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)
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REMARKS:

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

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

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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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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

Ir Dr Anne F Kerr

Independent Environmental Checker T +852 2828 5757 anne.kerr@mottmac.com

C.C.

Ove Arup & Partners HK Limited Bestwise – SFK Joint Venture Wellab Limited Mr. Mark Ngan Mr. Ken Chan Dr. Priscilla Choy Fax: 2370 4377 By email 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: <u>DOU1</u>
 - Concreting for new plinth

DOU1R

• Concreting for new plinth

DOU2

• Laying Packing Block

DOU5

• Weld test for Portal frame

<u>E&M</u>

- 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**.

Monitoring	Danamatan	No. of Exceedance		No. of Exceedance Due to the Project		Action
Station	Parameter	Action Level	Limit Level	Action Level	Limit Level	Taken
NM5	Noise	0	0	0	0	N/A
NM6	Noise	0	0	0	0	N/A
AMGh	1-hr TSP	0	0	0	0	N/A
AM6b	24-hr TSP	0	0	0	0	N/A
AM7	1-hr TSP	0	0	0	0	N/A
AINI /	24-hr TSP	0	0	0	0	N/A
AM8	1-hr TSP	0	0	0	0	N/A
Alvio	24-hr TSP	0	0	0	0	N/A

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

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 Inform	ation in the l	Reporting Month
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Event	Event Details		Action	Status	Remark
Event	Number	Nature	Taken	Status	Kelliark
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.

3

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**.

1 able 1.1	Key Hojeet Co			
Party	Role	Name	Position	Phone No.
Ove Arup & Partners Hong	Project Management's Representative	Mr. Edmund Chow	Senior Resident Engineer	2370 4311
Kong Ltd	Coordinator	Mr. Kevin Cheung	Resident Engineer	3925 6506
	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
Wellab		Mr. Howard Chan	Project Coordinator	2151 2073
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Bestwise –		Mr. Ken Chan	Site Agent	2620 0070
SFK Joint Venture	Contractor	Mr. Leo Leung	Environmental Officer	2620 0070

Table 1.1Key Project Contacts

Construction Programme

- 1.7 The site activities undertaken in the reporting month included:
 - <u>DOU1</u>Concreting for new plinth

DOU1R

• Concreting for new plinth

DOU2

Laying Packing Block

<u>DOU5</u>

• Weld test for Portal frame

<u>E&M</u>

- 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 2.2Air 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 $\pm 5\%$. 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 m³/min. and 1.4 m³/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 $\pm 3^{\circ}$ C; the RH should be < 50% and not vary by more than $\pm 5\%$. 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**.

Kepot ting Wohth						
Air Quality	Average	Range	Action Level	Limit Level		
Monitoring Station	µg/m³	μg/m³	μg/m³	µg/m³		
		1 hour TSP				
AM6b	69	18 - 149	346			
AM7	76.1	41.5 - 121.5	322	500		
AM8	83.0	41.8 - 191.3	307			
24 hours TSP						
AM6b	45	23 - 87	196			
AM7	32	18 - 43	207	260		
AM8	25	22 - 29	158			

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

- 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
LUCATION	UI INUISC	MIDINIOI IIIZ	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 3.2Noise 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.

	Torse montoring ruraneters, rrequency and Daration			
Monitoring Stations	Parameter	Period	Frequency	
NM5	L _{eq} (30 min.) dB(A)	0700-1900 hrs. on weekdays	Once per week	
NM6	L _{eq} (5 min.) dB(A)	During restricted hours	Monitoring to be conducted when construction works were to be carried out	

Table 3.3Noise Monitoring Parameters, Frequency and Duration

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	: $L_{eq}(30 \text{ min.}) dB(A)$
		(as six consecutive L_{eq} , 5_{min} 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**.

	6	0
For	the time period 0700-1900 hrs. on weekda	iys
Noise Monitoring	Range, dB(A)	Limit Level
Station	L _{eq} (30 min.)	dB(A)
NM5	53.2-61.4	75.0
NM6	54.4 - 61.3	75.0

 Table 3.3
 Summary the Noise Monitoring Results in Reporting Month

- 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 nonconformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1**.

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

Table 4.1Observations of Site Audit

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**.

		-			
Reference Valid P		Period	Details	Status	
Number	From	То		Status	
Water Dische	Water Discharge License				
WT00035198- 2019	15/1/2020	31/1/2025	The application was approved on 15-1-2020.	Valid	
Registered C	hemical Wasi	te Producer			
WPN5213- 269-B2565-01	N/A	N/A	The application was approved on 14-8-2019.	Valid	
Billing Accou	unt for Dispo	sal of Const	ruction Waste		
CSW03680	6/8/2019	N/A	The application was approved on 6-8-2019.	Valid	
Notification	of Works Und	der APCO	·		
447348	N/A	N/A	Notice form received by EPD on 17-7-2019.	N/A	
Construction	Construction Noise Permit				
GW- RW0096-21	2/4/2021	25/9/2021	The application was approved on 26/3/2021	Valid	

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

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.**

<u>1-hr TSP</u>

4.10 No Action/Limit Level exceedance was recorded.

<u>24-hr TSP</u>

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.

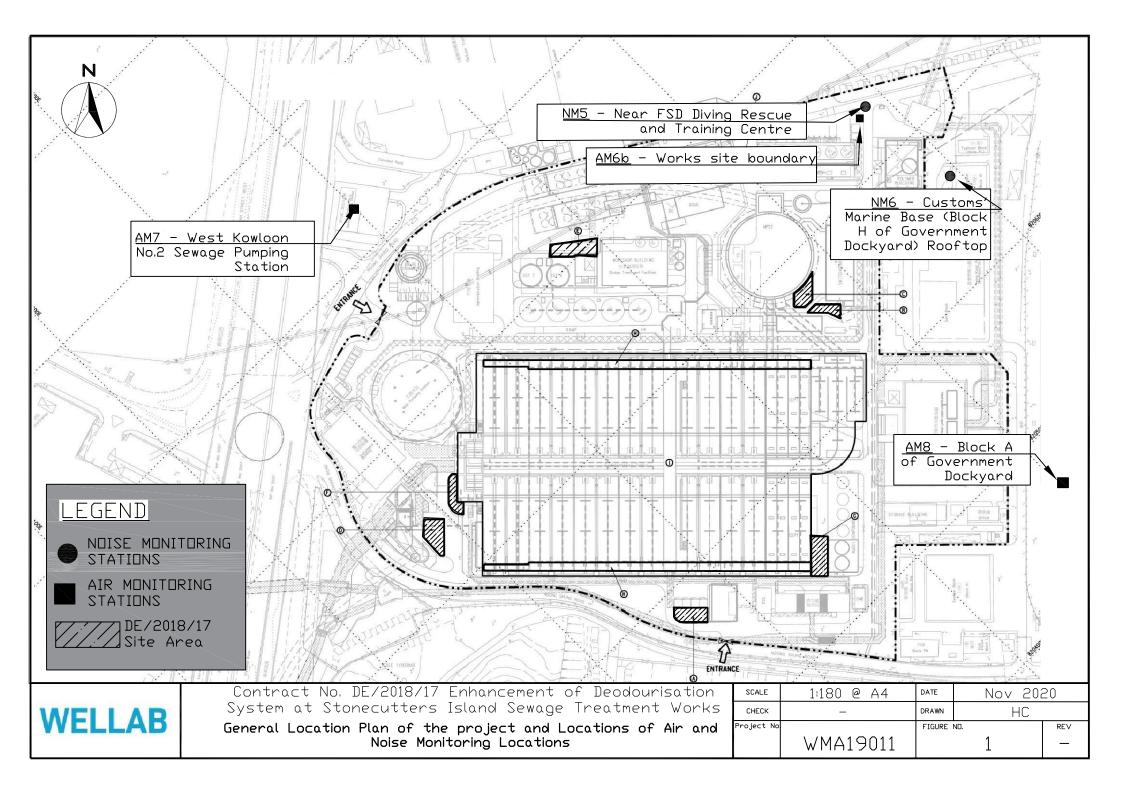
Waste/Chemical Management

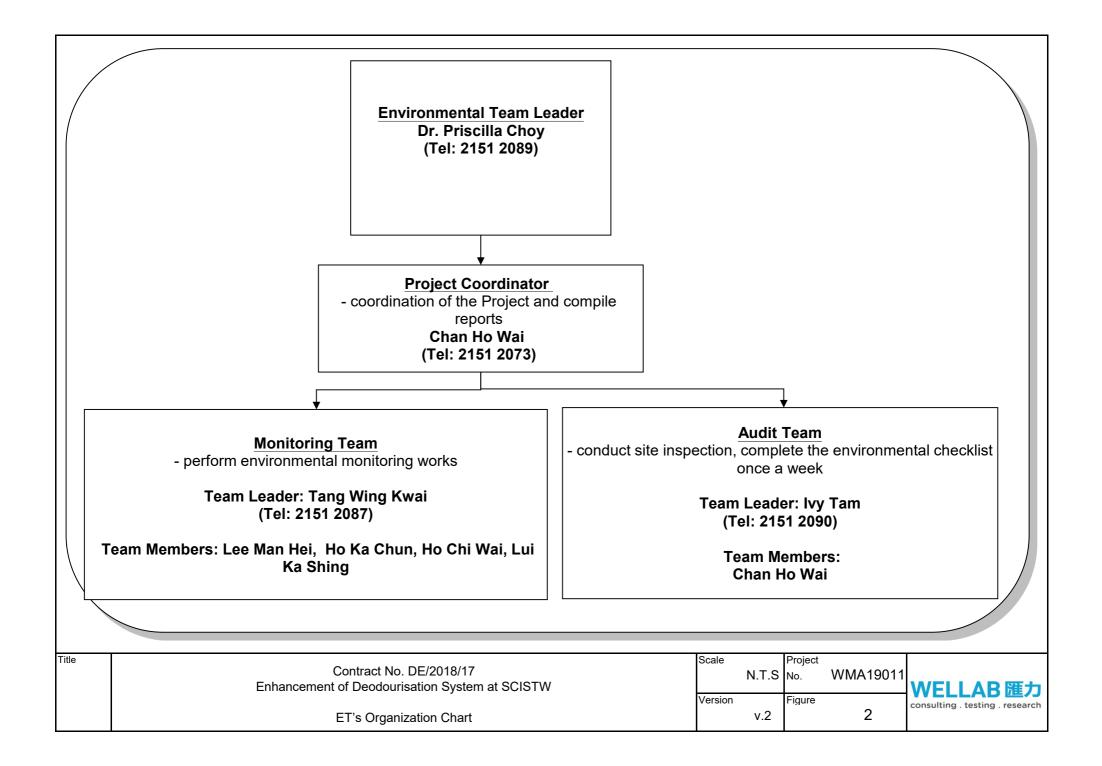
- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide adequate chemical waste storage area on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment; and
-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





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)
	0700-1900 hours on normal weekdays	When one documented complaint is received	75
NM5 NM6	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

Cert	ificate 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	7•	

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 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

: Dust Monitor
: Met One Instruments
: AEROCET-831
: X23810
: 0.1 cfm
: 0 count per 1 minute
: WA-01-04
: 17-22 degree Celsius
: 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.**

FATRICK 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 .:	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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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.:	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 : Met One Instruments Manufacturer : AEROCET-831 Model No. : X24479 Serial No. : 0.1 cfm Flow rate Zero Count Test : 0 count per 1 minute Equipment No. : WA-01-08 **Test Conditions:** : 17-22 degree Celsius Room Temperature **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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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 : Met One Instruments Manufacturer : AEROCET-831 Model No. Serial No. : X23811 Flow rate : 0.1 cfm : 0 count per 1 minute Zero Count Test Equipment No. : WA-01-09 **Test Conditions:** : 17-22 degree Celsius Room Temperature **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.

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 x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$				
Next Calibration Date:	28-Jan-22	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc				

		Calibration of	f TSP Sampler			
Calibration	Orfice			HVS		
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	∆W (HVS), in. of water	[ΔW x (Pa/760) x (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	
Correlation c		0.9979 0, check and recalibrate.	_			
*If Correlation (·				
		• •	Calculation		· ·	
		• •	Calculation			
From the TSP F	ield Calibration C	Set Point (Calculation		· · ·	
From the TSP F	ield Calibration C	Set Point C urve, take Qstd = 43 CFM		98/Ta)] ^{1/2}		

Remarks:

shi Conducted by: <u>*Ith Man Mbl*</u> Signature: Checked by: <u>*lo loa lin*</u> Signature:

8/4124 Date: 8 (ylhar Date:



8/6/2021 8/16/2021

Date: Date:

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

Date:		e Boundary				
		AM6 - Works Site Boundary		Operator:		<u></u>
	8-Jun-21		Next Due Date:		7-Aug-2	21
quipment No.:	uipment No.: WA-12-12		-	Serial No.	2355	
		and the second	Ambien	t Condition		
Temperature, Ta (K) 301			Pressure, Pa			756.5
		· ·			· · · · · · · · · · · · · · · · · · ·	
			Orifice Transfer	1		1 0.01000
Serial N	No	0993	Slope, mc	0.0569	Intercept,	
Last Calibration Date: 28-Jan-21						760) x (298/Ta)] ^{1/2}
Next Calibrat	ion Date:	28-Jan-22		$Qstd = \{ [\Delta I]$	H x (Pa/760) x (29	8/Ta)] ^{1/2} -bc} / mc
		•	Calibration	of TSP Sample	er	and a state of the s
		Or	fice			HVS
Calibration – Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}		Qstd (CFM) X - axis	∆W (HVS), in. of water	[ΔW x (Pa/760) x (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		4.7	2.15
4	5.4		2.31		3.2	1.78
5	3.7		1.91	33.82	2.5	1.57
By Linear Regres Slope , mw = Correlation coo	0.0429		9975	Intercept, bw -	0.0787	7
If Correlation Co	efficient < 0.99	0, check and rec	alibrate.			
		<u> </u>	Set Poin	t Calculation		
From the TSP Fiel	ld Calibration C	urve, take Qstd	= 43 CFM			
From the Regressi	ion Equation, th	e "Y" value acco	ording to			
			$\mathbf{x} \mathbf{Q}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w} = [\Delta]$	W v (Po/760) v	(298/Ta)) ^{1/2}	
		шw	λ <u>U</u> stu + Dw − [Δ	** x (1 a/ /00) X	[[ما الارس]	
	Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (Ta / 298) =	3.76	

Conducted by: <u>IEP MAN HB2</u> Signature: Checked by: <u>No La Chu</u>~ Signature:



High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

			F	ile 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 x 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	f TSP Sampler			
Calibration		Orfice			HVS	
		[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	12.4 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 =						
		Set Point	Calculation			
From the Regres	ssion Equation, th	urve, take Qstd = 43 CFM e "Y" value according to mw x Qstd + bw = [ΔW				
Therefore, S	et Point; W = (m	w x Qstd + bw) ² x (760 / Pa) x (Ta / 298) =	4.24		

Remarks:

Conducted by: <u>IE& Mark Hb</u> l Signature:	hp)
Checked by: 10 kg dh Signature:	

Date:	81 41201
Date:	114/201



High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

						File No.	WMA19011/WA14/0001
Station	AM7 - North West	t Kowloon Sewage I	oumping Station	Operator:	HL		
Date:	8-Jun-21]	Next Due Date:	7-Aug-21		
Equipment No.:	WA-12-14			Serial No.			
	and the second second		Ambier	1t Condition			
Temperatu	ire, Ta (K)	301.8	Pressure, Pa			755.3	
••	······································	•					
		C	Prifice Transfer	Standard Infor	mation		
Serial	l No.	0993	Slope, mc	0.0569	Intercept		-0.01398
Last Calibration Date:28-Jan-21mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$							
Next Calibr	ation Date:	28-Jan-22		Qstd = {[Δ]	= { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc		
	1.1.5.1	•	Calibustion	of TSP Sample			
		Orf		of ISP Sample		HVS	·
Calibration Point	∆H (orifice), in. of water) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water		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
Slope , mw = Correlation c *If Correlation C	coefficient* = Coefficient < 0.99	- 0.99	96 librate.	-	0.0263	J	
	ield Calibration C	umua taka Oatd —		t Calculation			
	ision Equation, the						
rioni ne regies	sion equation, in		ang to				
		mw x	Qstd + bw = $[\Delta^{\gamma}]$	W x (Pa/760) x	(298/Ta)] ^{1/2}		
Therefore, S	et Point; W = (m	w x Qstd + bw $)^2$	x (760 / Pa) x ('	Ta / 298) =	4.22		
Remarks:							
Conducted by: Checked by:	<u>let mon liter</u> No ka chun	-Signature: Signature:	A	1 Li		Date: Date:	8/6/2021 8/6/2021

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High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

				File No.	
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			
	296.8	riessure, ra (mining)				

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 = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$							
Next Calibration Date:	28-Jan-22	Qstd = { $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$ -bc} / mc							

		Calibration of	TSP Sampler	10. 0. ·	
0-111		Orfice		HVS	
Calibration - Point	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	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
Slope , mw = Correlation c		0.9987	Intercept, bw : _	0.0234	<u> </u>
Correlation of	coefficient* =		Intercept, bw = -	0,0234	<u>.</u>
Correlation of	coefficient* =	0.9987 0, check and recalibrate.	Intercept, bw - - Calculation	• 0.0234	<u> </u>
Correlation of *If Correlation (coefficient* = Coefficient < 0.99	0.9987 0, check and recalibrate.	_		<u></u>
Correlation of *If Correlation of From the TSP F	coefficient* = Coefficient < 0.99 'ield Calibration C	0.9987 0, check and recalibrate. Set Point (_		<u>.</u>
Correlation of *If Correlation of From the TSP F	coefficient* = Coefficient < 0.99 'ield Calibration C	0.9987 0, check and recalibrate. Set Point C urve, take Qstd = 43 CFM	- Calculation		<u>.</u>

Remarks:

Conducted by: <u>175 Mor Un</u>Signature: Checked by: <u>Mo Ca du</u> Signature:

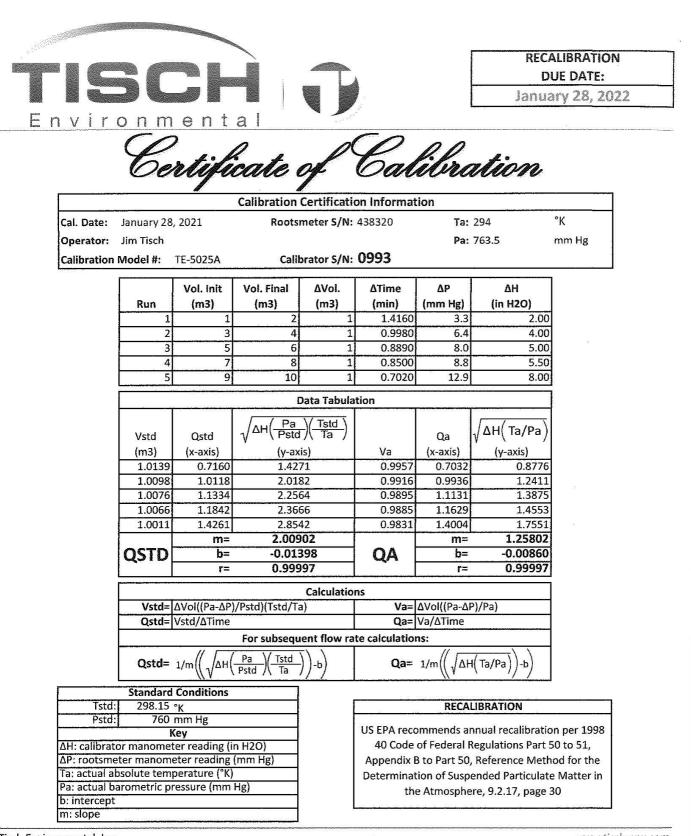
Date: Date:

814(2021 814(2021



High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

						File No.	WMA19011/WA18/0001
Station	AM8 - Block A	of Governmer	nt Dockyard	Operator:	HL		
Date:	8-Jun-21		. 1	ext Due Date:	7-Aug-	21	
Equipment No.:	WA-12-18			Serial No.	3219		
	······································	a the species	Å It fare	t Condition	· . ' . · ·	· · · · · · · · · · · · · · · · · · ·	
		201.0		t Condition		755 2	
Temperau	ıre, Ta (K)	301.9	Pressure, Pa	. (mmHg)	<u> </u>	755.3	
inter distanta Second			Orifice Transfer	Standard Info	mation	en e	
Seria	l No.	0993	Slope, mc	0.0569	Intercept		-0.01398
Last Calibi	ation Date:	28-Jan-21		me x Qstd -	+ bc = [ΔH x (Pa/	760) x (298/T	a)] ^{1/2}
Next Calib	ration Date:	28-Jan-22		Qstd = $\{[\Delta]$	H x (Pa/760) x (29	98/Ta)] ^{1/2} -be}	/ me
	ng tinu tang	•	<u> </u>	6700 G 1	e and the second second	hang pangga	e en el composición de la composición d
		Or		of TSP Sample	er	HVS	
Calibration Point	ΔH (orifice), in. of water		0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water		Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.5	3	3.36	59.30	8.0		2.80
2	9.8	3	3.10	54,76	6.4		2.51
3	7.7	2	2.75	48.56	5.5		2.32
4	5.4	2	2.30	40.71	3.9		1.96
5	3.1	1	.74	30.90	2.4		1.53
	0.0434 coefficient* = Coefficient < 0.99		970	Intercept, bw = -	0.1918	8	
				Calculation			
	ield Calibration C						
From the Regre	ssion Equation, the	e "Y" value accor	rding to				
		mw :	$x \operatorname{Qstd} + \mathbf{bw} = [\Delta V]$	V x (Pa/760) x	(298/Ta)] ^{1/2}		
Therefore, S	et Point; W = (m	w x Qstd + bw) ²	x (760 / Pa) x (1	ſa / 298) =	4.31		
Remarks:							
Conducted by: Checked by	<u>167 Mai Mar</u> No la Chun	Signature:	Ur		•	Date: Date:	81 61 2.21 81617021



Tisch Environmental, Inc.

145 South Miami Avenue

Village of Cleves, OH 45002

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

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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
itions:	

Test conditions:

Room Temperature Relative Humidity : 17-22 degree Celsius : 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 General Manager

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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 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 Relative Humidity : 17-22 degree Celsius : 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	$94.0 \pm 0.1 \text{ dB}$
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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

PATRICK TSE

General Manager

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APPENDIX C ENVIRONMENTAL MONITORING SCHEDULES

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				

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

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

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	

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

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	Air	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.	Filter
Start Date	Start Time	Condition	Temp. (K)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)	ID no.
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	

Min	18
Max	149
Average	69

Location AM7 -	North West	Kowloon Sewage	Pumping Station
Date	Time	Weather	Particulate Concentration (µg/m³)
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

Appendix D - 1-hour TSP Monitoring Results

Location AM8 -	Block A of C	Government Dock	yard
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	Air	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.	Filter
Start Date	Condition	Temp. (K)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m³)	ID no.
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	

Average 45

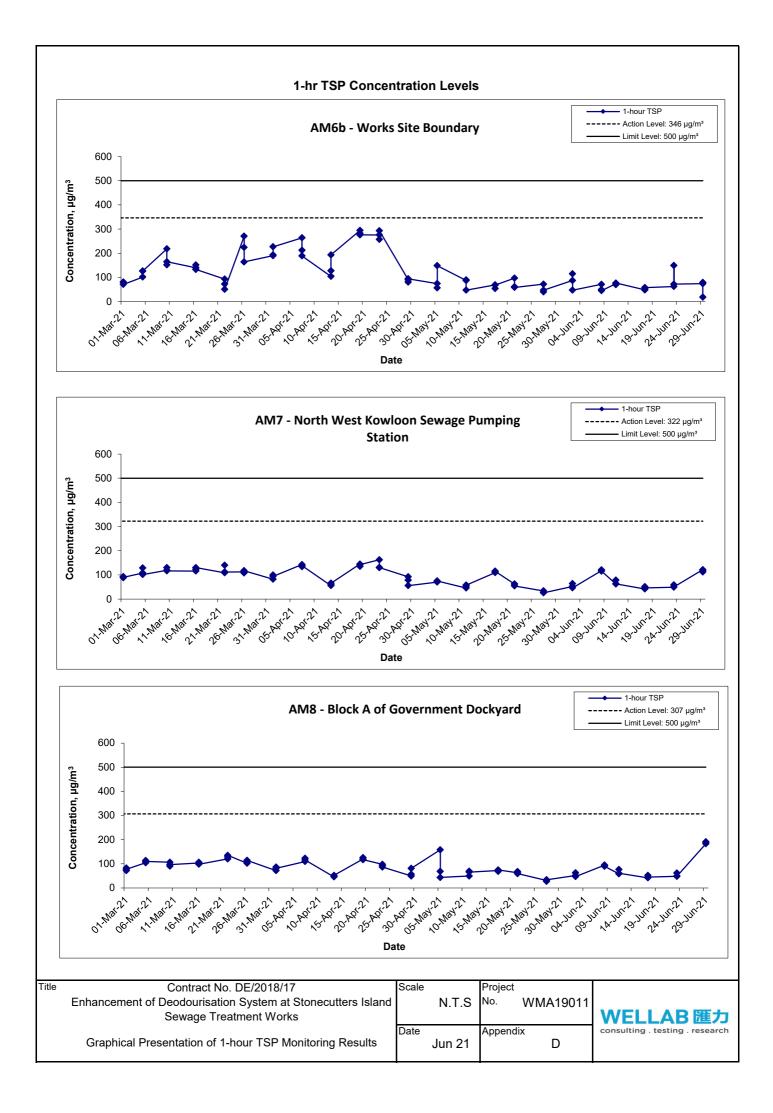
Location AM7 - North West Kowloon Sewage Pumping Station

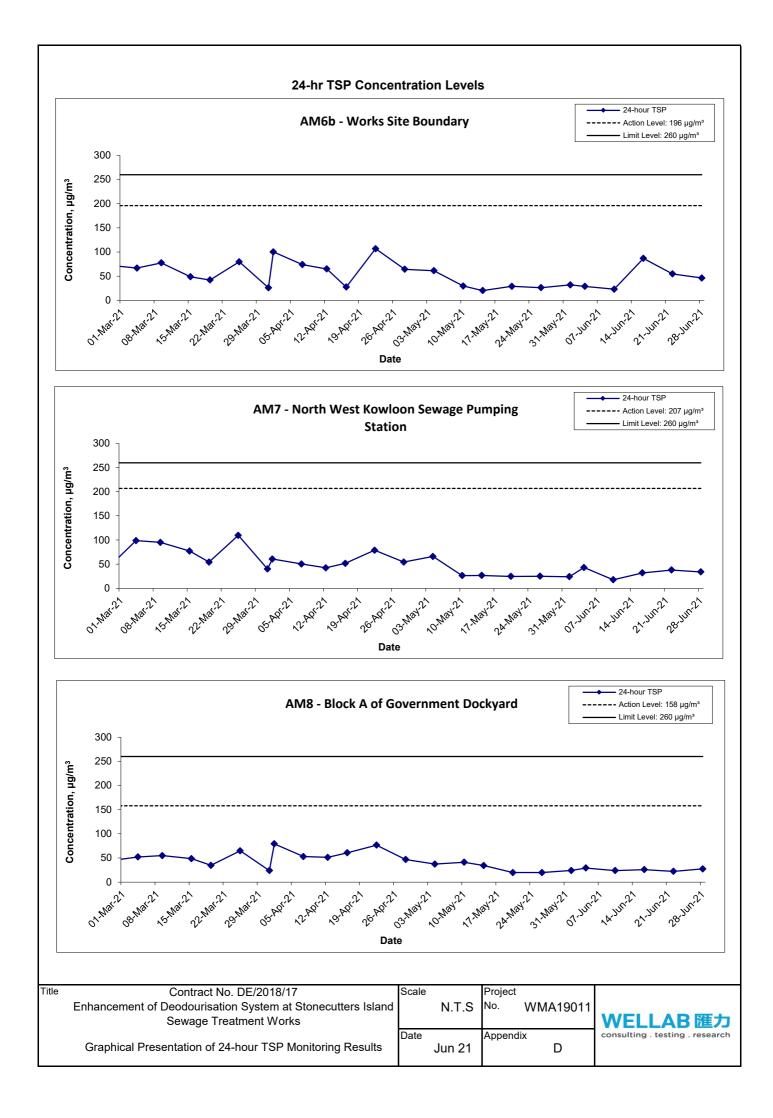
Start Date	Weather	Air	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.	Filter
Start Date	Condition	Temp. (K)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m³)	ID no.
1-Jun-21	Cloudy	299.5	3.3182	3.3600	0.0418	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	Air	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.	Filter
Start Date	Condition	Temp. (K)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m³)	ID no.
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	
												A	05	

Average 25





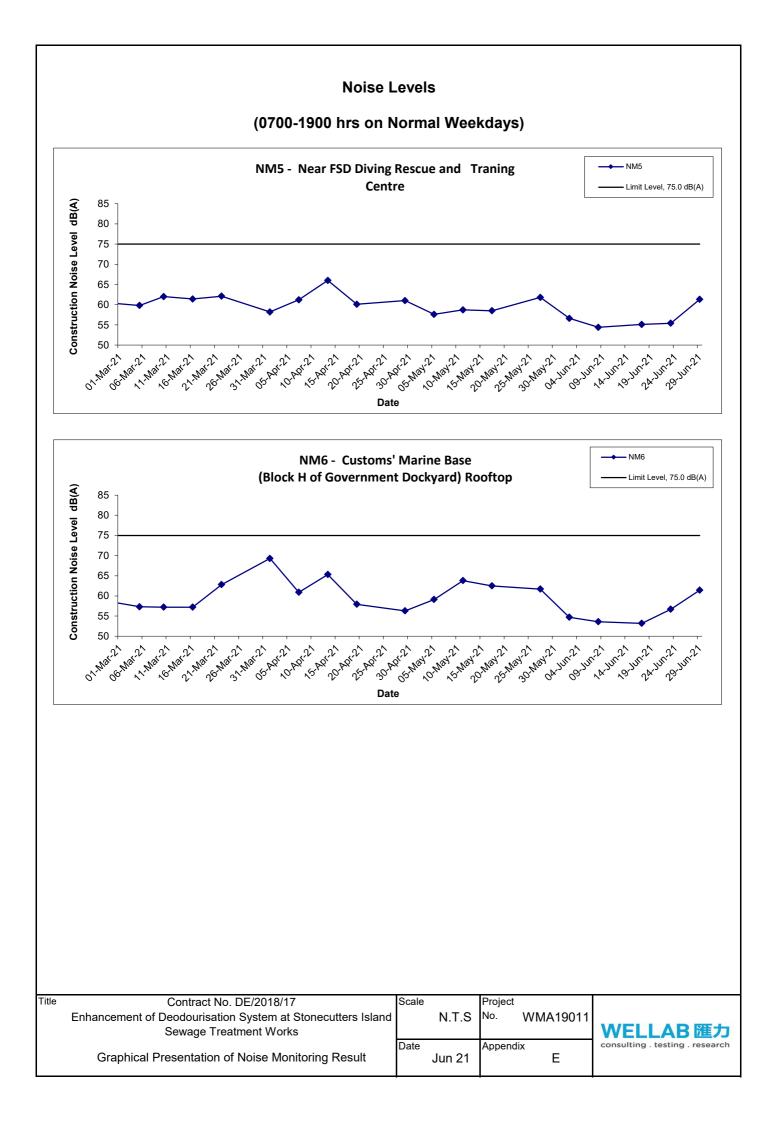
APPENDIX E NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - Noise Monitoring Results

Location NM5 - Near FSD Diving Rescue and Training Centre									
Date	:: dB (A) (30- sured Noise								
			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	29-Jun-21 15:30		61.4	62.4	59.5				
		Maximum	61.4						
		Minimum	53.2						

(0700-1900 hrs on Normal Weekdays)

Location NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop								
				:: dB (A) (30-	1			
Date	Time	Weather	Mea	sured Noise I	Level			
			L _{eq}	L ₁₀	L ₉₀			
2-Jun-21	un-21 14:45 Cloud		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					



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

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	Wan	7 June 2021
Checked by	Dr. Priscilla Choy	hT_	7 June 2021

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	NE	15 June 2021

Inspection into mution	
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	Wan	21 June 2021
Checked by	Dr. Priscilla Choy	W.T.	21 June 2021

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	War	28 June 2021
Checked by	Dr. Priscilla Choy	NEL	28 June 2021

APPENDIX H SUMMARY OF AMOUNT OF WASTE GENERATED Name of Department:

DSD

Contract No. :

DE/2018/17

	Actual Quantities of inert C&D Materials Generated Monthly				Actual Quantities of C&D Materials Generated Monthly				onthly		
Month	Total Quantity	Hard Rock and Large	Reused in the	Reused in	Disposed as	Imported	Metals	Paper/	Plastics	Chemical	Other, e.g.
Monu	Generated	Broken Concrete	Contract	other Projects	Public Fill	Fill		cardboard	(see Note 3)	Waste	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 commence ment of project		0.399	0.000	0.000	4.495	0.000	12.260	18.233	0.000	0.000	0.079

Monthly Summary Waste Flow Table for 2021 (year)

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

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

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

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

Table I-2 Event / Action Plan for Construction Noise

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

APPENDIX J ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			
А	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.		٨
	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	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			
В	Airborne Noise		
4.56-	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^
4.61			
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		
	Construction Site Runoff and General Construction Activities	A 11 4 4' '4	^
6.349 to 6.375	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. 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	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			
	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.		Λ
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. 		Λ
6.380	Construction Works in Close Proximity of Storm Drains or Seafront:	All construction sites	٨
	 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. 		

EIA	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			

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	٨
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	۸
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.		۸
	Any unused chemicals or those with remaining functional capacity shall be recycled.		٨
	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.		۸
	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	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			
	1		
	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	Λ
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.		٨
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.		٨
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.		Λ
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.		Λ
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	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			

Ε	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.	-	٨
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.	-	٨
	Control of night-time lighting.	-	٨
Table	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
13.7			
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	۸
Н	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	۸

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	20	19		Q
Works Pro	gramme (First Programme)								-	÷	G
Contract Pa									┢	-	
KD0001	Starting date of Project	0%	0	0		09-Jul-19*			<u>ج</u>	Start	ing
KD0005	Completion Date (665 days)	0%	0	0			03-May-2				
Key Dates											_
KD0010	Starting date of Project	0%	0	0		09-Jul-19*			• s	Start	ing
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*)9-	ul.:
ACCESS Dat A1090	e of Part of the Site Part A-L Part A-L	0%	0	0		09-Jul-19				Part	
	and General Requirements	0%	0	0		09-301-19			Ţ	aru	
PG00010	Statutory application/ notification of EPD and LD	0%	11	21	0	09-Jul-19	29-Jul-19				Sta
PG00020	Submission of Safety plan	0%	11	21		09-Jul-19	29-Jul-19		-		Su
PG00030	Approval of Safety Plan	0%	11	21		30-Jul-19	19-Aug-19		l	-	
PG00040	Submission of Waste Management Plan/ Environmental Management plan	0%	11	21	0	09-Jul-19	29-Jul-19			- 1	Su
PG00050	Approval of Waste Management Plan/ Environmental Management plan	0%	11	14		30-Jul-19	12-Aug-19			-	h
PG00060 PG00070	Submission of Subcontractor Management Plan	0%	112 112	14		09-Jul-19 23-Jul-19	22-Jul-19 05-Aug-19			1 8	ub
PG00070	Approval of Subcontractor Management Plan Submission of Staffing Proposal	0%	7	14		09-Jul-19	22-Jul-19		╺┟┤	ı İ	ubi
PG00090	Approval of Staffing Proposal	0%	7	7		23-Jul-19	29-Jul-19		F		Ap
	Ire Construction Works								+	-	-
Section 1 of t								 	+++		
A2960	Section 1 Completion (150days)	0%	0	0	0		05-Dec-19*				
E&M Design	Submission (AIP) Submission of AIP Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	09-Jul-19	15-Jul-19			Su	
A4930 A4940	Approval of AIP Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	21		16-Jul-19	05-Aug-19		2	JU	
A4950	Submission of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	7		09-Jul-19	15-Jul-19			Sų	omi
A4960	Approval of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	21	0	16-Jul-19	05-Aug-19		F	÷	(Ì
A4970	Submission of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	09-Jul-19	15-Jul-19			Su	Ъщ
A4980	Approval of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	21		16-Jul-19	05-Aug-19			Sú	1
A4990 A5000	Submission of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks Approval of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7 21		09-Jul-19 16-Jul-19	15-Jul-19 05-Aug-19		긢		:k
A5000 A5010	Submission of AIP Design to be supply, cabling, earthing, lightning protection and interface with	0%	57	7		09-Jul-19	15-Jul-19		╺╻	Su	
A5170	Approval of AIP Design to power supply, cabling, earthing, lightning protection and interface with ex'	0%	57	. 21		16-Jul-19	05-Aug-19		F		1
E&M Design	Submission (DDA)								+		-
A4945	Submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2	0%	0	7		09-Jul-19	15-Jul-19		1	Su	omi
A4955	Review and comment on DDA of Civil requirement drawings and General Arrangement of DOU1, DC	0%	0	21		16-Jul-19	05-Aug-19			E	
A4965 A4975	Re-submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DC Approval of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2, D	0%	0	7		06-Aug-19 13-Aug-19	12-Aug-19 19-Aug-19				
A5015	Submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7		06-Aug-19	12-Aug-19				ſ
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				4
A5030	Re-submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7		03-Sep-19	09-Sep-19				
A5040	Approval of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7		10-Sep-19	16-Sep-19				
A5050 A5060	Submission of DDADesign of Air Relief Duct for Effluent Drop Structure Review and Comment on DDADesign of Air Relief Duct for Effluent Drop Structure	0%	0	7 21		06-Aug-19 13-Aug-19	12-Aug-19 02-Sep-19				1
A5000 A5070	Re-submission of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7		03-Sep-19	02-Sep-19 09-Sep-19				
A5080	Approval of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7		10-Sep-19	16-Sep-19			- 1	
A5090	Submission of DDADesign of Isolation Device for Effluent Drop Structure	0%	0	7	0	06-Aug-19	12-Aug-19				9
A5100	Review and Comment on DDA Design of Isolation Device for Effluent Drop Structure	0%	0	21		13-Aug-19	02-Sep-19				1
A5110 A5120	Re-submission of DDA Design of Isolation Device for Effluent Drop Structure Approval of DDA Design of Isolation Device for Effluent Drop Structure	0%	0	7		03-Sep-19 10-Sep-19	09-Sep-19 16-Sep-19				
A5120	Submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7		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		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		10-Sep-19	16-Sep-19				J
A5460	Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	57	7		06-Aug-19	12-Aug-19	 			9
A8020 A8030	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interf Re-submission of DDA Design of power supply, cabling, earthing, lightning protection and interface	0%	57 57	21 7		13-Aug-19 03-Sep-19	02-Sep-19 09-Sep-19				
A8040	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	57	7		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		07-Sep-19	24-Oct-19	∤ ∣			
A5190	FAT of Activated Carbon Filter System for DOU1 Delivery of Activated Carbon Filter System for DOU1 to Site	0%	0	6		07-Oct-19	12-Oct-19				
A5200 A5210	Delivery of Activated Carbon Filter System for DOU1 to Site FAT of Activated Carbon Filter System for DOU2	0%	0	14 6		13-Oct-19 13-Oct-19	26-Oct-19 18-Oct-19				ĺ
A5220	Delivery of Activated Carbon Filter System for DOU2 to Site	0%	0	14		19-Oct-19	01-Nov-19				
A5230	FAT of Activated Carbon Filter System for DOU5	0%	0	6		19-Oct-19	24-Oct-19				
A5240	Delivery of Activated Carbon Filter System for DOU5 to Site	0%	0	14		25-Oct-19	07-Nov-19				Ī
A5250	Procurement of FRP Air Ducts for Effluent Drop Structure	0%	0	45		02-Sep-19	16-Oct-19				ĺ
A5260 A5270	FAT of FRP Air Ducts for Effluent Drop Structure Delivery of FRP Air Ducts for Effluent Drop Structure to Site	0%	0	7		10-Oct-19 17-Oct-19	16-Oct-19 23-Oct-19				
A5270	Procurement of Isolation Devices for Effluent Drop Structure	0%	0	30		02-Sep-19	01-Oct-19				
A5290	Delivery of Isolation Devices for Effluent Drop Structure to Site	0%	0	7		02-Oct-19	08-Oct-19	jf			1
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Part A														-									
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- Sub	mission of DI	6-Sep-19, E&N DA Civil requirer	pesign s	wings and Ge	opa) eneral Arra	naemen	t of DOI	J1. DOL	J1R. DO	U2. DO	U4 and	DOU5											
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Actual Work

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Summary

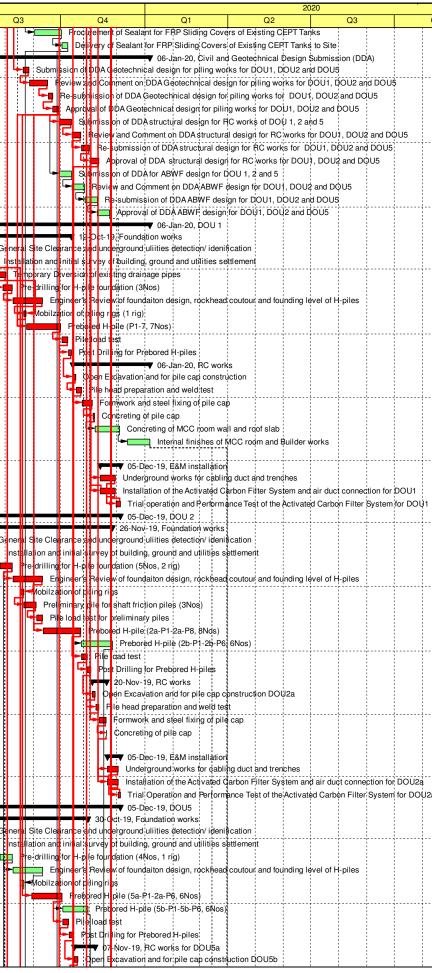
Remaining Work

Critical Remaining Work

Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment V

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RC works A1450 Open Excavation and A1455 Pile head preparation A1460 Formwork and steen A1470 Concreting of pile of Drainage works Drainage works E&M installation A5355 Junderground works A5360 A5370 Trial Operation and A5650 General Site Cleard A5660 Installation and initil A5660 Installation and initil A5660 Installation and initil A5660 Reneral Site Cleard A5660 Installation and initil A5660 Reneral Site Cleard A5660 Installation and initil A5670 Pre-drilling for H-pil A5680 Engineer's Review A5690 Mobilzation of pilin A5720 Prebored H-pile (5a)		0%	0	6 0 4 0	23-Oct-19 30-Oct-19	29-Oct-19 02-Nov-19							6	L L	e oa ost I
A1450 Open Excavation and A1455 A1455 Pile head preparation Formwork and stee A1470 Concreting of pile of Drainage works Bail attoin A5355 Underground works A5360 Installation of the Ard A5370 Trial Operation and Drouts Foundation works A5650 General Site Clearard A5660 A5650 General Site Clearard A5660 A5660 Installation and initit A5670 Pre-drilling for H-pil A5680 Engineer's Review A5690 Mobilzation of piling A5720		0%	U	4 0	00-001-19	02-1007-19									v 2
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A1470 Concreting of pile of Drainage works Drainage works Drainage works A5355 Underground works A5360 Installation of the Art		0%	0	7 0	12-Nov-19	19-Nov-19		++							Ē
E&M installation A5355 Underground works A5360 Installation of the A A5370 Trial Operation and A5370 Trial Operation and A5370 Trial Operation and A5370 General Site Cleard A5650 General Site Cleard A5660 Installation and initi A5670 Pre-drilling for H-pi A5680 Engineer's Review A5690 Mobilzation of pilling A5720 Prebored H-pile (5a		0%	0	1 0	20-Nov-19	20-Nov-19								6	jĊ
A5355 Underground works A5360 Installation of the A A5370 Trial Operation and COUS Foundation works A5650 General Site Cleara A5660 Installation and initi A5670 Pre-drilling for H-pi A5680 Engineer's Review A5690 Mobilzation of piling A5720 Prebored H-pile (5a)														ľΠ	
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DOUS Foundation works A5650 General Site Clear A5660 Installation and initi A5670 Pre-drilling for H-pi A5680 Engineer's Review A5690 Mobilzation of pilin A5720 Prebored H-pile (5a	· · ·	0%	0	10 0	21-Nov-19	02-Dec-19								1	F
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A5660Installation and initiA5670Pre-drilling for H-piA5680Engineer's ReviewA5690Mobilzation of pilingA5720Prebored H-pile (5a)		0%	8	6 0	09-Jul-19	15-Jul-19		┛	Ger	nera	Site C	Cleara	unce «	nd ur	nde
A5670Pre-drilling for H-piA5680Engineer's ReviewA5690Mobilzation of pilingA5720Prebored H-pile (5a)	-	0%	8	9 0	16-Jul-19	25-Jul-19	·	Ħ			lation				
A5680Engineer's ReviewA5690Mobilzation of pilingA5720Prebored H-pile (5a)		0%	8	12 0	26-Jul-19	08-Aug-19		ļţ	╺╋		re-drill				
A5690 Mobilzation of piling A5720 Prebored H-pile (5a		0%	8	28 0	09-Aug-19	10-Sep-19			F	-	1		neer's		
		0%	8	3 0	17-Aug-19	21-Aug-19				h	dobi	Izatic	n of p	iling	rigs
A5730 Prebored H-pile (5t	720 Prebored H-pile (5a-P1-2a-P6, 6Nos)	0%	0	28 0	30-Aug-19	02-Oct-19				ļĻ	-		Freb	red	Нp
noroo iroboica ii piic (or	730 Prebored H-pile (5b-P1-5b-P6, 6Nos)	0%	25	24 0	03-Oct-19	30-Oct-19		11				∎ ∏ ∎		Pr	
A5740 Pile load test	'40 Pile load test	0%	0	6 0	03-Oct-19	09-Oct-19						4	Pil	loac	l ler
A5750 Post Drilling for Pre	750 Deet Deillie e fee Deele ee ditteitee	0%	0	4 0	10-Oct-19	14-Oct-19						F	1 P	ost Di	rili
RC works for DOU5a	750 Post Drilling for Prebored H-piles													-	
A5590 Open Excavation a	works for DOU5a		0	5 0	15-Oct-19	19-Oct-19		11			1	l II I	- 🖪 🕴	Open	Exc
Actual Work	works for DOU5a	0%	0	0 0			<u> </u>				<u> </u>		ا مهم		



Critical Remaining Work

Q3			Q4			Q1			2021 Q2			Q3	
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Sh	eet 2 c		19-Jul-19		Rev.	0			CHECKE	۵.	, , , , , , , , , , , , , , , , , , ,		
		2	29-Aug-19	1	Rev.	1		1					

		Complete		Duration allowance					Q3			Q4		Q1	Q2	Q3	
A5600	Pile head preparation and weld test	0%	0	4 0	21-Oct-19	24-Oct-19		E			T E	Pile	head prepa	ration and weld test			
A5610	Formwork and steel fixing of pile cap	0%	0	10 0	25-Oct-19	05-Nov-19				i.		H F	omwork ar	nd steel fixing of pile ca	ip		
A5620	Concreting of pile cap	0%	0	2 0	06-Nov-19	07-Nov-19						💾 (oncreting c	of pile cap			
Drainage w													05.0	ec-19, E&M installation			
E&M install A5625	ation Underground works for cabling duct and trenches	0%	0	18 5	08-Nov-19	28-Nov-19			· <mark>-</mark> -	-+				ground works for cablin			
A5630	Installation of the Activated Carbon Filter System and air duct connection for DOU5b	0%	0	18 2	08-Nov-19								- 1 (The second se	arbon Filter System an	d air duct conn	ection for DOU5b
A5640	Trial Operation and Performance Test of the Activated Carbon Filter System for DOU5b	0%	0	6 0	29-Nov-19								Trial	Operation and Perform	ance Test of the Activa		
CEPT tank	······································		-								╉╼╋╸			ec-19, CEPT tank			
Air ducts of	effluent drop shaft											<u></u>	05-D	ec-19, Air ducts of efflu			
A7090	Installation of FRP air duct for effluent drop structure	0%	0	25 0	24-Oct-19	21-Nov-19					L -		Installati	ion of FRP air duct for			
A7180	Reliability Test of FRP air ducts for effluent Drop Structure	0%	0	12 0	22-Nov-19	05-Dec-19				1		11			ucts for effluent Drop S	tructure	
Effluent Lau A7100	Inder Delivery of isolation device for on site prototype test	0%	15	6 0	09-Jul-19	15-Jul-19			livery	oficol	ation do	vico for	1.1.1	ec-19, Effluent Launde totype test	n		
A7100 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	-					- i i i i i	I : :		Structure for On-site F	rototyne Test	
A7110	Conduction of On-site Prototype Test of the Isolation Device for Effluent Drop Structure	0%	15	12 0	06-Sep-19	19-Sep-19			·				1 I I I I I I I I I I I I I I I I I I I		ation Device for Effluer	1	re
A7130	Full Scale Installation of Isolation Devices for Effluent Drop Structure	0%	0	38 5	09-Oct-19	21-Nov-19				-			i i		on Devices for Effluent	-i - i	i i i
A7190	Performance test (smoke Test) of the isol ation device for effluent drop structure	0%	0	12 0	22-Nov-19	05-Dec-19						. 4			ast) of the isol ation dev		
CEPT FRP c			-							-	1	++++		ec-19, CEPT FRP cov			
A7140	Delivery of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	6 0	02-Sep-19	07-Sep-19			Ļ	De De	elivery	of FRP	Sliding Cov	er Sealant for On-site	Prototype Test		
A7150	Installation of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	8 0	09-Sep-19	17-Sep-19				-			1 1	g Cover Sealant for Or			
A7160	Conduction of On-site Prototype Test of FRP Sliding Cover Sealant	0%	3	12 0	18-Sep-19	02-Oct-19				L >	Co	nductio		1 10 1 1	Sliding Cover Sealant	1 1	
A7170	Full Scale Installation of FRP Sliding Cover Sealants for Existing CEPT Tanks	0%	0	40 5	07-Oct-19	21-Nov-19					4				iding Cover Sealants		
A7200	Performance test (Smoke test) of the sealant for FRP sliding covers	0%	0	12 0	22-Nov-19	05-Dec-19						<u> </u>	Perfo	rmance test (Smoke te	st) of the sealant for FI	RP sliding cove	ers
Section 2 of t						-									•		
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*								esign Submission (AIF			
E&M Design A5760	Submission (AIP) Submission of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	14 0	13-Aug-19	26-Aug-19				Subr					System for DOU1, DO	J2 and DOU5	
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			F		- i		1 T 1		er System for DOU1, D	-i -i	15
A5780	Submission of AIP Design of the Polishing System for DOU4	0%	0	14 0	27-Aug-19			†•						of the Polishing System			
A5790	Approval of AIP Design of the Polishing System for DOU4	0%	0	21 0	10-Sep-19	30-Sep-19				4	Арр	proval o	f AIP Desig	n of the Polishing Syst	em for DOU4		
A5800	Submission of AIP Design of the Polishing System for DOU1R	0%	0	14 0	27-Aug-19	09-Sep-19			-	📥 §	ubmiss	ion of A	P Design o	of the Polishing System	for DOU1R		
A5810	Approval of AIP Design of the Polishing System for DOU1R	0%	0	21 0	10-Sep-19	30-Sep-19					Арр	proval ø	f AIP Desig	n of the Polishing Syst	em for DOU1R		
A5820	Submission of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	14 0	10-Sep-19	23-Sep-19						1 1 1			ge and Transfer Facilit		
A5830	Approval of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	21 0	24-Sep-19	14-Oct-19						-91 L	- i - i	Ŭ I	brage and Transfer Fac	-i - i	
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			-						bution System for DOU		
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			•						tribution System for DO		* i i i i
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			-		- i		- i ⁻ - i		nent of the existing loca	i i	i i i
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		[]							ement of the existing lo		
A5880	Submission of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including function	0%	3	14 0	27-Aug-19	09-Sep-19			-		- L				ths for DOU Polishing Stems for DOU Polishing	1 1	17 1 1 7
A5890 A5900	Approval of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including functional Submission of AIP Design of Building Services for DOU Polishing Systems, New Switch/MCC Roor	0%	3	21 0 14 0	10-Sep-19 27-Aug-19	30-Sep-19 09-Sep-19			_			11 1			DOU Polishing Syster		
A5900 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			-						for DOU Polishing System		
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									DOU Polishing System		
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		†•	• • • •	···• 🖸		- +			for DOU Polishing Syst		
A8000	Submission of AIP Design to power supply, cabling, earthing, lightning protection and interface with	0%	59	14 0	13-Aug-19	26-Aug-19			-	Subi		- 1 C L			arthing, lightning protec	- I - I	- I I I
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			-		Approv	al of AlF	P Design fo	power supply, cabling	earthing, lightning pro	tection and inte	erface with ex'tg insta
A8090	Submission of AIP design of networks integration with existing DCS	0%	59	14 0	13-Aug-19	26-Aug-19			-	Subi	nission	df AIP d	esign of ne	tworks integration with	existing DCS		
A8100	Approval of AIP Design of network integration with existing DCS	0%	59	21 0	27-Aug-19	16-Sep-19			-					network integration wi			
A8110	Submission of AIP design of Redundant fiber network for new SCADA	0%	59	14 0	13-Aug-19	26-Aug-19			-					edundant fiber network	· · · ·		
A8120	Approval of AIP design of Redundant fiber networks for new SCADA	0%	59	21 0	27-Aug-19	16-Sep-19								Redundant fiber netwo			
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		['	-						dification of ex'tg data,		
A8180	Approval of AIP design for upgrading works and modification of extg data, event & Historain server	0%	59	21 0	27-Aug-19	16-Sep-19			-		Approv	al of All	- i T - i		modification of ex'tg da	ta, event & Hist	torain server in DOL
	Submission (DDA) Submission of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14 0	17 Son 10	20 Son 10		[-			Sub	missio		Dec-19, E&M Design S	Scrubbers Filters for E		
A1170 A1180	Review and Comment on DDA Design of Wet Chemical Scrubbers Filters for DOUT, DOU2 and DOUS Review and Comment on DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DO	0%	0	14 0 21 0	17-Sep-19 01-Oct-19										of Wet Chemical Scrub		
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								· · · · · ·	Chemical Scrubbers I		1 · · · · · · · · · · · · · · · · · · ·
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							i i	i i Till	hemical Scrubbers Filt	i i	i i i
A1190	Submission of DDA Design of the Polishing System for DOU4	0%	21	14 0	01-Oct-19	14-Oct-19					-			A Design of the Polishi			
A1200	Review and Comment on DDA Design of the Polishing System for DOU4	0%	21	21 0	15-Oct-19	04-Nov-19		F	• • • •						gn of the Polishing Sys	tem for DOU4	
A1210	Re-submission of DDA Design of the Polishing System for DOU4	0%	21	7 0	05-Nov-19										the Polishing System for		
A1260	Approval of DDA Design of the Polishing System for DOU4	0%	21	14 0	12-Nov-19	25-Nov-19									Polishing System for I		
A5940	Submission of DDA Design of the Polishing System for DOU1R	0%	0	14 0	01-Oct-19	14-Oct-19					-	Submis	sion of DD	A Design of the Polishi	ng System for DOU1R		
A5950	Review and Comment on DDA Design of the Polishing System for DOU1R	0%	0	21 0	15-Oct-19	04-Nov-19								*	on of the Polishing Sys		3
A5960	Re-submission of DDA Design of the Polishing System for DOU1R	0%	0	7 0	05-Nov-19		T		ſ			4			the Polishing System for	1 1	
A5970	Approval of DDA Design of the Polishing System for DOU1R	0%	0	14 0	12-Nov-19										Polishing System for I	· · · ·	
A5980	Submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14 0	15-Oct-19	28-Oct-19						Sup			OH bulk storage and tra	1 1	
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						┑			esign of the NaOH bul		
A6000	Re-submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	7 0	19-Nov-19	25-Nov-19		- -							t of the NaOH bulk stor		
A6010	Approval of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14 0	26-Nov-19						- C				the NaOH bulk storage and Distribution Syste	-i -i	- i i i
A6020 A6030	Submission of DDA Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19 19	14 0	17-Sep-19	30-Sep-19					Sub		p 1		and Distribution Syste	1 1	1 2 2 1 1
10030	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	li l			11		inevie			and D	iya ibaalori Syst	Control DQU FUIIS[III]
	ual Work Milestone					Contract No	DC	1201	0/1=							~	Sheet 3 of 7

Critical Remaining Work

04				01				2021			03	
Q4				Q1			1	Q2			Q3	
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designs												
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Da Jul-19	te		Rev.	Revis 0	ion	+		Checke	2	A	pproved	
Aug-19			Rev.									

vity ID	Activity Name	Activity % Total Complete	Float	Original Time risk Duration allowance	Start	Finish	201	9	Q3			Q4		Q1	21 Q2	020 Q3
A6040	Re-submission of DDA Design of Power Supply and Distribution System for DOU Polishing System	0%	19	7 0	22-Oct-19	28-Oct-19		Π			L -		upmissior			tion System for DOU Polishing \$y
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							pproval o	DDA Design of Power	Supply and Distributio	n System for DOU Polishing Syste
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				-1	Subr	ission	of DDA D	esign of Upgrading and	replacement of the exis	sting local HMI touchscreen
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						Reviev	and Con	hment on DDA Design c	f Upgrading and replac	ement of the existing local HMI tou
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					· -	Re-s	uomissior	n of DDA Design of Upg	rading and Upgrading a	and replacement of the existing loc
A6090	Approval of DDA Design of Upgrading and Upgrading and replacement of the existing local HMI tour	0%	40	14 0	29-Oct-19	11-Nov-19					- L		16 i			I replacement of the existing local I
A6100	Submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	3	14 0	01-Oct-19	14-Oct-19					► <mark>∎</mark> S		-	A Design of PLC & SCA		
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						P	- ji - i	i i i t 1	K i i f	stems for DOU Polishing Systems
A6120	Re-submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	7 0	05-Nov-19	11-Nov-19					-					for DOU Polishing Systems
A6130	Approval of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	14 0	12-Nov-19	25-Nov-19						1 F	ip ii - i			or DOU Polishing Systems
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						Suph	- 1i - i			ishing Systems, New MCC Rooms des for DOU Polishing Systems, N
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										or DOU Polishing Systems, New M
A6160 A6170	Re-submission of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms	0%	3	7 0 14 0	19-Nov-19	25-Nov-19 09-Dec-19						11				DOU Polishing Systems, New MCC
A8170 A8050	Approval of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms and N Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	59	14 0	26-Nov-19 17-Sep-19	30-Sep-19					Subr	issian		i		ing protection and interface with e
A8060	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	59	21 0	01-Oct-19	21-Oct-19					-		- R			arthing, lightning protection and int
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							- i - i	i i në të	A 1977 1 7 1	hing, lightning protection and inter
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	1				-	1				ng, lightning protection and interfac
A8280	Submission of DDA Design of networks integration with the existing DCS	0%	59	14 0	17-Sep-19	30-Sep-19					Subr	ission	df DDA D	esign of networks integ	ation with the existing	ФCS
A8290	Review & comment of DDA Design of networks integration with the existing DCS	0%	59	21 0	01-Oct-19	21-Oct-19						Review	& comm	ent of DDA Design of ne	tworks integration with	the existing DCS
A8300	Re-submission of DDA Design of networks integration with the existing DCS	0%	59	7 0	22-Oct-19	28-Oct-19						Re-s	uomissior	n of DDA Design of netw	orks integration with th	ne existing DCS
A8310	Approval of DDA Design of networks integration with the existing DCS	0%	59	14 0	29-Oct-19	11-Nov-19					-		. C	f DDA Design of networ	, , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·
A8320	Submission of DDA Design of redundant fiber networks for new SCADA	0%	59	14 0	17-Sep-19	30-Sep-19			T	-				esign of redundant fiber	5 i i	
A8330	Review & comment of DDA Design of redundant fiber networks for new SCADA	0%	59	21 0	01-Oct-19	21-Oct-19							6 6	ent of DDA Design of re		
A8340	Re-submission of DDA Design of redundant fiber networks for new SCADA	0%	59	7 0	22-Oct-19	28-Oct-19								of DDA Design of redu		
A8350	Approval of DDA Design of redundant fiber networks for new SCADA	0%	59	14 0	29-Oct-19	11-Nov-19							16 3	f DDA Design of redund	i i	
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	·			····	Subr	1 1	- I' '			ex'tg data, event & Historain server
A8370	Review & comment of DDA Design of upgrading works and modification of extg data, event & Histor	0%	59	21 0	01-Oct-19	21-Oct-19							P 2			dification of ex'tg data, event & His
A8380 A8390	Re-submission of DDA Design of upgrading works and modification of ex'tg data, event & Historain	0% 0%	59 59	7 0 14 0	22-Oct-19 29-Oct-19	28-Oct-19 11-Nov-19							- ji - i			ication of ex'tg data, event & Histor ation of ex'tg data, event & Historai
	Approval of DDA Design of upgrading works and modification of ex'tg data, event & Historain server sotechnical Design Submission (DDA)	0%	29	14 0	29-001-19	11-100-19						-1 ^	10 I	▼ 05-Jan-20, Civil and		
A7880	Submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	01-Oct-19	07-Oct-19				- L	Sub	nissic	6 3	Geotechnical design fo		
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	1				¢	Revi	w and Co	mment on DDA Geotec	hnical design for piling	works for DOU1R and 4
A7900	Re-submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	29-Oct-19	04-Nov-19					5	Fle-	submissi	on of DDA Geotechnica	d design for piling work	s for DOU1R and 4
A7910	Approval of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	05-Nov-19	11-Nov-19						A	pproval o	DDA Geotechnical des	sign for piling works for	DOU1R and 4
A7920	Submission of DDA structural design for RC works of DOU1R and 4	0%	39	14 0	12-Nov-19	25-Nov-19						┣	Submis	sion of DDA structural	design for RC works of	DOU1R and 4
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						-	T. C. L. L.		.	for RC works for DOU1R and 4
A7940	Re-submission of DDA structural design for RC works for DOU1R and 4	0%	39	10 0	17-Dec-19	26-Dec-19										C works for DOU1R and 4
A7950	Approval of DDA structural design for RC works for DOU1R and 4	0%	39	10 0	27-Dec-19	05-Jan-20								Դեսցմանակություն է է		works for DOU1R and 4
A7960	Submission of DDA for ABWF design for DOU1R and 4	0%	184	14 0	12-Nov-19	25-Nov-19						-		sion of DDA for ABWF		i i i i
A7970	Review and Comment on DDA ABWF design for DOU1R and 4	0%	184	21 0	26-Nov-19	16-Dec-19	-							eview and Comment on		
A7980	Re-submission of DDA ABWF design for DOU1R and 4	0%	184 184	10 0	17-Dec-19	26-Dec-19				·				Re-submission of DDA		
A7990	Approval of DDAABWF design for DOU1R and 4	0%	184	10 0	27-Dec-19	05-Jan-20										ment and Delivery of Equipment/M
A1320	Procurement of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	90 0	12-Nov-19	09-Feb-20										rubber Systems for DOU1, DOU2
A1330	FAT of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14 0	10-Feb-20	23-Feb-20						ΙT		' i 🛏 🖓 i		r Systems for DOU1, DOU2 and D
A1350	Delivery of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14 0	24-Feb-20	08-Mar-20								Deli	very of Wet Chemical	Scrubber Systems for DOU1, DOL
A1360	Procurement of DOU4 Polishing System	0%	21	76 0	26-Nov-19	09-Feb-20							4	Procureme	nt of DOU4 Polishing S	System
A1380	FAT of DOU4 Polishing System	0%	21	14 0	10-Feb-20	23-Feb-20				-				FAT of	DOU4 Polishing Syster	m
A1500	Delivery of DOU4 Polishing System	0%	21	14 0	24-Feb-20	08-Mar-20								L <mark>►</mark> Deli	ivery of DOU4 Polishin	g System
A6180	Procurement of DOU1R Polishing System	0%	0	76 0	26-Nov-19	09-Feb-20									nt of DOU1R Palishing	
A6190	FAT of DOU1R Polishing System	0%	0	14 0	10-Feb-20	23-Feb-20	ļļ	.				.			DOU1R Polishing Syste	
A6200	Delivery of DOU1R Polishing System	0%	0	14 0	24-Feb-20	08-Mar-20									Very of DOU1R Polishi	
A6210	Procurement of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	76 0	10-Dec-19	23-Feb-20	1 1			-					i i i	orage Tank and Transfer Facilities
A6220	FAT of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14 0	24-Feb-20	08-Mar-20										Tank and Transfer Facilities Storage Tank and Transfer Facilit
A6230	Delivery of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14 0	09-Mar-20	22-Mar-20	-							i i il <mark>i 199</mark> 4-	Ang tanàn ang taona kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaomini	Storage lank and Transfer Facilit
A6240 A6250	Procurement of Power Supply and Distribution System for DOU Polishing Systems	0%	19 19	90 0 30 0	12-Nov-19 10-Feb-20	09-Feb-20 10-Mar-20	∤ 									Distribution System for DOU Polis
A6250 A6260	FAT of Power Supply and Distribution System for DOU Polishing Systems Delivery of Power Supply and Distribution System for DOU Polishing Systems	0% 0%	19	14 0	10-Feb-20 11-Mar-20	24-Mar-20	1			Ì						ply and Distribution System for DC
A6260 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	1 1					┝╾╟╴				offer for Upgrading and Replacem
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	1					ΙT				offer for Upgrading and Replaceme
A6300	Procurement of PLC and SCADA Systems for DOU Polishing Systems	0%	45	90 0	26-Nov-19	23-Feb-20	1					┥┝╸				DA Systems for DOU Polishing Sys
A6310	FAT of PLC and SCADA Systems for DOU Polishing Systems	0%	45	30 0	24-Feb-20	24-Mar-20	<u>†</u> ∳	++				•••••	-	la a da a se la da resida l i a se la da se		A Systems for DOU Polishing Syst
A6320	Delivery of hardware of PLC and SCADA Systems for DOU Polishing Systems	0%	45	14 0	25-Mar-20	07-Apr-20	1								2.4	re of PLC and SCADA Systems for
A6330	Procurement of Building Services Equipment for DOU Polishing Systems, New Switch/MCC Rooms	0%	3	90 0	10-Dec-19	08-Mar-20	1								HP 1 1 1	ervices Equipment for DOU Polish
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									Delivery of Building	g Services Equipment for DOU Pol
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							-	Pro	curement of Fire Servic	es Equipment for DOU Polishing
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		11							Delivery of Fire Se	ervices Equipment for DOU Polish
DOU 1																
	lation (2nd stage)	001	_		00.11 ==	00.0				1						
A7210	Installation of DOU1 wet scrubber and air duct connection for DOU1	0%	0	175 14	09-Mar-20	08-Oct-20	-									Instal
A7212	Installation of Power supply and disturbution system for DOU polishing systems	0%	16	130 14	25-Mar-20	-	∤ 									Instal ation of P
47222	Upgrading and Replacement of the existing local HMI touchscreen	0%	56	90 14	25-Mar-20	14-Jul-20			5	<u> </u>	<u> </u>		<u> </u>			
Δ	tual Work					Contract I	No. D	C/20	18/17							Sheet 4 of 7
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	emaining Work Summary		Enha	ncement of Deodou	rization Sy	ystem at St	onecu	ıtter	Islan	d Sew	age Tre	atme	nt Worl	ks		29-A
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/ ID Activity Name		Activity % Tot Complete	tal Float	Original Time ri Duration allowar		Finish	2019	(3 Q4	Q1	Q2	2020 Q3
A7232 Installation of PLC and SCADA system for DOU p	olishing systems	0%	45	90 14	10-Apr-20	27-Jul-20						Installation of PLC ar
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 sy	stem, MCC room and NaOH bulk storage compou	0%	31	150 14	10-Apr-20	08-Oct-20					+	
A7292 Software developement for new DOU polishing st	•	0%	38	120 14	10-Apr-20	01-Sep-20		[Software de
A7332 Installation of redundunt fiber networks for new S	CADA	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						
	ation 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	estfor upgrading and replacement of existing local	0%	66	65 5	15-Jul-20	17-Sep-20						L <mark>→</mark> Hardwa
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 transfe	rsystem	0%	3	30 0	21-Oct-20	19-Nov-20						C
A7312 Performance test of building service for DOU pol	shing system, MCC room and NaOH bulk storage	0%	1	45 5	13-Nov-20	27-Dec-20						
	g system, MCC room and NaOH bulk storage com	0%	36	45 5	09-Oct-20	22-Nov-20						-
DOU 1R Foundation works							····				oundation works	
A6376 General Site Clearance and underground uliities	detection/idenification	0%	66	6 0	09-Jul-19	15-Jul-19		Gene	al Site Clearance and undergr			
A6380 Installation and initial survey of building, ground a		0%	66	6 0	16-Jul-19	22-Jul-19		🔲 İnst	llation and Initial survey of bui	Iding, ground and ut	lities settlement	
A6395 Pre-drilling for H-pile foundation (3Nos, 2 rigs)		0%	51	10 0	09-Aug-19	20-Aug-19			Pre-drilling for H pile found	ation (3Nos, 2 rigs)		
A6396 Engineer's Review of foundaiton design, rockhear	d coutour and founding level of H-piles	0%	51	24 0	21-Aug-19	17-Sep-19					rockhead ooutour and found	ling level of H-piles
A6397 Demolition of existing concrete plinth		0%	51	12 1	18-Sep-19	02-Oct-19			Demolition of ex	- <u>1 1 11 1</u>		
A6400 Prebored rock-socketted H-pile (P1-6, 6Nos)		0%	17	35 1	12-Nov-19	21-Dec-19					ocketted H-pile (P1-6, 6Nos)
A6410 Pile load test		0%	17		23-Dec-19					Pile Idad test		
A6420 Post Drilling for Prebored H-piles		0%	17	4 0	02-Jan-20	06-Jan-20				Post Drilling	for Prepored H-piles	works
RC works A6455 Open Excavation for pile cap construction		0%	17	6 1	11-Jan-20	17-Jan-20					avation for pile cap constru	ction
A6457 Pile head preparation and weld test		0%	17	6 1	18-Jan-20	24-Jan-20				i 🖃 i i 📕	ad preparation and weld test	i i i i
A6458 Formwork and steel fixing of pile cap		0%	17	15 2	25-Jan-20	11-Feb-20					rmwork and steel fixing of pi	
A6460 Concreting of pile cap		0%	17	2 0	12-Feb-20	13-Feb-20				, <u>1</u>	oncreting of pile cap	
A6470 Concreting of MCC room wall and roof slab		0%	117	24 2	14-Feb-20	16-Mar-20				↓	Concreting of MCC ro	
A6480 Internal finishes of MCC room and Builder works		0%	117	15 2	25-Mar-20	14-Apr-20					Internal finishe	es of MCC room and Builder work
Underground Drainage and cabling works									· · · · · · · · · · · · · · · · · · ·			02-0
A6450 Construction and installation of Cable into existin	g/ new underground cable trench/ ducts	0%	117	60 5	15-Apr-20	25-Jun-20						Construction and installation
A6490 Statutory submission and approval from WSD	2	0%	36	210 14	02-Oct-19*	15-Jun-20						Statutory submission and appro
A6500 Construction of underground watermain for DOU	R	0%	36	90 14	16-Jun-20	02-Oct-20		-) Cor
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						In
A7290 Installation of Power supply and disturbution syst		0%	17	130 14	25-Mar-20	31-Aug-20					₩	Installation
A7310 Installation of PLC and SCADA system for DOU p		0%	46	90 14	10-Apr-20	27-Jul-20						Installation of PLC ar
A7320 Installation of Building Service for DOU polishing		0%	1	180 14	10-Apr-20	12-Nov-20					• • • • • • • • • • • • • • • • • • •	
A7330 Installation of Fire services for DOU polishing sy	stem, MCC room and NaOH bulk storage compou	0%	21	160 14	10-Apr-20	20-Oct-20		i				
A8260 Software developement for new DOU polishing st	age	0%	39	120 14	10-Apr-20	01-Sep-20					-	Software de
A8270 Installation of redundunt fiber networks for new S	CADA	0%	39	30 14	02-Sep-20	08-Oct-20						ln
Testing and commissioning		201		20 5		00 NL 00						
A7335 Performance Test of the DOU1R polishing unit	alian and interferent test for DLO and OOADA for DC	0%	0		09-Oct-20	23-Nov-20		!				
A7530 Hardware, point/end to point/end, interlock, simul A7550 Reliability test of the polishing system of DOU1R	ation and interface test for PLC and SCADA for DC	0% 0%	19 0	65 5 35 0	01-Sep-20 24-Nov-20	04-Nov-20 28-Dec-20						
A7560 Reliability test of NaOH bulk Storage and transfe		0%	4		21-Oct-20	19-Nov-20						
	shing system, MCC room and NaOH bulk storage	0%	. 1	45 5	13-Nov-20							
	g system, MCC room and NaOH bulk storage com	0%	24		21-Oct-20	04-Dec-20						L=(
DOU 2									· · · · · · · · · · · · · · · · · · ·			
RC works											▼ 07-Mar-20, RC works	
A6825 Open Excavation and for pile cap construction		0%	51	6 0	27-Nov-19					Dpen Excavation and Pile head prepara	for pile cap construction	
A6830 Pile head preparation and weld test A6835 Formwork and steel fixing of pile cap		0%	51 51	10 2 18 2	04-Dec-19 16-Dec-19						nd steel fixing of pile cap	
A6836 Concreting of pile cap		0%	51	2 0	09-Jan-20	10-Jan-20				Concreting		
A6855 Concreting of MCC room wall and roof slab		0%	116		11-Jan-20	07-Feb-20					creting of MCC room wall a	nd roof slab
A6859 Internal finishes of MCC room and Builder works		0%	116		17-Feb-20	07-Mar-20						room and Builder works
Underground Drainage and cabling works			-						│			V 02-
A6810 Construction and installation of Cable into existin	g/ new underground cable trench/ ducts	0%	36	90 2	16-Jun-20	02-Oct-20						Cor
A8130 Statutory submission and approval from WSD		0%	36	210 14	02-Oct-19*	15-Jun-20						Statutory submission and appro
A8140 Construction of underground watermain for DOU2	2	0%	36	90 14	16-Jun-20	02-Oct-20						Cor
E&M installation		0.54	- 1	475 44	44 1: 07	10 4						Inded at the second
A6880 Installation of the chemical scrubber and air duct		0%	51	175 14	11-Jan-20	12-Aug-20						Installation of the
A7450 Installation of Power supply and disturbution syst A7460 Upgrading and Replacement of the existing local		0%	20 30	130 14 120 14	25-Mar-20 25-Mar-20	31-Aug-20 18-Aug-20		<u> </u>				Upgrading and
A7460 Opgrading and Replacement of the existing local A7470 Installation of PLC and SCADA system for DOU p		0%	30 49	90 14	25-Mar-20 10-Apr-20	27-Jul-20						Installation of PLC ar
A7480 Installation of Building Service for DOU polishing		0%	43	180 14	10-Apr-20	12-Nov-20						
	stem, MCC room and NaOH bulk storage compou	0%	31	150 14	10-Apr-20	08-Oct-20						In
A8400 Software developement for new DOU polishing st		0%	44	120 14	10-Apr-20	01-Sep-20						Software de
A8410 Installation of redundunt fiber networks for new S		0%	44	30 14	02-Sep-20	08-Oct-20		1				In
Testing and commissioning												
A6890 Performance Test of chemical scrubber and air de		0%	39	45 5	06-Sep-20	20-Oct-20						
	ation and interface test for PLC and SCADA for DC	0%	24		01-Sep-20	04-Nov-20						
A7600 Hardware, point to point, end to end and function	est for upgrading and replacement of existing loca	0%	37	65 5	19-Aug-20	22-Oct-20						
Actual Work	stone					Contract N	lo. DC	/2018/	7			Sheet 5 of 7
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Remaining Work									nd Sewage Treatment V			

First Programme

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ID	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish	2019	9 Q3	Q4	Q1		2020 Q2	Q3	_
A7610	Reliability test of the polishing system of DOU2	0%	9	30		20-Nov-20	19-Dec-20			04			Q2		
A7620	Reliability test of NaOH bulk Storage and transfer system	0%	9	30		21-Oct-20	19-Nov-20								
47630	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								-
OU 4									. <u></u>			- i - i - i - i - i - i - i - i - i - i			
<mark>oundatio</mark> N6558	General Site Clearance and underground uliities detection/ idenification	0%	36	6	0	27-Jul-19	02-Aug-19		Gene	eral Site Clearance and underg	round uliities detect	tion/ idenificatio	n		
6560	Installation and initial survey of building, ground and utilities settlement	0%	36	6	0	03-Aug-19	09-Aug-19			tallation and initial survey of b	i it li		i i		
6575	Pre-drilling for H-pile foundation (5Nos, 2rigs)	0%	36	12	1	10-Aug-19	23-Aug-19			Pre-drilling for H-pile foundati	on (5Nos, 2rigs)				
6576	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	36	28	0	24-Aug-19	25-Sep-19		F •	Engineer's Review of	foundaiton design,	rockhead couto	ur and founding lev	/el of H-piles	
6578	Mobilzation of piling rigs	0%	36	3	0	26-Sep-19	28-Sep-19			Mobilzation of piling	rigs				
6580	Prebored H-pile (P1-7, 7Nos)	0%	0	40	3	12-Nov-19	30-Dec-19			-	Prebored H-pile	(P1-7, 7Nos)			
6590	Pile load test	0%	0	6	0	13-Jan-20	18-Jan-20				Pile load te	1 2 1 2 2 2			
600	Post Drilling for Prebored H-piles	0%	0	4	0	20-Jan-20	23-Jan-20				Post Drilli	ng for Prebored	H-piles		
works 635	Open Excavation and for pile cap construction	0%	0	12	2	24-Jan-20	06-Feb-20				Dpen		 15-May-20, RC for pile cap construct 		
6637	Pile head preparation and weld test	0%	0			07-Feb-20	17-Feb-20						on and weld test		
6639	Formwork and steel fixing of pile cap	0%	0	18	3	18-Feb-20	12-Mar-20						d steel fixing of pil	e cap	
640	Concreting of pile cap	0%	0	2	0	13-Mar-20	14-Mar-20					Concreting o	of pile cap		
650	Concreting of MCC room wall and roof slab	0%	61	24	3	16-Mar-20	15-Apr-20				4	Con	creting of MCC roc		
660	Internal finishes of MCC room and Builder works	0%	61	18	3	24-Apr-20	15-May-20						Internal finishe	s of MCC room	m an
	nd Drainage and cabling works				0	40.11	01.0								
630	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	61	90		16-May-20	01-Sep-20							ry submission	Cons
160	Statutory submission and approval from WSD Construction of underground watermain for DOU2	0% 0%	36 36	210 90		02-Oct-19*	15-Jun-20 02-Oct-20						Statuto	y submission	and and
	Construction of underground watermain for DO02	U%	30	90	14	16-Jun-20	02-001-20					+			
700	Installation of the DOU4 polishing Unit and air duct connection for DOU4	0%	0	162	14	30-Mar-20	14-Oct-20								
400	Installation of Power supply and disturbution system for DOU polishing systems	0%	20	130	14	25-Mar-20	31-Aug-20								Instal
420	Installation of PLC and SCADA system for DOU polishing systems	0%	49	90	14	10-Apr-20	27-Jul-20							Instal ation	א of
430	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20					+			
440	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150		10-Apr-20	08-Oct-20						·····		
420	Software development for new DOU polishing stage	0%	44	120		10-Apr-20	01-Sep-20							S	Softw
430	Installation of redundunt fiber networks for new SCADA	0%	44	30	14	02-Sep-20	08-Oct-20								
ting and 710	Performance Test of the DOU4 polishing Unit	0%	0	45	5	15-Oct-20	28-Nov-20								
7650	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	24	65		01-Sep-20	04-Nov-20							······································	
7670	Reliability test of the polishing system of DOU4	0%	0	30		29-Nov-20	28-Dec-20								
7680	Reliability test of NaOH bulk Storage and transfer system	0%	9	30	0	21-Oct-20	19-Nov-20								
7690	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								
7700	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								
U 5 undatior	n works														
	or DOU5b			-							· · · ·	1 1 1	C works for DOU5	b	
7005	Open Excavation and for pile cap construction	0%	25	6			18-Nov-19				xcavation and for pi nead preparation an	1 1 1	tion		
010 015	Pile head preparation and weld test Formwork and steel fixing of pile cap	0%	25 25	9 18		19-Nov-19	28-Nov-19				Formwork and stee		an.		
015	Concreting of pile cap	0% 0%	25 25	18		29-Nov-19 20-Dec-19	19-Dec-19 21-Dec-19						ap		
020	Concreting of MCC room wall and roof slab	0%	25	30		23-Dec-19	29-Jan-20				Concreting of ple		n wall and roof slat		
025	Internal finishes of MCC room and Builder works	0%	25	18		15-Feb-20	10-Mar-20						es of MCC room a	1.	orks
	nd Drainage and cabling works									↓ · · · · · · · · · · · · · · · · · · ·					_
990	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	144	90		11-Mar-20	29-Jun-20				-		Cor	nstruction and i	
190	Statutory submission and approval from WSD	0%	36	210		02-Oct-19*	15-Jun-20						Statuto	ry submission	n and
200	Construction of underground watermain for DOU2	0%	36	90	14	16-Jun-20	02-Oct-20				_			; ;	
<mark>M instal</mark> '060	lation Installation of the DOU5 polishing system and air duct connection for DOU1	0%	6	175	14	09-Mar-20	08-Oct-20								
345	Installation of Power supply and disturbution system for DOU polishing systems	0%	13	130		25-Mar-20	31-Aug-20	 		+					Insta
365	Installation of PLC and SCADA system for DOU polishing systems	0%	42	90		10-Apr-20	27-Jul-20							Installation	
375	Installation of Building Service for DOU polishing system, MCC room	0%	1	180		10-Apr-20	12-Nov-20					+	· · ·		
385	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150		10-Apr-20	08-Oct-20					-			
440	Software developement for new DOU polishing stage	0%	36	120	14	10-Apr-20	01-Sep-20					4		s s	Softw
450	Installation of redundunt fiber networks for new SCADA	0%	36	30	14	02-Sep-20	08-Oct-20								
<mark>ting and</mark> 387	d commissioning Performance Test of the DOU5 polishing system	0%	6	30	5	09-Oct-20	12-Nov-20								
387 710	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	15	30 65		09-Oct-20 01-Sep-20	04-Nov-20								
730	Reliability test of the polishing system of DOU5	0%	0			20-Nov-20	28-Dec-20								
740	Reliability test of NaOH bulk Storage and transfer system	0%	0	30		21-Oct-20	19-Nov-20			·····					
750	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45		13-Nov-20	27-Dec-20								
760	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45		09-Oct-20									
	storage compound								•						—
works	Development of a lating Observation of the		_	1	-	07.4	04.0 1 15	·		Domolition of	existing Storage co	06-Mar-20, RC	works		
7230	Demolition of existing Storage compound	0%	0	50		27-Aug-19	24-Oct-19 07-Nov-19		-		existing Storage co of NaOH bulk stor	1.1			
7240 7050	Excavation of NaOH bulk storage compound Carryout plate load test for foundation	0% 0%	0	12 24		25-Oct-19 08-Nov-19	07-Nov-19 05-Dec-19			· · 📕 ·	ryout plate load tes				
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250 260	Review design by Project Manager Respresentative	0%	0	28	0	06-Dec-19	10-Jan-20				Review desid	in by Project Ma	nager Respresent	ative I	

Critical Remaining Work

First Programme

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Softw	are dev	lopeme	nt fo	ne '	w DOU	polishi	ng stage						
-							orks for		CADA				
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		L	ware						, simulati			lest for	PLC a
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			Relia	bility	/ test of	NaOH	bulk Sto	rage	and transf	er syste	m		
		L-							service f				
	•		Perf	rma	ance tes	t of fire	service	for D	O <mark>U polis</mark> h	ing sys	tem, MC	C room	and N
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sion and	approv	al from	wsb										
	Cons	truction	of ur	der	ground	waterm	ain for D	OU2					
		12	Nov	20,	E&M in	stallati	on						
,	Inst	allation	of th	D¢	DU5 pol	ishing	system	and ai	duct con	hection	for DOU	1	
Insta	lation of	Power	supp	y a'n	nd distu	rbution	system	for D	DU polish	ing syst	ems		
ation of	C and	SCAD	sys	em	for DOI	, polisl	ning sys	tems					
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	19-	Jul-19			Rev.								
	29-	Aug-19			Rev.	1							

ivity ID	Activity Name	Activity %	Total Float			Start	Finish	201	9				2020			2021	
		Complete		Duratior	allowance				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
A7270	RC works for NaOH bulk storage compound	0%	0	45	5 5	11-Jan-20	06-Mar-20				RC	works for NaOH bulk					
E&M insta	allation													95-Sep-20, E&M insta	allation		
A7280	Installation NaOH storage tanks and associated transfer pump	0%	0	120	20	15-Apr-20	05-Sep-20							nstallation NaOH s	orage tanks and associated trans	fer pump	
Testing a	nd Commissioning													 9	9-Nov-20, Testing and Commissi	oning	
A7390	Performance test of the NaOH bulk storage compound and transfer system	0%	0	75	5 15	06-Sep-20	19-Nov-20							P(erformance test of the NaOH bul	 storage compound and 	l transfer syster
Statutary I	nspection by FSD														V	🛛 🗸 03-May-21, Stat	tutary Inspection
A7770	Submission of Application for FS inspection ot FSD	0%	0	21	1 0	29-Dec-20	18-Jan-21								Submission of App	ication for FS inspection	n ot FSD
A7780	FS inspection by FSD	0%	0	14	1 2	19-Jan-21	01-Feb-21								FS inspection I	by FSD	
A7790	System/ Defect rectification	0%	0	40) 5	02-Feb-21	13-Mar-21								Syst	em/ Defect rectification	
A7800	Submission of application for FS reinspection to FSD	0%	0	21	0	14-Mar-21	03-Apr-21									Submission of applicati	ion for FS reinsp
A7810	FS re-inspection by FSD	0%	0	14	1 2	04-Apr-21	17-Apr-21									FS re-inspection by	FSD
A7820	Issue FS certificates	0%	0	15	5 2	18-Apr-21	02-May-21									Issue FS certific	cates
A7830	Works completion for Handover	0%	0	1	1 0	03-May-21	03-May-21									Norks completi	ion for Handove
Handover	of E&M equipment					,									V	🛛 🕶 03-May-21, Har	ndover of E&M e
A8210	Submission of O&M manual, Training manual and spare part list	0%	0	30)	30-Dec-20*	28-Jan-21								Submission of C	& manual, Training ma	anual and spare
A8220	Submission of final version of training manual	0%	0	30)	29-Jan-21	27-Feb-21								Submiss	ion of final version of tra	aining manual
A8230	O&M training to DSD/ST2	0%	0	14	1	28-Feb-21	13-Mar-21									tra ning to D\$D/ST2	
A8240	Handover spare parts	0%	0	30)	14-Mar-21	12-Apr-21									Handover spare parts	s
A8250	Handover of Final version of O&M manual	0%	0	21	1	13-Apr-21	03-May-21								G	Handover of Fir	nal version of O

Actual Work	•	♦ Milestone	Contract No. DC/2018/17	Sheet 7 of 7
Remaining Work	-	Summary	Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Works	29-
Critical Remaining Wo	rk			
			First Programme	

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