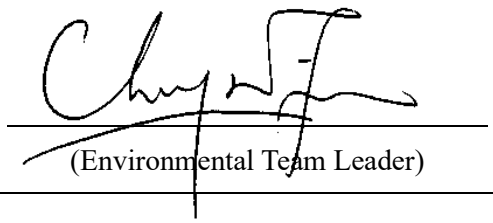
Bestwise – SFK Joint Venture

Contract No. DE/2018/17
Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works

Final Environmental Monitoring and Audit Report

(Version 2.0)

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.

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

Contract No. DE/2018/17 – Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works

Environmental Permit No. EP-322/2008/G

Final EM&A Report (Version 2.0) on Construction Phase Activities

8 April 2022
By Email and Post

Dear Sir,

I refer to the captioned Final EM&A Report on construction phase activities under Contract No. DE/2018/17 as stipulated under Section 15.13 of the EM&A Manual, and which was received on 28 March 2022 via email. Pursuant to Conditions 1.9 and 2.2 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

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c.c.

Ove Arup & Partners Hong Kong Limited	Mr. Edmund Chow / Mr. Kevin Cheung	By email and fax: 2370 4377
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Wellab Limited	Dr. Priscilla Choy	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
IEC	Independent Environmental Checker
RE	Resident Engineer
HATS Stage 2A	Habour Area Treatment Scheme Stage 2A
HVS	High Volume Sampler
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
BSJV	Bestwise – SFK Joint Venture
SCISTW	Stonecutters Island Sewage Treatment Works
SLM	Sound Level Meter
WMP	Waste Management Plan

EXECUTIVE SUMMARY

Introduction

1. This is the Final Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for DSD Contract No. DE/2018/17 "Enhancement of Deodourisation System at SCISTW" (hereinafter called "the Project") which documents the key information of EM&A and environmental monitoring results from the Project under Environmental Permit (Permit No. EP-322/2008/G) between 2nd September 2019 and 31st January 2022.

2. According to the information from the Contractor (Bestwise – SFK Joint Venture), all construction activities with significant environmental impact of Contract No. DE/2018/17 under Harbour Area Treatment Scheme Stage 2A have been completed on 31st December 2021. The proposal for cessation of construction phase EM&A works for Contract No. DE/2018/17 was submitted to EPD on 12th January 2022 and approved by EPD on 31st January 2022. Thus, the EM&A works under Contract No. DE/2018/17 was ceased since 1st February 2022.

Summary of Site Activities undertaken during the Construction Period

3. The construction works under this Project included:
   - Construction of foundation for enhanced deodourisation systems;
   - Design, supply, installation, testing and commissioning of enhanced deodourisation systems and associated accessories;
   - Enhancement of isolation devices at chemically enhanced primary treatment (CEPT) tanks;
   - Modification of air ducts at CEPT tanks;
   - Enhancement of sealing performance of existing covers for CEPT tanks; and
   - Any associated works as necessary to complete the above items.

4. Detail of Contractor's Construction Programme during the construction period could be found in the **Appendix L** of relevant Monthly EM&A Reports.

Environmental Monitoring Works

5. The environmental monitoring works of the Project were conducted by the Environmental Teams (ETs) for Contracts DC/2009/10 and DE/2018/17 (i.e. the Project) under the same Environmental Permit in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the Environmental Mitigation Measures, Event Action Plans and Environmental Complaint Handing Procedures were also checked.

Air Quality and Noise

6. The air quality monitoring work at monitoring stations AM6a/AM6b, AM7 and AM8 was taken over from Contract No. DC/2009/10 by the ET of Contract No. DE/2018/17 in June 2021.

7. Air quality monitoring station AM6a was adopted for impact monitoring since the commencement of construction phase EM&A programme of the Project. The Contractor informed in mid-October 2020 that part of Portion 7 would be handed over to DSD in late October 2020; the monitoring location AM6a was therefore not available for future monitoring. Station AM6a was relocated to AM6b on 20th October 2020 after handover of part of Portion 7. Monitoring stations AM6a and AM6b were close to each other (about 3

meters apart). AM6b was situated at the boundary of the site area and also the boundary of the SCISTW, and could therefore monitor the impact from construction works of the Project.

8. The monitoring works of noise monitoring stations near FSD Diving Rescue and Training Centre (NM5) and at Customs' Marine Base (NM6, Block H of Government Dockyard Rooftop) were taken over from Contract No. DC/2009/10 by the ET of Contract No. DE/2018/17 in June 2021.

9. The Proposal for Cessation of Construction Phase EM&A Works for Contract No. DE/2018/17 was submitted by the ET to EPD on12th January 2022, and approved by EPD on 31st January 2022, based on Condition 4.1 of Environmental Permit (EP) No.EP-332/2008/G of this Project as below:

   i) Based on the certification of completion of the Project, all the construction works of Contract No. DE/2018/17 under Harbour Area Treatment Scheme Stage 2A have been completed on 31st December 2021. No significant environmental impact due to this contract would be anticipated;

   ii) No environmental monitoring (air quality monitoring and noise monitoring) exceedances were recorded over the monitoring period according to the Action and Limit levels; and

   iii) No environmental-related prosecutions, summons or complaints were recorded under this Project in recent months prior to cessation of the EM&A works.

10. Summary of the non-compliance of the construction phrase of this Project is tabulated in **Table I**.

Table I Summary Table for Non-compliance (Exceedances) Recorded Due to the Project

Monitoring Station(s)	Parameters	No. of Exceedance		No. of Exceedance Due to the Project		Total No. of Exceedance Due to the Project
		Action Level	Limit Level	Action Level	Limit Level	
AM6a	1-hr TSP	0	0	0	0	0
	24-hr TSP	0	0	0	0	0
AM6b	1-hr TSP	0	0	0	0	0
	24-hr TSP	0	0	0	0	0
AM7	1-hr TSP	0	0	0	0	0
	24-hr TSP	0	0	0	0	0
AM8	1-hr TSP	0	0	0	0	0
	24-hr TSP	0	0	0	0	0
NM5	Noise (Day Time)	0	0	0	0	0
NM6		0	0	0	0	0

1-hour TSP Monitoring

11. All 1-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded for 1-hour TSP monitoring throughout the whole construction period.

24-hour TSP Monitoring

12. All 24-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded for 24-hour TSP monitoring throughout the whole construction period.

Construction Noise Monitoring

13. All construction noise monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded for noise monitoring throughout the whole construction period.

Environmental Licenses and Permits

14. Licenses/Permits granted to the Project include the Environmental Permit (EP), Notification of Works under APCO, Water Discharge Licence, Registered as a Chemical Waste Producer, Billing Account for Disposal of Construction Waste and Construction Noise Permit.

Environmental Mitigation Implementation Schedule

15. According to the EIA Report, air quality, noise, water quality, waste management, terrestrial ecology, landscape and visual, marine ecology and hazard to life would be the key environmental issues and mitigation measures shall be implemented during the period covering the EM&A programme. Details of the implementation of mitigation measures are provided in the **Appendix G**.

Summary of Complaints and Prosecutions

16. No environmental non-compliance was recorded in the construction period. The observations and recommendations made in each individual site audit session were attached in the Monthly EM&A Reports.

17. No environmental complaints, notification of summons or successful prosecutions were received in the whole construction period. The complaint and prosecution log is present in **Appendix H**.

Conclusion

18. The EM&A programme was found to be effective and efficient in monitoring impacts arising from the Project. The findings of the environmental monitoring program suggest that no adverse impacts on sensitive receivers at the designated monitoring locations were resulted by the Project. The environmental mitigation measures provided by the Contractor were generally acceptable apart from some minor deficiencies which were rectified timely by the Contractor.

19. In conclusion, the Project was environmentally acceptable.

1. INTRODUCTION

Background

1.1 The Project 'Enhancement of Deodourisation System at SCISTW' under Contract No: DE/2018/17 mainly comprises the following major works:

- Construction of foundation for enhanced deodourisation system;
- Design, supply, installation, testing and commissioning of enhanced deodourisation systems and associated accessories;
- Enhancement of isolation devices at chemically enhanced primary treatment (CEPT) tanks;
- Modification of air ducts at CEPT tanks;
- Enhancement of sealing performance of existing covers for CEPT tanks; and
- Any associated works as necessary to complete the above items.

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 Bestwise - SFK Joint Venture (hereafter called the BSJV) was commissioned by the DSD to undertake the construction of the Contract No. DE/2018/17 "Enhancement of Deodourisation System at SCISTW". The date of commencement of construction of the Project is 9th July 2019.

1.4 Wellab Limited was commissioned by BSJV 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 2nd September 2019. The Project cover the environmental monitoring works at monitoring stations AM6a (relocated to AM6b on 20th October 2020), AM7, AM8, NM5 and NM6. The general location plan of the Project is shown in **Figure 1**.

1.5 According to the information from BSJV, all construction activities with significant environmental impact of Contract No. DE/2018/17 under Harbour Area Treatment Scheme Stage 2A have been completed on 31st December 2021. The Proposal for Cessation of Construction Phase EM&A Works for Contract No. DE/2018/17 was endorsed by IEC, RE and DSD prior to submission to EPD on 12th January 2022. It was approved by EPD on 31st January 2022. The EM&A works under Contract No. DE/2018/17 were ceased since 1st February 2022.

Project Organizations

1.6 The contacts of the Project are shown in **Table 1.1** and the Project Organization Chart 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. Edmund Chow	Senior Resident Engineer	6049 5561
	Coordinator	Mr. Kevin Cheung	Resident Engineer	6049 5562
Wellab	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Mr. Antony Leung	Project Coordinator	2151 2073
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Bestwise – SFK Joint Venture	Contractor	Mr. Ken Chan	Site Agent	2620 0070
		Mr. Leo Leung	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 Final EM&A report represents the monitoring results, observation and locations of the required monitoring parameter, namely air quality, noise and audit works conducted for the Project in the period between 2nd September 2019 and 31st January 2022.

2. AIR QUALITY

Baseline Condition

2.1 Baseline air quality monitoring was conducted at the designated monitoring stations prior to commencement of construction works at SCISTW for HATS2A. The baseline data was used to derive the Action and Limit Levels. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Three designated monitoring stations, AM6a, AM7 and AM8 were selected for impact dust monitoring of the Project. The monitoring work of air quality monitoring stations was taken over from Contract No. DC/2009/10 by the ET of Contract No. DE/2018/17 in June 2021.

2.3 The Contractor of Contract No. DC/2009/10 informed in mid-October 2020 that part of Portion 7 would be handed over to DSD in late October 2020; the monitoring location AM6a was therefore not available for future monitoring. Location AM6a was relocated to the monitoring station AM6b on 20th October 2020 after handover of part of Portion 7. Monitoring stations AM6a and AM6b were close to each other (about 3 meters apart). AM6b was situated at the boundary of the site area and also the boundary of SCISTW, and could therefore monitor construction works of the Project.

2.4 **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

2.5 The termination of air quality monitoring was approved by EPD on 31st January 2022.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM6a(1)	DC/2009/10	Works site boundary
AM6b (2,3)	DC/2009/10 DE/2018/17	Works site boundary
AM7 (2)	DC/2009/10 DE/2018/17	North West Kowloon Sewage Pumping Station
AM8 (2)	DC/2009/10 DE/2018/17	Block A of Government Dockyard

Remarks:
(1) Air quality monitoring was conducted until 16th October 2020
(2) Adopted since 20th October 2020 after handover of part of Portion 7
(3) Taken over by the ET of Contract No. DE/2018/17 in June 2021

Prediction and Evaluation of Environmental Impact

2.6 The maximum predicted 1-hour and 24-hour average TSP levels for construction of the Project were predicted and evaluated during EIA period. **Table 2.2** summarizes the EIA predictions during construction period.

Table 2.2 EIA Predictions of 1-hour and 24-hour Average TSP Levels

Monitoring Station(s)	Predicted Mitigated Average TSP conc. (μg/m³)	
	1-hour TSP	24-hour TSP
AM6a	Not Predicted in EIA Report	Not Predicted in EIA Report
AM6b	Not Predicted in EIA Report	Not Predicted in EIA Report
AM7	Not Predicted in EIA Report	Not Predicted in EIA Report
AM8	133	93

Monitoring Parameters, Frequency and Duration

2.7 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hour TSP	Three times every 6 days
24-hour TSP	once every 6 days

Results and Observations

2.8 Before taking over the monitoring stations AM6b, AM7 and AM8 by the ET of Contract No. DE/2018/17 in June 2021, the impact air quality monitoring work was conducted by the ET of Contract No. DC/2009/10. The monitoring results were submitted and verified by IEC. The impact monitoring methodology conducted by the ET of Contract No. DC/2009/10 under the requirements of the EM&A Manual was also applicable for the Project since the Contracts executed their works under the same EP. The respective impact monitoring data was adopted for the Project from September 2019.

2.9 The impact air quality monitoring was later conducted by the ET of Contract No. DE/2018/17, which took over the respective monitoring stations under the same EP. The impact monitoring methodology conducted by the ET of Contract No. DE/2018/17 followed the requirements of the EM&A Manual.

2.10 EPD approved termination of impact air quality monitoring on 31st January 2022 and the respective monitoring works were terminated on 1st February 2022.

2.11 A summary of the impact air quality monitoring results in the construction period (conducted by ET of Contract No. DE/2018/17) of is given in **Table 2.4**.

Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Results in the Construction Period (conducted by ET of Contract No. DE/2018/17)

Monitoring Station(s)	Average µg/m³	Maximum µg/m³	Minimum µg/m³	Action Level µg/m³	Limit Level µg/m³
1-hour TSP					
AM6a(1)	N/A	N/A	N/A	346	500
AM6b	62	149	13	346	
AM7	86	268	13	322	
AM8	77	192	13	307	
24-hour TSP					
AM6a(1)	N/A	N/A	N/A	196	260
AM6b	60	134	15	196	
AM7	50	150	8	207	
AM8	40	97	10	158	

Remarks:
(1) Monitoring conducted by the ET of Contract No. DC/2009/10

2.12 All 1-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded.

2.13 All 24-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded. Summary of exceedance is presented in **Appendix E**.

2.14 The air quality monitoring data collected during construction period were generally in line with the prediction of the approved EIA Report.

2.15 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results during monitoring period are shown in **Appendix B**.

2.16 The weather information during construction period is summarized in **Appendix D**.

2.17 According to field observations during site inspection, identifiable dust emission sources near the monitoring stations were mainly from vehicles movement, dust generation from the excavated dusty materials and construction works of this Contract in the site.

3. NOISE

Baseline Condition

3.1 Baseline noise monitoring was conducted at the designated monitoring stations. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Noise monitoring was conducted at two designed monitoring stations, **Table 3.1** and **Figure 1** indicate their positions in relation to the site boundary.

Table 3.1 Locations for Noise Monitoring

Monitoring Station	Monitored By	Location of Measurement
NM5(1)	DC/2009/10 DE/2018/17	Near FSD Diving Rescue and Training Centre
NM6(1)	DC/2009/10 DE/2018/17	Customs' Marine Base (Block H of Government Dockyard Rooftop)

Remark:
(1) Taken over by the ET of Contract No. DE/2018/17 in June 2021

3.3 The termination of noise monitoring was approved by EPD on 31st January 2022 and the respective monitoring works were terminated on 1st February 2022.

Prediction and Evaluation of Environmental Impact

3.4 The Predicted Noise Levels for construction of the Project were predicted and evaluated in the absence of mitigation measures during EIA period. The **Table 3.2** summarizes the EIA predictions during construction period.

Table 3.2 EIA predictions of Noise Levels

Monitoring Station(s)	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{eq\ (30\ min)}$ dB(A))
NM5	47 - 62
NM6	Not Predicted in EIA Report

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring.

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

Results and Observations

3.6 Before taking over the monitoring stations NM5 and NM6 by the ET of Contract No. DE/2018/17 in June 2021, the impact noise monitoring work was conducted by the ET of Contract No. DC/2009/10. The monitoring results were submitted and verified by IEC. The impact monitoring methodology conducted by Contract No. DC/2009/10 under the requirements of the EM&A Manual was also applicable for the Project since the Contracts executed their works under the same EP. The respective impact monitoring data was adopted for the Project from September 2019.

3.7 The impact noise quality monitoring was later conducted by the ET of Contract No. DE/2018/17, which took over the respective monitoring stations under the same EP. The impact monitoring methodology conducted by the ET of Contract No. DE/2018/17 followed the requirements of the EM&A Manual.

3.8 EPD approved termination of impact noise monitoring on 31st January 2022 and the respective monitoring works were terminated on 1st February 2022.

3.9 A summary of the noise monitoring results in the construction period (conducted by ET of DE/2018/17) is given in **Table 3.4**.

Table 3.4 Summary of Noise Monitoring Results in the Construction Period (conducted by ET of Contract No. DE/2018/17)

0700-1900 hrs. during weekdays			
Noise Monitoring Station	**Range, $L_{eq\ (30\ min.)}$ dB(A)**	**Action Level**	**Limit Level, $L_{eq\ (30\ min.)}$ dB(A)**
NM5	46.2 – 67.5	When one documented complaint is received	>75* dB(A)
NM6	49.9 – 66.1		

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.
(*) 70 dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.

3.10 All construction noise monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances were recorded. Summary of exceedance is presented in **Appendix E**.

3.11 The noise monitoring data collected during construction period were generally in line with the prediction of the approved EIA Report.

3.12 Noise monitoring results and graphical presentations are shown in **Appendix C**.

3.13 The major noise sources identified at the designated noise monitoring stations were vehicle movement and construction equipment, as well as construction activities from this Contract in Stonecutters Island STW.

4. REVIEW OF THE EM&A PROGRAMME

Implementation Status of Environmental Mitigation Measures

4.1 The mitigation measures detailed in the EM&A Manual were implemented throughout the whole construction period. A summary of the EMIS is provided in **Appendix G**.

4.2 No non-compliance was recorded during the site audits throughout the construction period. Observations and recommendations recorded during the site audits were summarized in each of the Monthly EM&A Reports.

Review of Environmental Monitoring Procedures

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

Air Quality Monitoring

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

Noise Monitoring

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

Site Audits

4.4 Site audits were carried out by representatives of the Contractor, Engineer and Contractor's ET on weekly basis to observe the aspect of water quality, noise, air quality, landscape, waste and chemical management. Reminders and recommendations were given to the Contractor, and the Contractor rectified and implemented environmental management practices and mitigation measures timely and properly in the Project site. The representative of the IEC joined the site inspection once per month. Details of site audit findings were summarized in Monthly EM&A Reports.

Comparison of the EM&A data with EIA

Air Quality

4.5 The EIA Report has predicted that dust nuisance at ASRs would not be expected if the recommended mitigation measures have been implemented. No air quality complaints from EPD were received by the Project and no Project related exceedances at the monitoring stations were recorded during the construction period.

Noise

4.6 The EIA report had predicted that residual impacts of construction noise levels can be kept below the construction noise limit if the recommended mitigation measures have been implemented. No noise complaints from EPD were received by the Project and no Project related exceedances at the monitoring stations were recorded during the

construction period. Detail of the exceedance is provided in **Appendix E**.

Status of Waste Management

4.7 Waste generated from this Project includes non-inert C&D materials which are made up of general refuse and recyclable waste like paper/ cardboard packaging. The amount of wastes generated by the activities of this Project during the construction period is shown in **Appendix I**.

4.8 Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor regarding to waste management in the reporting period. Observations and recommendations recorded during the site audits were summarized in Monthly EM&A Reports.

Implementation Status of Landscape and Visual Mitigation Measures

4.9 Landscape and Visual monitoring was carried out on site in accordance with the EM&A Manual to ensure that the implementation and maintenance of landscape and visual mitigation measures were achieved.

4.10 No non-compliance was recorded during the works period of the Project. The implementation status for Landscape and Visual mitigation measures is provided in **Appendix G**.

5. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

5.1 The Event/ Action Plans for air quality and noise are presented in **Appendix F**.

1-hour TSP monitoring

5.2 All 1-hour TSP monitoring was conducted as scheduled during the construction period. No Action and Limit Level exceedances of 1-hour TSP monitoring were recorded throughout the whole construction period.

24-hour Monitoring

5.3 24-hour TSP monitoring was conducted as scheduled during construction period. No Action and Limit Level exceedances of 24-hour TSP monitoring were recorded throughout the whole construction period.

Construction Noise Monitoring

5.4 All construction noise monitoring was conducted as scheduled during construction period. No Action and Limit Level exceedances were recorded during the whole construction period. Summary of exceedance is presented in **Appendix E**.

Summary of Environmental Non-Compliance

5.5 No environmental non-compliance was recorded in the construction period. The observations and recommendations made in each individual site audit session were attached in the Monthly EM&A Reports.

Summary of Complaint, Prosecutions, Reporting Changes and Notification of Summons

5.6 No environmental complaints and no notification of summons/ successful prosecutions were received in the whole construction period. The summary of complaint, prosecutions, reporting changes and notification of summons is presented in **Appendix H**.

6. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Comments on Overall EM&A Programme

6.1 The EM&A Programme requires construction phase monitoring for air quality, air-bone construction noise and environmental site audit. Timely implementation of mitigation measures were carried out according to the environmental data obtained during construction phase. According to the information from the Contractor, all construction activities with significant environmental impact of Contract No. DE/2018/17 under Harbour Area Treatment Scheme Stage 2A have been completed on 31st December 2021. Therefore, no significant environmental impact due to this contract would be anticipated. The EM&A works under Contract No. DE/2018/17 were ceased since 1st February 2022.

6.2 During the construction phase, the weekly site audits were effective to ensure the implementation and efficiency of the mitigation measures. As a result, environmental nuisance to the public could be reduced to a minimal.

6.3 Therefore, the overall performance of the monitoring methodology adopted and environmental management system in this Project was effective.

Overall EM&A Data

6.4 Environmental monitoring works were performed during construction period and all monitoring results were checked and reviewed. Impact air quality and noise monitoring were carried out according to the requirements in the EM&A Manual.

1-hour TSP monitoring

6.5 1-hour TSP monitoring was conducted as scheduled during construction period. No exceedances of Action and Limit Levels were recorded throughout the whole construction period.

24-hour Monitoring

6.6 24-hour TSP monitoring was conducted as scheduled during construction period. No exceedances of Action and Limit Levels were recorded throughout the whole construction period.

Construction Noise Monitoring

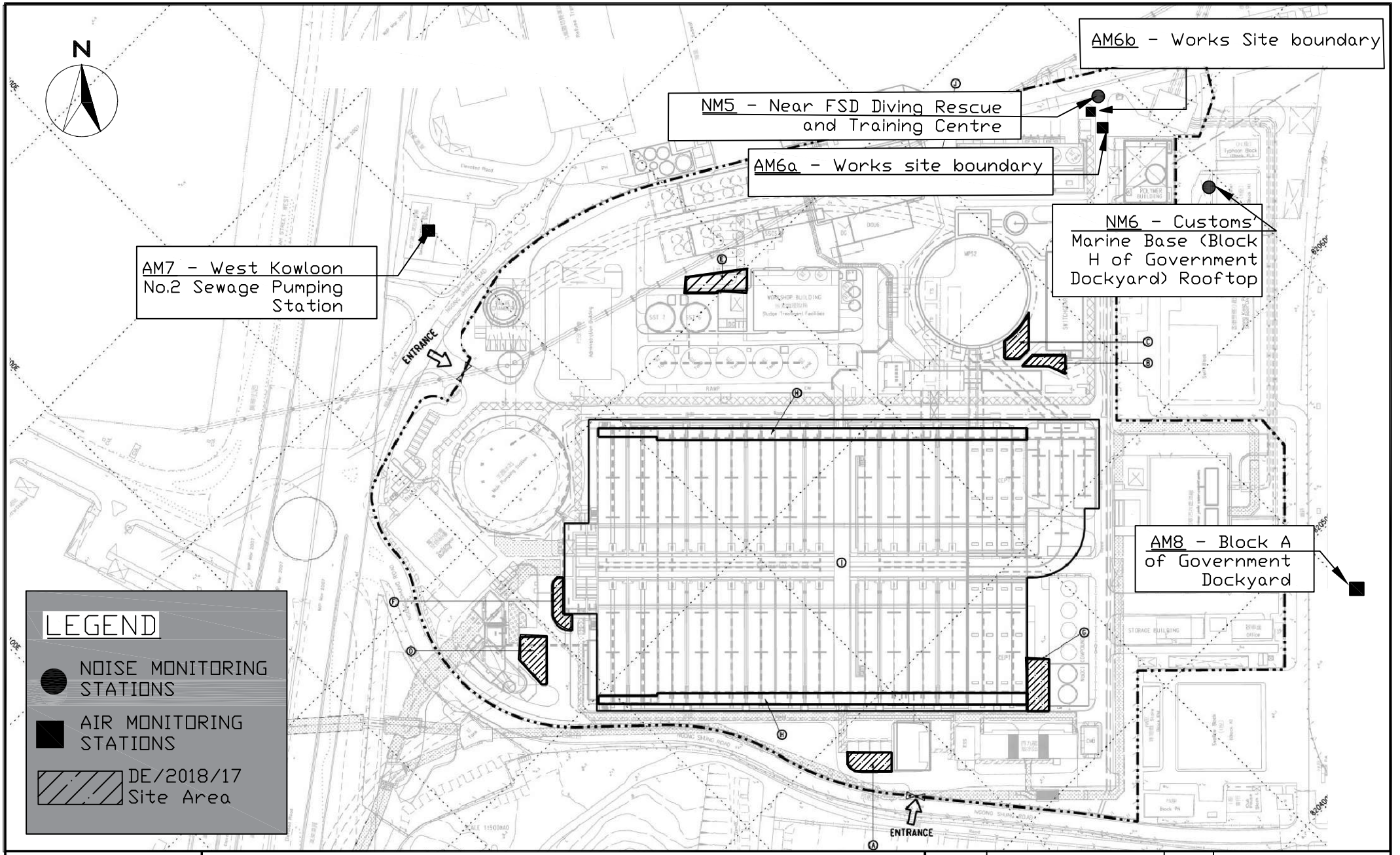
6.7 All construction noise monitoring was conducted as scheduled during construction period. No exceedances of Action and Limit Levels were recorded throughout the whole construction period.

Recommendations and Conclusions

6.8 The EM&A programme was found to be effective and efficient in monitoring impacts arising from the Project. The findings of the environmental monitoring programme suggest that no adverse impacts on the sensitive receivers were brought about by the Project. The environmental mitigation measures provided by the Contractor were generally acceptable apart from some minor deficiencies, which were rectified timely by the Contractor. In conclusion, the Project was environmentally acceptable.

6.9 With the success of the overall EM&A programme, the deterioration of the environment caused by the Project was cost-effectively identified and necessary prompt effective mitigation measures were implemented to avoid any unacceptable impacts.

FIGURES

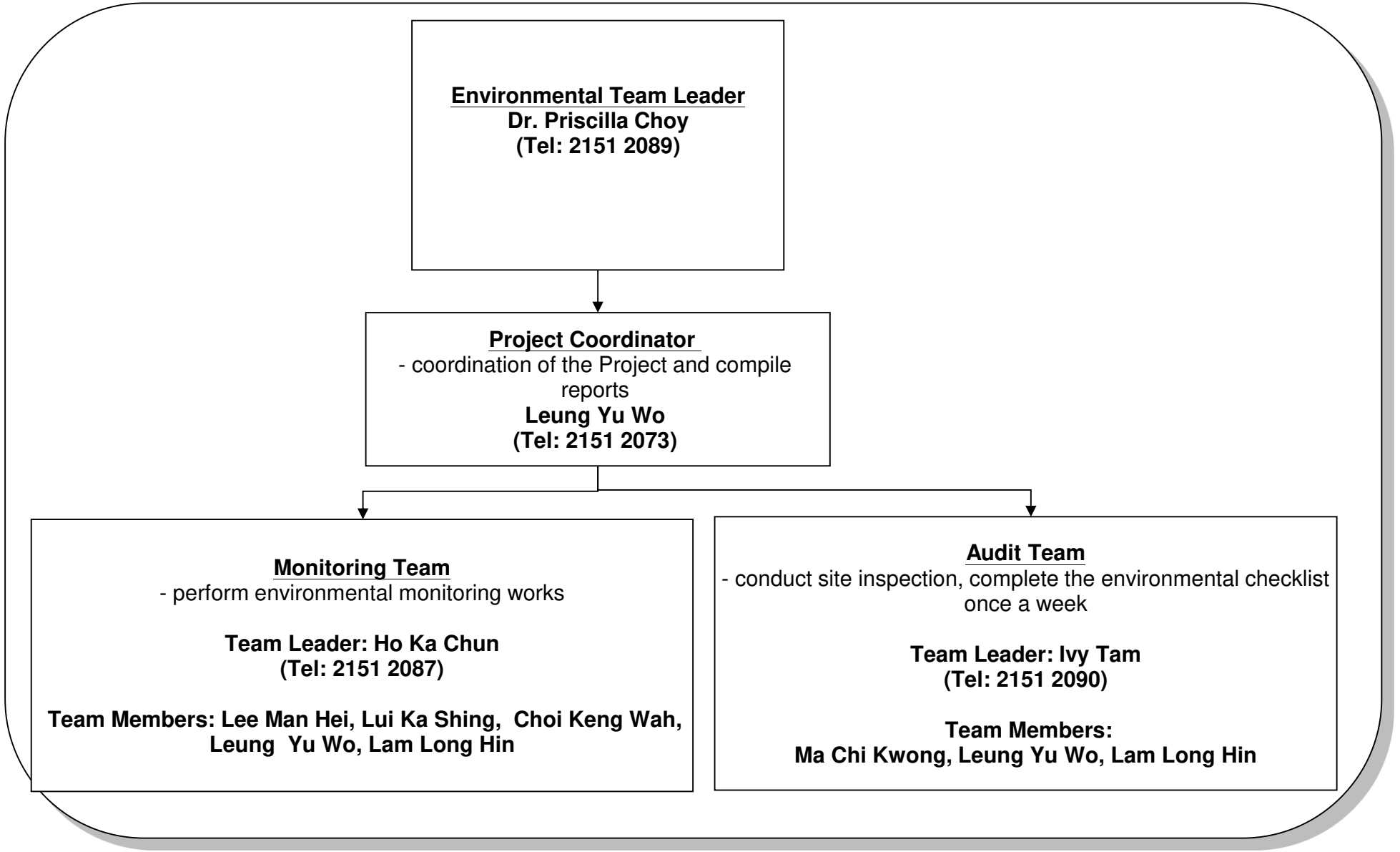


WELLAB

Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works

General Location Plan of the project and Locations of Air and Noise Monitoring Locations

SCALE	1:180 @ A4	DATE	OCT 2019
CHECK	–	DRAWN	HC
Project No	WMA19011	FIGURE NO. 1	REV –



Title		Scale	Project No.
	Contract No. DE/2018/17 Enhancement of Deodourisation System at SCISTW ET's Organization Chart	N.T.S	WMA19011
		Version v.3	Figure 2

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APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

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
AM6a/AM6b	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260

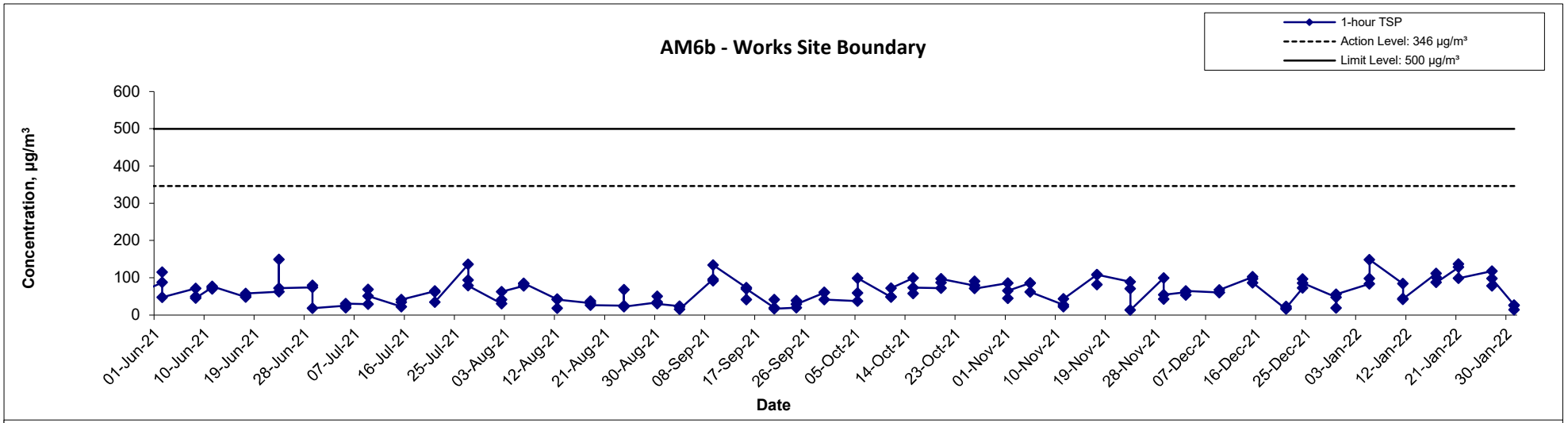
Table A-2 Action and Limit Level for Construction Noise

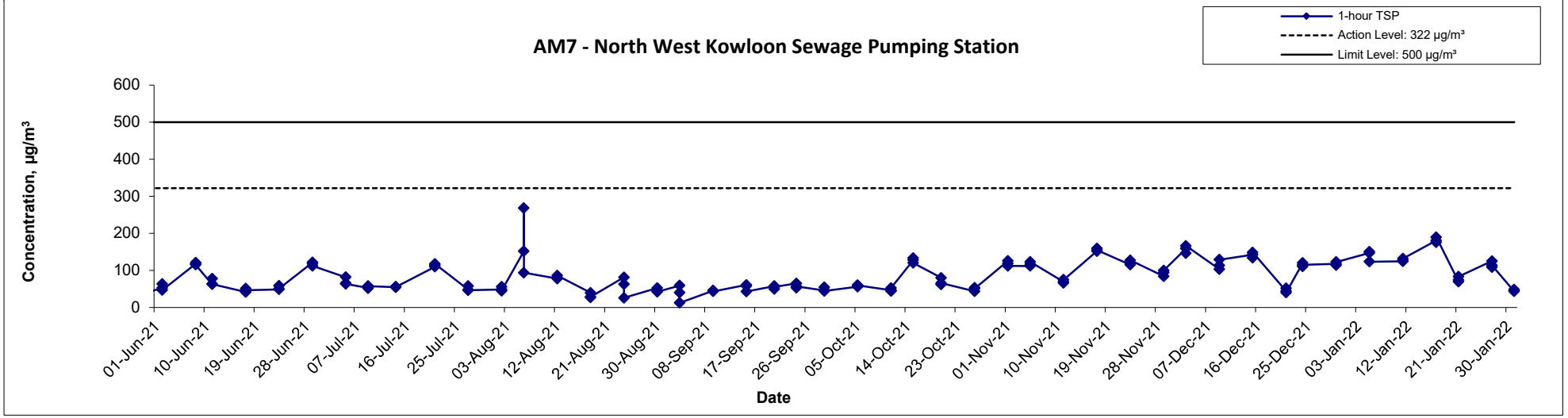
Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Evening Time of normal weekdays and General Holidays: All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during 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
1-HOUR AND 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

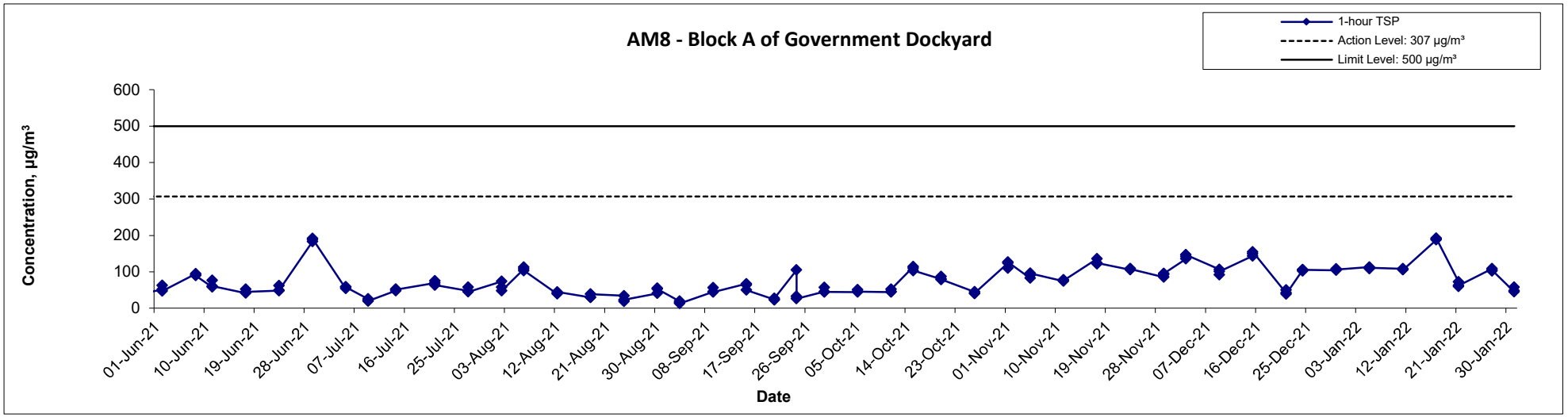
1-hr TSP Concentration Levels





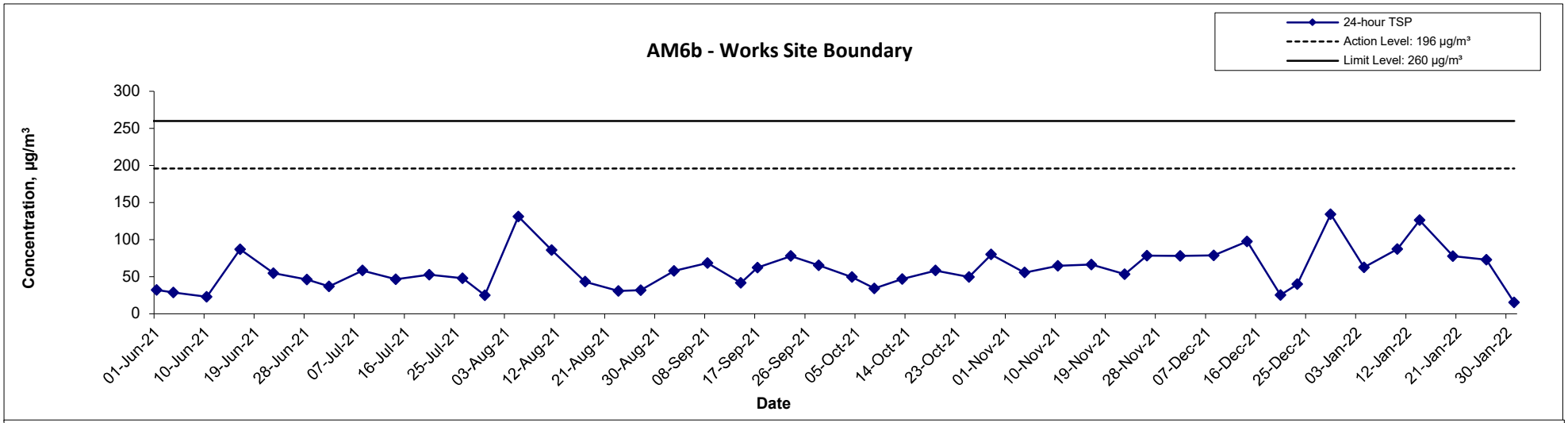
Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. WMA19011	WELLAB 匯力 consulting . testing . research
	Date Jan 22	Appendix B	

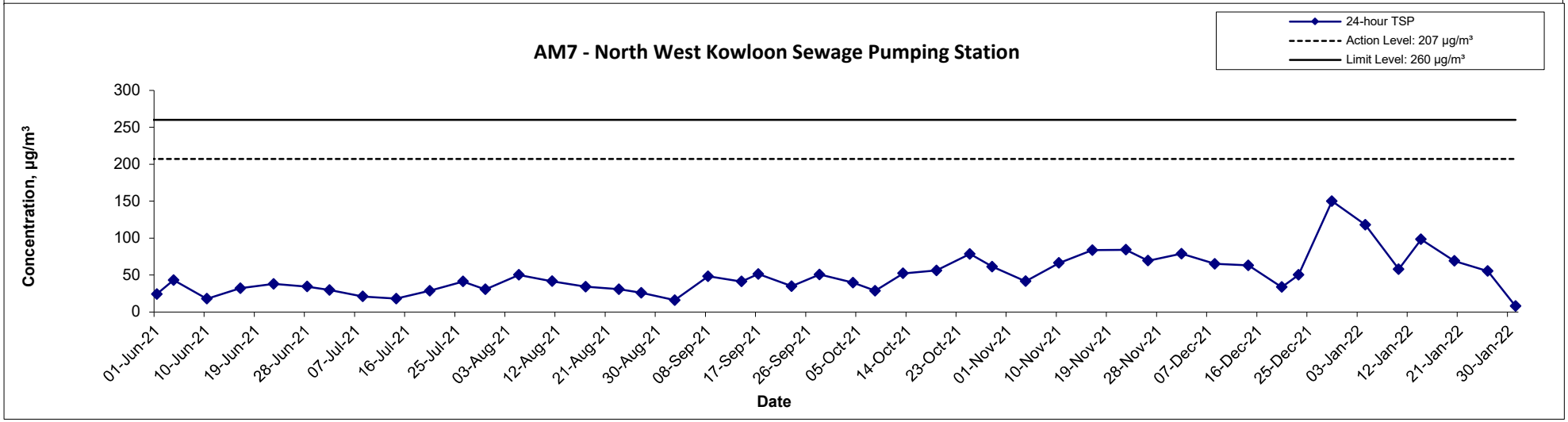
1-hr TSP Concentration Levels



Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S Date Jan 22	Project No. WMA19011 Appendix B	WELLAB 匯力 consulting . testing . research

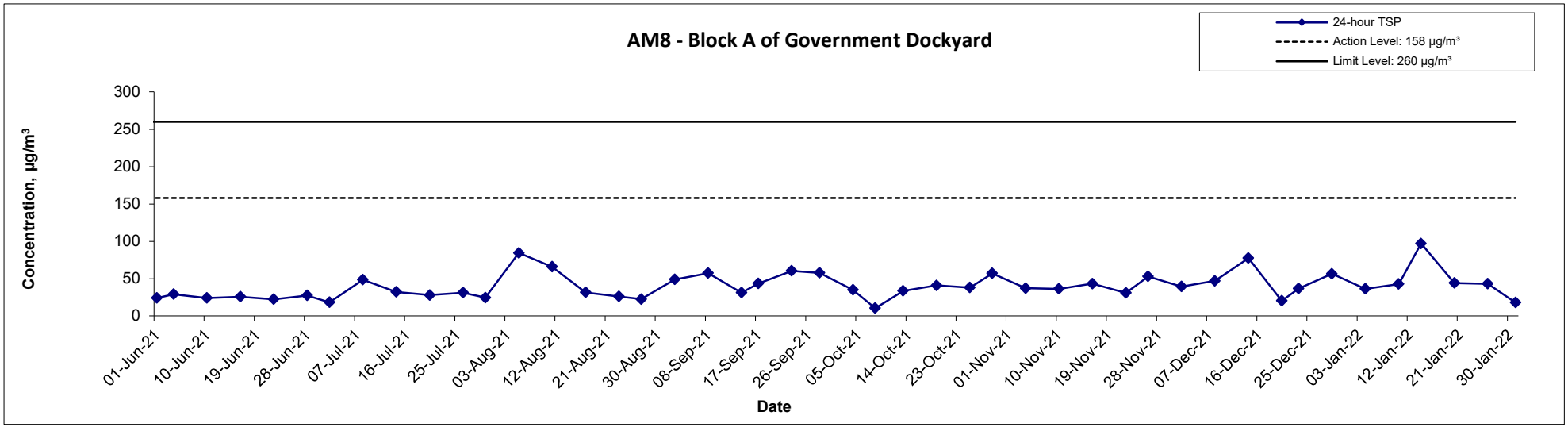
24-hr TSP Concentration Levels





Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S	Project No.: WMA19011	WELLAB 匯力 consulting . testing . research
	Date: Jan 22	Appendix: B	

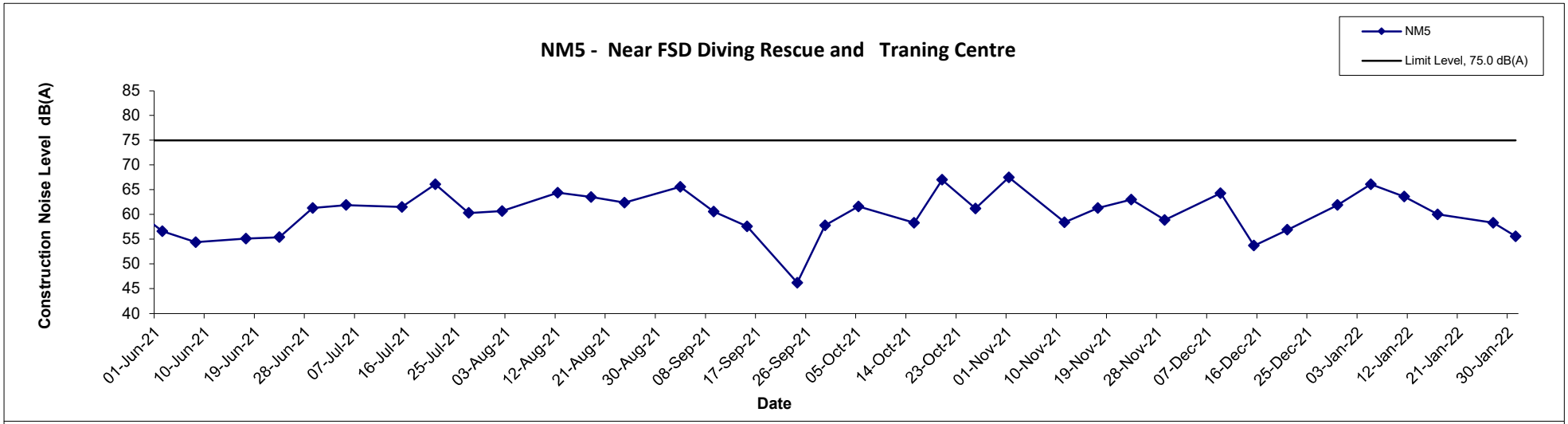
24-hr TSP Concentration Levels

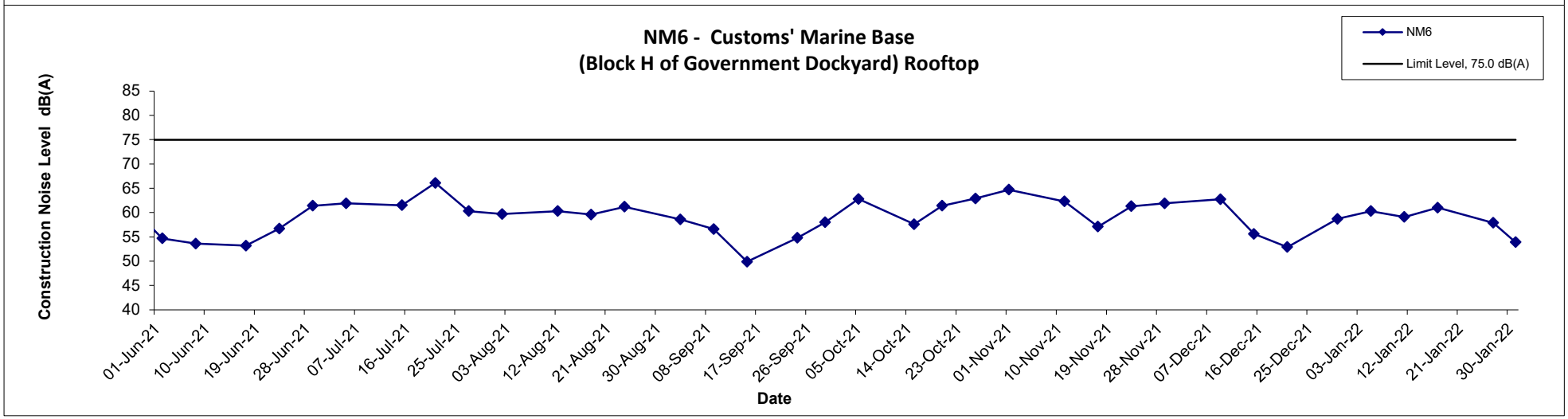


Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S Date Jan 22	Project No. WMA19011 Appendix B	WELLAB 匯力 consulting . testing . research

APPENDIX C
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Noise Levels
(0700-1900 hrs on Normal Weekdays)





Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. WMA19011	WELLAB 匯力 consulting . testing . research
	Date Jan 22	Appendix C	

APPENDIX D
METEOROLOGICAL DATA DURING MONITORING PERIOD

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Month	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Total Precipitation (mm)	Prevailing Wind Direction (Degrees)	Mean Wind Speed (km/h)
September 2019	28.7	73.0	198.9	080	20.1
October 2019	26.6	73.0	149.5	080	24.5
November 2019	23.0	69.0	Trace	070	25.9
December 2019	19.1	69.0	13.5	070	26.2
January 2020	18.6	76.0	14.8	060	26.1
February 2020	18.5	78.0	79.8	060	25.5
March 2020	21.3	84.0	41.3	060	22.2
April 2020	22.0	78.0	77.8	070	21.2
May 2020	27.7	83.0	352.5	220	18.4
June 2020	29.6	79.0	397.2	210	20.6
July 2020	30.2	76.0	125.4	230	21.0
August 2020	29.0	82.0	448.4	090	17.8
September 2020	28.4	84.0	708.8	080	19.4

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Month	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Total Precipitation (mm)	Prevailing Wind Direction (Degrees)	Mean Wind Speed (km/h)
October 2020	25.6	72.0	142.2	070	37.1
November 2020	23.5	71.0	5.1	070	26.9
December 2020	18.1	69.0	1.5	360	26.4
January 2021	19.3	62.0	Trace	050	25.2
February 2021	19.8	75.0	62.1	060	21.1
March 2021	22.0	79.0	3.5	070	22.6
April 2021	24.1	79.0	32.5	070	24.4
May 2021	29.0	78.0	65.0	230	19.6
June 2021	28.8	82	628	230	23.1
July 2021	29.7	80	379.5	090	19.5
August 2021	28.8	83	350.5	230	16.5
September 2021	29.7	78	129.6	080	16.7
October 2021	26.0	76	631.1	080	34.4

APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Month	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Total Precipitation (mm)	Prevailing Wind Direction (Degrees)	Mean Wind Speed (km/h)
November 2021	22.4	67	5.8	080	24.9
December 2021	18.9	68	19.5	070	27.7
January 2022	18.0	78	4.1	070	24.8

* The above information was extracted from Hong Kong Observatory.

** Trace means rainfall less than 0.05mm

APPENDIX E
SUMMARY OF EXCEEDANCE

APPENDIX E – SUMMARY OF EXCEEDANCE

Reporting Period: September 2019 to January 2022

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

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

c) Exceedance Report for Construction Noise (NIL)

APPENDIX F
EVENT ACTION PLANS

APPENDIX F – Event / Action Plans

Table F-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 action 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 failure in 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 F-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 action 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 G
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX G 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 H
SUMMARY OF COMPLAINTS, PROSECUTIONS, REPORTING CHANGES AND NOTIFICATION OF SUMMONS

APPENDIX H – COMPLAINT LOG

Reporting Period: September 2019 to January 2022

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

Remarks: No environmental complaints / notification of summons / successful prosecutions were received in the monitoring period.

APPENDIX I
SUMMARY OF AMOUNT OF WASTE GENERATED

Name of Department: DSD

Contract No. : DE/2018/17

Monthly Summary Waste Flow Table for **2019** (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	N/A										
Feb											
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	0.000
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.052	0.052	0.000	0.000	0.052	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.048	0.048	0.000	0.000	0.048	0.000	4.120	0.000	0.000	0.000	0.000
Oct	0.087	0.087	0.000	0.000	0.087	0.000	5.120	0.000	0.000	0.000	0.000
Nov	0.114	0.114	0.000	0.000	0.114	0.000	2.290	0.000	0.000	0.000	0.001
Dec	0.204	0.204	0.000	0.000	0.204	0.000	0.000	0.000	0.000	0.000	0.001
Total	0.506	0.506	0.000	0.000	0.506	0.000	11.530	0.000	0.000	0.000	0.002
Total since commencement of project	0.506	0.506	0.000	0.000	0.506	0.000	11.530	0.000	0.000	0.000	0.002

Notes:
(1) The performance targets are given in PS Clause 25.37(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.

Name of Department: DSD

Contract No. : DE/2018/17

Monthly Summary Waste Flow Table for 2020 (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	0.209	0.016	0.000	0.000	0.209	0.000	0.000	0.284	0.000	0.000	0.001
Feb	0.210	0.045	0.000	0.000	0.210	0.000	0.000	0.583	0.000	0.000	0.001
Mar	0.436	0.025	0.000	0.000	0.436	0.000	0.000	0.000	0.000	0.000	0.003
Apr	0.431	0.098	0.000	0.000	0.431	0.000	0.000	0.576	0.000	0.000	0.000
May	0.314	0.000	0.000	0.000	0.314	0.000	0.000	0.488	0.000	0.000	0.010
June	0.098	0.000	0.000	0.000	0.098	0.000	0.000	0.656	0.000	0.000	0.007
Sub-total	1.699	0.184	0.000	0.000	1.699	0.000	0.000	2.587	0.000	0.000	0.022
July	0.112	0.000	0.000	0.000	0.112	0.000	0.730	0.000	0.000	0.000	0.007
Aug	0.238	0.000	0.000	0.000	0.238	0.000	0.000	0.639	0.000	0.000	0.002
Sep	0.605	0.000	0.000	0.000	0.605	0.000	0.000	0.000	0.000	0.000	0.003
Oct	0.142	0.000	0.000	0.000	0.142	0.000	0.000	0.531	0.000	0.000	0.010
Nov	0.345	0.000	0.000	0.000	0.345	0.000	0.000	1.015	0.000	0.000	0.009
Dec	0.094	0.000	0.000	0.000	0.094	0.000	0.000	0.366	0.000	0.000	0.006
Total	3.234	0.184	0.000	0.000	3.234	0.000	0.730	5.138	0.000	0.000	0.059
Total since commencement of project	3.740	0.399	0.000	0.000	3.740	0.000	12.260	6.726	0.000	0.000	0.060

Notes:
(1) The performance targets are given in PS Clause 25.37(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.

Name of Department: DSD

Contract No. : DE/2018/17

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 packaging	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	0.200	0.000	0.000	0.000	0.200	0.000	0.000	1.332	0.000	0.000	0.007
Feb	0.179	0.000	0.000	0.000	0.179	0.000	0.000	3.083	0.000	0.000	0.007
Mar	0.170	0.000	0.000	0.000	0.170	0.000	0.000	3.614	0.000	0.000	0.004
Apr	0.085	0.000	0.000	0.000	0.085	0.000	0.000	2.022	0.000	0.000	0.008
May	0.070	0.000	0.000	0.000	0.070	0.000	0.000	1.456	0.000	0.000	0.002
June	0.052	0.000	0.000	0.000	0.052	0.000	0.000	0.695	0.000	0.000	0.002
Sub-total	0.755	0.000	0.000	0.000	0.755	0.000	0.000	12.202	0.000	0.000	0.030
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.258	0.000	0.000	0.006
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.207	0.000	0.000	0.002
Nov	0.012	0.000	0.000	0.000	0.012	0.000	0.000	0.160	0.000	0.000	0.003
Dec	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.108	0.000	0.000	0.004
Total	0.768	0.000	0.000	0.000	0.768	0.000	0.000	12.935	0.000	0.000	0.057
Total since commencement of project	4.508	0.399	0.000	0.000	4.508	0.000	12.260	19.661	0.000	0.000	0.106

Notes:
(1) The performance targets are given in PS Clause 25.37(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.

Name of Department: DSD

Contract No. : DE/2018/17

Monthly Summary Waste Flow Table for 2022 (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 packaging	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	2.571	0.000	0.000	0.005
Feb	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.571	0.000	0.000	0.005
July	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.571	0.000	0.000	0.005
Total since commencement of project	4.508	0.399	0.000	0.000	4.508	0.000	12.260	22.232	0.000	0.000	0.111

Notes:
(1) The performance targets are given in PS Clause 25.37(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.