd., was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Wellab's monitoring team.

2.10 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

2.11 Wellab Ltd. has a comprehensive quality assurance and quality control programme.

Operating/Analytical Procedures

2.12 Operating/analytical procedures for the air quality monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 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 quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centred with the stamped number upwards, on a supporting screen.
- 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.
- The shelter lid was closed and secured with the aluminium strip.
- 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).
- After sampling, the filter was removed and sent to the Wellab Ltd. for weighing. The elapsed time was also recorded.
- 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%. Weighing results were returned to Wellab for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

2.13 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.

Results and Observations

2.14 **Table 2.4** summarizes the monitoring results at AM6b, AM7 and AM8 in the reporting month.

Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Result in the Reporting Month

Air Quality Monitoring Station	Average µg/m3	Range µg/m3	Action Level µg/m3	Limit Level µg/m3
1 hour TSP				
AM6b	73	26 – 137	346	500
AM7	92.7	32.7 – 133.2	322	
AM8	80.9	24.4 – 117.5	307	
24 hours TSP				
AM6b	71	21 – 92	196	260
AM7	43	25 – 54	207	
AM8	47	16 – 63	158	

2.15 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix F.**

2.16 All 24-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix F.**

2.17 The details and graphical presentations of the air quality monitoring results at AM6b, AM7 and AM8 are shown in **Appendix D**.

2.18 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from vehicles movement and construction activities from other Contract in the site.

3. NOISE

Monitoring Requirements

3.1 Two noise monitoring stations, namely NM5 and NM6 was designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

3.2 Monitoring station (NM6) serves as an alternative location for FSD Diving Rescue and Diving Training Centre which is regarded as a Noise Sensitive Receiver (NSR) as it is an institution. Monitoring station (NM6) was set up at the proposed location in accordance with the Monitoring Proposal submitted by ET of Contract DC/2009/05, as agreed by the ER and IEC.

Monitoring Locations

3.3 Noise monitoring was conducted at two designated monitoring stations as listed in **Table 3.1.**

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
NM5	DC/2009/10	Near FSD Diving Rescue and Training Centre
NM6		Customs' Marine Base (Block H of Government Dockyard Rooftop)

Monitoring Equipment

3.4 **Table 3.2** summarizes the noise quality monitoring equipment and **Appendix B** shows the copies of calibration certificates for the equipment used at NM5 and NM6 in the reporting month.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	BSWA, Model no.: BSWA 308 SVANTEK, Model no: SVAN 957	2
Calibrator	SVANTEK, Model no: SV 30A	2

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule of the reporting month for NM5 and NM6 is shown in **Appendix C**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM5 NM6	L_{eq}(30 min.) dB(A)	0700-1900 hrs. on weekdays	Once per week
	L_{eq}(5 min.) dB(A)	During restricted hours	Monitoring to be conducted when construction works were to be carried out

Monitoring Methodology and QA/QC Procedures

3.6 The monitoring methodology and QA/QC procedure at NM5 and NM6 are presented as follow:

3.7 General weather conditions (i.e. sunny, cloudy or rainy) were recorded by field observation during equipment checking and estimated according to weather data from the Hong Kong Observatory.

Field Monitoring

3.8 The monitoring procedures are as follows:

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure good 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
  - Measurement time : 30 minutes

- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- Noise monitoring was carried out 30 minutes during on the monitoring days. Monitoring data was recorded and stored automatically within the sound level meter system. At the end of the monitoring period, noise levels in term of L_{eq}, L_{90} and L_{10} were recorded.
- All the monitoring data within the sound level meter system was downloaded through the computer software, and all these data was checked and reviewed within the computer.

Maintenance and Calibration

3.9 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals.

Results and Observations

3.10 **Table 3.4** summarizes the monitoring results at NM5 and NM6 in the reporting month.

Table 3.4 Summary the Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Noise Monitoring Station	Range, dB(A) L_{eq}(30 min.)	Limit Level dB(A)
NM5	59.8 – 60.8	75.0
NM6	50.8 – 62.5	75.0

3.11 The construction noise monitoring at the designated location was conducted by the ET of Contracts DC/2009/10 as scheduled in the reporting month. The monitoring results and graphical presentations could be referred to **Appendix E**.

3.12 1900-2300 hours noise monitoring was not conducted in the reporting month as there were no construction works during the period of restricted hours.

3.13 No Action/Limit Level exceedance was recorded in the reporting month. Summary of exceedance is presented in **Appendix F**.

3.14 The major noise sources identified at the designated noise monitoring stations were vehicle movement and construction activities from other Contract in Stonecutters Island STW.

4. ENVIRONMENTAL AUDIT

Site Audits

4.1 Site audits were conducted on a weekly basis to monitor the implementation of environmental management practices and mitigation measures at the site area by the Contractor.

4.2 Site inspections were undertaken to ensure and check that the implementation and maintenance of mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

4.3 The summaries of site audits are attached in **Appendix G**.

Implementation Status of Environmental Mitigation Measures

4.4 Details of the implementation of mitigation measures are provided in the **Appendix J**.

4.5 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1**.

Table 4.1 Observations of Site Audit

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	N/A	There was no observation in the reporting month.	N/A
Air Quality	N/A	There was no observation in the reporting month.	N/A
Waste/ Chemical Management	210210-R01	To clear general refuse and keep site area clean and tidy.	General refuse was cleared.
	210225-R01	To dispose of general refuse properly and keep the site clean and tidy.	Follow-up action will be reported in next monthly report.
Landscape and Visual	N/A	There was no observation in the reporting month.	N/A
Noise	N/A	There was no observation in the reporting month.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Review of Environmental Monitoring Procedures

4.6 The monitoring works conducted by Contract DC/2009/10's ET were reviewed at a regular basis to ensure the monitoring procedures were carried out properly.

Status of Environmental Licensing and Permitting

4.7 All permits/licenses obtained for the Contract DC/2009/10 are summarized in **Table 4.2**.

Table 4.2 Summary of Environmental Licence / Permit for DC/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00024404-2016	19/5/2016	31/5/2021	The application was approved on 19-5-2016.	Valid
WT00025973-2016	22/11/2016	31/5/2021	The application was approved on 22/11/2016.	Valid
Registered Chemical Waste Producer				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
Billing Account for Disposal of Construction Waste				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
Notification of Works Under APCO				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A

Status of Waste Management

4.8 The amount of wastes generated by the activities of the Project in the reporting month is shown in **Appendix H**.

Implementation Status of Event Action Plans

4.9 The Event Action Plans for air quality and noise are presented in **Appendix I.**

1-hr TSP

4.10 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.11 No Action/Limit Level exceedance was recorded.

Construction Noise

4.12 No Action/Limit Level exceedance was recorded.

Landscape and Visual

4.13 No major deficiency was recorded.

Summary of Complaints and Prosecutions

4.14 No environmental complaint and prosecution was received for the Project in the reporting month.

4.15 There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix K**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key environmental issues in the coming month include:

- Disposal/ Storage of general refuse and construction waste on-site;

Monitoring Schedule for the Next Month

5.2 The tentative environmental monitoring schedule over the next month is shown in **Appendix C** of this report.

Construction Program for the Next Month

5.3 The tentative construction program is provided in **Appendix L**.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

6.1 Environmental monitoring and audit works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

6.4 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Audit

6.5 Environmental site audits were conducted as weekly basis in the reporting month. No non-compliance was recorded.

Complaint and Prosecution

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

Recommendations for next reporting month

6.7 The following recommendations were made for the next report month:

Air Quality

- To regularly maintain the machinery and vehicles on site; and
- To follow up any exceedance caused by the construction works.

Noise

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers;
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location;
- To provide adequate lubricant on mechanical equipments to reduce frictional noise; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

Water Quality

- To provide adequate temporary drainage system with adequate capacity; and
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.

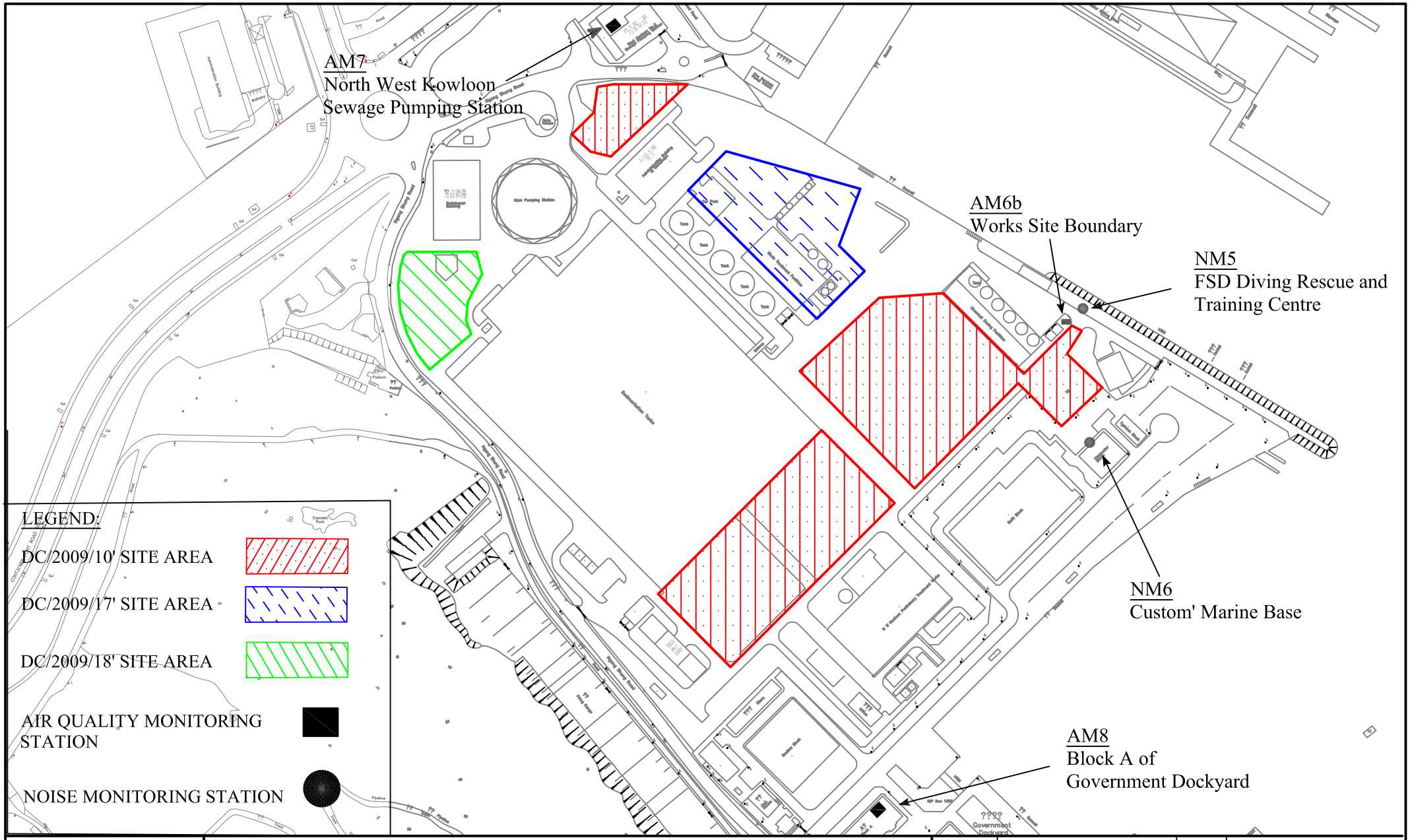
Waste/Chemical Management

- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide adequate chemical waste storage area on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment; and
- To avoid improper handling or storage of oil drum and cement on site.

Landscape and Visual

- To erect and maintain the protection fence around the retained trees; and
- To avoid any construction materials being placed inside the tree protection zone.

FIGURES



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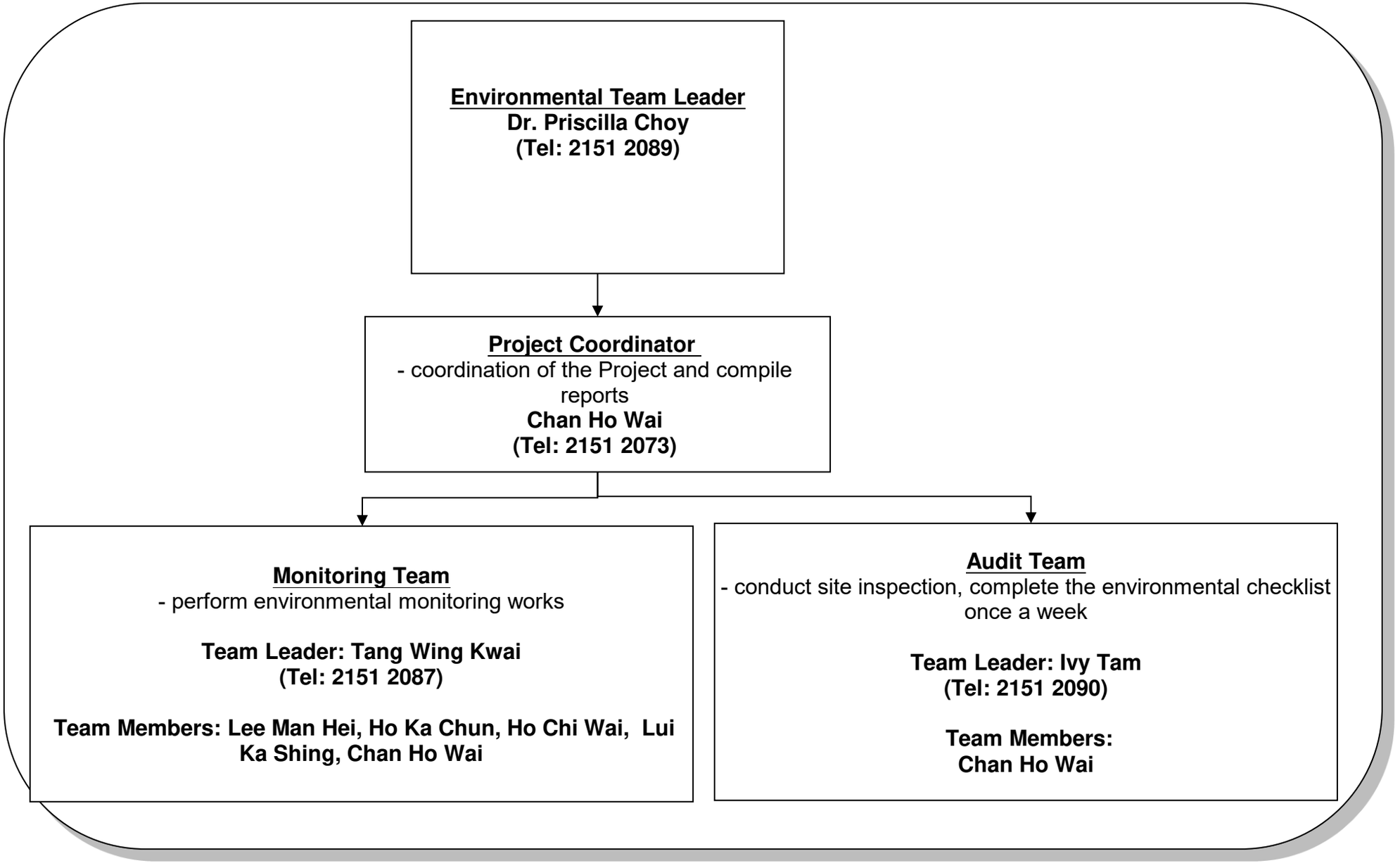
Contractor No. DC/2009/10
HATS 2A - Upgrading Main Pumping Station, Sedimentation Tank and Ancillary Facilities at SCISTW

General Location Plan of the Project and Location of
Air Quality and Noise Monitoring Stations

SCALE	A4@ 1:8000	DATE	Nov 2020
CHECK	–	DRAWN	HC
Project No.	MA11007	FIGURE NO. 1	REV –



Title	Contract No. DC/2009/10 HATS Stage 2A – Upgrading Works at SISTW Main Pumping Station, Sedimentation Tanks and Ancillary Facilities ET's Organization Chart	Scale: N.T.S	Project No.: MA11007	WELLAB 匯力 consulting . testing . research
		Version: v.2	Figure: 2	

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

Appendix A Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6b	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Evening Time of normal weekdays and General Holidays: All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during the day-time and evening (0700 to 2300 hours)	N/A	70(1)

Notes: 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.

APPENDIX B
COPIES OF CALIBRATION CERTIFICATES

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WELLAB LIMITED
Room 1701, Technology Park,
18 On Lai Street, Shatin,
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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	34597B
Date of Issue:	2021-01-03
Date Received:	2021-01-02
Date Tested:	2021-01-02
Date Completed:	2021-01-03
Next Due Date:	2021-03-02
Page:	1 of 1

ATTN: **Ms. Meiling Tang**

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X23809
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-03

Test Conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.
2. 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.

Results:

Correlation Factor (CF)	1.068

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
General Manager

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Room 1701, Technology Park,
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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	34597C
Date of Issue:	2021-01-03
Date Received:	2021-01-02
Date Tested:	2021-01-02
Date Completed:	2021-01-03
Next Due Date:	2021-03-02
Page:	1 of 1

ATTN: **Ms. Meiling Tang**

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X23810
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-04

Test Conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.
2. 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.

Results:

Correlation Factor (CF)	1.142

****

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General Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	34596A
Date of Issue:	2020-12-27
Date Received:	2020-12-24
Date Tested:	2020-12-24
Date Completed:	2020-12-27
Next Due Date:	2021-02-26
Page:	1 of 1

ATTN: **Ms. Meiling Tang**

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X24477
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-06

Test Conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.
2. 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.

Results:

Correlation Factor (CF)	1.116

****

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PATRICK TSE
General Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	34596B
Date of Issue:	2020-12-27
Date Received:	2020-12-24
Date Tested:	2020-12-24
Date Completed:	2020-12-27
Next Due Date:	2021-02-26
Page:	1 of 1

ATTN: **Ms. Meiling Tang**

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X24479
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-08

Test Conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.
2. 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.

Results:

Correlation Factor (CF)	1.098

****

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General Manager

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TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	34596D
Date of Issue:	2020-12-27
Date Received:	2020-12-24
Date Tested:	2020-12-24
Date Completed:	2020-12-27
Next Due Date:	2021-02-26
Page:	1 of 1

ATTN: **Ms. Meiling Tang**

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-831
Serial No.	: X24478
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-10

Test Conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Tisch Environmental Inc.
2. 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.

Results:

Correlation Factor (CF)	1.125

****

PREPARED AND CHECKED BY:
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General Manager

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TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	33962
Date of Issue:	2020-08-15
Date Received:	2020-08-13
Date Tested:	2020-08-13
Date Completed:	2020-08-15
Next Due Date:	2021-08-14
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test Conditions:

Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Reading, dB
94	94.0
114	114.0

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
General Manager

WELLAB LIMITED
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Technology Park, 18 On Lai Street,
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TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	33250E
Date of Issue:	2020-03-11
Date Received:	2020-03-10
Date Tested:	2020-03-10
Date Completed:	2020-03-11
Next Due Date:	2021-03-10
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Sound Level Meter
Manufacturer	: BSWA
Model No.	: BSWA 308
Serial No.	: 580008
Equipment No.	: WN-01-06

Test conditions:

Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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General Manager

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TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
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Test Report No.:	34136
Date of Issue:	2020-10-03
Date Received:	2020-09-29
Date Tested:	2020-09-29
Date Completed:	2020-10-03
Next Due Date:	2021-10-02
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Methodology:

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

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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PATRICK TSE
General Manager

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TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1701, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	33963A
Date of Issue:	2020-08-21
Date Received:	2020-08-19
Date Tested:	2020-08-19
Date Completed:	2020-08-21
Next Due Date:	2021-08-20
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Methodology:

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

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
General Manager

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA12/0004

Station: AM6 - Works Site Boundary Operator: HL

Date: 17-Dec-20 Next Due Date: 16-Feb-21

Equipment No.: WA-12-12 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	289.4	Pressure, Pa (mmHg)	767.3

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0588	Intercept, bc	-0.02681
Last Calibration Date:	18-Feb-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	18-Feb-21	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.4	3.59	61.52	8.6	2.99
2	10.7	3.34	57.18	7.0	2.70
3	7.9	2.87	49.20	5.4	2.37
4	5.6	2.41	41.49	3.8	1.99
5	3.3	1.85	31.96	2.4	1.58

By Linear Regression of Y on X

Slope , mw = 0.0469 **Intercept, bw =** 0.0620

Correlation coefficient* = 0.9981

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.15**

Remarks:

Conducted by: LEE MAN HEI Signature: [signature] Date: 17-12-2020

Checked by: W.K. Tang Signature: [signature] Date: 17/12/2020

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA12/0005

Station	AM6 - Works Site Boundary	Operator:	HL
Date:	11-Feb-21	Next Due Date:	10-Apr-21
Equipment No.:	WA-12-12	Serial No.	2355

Ambient Condition			
Temperature, Ta (K)	292	Pressure, Pa (mmHg)	762.6

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0588	Intercept, bc	-0.02681
Last Calibration Date:	18-Feb-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	18-Feb-21	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.4	3.56	61.06	8.1	2.88
2	10.8	3.33	57.02	7.4	2.75
3	7.8	2.83	48.52	5.1	2.29
4	5.7	2.42	41.55	3.7	1.95
5	3.2	1.81	31.24	2.3	1.53

By Linear Regression of Y on X

Slope , mw = **0.0466** **Intercept, bw =** **0.0512**

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.12**

Remarks:

Conducted by: LEE MAN HEI Signature: Lei Date: 11-2-2021

Checked by: WK. Tang Signature: Kwan Date: 11/2/2021

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA14/0004

Station: AM7 - North West Kowloon Sewage Pumping Station Operator: HL
Date: 17-Dec-20 Next Due Date: 16-Feb-21
Equipment No.: WA-12-14 Serial No. 2353

Ambient Condition			
Temperature, Ta (K)	289	Pressure, Pa (mmHg)	767.6

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0588	Intercept, bc	-0.02681
Last Calibration Date:	18-Feb-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	18-Feb-21	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.3	3.58	61.33	8.8	3.03
2	10.4	3.29	56.43	7.4	2.78
3	7.4	2.78	47.67	5.3	2.35
4	4.8	2.24	38.48	3.8	1.99
5	3.2	1.83	31.50	2.3	1.55

By Linear Regression of Y on X

Slope , mw = **0.0481** **Intercept, bw =** **0.0716**

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.40**

Remarks:

Conducted by: LEE Man Hei Signature: Date: 17-12-2020
Checked by: W.K. Tang Signature: Date: 17/12/2020

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA14/0005

Station: AM7 - North West Kowloon Sewage Pumping Station Operator: HL
Date: 11-Feb-21 Next Due Date: 10-Apr-21
Equipment No.: WA-12-14 Serial No. 2353

Ambient Condition			
Temperature, Ta (K)	291.4	Pressure, Pa (mmHg)	763.4

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0588	Intercept, bc	-0.02681
Last Calibration Date:	18-Feb-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	18-Feb-21	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.4	3.57	61.15	8.6	2.97
2	10.7	3.32	56.84	7.8	2.83
3	7.5	2.78	47.66	5.4	2.36
4	4.8	2.22	38.22	3.7	1.95
5	3.3	1.84	31.77	2.3	1.54

By Linear Regression of Y on X

Slope , mw = 0.0486 **Intercept, bw :** 0.0407

Correlation coefficient* = 0.9975

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.41**

Remarks:

Conducted by: LEE MAN HEI Signature: hei Date: 11-2-2021
Checked by: W.K. Tang Signature: Kwan Date: 11/2/2021

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA18/004

Station: AM8 - Block A of Government Dockyard Operator: HL

Date: 17-Dec-20 Next Due Date: 16-Feb-21

Equipment No.: WA-12-18 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	289.1	Pressure, Pa (mmHg)	767.4

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0588	Intercept, bc	-0.02681
Last Calibration Date:	18-Feb-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	18-Feb-21	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.1	3.55	60.81	8.5	2.97
2	10.4	3.29	56.41	6.9	2.68
3	7.6	2.81	48.29	5.0	2.28
4	5.3	2.35	40.40	3.7	1.96
5	3.4	1.88	32.45	2.4	1.58

By Linear Regression of Y on X

Slope , mw = 0.0479 **Intercept, bw =** 0.0123

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.12**

Remarks:

Conducted by: LEE MAN HEI Signature: Date: 17-12-2020

Checked by: W.K. Tang Signature: Date: 17/12/2020

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA18/005

Station: AM8 - Block A of Government Dockyard Operator: HL

Date: 11-Feb-21 Next Due Date: 10-Apr-21

Equipment No.: WA-12-18 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	291.8	Pressure, Pa (mmHg)	763.1

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0588	Intercept, bc	-0.02681
Last Calibration Date:	18-Feb-20	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	18-Feb-21	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.3	3.55	60.86	8.0	2.86
2	10.8	3.33	57.05	6.7	2.62
3	7.9	2.85	48.86	5.2	2.31
4	5.4	2.35	40.48	3.6	1.92
5	3.6	1.92	33.13	2.4	1.57

By Linear Regression of Y on X

Slope , mw = 0.0455 **Intercept, bw =** 0.0704

Correlation coefficient* = 0.9986

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.00**

Remarks:

Conducted by: [illegible] Signature: [signature] Date: 11-2-2021

Checked by: [illegible] Signature: [signature] Date: 11/2/2021

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RECALIBRATION DUE DATE:
February 18, 2021

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	February 18, 2020	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 753.1	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **2896**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4340	3.2	2.00
2	3	4	1	1.0230	6.4	4.00
3	5	6	1	0.9080	8.0	5.00
4	7	8	1	0.8680	8.8	5.50
5	9	10	1	0.7160	12.8	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)
1.0001	0.6975	1.4173	0.9958	0.6944	0.8836
0.9959	0.9735	2.0044	0.9915	0.9692	1.2496
0.9937	1.0944	2.2410	0.9894	1.0896	1.3971
0.9927	1.1436	2.3504	0.9883	1.1386	1.4653
0.9873	1.3790	2.8347	0.9830	1.3729	1.7672
QSTD	**m=**	**2.07675**	**QA**	**m=**	**1.30043**
	b=	**-0.02681**		**b=**	**-0.01672**
	r=	**0.99993**		**r=**	**0.99993**

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

Standard Conditions	
Tstd:	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

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

APPENDIX C
ENVIRONMENTAL MONITORING SCHEDULES

DC/2009/10, HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Impact Air Quality and Noise Monitoring Schedule (February 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb
	1hr TSP X 3			24 hr TSP	1hr TSP X 3 Noise	
7-Feb	8-Feb	9-Feb	10-Feb	11-Feb	**12-Feb**	**13-Feb**
			24 hr TSP	1hr TSP X 3 Noise		
14-Feb	**15-Feb**	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
		24 hr TSP	1hr TSP X 3 Noise			
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
	24 hr TSP	1hr TSP X 3 Noise			24 hr TSP	
28-Feb						

Air Quality Monitoring Station
AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6b - Works Site Boundary

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

DC/2009/10, HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (March 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar
	1hr TSP X 3			24 hr TSP	1hr TSP X 3 Noise	
7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar
		24 hr TSP	1hr TSP X 3 Noise			
14-Mar	15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar
	24 hr TSP	1hr TSP X 3 Noise			24 hr TSP	
21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar
	1hr TSP X 3 Noise			24 hr TSP	1hr TSP X 3	
28-Mar	29-Mar	30-Mar	31-Mar			
			24 hr TSP			

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

Air Quality Monitoring Station
AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6b - Works Site Boundary

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

APPENDIX D
1-HOUR AND 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix D - 1-hour TSP Monitoring Results

Location AM6b - Works Site Boundary

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
1-Feb-21	13:03	Sunny	297.1	3.5006	3.5105	0.0099	11369.8	11370.8	1.0	1.21	1.21	1.21	72.4	136.8	C200901/48
1-Feb-21	14:03	Sunny	297.1	3.4947	3.5016	0.0069	11370.8	11371.8	1.0	1.21	1.21	1.21	72.3	95.4	C200901/51
1-Feb-21	15:03	Sunny	297.3	3.4969	3.5034	0.0065	11371.8	11372.8	1.0	1.21	1.20	1.21	72.3	89.9	C200901/52
5-Feb-21	13:02	Sunny	295.8	3.5042	3.5105	0.0063	11396.8	11397.8	1.0	1.21	1.21	1.21	72.6	86.8	C201001/6
5-Feb-21	14:02	Sunny	295.8	3.4414	3.4479	0.0065	11397.8	11398.8	1.0	1.21	1.21	1.21	72.6	89.5	C200901/63
5-Feb-21	15:02	Sunny	296.0	3.4499	3.4561	0.0062	11398.8	11399.8	1.0	1.21	1.21	1.21	72.6	85.4	C200901/64
11-Feb-21	9:00	Cloudy	290.4	3.5332	3.5351	0.0019	11423.8	11424.8	1.0	1.22	1.22	1.22	73.1	26.0	C201001/28
11-Feb-21	10:00	Cloudy	290.6	3.5316	3.5344	0.0028	11424.8	11425.8	1.0	1.22	1.22	1.22	73.3	38.2	C201001/29
11-Feb-21	11:00	Cloudy	290.7	3.5102	3.5134	0.0032	11425.8	11426.8	1.0	1.22	1.22	1.22	73.3	43.7	C201001/30
17-Feb-21	13:11	Sunny	295.8	3.5061	3.5083	0.0022	11450.8	11451.8	1.0	1.21	1.21	1.21	72.5	30.3	C201001/46
17-Feb-21	14:11	Sunny	295.6	3.5145	3.5171	0.0026	11451.8	11452.8	1.0	1.21	1.21	1.21	72.5	35.8	C201010/47
17-Feb-21	15:11	Sunny	295.7	3.5186	3.5207	0.0021	11452.8	11453.8	1.0	1.21	1.21	1.21	72.5	29.0	C201001/49
23-Feb-21	13:00	Sunny	299.1	3.5449	3.5523	0.0074	11477.8	11478.8	1.0	1.20	1.20	1.20	71.9	102.9	C201001/69
23-Feb-21	14:00	Sunny	299.1	3.5031	3.5114	0.0083	11478.8	11479.8	1.0	1.20	1.20	1.20	71.9	115.4	C201001/71
23-Feb-21	15:00	Sunny	298.9	3.4869	3.4934	0.0065	11479.8	11480.8	1.0	1.20	1.20	1.20	71.9	90.3	C201001/72
													Min	26	
													Max	137	
													Average	73	

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (µg/m^3)
1-Feb-21	13:06	Sunny	107.1
1-Feb-21	14:06	Sunny	133.2
1-Feb-21	15:06	Sunny	92.6
5-Feb-21	13:09	Sunny	132.7
5-Feb-21	14:09	Sunny	122.5
5-Feb-21	15:09	Sunny	94.9
11-Feb-21	9:00	Cloudy	37.3
11-Feb-21	10:00	Cloudy	41.6
11-Feb-21	11:00	Cloudy	32.7
17-Feb-21	13:01	Sunny	79.3
17-Feb-21	14:01	Sunny	92.1
17-Feb-21	15:01	Sunny	99.8
23-Feb-21	13:01	Sunny	107.0
23-Feb-21	14:01	Sunny	103.0
23-Feb-21	15:01	Sunny	114.9
		Minimum	32.7
		Maximum	133.2
		Average	92.7

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (µg/m3)
1-Feb-21	13:16	Sunny	117.5
1-Feb-21	14:16	Sunny	101.4
1-Feb-21	15:16	Sunny	105.9
5-Feb-21	13:17	Sunny	103.7
5-Feb-21	14:17	Sunny	109.6
5-Feb-21	15:17	Sunny	93.2
11-Feb-21	9:00	Cloudy	28.0
11-Feb-21	10:00	Cloudy	32.7
11-Feb-21	11:00	Cloudy	24.4
17-Feb-21	13:17	Sunny	71.0
17-Feb-21	14:17	Sunny	84.4
17-Feb-21	15:17	Sunny	84.9
23-Feb-21	13:20	Sunny	90.5
23-Feb-21	14:20	Sunny	80.9
23-Feb-21	15:20	Sunny	85.4
		Minimum	24.4
		Maximum	117.5
		Average	80.9

Appendix D - 24-hour TSP Monitoring Results

Location AM6b - Works Site Boundary

Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
4-Feb-21	Sunny	292.7	3.4829	3.6439	0.1610	11372.8	11396.8	24.0	1.22	1.22	1.22	1755.6	91.7	C200901/53
10-Feb-21	Rainy	289.4	3.4680	3.5048	0.0368	11399.8	11423.8	24.0	1.22	1.22	1.22	1757.1	20.9	C200901/14
16-Feb-21	Sunny	293.1	3.4945	3.6405	0.1460	11426.8	11450.8	24.0	1.21	1.21	1.21	1747.2	83.6	C201001/31
22-Feb-21	Sunny	294.2	3.4860	3.6347	0.1487	11453.8	11477.8	24.0	1.21	1.21	1.21	1743.9	85.3	C201001/50
26-Feb-21	Cloudy	294.4	3.5134	3.6396	0.1262	11480.8	11504.8	24.0	1.21	1.21	1.21	1737.6	72.6	C201001/73
												Min	21	
												Max	92	
												Average	71	

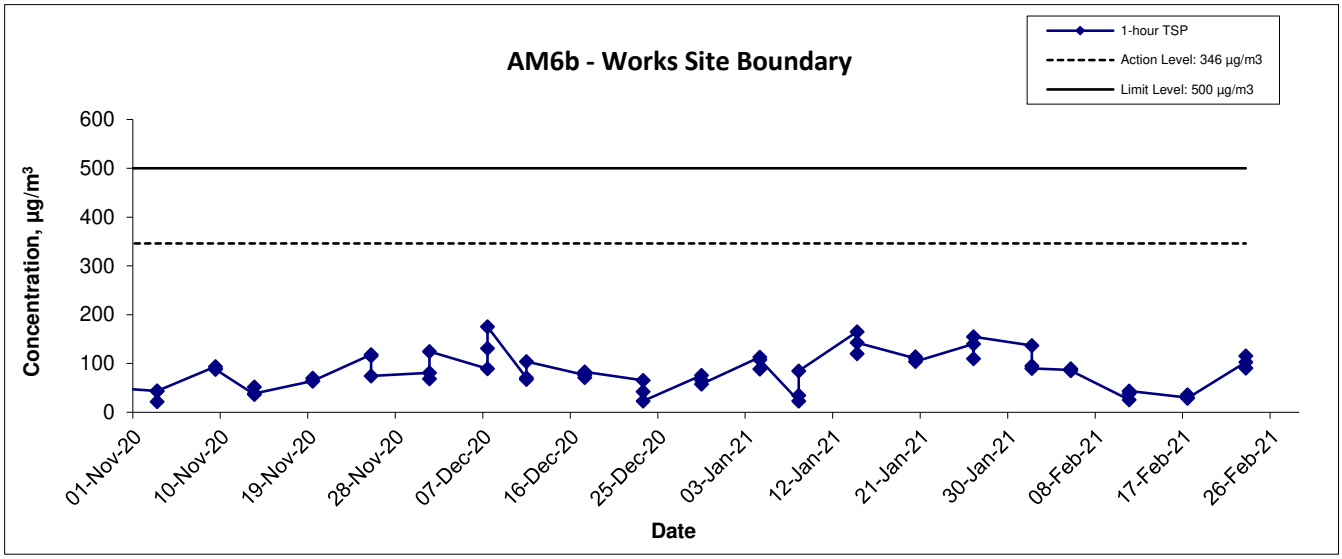
Location AM7 - North West Kowloon Sewage Pumping Station

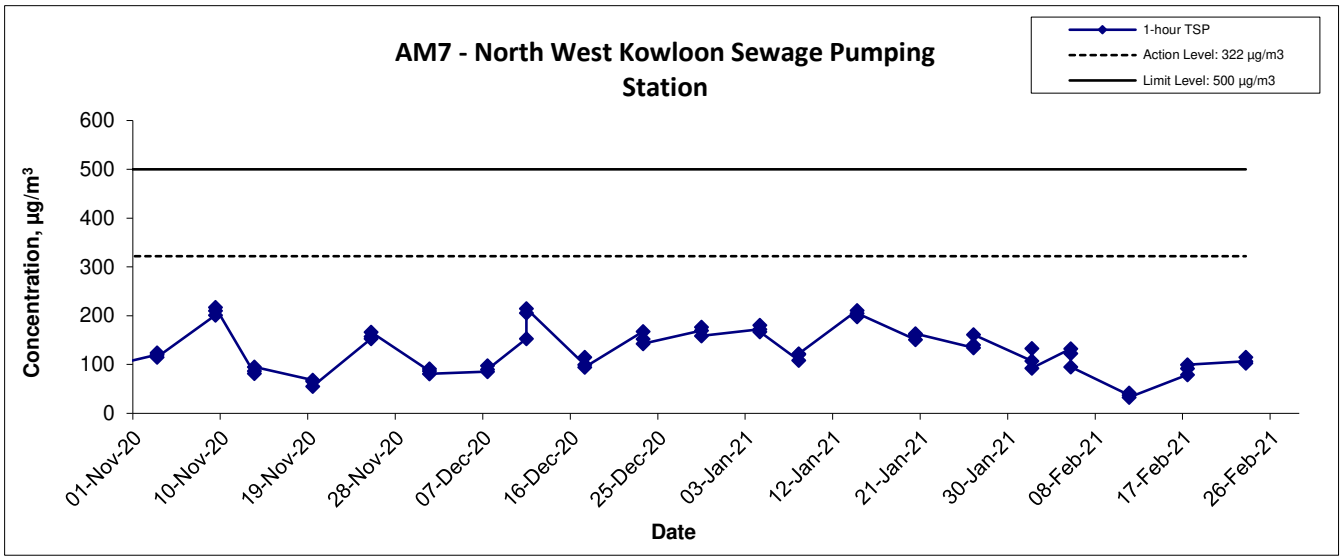
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
4-Feb-21	Sunny	292.8	3.4883	3.5821	0.0938	40614.4	40638.4	24.0	1.21	1.21	1.21	1744.7	53.8	C200901/50
10-Feb-21	Rainy	289.0	3.4584	3.5023	0.0439	40638.4	40662.4	24.0	1.21	1.21	1.21	1747.8	25.1	C200901/62
16-Feb-21	Sunny	293.2	3.5116	3.5932	0.0816	40662.4	40686.4	24.0	1.21	1.21	1.21	1745.6	46.7	C201001/32
22-Feb-21	Sunny	294.3	3.5110	3.5976	0.0866	40686.4	40710.4	24.0	1.21	1.21	1.21	1742.2	49.7	C201001/51
26-Feb-21	Cloudy	294.6	3.5098	3.5795	0.0697	40710.4	40734.4	24.0	1.21	1.20	1.21	1735.3	40.2	C201001/76
												Min	25	
												Max	54	
												Average	43	

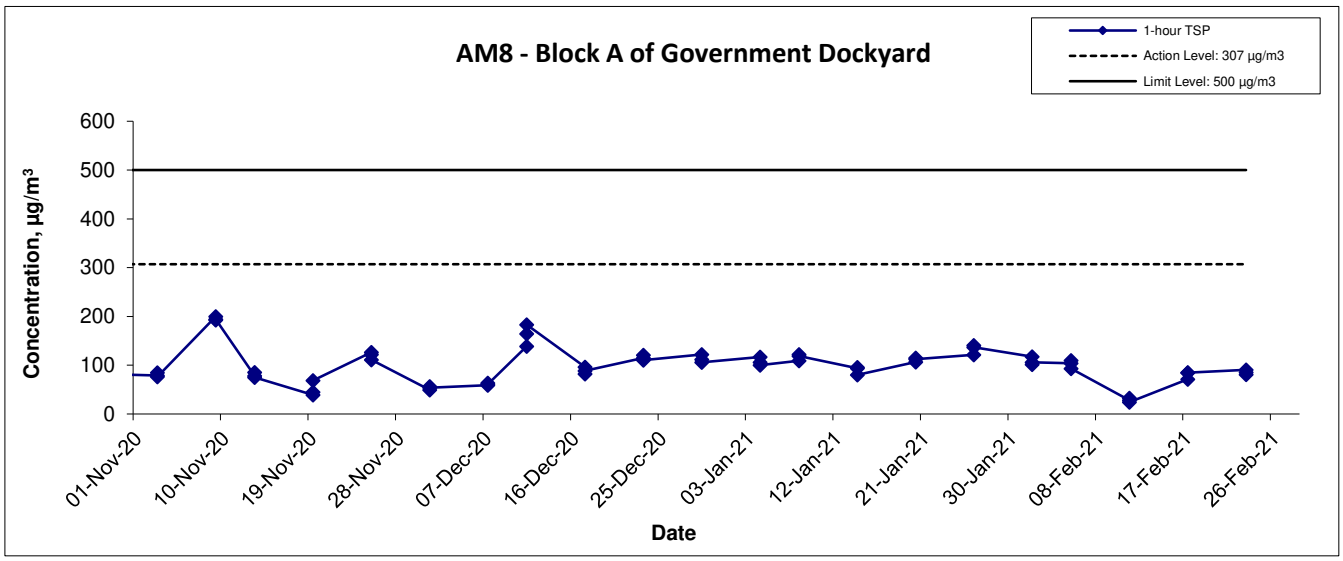
Location AM8 - Block A of Government Dockyard

Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
4-Feb-21	Sunny	292.6	3.5014	3.6107	0.1093	13548.2	13572.2	24.0	1.21	1.21	1.21	1740.2	62.8	C200901/49
10-Feb-21	Rainy	289.1	3.4784	3.5056	0.0272	13572.2	13596.2	24.0	1.21	1.21	1.21	1742.4	15.6	C200901/65
16-Feb-21	Sunny	293.3	3.4933	3.5957	0.1024	13596.2	13620.2	24.0	1.21	1.21	1.21	1748.9	58.5	C201001/33
22-Feb-21	Sunny	294.1	3.5155	3.6061	0.0906	13620.2	13644.2	24.0	1.21	1.21	1.21	1746.4	51.9	C201001/48
26-Feb-21	Cloudy	294.2	3.5109	3.5873	0.0764	13644.2	13668.2	24.0	1.21	1.21	1.21	1740.5	43.9	C201001/70
												Min	16	
												Max	63	
												Average	47	

1-hr TSP Concentration Levels

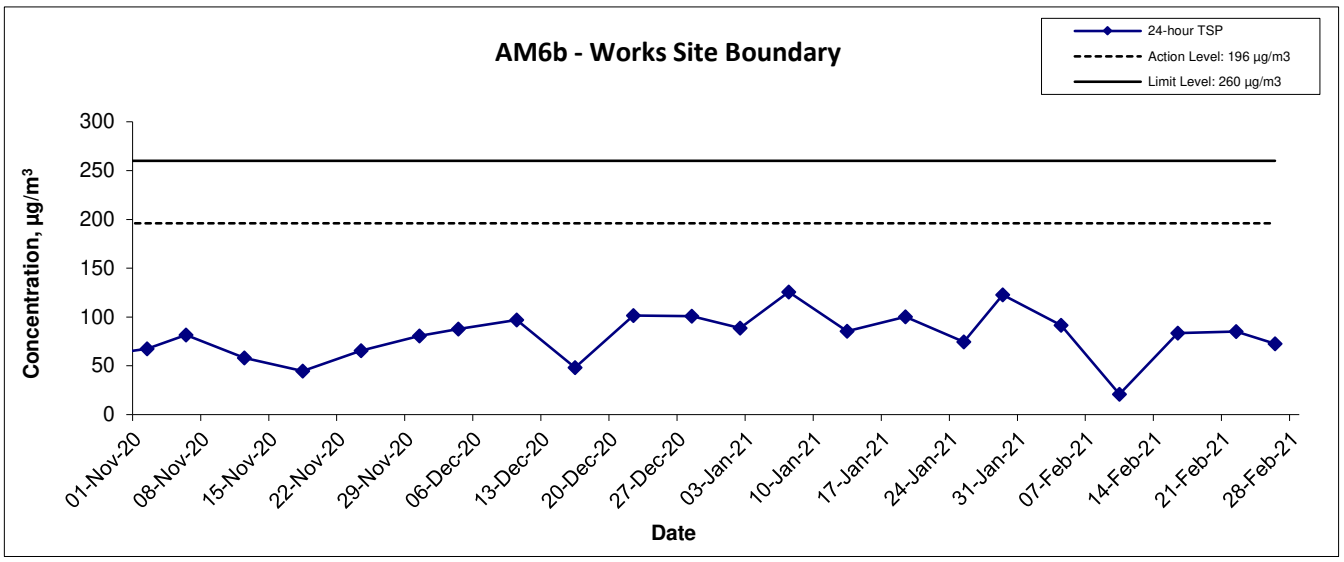


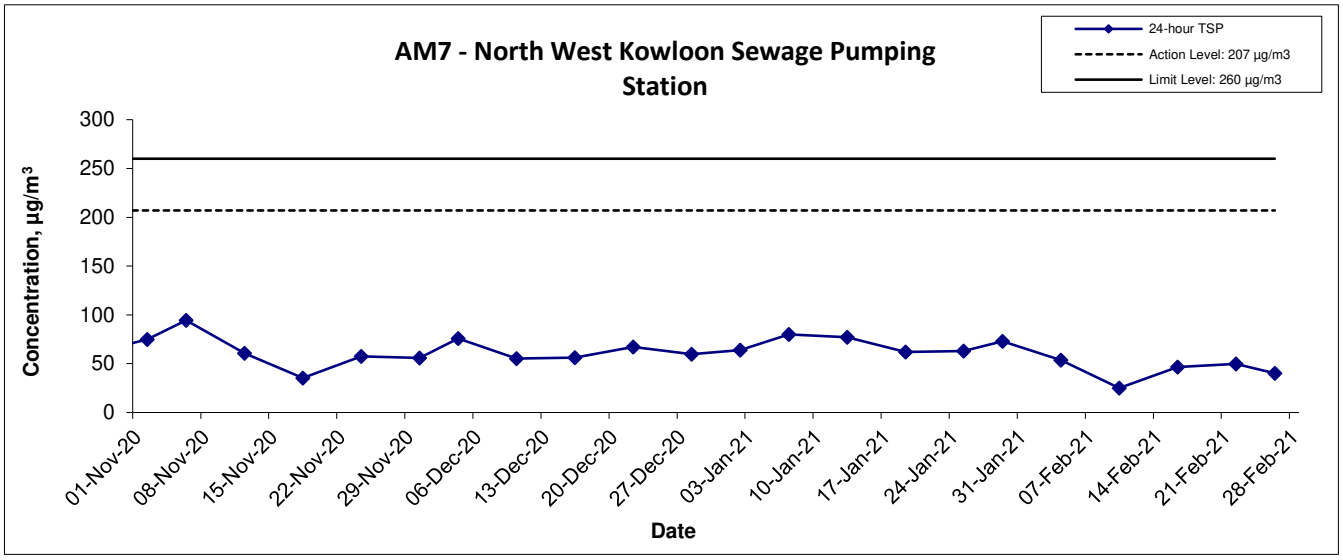


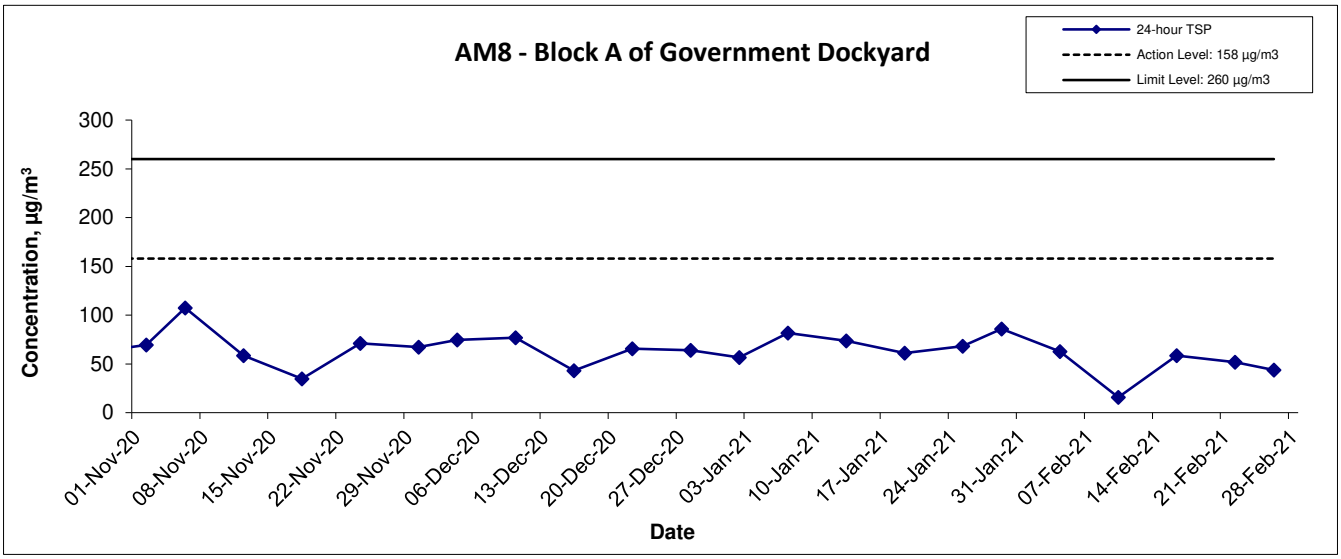


Title: Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 21	Project No.: MA11007 Appendix: D	WELLAB 匯力 consulting . testing . research

24-hr TSP Concentration Levels







Title: Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Feb 21	Project No.: MA11007 Appendix: D	WELLAB 匯力 consulting . testing . research

APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - Noise Monitoring Results

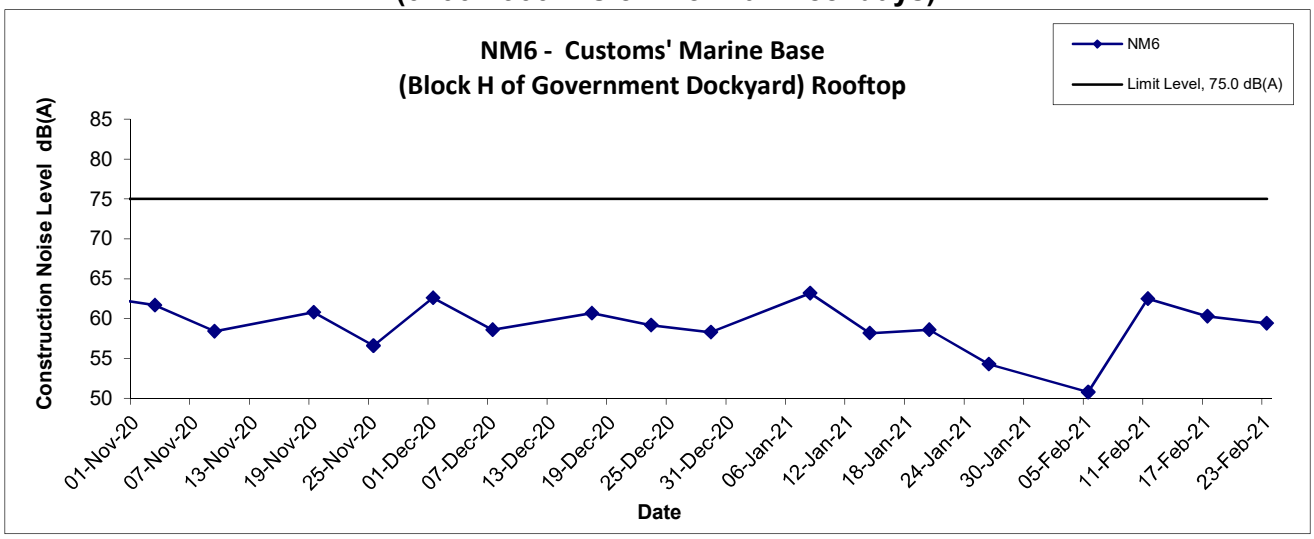
(0700-1900 hrs on Normal Weekdays)

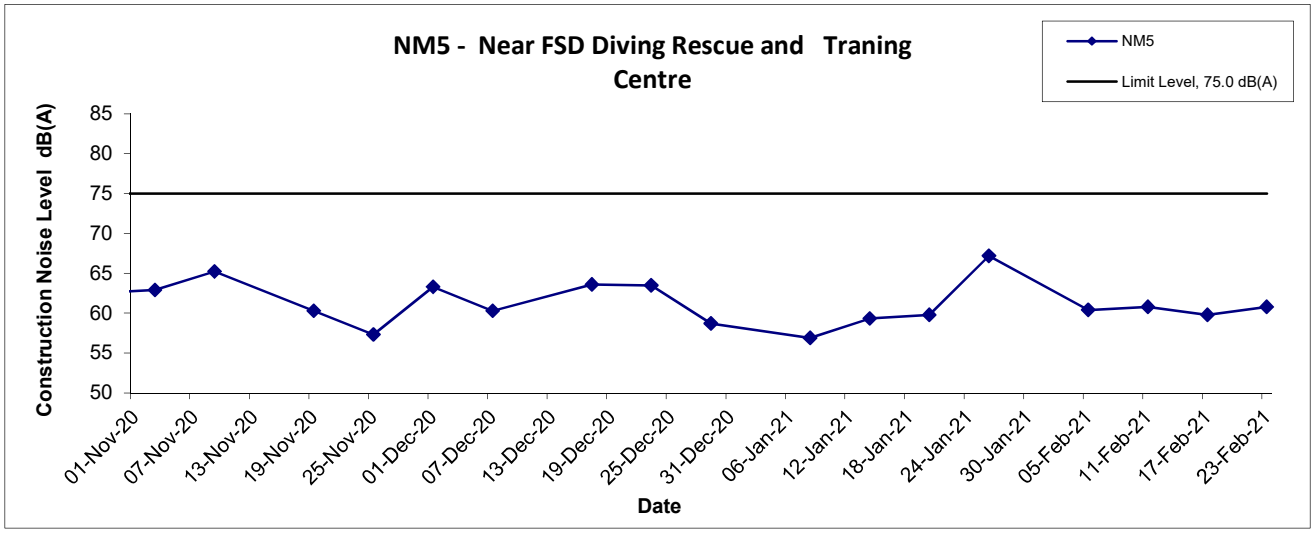
Location NM5 - Near FSD Diving Rescue and Training Centre					
Date	Time	Weather	Unit: dB (A) (30-min) Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
5-Feb-21	14:18	Sunny	60.4	61.9	57.3
11-Feb-21	9:00	Cloudy	60.8	62.1	55.3
17-Feb-21	14:16	Sunny	59.8	62.9	54.2
23-Feb-21	14:17	Sunny	60.8	61.8	58.3
		Maximum	60.8		
		Minimum	59.8		

Location NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop					
Date	Time	Weather	Unit: dB (A) (30-min) Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
5-Feb-21	13:27	Sunny	50.8	53.6	45.3
11-Feb-21	11:20	Cloudy	62.5	63.2	55.8
17-Feb-21	13:20	Sunny	60.3	61.7	57.3
23-Feb-21	13:31	Sunny	59.4	60.9	57.5
		Maximum	62.5		
		Minimum	50.8		

Noise Levels

(0700-1900 hrs on Normal Weekdays)





Title	Scale	Project No.
Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	N.T.S	MA11007
	Date: Feb 21	Appendix: E

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APPENDIX F
SUMMARY OF EXCEEDANCE

APPENDIX F – SUMMARY OF EXCEEDANCE

Reporting Month: February 2021

a) Exceedance Report for 1-hr TSP (NIL)

b) Exceedance Report for 24-hr TSP (NIL)

c) Exceedance Report for Construction Noise (NIL)

APPENDIX G
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210204
Date	04 February 2021 (Thursday)
Time	9:00 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licence*** • No environmental deficiency was identified during the site inspection. ***Others*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 210128), no environmental deficiency was observed during site inspection.	

	Name	Signature	Date
Recorded by	Ben Lo		8 February 2021
Checked by	Dr. Priscilla Choy		8 February 2021

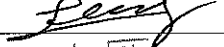
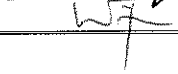
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210210
Date	10 February 2021 (Wednesday)
Time	09:30 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
210210-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • To clear general refuse and keep site area clean and tidy. ***Part F - Permit / Licence*** • No environmental deficiency was identified during the site inspection. ***Others*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 210204), no environmental deficiency was observed during site inspection.	E 1iii

	Name	Signature	Date
Recorded by	Kenneth Leung		11 February 2021
Checked by	Dr. Priscilla Choy		11 February 2021

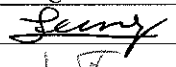
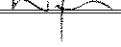
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210217
Date	17 February 2021 (Wednesday)
Time	14:30 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licence*** • No environmental deficiency was identified during the site inspection. ***Others*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 210210), all environmental deficiency was rectified by contractor.	

	Name	Signature	Date
Recorded by	Kenneth Leung		19 February 2021
Checked by	Dr. Priscilla Choy		19 February 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210225
Date	25 February 2021 (Thursday)
Time	09:30 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
210225-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • To dispose of general refuse properly and keep the site clean and tidy. ***Part F - Permit / Licence*** • No environmental deficiency was identified during the site inspection. ***Others*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit sessions: On previous audit session (Ref. No. 210217), no environmental deficiency was observed during site inspection.	E 1iii

	Name	Signature	Date
Recorded by	Kenneth Leung		25 February 2021
Checked by	Dr. Priscilla Choy		25 February 2021

APPENDIX H
SUMMARY OF AMOUNT OF WASTE GENERATED

Name of Department: DSD

Contract No. : DC/2009/10

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of inert C&D Materials Generated Monthly						Actual Quantities of C&D Materials 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	Plastics (see Note 3)	Chemical Waste	Other, e.g. general refuse
	(In '000m^3)	(In '000m^3)	(In '000m^3)	(In '000m^3)	(In '000m^3)	(In '000m^3)	(In '000kg)	(In '000kg)	(In '000kg)	(In '000kg)	(In '000m^3)
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
Mar											
Apr											
May											
June											
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
July											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
Total since commencement of project	61.956	61.952	0.000	0.000	61.956	0.000	372.871	11.905	3.314	2.227	2.128

Notes:
(1) The performance targets are given in PS Clause 25.41(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 conversion factor for tonne to m^3 for inert C&D materials is 1.9 tonne/m^3.
(5) The conversion factor for tonne to m^3 for general refuse is 1.8 tonne/m^3.

APPENDIX I
EVENT ACTION PLANS

APPENDIX I – Event / Action Plans

Table I-1 Event / Action Plan For Air Quality

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failurein writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be	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	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented;	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring	advise the ER accordingly; 5. Supervise the implementation of remedial measures.	5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table I-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated

APPENDIX J
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	**Air Quality**		
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^
	Vehicle washing facilities should be provided at every vehicle exit point.		^
	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.		^
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		N/A
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		^
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	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 3 sides.		^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.		^
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
B	**Airborne Noise**		
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^
C	**Water Quality**		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^
6.376	Effluent Discharge 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. 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 WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^
6.377	Accidental Spillage of Chemicals 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)		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Regulation should be observed and complied with for control of chemical wastes.		
6.378	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.		^
6.379	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: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.		^
6.380	Construction Works in Close Proximity of Storm Drains or Seafront: To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • 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. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea.	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
D	**Waste Management**		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals.		^
	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.		^
	Encourage collection of aluminum cans, PET bottles and paper by providing separate labeled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimize the potential for damage or contamination of construction materials.		^
9.115	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.		^
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^
	Provision of sufficient waste disposal points and regular collection of waste.		^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	interceptors.		
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All construction sites	^
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		*
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminum cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		^
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	**Terrestrial Ecology**		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^
F	**Landscape and Visual**		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		^
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
G	**Marine Ecology**		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^
H	**Hazard to Life**		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

Remarks:	^ Compliance of mitigation measure;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.
	X Non-compliance of mitigation measure;
	• Non-compliance but rectified by the contractor;

APPENDIX K
COMPLAINT LOG

APPENDIX K – COMPLAINT LOG

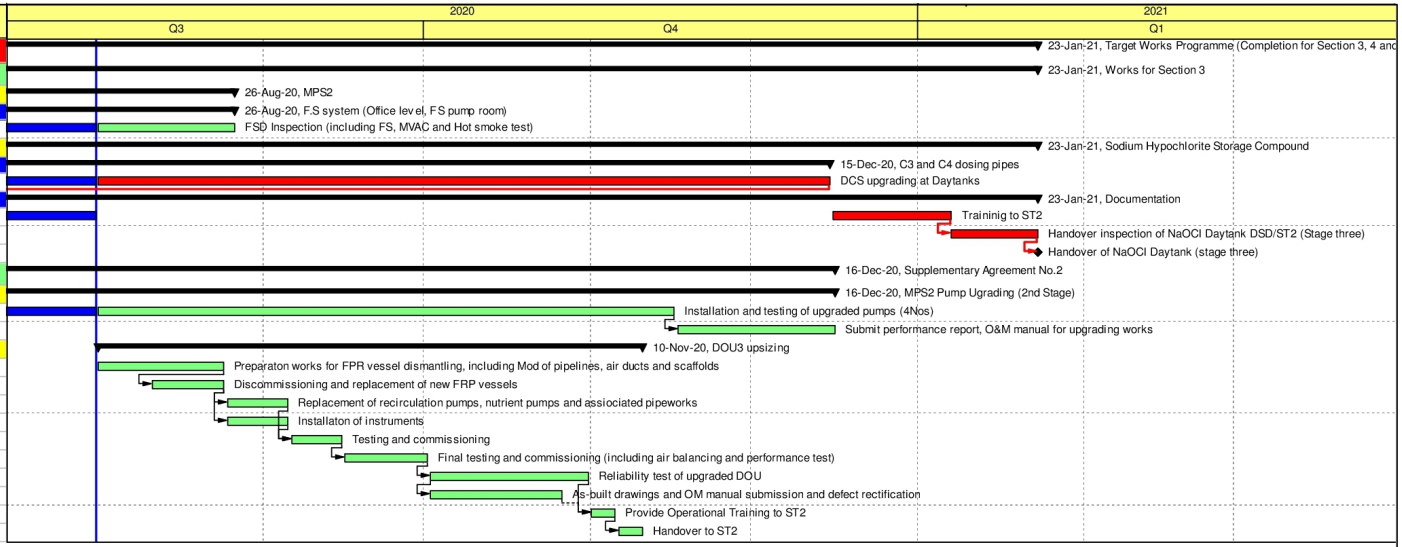
Reporting Month: February 2021

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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

APPENDIX L
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Activity % Complete	Original Duration	Start	Finish
Target Works Programme (Completion for Section 3, 4 and 5)					
Works for Section 3					
MPS2					
F.S system (Office level, FS pump room)					
A9620	FSD Inspection (including FS, MVAC and Hot smok	90%	210	27-Mar-19 A	26-Aug-20
Sodium Hypochlorite Storage Compound					
C3 and C4 dosing pipes					
A8720	DCS upgrading at Daytanks	5%	120	02-Nov-19 A	15-Dec-20
Documentation					
A3601	Trainiing to ST2	10%	18	28-Mar-20 A	07-Jan-21
A3602	Handover inspection of NaOCl Daytank DSD/ST2 (S	0%	14	07-Jan-21	23-Jan-21
A3605	Handover of NaOCl Daytank (stage three)	0%	0		23-Jan-21
Supplementary Agreement No.2					
MPS2 Pump Ugrading (2nd Stage)					
A9262	Installation and testing of upgraded pumps (4Nos)	10%	120	02-Sep-19 A	16-Nov-20
A9272	Submit performance report, O&M manual for upgrad	0%	30	17-Nov-20	16-Dec-20
DOU3 upsizing					
A9790	Preparaton works for FPR vessel dismantling, inclu	0%	24	01-Aug-20	24-Aug-20
A9800	Discommissioning and replacement of new FRP ve	0%	14	11-Aug-20	24-Aug-20
A9810	Replacement of recirculation pumps, nutrient pump	0%	12	25-Aug-20	05-Sep-20
A9820	Installaton of instruments	0%	12	25-Aug-20	05-Sep-20
A9830	Testing and commissioning	0%	10	06-Sep-20	15-Sep-20
A9840	Final testing and commissioning (including air bala	0%	16	16-Sep-20	01-Oct-20
A9850	Reliability test of upgraded DOU	0%	30	02-Oct-20	31-Oct-20
A9860	As-built drawings and OM manual submission and d	0%	25	02-Oct-20	26-Oct-20
A9870	Provide Operational Training to ST2	0%	5	01-Nov-20	05-Nov-20
A9880	Handover to ST2	0%	5	06-Nov-20	10-Nov-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme for Completion of Section 3, 4 and 5

Sheet 1 of 1

Date	Revision	Checked	Approved
26-Jul-18	Rev. 5		
20-Nov-18	Rev. 6		
11-Feb-19	Rev. 7		