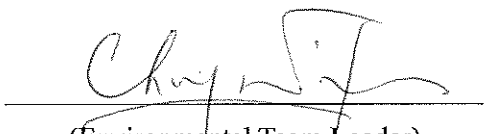
Bestwise – SFK Joint Venture

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

Monthly Environmental Monitoring and Audit Report June 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.

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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/bw/T261332/22.01/L-1502

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

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Condition 4.4 – Monthly EM&A Report for June 2021 (no. 22) Version 1.0

13 July 2021
By Post

Dear Sir,

I refer to the captioned Monthly EM&A Report for June 2021 (Version 1.0) submitted by ET on 12 July 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

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c.c.

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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
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
BSJV	Bestwise - SFK Joint Venture

EXECUTIVE SUMMARY

Introduction

1. This is the 22nd Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Wellab Limited for DSD Contract No. DE/2018/17 "Enhancement of Deodourisation System at SCISTW" (The Project) which documents the key information of EM&A and environmental monitoring works at the SCISTW under HATS Stage 2A with the Environmental Permit (Permit No. EP-322/2008/G).

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

DOU1
- Concreting for new plinth

DOU1R
- Concreting for new plinth

DOU2
- Laying Packing Block

DOU5
- Weld test for Portal frame

E&M
- DOU System
  - Mechanical electrical installation in progress
- Air Relief Duct installation in progress
- Sealant Installation in progress

Environmental Monitoring Works

3. The environmental monitoring works of the Project were conducted by the ETs for Contract DE/2018/17, at the SCISTW under HATS 2A with the Environmental Permit (Permit No. EP-322/2008/G). 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, Environmental Complaint and Handling Procedures were also checked.

4. Since the proposal for termination of Construction Phase EM&A works for Contract No. DC/2009/10 was approved by EPD on 1st June 2021, the monitoring of air quality monitoring stations (AM6b, AM7 and AM8) and noise monitoring stations (NM5 and NM6) were handed over to Contract No. DE/2018/17 from Contract No. DC/2009/10 on 1st June 2021, the environmental monitoring works of the Project and existing site audits were conducted by the ET for Contract No. DE/2018/17 from 1st June 2021.

5. 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

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
NM5	Noise	0	0	0	0	N/A
NM6	Noise	0	0	0	0	N/A
AM6b	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	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

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP); Billing account for Disposal of Construction Waste, Registered as Chemical Waste Producer, Construction Noise Permits and Water Discharge License.

Environmental Mitigation Implementation Schedule

10. 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

11. 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 May 2021	Submitted on 11 June 2021	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

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

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

Future Key Issues:

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

E&M works

- Installation of PLC Panel and Local Control Panel of DOU(s) system
- LVSB of DOU(s) system
- DOU1, DOU2 upgrade HMI touchscreen
- Install sealant
- Installation of DOU(S)
- Install isolation device for effluent drop shaft (and concrete repairing)
- Installation of air relief duct

15. The environmental concerns in the coming months are mainly on dust generated from the excavated dusty materials, general refuse and construction waste storage.

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 AM6b, AM7, AM8, NM5 and NM6. The general location plan of the Project is shown in **Figure 1**.

1.5 This is the 22nd monthly EM&A report summarizing the EM&A works conducted for the Project in June 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	Project Management's Representative	Mr. Edmund Chow	Senior Resident Engineer	2370 4311
	Coordinator	Mr. Kevin Cheung	Resident Engineer	3925 6506
Wellab	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Mr. Howard Chan	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

Construction Programme

1.7 The site activities undertaken in the reporting month included:

DOU1
- Concreting for new plinth

DOU1R
- Concreting for new plinth

DOU2
- Laying Packing Block

DOU5
- Weld test for Portal frame

E&M
- DOU System
  - Mechanical electrical installation in progress
- Air Relief Duct installation in progress
- Sealant Installation in progress

Summary of EM&A Requirements

1.8 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.

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

1.10 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 June 2021.

1.11 Since the proposal for termination of Construction Phase EM&A works for Contract No. DC/2009/10 was approved by EPD on 1st June 2021, the monitoring of air quality monitoring stations (AM6b, AM7 and AM8) and noise monitoring stations (NM5 and NM6) were handed over to Contract No. DE/2018/17 from Contract No. DC/2009/10 on 1st June 2021, the environmental monitoring works of the Project and existing site audits were conducted by the ET for Contract No. DE/2018/17 from 1st June 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. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

2.3 Since the air quality monitoring stations AM6b, AM7, AM8 were handed over from Contract No. DC/2009/10 to Contract No. DE/2018/17 from 1st June 2021, the monitoring data, monitoring methodology and QA/QC Procedure for air quality monitoring will be included in this monthly report.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Location of Measurement
AM6b(1)	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

2.4 **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

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

2.6 The monitoring methodology and QA/QC procedures for monitoring station AM6b, AM7 and AM8 are presented as follow:

TSP Monitoring with Laser Dust Monitor

Instrumentation

2.7 Direct reading laser dust meter was deployed for the air quality monitoring as shown in **Table 2.2**.

2.8 The measuring procedures of the dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(AEROCET-831)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Press and hold the Power key momentarily to power on the unit and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 second to display the Sample Screen minutes.
- Press the START / STOP key to run the internal vacuum pump for 1 minute and ready to use.
- Use the select dial to select the PM range and press the START / STOP key to start a measurement.
- Finally, push the START/STOP key to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, value and site condition were recorded during the monitoring period.
- All data were recorded in the data logger for further data processing.

Maintenance/ Calibration

2.9 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

(TISCH Model: TE-5170)

2.10 High volume Samplers (HVS) completed with appropriate sampling inlets were employed for 1-hour & 24-hour TSP monitoring. Each sampler was composed 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

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

- A horizontal platform with appropriate 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.
- Permission and access to the monitoring stations have been obtained to set up the samplers; and
- A secured supply of electricity was provided to operate the samplers.

Filters Preparation

2.12 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., (HOKLAS Registration No.083) was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Wellab's monitoring team.

2.13 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%.

Operation/ Analytical Procedures

2.14 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 centered 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 aluminum 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 kept in a clean and tightly sealed plastic bag. The filter paper was then be returned to the HOKLAS laboratory (Wellab Ltd.) for reconditioning in the humidity-controlled chamber followed by accurate weighting by an electronic balance with a readout down to 0.1mg. The elapsed time was also recorded; and
- 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 RH should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results were returned for further analysis of TSP concentrations collected by each filter.

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

Maintenance/ Calibration

2.16 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

2.17 **Table 2.4** summarizes the monitoring results at AM6b, AM7 and AM8 in the reporting month. The details and graphical presentations of the air quality monitoring results are shown in **Appendix D**.

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	69	18 - 149	346	500
AM7	76.1	41.5 – 121.5	322	
AM8	83.0	41.8 – 191.3	307	
24 hours TSP				
AM6b	45	23 – 87	196	260
AM7	32	18 – 43	207	
AM8	25	22 - 29	158	

2.18 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.**

2.19 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.**

2.20 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from vehicles movement, dust generated from the excavated dusty materials and construction works of this 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.

Monitoring Locations

3.2 Noise monitoring was conducted at two designated monitoring stations as listed in **Table 3.1,** which are also depicted in **Figure 1**.

3.3 Since the Construction noise monitoring stations NM5 and NM6 were handed over from Contract No. DC/2009/10 to Contract No. DE/2018/17 from 1st June 2021, the monitoring data, monitoring methodology and QA/QC Procedure for construction noise monitoring will be included in this monthly report.

Table 3.1 Location of Noise Monitoring Stations

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

Monitoring Equipment

3.4 Integrating Sound Level Meter was used for construction noise monitoring. The meters are Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.2** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix B**.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	BSWA, Model no.: BSWA 308	1
Calibrator	SVANTEK, Model no: SV 30A	1

Monitoring Parameters, Frequency and Duration

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

3.6 As advised by the Contractor, no construction work under Contract No. DE/2018/17 was conducted in the restricted hours during the reported month.

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

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

- The microphone head of the sound level meter was positioned at 1m from the exterior of the noise sensitive I and lowered sufficiently so that the building's external wall acted as a reflecting surface;
- The battery condition was checked to ensure the correct functioning of the meter;
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : L_{eq}(30 min.) dB(A) (as six consecutive $L_{eq,\ 5min}$ readings) during non-restricted hours (i.e. 0700-1900 hrs on normal weekdays)

- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re- calibration or repair of the equipment;
- During the monitoring period, the Leq, L90 and L10 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- Noise measurement was paused temporarily during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible and observation record during measurement period should be provided; and
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. The wind speed should be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Maintenance/ Calibration

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

3.9 The sound level meter and calibrator were checked and calibrated at yearly intervals.

3.10 Immediately prior to and following each noise measurement, the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration levels before and after the noise measurement agreed to within 1.0 dB.

Results and Observations

3.11 The noise monitoring results are summarized in **Table 3.3**. Detailed monitoring results and graphical presentations of noise monitoring are shown in **Appendix E**.

Table 3.3 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	53.2 – 61.4	75.0
NM6	54.4 – 61.3	75.0

3.12 All noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded in the reporting month. Summary of exceedance is presented in **Appendix F**.

3.13 1900-2300 hours noise monitoring was not conducted in the reporting month as there were no construction works during the period of restricted hours.

3.14 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. 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 **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
Noise	N/A	There was no observation in the reporting month.	N/A
Waste/ Chemical Management	N/A	There was no observation in the reporting month.	N/A
Landscape and Visual	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 DE/2018/17'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 DE/2018/17 are summarized in **Table 4.2**.

Table 4.2 Summary of Environmental Licence / Permit for DE/2018/17

Reference Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00035198-2019	15/1/2020	31/1/2025	The application was approved on 15-1-2020.	Valid
Registered Chemical Waste Producer				
WPN5213-269-B2565-01	N/A	N/A	The application was approved on 14-8-2019.	Valid
Billing Account for Disposal of Construction Waste				
CSW03680	6/8/2019	N/A	The application was approved on 6-8-2019.	Valid
Notification of Works Under APCO				
447348	N/A	N/A	Notice form received by EPD on 17-7-2019.	N/A
Construction Noise Permit				
GW-RW0096-21	2/4/2021	25/9/2021	The application was approved on 26/3/2021	Valid

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 non-compliance 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:

- Storage of chemicals/fuel and chemical waste/waste oil on-site;
- Leakage of oil from equipment;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Stockpile should be properly covered by tarpaulin or impervious materials to mitigate dust generation;
- Noise from operation of equipment and machinery on-site;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

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 provide adequate water spray on site;
- To mitigate dust generation by covering stockpile with tarpaulin;
- To regularly maintain the machinery and vehicles on site;
- To follow up any exceedance caused by the construction works; and
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

Noise

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- 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 identify any discharge of wastewater from the construction site;
- To provide adequate temporary drainage system with adequate capacity;
- To provide adequate wastewater treatment facilities to treat the wastewater generated during construction works and heavy rain;
- To properly cover the stockpile to prevent the generation of surface runoff; and
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.

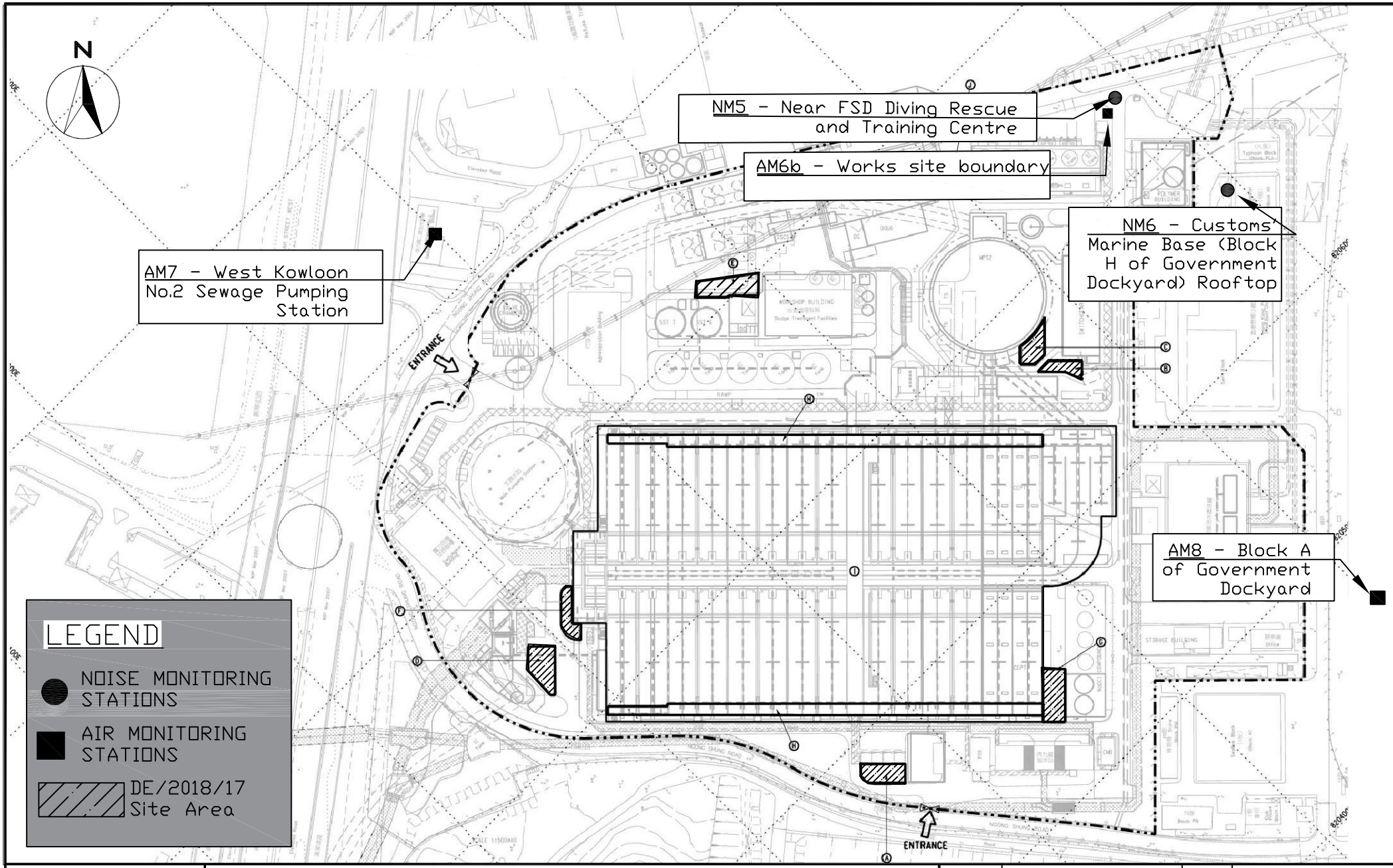
Waste/Chemical Management

- 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

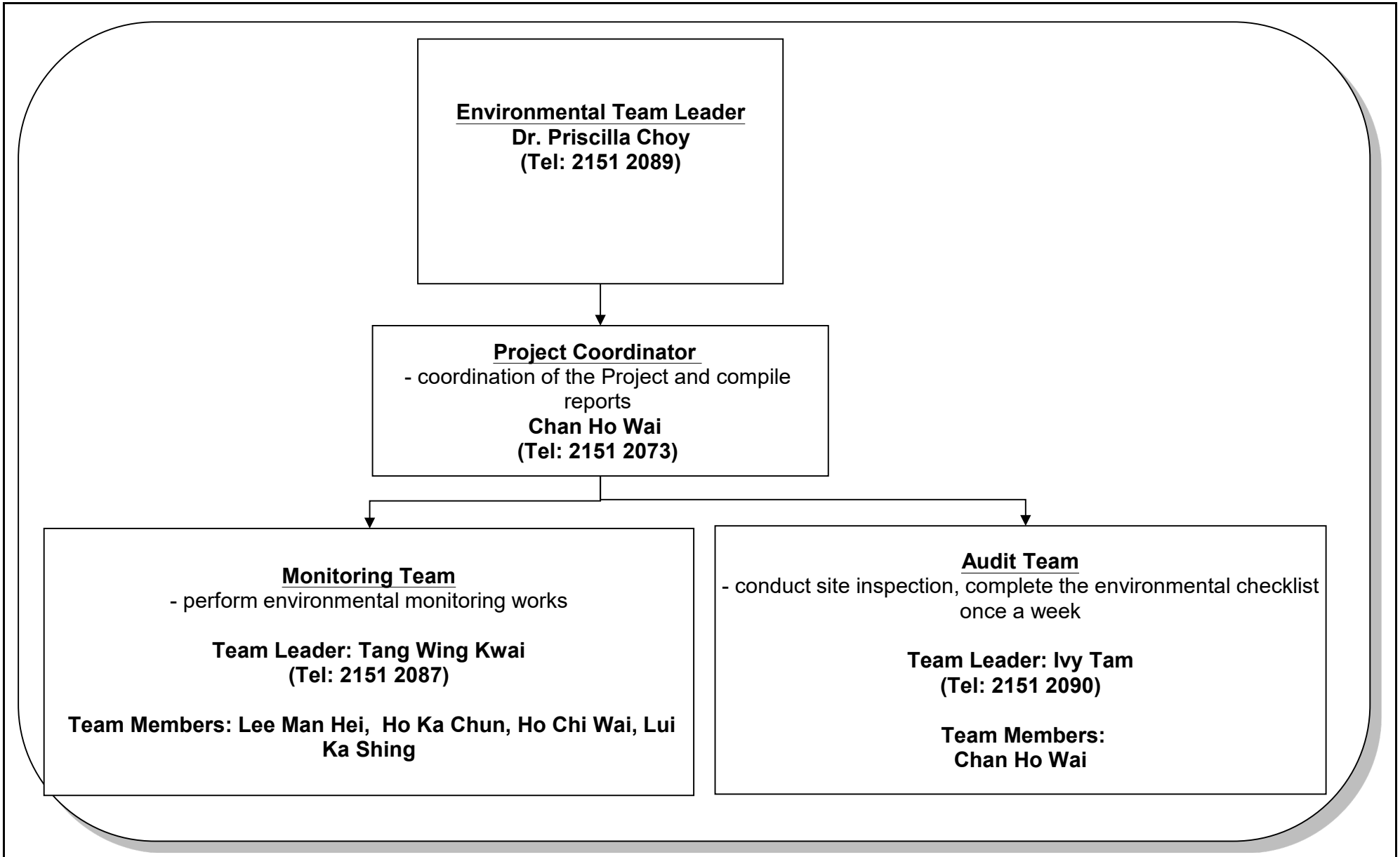


WELLAB

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	Nov 2020
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.2	Figure 2

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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 (μg/m^3)		Limit Level (μg/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 1714, Technology Park
18 On Lai Street, Shatin
New Territories, Hong Kong
Tel: 2898 7388 Fax: 2898 7076
Website : www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1808, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	35072A
Date of Issue:	2021-05-03
Date Received:	2021-04-29
Date Tested:	2021-04-30
Date Completed:	2021-05-03
Next Due Date:	2021-07-02
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.	: X23808
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-02

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)	1.171

****

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

Patrick Tse
PATRICK TSE
General Manager

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WELLAB LIMITED
Room 1714, Technology Park
18 On Lai Street, Shatin
New Territories, Hong Kong
Tel: 2898 7388 Fax: 2898 7076
Website : www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1808, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	35072C
Date of Issue:	2021-05-03
Date Received:	2021-04-29
Date Tested:	2021-04-30
Date Completed:	2021-05-03
Next Due Date:	2021-07-02
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)	1.110

****

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

PATRICK TSE
General Manager

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Room 1714, Technology Park
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New Territories, Hong Kong
Tel: 2898 7388 Fax: 2898 7076
Website : www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1808, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	35071A
Date of Issue:	2021-04-26
Date Received:	2021-04-23
Date Tested:	2021-04-24
Date Completed:	2021-04-26
Next Due Date:	2021-06-25
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)	1.134

****

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

PATRICK TSE
General Manager

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Room 1714, Technology Park
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New Territories, Hong Kong
Tel: 2898 7388 Fax: 2898 7076
Website : www.wellab.com.hk

TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1808, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	35071B
Date of Issue:	2021-04-26
Date Received:	2021-04-23
Date Tested:	2021-04-24
Date Completed:	2021-04-26
Next Due Date:	2021-06-25
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)	1.126

****

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

PATRICK TSE
General Manager

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WELLAB LIMITED
Room 1714, Technology Park
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New Territories, Hong Kong
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TEST REPORT

APPLICANT: **Wellab Limited**
(EM&A Department)
Room 1808, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	35071C
Date of Issue:	2021-04-26
Date Received:	2021-04-23
Date Tested:	2021-04-24
Date Completed:	2021-04-26
Next Due Date:	2021-06-25
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.	: X23811
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 1 minute
Equipment No.	: WA-01-09

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)	1.135

****

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

PATRICK TSE
Laboratory Manager

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA12/0006

Station: AM6 - Works Site Boundary Operator: HL

Date: 8-Apr-21 Next Due Date: 7-Jun-21

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

Ambient Condition			
Temperature, Ta (K)	296.8	Pressure, Pa (mmHg)	762.9

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	13.1	3.63	64.13	8.4	2.91
2	10.7	3.28	57.98	6.5	2.56
3	7.6	2.77	48.90	4.9	2.22
4	5.8	2.42	42.75	3.6	1.90
5	3.6	1.90	33.73	2.4	1.56

By Linear Regression of Y on X

Slope , mw = 0.0441 **Intercept, bw =** 0.0491

Correlation coefficient* = 0.9979

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.75**

Remarks:

Conducted by: Ho Man Hei Signature: Date: 8/4/2021

Checked by: Ho Ka Lun Signature: Date: 8/4/2021

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. WMA19011/WA12/0001

Station AM6 - Works Site Boundary Operator: HL

Date: 8-Jun-21 Next Due Date: 7-Aug-21

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

Ambient Condition			
Temperature, Ta (K)	301	Pressure, Pa (mmHg)	756.5

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	14.3	3.75	66.24	8.6	2.91
2	10.8	3.26	57.60	6.8	2.59
3	7.7	2.75	48.67	4.7	2.15
4	5.4	2.31	40.80	3.2	1.78
5	3.7	1.91	33.82	2.5	1.57

By Linear Regression of Y on X

Slope , mw = 0.0429 **Intercept, bw =** 0.0787

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.76**

Remarks:

Conducted by: Lee Man Hei Signature: Date: 8/6/2021

Checked by: Ho Ka Chun Signature: Date: 8/6/2021

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA14/0006

Station: AM7 - North West Kowloon Sewage Pumping Station
Operator: HL
Date: 8-Apr-21
Next Due Date: 7-Jun-21
Equipment No.: WA-12-14
Serial No. 2353

Ambient Condition			
Temperature, Ta (K)	296.8	Pressure, Pa (mmHg)	762.9

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	3.54	62.40	8.6	2.94
2	10.3	3.22	56.89	7.4	2.73
3	7.7	2.79	49.22	5.3	2.31
4	4.9	2.22	39.32	3.5	1.88
5	3.2	1.80	31.82	2.5	1.59

By Linear Regression of Y on X

Slope , mw = 0.0453 **Intercept, bw = 0.1195**

Correlation coefficient* = 0.9985

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.24**

Remarks:

Conducted by: Lee Man Hoi Signature: [signature] Date: 8/4/2021

Checked by: Ho Ka Chi Signature: [signature] Date: 8/4/2021

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. WMA19011/WA14/0001

Station	AM7 - North West Kowloon Sewage Pumping Station	Operator:	HL
Date:	8-Jun-21	Next Due Date:	7-Aug-21
Equipment No.:	WA-12-14	Serial No.	2353

Ambient Condition			
Temperature, Ta (K)	301.8	Pressure, Pa (mmHg)	755.3

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	28-Jan-22	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	12.6	3.52	62.06	8.7	2.92
2	10.8	3.26	57.48	7.6	2.73
3	7.4	2.69	47.62	5.1	2.24
4	5.2	2.26	39.96	3.6	1.88
5	3.6	1.88	33.29	2.6	1.60

By Linear Regression of Y on X

Slope , mw = **0.0467** **Intercept, bw =** **0.0263**

Correlation coefficient* = **0.9996**

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.22**

Remarks:

Conducted by: LEE MON HEI Signature: [signature] Date: 8/6/2021

Checked by: Ho ka chun Signature: [signature] Date: 8/6/2021

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

File No. MA11007/WA18/006

Station: AM8 - Block A of Government Dockyard
Operator: HL
Date: 8-Apr-21
Next Due Date: 7-Jun-21
Equipment No.: WA-12-18
Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	296.8	Pressure, Pa (mmHg)	762.9

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	11.5	3.40	60.10	8.2	2.87
2	9.7	3.13	55.22	6.6	2.58
3	7.7	2.79	49.22	5.4	2.33
4	5.1	2.27	40.10	3.7	1.93
5	3.4	1.85	32.79	2.4	1.56

By Linear Regression of Y on X

Slope , mw = 0.0470 **Intercept, bw =** 0.0234

Correlation coefficient* = 0.9987

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.14

Remarks:

Conducted by: Lee Man Hei Signature: Date: 8/4/2021
Checked by: Ho Ka Chun Signature: Date: 8/4/2021

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High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. WMA19011/WA18/0001

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

Date: 8-Jun-21 Next Due Date: 7-Aug-21

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

Ambient Condition			
Temperature, Ta (K)	301.9	Pressure, Pa (mmHg)	755.3

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0569	Intercept, bc	-0.01398
Last Calibration Date:	28-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orifice			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	11.5	3.36	59.30	8.0	2.80
2	9.8	3.10	54.76	6.4	2.51
3	7.7	2.75	48.56	5.5	2.32
4	5.4	2.30	40.71	3.9	1.96
5	3.1	1.74	30.90	2.4	1.53

By Linear Regression of Y on X

Slope , mw = 0.0434 **Intercept, bw =** 0.1918

Correlation coefficient* = 0.9970

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.31**

Remarks:

Conducted by: LEE MAN HEI Signature: Date: 8/6/2021

Checked by: Ho Ka Chun Signature: Date: 8/6/2021

TISCH Environmental

RECALIBRATION DUE DATE:
January 28, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	January 28, 2021	**Rootsmeter S/N:** 438320	**Ta:** 294	°K
Operator:	Jim Tisch		**Pa:** 763.5	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **0993**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4160	3.3	2.00
2	3	4	1	0.9980	6.4	4.00
3	5	6	1	0.8890	8.0	5.00
4	7	8	1	0.8500	8.8	5.50
5	9	10	1	0.7020	12.9	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)
1.0139	0.7160	1.4271	0.9957	0.7032	0.8776
1.0098	1.0118	2.0182	0.9916	0.9936	1.2411
1.0076	1.1334	2.2564	0.9895	1.1131	1.3875
1.0066	1.1842	2.3666	0.9885	1.1629	1.4553
1.0011	1.4261	2.8542	0.9831	1.4004	1.7551
QSTD	**m=**	**2.00902**	**QA**	**m=**	**1.25802**
	b=	**-0.01398**		**b=**	**-0.00860**
	r=	**0.99997**		**r=**	**0.99997**

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

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WELLAB LIMITED
Room 1701, Technology Park,
18 On Lai Street, Shatin,
N.T., Hong Kong.
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.:	34873B
Date of Issue:	2021-03-15
Date Received:	2021-03-12
Date Tested:	2021-03-12
Date Completed:	2021-03-15
Next Due Date:	2022-03-14
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.	: 580017
Equipment No.	: WN-01-10

Test conditions:

Room Temperature	: 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

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

Patrick Tse
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.:	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

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

PATRICK TSE
General Manager

APPENDIX C
ENVIRONMENTAL MONITORING SCHEDULES

DE/2018/17, Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works
Impact Air Quality and Noise Monitoring Schedule (June 2021)

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

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

DE/2018/17, Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works
Tentative Impact Air Quality and Noise Monitoring Schedule (July 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jul	2-Jul	3-Jul
					24 hr TSP	
4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul
	1hr TSP X 3 Noise			24 hr TSP	1hr TSP X 3	
11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul
			24 hr TSP	1hr TSP X 3 Noise		
18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul
		24 hr TSP	1hr TSP X 3 Noise			
25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul
	24 hr TSP	1hr TSP X 3 Noise			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				
2-Jun-21	13:00	Cloudy	303.5	3.4970	3.5033	0.0063	11987.8	11988.8	1.0	1.21	1.21	1.21	72.4	87.1	210501/098
2-Jun-21	14:00	Cloudy	302.8	3.4975	3.5058	0.0083	11988.8	11989.8	1.0	1.21	1.21	1.21	72.4	114.6	210501/100
2-Jun-21	15:00	Cloudy	302.6	3.3389	3.3423	0.0034	11989.8	11990.8	1.0	1.21	1.21	1.21	72.5	46.9	210601/045
8-Jun-21	13:15	Sunny	304.6	3.3033	3.3085	0.0052	12014.8	12015.8	1.0	1.22	1.22	1.22	73.1	71.1	210601/050
8-Jun-21	14:15	Sunny	304.4	3.2079	3.2115	0.0036	12015.8	12016.8	1.0	1.22	1.22	1.22	73.1	49.2	210601/051
8-Jun-21	15:15	Sunny	303.3	3.3034	3.3067	0.0033	12016.8	12017.8	1.0	1.22	1.22	1.22	73.2	45.1	210601/052
11-Jun-21	14:00	Cloudy	304.1	3.3456	3.3510	0.0054	12041.8	12042.8	1.0	1.22	1.22	1.22	73.1	73.9	210601/080
11-Jun-21	15:05	Cloudy	303.8	3.3519	3.3570	0.0051	12042.8	12043.8	1.0	1.22	1.22	1.22	73.1	69.8	210601/078
11-Jun-21	16:10	Cloudy	303.4	3.3072	3.3128	0.0056	12043.8	12044.8	1.0	1.22	1.22	1.22	73.1	76.6	210601/079
17-Jun-21	13:00	Sunny	305.5	3.5255	3.5290	0.0035	12068.8	12069.8	1.0	1.22	1.22	1.22	73.0	47.9	210602/041
17-Jun-21	14:00	Sunny	305.5	3.4886	3.4924	0.0038	12069.8	12070.8	1.0	1.22	1.22	1.22	73.0	52.1	210602/042
17-Jun-21	15:00	Sunny	305.4	3.5215	3.5257	0.0042	12070.8	12071.8	1.0	1.22	1.22	1.22	73.0	57.5	210602/043
23-Jun-21	13:00	Cloudy	299.1	3.2576	3.2622	0.0046	12095.8	12096.8	1.0	1.23	1.23	1.23	73.8	62.4	210601/083
23-Jun-21	14:00	Cloudy	298.2	3.3497	3.3607	0.0110	12096.8	12097.8	1.0	1.23	1.23	1.23	73.9	148.9	210602/084
23-Jun-21	15:00	Cloudy	298.2	3.2484	3.2537	0.0053	12097.8	12098.8	1.0	1.23	1.23	1.23	73.9	71.8	210602/085
29-Jun-21	13:10	Cloudy	302.4	3.5243	3.5297	0.0054	12122.8	12123.8	1.0	1.22	1.22	1.22	73.3	73.7	210602/084
29-Jun-21	14:10	Cloudy	302.7	3.5041	3.5099	0.0058	12123.8	12124.8	1.0	1.22	1.22	1.22	73.3	79.2	210602/083
29-Jun-21	15:10	Cloudy	302.7	3.4855	3.4868	0.0013	12124.8	12125.8	1.0	1.22	1.22	1.22	73.2	17.7	210602/082
													Min	18	
													Max	149	
													Average	69	

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (μg/m^3)
2-Jun-21	13:00	Cloudy	52.6
2-Jun-21	14:00	Cloudy	63.6
2-Jun-21	15:00	Cloudy	46.7
8-Jun-21	13:00	Sunny	117.8
8-Jun-21	14:00	Sunny	120.8
8-Jun-21	15:00	Sunny	115.4
11-Jun-21	14:00	Cloudy	62.5
11-Jun-21	15:00	Cloudy	78.0
11-Jun-21	16:00	Cloudy	63.1
17-Jun-21	13:05	Sunny	41.5
17-Jun-21	14:05	Sunny	51.3
17-Jun-21	15:05	Sunny	46.6
23-Jun-21	13:00	Cloudy	48.8
23-Jun-21	14:00	Cloudy	58.6
23-Jun-21	15:00	Cloudy	50.5
29-Jun-21	13:00	Cloudy	121.5
29-Jun-21	14:00	Cloudy	118.1
29-Jun-21	15:00	Cloudy	112.0
		Minimum	41.5
		Maximum	121.5
		Average	76.1

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (μg/m3)
2-Jun-21	13:45	Cloudy	51.3
2-Jun-21	14:45	Cloudy	62.7
2-Jun-21	15:45	Cloudy	47.0
8-Jun-21	13:40	Sunny	94.8
8-Jun-21	14:40	Sunny	91.4
8-Jun-21	15:40	Sunny	89.6
11-Jun-21	14:20	Cloudy	58.4
11-Jun-21	15:20	Cloudy	76.4
11-Jun-21	16:20	Cloudy	60.8
17-Jun-21	14:25	Sunny	41.8
17-Jun-21	15:25	Sunny	51.9
17-Jun-21	16:25	Sunny	44.7
23-Jun-21	13:10	Cloudy	48.2
23-Jun-21	14:10	Cloudy	61.7
23-Jun-21	15:10	Cloudy	49.2
29-Jun-21	13:20	Cloudy	183.0
29-Jun-21	14:20	Cloudy	189.0
29-Jun-21	15:20	Cloudy	191.3
		Minimum	41.8
		Maximum	191.3
		Average	83.0

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. (μg/m^3)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
1-Jun-21	Cloudy	299.5	3.3587	3.4146	0.0559	11963.8	11987.8	24.0	1.22	1.21	1.21	1749.5	32.0	210601/013
4-Jun-21	Sunny	300.6	3.5012	3.5513	0.0501	11990.8	12014.8	24.0	1.21	1.21	1.21	1744.5	28.7	210501/099
10-Jun-21	Cloudy	301.4	3.2789	3.3193	0.0404	12017.8	12041.8	24.0	1.23	1.22	1.22	1763.0	22.9	210601/047
16-Jun-21	Sunny	303.1	3.2777	3.4304	0.1527	12044.8	12068.8	24.0	1.22	1.22	1.22	1759.5	86.8	210601/081
22-Jun-21	Cloudy	298.7	3.4693	3.5660	0.0967	12071.8	12095.8	24.0	1.23	1.23	1.23	1771.8	54.6	210602/044
28-Jun-21	Cloudy	299.7	3.3425	3.4241	0.0816	12098.8	12122.8	24.0	1.23	1.22	1.23	1768.6	46.1	210602/086
												Min	23	
												Max	87	
												Average	45	

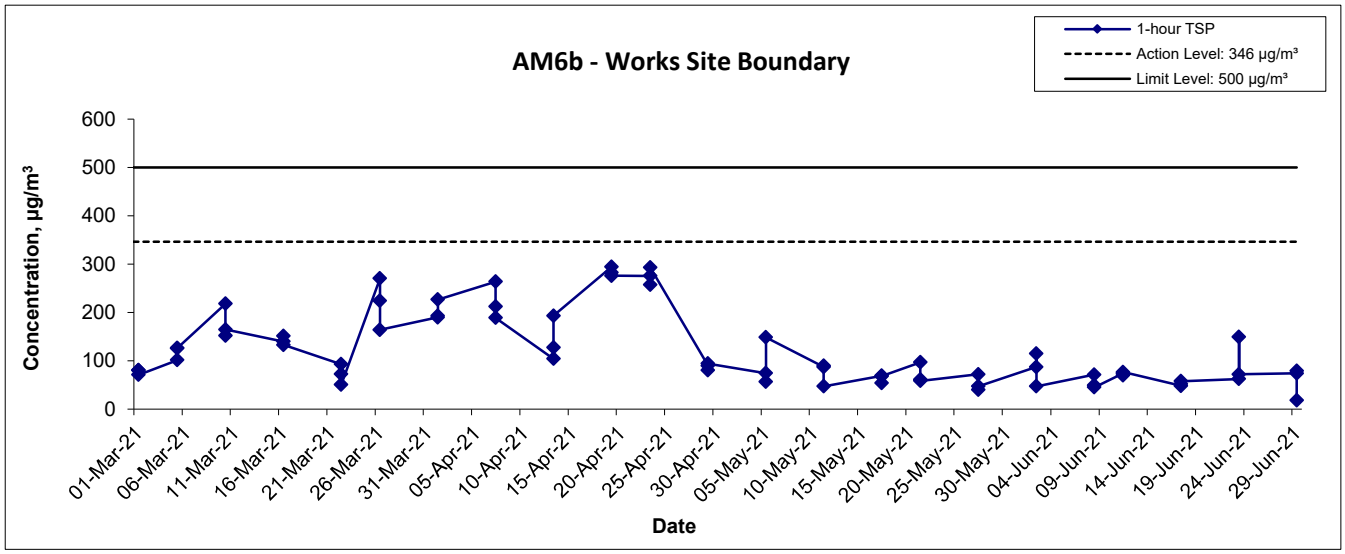
Location AM7 - North West Kowloon Sewage Pumping Station

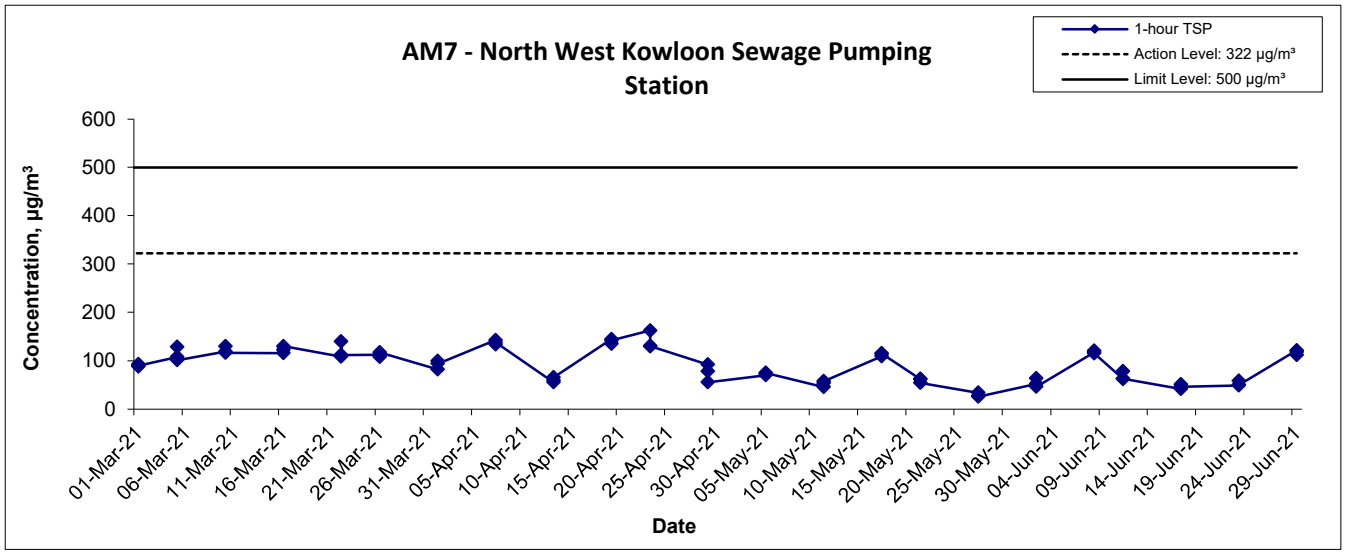
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
1-Jun-21	Cloudy	299.5	3.3182	3.3600	0.0418	41142.4	41166.4	24.0	1.20	1.20	1.20	1729.5	24.2	210601/017
4-Jun-21	Sunny	300.6	3.4938	3.5681	0.0743	41166.4	41190.4	24.0	1.19	1.20	1.20	1724.4	43.1	210501/097
10-Jun-21	Cloudy	301.4	3.2096	3.2409	0.0313	41190.4	41214.4	24.0	1.22	1.22	1.22	1751.9	17.9	210601/048
16-Jun-21	Sunny	303.1	3.2456	3.3018	0.0562	41214.4	41238.4	24.0	1.21	1.21	1.21	1748.5	32.1	210601/081
22-Jun-21	Cloudy	298.7	3.4938	3.5607	0.0669	41238.4	41262.4	24.0	1.23	1.22	1.22	1760.4	38.0	210602/046
28-Jun-21	Cloudy	299.7	3.3049	3.3651	0.0602	41262.4	41286.4	24.0	1.23	1.21	1.22	1757.3	34.3	210601/087
												Min	18	
												Max	43	
												Average	32	

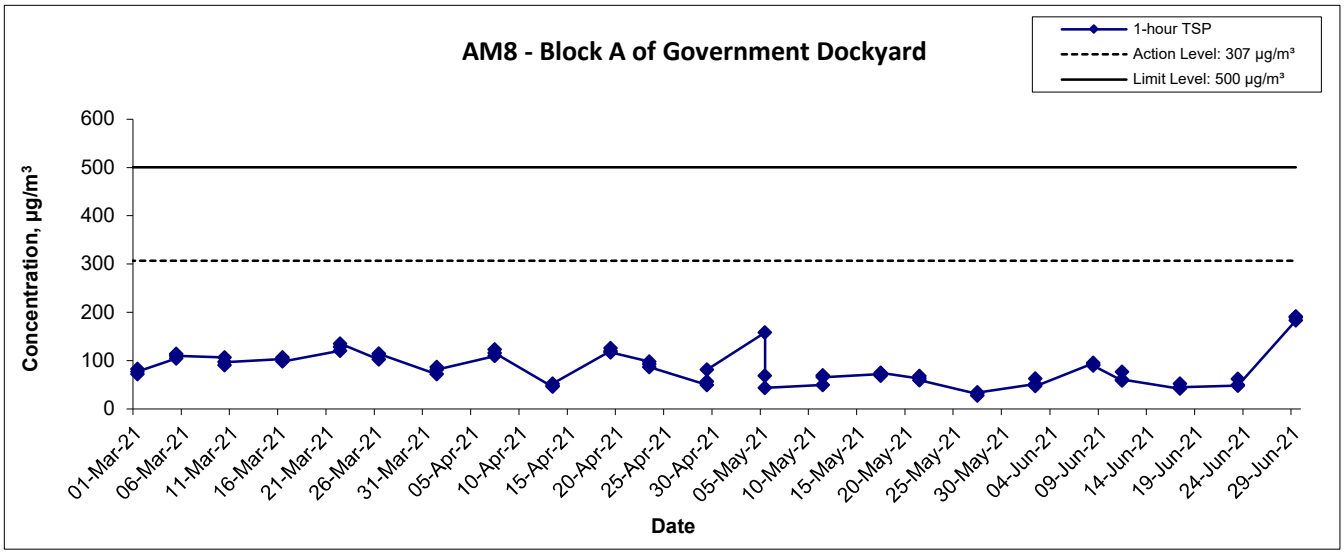
Location AM8 - Block A of Government Dockyard

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. (μg/m^3)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
1-Jun-21	Cloudy	299.5	3.3069	3.3486	0.0417	14076.2	14100.2	24.0	1.20	1.20	1.20	1729.1	24.1	210601/018
4-Jun-21	Sunny	300.6	3.3238	3.3742	0.0504	14100.2	14124.2	24.0	1.19	1.20	1.20	1724.2	29.2	210601/046
10-Jun-21	Cloudy	301.4	3.2360	3.2779	0.0419	14124.2	14148.2	24.0	1.22	1.22	1.22	1752.3	23.9	210601/049
16-Jun-21	Sunny	303.1	3.3158	3.3610	0.0452	14148.2	14172.2	24.0	1.21	1.21	1.21	1748.6	25.8	210601/077
22-Jun-21	Cloudy	298.7	3.5060	3.5452	0.0392	14172.2	14196.2	24.0	1.23	1.22	1.22	1761.6	22.3	210602/045
28-Jun-21	Cloudy	299.7	3.2993	3.3474	0.0481	14196.2	14220.2	24.0	1.23	1.21	1.22	1758.2	27.4	210601/088
												Min	22	
												Max	29	
												Average	25	

1-hr TSP Concentration Levels

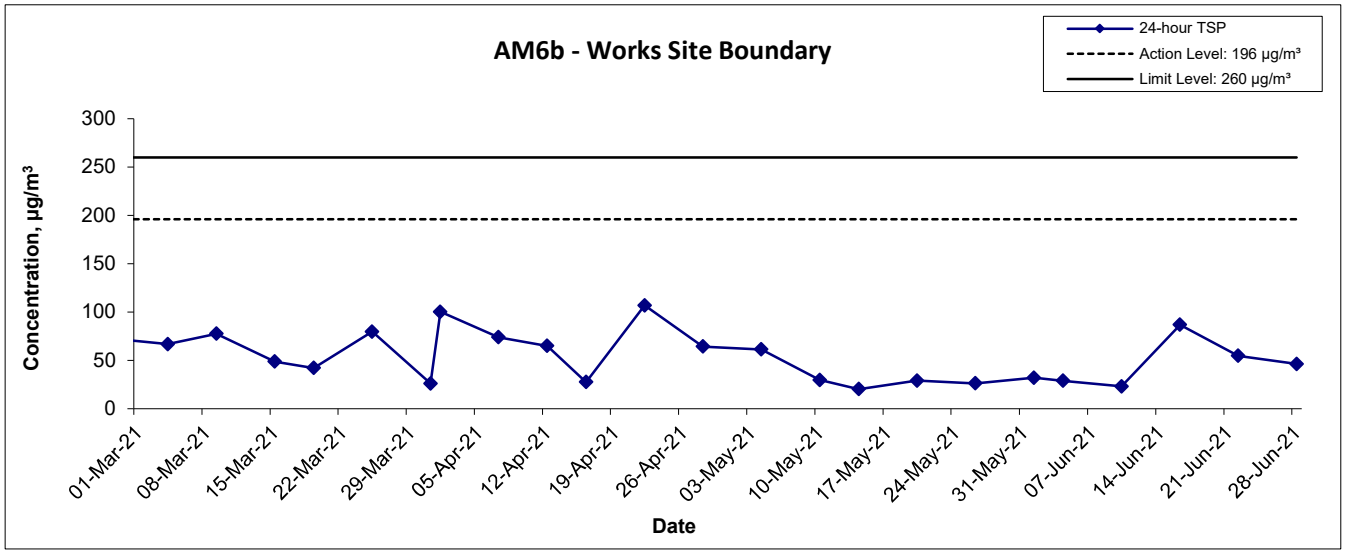


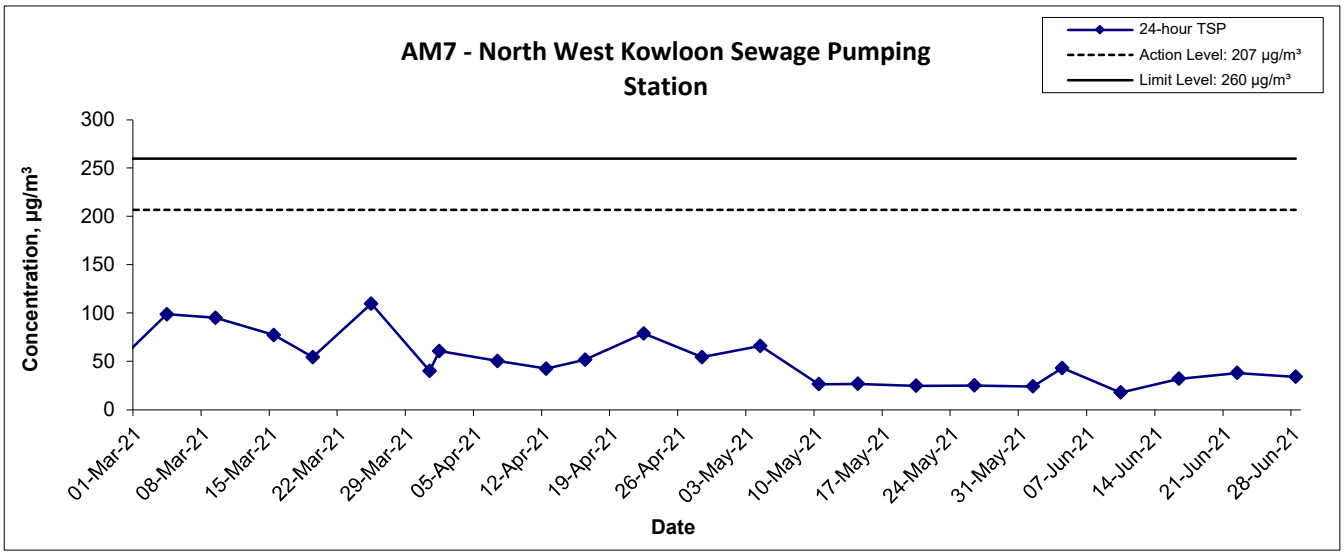


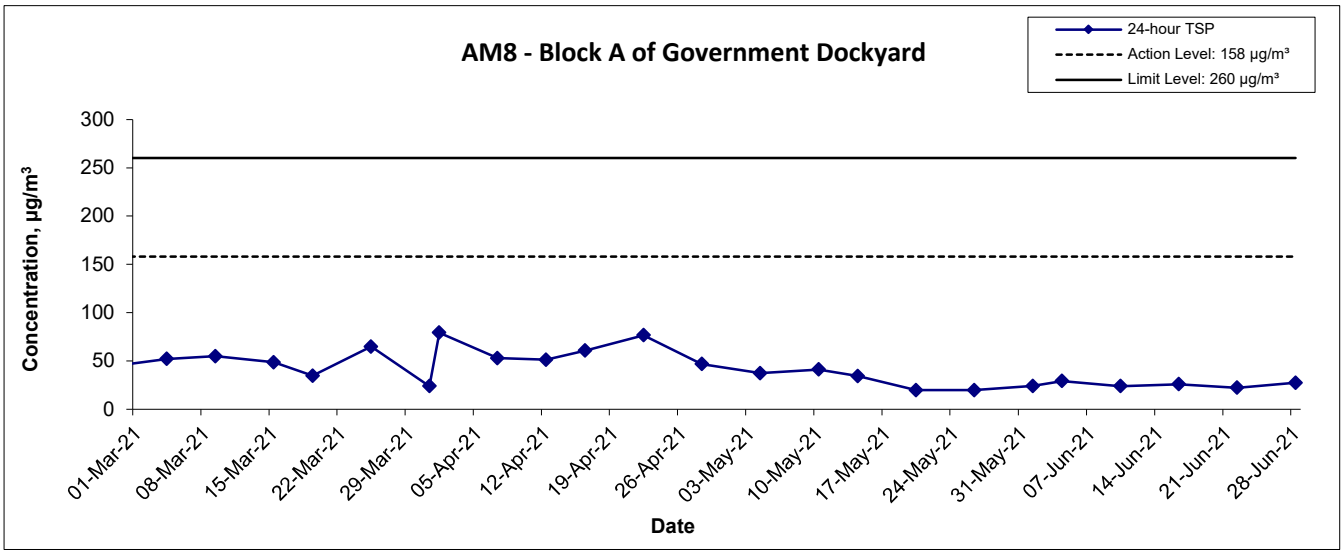


Title: Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S	Project No.: WMA19011	WELLAB 匯力 consulting . testing . research
	Date: Jun 21	Appendix: D	

24-hr TSP Concentration Levels







Title	Scale	Project No.
Contract No. DE/2018/17 Enhancement of Deodourisation System at Stonecutters Island Sewage Treatment Works Graphical Presentation of 24-hour TSP Monitoring Results	N.T.S	WMA19011
	Date: Jun 21	Appendix: D

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APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - Noise Monitoring Results

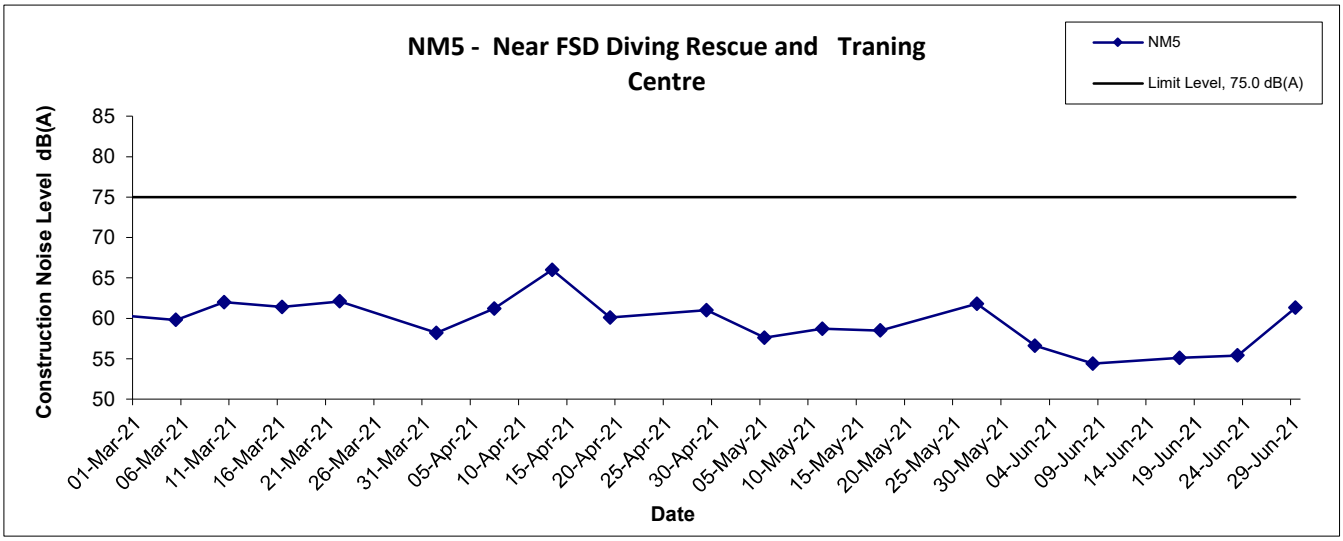
(0700-1900 hrs on Normal Weekdays)

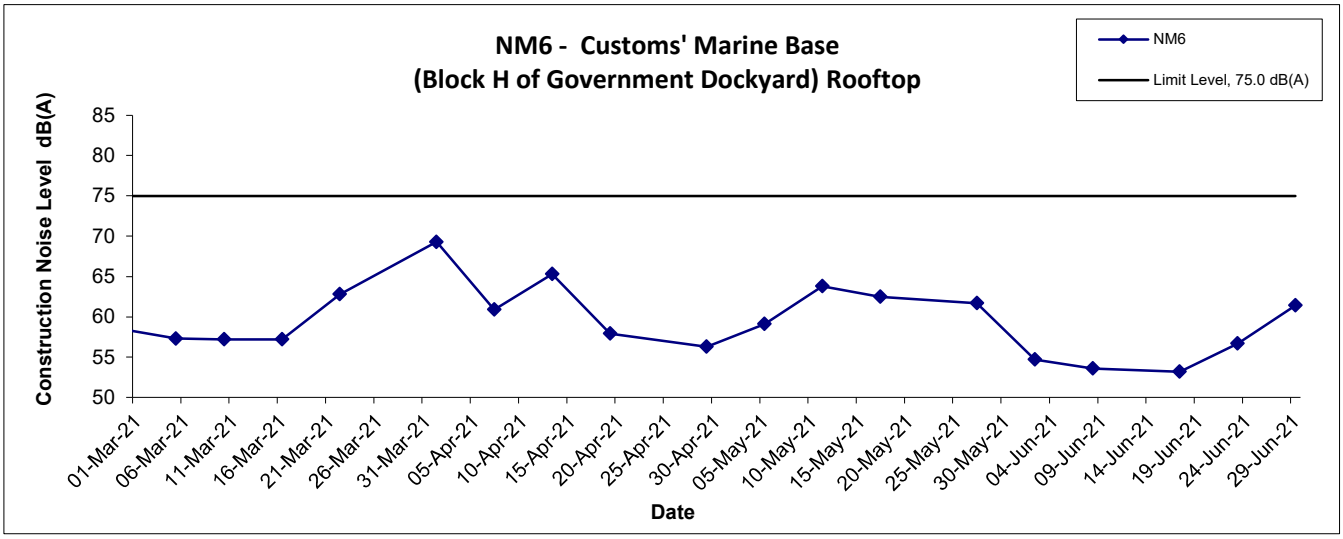
Location NM5 - Near FSD Diving Rescue and Training Centre					
Date	Time	Weather	Unit: dB (A) (30-min) Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
2-Jun-21	13:30	Cloudy	54.7	56.2	50.1
8-Jun-21	14:45	Sunny	53.6	54.8	50.2
17-Jun-21	13:15	Sunny	53.2	54.6	48.8
23-Jun-21	13:20	Cloudy	56.7	57.9	50.4
29-Jun-21	15:30	Cloudy	61.4	62.4	59.5
		Maximum	61.4		
		Minimum	53.2		

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}
2-Jun-21	14:45	Cloudy	56.6	57.2	50.3
8-Jun-21	13:30	Sunny	54.4	55.8	50.4
17-Jun-21	14:30	Sunny	55.1	56.3	49.2
23-Jun-21	14:10	Cloudy	55.4	56.8	50.1
29-Jun-21	13:50	Cloudy	61.3	61.9	60.7
		Maximum	61.3		
		Minimum	54.4		

Noise Levels

(0700-1900 hrs on Normal Weekdays)





Title: 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 Date: Jun 21	Project No.: WMA19011 Appendix: E	WELLAB 匯力 consulting . testing . research

APPENDIX F
SUMMARY OF EXCEEDANCE

APPENDIX F – SUMMARY OF EXCEEDANCE

Reporting Month: June 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	210603
Date	3 June 2021 (Thursday)
Time	09:30 – 10:30

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 session: On previous audit session (Ref. No.: 210527), no environmental deficiency was observed during site inspection.	

	Name	Signature	Date
Recorded by	Ivan Wong	Ivan	7 June 2021
Checked by	Dr. Priscilla Choy		7 June 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210610
Date	10 June 2021 (Thursday)
Time	09:30 – 10:30

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 session: On previous audit session (Ref. No.: 210603), no environmental deficiency was observed during site inspection.	

	Name	Signature	Date
Recorded by	Ivan Wong	Ivan	15 June 2021
Checked by	Dr. Priscilla Choy		15 June 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210616
Date	16 June 2021 (Wednesday)
Time	14:00 – 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 session: On previous audit session (Ref. No.: 210610), no environmental deficiency was observed during site inspection.	

	Name	Signature	Date
Recorded by	Ivan Wong	Ivan	21 June 2021
Checked by	Dr. Priscilla Choy		21 June 2021

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	210624
Date	24 June 2021 (Thursday)
Time	09:30 – 10:30

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 session: On previous audit session (Ref. No.: 210616), no environmental deficiency was observed during site inspection.	

	Name	Signature	Date
Recorded by	Ivan Wong	Ivan	28 June 2021
Checked by	Dr. Priscilla Choy		28 June 2021

APPENDIX H
SUMMARY OF AMOUNT OF WASTE GENERATED

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	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	0.000	0.000	0.000	0.002
Sub-total	0.755	0.000	0.000	0.000	0.755	0.000	0.000	11.507	0.000	0.000	0.030
July											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	0.755	0.000	0.000	0.000	0.755	0.000	0.000	11.507	0.000	0.000	0.030
Total since commencement of project	4.495	0.399	0.000	0.000	4.495	0.000	12.260	18.233	0.000	0.000	0.079

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.

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 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 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 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 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

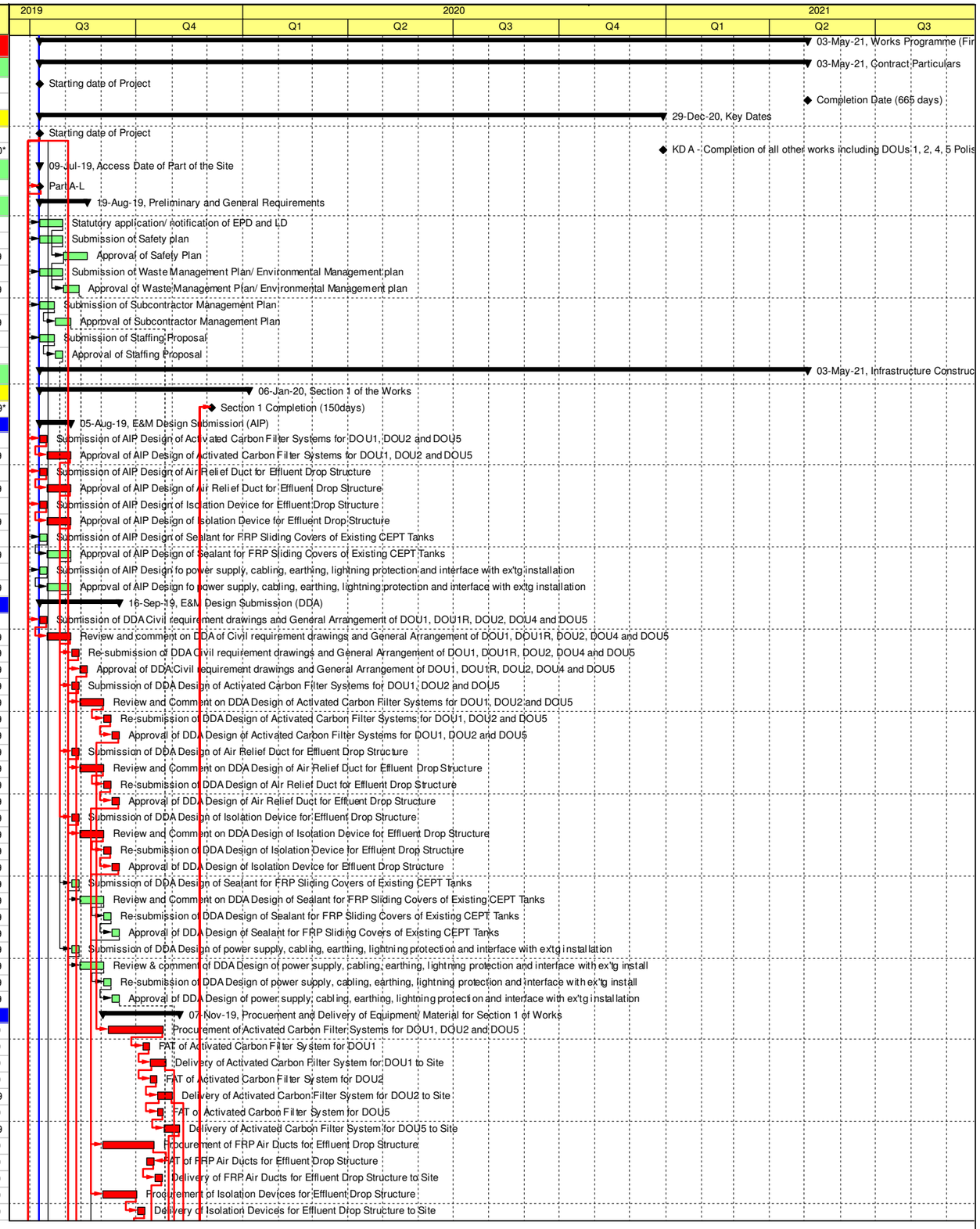
Reporting Month: June 2021

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	Total Float	Original Duration	Time risk allowance	Start	Finish
Works Programme (First Programme)							
Contract Particulars							
KD0001	Starting date of Project	0%	0	0		09-Jul-19*	
KD0005	Completion Date (665 days)	0%	0	0			03-May-2
Key Dates							
KD0010	Starting date of Project	0%	0	0		09-Jul-19*	
KD0020	KD A - Completion of all other works including DOUs 1, 2, 4, 5 Polishing stages for FSI (540 days)	0%	0	0			29-Dec-20*
Access Date of Part of the Site							
A1090	Part A-L	0%	0	0		09-Jul-19	
Preliminary and General Requirements							
PG00010	Statutory application/ notification of EPD and LD	0%	11	21	0	09-Jul-19	29-Jul-19
PG00020	Submission of Safety plan	0%	11	21	0	09-Jul-19	29-Jul-19
PG00030	Approval of Safety Plan	0%	11	21	0	30-Jul-19	19-Aug-19
PG00040	Submission of Waste Management Plan/ Environmental Management plan	0%	11	21	0	09-Jul-19	29-Jul-19
PG00050	Approval of Waste Management Plan/ Environmental Management plan	0%	11	14	0	30-Jul-19	12-Aug-19
PG00060	Submission of Subcontractor Management Plan	0%	112	14	0	09-Jul-19	22-Jul-19
PG00070	Approval of Subcontractor Management Plan	0%	112	14	0	23-Jul-19	05-Aug-19
PG00080	Submission of Staffing Proposal	0%	7	14	0	09-Jul-19	22-Jul-19
PG00090	Approval of Staffing Proposal	0%	7	7	0	23-Jul-19	29-Jul-19
Infrastructure Construction Works							
Section 1 of the Works							
A2960	Section 1 Completion (150days)	0%	0	0	0		05-Dec-19*
E&M Design Submission (AIP)							
A4930	Submission of AIP Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	09-Jul-19	15-Jul-19
A4940	Approval of AIP Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	21	0	16-Jul-19	05-Aug-19
A4950	Submission of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	7	0	09-Jul-19	15-Jul-19
A4960	Approval of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	21	0	16-Jul-19	05-Aug-19
A4970	Submission of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	09-Jul-19	15-Jul-19
A4980	Approval of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	21	0	16-Jul-19	05-Aug-19
A4990	Submission of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7	0	09-Jul-19	15-Jul-19
A5000	Approval of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	21	0	16-Jul-19	05-Aug-19
A5010	Submission of AIP Design fo power supply, cabling, earthing, lightning protection and interface with	0%	57	7	0	09-Jul-19	15-Jul-19
A5170	Approval of AIP Design fo power supply, cabling, earthing, lightning protection and interface with ex'	0%	57	21	0	16-Jul-19	05-Aug-19
E&M Design Submission (DDA)							
A4945	Submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2	0%	0	7	0	09-Jul-19	15-Jul-19
A4955	Review and comment on DDA of Civil requirement drawings and General Arrangement of DOU1, D(	0%	0	21	0	16-Jul-19	05-Aug-19
A4965	Re-submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, D(	0%	0	7	0	06-Aug-19	12-Aug-19
A4975	Approval of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2, D	0%	0	7	0	13-Aug-19	19-Aug-19
A5015	Submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	06-Aug-19	12-Aug-19
A5020	Review and Comment on DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DC	0%	0	21	0	13-Aug-19	02-Sep-19
A5030	Re-submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	03-Sep-19	09-Sep-19
A5040	Approval of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	10-Sep-19	16-Sep-19
A5050	Submission of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7	0	06-Aug-19	12-Aug-19
A5060	Review and Comment on DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	21	0	13-Aug-19	02-Sep-19
A5070	Re-submission of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7	0	03-Sep-19	09-Sep-19
A5080	Approval of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7	0	10-Sep-19	16-Sep-19
A5090	Submission of DDA Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	06-Aug-19	12-Aug-19
A5100	Review and Comment on DDA Design of Isolation Device for Effluent Drop Structure	0%	0	21	0	13-Aug-19	02-Sep-19
A5110	Re-submission of DDA Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	03-Sep-19	09-Sep-19
A5120	Approval of DDA Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	10-Sep-19	16-Sep-19
A5130	Submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7	0	06-Aug-19	12-Aug-19
A5140	Review and Comment on DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	21	0	13-Aug-19	02-Sep-19
A5150	Re-submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7	0	03-Sep-19	09-Sep-19
A5160	Approval of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7	0	10-Sep-19	16-Sep-19
A5460	Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface witl	0%	57	7	0	06-Aug-19	12-Aug-19
A8020	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interf	0%	57	21	0	13-Aug-19	02-Sep-19
A8030	Re-submission of DDA Design of power supply, cabling, earthing, lightning protection and interface	0%	57	7	0	03-Sep-19	09-Sep-19
A8040	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	57	7	0	10-Sep-19	16-Sep-19
Procuement and Delivery of Equipment/ Material for Section 1 of Works							
A5180	Procurement of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	48	0	07-Sep-19	24-Oct-19
A5190	FAT of Activated Carbon Filter System for DOU1	0%	0	6	0	07-Oct-19	12-Oct-19
A5200	Delivery of Activated Carbon Filter System for DOU1 to Site	0%	0	14	0	13-Oct-19	26-Oct-19
A5210	FAT of Activated Carbon Filter System for DOU2	0%	0	6	0	13-Oct-19	18-Oct-19
A5220	Delivery of Activated Carbon Filter System for DOU2 to Site	0%	0	14	0	19-Oct-19	01-Nov-19
A5230	FAT of Activated Carbon Filter System for DOU5	0%	0	6	0	19-Oct-19	24-Oct-19
A5240	Delivery of Activated Carbon Filter System for DOU5 to Site	0%	0	14	0	25-Oct-19	07-Nov-19
A5250	Procurement of FRP Air Ducts for Effluent Drop Structure	0%	0	45	0	02-Sep-19	16-Oct-19
A5260	FAT of FRP Air Ducts for Effluent Drop Structure	0%	0	7	0	10-Oct-19	16-Oct-19
A5270	Delivery of FRP Air Ducts for Effluent Drop Structure to Site	0%	0	7	0	17-Oct-19	23-Oct-19
A5280	Procurement of Isolation Devices for Effluent Drop Structure	0%	0	30	0	02-Sep-19	01-Oct-19
A5290	Delivery of Isolation Devices for Effluent Drop Structure to Site	0%	0	7	0	02-Oct-19	08-Oct-19



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

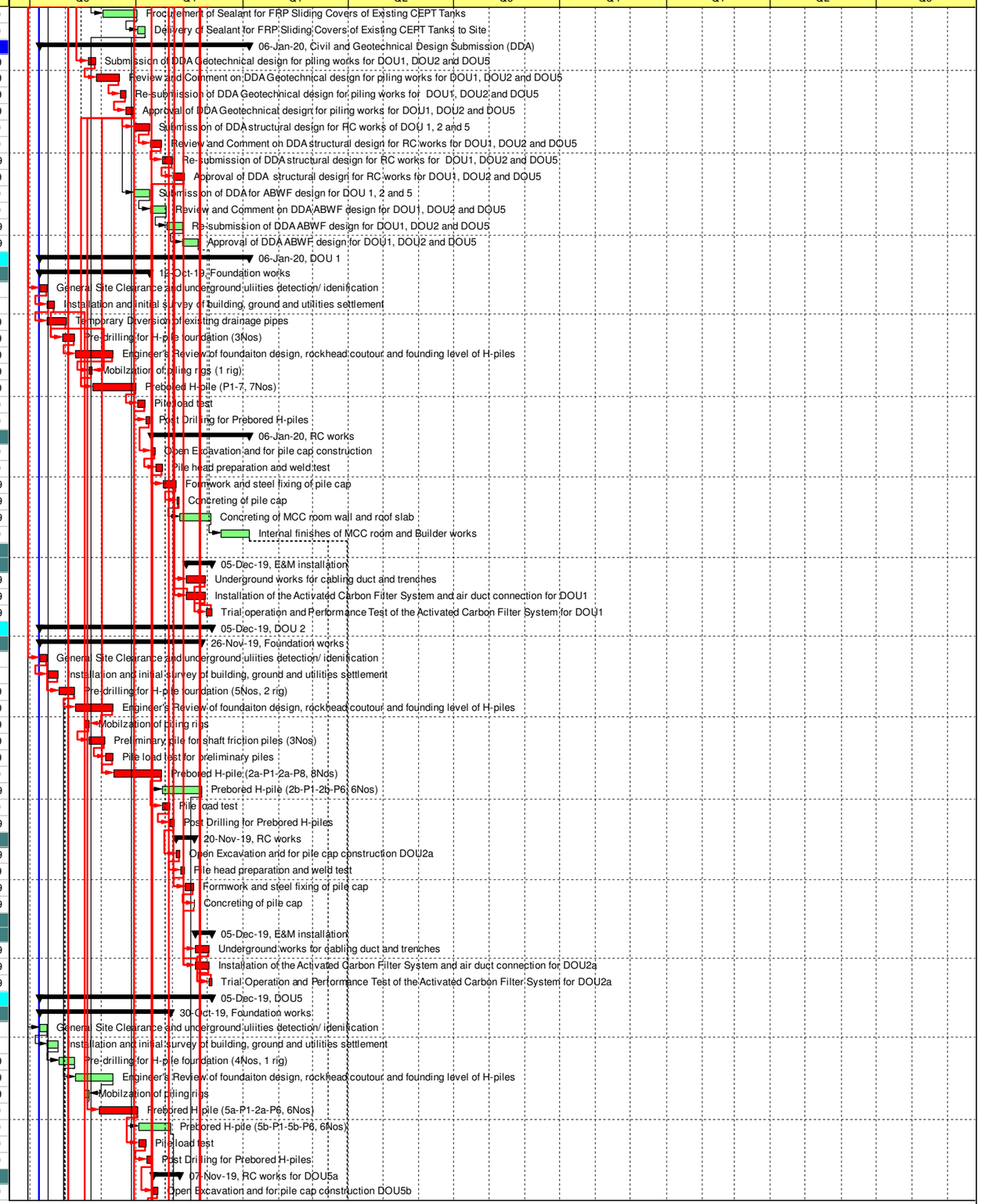
Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works

First Programme

Date	Revision	Checked	Approved
19-Jul-19	Rev. 0		
29-Aug-19	Rev. 1		

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish
A5300	Procurement of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	30	0	02-Sep-19	01-Oct-19
A5310	Delivery of Sealant for FRP Sliding Covers of Existing CEPT Tanks to Site	0%	1	7	0	02-Oct-19	08-Oct-19
Civil and Geotechnical Design Submission (DDA)							
A5320	Submission of DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	7	0	20-Aug-19	26-Aug-19
A5330	Review and Comment on DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	21	0	27-Aug-19	16-Sep-19
A5340	Re-submission of DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	5	0	17-Sep-19	21-Sep-19
A5350	Approval of DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	7	0	22-Sep-19	28-Sep-19
A5400	Submission of DDA structural design for RC works of DOU 1, 2 and 5	0%	0	14	0	29-Sep-19	12-Oct-19
A7500	Review and Comment on DDA structural design for RC works for DOU1, DOU2 and DOU5	0%	0	10	0	13-Oct-19	22-Oct-19
A7510	Re-submission of DDA structural design for RC works for DOU1, DOU2 and DOU5	0%	0	10	0	23-Oct-19	01-Nov-19
A7520	Approval of DDA structural design for RC works for DOU1, DOU2 and DOU5	0%	0	10	0	02-Nov-19	11-Nov-19
A7840	Submission of DDA for ABWF design for DOU 1, 2 and 5	0%	115	14	0	29-Sep-19	12-Oct-19
A7850	Review and Comment on DDA ABWF design for DOU1, DOU2 and DOU5	0%	115	14	0	13-Oct-19	26-Oct-19
A7860	Re-submission of DDA ABWF design for DOU1, DOU2 and DOU5	0%	115	14	0	27-Oct-19	09-Nov-19
A7870	Approval of DDA ABWF design for DOU1, DOU2 and DOU5	0%	115	14	0	10-Nov-19	23-Nov-19
DOU 1							
Foundation works							
A1130	General Site Clearance and underground uliities detection/ idenification	0%	0	6	0	09-Jul-19	15-Jul-19
A1131	Installation and initial survey of building, ground and utilities settlement	0%	0	6	0	16-Jul-19	22-Jul-19
A1132	Temporary Diversion of existing drainage pipes	0%	0	15	0	16-Jul-19	01-Aug-19
A1133	Pre-drilling for H-pile foundation (3Nos)	0%	0	10	0	29-Jul-19	08-Aug-19
A1134	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	0	28	0	09-Aug-19	10-Sep-19
A1137	Mobilzation of piling rigs (1 rig)	0%	0	3	0	21-Aug-19	23-Aug-19
A1140	Prebored H-pile (P1-7, 7Nos)	0%	0	32	0	24-Aug-19	30-Sep-19
A1430	Pile load test	0%	0	6	0	02-Oct-19	08-Oct-19
A1440	Post Drilling for Prebored H-piles	0%	0	4	0	09-Oct-19	12-Oct-19
RC works							
A5470	Open Excavation and for pile cap construction	0%	0	4	0	14-Oct-19	17-Oct-19
A5480	Pile head preparation and weld test	0%	0	5	0	18-Oct-19	23-Oct-19
A5490	Formwork and steel fixing of pile cap	0%	0	10	0	24-Oct-19	04-Nov-19
A5500	Concreting of pile cap	0%	0	2	0	05-Nov-19	06-Nov-19
A5510	Concreting of MCC room wall and roof slab	0%	76	24	2	07-Nov-19	04-Dec-19
A5520	Internal finishes of MCC room and Builder works	0%	76	18	2	13-Dec-19	06-Jan-20
Drainage works							
E&M installation							
A5535	Underground works for cabling duct and trenches	0%	0	15	0	13-Nov-19	29-Nov-19
A5540	Installation of the Activated Carbon Filter System and air duct connection for DOU1	0%	0	15	1	13-Nov-19	29-Nov-19
A5550	Trial operation and Performance Test of the Activated Carbon Filter System for DOU1	0%	0	5	0	30-Nov-19	05-Dec-19
DOU 2							
Foundation works							
A5380	General Site Clearance and underground uliities detection/ idenification	0%	0	6	0	09-Jul-19	15-Jul-19
A5390	Installation and initial survey of building, ground and utilities settlement	0%	0	9	0	16-Jul-19	25-Jul-19
A5410	Pre-drilling for H-pile foundation (5Nos, 2 rig)	0%	0	12	0	26-Jul-19	08-Aug-19
A5420	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	0	28	0	09-Aug-19	10-Sep-19
A5430	Mobilzation of piling rigs	0%	0	3	0	17-Aug-19	21-Aug-19
A5440	Preliminary pile for shaft friction piles (3Nos)	0%	0	12	0	21-Aug-19	03-Sep-19
A5450	Pile load test for preliminary piles	0%	0	6	0	04-Sep-19	10-Sep-19
A5560	Prebored H-pile (2a-P1-2a-P8, 8Nos)	0%	0	35	0	11-Sep-19	22-Oct-19
A5565	Prebored H-pile (2b-P1-2b-P6, 6Nos)	0%	51	30	0	23-Oct-19	26-Nov-19
A5570	Pile load test	0%	0	6	0	23-Oct-19	29-Oct-19
A5580	Post Drilling for Prebored H-piles	0%	0	4	0	30-Oct-19	02-Nov-19
RC works							
A1450	Open Excavation and for pile cap construction DOU2a	0%	0	4	0	04-Nov-19	07-Nov-19
A1455	Pile head preparation and weld test	0%	0	3	0	08-Nov-19	11-Nov-19
A1460	Formwork and steel fixing of pile cap	0%	0	7	0	12-Nov-19	19-Nov-19
A1470	Concreting of pile cap	0%	0	1	0	20-Nov-19	20-Nov-19
Drainage works							
E&M installation							
A5355	Underground works for cabling duct and trenches	0%	0	10	0	21-Nov-19	02-Dec-19
A5360	Installation of the Activated Carbon Filter System and air duct connection for DOU2a	0%	0	10	0	21-Nov-19	02-Dec-19
A5370	Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a	0%	0	3	0	03-Dec-19	05-Dec-19
DOU5							
Foundation works							
A5650	General Site Clearance and underground uliities detection/ idenification	0%	8	6	0	09-Jul-19	15-Jul-19
A5660	Installation and initial survey of building, ground and utilities settlement	0%	8	9	0	16-Jul-19	25-Jul-19
A5670	Pre-drilling for H-pile foundation (4Nos, 1 rig)	0%	8	12	0	26-Jul-19	08-Aug-19
A5680	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	8	28	0	09-Aug-19	10-Sep-19
A5690	Mobilzation of piling rigs	0%	8	3	0	17-Aug-19	21-Aug-19
A5720	Prebored H-pile (5a-P1-2a-P6, 6Nos)	0%	0	28	0	30-Aug-19	02-Oct-19
A5730	Prebored H-pile (5b-P1-5b-P6, 6Nos)	0%	25	24	0	03-Oct-19	30-Oct-19
A5740	Pile load test	0%	0	6	0	03-Oct-19	09-Oct-19
A5750	Post Drilling for Prebored H-piles	0%	0	4	0	10-Oct-19	14-Oct-19
RC works for DOU5a							
A5590	Open Excavation and for pile cap construction DOU5b	0%	0	5	0	15-Oct-19	19-Oct-19



Actual Work
Remaining Work
Critical Remaining Work
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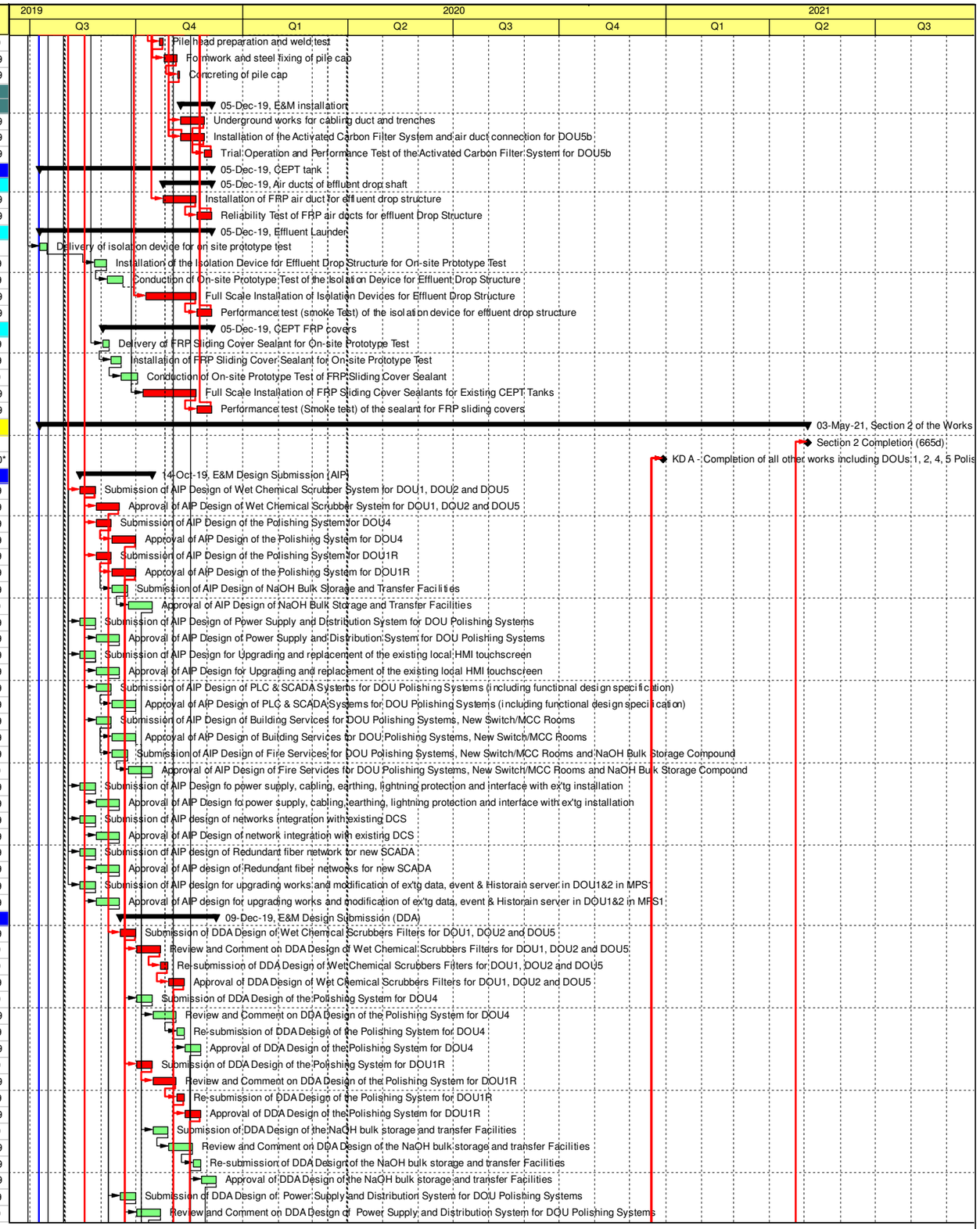
Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works

First Programme

Date	Revision	Checked	Approved
19-Jul-19	Rev. 0		
29-Aug-19	Rev. 1		

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish
A5600	Pile head preparation and weld test	0%	0	4	0	21-Oct-19	24-Oct-19
A5610	Formwork and steel fixing of pile cap	0%	0	10	0	25-Oct-19	05-Nov-19
A5620	Concreting of pile cap	0%	0	2	0	06-Nov-19	07-Nov-19
Drainage works							
E&M installation							
A5625	Underground works for cabling duct and trenches	0%	0	18	5	08-Nov-19	28-Nov-19
A5630	Installation of the Activated Carbon Filter System and air duct connection for DOU5b	0%	0	18	2	08-Nov-19	28-Nov-19
A5640	Trial Operation and Performance Test of the Activated Carbon Filter System for DOU5b	0%	0	6	0	29-Nov-19	05-Dec-19
CEPT tank							
Air ducts of effluent drop shaft							
A7090	Installation of FRP air duct for effluent drop structure	0%	0	25	0	24-Oct-19	21-Nov-19
A7180	Reliability Test of FRP air ducts for effluent Drop Structure	0%	0	12	0	22-Nov-19	05-Dec-19
Effluent Launder							
A7100	Delivery of isolation device for on site prototype test	0%	15	6	0	09-Jul-19	15-Jul-19
A7110	Installation of the Isolation Device for Effluent Drop Structure for On-site Prototype Test	0%	15	10	0	26-Aug-19	05-Sep-19
A7120	Conduction of On-site Prototype Test of the Isolation Device for Effluent Drop Structure	0%	15	12	0	06-Sep-19	19-Sep-19
A7130	Full Scale Installation of Isolation Devices for Effluent Drop Structure	0%	0	38	5	09-Oct-19	21-Nov-19
A7190	Performance test (smoke Test) of the isolation device for effluent drop structure	0%	0	12	0	22-Nov-19	05-Dec-19
CEPT FRP covers							
A7140	Delivery of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	6	0	02-Sep-19	07-Sep-19
A7150	Installation of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	8	0	09-Sep-19	17-Sep-19
A7160	Conduction of On-site Prototype Test of FRP Sliding Cover Sealant	0%	3	12	0	18-Sep-19	02-Oct-19
A7170	Full Scale Installation of FRP Sliding Cover Sealants for Existing CEPT Tanks	0%	0	40	5	07-Oct-19	21-Nov-19
A7200	Performance test (Smoke test) of the sealant for FRP sliding covers	0%	0	12	0	22-Nov-19	05-Dec-19
Section 2 of the Works							
A2970	Section 2 Completion (665d)	0%	0	0	0		03-May-2
KD0100	KD A - Completion of all other works including DOUs 1, 2, 4, 5 Polishing stages for FSI (540 days)	0%	0	0	0		29-Dec-20*
E&M Design Submission (AIP)							
A5760	Submission of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	14	0	13-Aug-19	26-Aug-19
A5770	Approval of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	21	0	27-Aug-19	16-Sep-19
A5780	Submission of AIP Design of the Polishing System for DOU4	0%	0	14	0	27-Aug-19	09-Sep-19
A5790	Approval of AIP Design of the Polishing System for DOU4	0%	0	21	0	10-Sep-19	30-Sep-19
A5800	Submission of AIP Design of the Polishing System for DOU1R	0%	0	14	0	27-Aug-19	09-Sep-19
A5810	Approval of AIP Design of the Polishing System for DOU1R	0%	0	21	0	10-Sep-19	30-Sep-19
A5820	Submission of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	14	0	10-Sep-19	23-Sep-19
A5830	Approval of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	21	0	24-Sep-19	14-Oct-19
A5840	Submission of AIP Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14	0	13-Aug-19	26-Aug-19
A5850	Approval of AIP Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	21	0	27-Aug-19	16-Sep-19
A5860	Submission of AIP Design for Upgrading and replacement of the existing local HMI touchscreen	0%	3	14	0	13-Aug-19	26-Aug-19
A5870	Approval of AIP Design for Upgrading and replacement of the existing local HMI touchscreen	0%	40	21	0	27-Aug-19	16-Sep-19
A5880	Submission of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including functio	0%	3	14	0	27-Aug-19	09-Sep-19
A5890	Approval of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including functional	0%	3	21	0	10-Sep-19	30-Sep-19
A5900	Submission of AIP Design of Building Services for DOU Polishing Systems, New Switch/MCC Roor	0%	3	14	0	27-Aug-19	09-Sep-19
A5910	Approval of AIP Design of Building Services for DOU Polishing Systems, New Switch/MCC Rooms	0%	17	21	0	10-Sep-19	30-Sep-19
A5920	Submission of AIP Design of Fire Services for DOU Polishing Systems, New Switch/MCC Rooms a	0%	3	14	0	10-Sep-19	23-Sep-19
A5930	Approval of AIP Design of Fire Services for DOU Polishing Systems, New Switch/MCC Rooms and	0%	3	21	0	24-Sep-19	14-Oct-19
A8000	Submission of AIP Design fo power supply, cabling, earthing, lightning protection and interface with	0%	59	14	0	13-Aug-19	26-Aug-19
A8010	Approval of AIP Design fo power supply, cabling, earthing, lightning protection and interface with ex'	0%	59	21	0	27-Aug-19	16-Sep-19
A8090	Submission of AIP design of networks integration with existing DCS	0%	59	14	0	13-Aug-19	26-Aug-19
A8100	Approval of AIP Design of network integration with existing DCS	0%	59	21	0	27-Aug-19	16-Sep-19
A8110	Submission of AIP design of Redundant fiber network for new SCADA	0%	59	14	0	13-Aug-19	26-Aug-19
A8120	Approval of AIP design of Redundant fiber networks for new SCADA	0%	59	21	0	27-Aug-19	16-Sep-19
A8150	Submission of AIP design for upgrading works and modification of ex'tg data, event & Historain serv	0%	59	14	0	13-Aug-19	26-Aug-19
A8180	Approval of AIP design for upgrading works and modification of ex'tg data, event & Historain server	0%	59	21	0	27-Aug-19	16-Sep-19
E&M Design Submission (DDA)							
A1170	Submission of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14	0	17-Sep-19	30-Sep-19
A1180	Review and Comment on DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DO	0%	0	21	0	01-Oct-19	21-Oct-19
A1183	Re-submission of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	7	0	22-Oct-19	28-Oct-19
A1185	Approval of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14	0	29-Oct-19	11-Nov-19
A1190	Submission of DDA Design of the Polishing System for DOU4	0%	21	14	0	01-Oct-19	14-Oct-19
A1200	Review and Comment on DDA Design of the Polishing System for DOU4	0%	21	21	0	15-Oct-19	04-Nov-19
A1210	Re-submission of DDA Design of the Polishing System for DOU4	0%	21	7	0	05-Nov-19	11-Nov-19
A1260	Approval of DDA Design of the Polishing System for DOU4	0%	21	14	0	12-Nov-19	25-Nov-19
A5940	Submission of DDA Design of the Polishing System for DOU1R	0%	0	14	0	01-Oct-19	14-Oct-19
A5950	Review and Comment on DDA Design of the Polishing System for DOU1R	0%	0	21	0	15-Oct-19	04-Nov-19
A5960	Re-submission of DDA Design of the Polishing System for DOU1R	0%	0	7	0	05-Nov-19	11-Nov-19
A5970	Approval of DDA Design of the Polishing System for DOU1R	0%	0	14	0	12-Nov-19	25-Nov-19
A5980	Submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14	0	15-Oct-19	28-Oct-19
A5990	Review and Comment on DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	21	0	29-Oct-19	18-Nov-19
A6000	Re-submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	7	0	19-Nov-19	25-Nov-19
A6010	Approval of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14	0	26-Nov-19	09-Dec-19
A6020	Submission of DDA Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14	0	17-Sep-19	30-Sep-19
A6030	Review and Comment on DDA Design of Power Supply and Distribution System for DOU Polishing	0%	19	21	0	01-Oct-19	21-Oct-19



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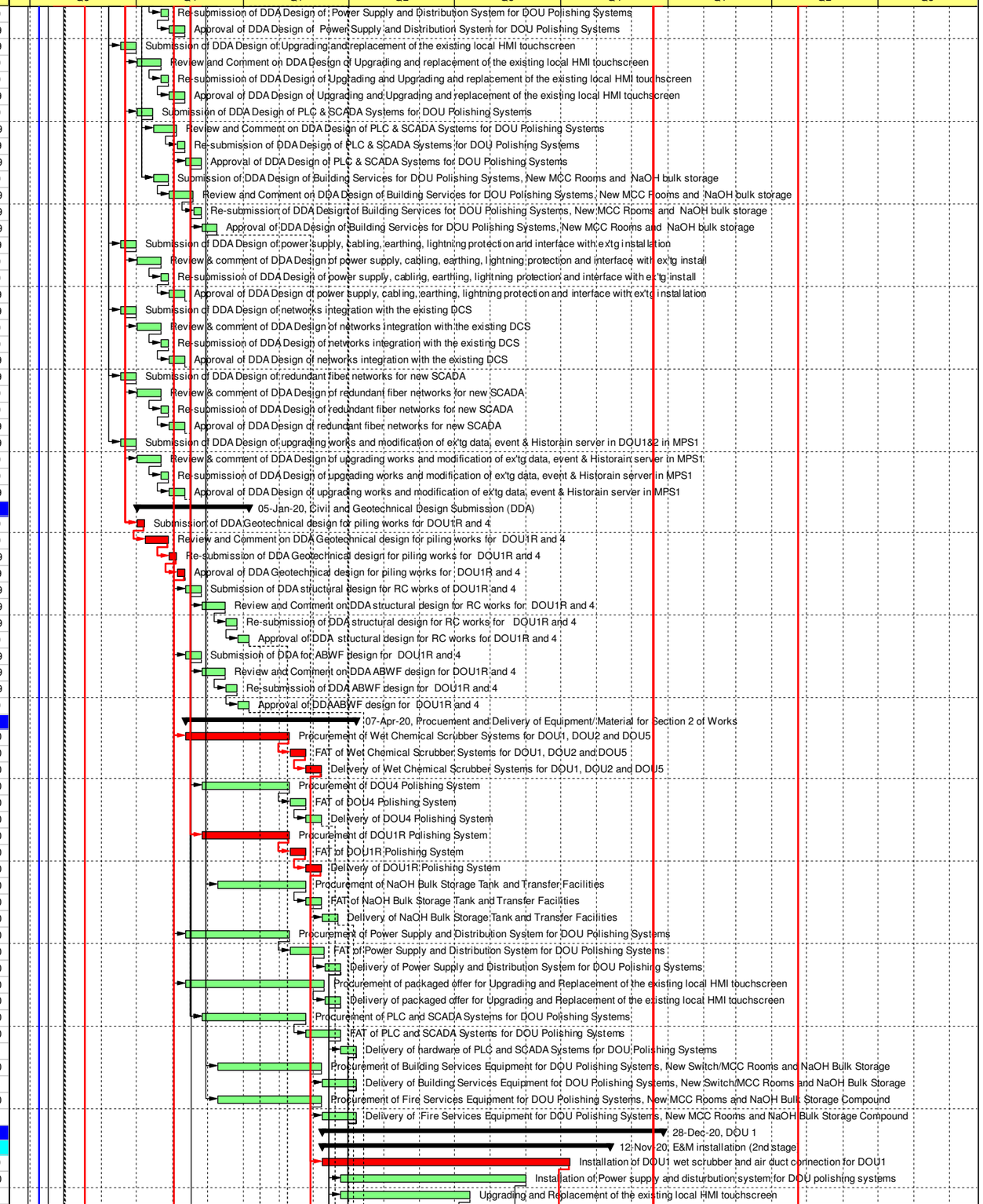
Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works

First Programme

Date	Revision	Checked	Approved
19-Jul-19	Rev. 0		
29-Aug-19	Rev. 1		

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish
A6040	Re-submission of DDA Design of Power Supply and Distribution System for DOU Polishing Systen	0%	19	7	0	22-Oct-19	28-Oct-19
A6050	Approval of DDA Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14	0	29-Oct-19	11-Nov-19
A6060	Submission of DDA Design of Upgrading and replacement of the existing local HMI touchscreen	0%	40	14	0	17-Sep-19	30-Sep-19
A6070	Review and Comment on DDA Design of Upgrading and replacement of the existing local HMI touch	0%	40	21	0	01-Oct-19	21-Oct-19
A6080	Re-submission of DDA Design of Upgrading and Upgrading and replacement of the existing local HI	0%	40	7	0	22-Oct-19	28-Oct-19
A6090	Approval of DDA Design of Upgrading and Upgrading and replacement of the existing local HMI touc	0%	40	14	0	29-Oct-19	11-Nov-19
A6100	Submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	3	14	0	01-Oct-19	14-Oct-19
A6110	Review and Comment on DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	21	0	15-Oct-19	04-Nov-19
A6120	Re-submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	7	0	05-Nov-19	11-Nov-19
A6130	Approval of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	14	0	12-Nov-19	25-Nov-19
A6140	Submission of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms and	0%	3	14	0	15-Oct-19	28-Oct-19
A6150	Review and Comment on DDA Design of Building Services for DOU Polishing Systems, New MCC	0%	3	21	0	29-Oct-19	18-Nov-19
A6160	Re-submission of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms	0%	3	7	0	19-Nov-19	25-Nov-19
A6170	Approval of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms and N	0%	3	14	0	26-Nov-19	09-Dec-19
A8050	Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	59	14	0	17-Sep-19	30-Sep-19
A8060	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interf	0%	59	21	0	01-Oct-19	21-Oct-19
A8070	Re-submission of DDA Design of power supply, cabling, earthing, lightning protection and interface	0%	59	7	0	22-Oct-19	28-Oct-19
A8080	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	59	14	0	29-Oct-19	11-Nov-19
A8280	Submission of DDA Design of networks integration with the existing DCS	0%	59	14	0	17-Sep-19	30-Sep-19
A8290	Review & comment of DDA Design of networks integration with the existing DCS	0%	59	21	0	01-Oct-19	21-Oct-19
A8300	Re-submission of DDA Design of networks integration with the existing DCS	0%	59	7	0	22-Oct-19	28-Oct-19
A8310	Approval of DDA Design of networks integration with the existing DCS	0%	59	14	0	29-Oct-19	11-Nov-19
A8320	Submission of DDA Design of redundant fiber networks for new SCADA	0%	59	14	0	17-Sep-19	30-Sep-19
A8330	Review & comment of DDA Design of redundant fiber networks for new SCADA	0%	59	21	0	01-Oct-19	21-Oct-19
A8340	Re-submission of DDA Design of redundant fiber networks for new SCADA	0%	59	7	0	22-Oct-19	28-Oct-19
A8350	Approval of DDA Design of redundant fiber networks for new SCADA	0%	59	14	0	29-Oct-19	11-Nov-19
A8360	Submission of DDA Design of upgrading works and modification of ex'tg data, event & Historain ser	0%	59	14	0	17-Sep-19	30-Sep-19
A8370	Review & comment of DDA Design of upgrading works and modification of ex'tg data, event & Histor	0%	59	21	0	01-Oct-19	21-Oct-19
A8380	Re-submission of DDA Design of upgrading works and modification of ex'tg data, event & Historain	0%	59	7	0	22-Oct-19	28-Oct-19
A8390	Approval of DDA Design of upgrading works and modification of ex'tg data, event & Historain server	0%	59	14	0	29-Oct-19	11-Nov-19
Civil and Geotechnical Design Submission (DDA)							
A7880	Submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7	0	01-Oct-19	07-Oct-19
A7890	Review and Comment on DDA Geotechnical design for piling works for DOU1R and 4	0%	0	21	0	08-Oct-19	28-Oct-19
A7900	Re-submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7	0	29-Oct-19	04-Nov-19
A7910	Approval of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7	0	05-Nov-19	11-Nov-19
A7920	Submission of DDA structural design for RC works of DOU1R and 4	0%	39	14	0	12-Nov-19	25-Nov-19
A7930	Review and Comment on DDA structural design for RC works for DOU1R and 4	0%	39	21	0	26-Nov-19	16-Dec-19
A7940	Re-submission of DDA structural design for RC works for DOU1R and 4	0%	39	10	0	17-Dec-19	26-Dec-19
A7950	Approval of DDA structural design for RC works for DOU1R and 4	0%	39	10	0	27-Dec-19	05-Jan-20
A7960	Submission of DDA for ABWF design for DOU1R and 4	0%	184	14	0	12-Nov-19	25-Nov-19
A7970	Review and Comment on DDA ABWF design for DOU1R and 4	0%	184	21	0	26-Nov-19	16-Dec-19
A7980	Re-submission of DDA ABWF design for DOU1R and 4	0%	184	10	0	17-Dec-19	26-Dec-19
A7990	Approval of DDAABWF design for DOU1R and 4	0%	184	10	0	27-Dec-19	05-Jan-20
Procuement and Delivery of Equipment/ Material for Section 2 of Works							
A1320	Procurement of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	90	0	12-Nov-19	09-Feb-20
A1330	FAT of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14	0	10-Feb-20	23-Feb-20
A1350	Delivery of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14	0	24-Feb-20	08-Mar-20
A1360	Procurement of DOU4 Polishing System	0%	21	76	0	26-Nov-19	09-Feb-20
A1380	FAT of DOU4 Polishing System	0%	21	14	0	10-Feb-20	23-Feb-20
A1500	Delivery of DOU4 Polishing System	0%	21	14	0	24-Feb-20	08-Mar-20
A6180	Procurement of DOU1R Polishing System	0%	0	76	0	26-Nov-19	09-Feb-20
A6190	FAT of DOU1R Polishing System	0%	0	14	0	10-Feb-20	23-Feb-20
A6200	Delivery of DOU1R Polishing System	0%	0	14	0	24-Feb-20	08-Mar-20
A6210	Procurement of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	76	0	10-Dec-19	23-Feb-20
A6220	FAT of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14	0	24-Feb-20	08-Mar-20
A6230	Delivery of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14	0	09-Mar-20	22-Mar-20
A6240	Procurement of Power Supply and Distribution System for DOU Polishing Systems	0%	19	90	0	12-Nov-19	09-Feb-20
A6250	FAT of Power Supply and Distribution System for DOU Polishing Systems	0%	19	30	0	10-Feb-20	10-Mar-20
A6260	Delivery of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14	0	11-Mar-20	24-Mar-20
A6270	Procurement of packaged offer for Upgrading and Replacement of the existing local HMI touchscree	0%	40	120	0	12-Nov-19	10-Mar-20
A6290	Delivery of packaged offer for Upgrading and Replacement of the existing local HMI touchscreen	0%	40	14	0	11-Mar-20	24-Mar-20
A6300	Procurement of PLC and SCADA Systems for DOU Polishing Systems	0%	45	90	0	26-Nov-19	23-Feb-20
A6310	FAT of PLC and SCADA Systems for DOU Polishing Systems	0%	45	30	0	24-Feb-20	24-Mar-20
A6320	Delivery of hardware of PLC and SCADA Systems for DOU Polishing Systems	0%	45	14	0	25-Mar-20	07-Apr-20
A6330	Procurement of Building Services Equipment for DOU Polishing Systems, New Switch/MCC Rooms	0%	3	90	0	10-Dec-19	08-Mar-20
A6340	Delivery of Building Services Equipment for DOU Polishing Systems, New Switch/MCC Rooms and	0%	3	30	0	09-Mar-20	07-Apr-20
A6350	Procurement of Fire Services Equipment for DOU Polishing Systems, New MCC Rooms and NaOH	0%	28	90	0	10-Dec-19	08-Mar-20
A7080	Delivery of Fire Services Equipment for DOU Polishing Systems, New MCC Rooms and NaOH Bu	0%	28	30	0	09-Mar-20	07-Apr-20
DOU 1							
E&M installation (2nd stage)							
A7210	Installation of DOU1 wet scrubber and air duct connection for DOU1	0%	0	175	14	09-Mar-20	08-Oct-20
A7212	Installation of Power supply and disturbution system for DOU polishing systems	0%	16	130	14	25-Mar-20	31-Aug-20
A7222	Upgrading and Replacement of the existing local HMI touchscreen	0%	56	90	14	25-Mar-20	14-Jul-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works

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Date	Revision	Checked	Approved
19-Jul-19	Rev. 0		
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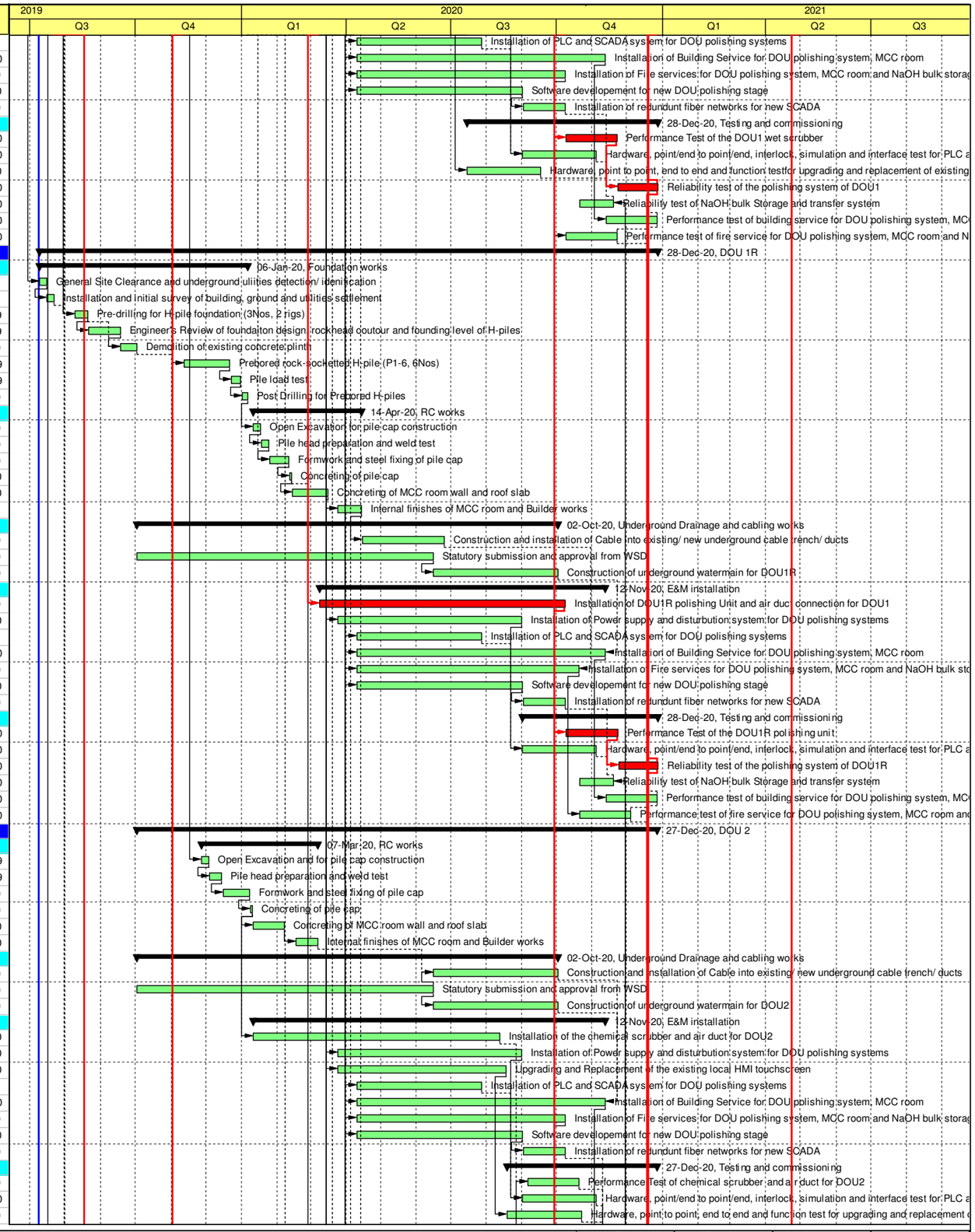
Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish
A7232	Installation of PLC and SCADA system for DOU polishing systems	0%	45	90	14	10-Apr-20	27-Jul-20
A7242	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20
A7252	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150	14	10-Apr-20	08-Oct-20
A7292	Software developement for new DOU polishing stage	0%	38	120	14	10-Apr-20	01-Sep-20
A7332	Installation of redundunt fiber networks for new SCADA	0%	38	30	14	02-Sep-20	08-Oct-20
Testing and commissioning							
A7262	Performance Test of the DOU1 wet scrubber	0%	0	45	5	09-Oct-20	22-Nov-20
A7272	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	18	65	5	01-Sep-20	04-Nov-20
A7275	Hardware, point to point, end to end and function testfor upgrading and replacement of existing local	0%	66	65	5	15-Jul-20	17-Sep-20
A7282	Reliability test of the polishing system of DOU1	0%	0	36	0	23-Nov-20	28-Dec-20
A7302	Reliability test of NaOH bulk Storage and transfer system	0%	3	30	0	21-Oct-20	19-Nov-20
A7312	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20
A7322	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45	5	09-Oct-20	22-Nov-20
DOU 1R							
Foundation works							
A6376	General Site Clearance and underground ulilities detection/ idenification	0%	66	6	0	09-Jul-19	15-Jul-19
A6380	Installation and initial survey of building, ground and utilities settlement	0%	66	6	0	16-Jul-19	22-Jul-19
A6395	Pre-drilling for H-pile foundation (3Nos, 2 rigs)	0%	51	10	0	09-Aug-19	20-Aug-19
A6396	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	51	24	0	21-Aug-19	17-Sep-19
A6397	Demolition of existing concrete plinth	0%	51	12	1	18-Sep-19	02-Oct-19
A6400	Prebored rock-socketted H-pile (P1-6, 6Nos)	0%	17	35	1	12-Nov-19	21-Dec-19
A6410	Pile load test	0%	17	6	0	23-Dec-19	31-Dec-19
A6420	Post Drilling for Prebored H-piles	0%	17	4	0	02-Jan-20	06-Jan-20
RC works							
A6455	Open Excavation for pile cap construction	0%	17	6	1	11-Jan-20	17-Jan-20
A6457	Pile head preparation and weld test	0%	17	6	1	18-Jan-20	24-Jan-20
A6458	Formwork and steel fixing of pile cap	0%	17	15	2	25-Jan-20	11-Feb-20
A6460	Concreting of pile cap	0%	17	2	0	12-Feb-20	13-Feb-20
A6470	Concreting of MCC room wall and roof slab	0%	117	24	2	14-Feb-20	16-Mar-20
A6480	Internal finishes of MCC room and Builder works	0%	117	15	2	25-Mar-20	14-Apr-20
Underground Drainage and cabling works							
A6450	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	117	60	5	15-Apr-20	25-Jun-20
A6490	Statutory submission and approval from WSD	0%	36	210	14	02-Oct-19*	15-Jun-20
A6500	Construction of underground watermain for DOU1R	0%	36	90	14	16-Jun-20	02-Oct-20
E&M installation							
A6520	Installation of DOU1R polishing Unit and air duct connection for DOU1	0%	0	175	14	09-Mar-20	08-Oct-20
A7290	Installation of Power supply and disturbution system for DOU polishing systems	0%	17	130	14	25-Mar-20	31-Aug-20
A7310	Installation of PLC and SCADA system for DOU polishing systems	0%	46	90	14	10-Apr-20	27-Jul-20
A7320	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20
A7330	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	21	160	14	10-Apr-20	20-Oct-20
A8260	Software developement for new DOU polishing stage	0%	39	120	14	10-Apr-20	01-Sep-20
A8270	Installation of redundunt fiber networks for new SCADA	0%	39	30	14	02-Sep-20	08-Oct-20
Testing and commissioning							
A7335	Performance Test of the DOU1R polishing unit	0%	0	39	5	09-Oct-20	23-Nov-20
A7530	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	19	65	5	01-Sep-20	04-Nov-20
A7550	Reliability test of the polishing system of DOU1R	0%	0	35	0	24-Nov-20	28-Dec-20
A7560	Reliability test of NaOH bulk Storage and transfer system	0%	4	30	0	21-Oct-20	19-Nov-20
A7570	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20
A7580	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	24	45	5	21-Oct-20	04-Dec-20
DOU 2							
RC works							
A6825	Open Excavation and for pile cap construction	0%	51	6	0	27-Nov-19	03-Dec-19
A6830	Pile head preparation and weld test	0%	51	10	2	04-Dec-19	14-Dec-19
A6835	Formwork and steel fixing of pile cap	0%	51	18	2	16-Dec-19	08-Jan-20
A6836	Concreting of pile cap	0%	51	2	0	09-Jan-20	10-Jan-20
A6855	Concreting of MCC room wall and roof slab	0%	116	24	2	11-Jan-20	07-Feb-20
A6859	Internal finishes of MCC room and Builder works	0%	116	15	2	17-Feb-20	07-Mar-20
Underground Drainage and cabling works							
A6810	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	36	90	2	16-Jun-20	02-Oct-20
A8130	Statutory submission and approval from WSD	0%	36	210	14	02-Oct-19*	15-Jun-20
A8140	Construction of underground watermain for DOU2	0%	36	90	14	16-Jun-20	02-Oct-20
E&M installation							
A6880	Installation of the chemical scrubber and air duct for DOU2	0%	51	175	14	11-Jan-20	12-Aug-20
A7450	Installation of Power supply and disturbution system for DOU polishing systems	0%	20	130	14	25-Mar-20	31-Aug-20
A7460	Upgrading and Replacement of the existing local HMI touchscreen	0%	30	120	14	25-Mar-20	18-Aug-20
A7470	Installation of PLC and SCADA system for DOU polishing systems	0%	49	90	14	10-Apr-20	27-Jul-20
A7480	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20
A7490	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150	14	10-Apr-20	08-Oct-20
A8400	Software developement for new DOU polishing stage	0%	44	120	14	10-Apr-20	01-Sep-20
A8410	Installation of redundunt fiber networks for new SCADA	0%	44	30	14	02-Sep-20	08-Oct-20
Testing and commissioning							
A6890	Performance Test of chemical scrubber and air duct for DOU2	0%	39	45	5	06-Sep-20	20-Oct-20
A7590	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	24	65	5	01-Sep-20	04-Nov-20
A7600	Hardware, point to point, end to end and function test for upgrading and replacement of existing loca	0%	37	65	5	19-Aug-20	22-Oct-20



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Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works

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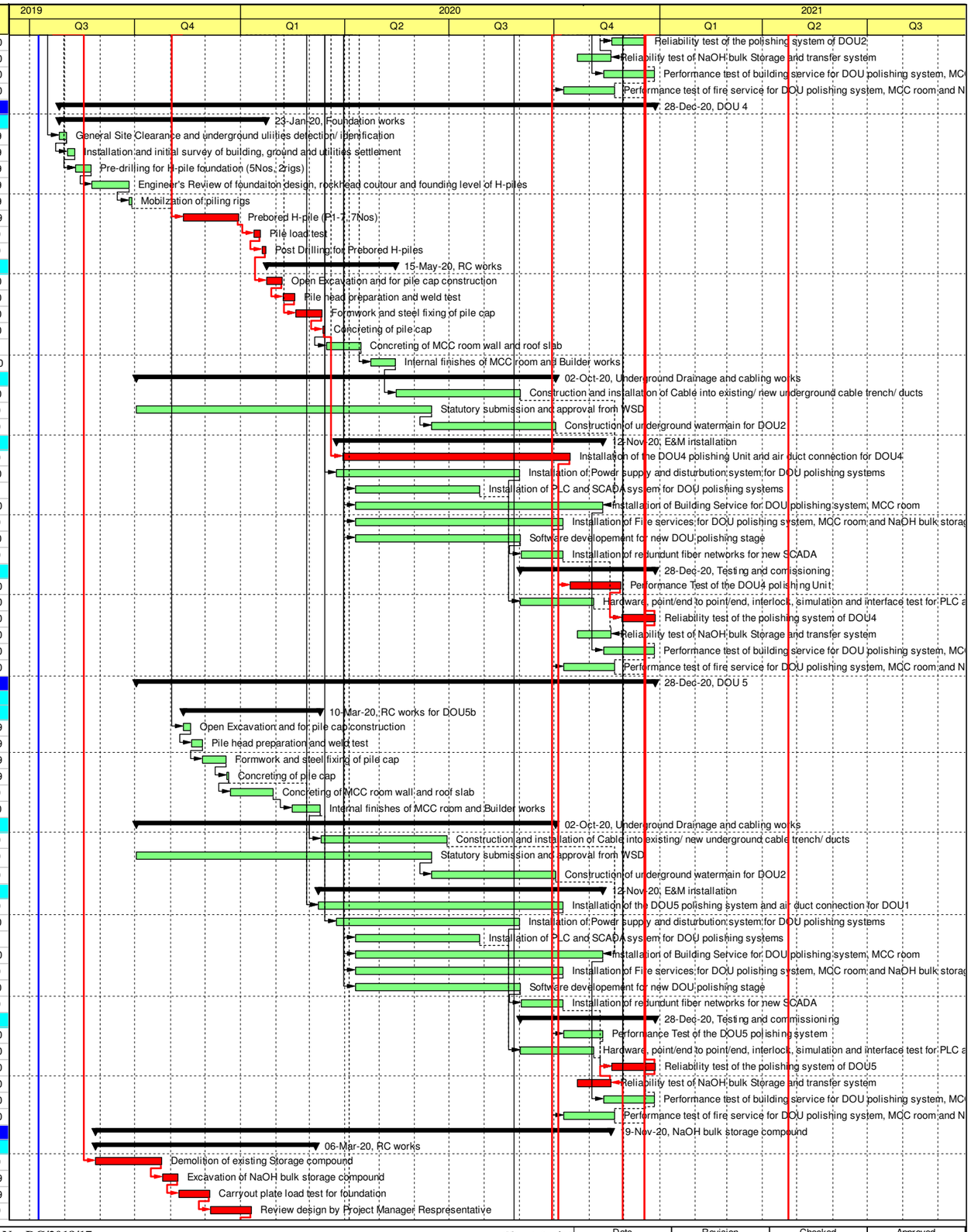
A7610	Reliability test of the polishing system of DOU2	0%	9	30	0	20-Nov-20	19-Dec-20
A7620	Reliability test of NaOH bulk Storage and transfer system	0%	9	30	0	21-Oct-20	19-Nov-20
A7630	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20
A7640	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45	5	09-Oct-20	22-Nov-20
DOU 4							
Foundation works							
A6558	General Site Clearance and underground ulilities detection/ idenification	0%	36	6	0	27-Jul-19	02-Aug-19
A6560	Installation and initial survey of building, ground and utilities settlement	0%	36	6	0	03-Aug-19	09-Aug-19
A6575	Pre-drilling for H-pile foundation (5Nos, 2rigs)	0%	36	12	1	10-Aug-19	23-Aug-19
A6576	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	36	28	0	24-Aug-19	25-Sep-19
A6578	Mobilzation of piling rigs	0%	36	3	0	26-Sep-19	28-Sep-19
A6580	Prebored H-pile (P1-7, 7Nos)	0%	0	40	3	12-Nov-19	30-Dec-19
A6590	Pile load test	0%	0	6	0	13-Jan-20	18-Jan-20
A6600	Post Drilling for Prebored H-piles	0%	0	4	0	20-Jan-20	23-Jan-20
RC works							
A6635	Open Excavation and for pile cap construction	0%	0	12	2	24-Jan-20	06-Feb-20
A6637	Pile head preparation and weld test	0%	0	9	2	07-Feb-20	17-Feb-20
A6639	Formwork and steel fixing of pile cap	0%	0	18	3	18-Feb-20	12-Mar-20
A6640	Concreting of pile cap	0%	0	2	0	13-Mar-20	14-Mar-20
A6650	Concreting of MCC room wall and roof slab	0%	61	24	3	16-Mar-20	15-Apr-20
A6660	Internal finishes of MCC room and Builder works	0%	61	18	3	24-Apr-20	15-May-20
Underground Drainage and cabling works							
A6630	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	61	90	2	16-May-20	01-Sep-20
A8160	Statutory submission and approval from WSD	0%	36	210	14	02-Oct-19*	15-Jun-20
A8170	Construction of underground watermain for DOU2	0%	36	90	14	16-Jun-20	02-Oct-20
E&M installation							
A6700	Installation of the DOU4 polishing Unit and air duct connection for DOU4	0%	0	162	14	30-Mar-20	14-Oct-20
A7400	Installation of Power supply and disturbution system for DOU polishing systems	0%	20	130	14	25-Mar-20	31-Aug-20
A7420	Installation of PLC and SCADA system for DOU polishing systems	0%	49	90	14	10-Apr-20	27-Jul-20
A7430	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20
A7440	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150	14	10-Apr-20	08-Oct-20
A8420	Software developement for new DOU polishing stage	0%	44	120	14	10-Apr-20	01-Sep-20
A8430	Installation of redundunt fiber networks for new SCADA	0%	44	30	14	02-Sep-20	08-Oct-20
Testing and comissioning							
A6710	Performance Test of the DOU4 polishing Unit	0%	0	45	5	15-Oct-20	28-Nov-20
A7650	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	24	65	5	01-Sep-20	04-Nov-20
A7670	Reliability test of the polishing system of DOU4	0%	0	30	0	29-Nov-20	28-Dec-20
A7680	Reliability test of NaOH bulk Storage and transfer system	0%	9	30	0	21-Oct-20	19-Nov-20
A7690	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20
A7700	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45	5	09-Oct-20	22-Nov-20
DOU 5							
Foundation works							
RC works for DOU5b							
A7005	Open Excavation and for pile cap construction	0%	25	6	1	12-Nov-19	18-Nov-19
A7010	Pile head preparation and weld test	0%	25	9	1	19-Nov-19	28-Nov-19
A7015	Formwork and steel fixing of pile cap	0%	25	18	3	29-Nov-19	19-Dec-19
A7018	Concreting of pile cap	0%	25	2	0	20-Dec-19	21-Dec-19
A7020	Concreting of MCC room wall and roof slab	0%	25	30	3	23-Dec-19	29-Jan-20
A7025	Internal finishes of MCC room and Builder works	0%	25	18	3	15-Feb-20	10-Mar-20
Underground Drainage and cabling works							
A6990	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	144	90	4	11-Mar-20	29-Jun-20
A8190	Statutory submission and approval from WSD	0%	36	210	14	02-Oct-19*	15-Jun-20
A8200	Construction of underground watermain for DOU2	0%	36	90	14	16-Jun-20	02-Oct-20
E&M installation							
A7060	Installation of the DOU5 polishing system and air duct connection for DOU1	0%	6	175	14	09-Mar-20	08-Oct-20
A7345	Installation of Power supply and disturbution system for DOU polishing systems	0%	13	130	14	25-Mar-20	31-Aug-20
A7365	Installation of PLC and SCADA system for DOU polishing systems	0%	42	90	14	10-Apr-20	27-Jul-20
A7375	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20
A7385	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150	14	10-Apr-20	08-Oct-20
A8440	Software developement for new DOU polishing stage	0%	36	120	14	10-Apr-20	01-Sep-20
A8450	Installation of redundunt fiber networks for new SCADA	0%	36	30	14	02-Sep-20	08-Oct-20
Testing and commissioning							
A7387	Performance Test of the DOU5 polishing system	0%	6	30	5	09-Oct-20	12-Nov-20
A7710	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	15	65	5	01-Sep-20	04-Nov-20
A7730	Reliability test of the polishing system of DOU5	0%	0	39	0	20-Nov-20	28-Dec-20
A7740	Reliability test of NaOH bulk Storage and transfer system	0%	0	30	0	21-Oct-20	19-Nov-20
A7750	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20
A7760	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45	5	09-Oct-20	22-Nov-20
NaOH bulk storage compound							
RC works							
A7230	Demolition of existing Storage compound	0%	0	50	5	27-Aug-19	24-Oct-19
A7240	Excavation of NaOH bulk storage compound	0%	0	12	2	25-Oct-19	07-Nov-19
A7250	Carryout plate load test for foundation	0%	0	24	5	08-Nov-19	05-Dec-19
A7260	Review design by Project Manager Respresentative	0%	0	28	0	06-Dec-19	10-Jan-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

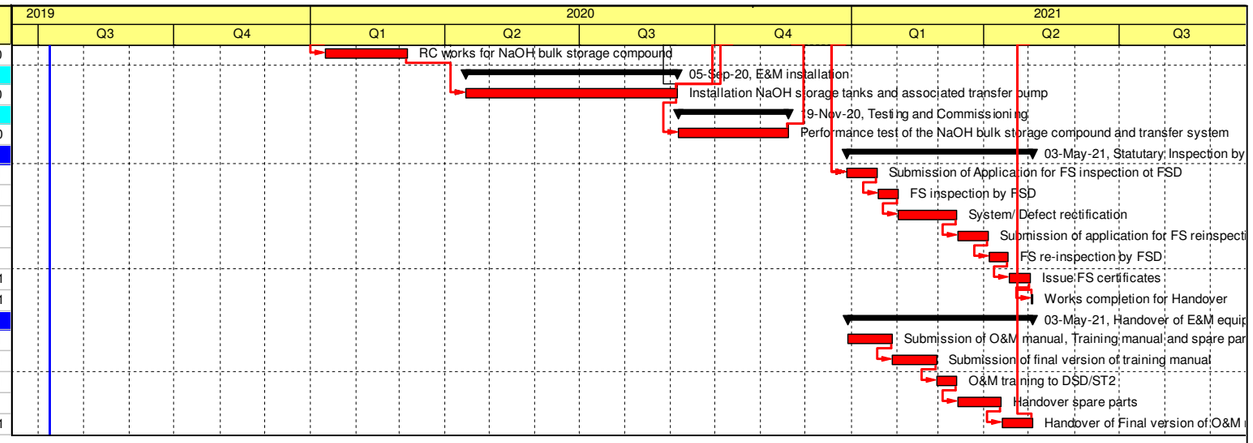
Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works

First Programme

Date	Revision	Checked	Approved
19-Jul-19	Rev. 0		
29-Aug-19	Rev. 1		

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish
A7270	RC works for NaOH bulk storage compound	0%	0	45	5	11-Jan-20	06-Mar-20
E&M installation							
A7280	Installation NaOH storage tanks and associated transfer pump	0%	0	120	20	15-Apr-20	05-Sep-20
Testing and Commissioning							
A7390	Performance test of the NaOH bulk storage compound and transfer system	0%	0	75	15	06-Sep-20	19-Nov-20
Statutary Inspection by FSD							
A7770	Submission of Application for FS inspection ot FSD	0%	0	21	0	29-Dec-20	18-Jan-21
A7780	FS inspection by FSD	0%	0	14	2	19-Jan-21	01-Feb-21
A7790	System/ Defect rectification	0%	0	40	5	02-Feb-21	13-Mar-21
A7800	Submission of application for FS reinspection to FSD	0%	0	21	0	14-Mar-21	03-Apr-21
A7810	FS re-inspection by FSD	0%	0	14	2	04-Apr-21	17-Apr-21
A7820	Issue FS certificates	0%	0	15	2	18-Apr-21	02-May-21
A7830	Works completion for Handover	0%	0	1	0	03-May-21	03-May-21
Handover of E&M equipment							
A8210	Submission of O&M manual, Training manual and spare part list	0%	0	30		30-Dec-20*	28-Jan-21
A8220	Submission of final version of training manual	0%	0	30		29-Jan-21	27-Feb-21
A8230	O&M training to DSD/ST2	0%	0	14		28-Feb-21	13-Mar-21
A8240	Handover spare parts	0%	0	30		14-Mar-21	12-Apr-21
A8250	Handover of Final version of O&M manual	0%	0	21		13-Apr-21	03-May-21



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