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 November 2020

(Version 1.0)

Certified By	Chap My
	(Environmental Team Leader)
REMARKS:	

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

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

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Our Reference EC/AFK/DC/jl/T261332/ 22.01/L-1474

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

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11 December 2020 By Post

Dear Sir,

I refer to the captioned Monthly EM&A Report for November 2020 (version 1.0) submitted by ET on 11 December 2020 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 Sun Fook Kong – Bestwise Joint Venture Wellab Limited Mr. Mark Ngan Mr. Keith Ho 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 15th 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 undertaken by other Contracts at the SCISTW under HATS Stage 2A with the same Environmental Permit (Permit No. EP-322/2008/G).
- 2. The site activities undertaken in the reporting month included: <u>DOU1</u>
 - Erector Formwork for Wall at MCC Room & Bund Wall

DOU1R

• Backfilling for Draw pit & Sump pit

DOU2

• Erector Formwork for Wall at MCC Room & Bund Wall

DOU4

• Plaster for tesonproof at MCC ROOM

<u>DOU5</u>

• Fixing of Steel reinforcement

<u>E&M</u>

- Isolation Device for Effluent Drop Shaft
 - Smoke Test Completed (PST No.47/49, 48/50, 51/53, 52/54)
 - Installation (PST No. 9/11, 17/19, 21/23, 22/24, 29/31, 30/32, 36/38, 40/42, 44/46, 47/49, 48/50, 51/53, 52/54)
 - Concrete repairing (PST No. 13/15, 25/27, 35/37, 39/41, 43/45, 14/16, 18/20)
- Sealant Installation
 - PST1/3 PST52/54, FT5, FT6, MDC and brush-type sealant in progress
- DOU System of DOU1R, DOU1PS, DOU4PS
 - Mechanical installation in progress
- Air Relief Duct
 - Arrange installation

Environmental Monitoring Works

- 3. The environmental monitoring works of the Project were conducted by the ET for Contract DC/2009/10, at the SCISTW under HATS 2A with the same Environmental Permit. The monitoring results were checked and reviewed and the site audits were conducted once per week. The implementation of the Environmental Mitigation Measures, Event Action Plans and Environmental Complaint Handling Procedures were also checked.
- 4. Summary of the non-compliance of the reporting month is tabulated in Table I.

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

Monitored Mo	Monitoring Station Parameter	Devenuetor	No. of Exceedance		No. of Exceedance Due to the Project		Action	
Ву		Parameter	Action Level	Limit Level	Action Level	Limit Level	Taken	
	AM6b	1-hr TSP	0	0	0	0	N/A	
		24-hr TSP	0	0	0	0	N/A	
	NM5	Noise	0	0	0	0	N/A	
DC/2009/10	NM6	Noise	0	0	0	0	N/A	
	AM7	1-hr TSP	0	0	0	0	N/A	
		24-hr TSP	0	0	0	0	N/A	
	AM8	1-hr TSP	0	0	0	0	N/A	
	AM8	24-hr TSP	0	0	0	0	N/A	

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Environmental Licenses and Permits

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

Environmental Mitigation Implementation Schedule

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

Key Information in the Reporting Month

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

I able II	Summary	I able for Key	Informa	tion in the	Report	ing Month	

Evont	Event Event Details		Action Taken	Status	Remark
Event	Number	Nature	ACTION TAKEN	Status	Kelliark
Complaint received	0		N/A	N/A	
Status of submissions under EP	1	Monthly EM&A Report for October 2020	Submitted on 13 November 2020	N/A	

Event	Event Details		Action Taken	Status	Remark
Event	Number	Nature	ACTION LAKEN	Status	Kelliark
Notifications of any summons & prosecutions received	0		N/A	N/A	

Summary of Complaints and Prosecutions

- 11. No environmental complaint and prosecution was received for the Project in the reporting month.
- 12. There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix G**.

Future Key Issues:

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

Construction of DOU1 PS

- Complete MCC room and chemical compound
- Installation of water main

Construction of DOU2 PS

- Construction of MCC Room of DOU2B
- Installation of water main

Construction of DOU4 PS

- Construct cable ducts and draw pits
- Installation of water main

Construction of DOU5 PS

- Construct cable ducts and draw pits
- Installation of water main

<u>E&M</u>

- FAT of PLC Panel and Local Control Panel
- LVSB of DOU(s) system
- DOU1, DOU2 upgrade HMI touchscreen
- Mechanical installation of deodourisation system of DOU1R, DOU4PS and DOU1PS
- Install sealant
- Install isolation device for effluent drop shaft (and concrete repairing)
- Installation of air relief duct
- 14. The environmental concerns in the coming months are mainly on construction waste, chemical and general refuse storage; dust generated from the excavated dusty materials.

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 general location plan of the Project is shown in **Figure 1**.
- 1.3 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.
- 1.4 The environmental monitoring works in the Project were covered by the ET for the Contract: DC/2009/10.
- 1.5 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.
- 1.6 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.
- 1.7 This is the 15th monthly EM&A report summarizing the EM&A works conducted for the Project in November 2020.

Project Organizations

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

Table 1.1Key Project Contacts

Party	Role	Name	Position	Phone No.
Ove Arup & Partners Hong Kong Ltd	Project Management's Representative	Mr. Edmund Chow	Senior Resident Engineer	2370 4311

Party	Role	Name	Position	Phone No.
	Coordinator	Mr. Kevin Cheung	Resident Engineer	3925 6506
		Dr. Priscilla Choy	ET Leader	2151 2089
Wellab	Environmental Team	Mr. Howard Chan	Project Coordinator & Audit Team	2151 2073
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Bestwise –	2	Mr. Ken Chan	Site Agent	2620 0070
SFK Joint Venture	Contractor	Mr. Leo Leung	Environmental Officer	2620 0070

Construction Programme

1.9 The site activities undertaken in the reporting month included:

DOU1

• Erector Formwork for Wall at MCC Room & Bund Wall

DOU1R

• Backfilling for Draw pit & Sump pit

DOU2

• Erector Formwork for Wall at MCC Room & Bund Wall

DOU4

• Plaster for tesonproof at MCC ROOM

DOU5

• Fixing of Steel reinforcement

<u>E&M</u>

- Isolation Device for Effluent Drop Shaft
 - Smoke Test Completed (PST No.47/49, 48/50, 51/53, 52/54)
 - Installation (PST No. 9/11, 17/19, 21/23, 22/24, 29/31, 30/32, 36/38, 40/42, 44/46, 47/49, 48/50, 51/53, 52/54)
 - Concrete repairing (PST No. 13/15, 25/27, 35/37, 39/41, 43/45, 14/16, 18/20)
- Sealant Installation
 - PST1/3 PST52/54, FT5, FT6, MDC and brush-type sealant in progress
- DOU System of DOU1R, DOU1PS, DOU4PS
- Mechanical installation in progress
- Air Relief Duct
 - Arrange installation
- 1.10 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.
- 1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.
- 1.12 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 November 2020. For the methodology and QA/QC procedures of the monitoring parameters, please refer to the monthly report for Contract DC/2009/10.

2. AIR QUALITY

Monitoring Requirements

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

Monitoring Locations

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

 Table 2.1
 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM6b ⁽¹⁾		Works site boundary
AM7	DC/2009/10	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

2.3 The details of the monitoring equipment and copies of the calibration certificates used during the reported month could be referred to Section 2.3 and **Appendix B** of the monthly report of Contract DC/2009/10.

Monitoring Parameters, Frequency and Duration

2.4 **Table 2.2** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting period could be found in **Appendix C** in the monthly report for the Contract DC/2009/10.

Table 2.2	Impact Dust Monitoring Parameters, Frequency and Duration
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Monitoring Station	Parameter	Period	Frequency
All monitoring	1-hour TSP	0700-1900 hrs	3 times/ every 6 days
locations	24-hour TSP	0000-2400 hrs	once in every 6 days

Monitoring Methodology and QA/QC Procedure

2.5 The monitoring methodology and QA/QC procedures are presented in Section 2.3 – 2.15 of monthly report for Contract DC/2009/10.

Results and Observations

2.6 **Table 2.3** summarizes the monitoring results at AM6b, AM7 and AM8 in the reporting month.

I	or ting month				
Air Quality Monitoring Station	Average µg/m³	Range μg/m ³	Action Level µg/m ³	Limit Level µg/m ³	
		1 hour TSP			
AM6b	68	22 - 118	346		
AM7	127.9	55.4 - 217.6	322	500	
AM8	105.1	38.9 - 199.9	307		
	24 hours TSP				
AM6b	66	45 - 82	196		
AM7	63	35 - 95	207	260	
AM8	68	35 - 107	158		

Table 2.3	Summary of 1-hour and 24-hour TSP Monitoring Result in the
	Reporting Month

- 2.7 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 B.**
- 2.8 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 B.**
- 2.9 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix D** of monthly report of Contract DC/2009/10.
- 2.10 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from loadings of material, vehicles movement, dust generated from the excavated dusty materials and construction works of other Contract and 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.

Table 3.1	Location of Noise Monitoring Stations	
Monitoring Station	Monitored By	Location of Measurement
NM5	DC/2000/10	Near FSD Diving Rescue and Training Centre
NM6	DC/2009/10	Customs' Marine Base (Block H of Government Dockyard Rooftop)

Location of Noise Manitaring Stations

Monitoring Equipment

3.3 The details of the monitoring equipment and copies of the calibration certificates used in the impact noise monitoring programme could be referred to Section 3.4 and Appendix B of the monthly report of Contract DC/2009/10.

Monitoring Parameters, Frequency and Duration

- 3.4 Table 3.2 summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule could be found in Appendix C in the monthly report for the Contract DC/2009/10.
- 3.5 As advised by the Contractor, no construction work under Contract DE/2018/17 was conducted in the restricted hours during the reported month.

- ····································				
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 3.2 Noise Monitoring Parameters, Frequency and Duration

Monitoring Methodology and QA/QC Procedures

3.6 The monitoring methodology and QA/QC procedure could be referring to Section 3.6 - 3.9 of the monthly report for Contract DC/2009/10.

Results and Observations

3.7 **Table 3.3** summarizes the monitoring results at NM5 and NM6 in the reporting month.

For the time period 0700-1900 hrs. on weekdays		
Noise Monitoring	Range, dB(A)	Limit Level
Station	$L_{eq}(30 \text{ min.})$	dB(A)
NM5	57.3 - 65.2	75.0
NM6	56.6 - 61.7	75.0

 Table 3.3
 Summary the Noise Monitoring Results in Reporting Month

- 3.8 The construction noise monitoring at the designated location was conducted by the ET of Contract DC/2009/10 as scheduled in the reporting month. The monitoring results and graphical presentations could be referred to **Appendix E** of the monthly report for Contract DC/2009/10.
- 3.9 1900-2300 hours noise monitoring was not conducted in the reporting month as there were no construction works during the period of restricted hours.
- 3.10 No Action/Limit Level exceedance was recorded in the reporting month. Summary of exceedance is presented in **Appendix B**.
- 3.11 The major noise sources identified at the designated noise monitoring stations were vehicle movement and construction equipment, as well as construction activities from other and 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 C**.

Implementation Status of Environmental Mitigation Measures

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

Table 4.1 Observations of Site Audit			
Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	N/A	There was no observation in the reporting month.	N/A
	201029-R01	NRMM Label was observed faded. Contractor was reminded to replace the NRMM Label	The aerial work platform was removed from the site.
A :	201105-R01	NRMM label was observed faded. Contractor was reminded to replace the NRMM label.	Item was remarked as 201112-R01.
Air Quality	201105-R02	Stockpile of dusty materials should be covered by impervious materials.	Stockpile of dusty materials was covered by impervious materials.
	201112-R01	NRMM label was observed faded. Contractor was reminded to replace the NRMM label.	The generator was removed.
Waste/ Chemical Management	201029-R02	General refuse should be disposed of regularly and properly.	General refuse was disposed of properly.
Landscape and Visual	N/A	There was no observation in the reporting month.	N/A
Noise	N/A	There was no observation in the reporting month.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Table 4.1Observations of Site Audit

Review of Environmental Monitoring Procedures

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

Status of Environmental Licensing and Permitting

4.7 All permits/licenses obtained for the Contract DE/2018/17 are summarized in **Table 4.2**.

Reference	Valid I	Period	Details	
Number	From	То		Status
Water Dische	arge 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	of Works Und	der APCO		•
447348	N/A	N/A	Notice form received by EPD on 17-7-2019.	N/A
Construction	Noise Permi	t	•	•
GW- RW0442-20	2/10/2020	26/3/2021	The application was approved on 25/9/2020	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 D**.

Implementation Status of Event Action Plans

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

<u>1-hr TSP</u>

4.10 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.11 No Action/Limit Level exceedance was recorded.

Construction Noise

4.12 No Action/Limit Level exceedance was recorded.

Landscape and Visual

4.13 No major deficiency was recorded.

Summary of Complaints and Prosecutions

- 4.14 No environmental complaint and prosecution was received for the Project in the reporting month.
- 4.15 There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix G**.

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 could be found in the **Appendix C** of the monthly report of Contract DC/2009/10.

Construction Program for the Next Month

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

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

• To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

Water Quality

- To 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.

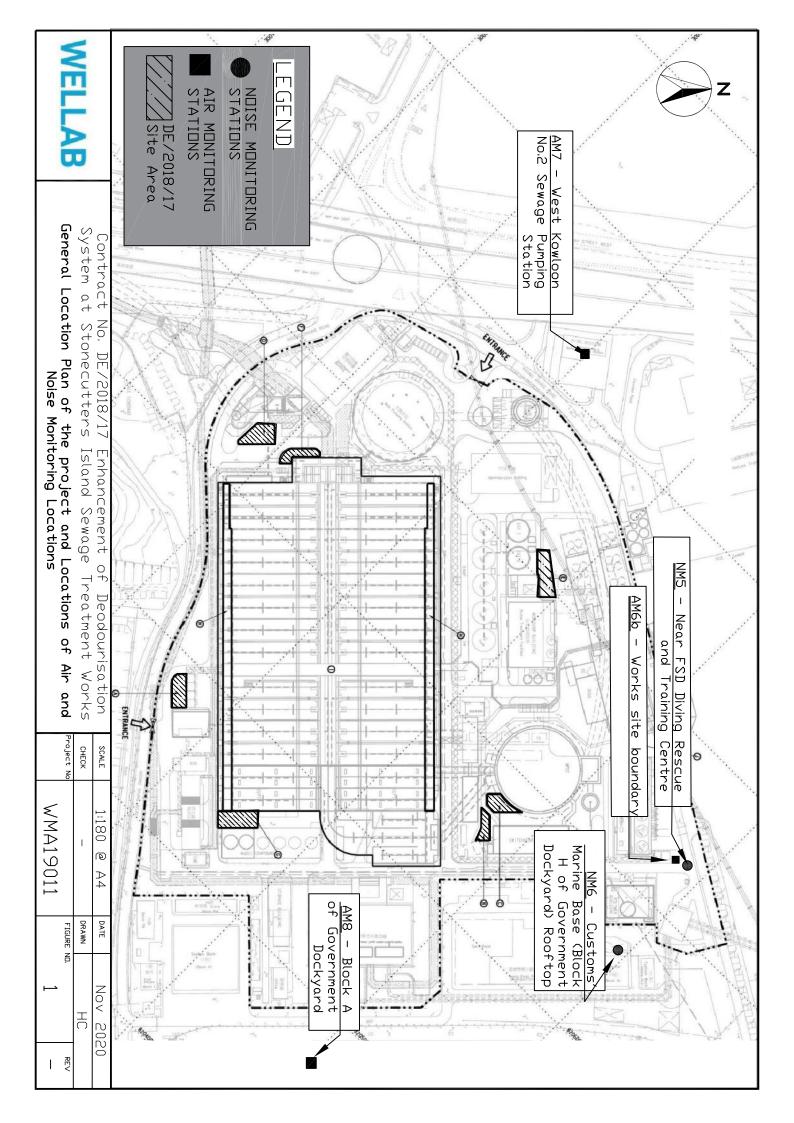
Waste/Chemical Management

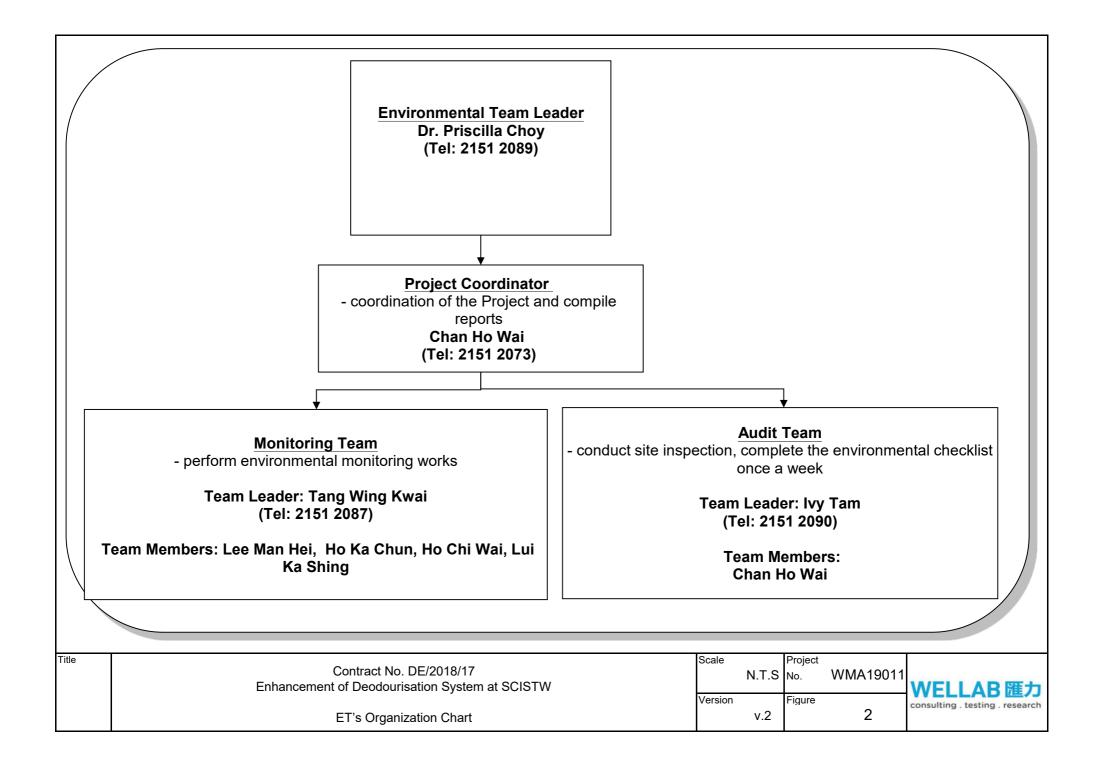
- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide adequate chemical waste storage area on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment; and
-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

Maritaring Stations	Action Level (µg/m ³)		Limit Level (µg/m ³)	
Monitoring Stations	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	N/A	70 ⁽¹⁾
	(including Sundays) during the day- time and evening (0700 to 2300 hours)		

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 SUMMARY OF EXCEEDANCE

APPENDIX B – SUMMARY OF EXCEEDANCE

Reporting Month: November 2020

- a) Exceedance Report for 1-hr TSP (NIL)
- b) Exceedance Report for 24-hr TSP (NIL)
- c) Exceedance Report for Construction Noise (NIL)

APPENDIX C SITE AUDIT SUMMARY

Checklist Reference Number	201105	
Date	5 November 2020 (Thursday)	
Time	10:15-11:30	

Ref. No.	Non-Compliance	Related Item No.
ų	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. 	
201105-R01	Part C - Air QualityNRMM label was observed faded. Contractor was reminded to replace the	C19
	NRMM label.	
201105-R02	• Stockpile of dusty materials should be covered by impervious materials.	C6
	 <i>Part D – Noise</i> 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. 201029), all environmental deficiencies were rectified by the Contractor.	

	Name	Signaturę	Date
Recorded by	Howard Chan	Lavand	5 November 2020
Checked by	Dr. Priscilla Choy	NI.	5 November 2020

Checklist Reference Number	201112
Date	12 November 2020 (Thursday)
Time	10:15-11:30

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.	
	 <i>Part B – Landscape and Visual</i> No environmental deficiency was identified during the site inspection. 	
	Part C - Air Quality	
201112-R01	• NRMM label was observed faded. Contractor was reminded to replace the NRMM label.	C19
	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. 201105), items 201105-R01 was remarked	
	as 201112-R01, Follow-up action is needed to be reviewed. Other item was rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ella Ho	ike-	13 November 2020
Checked by	Dr. Priscilla Choy	WI	13 November 2020

Checklist Reference Number	201118
Date	18 November 2020 (Wednesday)
Time	14:30-16:00

 NCI. 140.	Non-Compliance	Related Item No.
_	None identified	1

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	 <i>Part B – Landscape and Visual</i> 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. 201112), all environmental deficiency was rectified by Contractor.	

	Name	, Signature	Date
Recorded by	Howard Chan	Dansal	19 November 2020
Checked by	Dr. Priscilla Choy	NI	19 November 2020
		/	

Checklist Reference Number	201126	
Date	26 November 2020 (Thursday)	
Time	10:15-11:30	

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. 201118), no environmental deficiency was observed during site inspection.	

	Name	Signature	Date
Recorded by	Ella Ho	chag-	27 November 2020
Checked by	Dr. Priscilla Choy	NIL.	27 November 2020

APPENDIX D 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					
Month	Total Quantity	Hard Rock and Large	Reused in the	Reused in	Disposed as	Imported	Metals	Paper/	Plastics	Chemical	Other, e.g.
	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	0.209	0.016	0.000	0.000	0.209	0.000	0.000	0.284	0.000	0.000	0.001
Feb	0.210	0.045	0.000	0.000	0.210	0.000	0.000	0.583	0.000	0.000	0.001
Mar	0.436	0.025	0.000	0.000	0.436	0.000	0.000	0.000	0.000	0.000	0.003
Apr	0.431	0.098	0.000	0.000	0.431	0.000	0.000	0.576	0.000	0.000	0.000
May	0.314	0.000	0.000	0.000	0.314	0.000	0.000	0.000	0.000	0.000	0.010
June	0.098	0.000	0.000	0.000	0.098	0.000	0.000	0.656	0.000	0.000	0.007
Sub-total	1.699	0.184	0.000	0.000	1.699	0.000	0.000	2.099	0.000	0.000	0.022
July	0.112	0.000	0.000	0.000	0.112	0.000	0.730	0.000	0.000	0.000	0.007
Aug	0.238	0.000	0.000	0.000	0.238	0.000	0.000	0.639	0.000	0.000	0.002
Sep	0.605	0.000	0.000	0.000	0.605	0.000	0.000	0.000	0.000	0.000	0.003
Oct	0.142	0.000	0.000	0.000	0.142	0.000	0.000	0.531	0.000	0.000	0.010
Nov	0.345	0.000	0.000	0.000	0.345	0.000	0.000	1.015	0.000	0.000	0.009
Dec											
Total	3.140	0.184	0.000	0.000	3.140	0.000	0.730	4.284	0.000	0.000	0.052
Total since commence ment of project		0.399	0.000	0.000	3.646	0.000	12.260	5.872	0.000	0.000	0.054

Monthly Summary Waste Flow Table for 2020 (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 E EVENT ACTION PLANS

APPENDIX E – Event / Action Plans

Table E-1 Event / Action Plan For Air Quality

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

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 E-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
eneccucu	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
eneccuca	findings;	remedial actions;	3. In consolidation with the	remedial actions to IEC
	3. Increase monitoring frequency;	2. Review Contractor's	IEC, agree with the Contractor on	and ER within 3 working
	4. Identify source and investigate the	remedial	the remedial measures to be	days of notification;
	cause of exceedance;	actions whenever necessary	implemented;	3. Implement the agreed
	5. Carry out analysis of Contractor's	to assure their effectiveness	4. Supervise the implementation of	proposals;
	working procedures;	and advise the 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 F ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX F IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA	Recommended Mitigation Measures	Location of the measure	Implementation Status
Ref.			
Α	Air Quality		
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	٨
	Vehicle washing facilities should be provided at every vehicle exit point.		٨
	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.		۸
	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.		٨
	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.		٨
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		٨
	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.		٨
	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	٨

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	٨
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.		٨
	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.		^
С	Water Quality		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^
6.376 6.377	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.		٨
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	۸
	 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.		۸
	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.		۸
	Provision of sufficient waste disposal points and regular collection of waste.		٨
	Regular cleaning and maintenance programme for drainage systems, sumps and oil		٨

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	٨
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.		*
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.		٨
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.	-	۸
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
	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.		۸
	Trees unavoidably affected by the works should be transplanted where practical.	-	۸
	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 G COMPLAINT LOG

APPENDIX G – COMPLAINT LOG

Reporting Month: November 2020

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 H CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Activity % Complete	Total Float	Original Duration		Start	Finish	201	19		C
Works Pro	gramme (First Programme)								-	-	_
Contract Pa									┝	-	_
KD0001	Starting date of Project	0%	0	0		09-Jul-19*			φ ε	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*			<u>•</u> •	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*				
	e of Part of the Site)9-5	
A1090	Part A-L	0%	0	0		09-Jul-19			⊉ீ	Part	A-I
	and General Requirements										
PG00010	Statutory application/ notification of EPD and LD	0%	11	21		09-Jul-19	29-Jul-19				St
PG00020 PG00030	Submission of Safety plan	0%	11	21		09-Jul-19 30-Jul-19	29-Jul-19				Sı
PG00030 PG00040	Approval of Safety Plan Submission of Waste Management Plan/ Environmental Management plan	0%	11	21		09-Jul-19	19-Aug-19 29-Jul-19		╺╺┝┥	-	Sı
PG00050	Approval of Waste Management Plan/ Environmental Management plan	0%	11	14		30-Jul-19	12-Aug-19			-	
PG00060	Submission of Subcontractor Management Plan	0%	112	14		09-Jul-19	22-Jul-19		-	j s	ub
PG00070	Approval of Subcontractor Management Plan	0%	112	14	0	23-Jul-19	05-Aug-19		F		L
PG00080	Submission of Staffing Proposal	0%	7	14	0	09-Jul-19	22-Jul-19		┢	ļŝ	ub
PG00090	Approval of Staffing Proposal	0%	7	7	0	23-Jul-19	29-Jul-19		4		Ap
Infrastructu	Ire Construction Works										
Section 1 of t									Ť		-
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	/ om
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	[¢.	Ψq	201
A4950	Submission of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0		0	09-Jul-19	15-Jul-19	;	÷,	Su	bm
A4960	Approval of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	21		16-Jul-19	05-Aug-19		¢.		
A4970	Submission of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	09-Jul-19	15-Jul-19	1		Sú	om
A4980	Approval of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	21	0	16-Jul-19	05-Aug-19		F		1
A4990	Submission of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7	0	09-Jul-19	15-Jul-19		1	Sü	сm
A5000	Approval of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	21		16-Jul-19	05-Aug-19				
A5010	Submission of AIP Design fo power supply, cabling, earthing, lightning protection and interface with	0%	57		0	09-Jul-19	15-Jul-19		1	Sų	ст
A5170	Approval of AIP Design fo power supply, cabling, earthing, lightning protection and interface with ex' Submission (DDA)	0%	57	21	0	16-Jul-19	05-Aug-19		Ľ	Ð	1
A4945	Submission (DDA) Submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2	0%	0	7	0	09-Jul-19	15-Jul-19			Sú	om
A4955	Review and comment on DDA of Civil requirement drawings and General Arrangement of DOU1, D	0%	0	21		16-Jul-19	05-Aug-19		¢.	- 1	
A4965	Re-submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DC	0%	0		0	06-Aug-19	12-Aug-19			H	
A4975	Approval of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2, E	0%	0	7	0	13-Aug-19	19-Aug-19				-
A5015	Submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	06-Aug-19	12-Aug-19			-	1
A5020	Review and Comment on DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DC	0%	0	21	0	13-Aug-19	02-Sep-19				-
A5030	Re-submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0		0	03-Sep-19	09-Sep-19				
A5040	Approval of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0		0	10-Sep-19	16-Sep-19				
A5050	Submission of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0		0	06-Aug-19	12-Aug-19			1	
A5060 A5070	Review and Comment on DDA Design of Air Relief Duct for Effluent Drop Structure Re-submission of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	21	0	13-Aug-19 03-Sep-19	02-Sep-19 09-Sep-19				T
A5080	Approval of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0		0	10-Sep-19	16-Sep-19		· • • •	-	
A5090	Submission of DDA Design of Isolation Device for Effluent Drop Structure	0%	0		0	06-Aug-19	12-Aug-19			4	
A5100	Review and Comment on DDA Design of Isolation Device for Effluent Drop Structure	0%	0	21		13-Aug-19	02-Sep-19				4
A5110	Re-submission of DDA Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	03-Sep-19	09-Sep-19				
A5120	Approval of DDA Design of Isolation Device for Effluent Drop Structure	0%	0		0	10-Sep-19	16-Sep-19				
A5130	Submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1		0	06-Aug-19	12-Aug-19				•
A5140	Review and Comment on DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	21		13-Aug-19	02-Sep-19				1
A5150	Re-submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks Approval of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1		0	03-Sep-19 10-Sep-19	09-Sep-19 16-Sep-19				
A5160 A5460	Approval of DDA Design of Sealant for FHP Sliding Covers of Existing CEPT lanks Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	57		0	10-Sep-19 06-Aug-19	16-Sep-19 12-Aug-19				-01
A3400 A8020	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	57	21		13-Aug-19	02-Sep-19	+	++		-
A8030	Re-submission of DDA Design of power supply, cabling, earthing, lightning protection and interface	0%	57		0	03-Sep-19	09-Sep-19				
A8040	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	57		0	10-Sep-19	16-Sep-19				
	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	0%	0		0	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	0	13-Oct-19 13-Oct-19	26-Oct-19 18-Oct-19				
A5210	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		0	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	 -			÷
A5250	Procurement of FRP Air Ducts for Effluent Drop Structure	0%	0	45		02-Sep-19	16-Oct-19				
A5260	FAT of FRP Air Ducts for Effluent Drop Structure	0%	0	7	0	10-Oct-19	16-Oct-19				
A5270	Delivery of FRP Air Ducts for Effluent Drop Structure to Site	0%	0	7	0	17-Oct-19	23-Oct-19				
A5280	Procurement of Isolation Devices for Effluent Drop Structure	0%	0	30		02-Sep-19	01-Oct-19	ļļ.			
A5290	Delivery of Isolation Devices for Effluent Drop Structure to Site	0%	0	7	0	02-Oct-19	08-Oct-19				
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2019										20)20										2021				
	Q3		Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3	(E)
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St	arting date	of Project																			V 03-IVI	ay-21, C	ontract	Particul	ars
																					Com	¦ pletion [) ate (665	days)	
																	29-De	c-20, K	ey Dates						
i ♦ Sta	arting date	of Project															KD A -	Compl	etion of	all other	works	ncludin	g DOUs	124	5 Polis
v 09	-Jul-19, Ac	cess Date of	Part of t	he Site														Compi			WORKS	liciuum	90003	1, 2, 4,	51 0112
Pa	rtA-L																								
		Aug-19, Prel					nts																		
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				ement of A tivated Ca					s for D0	0U1, DC	U2 and	DOU5													
				ery of Activ					DOU1	to Site															
			FAT of A	ctivated C	arbon F	ilter Sy	stem fo	r DOU2																	
				very of Act Activated						to Site															
• • • • •	· · · · ·	F		Activated livery of A						J5 to Sit	e														
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gramn	ne																								

Actual Work

Milestone

Summary

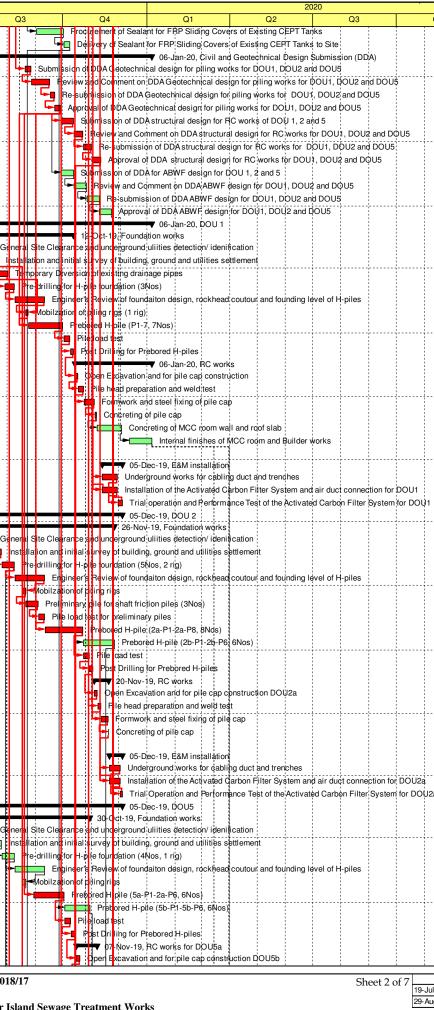
Remaining Work

Critical Remaining Work

Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment Wo

D	Activity Name	Activity % To Complete	otal Float	Original Time risk Duration allowance	Start	Finish	201	9		C	23		-			Q4	
\$300	Procurement of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	30 0	02-Sep-19	01-Oct-19		Π		Π	4	; _	₫	Fro	ocure	_	_
5310	Delivery of Sealant for FRP Sliding Covers of Existing CEPT Tanks to Site	0%	1	7 0	02-Oct-19	08-Oct-19							<u> </u>] D	elive)	ry c	fS
	eotechnical Design Submission (DDA)							T		Ħ		Quiles					
5320	Submission of DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	7 0	20-Aug-19	26-Aug-19					2	Subr			of DI v and		
5330 5340	Review and Comment on DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5 Re-submission of DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	21 0 5 0	27-Aug-19 17-Sep-19	16-Sep-19 21-Sep-19					T	2	- II-		ubriis		1 i i
15350	Approval of DDA Geotechnical design for piling works for DOU1, DOU2 and DOU5	0%	0	7 0	22-Sep-19	21-Sep-19 28-Sep-19						G	- 11		roval		L 1.
5400	Submission of DDA structural design for RC works of DOU 1, 2 and 5	0%	0	14 0	29-Sep-19	12-Oct-19								- 1	Subn		
7500	Review and Comment on DDA structural design for RC works for DOU1, DOU2 and DOU5	0%	0	10 0	13-Oct-19	22-Oct-19							, C	┛		viev	- i -
7510	Re-submission of DDA structural design for RC works for DOU1, DOU2 and DOU5	0%	0	10 0	23-Oct-19	01-Nov-19	· <mark>-</mark>	++						- 5		Re-	
7520	Approval of DDA structural design for RC works for DOU1, DOU2 and DOU5	0%	0	10 0	02-Nov-19	11-Nov-19					11				4		op
7840	Submission of DDA for ABWF design for DOU 1, 2 and 5	0%	115	14 0	29-Sep-19	12-Oct-19						l	╺╋	_ :	Subn	iss	on
7850	Review and Comment on DDA ABWF design for DOU1, DOU2 and DOU5	0%	115	14 0	13-Oct-19	26-Oct-19					11		Ę	-	E F	levie	w
7860	Re-submission of DDA ABWF design for DOU1, DOU2 and DOU5	0%	115	14 0	27-Oct-19	09-Nov-19					11			գ	-	R	le-s
7870	Approval of DDA ABWF design for DOU1, DOU2 and DOU5	0%	115	14 0	10-Nov-19	23-Nov-19									T		1
OU 1							1	Ħ		۵						ct-1	
A1130	on works General Site Clearance and underground uliities detection/ idenification	0%	0	6 0	09-Jul-19	15-Jul-19			G	ene	ral S	ite Cl	lear	ance			
A1131	Installation and initial survey of building, ground and utilities settlement	0%	0	6 0	16-Jul-19	22-Jul-19	l I	嫦		Inst	allati	ion an	ndir	nitial	ŝ	ev d	of h
A1132	Temporary Diversion of existing drainage pipes	0%	0	15 0	16-Jul-19	01-Aug-19	(<mark> 1</mark>	¢		i i		orary					
A1132	Pre-drilling for H-pile foundation (3Nos)	0%	0	10 0	29-Jul-19	01-Aug-19 08-Aug-19			G	H		drillir					
A1134	Engineer's Review of foundation design, rockhead coutour and founding level of H-piles	0%	0	28 0	09-Aug-19	10-Sep-19			Ģ	ţ,					r's R		
A1137	Mobilzation of piling rigs (1 rig)	0%	0	3 0	21-Aug-19	23-Aug-19				0	₩F	Nobil					
A1140	Prebored H-pile (P1-7, 7Nos)	0%	0	32 0	24-Aug-19	30-Sep-19				1	#∎				bole		
A1430	Pile load test	0%	0	6 0	02-Oct-19	08-Oct-19	-	++			1		4		ile lo		
A1440	Post Drilling for Prebored H-piles	0%	0	4 0	09-Oct-19	12-Oct-19							F		Post		
RC works													۱I	-			i ii
A5470	Open Excavation and for pile cap construction	0%	0	4 0	14-Oct-19	17-Oct-19							ľ	1	- 11	n E	
A5480	Pile head preparation and weld test	0%	0	5 0	18-Oct-19	23-Oct-19								4		le h	
A5490	Formwork and steel fixing of pile cap	0%	0	10 0	24-Oct-19	04-Nov-19								ŀ	۳.	Fo	mv
A5500	Concreting of pile cap	0%	0	2 0	05-Nov-19	06-Nov-19									1	Co	n¢
A5510	Concreting of MCC room wall and roof slab	0%	76	24 2	07-Nov-19	04-Dec-19											Þ
A5520	Internal finishes of MCC room and Builder works	0%	76	18 2	13-Dec-19	06-Jan-20											14
Drainage							·										
E&M insta A5535	Underground works for cabling duct and trenches	0%	0	15 0	13-Nov-19	29-Nov-19					1						
A5540	Installation of the Activated Carbon Filter System and air duct connection for DOU1	0%	0	15 1	13-Nov-19	29-Nov-19					1				╢╴	17	
A5550	Trial operation and Performance Test of the Activated Carbon Filter System for DOU1	0%	0	5 0	30-Nov-19	05-Dec-19										14	h
OU 2							l	-									t.
	on works							Ħ							-11		1
A5380	General Site Clearance and underground uliities detection/ idenification	0%	0	6 0	09-Jul-19	15-Jul-19	1	1		enei		ite CI					
A5390	Installation and initial survey of building, ground and utilities settlement	0%	0	9 0	16-Jul-19	25-Jul-19		T		Inst		ion a					I .
A5410 A5420	Pre-drilling for H-pile foundation (5Nos, 2 rig)	0%	0	12 0 28 0	26-Jul-19	08-Aug-19		Ī	Ĩ	£.	rie	drillir			-pite r's Re		
	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles		0		09-Aug-19	10-Sep-19					-				-+++-		
A5430 A5440	Mobilization of piling rigs	0%	0	3 0 12 0	17-Aug-19	21-Aug-19 03-Sep-19				l c	£	Nobilz Dr			y cile		
A5440	Preliminary pile for shaft friction piles (3Nos) Pile load test for preliminary piles	0%	0	6 0	21-Aug-19 04-Sep-19	10-Sep-19					٦Ç	E F	Pillo	logo	y, 1911 1 1951	for	an
A5560	Prebored H-pile (2a-P1-2a-P8, 8Nos)	0%	0	35 0	11-Sep-19	22-Oct-19						۲.			<u>і Ь.</u>	L h a	.
A5565	Prebored H-pile (2b-P1-2b-P6, 6Nos)	0%	51	30 0	23-Oct-19	22-Oct-19 26-Nov-19			Ē				Т	ፑ			
A5570	Pile load test	0%	0	6 0	23-Oct-19 23-Oct-19	29-Oct-19										ile	02
A5570 A5580	Post Drilling for Prebored H-piles	0%	0	4 0	30-Oct-19	02-Nov-19								ſ		Pos	tr
RC works		0,0	U	v	100 001-10	32 1107-13						!			H	Ц, ро	I (
A1450	Open Excavation and for pile cap construction DOU2a	0%	0	4 0	04-Nov-19	07-Nov-19									Щ.		per
A1455	Pile head preparation and weld test	0%	0	3 0	08-Nov-19	11-Nov-19									F		le
A1460	Formwork and steel fixing of pile cap	0%	0	7 0	12-Nov-19	19-Nov-19	<u> </u>	11			11-*				15	1	Fo
A1470	Concreting of pile cap	0%	0	1 0	20-Nov-19	20-Nov-19										H	¢
												1				[[]	
Drainage	works																Ē
E&M insta	allation	· · ·				00 Dec 10		+-	[- !	¦	 				E
E&M insta A5355	allation Underground works for cabling duct and trenches	0%	0	10 0	21-Nov-19	02-Dec-19		11				1				T	Е
E&M insta A5355 A5360	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a	0%	0	10 0	21-Nov-19	02-Dec-19			. F	4		-	- II-		1	Ľ	Г
E&M inst A5355 A5360 A5370	allation Underground works for cabling duct and trenches													┛	÷		17
E&M insta A5355 A5360 A5370 OU5	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a	0%	0	10 0	21-Nov-19	02-Dec-19			⊒				╈	+	ŧ.	30-0	dt
E&M insta A5355 A5360 A5370 OU5	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a	0%	0	10 0	21-Nov-19	02-Dec-19				enei		ite Cl			1	30-C I unc	1
E&M insta A5355 A5360 A5370 OU5 Foundati	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works	0% 0%	0	10 0 3 0	21-Nov-19 03-Dec-19	02-Dec-19 05-Dec-19			G		eral S	1	leara	ance	e and	l unc	er
E&M inst A5355 A5360 A5370 OU5 Foundati A5650	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works General Site Clearance and underground uliities detection/ idenification	0% 0%	0 0 8	10 0 3 0 6 0	21-Nov-19 03-Dec-19 09-Jul-19	02-Dec-19 05-Dec-19 15-Jul-19			Gé	enei Insi	eral S Italia	ite Cl	leara	ance nitia	e and Il sur	l unc vey	er of
E&M insta A5355 A5360 A5370 OU5 Foundati A5650 A5660	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement	0% 0% 0%	0 0 8 8	10 0 3 0 6 0 9 0	21-Nov-19 03-Dec-19 09-Jul-19 16-Jul-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19			G	enei Insi	eral S talla Pre	tion a drillir	leara and ii Ing fo Engi	ance nitia or H- ineer	e and I sur ple r's Re	l unc vey four evie	erç of l rda
E&M insta A5355 A5360 A5370 OU5 Foundati A5650 A5660 A5670	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig)	0% 0% 0% 0% 0%	0 0 8 8 8 8	10 0 3 0 6 0 9 0 12 0	21-Nov-19 03-Dec-19 09-Jul-19 16-Jul-19 26-Jul-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19 08-Aug-19			Gé	enei Insi	eral S talla Pre	ite Cl tion a drillir	leara and ii Ing fo Engi	ance nitia or H- ineer	e and I sur ple r's Re	l unc vey four evie	erç of l rda
E&M insta A5355 A5360 A5370 OU5 Foundati A5650 A5660 A5670	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig) Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0% 0% 0% 0% 0%	0 0 8 8 8 8 8	10 0 3 0 6 0 9 0 12 0 28 0	21-Nov-19 03-Dec-19 09-Jul-19 16-Jul-19 26-Jul-19 09-Aug-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19			Gé	enei Insi	eral S talla Pre	tion a drillir	ileara anctin Ing fo Engi zatio	ance nitia or H- ineer on of Fre	e end I sur -p le r's Re f pilir epore	l unc vey four evie ng ri ed H	of da w d gs
E&M insta A5355 A5360 A5370 OU5 Foundati A5650 A5660 A5660 A5680 A5680	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig) Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles Mobilzation of piling rigs	0% 0% 0% 0% 0% 0%	0 0 8 8 8 8 8 8 8 8	10 0 3 0 6 0 9 0 12 0 28 0 3 0	21-Nov-19 03-Dec-19 09-Jul-19 16-Jul-19 26-Jul-19 09-Aug-19 17-Aug-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19 21-Aug-19			Gé	enei Insi	eral S talla Pre	tion a drillir	ileara anctin Ing fo Engi zatio	ance nitia or H- incer on of Fre	e eind -p le r's Re f pilir ebore	l und vey four evie ng ri ed H Pret	of of da gs pil
E&M insta A5355 A5360 A5370 OU5 Foundati A5650 A5660 A5660 A5680 A5690 A5720	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a on works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig) Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles Mobilzation of piling rigs Prebored H-pile (5a-P1-2a-P6, 6Nos)	0% 0% 0% 0% 0% 0% 0%	0 0 8 8 8 8 8 8 8 8 8 0	10 0 3 0 6 0 9 0 12 0 28 0 3 0 28 0	21-Nov-19 03-Dec-19 09-Jul-19 16-Jul-19 26-Jul-19 09-Aug-19 17-Aug-19 30-Aug-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19 21-Aug-19 02-Oct-19	· [Gé	enei Insi	eral S talla Pre	tion a drillir	ileara anctin Ing fo Engi zatio	ance nitia or H- incer on of Fre	e end I sur -p le r's Re f pilir epore	l und vey four evie ng ri ed H Pret	of of da gs pil
E&M insta A5355 A5360 A5370 OU5 Foundati A5650 A5660 A5660 A5680 A5690 A5720 A5730	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a On works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig) Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles Mobilzation of piling rigs Prebored H-pile (5a-P1-2a-P6, 6Nos) Prebored H-pile (5b-P1-5b-P6, 6Nos)	0% 0% 0% 0% 0% 0% 0% 0%	0 0 8 8 8 8 8 8 8 0 25	10 0 3 0 6 0 9 0 12 0 28 0 3 0 28 0 28 0 24 0	21-Nov-19 03-Dec-19 16-Jul-19 26-Jul-19 09-Aug-19 17-Aug-19 30-Aug-19 03-Oct-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19 21-Aug-19 02-Oct-19 30-Oct-19	· • - [Gé	enei Insi	eral S talla Pre	tion a drillir	ileara anctin Ing fo Engi zatio	ance nitia or H- ineer on of Fre	e eind sur -p le r's Re f cilir ebore Pilelc Post	l unc vey four evie ng ri ed H Pret pad t t Dri	er of da y i g s i pil es l in
E&M instr A5355 A5360 A5370 OU5 Foundati A5650 A5660 A5670 A5680 A5670 A5680 A5670 A5680 A5670 A5670 A5670 A5670 A5670 A5670 A5670 A5670 A5730 A5740 A5750 RC works	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a OP Works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig) Engineer's Review of foundation design, rockhead coutour and founding level of H-piles Mobilzation of piling rigs Prebored H-pile (5a-P1-2a-P6, 6Nos) Pile load test Post Drilling for Prebored H-piles	0% 0% 0% 0% 0% 0% 0% 0% 0%	0 0 8 8 8 8 8 8 0 25 0 0 0	10 0 3 0 9 0 12 0 28 0 3 0 28 0 24 0 6 0 4 0	21-Nov-19 03-Dec-19 16-Jul-19 26-Jul-19 09-Aug-19 17-Aug-19 03-Oct-19 03-Oct-19 10-Oct-19	02-Dec-19 05-Dec-19 25-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19 21-Aug-19 02-Oct-19 30-Oct-19 09-Oct-19	· · · · · · · · · · · · · · · · · · ·		Gé	enei Insi	eral S talla Pre	tion a drillir	ileara anctin Ing fo Engi Zatio	ance nitia or H- ineer on of Fre	e end l sur -p le r's Re f cilir ebore	lund vey four evie ng rid ed H Prek bad 1 t Dri	er of da y s pil or les lin N
A5360 A5370 OUS Foundati A5650 A5660 A5670 A5680 A5690 A5720 A5730 A5740 A5750	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a OPERATION OF THE System and air duct connection for DOU2a OPERATION OF THE System and Performance Test of the Activated Carbon Filter System for DOU2a OPERATION OF THE System for DOU2a OPERATION OF THE System for DOU2a OPERATION OF THE SYSTEM OF DOUADING, TRUE SYSTEM OF THE SY	0% 0% 0% 0% 0% 0% 0% 0% 0%	0 0 8 8 8 8 8 8 0 25 0	10 0 3 0 6 0 9 0 12 0 28 0 3 0 28 0 28 0 24 0 6 0	21-Nov-19 03-Dec-19 16-Jul-19 26-Jul-19 09-Aug-19 17-Aug-19 30-Aug-19 03-Oct-19 03-Oct-19	02-Dec-19 05-Dec-19 15-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19 21-Aug-19 02-Oct-19 30-Oct-19 09-Oct-19	1		Gé	enei Insi	eral S talla Pre	tion a drillir	ileara anctin Ing fo Engi Zatio	ance nitia or H- ineer on of Fre	e end l sur -p le r's Re f cilir ebore	l unc vey four evie ng ri ed H Pret pad t t Dri	of t dat w c JS lpil lest ling
&M instr A5355 A5360 A5370 OU5 oundati A5660 A5660 A5680 A5680 A5680 A5680 A5670 A5720 A5730 A5740 A5750 C works A5590	allation Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU2a Trial Operation and Performance Test of the Activated Carbon Filter System for DOU2a OP Works General Site Clearance and underground uliities detection/ idenification Installation and initial survey of building, ground and utilities settlement Pre-drilling for H-pile foundation (4Nos, 1 rig) Engineer's Review of foundation design, rockhead coutour and founding level of H-piles Mobilzation of piling rigs Prebored H-pile (5a-P1-2a-P6, 6Nos) Pile load test Post Drilling for Prebored H-piles	0% 0% 0% 0% 0% 0% 0% 0% 0%	0 0 8 8 8 8 8 8 0 25 0 0 0	10 0 3 0 9 0 12 0 28 0 3 0 28 0 24 0 6 0 4 0	21-Nov-19 03-Dec-19 16-Jul-19 26-Jul-19 09-Aug-19 17-Aug-19 03-Oct-19 03-Oct-19 10-Oct-19	02-Dec-19 05-Dec-19 25-Jul-19 25-Jul-19 08-Aug-19 10-Sep-19 21-Aug-19 02-Oct-19 30-Oct-19 09-Oct-19			Ga 	enei Inst	eral S talla Pre-	tion a drillir	ileara anctin Ing fo Engi Zatio	ance nitia or H- ineer on of Fre	e end l sur -p le r's Re f cilir ebore	lund vey four evie ng rid ed H Prek bad 1 t Dri	er of da ys ipil or les lin



Critical Remaining Work

Q4		Q1	2021 Q2		Q3
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Date 9-Jul-19	Rev	Revision	Chec	ked	Approved

D	Activity Name	Activity % Tot Complete	arrioar	Original Time risk Duration allowance	Start	Finish	2019		Q3			Q4	Q1	Q2	2020 Q3	
A5600	Pile head preparation and weld test	0%	0	4 0	21-Oct-19	24-Oct-19				1		ile head pre	paration and weld test			
A5610	Formwork and steel fixing of pile cap	0%	0	10 0	25-Oct-19	05-Nov-19				-	F	Formwork	and steel fixing of pile c	ap		
A5620	Concreting of pile cap	0%	0	2 0	06-Nov-19	07-Nov-19				-	!	Concretin	g of pile cap			
ainage w																
&M instal		00(0	40 5	00 Nov 40					¦			-Dec-19, E&M installatio erground works for cabli			
A5625 A5630	Underground works for cabling duct and trenches Installation of the Activated Carbon Filter System and air duct connection for DOU5b	0%	0	18 5 18 2	08-Nov-19 08-Nov-19								allation of the Activated C	- F	d air duat aann	action for DOUED
45630 45640	Trial Operation and Performance Test of the Activated Carbon Filter System for DOU5b	0%	0	6 0	29-Nov-19					i i		- His	al Operation and Perform			
T tank	That Operation and Performance rest of the Activated Carbon Thiter System for DOOSD	0 /8	0	0 0	23-1100-13	03-Dec-19		1				05	-Dec-19, CEPT tank			encystem for DO
	effluent drop shaft											05	-Dec-19, Air ducts of effl	uent drop shaft		
7090	Installation of FRP air duct for effluent drop structure	0%	0	25 0	24-Oct-19	21-Nov-19		1			L-1	Install	ation of FRP air duct for			
180	Reliability Test of FRP air ducts for effluent Drop Structure	0%	0	12 0	22-Nov-19	05-Dec-19				1		Re	liability Test of FRP air o	ducts for effluent Drop S	tructure	
ient Lai							-						-Dec-19, Effluent Launde	en		
100	Delivery of isolation device for on site prototype test	0%	15	6 0	09-Jul-19	15-Jul-19	-		live r y -	1	IC 11		prototype test			
110	Installation of the Isolation Device for Effluent Drop Structure for On-site Prototype Test	0%	15	10 0	26-Aug-19	05-Sep-19			•				Device for Effluent Drop	A 1 1		
120	Conduction of On-site Prototype Test of the Isol ation Device for Effluent Drop Structure	0%	15	12 0	06-Sep-19	19-Sep-19				-	Conductip	11	Prototype Test of the Iso	- A i i i	-i - i - i	i i
130	Full Scale Installation of Isolation Devices for Effluent Drop Structure	0%	0	38 5	09-Oct-19	21-Nov-19							cale Installation of Isolat			
190	Performance test (smoke Test) of the isolation device for effluent drop structure	0%	0	12 0	22-Nov-19	05-Dec-19							rformance test (smoke T		ice for effluent	drop structure
PT FRP c 7140	overs Delivery of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	6 0	02-Sep-19	07-Sep-19				De	livory of E		-Dec-19, CEPT FRP cov Cover Sealant for On-site			
7150	Installation of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	8 0	02-Sep-19 09-Sep-19	17-Sep-19				F			ling Cover Sealant for Or			
150	Conduction of On-site Prototype Test of FRP Sliding Cover Sealant	0%	3	12 0	18-Sep-19	02-Oct-19					11 11		site Prototype Test of FRI			
160	Full Scale Installation of FRP Sliding Cover Sealants for Existing CEPT Tanks	0%	0	40 5	07-Oct-19	21-Nov-19				-			cale Installation of FRP		1 1	PT Tanks
200	Performance test (Smoke test) of the sealant for FRP sliding covers	0%	0	12 0	22-Nov-19	05-Dec-19				1			rformance test (Smoke to			
	the Works	v /o	0	12 0	LL 110V-13	00 000 19										
70	Section 2 Completion (665d)	0%	0	0 0		03-May-2								+++		
100	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*										
	Submission (AIP)										4	Oct-19, E&M	Design Submission (All	P		
760	Submission of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	14 0	13-Aug-19	26-Aug-19			-	Subm	ission of A	P Design of	Wet Chemical Scrubber	System for DOU1, DO	U2 and DOU5	
770	Approval of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	21 0	27-Aug-19	16-Sep-19			-		Approval of	AIP Design	of Wet Chemical Scrubb	per System for DOU1, D	OU2 and DOU	5
780	Submission of AIP Design of the Polishing System for DOU4	0%	0	14 0	27-Aug-19	09-Sep-19		1	-1	SI	bmission	of AIP Design	n of the Polishing System	n for DOU4		
90	Approval of AIP Design of the Polishing System for DOU4	0%	0	21 0	10-Sep-19	30-Sep-19				9	Approv	al of AIP Des	ign of the Polishing Syst	tem for DOU4		
00	Submission of AIP Design of the Polishing System for DOU1R	0%	0	14 0	27-Aug-19	09-Sep-19			-1	ւ թ	ıbmission	of AIP Desig	n of the Polishing Systen	n for DOU1R		
10	Approval of AIP Design of the Polishing System for DOU1R	0%	0	21 0	10-Sep-19	30-Sep-19				┣┫━━━	Approv	al of AIP Des	sign of the Polishing Syst	tem for DOU1R		
20	Submission of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	14 0	10-Sep-19	23-Sep-19							sign of NaOH Bulk Store			
30	Approval of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	21 0	24-Sep-19	14-Oct-19				14	App	roval of AIP	Design of NaOH Bulk St	orage and Transfer Fac	ilities	
340	Submission of AIP Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14 0	13-Aug-19	26-Aug-19			-1		11 11		Power Supply and Distri			
850	Approval of AIP Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	21 0	27-Aug-19	16-Sep-19			-		11 14		of Power Supply and Dis			
60	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	il ui	1 1	r Upgrading and replace	- 4 - i - i - i	i i	i i
370	Approval of AIP Design for Upgrading and replacement of the existing local HMI touchscreen	0%	40	21 0	27-Aug-19	16-Sep-19			-[-h h a a a a i alla		for Upgrading and repla			
30	Submission of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including function	0%	3	14 0	27-Aug-19	09-Sep-19			-	- Su			n of PLC & SCADA Syste		1 1	17 1
0	Approval of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including functional	0%	3	21 0	10-Sep-19	30-Sep-19							sign of PLC & SCADA Sy			-
	Submission of AIP Design of Building Services for DOU Polishing Systems, New Switch/MCC Roor	0%	3	14 0	27-Aug-19	09-Sep-19			-				n of Building Services for			
10	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							sign of Building Services			
20	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							sign of Fire Services for			
30	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			_				Design of Fire Services		- I - I - I - I - I - I - I - I - I - I	1 1
000	Submission of AIP Design fo power supply, cabling, earthing, lightning protection and interface with	0%	59	14 0	13-Aug-19	26-Aug-19							power supply, cabling, e			
010	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							fo power supply, cabling networks integration with		lection and me	mace with exig in
090 100	Submission of AIP design of networks integration with existing DCS	0%	59	14 0	13-Aug-19	26-Aug-19							of network integration w			
10	Approval of AIP Design of network integration with existing DCS Submission of AIP design of Redundant fiber network for new SCADA	0% 0%	59 59	21 0 14 0	27-Aug-19 13-Aug-19	16-Sep-19 26-Aug-19			-				Redundant fiber network			
20	Approval of AIP design of Redundant fiber networks for new SCADA	0%	59	21 0	27-Aug-19	16-Sep-19							of Redundant fiber netwo			
50	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							upgrading works and m		event & Histor	ain server in DOI
80	Approval of AIP design for upgrading works and modification of exitg data, event & Historain server	0%	59	21 0	-	16-Sep-19							for upgrading works and			
	Submission (DDA)	0,0	00	21 0	Er rug to	10 000 10							9-Dec-19, E&M Design S			
70	Submission of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14 0	17-Sep-19	30-Sep-19				╞╼╽	Submis		Design of Wet Chemica		DOU1, DOU2 a	nd DOU5
30	Review and Comment on DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DO	0%	0	21 0	01-Oct-19						- L - L - L - L		omment on DDA Design	A 1 1		
83	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						Re submissi	ion of DDA Design of We	et Chemical Scrubbers I	ilters for DOU	1, DOU2 and DOI
85	Approval of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14 0	29-Oct-19	11-Nov-19						Approval	of DDA Design of Wet C	Chemical Scrubbers Filt	ers for DOU1,	DOU2 and DOU5
90	Submission of DDA Design of the Polishing System for DOU4	0%	21	14 0	01-Oct-19	14-Oct-19					- Sub	mission of D	DA Design of the Polish	ing System for DOU4		
00	Review and Comment on DDA Design of the Polishing System for DOU4	0%	21	21 0	15-Oct-19	04-Nov-19				1			d Comment on DDA Des			
210	Re-submission of DDA Design of the Polishing System for DOU4	0%	21	7 0	05-Nov-19	11-Nov-19					- 4	Re-subm	nission of DDA Design of	the Polishing System f	or DOU4	
260	Approval of DDA Design of the Polishing System for DOU4	0%	21	14 0	12-Nov-19	25-Nov-19					-	Appro	oval of DDA Design of th	e Polishing System for	DOU4	
940	Submission of DDADesign of the Polishing System for DOU1R	0%	0	14 0	01-Oct-19	14-Oct-19				1 F	Sub	mission of C	DA Design of the Polish	ing System for DOU1R		
950	Review and Comment on DDA Design of the Polishing System for DOU1R	0%	0	21 0	15-Oct-19	04-Nov-19							d Comment on DDA Des		- 4 5	1
960	Re-submission of DDA Design of the Polishing System for DOU1R	0%	0	7 0	05-Nov-19		IT			11	1		hission of DDA Design of		- i i	
970	Approval of DDA Design of the Polishing System for DOU1R	0%	0	14 0	12-Nov-19						1 h		oval of DDA Design of th			
980	Submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14 0	15-Oct-19	28-Oct-19							of DDA Design of the Na			
990	Review and Comment on DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	21 0	29-Oct-19	18-Nov-19					: ⊾ ‡		v and Comment on DDA I			
000	Re-submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	7 0	19-Nov-19	25-Nov-19				<u> . </u>	l		ubmission of DDA Desig		- 4	
010	Approval of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14 0	26-Nov-19							·	pproval of DDA Design o		- i - i	
020	Submission of DDA Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14 0	17-Sep-19	30-Sep-19							Design of Power Supply	· • • • • • • • • • • • • • • • • • • •	1 I	1 7 7 1
030	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						eview and C	omment on DDA Design	of Power Supply and D	istribution Syst	tem for DOU Polis
6030	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					<u>, – </u>		oriment on DDA design	di Fower Suppry and L		he

Critical Remaining Work

01				01				2021			01	
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d DOU5												
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Jul-19			Rev.	0								
Aug-19			Rev.	1		1						

ity ID	Activity Name	Activity % Total Complete	⊦loat	Original Time risk Duration allowance	Start	Finish	201	9	Q3			Q4		Q1	2 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	╏				-		pmission			tion System for DOU Polishing S	şys
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						🗖 Ap	proval o	DDA Design of Power	Supply and Distributio	n System for DOU Polishing Sys	te
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				-	Submi	ssion o	f 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				•		leview	and Con	nment on DDA Design o	f Upgrading and replac	ement of the existing local HMI t	our
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-su	omission	n of DDA Design of Upg	rading and Upgrading a	and replacement of the existing lo	ca
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					└► [·	5 i			replacement of the existing loca	ļΗ
A6100	Submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	3	14 0	01-Oct-19	14-Oct-19					🔲 Su		6	A Design of PLC & SCA			į
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		6 i i 1	stems for DOU Polishing Systen	IS
A6120	Re-submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	7 0	05-Nov-19	11-Nov-19							6 3	, i i i i i i i i i i i i i i i i i i i		for DOU Polishing Systems	í.
A6130	Approval of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	14 0	12-Nov-19	25-Nov-19	_						R 11 - 3	9		r DOU Polishing Systems	1
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							li i			ishing Systems, New MCC Roor	i i
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					-					es for DOU Polishing Systems,	
A6160	Re-submission of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms	0%	3	7 0	19-Nov-19	25-Nov-19	-						P 1			or DOU Polishing Systems, New	
A6170	Approval of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms and N	0%	3	14 0	26-Nov-19	09-Dec-19	-				Cubas					OU Polishing Systems, New MO	÷ .
A8050 A8060	Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	59 59	14 0	17-Sep-19 01-Oct-19	30-Sep-19 21-Oct-19	-				-		R 3			ing protection and interface with arthing, lightning protection and i	1
A8060 A8070	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%	59	21 0 7 0	22-Oct-19	21-Oct-19 28-Oct-19	-						16 i	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		hing, lightning protection and inte	i
A8080	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	59	14 0	22-Oct-19 29-Oct-19	11-Nov-19				· • • • • • •			6			g, lightning protection and interfa	+
A8280	Submission of DDA Design of networks integration with the existing DCS	0%	59	14 0	17-Sep-19	30-Sep-19							p	esign of networks integ		T T I T I I I	1
A8290	Review & comment of DDA Design of networks integration with the existing DCS	0%	59	21 0	01-Oct-19	21-Oct-19					- 1		E :	ent of DDA Design of n			1
A8300	Re-submission of DDA Design of networks integration with the existing DCS	0%	59	7 0	22-Oct-19	28-Oct-19							P 2	of DDA Design of netw			1
A8310	Approval of DDA Design of networks integration with the existing DCS	0%	59	14 0	29-Oct-19	11-Nov-19							ji i	DDA Design of networ		i i i	í
A8320	Submission of DDA Design of redundant fiber networks for new SCADA	0%	59	14 0	17-Sep-19	30-Sep-19	1	<u>+ + </u>		┊┝╾╽	Submi		C	esign of redundant fiber	, , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·	[
A8330	Review & comment of DDA Design of redundant fiber networks for new SCADA	0%	59	21 0	01-Oct-19	21-Oct-19	1					leview	& comm	ent of DDA Design of re	dundant fiber networks	for new SCADA	í
A8340	Re-submission of DDA Design of redundant fiber networks for new SCADA	0%	59	7 0	22-Oct-19	28-Oct-19	1				-	Re-su	omissior	of DDA Design of redu	ndant fiber networks fo	r new SCADA	1
A8350	Approval of DDA Design of redundant fiber networks for new SCADA	0%	59	14 0	29-Oct-19	11-Nov-19					-	📕 Ap	proval o	DDA Design of redund	ant fiber networks for n	ew SCADA	1
A8360	Submission of DDADesign of upgrading works and modification of ex'tg data, event & Historain ser	0%	59	14 0	17-Sep-19	30-Sep-19				└╼┎	-		P !	0 10 10		x'tg data, event & Historain serv	
A8370	Review & comment of DDA Design of upgrading works and modification of ex'tg data, event & Histor	0%	59	21 0	01-Oct-19	21-Oct-19				•		leview	& comm	ent of DDA Design of up	grading works and mo	dification of ex'tg data, event & H	ist
A8380	Re-submission of DDA Design of upgrading works and modification of ex'tg data, event & Historain	0%	59	7 0	22-Oct-19	28-Oct-19					⊢ ∎	Re-su	pmissior	n of DDA Design of upgr	ading works and modif	ication of ex'tg data, event & Hist	ora
A8390	Approval of DDA Design of upgrading works and modification of ex'tg data, event & Historain server	0%	59	14 0	29-Oct-19	11-Nov-19					ا~ ا	📕 Ar	C 1			tion of ex'tg data, event & Histor	ain
	eotechnical Design Submission (DDA)			=1-									E	▼ 05-Jan-20, Civil and			1
A7880	Submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	01-Oct-19	07-Oct-19				.	Subi		h i	Geotechnical design fo		works for DOU1R and 4	<u>í</u>
A7890 A7900	Review and Comment on DDA Geotechnical design for piling works for DOU1R and 4	0%	0	21 0 7 0	08-Oct-19	28-Oct-19 04-Nov-19	-				<u> </u>		10 I I I I I I I I I I I I I I I I I I I	on of DDA Geotechnica			ĺ.
A7900 A7910	Re-submission of DDA Geotechnical design for piling works for DOU1R and 4 Approval of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	29-Oct-19 05-Nov-19	11-Nov-19	-				G		• •	DDA Geotechnical des		1 I I I I I I I I I I I I I I I I I I I	1
A7920	Submission of DDA structural design for RC works of DOU1R and 4	0%	39	14 0	12-Nov-19	25-Nov-19							6 1	sion of DDA structural			
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	-						E :			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					+			i GII		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								Approval of DDA st	uctural design for RC	works for DOU1R and 4	í.
A7960	Submission of DDA for ABWF design for DOU1R and 4	0%	184	14 0	12-Nov-19	25-Nov-19						-	Submis	sion of DDA for ABWF	design for DOU1R and	14	ĺ.
A7970	Review and Comment on DDA ABWF design for DOU1R and 4	0%	184	21 0	26-Nov-19	16-Dec-19						-	Re Re	eview and Comment on	DDA ABWF design for	DOU1R and 4	ĺ.
A7980	Re-submission of DDA ABWF design for DOU1R and 4	0%	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							┕╼┏	Approval of DDAAB			
Procuemen	t and Delivery of Equipment/ Material for Section 2 of Works											-			A 1 12 2 1	ment and Delivery of Equipment/	
A1320	Procurement of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	90 0	12-Nov-19	09-Feb-20								· · 🛏 : : :		ubber Systems for DOU1, DOU	
A1330	FAT of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14 0	10-Feb-20	23-Feb-20	-							- i - i <mark></mark> (- i - i		r Systems for DOU1, DOU2 and	
A1350	Delivery of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14 0	24-Feb-20	08-Mar-20									•	Scrubber Systems for DOU1, DC	102
A1360	Procurement of DOU4 Polishing System	0%	21 21	76 0	26-Nov-19 10-Feb-20	09-Feb-20	-					-1		· · · · · · · · · · · · · · · · · · ·	nt of DOU4 Polishing S DOU4 Polishing Syster	1 1 1 1	1
A1380 A1500	FAT of DOU4 Polishing System Delivery of DOU4 Polishing System	0%	21	14 0 14 0	24-Feb-20	23-Feb-20 08-Mar-20	-								very of DOU4 Polishin	i i i i	
A6180	Procurement of DOU1R Polishing System	0%	0	76 0	24-Feb-20 26-Nov-19	08-1viar-20 09-Feb-20								i de la de la companya de la company	nt of DOU1R Palishing		
A6190	FAT of DOUTR Polishing System	0%	0	14 0	10-Feb-20	23-Feb-20				1					DOU1R Polishing Syst		
A6200	Delivery of DOU1R Polishing System	0%	0	14 0	24-Feb-20	08-Mar-20								i a a sha a sha a she	very of DOU1R Polish		
A6210	Procurement of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	76 0	10-Dec-19	23-Feb-20	1						-	· · · · · · · · · · · · · · · · · · ·		orage Tank and Transfer Facilitie	às.
A6220	FAT of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14 0	24-Feb-20	08-Mar-20	1									Tank and Transfer Facilities	
A6230	Delivery of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14 0	09-Mar-20	22-Mar-20	1									Storage Tank and Transfer Faci	İiti∉
A6240	Procurement of Power Supply and Distribution System for DOU Polishing Systems	0%	19	90 0	12-Nov-19	09-Feb-20	1					-		Procureme	nt of Power Supply and	Distribution System for DOU Po	ilis
A6250	FAT of Power Supply and Distribution System for DOU Polishing Systems	0%	19	30 0	10-Feb-20	10-Mar-20	1							FA1	of Power Supply and	Distribution System for DOU Pol	ish
A6260	Delivery of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14 0	11-Mar-20	24-Mar-20								· · · · · · · · · · · · · · · · · · ·		ply and Distribution System for [1
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		-				offer for Upgrading and Replace	
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										offer for Upgrading and Replacer	
A6300	Procurement of PLC and SCADA Systems for DOU Polishing Systems	0%	45	90 0	26-Nov-19	23-Feb-20	 					• •1		and a second state of a line of the second state of the second state of the second state of the second state of		DA Systems for DOU Polishing S	
A6310	FAT of PLC and SCADA Systems for DOU Polishing Systems	0%	45	30 0	24-Feb-20	24-Mar-20				-						A Systems for DOU Polishing Sy	
A6320	Delivery of hardware of PLC and SCADA Systems for DOU Polishing Systems	0%	45	14 0	25-Mar-20	07-Apr-20								- 1 - 1 - <mark>-</mark> 1 - 1	FFP 1 1 1 1	re of PLC and SCADA Systems f	
A6330	Procurement of Building Services Equipment for DOU Polishing Systems, New Switch/MCC Rooms	0%	3	90 0	10-Dec-19	08-Mar-20										ervices Equipment for DOU Polis	
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	-									g Services Equipment for DOU P	
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	·	+ +					-	Hro	Delivery of Fire Servic	es Equipment for DOU Polishing	15
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				}						rvices Equipment for DOU Polis	.00
DOU 1 E&M insta	lation (2nd stage)									-							Ē
A7210	Installation of DOU1 wet scrubber and air duct connection for DOU1	0%	0	175 14	09-Mar-20	08-Oct-20										Inst	all
A7212	Installation of Power supply and disturbution system for DOU polishing systems	0%	16	130 14			1			}				╡┊┊┊┊		Installation of	Po
A7222	Upgrading and Replacement of the existing local HMI touchscreen	0%	56	90 14	25-Mar-20	14-Jul-20	1 ∳	++						····		Upgrading and Replaceme	ənt
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A	ctual Work					Contract I	No. D	C/20	18/17							Sheet 4 of 7	Jul
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D Activity Name	Activity % Complete	Total Float		Time risk allowance	Start	Finish	2019	Q3		Q4	Q1		2 Q2	2020 Q3
A7232 Installation of PLC and SCADA system for DOU polishing systems	0%	45	90	14	10-Apr-20	27-Jul-20							•	
A7242 Installation of Building Service for DOU polishing system, MCC room	0%	1			10-Apr-20	12-Nov-20								
7252 Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150		10-Apr-20	08-Oct-20							•	
292 Software development for new DOU polishing stage	0%	38 38			10-Apr-20	01-Sep-20								So
332 Installation of redundunt fiber networks for new SCADA ting and commissioning	0%	30	30	14	02-Sep-20	08-Oct-20								
22 Performance Test of the DOU1 wet scrubber	0%	0	45	5	09-Oct-20	22-Nov-20								
72 Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	18	65	5	01-Sep-20	04-Nov-20								L=
Hardware, point to point, end to end and function testfor upgrading and replacement of existing local	0%	66			15-Jul-20	17-Sep-20								L=
Reliability test of the polishing system of DOU1	0%	0	36		23-Nov-20	28-Dec-20								
Reliability test of NaOH bulk Storage and transfer system	0%	3			21-Oct-20	19-Nov-20								
Barbon Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage Barbon Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	1	45 45		13-Nov-20 09-Oct-20	27-Dec-20 22-Nov-20								
1R	078	50	+3	5	05-001-20	22-1400-20								
Indation works											06-Jan-20,	oundat	on works	
376 General Site Clearance and underground uliities detection/ idenification	0%	66			09-Jul-19	15-Jul-19		_			und uliities detection	- 11 1		
Installation and initial survey of building, ground and utilities settlement	0%	66			16-Jul-19	22-Jul-19					ding, ground and util	ities se	ttlement	
 Pre-drilling for H-pile foundation (3Nos, 2 rigs) Engineer's Review of foundation design, rockhead coutour and founding level of H-piles 	0%	51 51	10 24		09-Aug-19 21-Aug-19	20-Aug-19 17-Sep-19					tion (3Nos, 2 rigs) foundaiton design	rockher	d ooutour and foundin	a level of H-niles
Sign of existing concrete plinth	0%	51	12		21-Aug-19 18-Sep-19	02-Oct-19		·			ting concrete plint			5.500 on 1 piloo
400 Prebored rock-socketted H-pile (P1-6, 6Nos)	0%	17			12-Nov-19	21-Dec-19						ockette	Hpile (P1-6, 6Nos)	
6410 Pile load test	0%	17			23-Dec-19	31-Dec-19				- - -	Pile Idad test			
A20 Post Drilling for Prebored H-piles	0%	17	4	0	02-Jan-20	06-Jan-20					Post Drilling	for Pre	pored H-piles	
works													14-Apr-20, RC w for pile cap construct	orks
455 Open Excavation for pile cap construction	0%	17			11-Jan-20	17-Jan-20								on
457 Pile head preparation and weld test	0%	17			18-Jan-20	24-Jan-20					· · · · · ·		ration and weld test and steel fixing of pile	aan
5458 Formwork and steel fixing of pile cap 5460 Concreting of pile cap	0%	17 17	15		25-Jan-20 12-Feb-20	11-Feb-20 13-Feb-20							and steel fixing of pile g of pile cap	чар
6470 Concreting of MCC room wall and roof slab	0%	117			12-1 eb-20 14-Feb-20	16-Mar-20						- 11 1	photecap	n wall and roof slab
State Internal finishes of MCC room and Builder works	0%	117			25-Mar-20	14-Apr-20		· · · · · · · ·						of MCC room and Bui
derground Drainage and cabling works				I					-					
6450 Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	117	60	5	15-Apr-20	25-Jun-20								Construction and ir
490 Statutory submission and approval from WSD	0%	36			02-Oct-19*	15-Jun-20								Statutory submission
500 Construction of underground watermain for DOU1R	0%	36	90	14	16-Jun-20	02-Oct-20								
I installation 520 Installation of DOU1R polishing Unit and air duct connection for DOU1	0%	0	175	14	09-Mar-20	08-Oct-20								
290 Installation of Power supply and disturbution system for DOU polishing systems	0%	17			25-Mar-20	31-Aug-20								In
310 Installation of PLC and SCADA system for DOU polishing systems	0%	46			10-Apr-20	27-Jul-20								Installation
Installation of Building Service for DOU polishing system, MCC room	0%	1	180		10-Apr-20	12-Nov-20							+	
330 Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	21	160	14	10-Apr-20	20-Oct-20							▶	
260 Software developement for new DOU polishing stage	0%	39	120	14	10-Apr-20	01-Sep-20							+	s s
270 Installation of redundunt fiber networks for new SCADA	0%	39	30	14	02-Sep-20	08-Oct-20								
ting and commissioning 335 Performance Test of the DOU1R polishing unit	0%	0	39	5	09-Oct-20	23-Nov-20								
Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	19		-	03-Oct-20 01-Sep-20	04-Nov-20							+	
7550 Reliability test of the polishing system of DOU1R	0%	0			24-Nov-20	28-Dec-20								
560 Reliability test of NaOH bulk Storage and transfer system	0%	4			21-Oct-20	19-Nov-20								
7570 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								
7580 Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	24	45	5	21-Oct-20	04-Dec-20								
U2														
works 5825 Open Excavation and for pile cap construction	0%	51	6	0	27-Nov-19	03-Dec-19					pen Excavation and	for pile	lar 20, RC works	
830 Pile head preparation and weld test	0%	51	10		04-Dec-19	14-Dec-19					Pile head preparat			
835 Formwork and steel fixing of pile cap	0%	51	18		16-Dec-19	08-Jan-20				5	Formwork a	ind steel	fixing of pile cap	
836 Concreting of pile cap	0%	51	2		09-Jan-20	10-Jan-20					Concreting			
855 Concreting of MCC room wall and roof slab	0%	116	24	2	11-Jan-20	07-Feb-20						creting	of MCC room wall and	
359 Internal finishes of MCC room and Builder works	0%	116	15	2	17-Feb-20	07-Mar-20						Inter	nal finishes of MCC ro	om and Builder work
derground Drainage and cabling works				2	10 1	00.0 /								
6810 Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	36			16-Jun-20	02-Oct-20								Statutory submission
130 Statutory submission and approval from WSD 140 Construction of underground watermain for DOU2	0%	36 36			02-Oct-19* 16-Jun-20	15-Jun-20 02-Oct-20								statutory submission
Minstallation	078	50	50	14	10-0011-20	02-001-20								
880 Installation of the chemical scrubber and air duct for DOU2	0%	51	175	14	11-Jan-20	12-Aug-20					-			Installa
450 Installation of Power supply and disturbution system for DOU polishing systems	0%	20			25-Mar-20	31-Aug-20						+	· · · · · · · · · · · · · · · · · · ·	In
7460 Upgrading and Replacement of the existing local HMI touchscreen	0%	30	120	14	25-Mar-20	18-Aug-20						-		Upgr
1470 Installation of PLC and SCADA system for DOU polishing systems	0%	49			10-Apr-20	27-Jul-20								Installatior
1/480 Installation of Building Service for DOU polishing system, MCC room	0%	1	180		10-Apr-20	12-Nov-20								
7490 Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou 2000 Certimes development for new DOU polishing store	0%	31	150		10-Apr-20	08-Oct-20								
Software development for new DOU polishing stage 1410 Installation of redundunt fiber networks for new SCADA	0%	44 44			10-Apr-20	01-Sep-20		· -						s s
8410 Installation of redundunt fiber networks for new SCADA sting and commissioning	U%	44	30	14	02-Sep-20	08-Oct-20								
8890 Performance Test of chemical scrubber and air duct for DOU2	0%	39	45	5	06-Sep-20	20-Oct-20								
Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	24			01-Sep-20	04-Nov-20								: : L + ==
600 Hardware, point to point, end to end and function test for upgrading and replacement of existing loca	0%	37	65	5	19-Aug-20	22-Oct-20								
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	Activity Name	Activity % To Complete	otal Float	Original Duration	Time risk allowance	Start	Finish	2019		23		Q4	0)1			Q2	2020	Q3		
A7610	Reliability test of the polishing system of DOU2	0%	9	30		20-Nov-20	19-Dec-20			20		Q4					Q2	<u> </u>	- 43	TE	<u> </u>
20	Reliability test of NaOH bulk Storage and transfer system	0%	9	30		21-Oct-20	19-Nov-20														
30	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														
640	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														⊳ [
4 Indation	works								· · · · · ·				23-J	Jan 20	, Foun	ndation (works				
58	General Site Clearance and underground uliities detection/ idenification	0%	36	6	0	27-Jul-19	02-Aug-19		· ل_غ ا	General Site	Clearan	e and undergr	ound uliities	detect	tion/ id	lenificat	tion				
0	Installation and initial survey of building, ground and utilities settlement	0%	36	6	0	03-Aug-19	09-Aug-19			1	1 1	I survey of bu	1	11	utilitie	s settle	ment				
75	Pre-drilling for H-pile foundation (5Nos, 2rigs)	0%	36	12		10-Aug-19	23-Aug-19			Pre-dri		pile foundatio									
76	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	36	28		24-Aug-19	25-Sep-19					r's Review of f		esigh, i	rockhe	ead cou	tour and foi	unding lev	vel of H-	pilės	
578	Mobilzation of piling rigs	0%	36	3		26-Sep-19	28-Sep-19				, Mobilz	tion of piling r									
580	Prebored H-pile (P1-7, 7Nos)	0%	0	40		12-Nov-19	30-Dec-19						Prebored I	18	11 1	, 7Nos)					
590 500	Pile load test Post Drilling for Prebored H-piles	0%	0		0	13-Jan-20 20-Jan-20	18-Jan-20 23-Jan-20							12	11 1	Prebore	ed H-piles				
works	rost briting to repored n-piles	0%	0	4	0	20-Jan-20	23-Jan-20								19.101	riebuie	i i i	ay-20, RC	C works		
635	Open Excavation and for pile cap construction	0%	0	12	2	24-Jan-20	06-Feb-20							Open I	Excava	ation an	d for pile c	ap constr	uction		
637	Pile head preparation and weld test	0%	0	9	2	07-Feb-20	17-Feb-20							Pile			ation and w				
639	Formwork and steel fixing of pile cap	0%	0	18	3	18-Feb-20	12-Mar-20						-				and steel fi		e cap		
40	Concreting of pile cap	0%	0		0	13-Mar-20	14-Mar-20										g of pile cap				
650	Concreting of MCC room wall and roof slab	0%	61	24		16-Mar-20	15-Apr-20										oncreting of				
60	Internal finishes of MCC room and Builder works Drainage and cabling works	0%	61	18	3	24-Apr-20	15-May-20							-			Intern	al finishe	s of MC0	room a	and B
ergrou 630	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	61	90	2	16-May-20	01-Sep-20														onstru
60	Statutory submission and approval from WSD	0%	36	210		02-Oct-19*	15-Jun-20					1	: :	1				Statuto	ory subm	- P	
170	Construction of underground watermain for DOU2	0%	36		14	16-Jun-20	02-Oct-20										5			1	i `
	ation														T ▼†						8
700	Installation of the DOU4 polishing Unit and air duct connection for DOU4	0%	0	162		30-Mar-20	14-Oct-20													-	
00	Installation of Power supply and disturbution system for DOU polishing systems	0%	20	130		25-Mar-20	31-Aug-20									<u> </u>				allation o	stallat
20	Installation of PLC and SCADA system for DOU polishing systems	0%	49		14	10-Apr-20	27-Jul-20											<u> </u>	Insta	illation o	ot
130	Installation of Building Service for DOU polishing system, MCC room	0%	1 31	180		10-Apr-20	12-Nov-20						·····		[· · · · · · · · · · · · · · · · · · ·	;				
40 20	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou Software developement for new DOU polishing stage	0%	44	150 120		10-Apr-20 10-Apr-20	08-Oct-20 01-Sep-20										<u> </u>	<u> </u>		Hi so	oftwar
30	Installation of redundunt fiber networks for new SCADA	0%	44		14	02-Sep-20	01-3ep-20 08-Oct-20														1
	comissioning	0,0		00		02 000 20	00 001 20														_
10	Performance Test of the DOU4 polishing Unit	0%	0	45	5	15-Oct-20	28-Nov-20														
650	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	24	65	5	01-Sep-20	04-Nov-20													4	
670	Reliability test of the polishing system of DOU4	0%	0	30	0	29-Nov-20	28-Dec-20														
680	Reliability test of NaOH bulk Storage and transfer system	0%	9	30	0	21-Oct-20	19-Nov-20														
690	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 J 5	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														
undatior																					
works f 7005	or DOU5b Open Excavation and for pile cap construction	0%	25	6	1	12-Nov-19	18-Nov-19					Den Ex	cavation and	t for ni		1 3	RC works t	ior DOU5	'n		
7010	Pile head preparation and weld test	0%	25	9		19-Nov-19	28-Nov-19					Pile h									
015	Formwork and steel fixing of pile cap	0%	25	18		29-Nov-19	19-Dec-19				+		Formwork an				cap				
018	Concreting of pile cap	0%	25	2		20-Dec-19	21-Dec-19						Concreting o								
020	Concreting of MCC room wall and roof slab	0%	25	30		23-Dec-19	29-Jan-20						Co	oncreti	rig of I	MCC roo	om wall and	d roof slal	ιb		
025	Internal finishes of MCC room and Builder works	0%	25	18	3	15-Feb-20	10-Mar-20								Inter	rnal finis	shes of MC	C room a	and Build	er work:	s
	nd Drainage and cabling works										×							_	onstructio	-	
990	Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	144	90		11-Mar-20	29-Jun-20											4			
190	Statutory submission and approval from WSD	0%	36	210		02-Oct-19*	15-Jun-20												ory subm	ission a	ano
200 /install	Construction of underground watermain for DOU2 ation	0%	36	90	14	16-Jun-20	02-Oct-20											1		-	
060	Installation of the DOU5 polishing system and air duct connection for DOU1	0%	6	175	14	09-Mar-20	08-Oct-20							L-							
345	Installation of Power supply and disturbution system for DOU polishing systems	0%	13	130	14	25-Mar-20	31-Aug-20				1		†		t-d	;				📕 Ins	stalla
365	Installation of PLC and SCADA system for DOU polishing systems	0%	42	90	14	10-Apr-20	27-Jul-20				1				H	-			💻 Inst	allation	of
375	Installation of Building Service for DOU polishing system, MCC room	0%	1	180	14	10-Apr-20	12-Nov-20								H	+		_ <u>+</u> _		ا ا	
85	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150	14	10-Apr-20	08-Oct-20								H	+		—	_	#:	
40	Software developement for new DOU polishing stage	0%	36	120	14	10-Apr-20	01-Sep-20									+				Sof	oftwa
50	Installation of redundunt fiber networks for new SCADA	0%	36	30	14	02-Sep-20	08-Oct-20													†	
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387 710	Performance Test of the DOU5 polishing system	0%	6 15	30		09-Oct-20	12-Nov-20														_[]
'10 '30	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC Reliability test of the polishing system of DOU5	0%	15 0	65 39		01-Sep-20 20-Nov-20	04-Nov-20 28-Dec-20														
730 740	Reliability test of the polishing system of DOUS Reliability test of NaOH bulk Storage and transfer system	0%	0	39		20-Nov-20 21-Oct-20	28-Dec-20 19-Nov-20			· · · · · · · · · · · ·	÷		·			<u>.</u>					
750	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	30 45		13-Nov-20	27-Dec-20														
30 760	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45		09-Oct-20															
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works												<u>-</u>	ļ		06-M	lar-20, F	RC works				
230	Demolition of existing Storage compound	0%	0	50		27-Aug-19	24-Oct-19			-		Demolition of e	1 1		1						
240	Excavation of NaOH bulk storage compound	0%	0	12		25-Oct-19	07-Nov-19				- -	Excavation				1 1 1					
250	Carryout plate load test for foundation Review design by Project Manager Respresentative	0%	0	24		08-Nov-19 06-Dec-19	05-Dec-19 10-Jan-20				1	Cari	yout plate lo			· ·					
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ivity ID	Activity Name	Activity %				Start	Finish	2019			2020				2021			
		Complete		Duration	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 bu						
E&M insta	allation													05-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 ar	nd Commissioning														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	d transfer syster	
Statutary I	nspection by FSD														V	🗸 03-May-21, Sta	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	lication for FS inspectio	n ot FSD	
A7780	FS inspection by FSD	0%	0	14	1 2	19-Jan-21	01-Feb-21								FS inspection	by FSD		
A7790	System/ Defect rectification	0%	0	4() 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 applicat	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									Works complet	ion for Handove	
Handover	of E&M equipment					,									V	🛛 🗸 03-May-21, Hai	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	80 manual, Training m	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 tr	aining manual	
A8230	O&M training to DSD/ST2	0%	0	14	1	28-Feb-21	13-Mar-21					1			- O&N	tra ning to D\$D/ST2		
A8240	Handover spare parts	0%	0	30)	14-Mar-21	12-Apr-21									Handover spare part	s	
A8250	Handover of Final version of O&M manual	0%	0	2	1	13-Apr-21	03-May-21	1							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 W	ork	·	
		First Programme	

Data	Duristan.	Observed	A
Date	Revision	Checked	Approved
19-Jul-19	Rev. 0		
29-Aug-19	Rev. 1		