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 July 2020

(Version 1.0)

Certified By	(Environmental Team Leader)
REMARKS:	

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

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

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

Our Reference EC/AFK/DC/jl/T261332/ 22.01/L-1454

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

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10 July 2020 By Post

Dear Sir,

I refer to the captioned Monthly EM&A Report for June 2020 (version 1.0) submitted by ET on 7 July 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 11th 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>

• Completion of plinth construction at DOU1

DOU1R

• Complete of bund wall for chemical compound of DOU1R

<u>DOU2</u>

• Completed pile excavation of DOU2A-P1 on 29 July 2020, steel pile installation in progress. Drilling pile excavation of DOU2A-P5.

DOU4

• Construction of MCC room, plinth and bund wall complete on 29 July 2020

<u>DOU5</u>

• MCC Room construction at DOU5 PS in progress

<u>E&M</u>

- Isolation Device for Effluent Drop Shaft
 Smoke Test Completed (PST No. 52/54, 51/53, 47/49, 48/50)
 Installation (PST No.47/49, 48/50, 51/53, 52/54, 9/11, 17/19, 22/24)
 Concrete repairing
 PST No. 13/15, 14/16, 18/20, 21/23, 25/27, 29/31, 35/37, 39/41, 40/42, 43/45, 44/46 (completed)
- Sealant Installation
 - PST8/10 PST52/54, FT5, FT6, MDC (completed)
- Deodourisation System of DOU1R
 Transportation
- DOU System and FRP air duct
 Fabrication
- MgO Impregnated Activated Carbon
 •45.5 ton delivered on site
 •5.1 ton used in SCISTW

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.

Monitored	Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action
By			Action Level	Limit Level	Action Level	Limit Level	Taken
	AM6a	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
DC/2007/10	AM7	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	A M 8	1-hr TSP	0	0	0	0	N/A
	AM8	24-hr TSP	0	0	0	0	N/A

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

1-hour TSP Monitoring

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**.

Table II	Summary Table for Key	Information in the Reporting Month
----------	-----------------------	------------------------------------

Event	Event Details		Action Taken	Status	Remark	
Event	Number	Nature	ACTION TAKEN	Status	Kemark	
Complaint received	0		N/A	N/A		

Event	Event Details		Action Taken	Status	Remark
Event	Number	Nature	Action Taken	Status	Kemark
Status of submissions under EP	1	Monthly EM&A Report for June 2020	Submitted on 13 July 2020	N/A	
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 in Sep 2020
 - Construct cable ducts and draw pits
 - Construction of DOU2 PS
 - Target to complete remaining five piles by early Aug 2020
 - Complete load test and proof drilling work in Aug 2020
 - Construction of DOU4 PS
 - Complete concrete plinth and bund wall
 - Complete MCC room
 - Construction of DOU5 PS
 - Complete pile cap and plinth construction
 - Complete MCC room in Aug 2020
 - Construction of DOU1R
 - Complete bund wall and u-channel
 - Mechanical installation of deodourisation system of DOU1R
 - Delivery of deodourisation system of DOU4PS and DOU1PS
 - Fabrication FRP air ductwork and DOU(s), air relief duct and support
 - Install sealant
 - Install isolation device for effluent drop shaft (and concrete repairing)
- 14. The environmental concerns in the coming months are mainly on construction waste 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 AM6a, AM7, AM8, NM5 and NM6.
- 1.7 This is the 11th monthly EM&A report summarizing the EM&A works conducted for the Project in July 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 –		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

• Completion of plinth construction at DOU1

DOU1R

• Complete of bund wall for chemical compound of DOU1R

DOU2

• Completed pile excavation of DOU2A-P1 on 29 July 2020, steel pile installation in progress. Drilling pile excavation of DOU2A-P5.

DOU4

• Construction of MCC room, plinth and bund wall complete on 29 July 2020

<u>DOU5</u>

• MCC Room construction at DOU5 PS in progress

E&M

- Isolation Device for Effluent Drop Shaft
 Smoke Test Completed (PST No. 52/54, 51/53, 47/49, 48/50)
 Installation (PST No.47/49, 48/50, 51/53, 52/54, 9/11, 17/19, 22/24)
 Concrete repairing
 PST No. 13/15, 14/16, 18/20, 21/23, 25/27, 29/31, 35/37, 39/41, 40/42, 43/45, 44/46
 - (completed)
- Sealant Installation
 •PST8/10 PST52/54, FT5, FT6, MDC (completed)
- Deodourisation System of DOU1R
 Transportation
- DOU System and FRP air ductFabrication
- MgO Impregnated Activated Carbon
 •45.5 ton delivered on site
 •5.1 ton used in SCISTW

Summary of EM&A Requirements

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 July 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, AM6a, AM7 and AM8 were selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM6a		Works site boundary
AM7	DC/2009/10	North West Kowloon Sewage Pumping Station
AM8		Block A of Government Dockyard

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 2.5 – 2.15 of monthly report for Contract DC/2009/10.

Results and Observations

2.6 **Table 2.3** summarizes the monitoring results at AM6a, AM7 and AM8 in the reporting month.

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

Air Quality Monitoring Station	Average µg/m³	Range μg/m³	Action Level µg/m ³	Limit Level µg/m ³	
		1 hour TSP			
AM6a	28	14 - 59	346		
AM7	91.6	69.8 - 138	322	500	
AM8	73.8	53.6 - 93.3	307		
	24 hours TSP				
AM6a	21	15 - 29	196		
AM7	30	17 - 45	207	260	
AM8	18	8 - 23	158		

- 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 3.1Location of Noise Monitoring Stations

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

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.

Table 3.2Noise Monitoring Parameters, Frequency and Duration

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

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	56.4 - 58.6	75.0
NM6	54.6 - 56.4	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 Contracts 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**.

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	N/A	There was no observation in the reporting month.	N/A
	200624-R01		Item was remarked as 200702- R01.
	200702-R01		Item was remarked as 200709- R02.
	200709-R02	NRMM Label was not observed on the excavator at DOU-5 Contractor	Item was remarked as 200715- R02.
	200715-R02	was reminded to replace the label.	Item was remarked as 200723- R01.
Air Quality	200723-R01		Item was remarked as 200730- R01.
Quanty	200730-R01	R01	Follow-up action will be reported in the next monthly report.
	200709-R01	NRMM Label was observed faded. Contractor was reminded to replace	Item was remarked as 200715- R01.
	200715-R01	the NRMM Label (DOU-2).	Contractor was replaced the NRMM Label.
	200723-R02	The excavated dusty materials should be covered by impervious materials to avoid dust generation.	The excavated dusty material was cleared.
Waste/	200624-R02	General refuse should be disposed	Item was remarked as 200702- R02.
Waste/ Chemical Management	200702-R02	of properly.	General refuse was disposed of properly.
management	200709-R03	General refuse should be disposed of properly. (DOU-2)	General refuse was disposed of properly.
Landscape and Visual	N/A	There was no observation in the reporting month.	N/A

Table 4.1Observations of Site Audit

Noise	N/A	There was no observation in the reporting month.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Review of Environmental Monitoring Procedures

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

Status of Environmental Licensing and Permitting

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

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

Reference	Valid I	Period	Details		
Number	From	То		~~~~~	
Water Discha	arge License				
WT00035198- 2019	15/1/2020	31/1/2025	The application was approved on 15-1-2020.	Valid	
Registered C	hemical Wast	te Producer			
WPN5213- 269-B2565-01	N/A	N/A	The application was approved on 14-8-2019.	Valid	
Billing Accou	int 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	ler APCO			
447348	N/A	N/A	Notice form received by EPD on 17-7-2019.	N/A	
Construction	Construction Noise Permit				
GW- RW0092-20	27/3/2020	26/9/2020	The application was approved on 13-3-2020.	Valid	

Status of Waste Management

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

<u>24-hr TSP</u>

4.11 No Action/Limit Level exceedance was recorded.

Construction Noise

4.12 No Action/Limit Level exceedance was recorded.

Landscape and Visual

4.13 No 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.

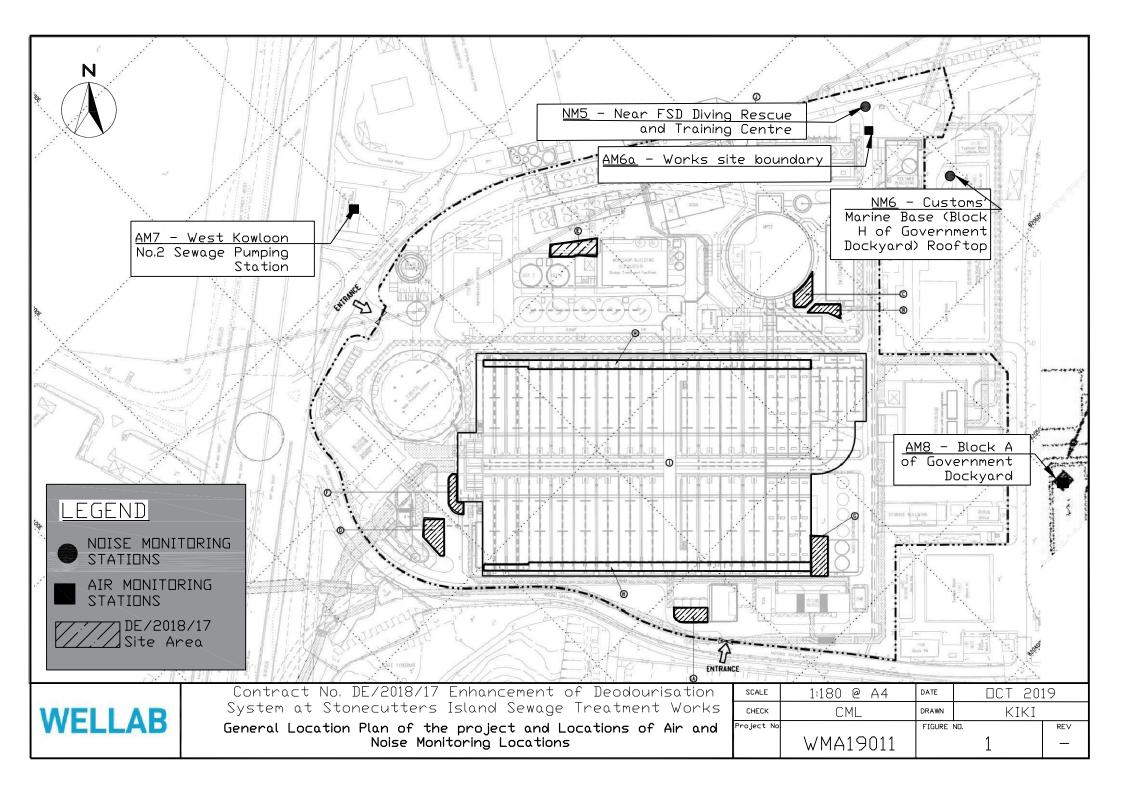
Waste/Chemical Management

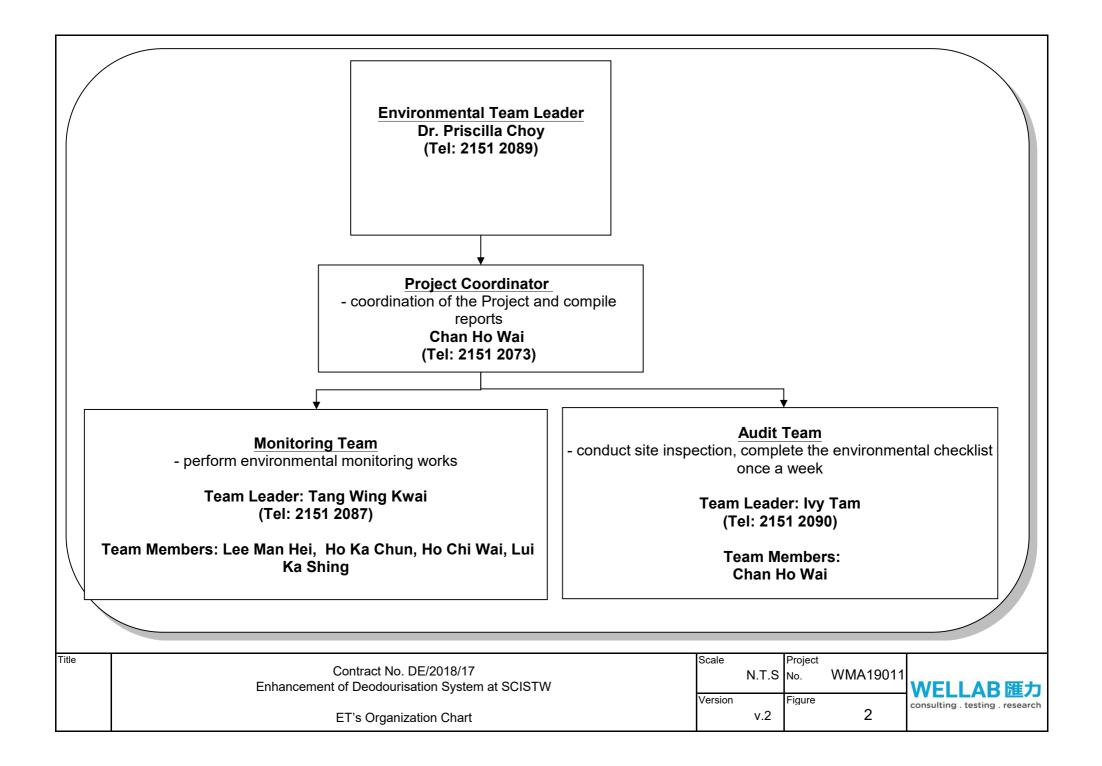
- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide adequate chemical waste storage area on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment; and
-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

Maritania - Stations	Action Le	vel (µg/m³)	Limit Le	evel (µg/m ³)
Monitoring Stations	1-hour	24-hour	1-hour	24-hour
АМба	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: July 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

Inspection Information

Checklist Reference Number	200702
Date	2 July 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	
200702-R01	• NRMM label was not observed on the excavator. Contractor was reminded to replace the label.	C19
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
200702-R02	General refuse should be disposed of properly.	Eli & Eliii
4	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. 200624), item 200624-R01 and 200624-	
	R02 were remarked as 200702-R01 and 200702-R02, Follow-up action is needed to be reviewed.	

	Name	Signature	Date
Recorded by	Chan Ho Wai	1 a ward	3 July 2020
Checked by		NA	3 July 2020

•

Inspection Information

Checklist Reference Number	200709
Date	9 July 2020 (Thursday)
Time	10:00-11:30

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	
200709-R01	• NRMM Label was observed faded. Contractor was reminded to replace the NRMM Label. (DOU-2)	C19
200709-R02	• NRMM Label was not observed on the excavator at DOU-5 Contractor was reminded to replace the label.	C19
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
200709-R03	• General refuse should be disposed of properly. (DOU-2)	Eliii
	Part F - Permit / Licence	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• No environmental deficiency was identified during the site inspection.	
	<i>Remark:</i> • Follow-up on previous audit session: On previous audit session (Ref No. 200702), item 200702-R01 was remarked as 200709-R02, Follow-up action is needed to be reviewed. Other item was rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ella Ho	1895	10 July 2020
Checked by	Dr. Priscilla Choy	NL	10 July 2020
······································			

Inspection Information

Checklist Reference Number	200715	
Date	15 July 2020 (Wednesday)	
Time	14:00-15:00	

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	 Part B – Landscape and Visual No environmental deficiency was identified during the site inspection. 	
	Part C - Air Quality	
200715-R01	• NRMM Label was observed faded. Contractor was reminded to replace the NRMM Label. (DOU-2)	C19
200715-R02	• NRMM Label was not observed on the excavator at DOU-5. Contractor was reminded to replace the 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.	
	<i>Remark:</i> • Follow-up on previous audit session: On previous audit session (Ref No. 200709), items 200709-R01 and 200709- R02 were remarked as 200715-R01 and 200715-R02, Follow-up action is needed to be reviewed. Other item was rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Howard Chan	Acutard	15 July 2020
Checked by	Dr. Priscilla Choy		15 July 2020

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Inspection Information

Checklist Reference Number	200723	
Date	23 July 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.	5
4	Part C - Air Quality	
200723-R01	• NRMM Label was not observed on the excavator at DOU-5. Contractor was reminded to replace the label.	C19
200723-R01	• The excavated dusty materials should be covered by impervious materials to avoid dust generation.	C6
	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	
2	• 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. 200715), items 200715-R02 was remarked	
	as 200723-R01, follow-up action is needed to be reviewed. Other item was rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Ella Ho	Apr	24 July 2020
Checked by	Dr. Priscilla Choy	NE	24 July 2020

Inspection Information

Checklist Reference Number	200730	
Date	30 July 2020 (Thursday)	
Time	10:30-11:30	

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

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	
• NRMM Label was not observed on the excavator at DOU-5. Contractor was reminded to replace the 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:	
as 200730-R01, follow-up action is needed to be reviewed. Other item was	
	 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 NRMM Label was not observed on the excavator at DOU-5. Contractor was reminded to replace the label. 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.

	Name	Şignature	Date		
Recorded by	Howard Chan	Havard	30 July 2020		
Checked by	Dr. Priscilla Choy	"NA	30 July 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	0.098	0.000	0.000	0.000	0.098	0.000	0.730	0.000	0.000	0.000	0.007
Aug											
Sep											
Oct											
Nov											
Dec											
Total	1.797	0.184	0.000	0.000	1.797	0.000	0.730	2.099	0.000	0.000	0.029
Total since commence ment of project		0.399	0.000	0.000	2.303	0.000	12.260	3.687	0.000	0.000	0.030

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
encecuca	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
execcutu	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	۸

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		л Л Л
	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.		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.		^
	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.		۸
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^
	Provision of sufficient waste disposal points and regular collection of waste.		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.			

Е	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.	-	۸
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		٨
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		٨
F	Landscape and Visual		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	۸
	Existing trees to be retained on site should be carefully protected during construction.		٨
	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 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
G	Marine Ecology	I	
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	^

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: July 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	Time risk allowance	Start	Finish	20	19		Q
Works Pro	gramme (First Programme)								-	÷	G
Contract Pa									┢	-	
KD0001	Starting date of Project	0%	0	0		09-Jul-19*			<u>ج</u>	Start	ing
KD0005	Completion Date (665 days)	0%	0	0			03-May-2				
Key Dates											_
KD0010	Starting date of Project	0%	0	0		09-Jul-19*			• s	Start	ing
KD0020	KD A - Completion of all other works including DOUs 1, 2, 4, 5 Polishing stages for FSI (540 days)	0%	0	0			29-Dec-20*)9-	ul.:
ACCESS Dat A1090	e of Part of the Site PartA-L	0%	0	0		09-Jul-19				Part	
	and General Requirements	0%	0	0		09-301-19			Ţ	aru	
PG00010	Statutory application/ notification of EPD and LD	0%	11	21	0	09-Jul-19	29-Jul-19				Sta
PG00020	Submission of Safety plan	0%	11	21		09-Jul-19	29-Jul-19		-		Su
PG00030	Approval of Safety Plan	0%	11	21		30-Jul-19	19-Aug-19		l	-	
PG00040	Submission of Waste Management Plan/ Environmental Management plan	0%	11	21	0	09-Jul-19	29-Jul-19			- 1	Su
PG00050	Approval of Waste Management Plan/ Environmental Management plan	0%	11	14		30-Jul-19	12-Aug-19			-	h
PG00060 PG00070	Submission of Subcontractor Management Plan	0%	112 112	14		09-Jul-19 23-Jul-19	22-Jul-19 05-Aug-19			1 8	ub
PG00070	Approval of Subcontractor Management Plan Submission of Staffing Proposal	0%	7	14		09-Jul-19	22-Jul-19		╺┟┤	ı İ	ubi
PG00090	Approval of Staffing Proposal	0%	7	7		23-Jul-19	29-Jul-19		F		Ap
	Ire Construction Works								+	-	-
Section 1 of t								 	+++		
A2960	Section 1 Completion (150days)	0%	0	0	0		05-Dec-19*				
E&M Design	Submission (AIP) Submission of AIP Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7	0	09-Jul-19	15-Jul-19			Su	
A4930 A4940	Approval of AIP Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	21		16-Jul-19	05-Aug-19		2	JU	
A4950	Submission of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	7		09-Jul-19	15-Jul-19			Sų	omi
A4960	Approval of AIP Design of Air Relief Duct for Effluent Drop Structure	0%	0	21	0	16-Jul-19	05-Aug-19		F	÷	(Ì
A4970	Submission of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	7	0	09-Jul-19	15-Jul-19			Su	Ъщ
A4980	Approval of AIP Design of Isolation Device for Effluent Drop Structure	0%	0	21		16-Jul-19	05-Aug-19			Sú	1
A4990 A5000	Submission of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks Approval of AIP Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7 21		09-Jul-19 16-Jul-19	15-Jul-19 05-Aug-19		긢		:k
A5000 A5010	Submission of AIP Design to be supply, cabling, earthing, lightning protection and interface with	0%	57	7		09-Jul-19	15-Jul-19		╺╻	Su	
A5170	Approval of AIP Design to power supply, cabling, earthing, lightning protection and interface with ex'	0%	57	. 21		16-Jul-19	05-Aug-19		F		1
E&M Design	Submission (DDA)								+		-
A4945	Submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2	0%	0	7		09-Jul-19	15-Jul-19		1	Su	omi
A4955	Review and comment on DDA of Civil requirement drawings and General Arrangement of DOU1, DC	0%	0	21		16-Jul-19	05-Aug-19			E	<u> </u>
A4965 A4975	Re-submission of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DC Approval of DDA Civil requirement drawings and General Arrangement of DOU1, DOU1R, DOU2, D	0%	0	7		06-Aug-19 13-Aug-19	12-Aug-19 19-Aug-19				
A5015	Submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7		06-Aug-19	12-Aug-19				ſ
A5020	Review and Comment on DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DC	0%	0	21	0	13-Aug-19	02-Sep-19				4
A5030	Re-submission of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7		03-Sep-19	09-Sep-19				
A5040	Approval of DDA Design of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	7		10-Sep-19	16-Sep-19				
A5050 A5060	Submission of DDADesign of Air Relief Duct for Effluent Drop Structure Review and Comment on DDADesign of Air Relief Duct for Effluent Drop Structure	0%	0	7 21		06-Aug-19 13-Aug-19	12-Aug-19 02-Sep-19				1
A5000 A5070	Re-submission of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7		03-Sep-19	02-Sep-19 09-Sep-19				
A5080	Approval of DDA Design of Air Relief Duct for Effluent Drop Structure	0%	0	7		10-Sep-19	16-Sep-19			- 1	
A5090	Submission of DDADesign of Isolation Device for Effluent Drop Structure	0%	0	7	0	06-Aug-19	12-Aug-19				9
A5100	Review and Comment on DDA Design of Isolation Device for Effluent Drop Structure	0%	0	21		13-Aug-19	02-Sep-19				1
A5110 A5120	Re-submission of DDA Design of Isolation Device for Effluent Drop Structure Approval of DDA Design of Isolation Device for Effluent Drop Structure	0%	0	7		03-Sep-19 10-Sep-19	09-Sep-19 16-Sep-19				
A5120	Submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7		06-Aug-19	12-Aug-19			-	•
A5140	Review and Comment on DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	21		13-Aug-19	02-Sep-19				-
A5150	Re-submission of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7	0	03-Sep-19	09-Sep-19				
A5160	Approval of DDA Design of Sealant for FRP Sliding Covers of Existing CEPT Tanks	0%	1	7		10-Sep-19	16-Sep-19				J
A5460	Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	57	7		06-Aug-19	12-Aug-19	 			9
A8020 A8030	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interf Re-submission of DDA Design of power supply, cabling, earthing, lightning protection and interface	0%	57 57	21 7		13-Aug-19 03-Sep-19	02-Sep-19 09-Sep-19				
A8040	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	57	7		10-Sep-19	16-Sep-19				
Procuement	and Delivery of Equipment/ Material for Section 1 of Works										
A5180	Procurement of Activated Carbon Filter Systems for DOU1, DOU2 and DOU5	0%	0	48		07-Sep-19	24-Oct-19	∤ ∣			
A5190	FAT of Activated Carbon Filter System for DOU1 Delivery of Activated Carbon Filter System for DOU1 to Site	0%	0	6		07-Oct-19	12-Oct-19				
A5200 A5210	Delivery of Activated Carbon Filter System for DOU1 to Site FAT of Activated Carbon Filter System for DOU2	0%	0	14 6		13-Oct-19 13-Oct-19	26-Oct-19 18-Oct-19				ĺ
A5220	Delivery of Activated Carbon Filter System for DOU2 to Site	0%	0	14		19-Oct-19	01-Nov-19				
A5230	FAT of Activated Carbon Filter System for DOU5	0%	0	6		19-Oct-19	24-Oct-19				
A5240	Delivery of Activated Carbon Filter System for DOU5 to Site	0%	0	14		25-Oct-19	07-Nov-19		T		Ī
A5250	Procurement of FRP Air Ducts for Effluent Drop Structure	0%	0	45		02-Sep-19	16-Oct-19				ĺ
A5260 A5270	FAT of FRP Air Ducts for Effluent Drop Structure Delivery of FRP Air Ducts for Effluent Drop Structure to Site	0%	0	7		10-Oct-19 17-Oct-19	16-Oct-19 23-Oct-19				
A5270	Procurement of Isolation Devices for Effluent Drop Structure	0%	0	30		02-Sep-19	01-Oct-19				
A5290	Delivery of Isolation Devices for Effluent Drop Structure to Site	0%	0	7		02-Oct-19	08-Oct-19	jf			1
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	ng date of Fro	ject													KD A -	Compl	etion of	all other	works	includin	g DOUs	1, 2, 4,	5 Polis
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Actual Work

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Summary

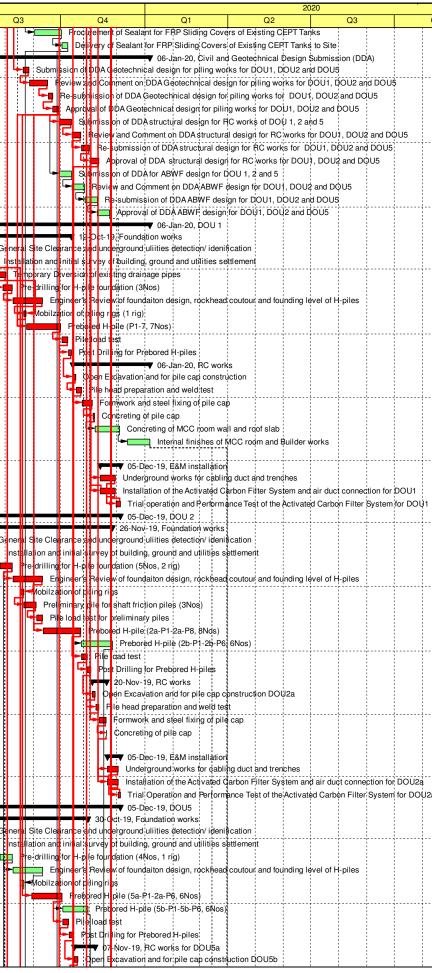
Remaining Work

Critical Remaining Work

Contract No. DC/2018/17

Enhancement of Deodourization System at Stonecutter Island Sewage Treatment

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DOUS Foundation works A5650 General Site Clear A5660 Installation and initi A5670 Pre-drilling for H-pi A5680 Engineer's Review A5690 Mobilzation of pilin A5720 Prebored H-pile (5a	· · ·	0%	0	10 0	21-Nov-19	02-Dec-19								1	F
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A5660Installation and initiA5670Pre-drilling for H-piA5680Engineer's ReviewA5690Mobilzation of pilingA5720Prebored H-pile (5a)		0%	8	6 0	09-Jul-19	15-Jul-19		┛	Ger	nera	Site C	Cleara	unce «	nd ur	nde
A5670Pre-drilling for H-piA5680Engineer's ReviewA5690Mobilzation of pilingA5720Prebored H-pile (5a)	-	0%	8	9 0	16-Jul-19	25-Jul-19	·	Ħ			lation				
A5680Engineer's ReviewA5690Mobilzation of pilingA5720Prebored H-pile (5a)		0%	8	12 0	26-Jul-19	08-Aug-19		ļţ	╺╋		re-drill				
A5690 Mobilzation of piling A5720 Prebored H-pile (5a		0%	8	28 0	09-Aug-19	10-Sep-19			F	-	1		neer's		
		0%	8	3 0	17-Aug-19	21-Aug-19				h	dobi	Izatic	n of p	iling	rigs
A5730 Prebored H-pile (5t	720 Prebored H-pile (5a-P1-2a-P6, 6Nos)	0%	0	28 0	30-Aug-19	02-Oct-19				ļĻ	-		Freb	red	Нp
noroo incontrari pilo (or	730 Prebored H-pile (5b-P1-5b-P6, 6Nos)	0%	25	24 0	03-Oct-19	30-Oct-19		11				∎ ∏ ∎		Pr	
A5740 Pile load test	'40 Pile load test	0%	0	6 0	03-Oct-19	09-Oct-19						4	Pil	loac	l ler
A5750 Post Drilling for Pre	750 Deet Deillie e fee Deele ee ditteitee	0%	0	4 0	10-Oct-19	14-Oct-19						F	1 P	ost Di	rili
RC works for DOU5a	750 Post Drilling for Prebored H-piles													-	
A5590 Open Excavation a	works for DOU5a		0	5 0	15-Oct-19	19-Oct-19		11			1	l II I	- 🖪 🕴	Open	Exc
Actual Work	works for DOU5a	0%	0	0 0							<u> </u>		ا مهم		



Critical Remaining Work

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

		Complete		Duration allowance					Q3			Q4		Q1	Q2	Q3	
A5600	Pile head preparation and weld test	0%	0	4 0	21-Oct-19	24-Oct-19		E			T E	Pile	head prepa	ration and weld test			
A5610	Formwork and steel fixing of pile cap	0%	0	10 0	25-Oct-19	05-Nov-19				i.		H F	omwork ar	nd steel fixing of pile ca	ip		
A5620	Concreting of pile cap	0%	0	2 0	06-Nov-19	07-Nov-19						💾 (oncreting c	of pile cap			
Drainage w													05.0	ec-19, E&M installation			
_E&M install A5625	ation Underground works for cabling duct and trenches	0%	0	18 5	08-Nov-19	28-Nov-19								ground works for cablin			
A5630	Installation of the Activated Carbon Filter System and air duct connection for DOU5b	0%	0	18 2	08-Nov-19								- 1 (The second se	arbon Filter System an	d air duct conn	ection for DOU5b
A5640	Trial Operation and Performance Test of the Activated Carbon Filter System for DOU5b	0%	0	6 0	29-Nov-19								Trial	Operation and Perform	ance Test of the Activa		
CEPT tank	······································		-								╉╼╋╸			ec-19, CEPT tank			
Air ducts of	effluent drop shaft											<u> </u>	05-D	ec-19, Air ducts of efflu			
A7090	Installation of FRP air duct for effluent drop structure	0%	0	25 0	24-Oct-19	21-Nov-19					L -		Installati	ion of FRP air duct for			
A7180	Reliability Test of FRP air ducts for effluent Drop Structure	0%	0	12 0	22-Nov-19	05-Dec-19				1		11			ucts for effluent Drop S	tructure	
Effluent Lau A7100	Inder Delivery of isolation device for on site prototype test	0%	15	6 0	09-Jul-19	15-Jul-19			livery	oficol	ation do	vico for	1.1.1	ec-19, Effluent Launde totype test	n		
A7100 A7110	Installation of the Isolation Device for Effluent Drop Structure for On-site Prototype Test	0%	15	10 0	26-Aug-19	05-Sep-19	-					- i i i i i	I : :		Structure for On-site F	rototyne Test	
A7110	Conduction of On-site Prototype Test of the Isolation Device for Effluent Drop Structure	0%	15	12 0	06-Sep-19	19-Sep-19			·				1 I I I I I I I I I I I I I I I I I I I		ation Device for Effluer	1	re
A7130	Full Scale Installation of Isolation Devices for Effluent Drop Structure	0%	0	38 5	09-Oct-19	21-Nov-19				-			i i		on Devices for Effluent	-i - i	i i i
A7190	Performance test (smoke Test) of the isol ation device for effluent drop structure	0%	0	12 0	22-Nov-19	05-Dec-19						. 4			ast) of the isol ation dev		
CEPT FRP c			-							-	1	++++		ec-19, CEPT FRP cov			
A7140	Delivery of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	6 0	02-Sep-19	07-Sep-19			Ļ	De De	elivery	of FRP	Sliding Cov	er Sealant for On-site	Prototype Test		
A7150	Installation of FRP Sliding Cover Sealant for On-site Prototype Test	0%	3	8 0	09-Sep-19	17-Sep-19				-			1 1	g Cover Sealant for Or			
A7160	Conduction of On-site Prototype Test of FRP Sliding Cover Sealant	0%	3	12 0	18-Sep-19	02-Oct-19				L >	Co	nductio		1 10 1 1	Sliding Cover Sealant	1 1	
A7170	Full Scale Installation of FRP Sliding Cover Sealants for Existing CEPT Tanks	0%	0	40 5	07-Oct-19	21-Nov-19					4				iding Cover Sealants		
A7200	Performance test (Smoke test) of the sealant for FRP sliding covers	0%	0	12 0	22-Nov-19	05-Dec-19						<u> </u>	Perfo	rmance test (Smoke te	st) of the sealant for FI	RP sliding cove	ers
Section 2 of t						-									•		
A2970	Section 2 Completion (665d)	0%	0	0 0		03-May-2											
KD0100	KD A - Completion of all other works including DOUs 1, 2, 4, 5 Polishing stages for FSI (540 days)	0%	0	0 0		29-Dec-20*								esign Submission (AIF			
E&M Design A5760	Submission (AIP) Submission of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	14 0	13-Aug-19	26-Aug-19				Subr					System for DOU1, DO	J2 and DOU5	
A5770	Approval of AIP Design of Wet Chemical Scrubber System for DOU1, DOU2 and DOU5	0%	0	21 0	27-Aug-19	16-Sep-19			F		- i		1 T 1		er System for DOU1, D	-i -i	15
A5780	Submission of AIP Design of the Polishing System for DOU4	0%	0	14 0	27-Aug-19			†•						of the Polishing System			
A5790	Approval of AIP Design of the Polishing System for DOU4	0%	0	21 0	10-Sep-19	30-Sep-19				4	Арр	proval o	f AIP Desig	n of the Polishing Syst	em for DOU4		
A5800	Submission of AIP Design of the Polishing System for DOU1R	0%	0	14 0	27-Aug-19	09-Sep-19			-	📥 §	ubmiss	ion of A	P Design o	of the Polishing System	for DOU1R		
A5810	Approval of AIP Design of the Polishing System for DOU1R	0%	0	21 0	10-Sep-19	30-Sep-19					Арр	proval ø	f AIP Desig	n of the Polishing Syst	em for DOU1R		
A5820	Submission of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	14 0	10-Sep-19	23-Sep-19						1 1 1			ge and Transfer Facilit		
A5830	Approval of AIP Design of NaOH Bulk Storage and Transfer Facilities	0%	23	21 0	24-Sep-19	14-Oct-19						-91 L	- i - i	Ŭ l	brage and Transfer Fac	-i - i	
A5840	Submission of AIP Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14 0	13-Aug-19	26-Aug-19			-						bution System for DOU		
A5850	Approval of AIP Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	21 0	27-Aug-19	16-Sep-19			•						tribution System for DO		* i i i i
A5860	Submission of AIP Design for Upgrading and replacement of the existing local HMI touchscreen	0%	3	14 0	13-Aug-19	26-Aug-19			-		- i		- i ⁻ - i		nent of the existing loca	i i	i i i
A5870	Approval of AIP Design for Upgrading and replacement of the existing local HMI touchscreen	0%	40	21 0	27-Aug-19	16-Sep-19		[]							ement of the existing lo		
A5880	Submission of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including function	0%	3	14 0	27-Aug-19	09-Sep-19			-		- L				ths for DOU Polishing Stems for DOU Polishing	1 1	17 1 1 7
A5890 A5900	Approval of AIP Design of PLC & SCADA Systems for DOU Polishing Systems (including functional Submission of AIP Design of Building Services for DOU Polishing Systems, New Switch/MCC Roor	0%	3	21 0 14 0	10-Sep-19 27-Aug-19	30-Sep-19 09-Sep-19			_			11 1			DOU Polishing Syster		
A5900 A5910	Approval of AIP Design of Building Services for DOU Polishing Systems, New Switch/MCC Rooms	0%	17	21 0	10-Sep-19	30-Sep-19			-						for DOU Polishing System		
A5920	Submission of AIP Design of Fire Services for DOU Polishing Systems, New Switch/MCC Rooms a	0%	3	14 0	10-Sep-19	23-Sep-19									DOU Polishing System		
A5930	Approval of AIP Design of Fire Services for DOU Polishing Systems, New Switch/MCC Rooms and	0%	3	21 0	24-Sep-19	14-Oct-19		†•	• • • •	···• 🖸		- +			for DOU Polishing Syst		
A8000	Submission of AIP Design to power supply, cabling, earthing, lightning protection and interface with	0%	59	14 0	13-Aug-19	26-Aug-19			-	Subi		- 1 C L			arthing, lightning protec	- I - I	- I I I
A8010	Approval of AIP Design fo power supply, cabling, earthing, lightning protection and interface with ex	0%	59	21 0	27-Aug-19	16-Sep-19			-		Approv	al of AlF	P Design fo	power supply, cabling	earthing, lightning pro	tection and inte	erface with ex'tg insta
A8090	Submission of AIP design of networks integration with existing DCS	0%	59	14 0	13-Aug-19	26-Aug-19			-	Subi	ni\$sion	df AIP d	esign of ne	tworks integration with	existing DCS		
A8100	Approval of AIP Design of network integration with existing DCS	0%	59	21 0	27-Aug-19	16-Sep-19			-					network integration wi			
A8110	Submission of AIP design of Redundant fiber network for new SCADA	0%	59	14 0	13-Aug-19	26-Aug-19			-					edundant fiber network	· · · ·		
A8120	Approval of AIP design of Redundant fiber networks for new SCADA	0%	59	21 0	27-Aug-19	16-Sep-19								Redundant fiber netwo			
A8150	Submission of AIP design for upgrading works and modification of ex'tg data, event & Historain serv	0%	59	14 0	13-Aug-19	26-Aug-19		['	-						dification of ex'tg data,		
A8180	Approval of AIP design for upgrading works and modification of extg data, event & Historain server	0%	59	21 0	27-Aug-19	16-Sep-19			-		Approv	al of All	- i T - i		modification of ex'tg da	ta, event & Hist	torain server in DOL
	Submission (DDA) Submission of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14 0	17 Son 10	20 Son 10		[-			Sub	missio		Dec-19, E&M Design S	Scrubbers Filters for E		
A1170 A1180	Review and Comment on DDA Design of Wet Chemical Scrubbers Filters for DOUT, DOU2 and DOUS Review and Comment on DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DO	0%	0	14 0 21 0	17-Sep-19 01-Oct-19										of Wet Chemical Scrub		
A1183	Re-submission of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	7 0	22-Oct-19	28-Oct-19								· · · · · ·	Chemical Scrubbers		1 · · · · · · · · · · · · · · · · · · ·
A1185	Approval of DDA Design of Wet Chemical Scrubbers Filters for DOU1, DOU2 and DOU5	0%	0	14 0	29-Oct-19	11-Nov-19						-	i i	i i Till	hemical Scrubbers Filt	i i	i i i
A1190	Submission of DDA Design of the Polishing System for DOU4	0%	21	14 0	01-Oct-19	14-Oct-19					-			A Design of the Polishi			
A1200	Review and Comment on DDA Design of the Polishing System for DOU4	0%	21	21 0	15-Oct-19	04-Nov-19		F	• • • •						gn of the Polishing Sys	tem for DOU4	
A1210	Re-submission of DDA Design of the Polishing System for DOU4	0%	21	7 0	05-Nov-19										the Polishing System for		
A1260	Approval of DDA Design of the Polishing System for DOU4	0%	21	14 0	12-Nov-19	25-Nov-19									Polishing System for I		
A5940	Submission of DDA Design of the Polishing System for DOU1R	0%	0	14 0	01-Oct-19	14-Oct-19					-	Submis	sion of DD	A Design of the Polishi	ng System for DOU1R		
A5950	Review and Comment on DDA Design of the Polishing System for DOU1R	0%	0	21 0	15-Oct-19	04-Nov-19								*	on of the Polishing Sys		3
A5960	Re-submission of DDA Design of the Polishing System for DOU1R	0%	0	7 0	05-Nov-19		T		ſ			4			the Polishing System for	1 1	
A5970	Approval of DDA Design of the Polishing System for DOU1R	0%	0	14 0	12-Nov-19										Polishing System for I	· · · ·	
A5980	Submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14 0	15-Oct-19	28-Oct-19						Sup			OH bulk storage and tra	1 1	
A5990	Review and Comment on DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	21 0	29-Oct-19	18-Nov-19						┑			esign of the NaOH bul		
A6000	Re-submission of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	7 0	19-Nov-19	25-Nov-19		- -							t of the NaOH bulk stor		
A6010	Approval of DDA Design of the NaOH bulk storage and transfer Facilities	0%	23	14 0	26-Nov-19						- C				the NaOH bulk storage and Distribution Syste	-i -i	- i i i
A6020 A6030	Submission of DDA Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19 19	14 0	17-Sep-19	30-Sep-19					Sub		p 1		and Distribution Syste	1 1	1 2 2 1 1
10030	Review and Comment on DDA Design of Power Supply and Distribution System for DOU Polishing	0%	19	21 0	01-Oct-19	21-Oct-19	li l			11		inevie			and D	iya ibaalori Syst	Control DQU FUIIS[III]
	ual Work Milestone					Contract No	DC	1201	0/1=							~	Sheet 3 of 7

Critical Remaining Work

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Aug-19			Rev.									

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A6040	Re-submission of DDA Design of Power Supply and Distribution System for DOU Polishing System	0%	19	7 0	22-Oct-19	28-Oct-19		Π			L -		upmissior			tion System for DOU Polishing \$y
A6050	Approval of DDA Design of Power Supply and Distribution System for DOU Polishing Systems	0%	19	14 0	29-Oct-19	11-Nov-19							pproval o	DDA Design of Power	Supply and Distributio	n System for DOU Polishing Syste
A6060	Submission of DDA Design of Upgrading and replacement of the existing local HMI touchscreen	0%	40	14 0	17-Sep-19	30-Sep-19				-1	Subr	ission	of DDA D	esign of Upgrading and	replacement of the exis	sting local HMI touchscreen
A6070	Review and Comment on DDA Design of Upgrading and replacement of the existing local HMI touch	0%	40	21 0	01-Oct-19	21-Oct-19						Reviev	and Con	hment on DDA Design c	f Upgrading and replac	ement of the existing local HMI tou
A6080	Re-submission of DDA Design of Upgrading and Upgrading and replacement of the existing local HI	0%	40	7 0	22-Oct-19	28-Oct-19					· -	Re-s	uomissior	n of DDA Design of Upg	rading and Upgrading a	and replacement of the existing loc
A6090	Approval of DDA Design of Upgrading and Upgrading and replacement of the existing local HMI tour	0%	40	14 0	29-Oct-19	11-Nov-19					- L		16 i			I replacement of the existing local I
A6100	Submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	3	14 0	01-Oct-19	14-Oct-19					► <mark>∎</mark> S		-	A Design of PLC & SCA		
A6110	Review and Comment on DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	21 0	15-Oct-19	04-Nov-19						P	- ji - i	i i i t 1	K i i f	stems for DOU Polishing Systems
A6120	Re-submission of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	7 0	05-Nov-19	11-Nov-19					-					for DOU Polishing Systems
A6130	Approval of DDA Design of PLC & SCADA Systems for DOU Polishing Systems	0%	45	14 0	12-Nov-19	25-Nov-19						1 F	ip ii - i			or DOU Polishing Systems
A6140	Submission of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms and	0%	3	14 0	15-Oct-19	28-Oct-19						Suph	- 1i - i			ishing Systems, New MCC Rooms des for DOU Polishing Systems, N
A6150	Review and Comment on DDA Design of Building Services for DOU Polishing Systems, New MCC	0%	3	21 0	29-Oct-19	18-Nov-19										or DOU Polishing Systems, New M
A6160 A6170	Re-submission of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms	0%	3	7 0 14 0	19-Nov-19	25-Nov-19 09-Dec-19						11				DOU Polishing Systems, New MCC
A8170 A8050	Approval of DDA Design of Building Services for DOU Polishing Systems, New MCC Rooms and N Submission of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	59	14 0	26-Nov-19 17-Sep-19	30-Sep-19					Subr	issian		i		ing protection and interface with e
A8060	Review & comment of DDA Design of power supply, cabling, earthing, lightning protection and interface with	0%	59	21 0	01-Oct-19	21-Oct-19					-		- R			arthing, lightning protection and int
A8070	Re-submission of DDA Design of power supply, cabling, earthing, lightning protection and interface	0%	59	7 0	22-Oct-19	28-Oct-19							- i - i	i i në të	A 1977 1 7 1	hing, lightning protection and inter
A8080	Approval of DDA Design of power supply, cabling, earthing, lightning protection and interface with e	0%	59	14 0	29-Oct-19	11-Nov-19	1				-	1 -				ng, lightning protection and interfac
A8280	Submission of DDA Design of networks integration with the existing DCS	0%	59	14 0	17-Sep-19	30-Sep-19					Subr	ission	df DDA D	esign of networks integ	ation with the existing	ФCS
A8290	Review & comment of DDA Design of networks integration with the existing DCS	0%	59	21 0	01-Oct-19	21-Oct-19						Review	& comm	ent of DDA Design of ne	tworks integration with	the existing DCS
A8300	Re-submission of DDA Design of networks integration with the existing DCS	0%	59	7 0	22-Oct-19	28-Oct-19						Re-s	uomissior	n of DDA Design of netw	orks integration with th	ne existing DCS
A8310	Approval of DDA Design of networks integration with the existing DCS	0%	59	14 0	29-Oct-19	11-Nov-19					-		. C	f DDA Design of networ	, , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·
A8320	Submission of DDA Design of redundant fiber networks for new SCADA	0%	59	14 0	17-Sep-19	30-Sep-19			T	-				esign of redundant fiber	5 i i	
A8330	Review & comment of DDA Design of redundant fiber networks for new SCADA	0%	59	21 0	01-Oct-19	21-Oct-19							6 6	ent of DDA Design of re		
A8340	Re-submission of DDA Design of redundant fiber networks for new SCADA	0%	59	7 0	22-Oct-19	28-Oct-19								of DDA Design of redu		
A8350	Approval of DDA Design of redundant fiber networks for new SCADA	0%	59	14 0	29-Oct-19	11-Nov-19							16 3	f DDA Design of redund	i i	
A8360	Submission of DDA Design of upgrading works and modification of ex'tg data, event & Historain ser	0%	59	14 0	17-Sep-19	30-Sep-19	·			····	Subr	1 1	- I' '			ex'tg data, event & Historain server
A8370	Review & comment of DDA Design of upgrading works and modification of extg data, event & Histor	0%	59	21 0	01-Oct-19	21-Oct-19							P 2			dification of ex'tg data, event & His
A8380 A8390	Re-submission of DDA Design of upgrading works and modification of ex'tg data, event & Historain	0% 0%	59 59	7 0 14 0	22-Oct-19 29-Oct-19	28-Oct-19 11-Nov-19							- ji - i			ication of ex'tg data, event & Histor ation of ex'tg data, event & Historai
	Approval of DDA Design of upgrading works and modification of ex'tg data, event & Historain server sotechnical Design Submission (DDA)	0%	29	14 0	29-001-19	11-100-19						-1 ^	10 I	▼ 05-Jan-20, Civil and		
A7880	Submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	01-Oct-19	07-Oct-19				- L	Sub	nissic	6 3	Geotechnical design fo		
A7890	Review and Comment on DDA Geotechnical design for piling works for DOU1R and 4	0%	0	21 0	08-Oct-19	28-Oct-19	1				¢	Revi	w and Co	mment on DDA Geotec	hnical design for piling	works for DOU1R and 4
A7900	Re-submission of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	29-Oct-19	04-Nov-19					5	Fle-	submissi	on of DDA Geotechnica	d design for piling work	s for DOU1R and 4
A7910	Approval of DDA Geotechnical design for piling works for DOU1R and 4	0%	0	7 0	05-Nov-19	11-Nov-19						A	pproval o	DDA Geotechnical des	sign for piling works for	DOU1R and 4
A7920	Submission of DDA structural design for RC works of DOU1R and 4	0%	39	14 0	12-Nov-19	25-Nov-19						┣	Submis	sion of DDA structural	design for RC works of	DOU1R and 4
A7930	Review and Comment on DDA structural design for RC works for DOU1R and 4	0%	39	21 0	26-Nov-19	16-Dec-19						-	T. C. L. L.		.	for RC works for DOU1R and 4
A7940	Re-submission of DDA structural design for RC works for DOU1R and 4	0%	39	10 0	17-Dec-19	26-Dec-19										C works for DOU1R and 4
A7950	Approval of DDA structural design for RC works for DOU1R and 4	0%	39	10 0	27-Dec-19	05-Jan-20								Դեսցմանակություն է է է		works for DOU1R and 4
A7960	Submission of DDA for ABWF design for DOU1R and 4	0%	184	14 0	12-Nov-19	25-Nov-19						-		sion of DDA for ABWF		i i i i
A7970	Review and Comment on DDA ABWF design for DOU1R and 4	0%	184	21 0	26-Nov-19	16-Dec-19	-							eview and Comment on		
A7980	Re-submission of DDA ABWF design for DOU1R and 4	0%	184 184	10 0	17-Dec-19	26-Dec-19				·				Re-submission of DDA		
A7990	Approval of DDAABWF design for DOU1R and 4	0%	184	10 0	27-Dec-19	05-Jan-20										ment and Delivery of Equipment/M
A1320	Procurement of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	90 0	12-Nov-19	09-Feb-20										rubber Systems for DOU1, DOU2
A1330	FAT of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14 0	10-Feb-20	23-Feb-20						ΙT		' i 🛏 🖓 i		r Systems for DOU1, DOU2 and D
A1350	Delivery of Wet Chemical Scrubber Systems for DOU1, DOU2 and DOU5	0%	0	14 0	24-Feb-20	08-Mar-20								Deli	very of Wet Chemical	Scrubber Systems for DOU1, DOL
A1360	Procurement of DOU4 Polishing System	0%	21	76 0	26-Nov-19	09-Feb-20							4	Procureme	nt of DOU4 Polishing S	System
A1380	FAT of DOU4 Polishing System	0%	21	14 0	10-Feb-20	23-Feb-20				-				FAT of	DOU4 Polishing Syster	m
A1500	Delivery of DOU4 Polishing System	0%	21	14 0	24-Feb-20	08-Mar-20								L <mark>►</mark> Deli	ivery of DOU4 Polishin	g System
A6180	Procurement of DOU1R Polishing System	0%	0	76 0	26-Nov-19	09-Feb-20									nt of DOU1R Palishing	
A6190	FAT of DOU1R Polishing System	0%	0	14 0	10-Feb-20	23-Feb-20	ļļ	.				.			DOU1R Polishing Syste	
A6200	Delivery of DOU1R Polishing System	0%	0	14 0	24-Feb-20	08-Mar-20									Very of DOU1R Polishi	
A6210	Procurement of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	76 0	10-Dec-19	23-Feb-20	1 1			-					i i i	orage Tank and Transfer Facilities
A6220	FAT of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14 0	24-Feb-20	08-Mar-20										Tank and Transfer Facilities Storage Tank and Transfer Facilit
A6230	Delivery of NaOH Bulk Storage Tank and Transfer Facilities	0%	23	14 0	09-Mar-20	22-Mar-20	-							i i il <mark>i 199</mark> 4-	Ang tanàn ang taona kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaomini	Storage lank and Transfer Facilit
A6240 A6250	Procurement of Power Supply and Distribution System for DOU Polishing Systems	0%	19 19	90 0 30 0	12-Nov-19 10-Feb-20	09-Feb-20 10-Mar-20	∤ 									Distribution System for DOU Polis
A6250 A6260	FAT of Power Supply and Distribution System for DOU Polishing Systems Delivery of Power Supply and Distribution System for DOU Polishing Systems	0% 0%	19	14 0	10-Feb-20 11-Mar-20	24-Mar-20	1			Ì						ply and Distribution System for DC
A6260 A6270	Procurement of packaged offer for Upgrading and Replacement of the existing local HMI touchscree	0%	40	120 0	12-Nov-19	10-Mar-20	1 1					┝╾╟╴				offer for Upgrading and Replacem
A6290	Delivery of packaged offer for Upgrading and Replacement of the existing local HMI touchscreen	0%	40	14 0	11-Mar-20	24-Mar-20	1					ΙT				offer for Upgrading and Replaceme
A6300	Procurement of PLC and SCADA Systems for DOU Polishing Systems	0%	45	90 0	26-Nov-19	23-Feb-20	1					┥┝╸				DA Systems for DOU Polishing Sys
A6310	FAT of PLC and SCADA Systems for DOU Polishing Systems	0%	45	30 0	24-Feb-20	24-Mar-20	1	++				•••••	-	la a sta a sub sta na s ta <mark>t</mark> i a sub sta su		A Systems for DOU Polishing Syst
A6320	Delivery of hardware of PLC and SCADA Systems for DOU Polishing Systems	0%	45	14 0	25-Mar-20	07-Apr-20	1								2.4	re of PLC and SCADA Systems for
A6330	Procurement of Building Services Equipment for DOU Polishing Systems, New Switch/MCC Rooms	0%	3	90 0	10-Dec-19	08-Mar-20	1								HP 1 1 1	ervices Equipment for DOU Polish
A6340	Delivery of Building Services Equipment for DOU Polishing Systems, New Switch/MCC Rooms and	0%	3	30 0	09-Mar-20	07-Apr-20									Delivery of Building	g Services Equipment for DOU Pol
A6350	Procurement of Fire Services Equipment for DOU Polishing Systems, New MCC Rooms and NaOH	0%	28	90 0	10-Dec-19	08-Mar-20							-	Pro	curement of Fire Servic	es Equipment for DOU Polishing
A7080	Delivery of Fire Services Equipment for DOU Polishing Systems, New MCC Rooms and NaOH Bu	0%	28	30 0	09-Mar-20	07-Apr-20		11							Delivery of Fire Se	ervices Equipment for DOU Polish
DOU 1																
	lation (2nd stage)	001	_		00.11 ==	00.0				1						
A7210	Installation of DOU1 wet scrubber and air duct connection for DOU1	0%	0	175 14	09-Mar-20	08-Oct-20	-									Instal
A7212	Installation of Power supply and disturbution system for DOU polishing systems	0%	16	130 14	25-Mar-20	-	∤ 									Instal ation of P
47222	Upgrading and Replacement of the existing local HMI touchscreen	0%	56	90 14	25-Mar-20	14-Jul-20			5	<u> </u>	<u> </u>		<u> </u>			
Δ	tual Work					Contract I	No. D	C/20	18/17							Sheet 4 of 7
																19-Ju 29-Ai
	emaining Work Summary		Enha	ncement of Deodou	rization Sy	ystem at St	onecu	ıtter	Islan	d Sew	age Tre	atme	nt Worl	ks		29-A
Cr	itical Remaining Work						-									
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Power supp	y a	nd distu	rbution	system	for D	ΡĻ	J polishi	ng syst	ems		
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Date			Revis	ion			Checke	ł	A	pproved	
-Jul-19		Rev.	0			_					
-Aug-19		Rev.	1								

/ ID Activity Name		Activity % Tot Complete	tal Float	Original Time ri Duration allowar		Finish	2019	(3 Q4	Q1	Q2	2020 Q3
A7232 Installation of PLC and SCADA system for DOU p	olishing systems	0%	45	90 14	10-Apr-20	27-Jul-20						Installation of PLC ar
A7242 Installation of Building Service for DOU polishing	system, MCC room	0%	1	180 14	10-Apr-20	12-Nov-20						
A7252 Installation of Fire services for DOU polishing sy	stem, MCC room and NaOH bulk storage compou	0%	31	150 14	10-Apr-20	08-Oct-20					+	
A7292 Software developement for new DOU polishing st	•	0%	38	120 14	10-Apr-20	01-Sep-20		[Software de
A7332 Installation of redundunt fiber networks for new S	CADA	0%	38	30 14	02-Sep-20	08-Oct-20						
Testing and commissioning A7262 Performance Test of the DOU1 wet scrubber		0%	0	45 5	09-Oct-20	22-Nov-20						
	ation and interface test for PLC and SCADA for DC	0%	18	65 5	01-Sep-20	04-Nov-20						
A7275 Hardware, point to point, end to end and function	estfor upgrading and replacement of existing local	0%	66	65 5	15-Jul-20	17-Sep-20						L <mark>→</mark> Hardwa
A7282 Reliability test of the polishing system of DOU1		0%	0	36 0	23-Nov-20	28-Dec-20						
A7302 Reliability test of NaOH bulk Storage and transfe	rsystem	0%	3	30 0	21-Oct-20	19-Nov-20						C
A7312 Performance test of building service for DOU pol	shing system, MCC room and NaOH bulk storage	0%	1	45 5	13-Nov-20	27-Dec-20						
	g system, MCC room and NaOH bulk storage com	0%	36	45 5	09-Oct-20	22-Nov-20						-
DOU 1R Foundation works							····			06 1/20 20	oundation works	
A6376 General Site Clearance and underground uliities	detection/idenification	0%	66	6 0	09-Jul-19	15-Jul-19		Gene	al Site Clearance and undergr			
A6380 Installation and initial survey of building, ground a		0%	66	6 0	16-Jul-19	22-Jul-19		🔲 İnst	llation and initial survey of bui	Iding, ground and ut	lities settlement	
A6395 Pre-drilling for H-pile foundation (3Nos, 2 rigs)		0%	51	10 0	09-Aug-19	20-Aug-19			Pre-drilling for H pile found	ation (3Nos, 2 rigs)		
A6396 Engineer's Review of foundaiton design, rockhear	d coutour and founding level of H-piles	0%	51	24 0	21-Aug-19	17-Sep-19					rockhead ooutour and found	ling level of H-piles
A6397 Demolition of existing concrete plinth		0%	51	12 1	18-Sep-19	02-Oct-19			Demolition of ex	- <u>1 1 11 1</u>		
A6400 Prebored rock-socketted H-pile (P1-6, 6Nos)		0%	17	35 1	12-Nov-19	21-Dec-19					ocketted H-pile (P1-6, 6Nos)
A6410 Pile load test		0%	17		23-Dec-19					Pile Idad test		
A6420 Post Drilling for Prebored H-piles		0%	17	4 0	02-Jan-20	06-Jan-20				Post Drilling	for Prepored H-piles	works
RC works A6455 Open Excavation for pile cap construction		0%	17	6 1	11-Jan-20	17-Jan-20					avation for pile cap constru	ction
A6457 Pile head preparation and weld test		0%	17	6 1	18-Jan-20	24-Jan-20				i 🖃 i i 📕	ad preparation and weld test	i i i i
A6458 Formwork and steel fixing of pile cap		0%	17	15 2	25-Jan-20	11-Feb-20					rmwork and steel fixing of pi	
A6460 Concreting of pile cap		0%	17	2 0	12-Feb-20	13-Feb-20				, <u>1</u>	oncreting of pile cap	
A6470 Concreting of MCC room wall and roof slab		0%	117	24 2	14-Feb-20	16-Mar-20				↓	Concreting of MCC ro	
A6480 Internal finishes of MCC room and Builder works		0%	117	15 2	25-Mar-20	14-Apr-20					Internal finishe	es of MCC room and Builder work
Underground Drainage and cabling works									· · · · · · · · · · · · · · · · · · ·			02-0
A6450 Construction and installation of Cable into existin	g/ new underground cable trench/ ducts	0%	117	60 5	15-Apr-20	25-Jun-20						Construction and installation
A6490 Statutory submission and approval from WSD	2	0%	36	210 14	02-Oct-19*	15-Jun-20						Statutory submission and appro
A6500 Construction of underground watermain for DOU	R	0%	36	90 14	16-Jun-20	02-Oct-20) Cor
E&M installation A6520 Installation of DOU1R polishing Unit and air duct	connection for DOU1	0%	0	175 14	09-Mar-20	08-Oct-20						In
A7290 Installation of Power supply and disturbution syst		0%	17	130 14	25-Mar-20	31-Aug-20					₩	Installation
A7310 Installation of PLC and SCADA system for DOU p		0%	46	90 14	10-Apr-20	27-Jul-20						Installation of PLC ar
A7320 Installation of Building Service for DOU polishing		0%	1	180 14	10-Apr-20	12-Nov-20					• • • • • • • • • • • • • • • • • • •	
A7330 Installation of Fire services for DOU polishing sy	stem, MCC room and NaOH bulk storage compou	0%	21	160 14	10-Apr-20	20-Oct-20		i				
A8260 Software developement for new DOU polishing st	age	0%	39	120 14	10-Apr-20	01-Sep-20					-	Software de
A8270 Installation of redundunt fiber networks for new S	CADA	0%	39	30 14	02-Sep-20	08-Oct-20						ln
Testing and commissioning		201		20 5		00 NL 00						
A7335 Performance Test of the DOU1R polishing unit	alian and interferent test for DLO and OOADA for DC	0%	0		09-Oct-20	23-Nov-20		!				
A7530 Hardware, point/end to point/end, interlock, simul A7550 Reliability test of the polishing system of DOU1R	ation and interface test for PLC and SCADA for DC	0% 0%	19 0	65 5 35 0	01-Sep-20 24-Nov-20	04-Nov-20 28-Dec-20						
A7560 Reliability test of NaOH bulk Storage and transfe		0%	4		21-Oct-20	19-Nov-20						
	shing system, MCC room and NaOH bulk storage	0%	. 1	45 5	13-Nov-20							
	g system, MCC room and NaOH bulk storage com	0%	24		21-Oct-20	04-Dec-20						L=(
DOU 2									· · · · · · · · · · · · · · · · · · ·			
RC works											▼ 07-Mar-20, RC works	
A6825 Open Excavation and for pile cap construction		0%	51	6 0	27-Nov-19					Dpen Excavation and Pile head prepara	for pile cap construction	
A6830 Pile head preparation and weld test A6835 Formwork and steel fixing of pile cap		0%	51 51	10 2 18 2	04-Dec-19 16-Dec-19						nd steel fixing of pile cap	
A6836 Concreting of pile cap		0%	51	2 0	09-Jan-20	10-Jan-20				Concreting		
A6855 Concreting of MCC room wall and roof slab		0%	116		11-Jan-20	07-Feb-20					creting of MCC room wall a	nd roof slab
A6859 Internal finishes of MCC room and Builder works		0%	116		17-Feb-20	07-Mar-20						room and Builder works
Underground Drainage and cabling works			-						│			V 02-
A6810 Construction and installation of Cable into existin	g/ new underground cable trench/ ducts	0%	36	90 2	16-Jun-20	02-Oct-20						Cor
A8130 Statutory submission and approval from WSD		0%	36	210 14	02-Oct-19*	15-Jun-20						Statutory submission and appro
A8140 Construction of underground watermain for DOU2	2	0%	36	90 14	16-Jun-20	02-Oct-20						Cor
E&M installation		0.54	- 1	475 44	44 1: 07	10 4						Inded at the second
A6880 Installation of the chemical scrubber and air duct		0%	51	175 14	11-Jan-20	12-Aug-20						Installation of the
A7450 Installation of Power supply and disturbution syst A7460 Upgrading and Replacement of the existing local		0%	20 30	130 14 120 14	25-Mar-20 25-Mar-20	31-Aug-20 18-Aug-20		<u> </u>				Upgrading and
A7460 Opgrading and Replacement of the existing local A7470 Installation of PLC and SCADA system for DOU p		0%	30 49	90 14	25-Mar-20 10-Apr-20	27-Jul-20						Installation of PLC ar
A7480 Installation of Building Service for DOU polishing		0%	43	180 14	10-Apr-20	12-Nov-20						
	stem, MCC room and NaOH bulk storage compou	0%	31	150 14	10-Apr-20	08-Oct-20						In
A8400 Software developement for new DOU polishing st		0%	44	120 14	10-Apr-20	01-Sep-20						Software de
A8410 Installation of redundunt fiber networks for new S		0%	44	30 14	02-Sep-20	08-Oct-20		1				In
Testing and commissioning												
A6890 Performance Test of chemical scrubber and air de		0%	39	45 5	06-Sep-20	20-Oct-20						
	ation and interface test for PLC and SCADA for DC	0%	24		01-Sep-20	04-Nov-20						
A7600 Hardware, point to point, end to end and function	est for upgrading and replacement of existing loca	0%	37	65 5	19-Aug-20	22-Oct-20						
Actual Work	stone					Contract N	lo. DC	/2018/	7			Sheet 5 of 7
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Remaining Work									nd Sewage Treatment V			

First Programme

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	Q4			Q1			Q2			Q3	
n of	PLC and SCAE	DAsys	em fo	DOU polisi	ning syst	ems					
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	Installatio	n of Fi	e s ['] erv	vices for DO	U polish	ing s	stem, MC	C room	and Na	OH bulk	stora
Softw	are developen	1	1	1							
	·			nt fiber netwo			CADA				
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		Relia	- n i	est of NaOH							
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	-	Perfe	rmano	ce test of fire	service	for D	OU polish	ing sys	tem, MC	C room	and N
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n and	approval from	ו WSD									
	Constructio	on of ur	dergro	ound waterm	ain for D	OU1	R				
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_	V 02-Oct-20,	Under	round	Drainage a	hd cablir	iq wo	ks				
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			- i -	vices for DO	i i		stem, MC	C room	and Na	OH bulk	stora
Softw	are developen	nent fo	new	DOUpolishi	ng stage						
	Installatio	n of re	lundu	nt fiber netwo	orks for r	new S	CADA				
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_	Perforr	nance	Test o	f chemical s	crubber	and a	r duct for	DOU2			
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t 5 c	of 7 19-Jul-19	Date		Revis	UII	+	Checke	J	A	pproved	
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	Activity Name	Activity % Complete	Total Float	Original Duration	Time risk allowance	Start	Finish	2019	9 Q3	Q4	Q1		2020 Q2	Q3	
A7610	Reliability test of the polishing system of DOU2	0%	9	30		20-Nov-20	19-Dec-20			Q4					-
47620	Reliability test of NaOH bulk Storage and transfer system	0%	9	30		21-Oct-20	19-Nov-20								
A7630	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20								
A7640	Performance test of fire service for DOU polishing system, MCC room and NaOH bulk storage com	0%	36	45	5	09-Oct-20	22-Nov-20								f
OU 4 oundation	works										23-Jan-20	Foundation wo	orks		
A6558	General Site Clearance and underground uliities detection/ idenification	0%	36	6	0	27-Jul-19	02-Aug-19		Gen	eral Site Clearance and underg	round uliities delect	ion/ idenificatio	n		
A6560	Installation and initial survey of building, ground and utilities settlement	0%	36	6	0	03-Aug-19	09-Aug-19		Ling Ins	tallation and initial survey of b	uilding, ground and i	utilities settleme	ent		
A6575	Pre-drilling for H-pile foundation (5Nos, 2rigs)	0%	36	12		10-Aug-19	23-Aug-19			Pre-drilling for H-pile foundati					
A6576	Engineer's Review of foundaiton design, rockhead coutour and founding level of H-piles	0%	36	28		24-Aug-19	25-Sep-19			Engineer's Review of		rockhead couto	ur and founding le	vel of H-piles	
A6578 A6580	Mobilzation of piling rigs Prebored H-pile (P1-7, 7Nos)	0%	36 0	3 40		26-Sep-19 12-Nov-19	28-Sep-19 30-Dec-19			Mobilzation of piling	Prebored H-pile	(P1-7 7Nos)			
6590	Pile load test	0%	0			13-Jan-20	18-Jan-20				Pile load te	1: 6: 7			
6600	Post Drilling for Prebored H-piles	0%	0	4	0	20-Jan-20	23-Jan-20				Post Drilli	ng for Prebored	H-piles		
C works	Once Franciska and family and another star	00/	0	10	0	04 1 00	00 E-k 00						🔻 15-May-20, RC		
6635 6637	Open Excavation and for pile cap construction Pile head preparation and weld test	0% 0%	0			24-Jan-20 07-Feb-20	06-Feb-20 17-Feb-20						for pile cap constr on and weld test	uction	
6639	Formwork and steel fixing of pile cap	0%	0	18		18-Feb-20	12-Mar-20						d steel fixing of pi	le cap	
6640	Concreting of pile cap	0%	0	2		13-Mar-20	14-Mar-20				-	Concreting c	i - i - i		
6650	Concreting of MCC room wall and roof slab	0%	61	24	3	16-Mar-20	15-Apr-20				4	Con	creting of MCC roo		
6660	Internal finishes of MCC room and Builder works	0%	61	18	3	24-Apr-20	15-May-20					┕╸═	Internal finishe	es of MCC roon	
-	nd Drainage and cabling works Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	61	00	0	16 May 20	01 Son 20								Cons
3630 3160	Construction and installation of Cable into existing/ new underground cable trench/ ducts Statutory submission and approval from WSD	0% 0%	61 36	90 210		16-May-20 02-Oct-19*	01-Sep-20 15-Jun-20						Statuto	bry submission	
3170	Construction of underground watermain for DOU2	0%	36	90		16-Jun-20	02-Oct-20								
	ation											•			
6700 7400	Installation of the DOU4 polishing Unit and air duct connection for DOU4	0%	0	162		30-Mar-20	14-Oct-20								Instal
7400 7420	Installation of Power supply and disturbution system for DOU polishing systems	0% 0%	20 49	130 90		25-Mar-20	31-Aug-20 27-Jul-20						1 1		
7430	Installation of PLC and SCADA system for DOU polishing systems Installation of Building Service for DOU polishing system, MCC room	0%	49	90 180		10-Apr-20 10-Apr-20	12-Nov-20						; ;		511 01
7440	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150		10-Apr-20	08-Oct-20					+			
3420	Software developement for new DOU polishing stage	0%	44	120		10-Apr-20	01-Sep-20							s s	Softw
3430	Installation of redundunt fiber networks for new SCADA	0%	44	30	14	02-Sep-20	08-Oct-20								
•	comissioning	201		15	-	45.0 1.00	00 NL 00								
6710 7650	Performance Test of the DOU4 polishing Unit Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0% 0%	0 24	45 65		15-Oct-20 01-Sep-20	28-Nov-20 04-Nov-20								
7670	Reliability test of the polishing system of DOU4	0%	0	30		29-Nov-20	28-Dec-20								
7680	Reliability test of NaOH bulk Storage and transfer system	0%	9	30	0	21-Oct-20	19-Nov-20								
7690	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45	5	13-Nov-20	27-Dec-20								
7700 U 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								
ondation	works														
<mark>; works fo</mark> 7005	or DOU5b Open Excavation and for pile cap construction	0%	25	6	4	10 Nev 10	18-Nov-19			- Open F	xcavation and for pi	1 6 3	C works for DOU5	ib	
7010	Pile head preparation and weld test	0%	25	9		12-Nov-19	28-Nov-19				head preparation an	1 1 1	uon		
7015	Formwork and steel fixing of pile cap	0%	25	18		29-Nov-19	19-Dec-19				Formwork and stee		ар		
7018	Concreting of pile cap	0%	25	2	0	20-Dec-19	21-Dec-19			5	Concreting of ple	cap			
7020	Concreting of MCC room wall and roof slab	0%	25	30	3	23-Dec-19	29-Jan-20			-	Concreti	ng of MCC roon	n wall and roof sla		
7025	Internal finishes of MCC room and Builder works	0%	25	18	3	15-Feb-20	10-Mar-20					Internal finish	es of MCC room a	nd Builder wor	orks
dergrour i990	nd Drainage and cabling works Construction and installation of Cable into existing/ new underground cable trench/ ducts	0%	144	90	4	11-Mar-20	29-Jun-20						Co	nstruction and	d inst
190	Statutory submission and approval from WSD	0%	36	210		02-Oct-19*	15-Jun-20						, 5	ory submission	
200	Construction of underground watermain for DOU2	0%	36	90	14	16-Jun-20	02-Oct-20								
	ation														
7060	Installation of the DOU5 polishing system and air duct connection for DOU1	0%	6			09-Mar-20	08-Oct-20					· · · · · · · · · · · · · · · · · · ·			
7345 7365	Installation of Power supply and disturbution system for DOU polishing systems Installation of PLC and SCADA system for DOU polishing systems	0% 0%	13 42	130 90		25-Mar-20 10-Apr-20	31-Aug-20 27-Jul-20						1 1		Instal on of
7375	Installation of Building Service for DOU polishing systems MCC room	0%	42	180		10-Apr-20	12-Nov-20					+			
7385	Installation of Fire services for DOU polishing system, MCC room and NaOH bulk storage compou	0%	31	150		10-Apr-20	08-Oct-20					-			
8440	Software developement for new DOU polishing stage	0%	36	120	14	10-Apr-20	01-Sep-20					÷		s s	Softw
8450	Installation of redundunt fiber networks for new SCADA	0%	36	30	14	02-Sep-20	08-Oct-20								
sting and 7387	commissioning Performance Test of the DOU5 polishing system	0%	6	30	5	09-Oct-20	12-Nov-20								_
7710	Hardware, point/end to point/end, interlock, simulation and interface test for PLC and SCADA for DC	0%	15	65		03-Oct-20 01-Sep-20	04-Nov-20							4	
730	Reliability test of the polishing system of DOU5	0%	0			20-Nov-20	28-Dec-20								
740	Reliability test of NaOH bulk Storage and transfer system	0%	0	30	0	21-Oct-20	19-Nov-20								
750	Performance test of building service for DOU polishing system, MCC room and NaOH bulk storage	0%	1	45		13-Nov-20	27-Dec-20								
7760	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								
OH bulk s works	torage compound											06-Mar-20, RC	works		
7230	Demolition of existing Storage compound	0%	0	50	5	27-Aug-19	24-Oct-19		L -1	🦰	existing Storage cor	npound			
7240	Excavation of NaOH bulk storage compound	0%	0			25-Oct-19	07-Nov-19			· · 💾 ·	n of NaOH bulk stor				
7250	Carryout plate load test for foundation Review design by Project Manager Respresentative	0% 0%	0	24 28		08-Nov-19 06-Dec-19	05-Dec-19			Ca	rryout plate load tes	11 11	nager Respresent	retive	
7260															

Critical Remaining Work

First Programme

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			Relia	1				-	and transf				
		-							service f		í i		
	-	<u> </u>	Perf	rm	ance tes	t of fire	service	for D	OU polish	ing sys	tem, MC	C room	and N
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		-Jul-19 -Aug-19			Rev.			+					
	29	/ wy- 19			Li iev.	<u>.</u>					l		

ivity ID	Activity Name	Activity %				Start	Finish	201	9				2020		2021		
		Complete		Duration	on allowance				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
A7270	RC works for NaOH bulk storage compound	0%	C	45	5 5	11-Jan-20	06-Mar-20				RC	works for NaOH bulk					
E&M insta	allation													95-Sep-20, E&M insta	allation		
A7280	Installation NaOH storage tanks and associated transfer pump	0%	C	120	20	15-Apr-20	05-Sep-20							nstallation NaOH s	orag <mark>e</mark> tanks and associated trans	er pump	
Testing a	nd Commissioning														9-Nov-20, Testing and Commissi	ning	
A7390	Performance test of the NaOH bulk storage compound and transfer system	0%	C	75	5 15	06-Sep-20	19-Nov-20							P	erformance test of the NaOH bul	storage compound and	l transfer syster
Statutary I	nspection by FSD														V	🛛 🔽 03-May-21, Stat	tutary Inspectior
A7770	Submission of Application for FS inspection ot FSD	0%	C	21	1 0	29-Dec-20	18-Jan-21								Submission of App	cation for FS inspectior	n ot FSD
A7780	FS inspection by FSD	0%	C	14	1 2	19-Jan-21	01-Feb-21								FS inspection I	y F <mark>S</mark> D	
A7790	System/ Defect rectification	0%	C	4() 5	02-Feb-21	13-Mar-21								Syst	m/ Defect rectification	
A7800	Submission of application for FS reinspection to FSD	0%	C	21	0	14-Mar-21	03-Apr-21									Submission of applicati	ion for FS reinsp
A7810	FS re-inspection by FSD	0%	C	14	1 2	04-Apr-21	17-Apr-21									FS re-inspection by	FSD
A7820	Issue FS certificates	0%	C	15	5 2	18-Apr-21	02-May-21									Issue FS certific	cates
A7830	Works completion for Handover	0%	C	1	1 0	03-May-21	03-May-21									- Works completi	ion for Handove
Handover	of E&M equipment					,									v	🛛 🕶 03-May-21, Han	ndover of E&M e
A8210	Submission of O&M manual, Training manual and spare part list	0%	C	30)	30-Dec-20*	28-Jan-21								Submission of C	&M manual, Training ma	anual and spare
A8220	Submission of final version of training manual	0%	C	30)	29-Jan-21	27-Feb-21								Submiss	on of final version of tra	aining manual
A8230	O&M training to DSD/ST2	0%	C	14	1	28-Feb-21	13-Mar-21		iiii	·						tra ning to D\$D/ST2	
A8240	Handover spare parts	0%	C	30)	14-Mar-21	12-Apr-21	1								Handover spare parts	s
A8250	Handover of Final version of O&M manual	0%	C	2	1	13-Apr-21	03-May-21	1								Handover of Fin	nal version of O

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

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