Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2009/10 and DC/2009/17

Consolidated Monthly Environmental Monitoring and Audit Report March 2018

(Version 1.0)

Certified By

(Environmental Team Leader)

REMARKS:

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

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CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

MOTT MACDONALD

CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
2A Pokfulam Road, Hong Kong

Attn: Mr. Danny Tang

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

Our Reference
GCB/AFK/DC/bw/
T261332/22.01/L-1313

Submission of Monthly EM&A Consolidated Report for Stonecutters Island Sewage Treatment Works for March 2018 (Issue No. 100)

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

13 April 2018

By Post

Dear Sir,

We refer to the captioned consolidated report summarising the key information of the construction phase Monthly EM&A Reports for Contract Nos. DC/2009/10 and 2009/17 at Stonecutters Island Sewage Treatment Works under Harbour Area Treatment Scheme Stage 2A. We hereby verify the consolidated report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker
T +852 2828 5757
anne.kerr@mottmac.com

c.c.

Ove Arup & Partners HK Ltd.	Mr. Ted Y F Tang	Fax: 2370 4377
Cinotech Consultants Ltd.	Dr. Priscilla Choy	By email

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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan
SCISTW	Stonecutters Island Sewage Treatment Works
HATS 2A	Harbour Area Treatment Scheme Stage 2A

EXECUTIVE SUMMARY

Introduction

1. This is the 100th Consolidated Environmental Monitoring and Audit (EM&A) Report summaries the key information of EM&A monthly reports for the following construction contracts at the Stonecutters Island Sewage Treatment Works (SCISTW) under the Project of Harbour Area Treatment Scheme Stage 2A (the Project) and prepared by Cinotech Consultants Limited, the Environmental Team (ET) for Contract no. DC/2009/10.

    - Contract no. DC/2009/17 – Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities;
    - Contract no. DC/2009/10 – Upgrading Works at Stonecutters Island Sewage Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities.

2. The above-mentioned Contracts are under the same Environmental Permit (EP) No. EP-322/2008/G and separate ETs were appointed under each contract pursuant to Condition 2.1 of the EP.

3. This report is a contractual requirement under Contract No. DC/2009/10 to provide a consolidated monthly summary of the EM&A works at SCISTW for ease of reference. Each contract is administered under their respective contract by different project teams including the Engineer, the Engineer's Representatives, the Contractor, and the ET.

4. Contract DC/2007/23 in the SCISTW has completed all major construction works in the Stonecutters Island on 16 October 2015.

5. Contract DC/2009/19 in the SCISTW has completed all major construction works in the Stonecutters Island on 5 March 2015.

6. Contract DC/2009/18 in the SCISTW has completed all major construction works in the Stonecutters Island on 25 October 2017.

7. This Report documents the findings of EM&A Works for the Project covering the period in March 2018.

8. The details of the EM&A for individual contracts can be found in the separate EM&A monthly reports. In case of ambiguity and discrepancy, the individual EM&A report shall prevail. The Executive Summaries and Web Sites for the individual contracts are shown below:

Table I Summary Table for Executive Summaries and Web Sites:

Contract no.	ES/Web Site	Details:
DC/2009/17	Executive Summary	The air quality and noise monitoring stations under this contract were covered by other contracts at SCISTW. The monitoring data would be summarized in this monthly EM&A report.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC%202009%2017/EMA%20Report-DC200917.html
DC/2009/10	Executive Summary	At SCISTW, air quality monitoring station AM6a, AM7, AM8 and noise monitoring station NM5, NM6 were monitored by ET for Contract no. DC/2009/10.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC200910/EMA%20Report-DC200910.html

Environmental Monitoring and Audit Works

9. The environmental monitoring works in the Project were covered by the ETs for the Contracts: DC/2009/10 and DC/2009/17. The site audits were conducted once per week for each contract by their ETs.

10. Summary of the non-compliance of the reporting month is tabulated in **Table II**.

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

Monitored By	Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
			Action Level	Limit Level	Action Level	Limit Level	
DC/2009/10	AM6a	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	
	AM7	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
	AM8	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
DC/2009/10	NM5	Noise	0	0	0	0	
	NM6		0	0	0	0	

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

13. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance for normal working hours and restricted hours were recorded in the reporting month.

Key Information in the Reporting Month

14. Summary of key information in the reporting month is tabulated in **Table III**.

Table III Monthly Consolidated Summary Table for Key Information

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint	0	---	N/A	N/A	---
Status of EP submissions	1	Monthly Consolidated EM&A Report for Stonecutters Island Sewage Treatment Works for February 2018	Submitted to EPD	No comment	---

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Summons & Prosecutions	0	--	N/A	N/A	---

Key Information in the EIA Report

15. According to the EIA Report, air quality, noise, water quality, ecology and landscape and visual would be the key environmental issues during the construction of the project. Details of the implementation of mitigation measures for the two contracts are provided in the **Appendix J**.

1. INTRODUCTION

Background

1.1 Harbour Area Treatment Scheme (HATS) Stage 2A is a designated project (Register No. : AEIAR-121/2008). The Environmental Permit (Permit No. EP-322/2008/G) for the Project 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.

1.2 The general location plan for the Contracts: DC/2009/10 and DC/2009/17 are shown in **Figures 1 to Figure 3**.

1.3 The environmental permit (EP) was issued for the whole HATS Stage 2A construction works. The ET for the Contract DC/2009/10 is contractually responsible for consolidating the key information from all monthly EM&A reports from the ETs of other Contracts at SCISTW into a single monthly summary for ease of reference.

1.4 The 1st to 11th consolidated monthly EM&A reports were prepared by Ove Arup & Partners Hong Kong Ltd (Arup) and submitted to EPD. From November 2010 onwards, the 12th and subsequent consolidated monthly EM&A report will be prepared and submitted by Cinotech Consultant Limited, the ET for the Contracts DC/2009/10 and DC/2009/17.

1.5 This is the 100th consolidated monthly EM&A report summarizing the EM&A works conducted for the Project at SCISTW in March 2018.

1.6 The monthly EM&A reports for each contract were prepared and certified by separate ETs and subsequently verified by the Independent Environmental Checker (IEC) for the Project. All individual monthly EM&A Reports are provided in the Project Website.

Current Contracts at SCISTW

1.7 The major Contracts at SCISTW and their scope of works are provided below:

Contract no. DC/2009/10

- Construction of a main pumping station;
- The extension of chemically enhanced primary treatment tanks; and
- The construction of other ancillary facilities at Stonecutters Island Sewage Treatment Works.

Contract no. DC/2009/17

- Demolition of the existing structures including vehicle washing facilities, Sludge Silo Building, Sludge Dewatering Building, process water storage tanks, polyelectrolyte storage tanks, ADF barging facilities and all associated plant and equipment;
- Construction of Sludge Dewatering Building, Sludge Cake Silos, Sludge Conveyor Bridges, Sludge Storage Tank, Deodourisation Units, Workshop Building, Process Water Storage Tanks and Pumping System;
- Construction of roof landscaping including irrigation system for the Sludge Dewatering Building and Workshop Building;
- Construction of chemical unloading facilities and the chemical pipe trench for the Disinfection Facilities; and
- Construction of associated Electrical, Mechanical, Building Services, Fire Services and Process Installation, Odour Control System and Temporary Vehicle Wash Facilities.

Project Organizations

1.8 The key contacts of current contracts are provided in Table 1.1.

Table 1.1 Key Project Contacts

Contract No./ Position	DC/2009/10	DC/2009/17
Contract Title:	Upgrading Works at SCISTW - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities	Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities
Consultant	Ove Arup & Partners HK Ltd	Ove Arup & Partners HK Ltd
The Engineer	S.Y.Chan (Tel: 2528 3031)	S.Y.Chan (Tel: 2528 3031)
The Engineer Representative	Mr Ted Tang (Tel: 2370 4311)	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Ms Natalie Kwok (Tel: 2370 4356)	Ms Natalie Kwok (Tel: 2370 4356)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)	Dr. Anne Kerr (Tel:2828 5757)
Contractor	Sun Fook Kong – Biwater Joint Venture	China State- ATAL Joint Venture
Site Agent	Mr. Keith Ho (Tel: 2620 0070)	Mr. Charles Tse (Tel: 9270 3384)
Environmental Officer	Mr. Leo Leung (Tel:2620 0070)	Mr. Leo Leung (Tel: 2370 3010)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Construction Programme

1.9 The construction program for the two contracts at SCISTW are provided in **Appendix M**. Major construction works undertaken during the reporting month include:

Table 1.2 Construction Works in the Reporting Month

Contract No.	Construction Works in the Reporting Month
DC/2009/17	Portion 6: • The painting works at Workshop Building was in progress. • E&M installation for Southern Sludge Cake Silo, Workshop Building, DOU5 and DOU6B was in progress. External Works: • The road surface reinstatement was in progress.
DC/2009/10	Section 3 - MPS2 • Defects rectification for handover to ST2 • Installation of FRP platform and Handrailing in Inlet Chamber • Fire detection system and sprinkler installation at MPS2 • Process water pipework modification for WSD connection works • Weather Station and H2S Sensors installation Section 5 – External works • DN1200 NWK overflow pipes • External underground drainage works and cable drawpits • CLP trench modification Section 5 - Polymer Storage Building • Green Roof installation Section 5 - (Refurbishment works) • Synthetic timber Installation Chemical Dosing bldg and flow distribution chamber Pump Upgrading • Manufacturing of first pump propeller

Summary of EM&A Requirements

1.10 The EM&A programme requires construction phase monitoring for air quality and noise, as well as site audits covering environmental mitigation measures, including landscape and visual impact, waste/chemicals management, and general compliance with the EM&A Manual and relevant permits/licenses. 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 summarized the monitoring results, observations, locations, equipment, frequency, methodology and QA/QC procedures for the monitoring parameter of dust, noise levels, and audit works conducted for the Project in March 2018.

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. The original location of AM6 was inaccessible due to planned construction works and site area handover. Alternative monitoring station AM6a was proposed and adopted for subsequent impact monitoring from 4th January 2016 onward.

2.3 **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1 and 3**.

Table 2.1 Locations for Air Quality Monitoring

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

Monitoring Equipment

2.4 The monitoring methodology and QA/QC procedure for monitoring equipment are presented in the monthly reports for Contracts DC/2009/10.

Monitoring Parameters, Frequency and Duration

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

2.6 The air quality monitoring schedule for the reporting period is shown in **Appendix B**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Period	Frequency
All monitoring locations	1-hour TSP	0700-1900 hrs	3 times/ every 6 days
	24-hour TSP	0000-2400 hrs	once in every 6 days

Monitoring Methodology and QA/QC Procedure

2.7 The monitoring methodology and QA/QC procedure for monitoring equipment are presented in the monthly reports for Contracts DC/2009/10.

Results and Observations

2.8 **Table 2.4** summaries the air quality monitoring results at AM6a, AM7 and AM8 in reporting month.

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

Air Quality Monitoring Station	Average μgm^{-3}	Range μgm^{-3}	Action Level μgm^{-3}	Limit Level μgm^{-3}
1 hour TSP				
AM6a	47	17 - 98	346	500
AM7	32.6	104.3 – 262.7	322	
AM8	19.8	82.2 – 251.1	307	
24 hours TSP				
AM6a	41	23 – 58	196	260
AM7	87	33- 142	207	
AM8	61	34 - 110	158	

2.9 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance is presented in **Appendix G**.

2.10 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance is presented in **Appendix G**.

2.11 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix D**.

2.12 According to the field observations, the identified dust sources at the monitoring stations were mainly from loading of material, vehicles movement and construction works in site.

3. NOISE

Monitoring Requirements

3.1 Three noise monitoring stations, namely NM5 and NM6 were 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. **Figures 1 and 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Station	Responsible Contracts	Location of Measurement
NM5	DC/2009/10	Near FSD Diving Rescue and Training Centre
NM6		Customs' Marine Base

Monitoring Equipment

3.3 Copies of calibration certificates were shown in **Appendix C** to summarize the noise monitoring equipment used during the reporting month.

Monitoring Parameters, Frequency and Duration

3.4 The noise monitoring schedule is shown in **Appendix B**.

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM5 NM6	L_{eq}(30 min.) dB(A)	0700-1900 hrs on weekdays	Once per week
	L_{eq}(5 min.) dB(A)	During restricted hours	Weekly monitoring to be conducted if construction works were scheduled

Monitoring Methodology and QA/QC Procedures

3.6 The monitoring methodology and QA/QC procedure are presented in the monthly reports of the Contract DC/2009/10.

Results and Observations

3.7 **Table 3.4** summaries the noise monitoring results at NM5 and NM6 in reporting month.

Table 3.4 Summary of Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Monitoring Station	Range, dB(A) L_{eq} (30 min.)	Limit Level ,dB(A) L_{eq} (30 min.)
NM5	63.8 - 71.7	75.0
NM6	62.8 – 68.9	

3.8 All construction noise monitoring at two designated locations were conducted by their ETs as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance is presented in **Appendix G**. Noise monitoring results and graphical presentations are shown in **Appendix E**.

3.9 The major noise sources identified at the designated noise monitoring stations were generated by on-site vehicle movement and construction equipment in the Stonecutters Island STW.

4. ENVIRONMENTAL AUDIT

Site Audits

4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the each Project site.

4.2 Site inspections were undertaken every week during the reporting month to ensure the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting month in accordance to section 11.10 of the EM&A Manual. No non-compliance was observed during the site inspections.

4.3 The summaries of site audits for the two contracts are attached in **Appendix H**. No non-compliance was observed during the site audits.

Review of Environmental Monitoring Procedures

4.4 The monitoring works conducted by the monitoring teams of respective Contracts and were inspected regularly by their ETs.

Status of Environmental Licensing and Permitting

4.5 All permits/licenses obtained for the each Contract are summarized in **Appendix F**.

Status of Waste Management

4.6 The amount of wastes generated by the activities of the two contracts in the reporting month is the following:

Table 4.2 Summary of Amount of Waste Generated in Reporting Month

Contract	Inert C&D[1] Materials	Other C&D[2] Waste	Chemical Waste	Marine Deposit		
				Type 1 (m^3)	Type 2 (m^3)	Type 3 (Tonnes)
DC/2009/10	203(m^3)	7(m^3)	180 kg	0	0	0
DC/2009/17	49(m^3)	9(ton)	0	0	0	0

Remark:
1: Inert C&D Materials includes Broken Concrete/Rock, Inert C&D waste reused in the Contract/other Project and those disposed to Public Fill.
2: Other C&D Waste includes Metals, Paper Cardboard packaging, plastic (kg) and other General Refuse (m^3, ton).

4.7 The disposal location of wastes generated by the activities of the two contracts is shown in **Table 4.3**:

Table 4.3 Summary of Disposal Location of Waste Generated in Reporting Month

Contract No.	Disposal Location of Wastes in the Report Month
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill
DC/2009/17	

4.8 The summaries of amount of waste generated in the two contracts could be referred to respective monthly report.

Implementation Status of Environmental Mitigation Measures

4.9 Details of the implementation of mitigation measures for the two contracts are provided in the **Appendix J**.

4.10 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Appendix H**.

Implementation Status of Event Action Plans

4.11 The Event Action Plans for air quality and noise are presented in **Appendix I.**

1-hr TSP

4.12 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.13 No Action/Limit Level exceedance was recorded.

Construction Noise

4.14 No Action/Limit Level exceedance for normal working hours was recorded in the reporting month. Summary of exceedance is presented in **Appendix G**.

Summary of Complaints and Prosecutions

4.15 No environmental complaint and prosecution was received at SCISTW for the two contracts in the reporting month.

4.16 There were no environmental complaint and prosecution received since the commencement of the two contracts. The Complaint Log is presented in **Appendix L**.

5. LANDSCAPE AND VISUAL MONITORING

Implementation Status of the Landscape and Visual Mitigation Measures

5.1 Monthly Landscape and Visual Monitoring for Contract no. DC/2009/10 and DC/2009/17 was carried out to check the implementation status of the Landscape and Visual Mitigation Measures conducted by the two contracts in the SCISTW. Details of the Mitigation Measures are provided in Section F of **Appendix J.**

Summary of Monthly Observation

5.2 No observation was identified in the SCISTW during the Monthly Landscape and Visual Site Audits for each Contract during the reporting month. The Audit Summary is presented in **Appendix K**.

6. FUTURE KEY ISSUES

Key Issues for the Coming Month

6.1 Key environmental issues in the coming month include:

- Storage of chemicals/fuel and chemical waste/waste oil on-site;
- Over-flooding of drainage system during rainy days;
- Leakage of oil and other chemicals from equipment;
- Generation of site runoff during rainy days;
- Dust generation from open stockpiles and dusty haul roads during dry days; and
- Maintenance problems with the AquaSed water treatment facilities.

Monitoring Schedule for the Next Month

6.2 The tentative environmental monitoring schedules for the next month are shown in **Appendix B**.

Construction Program for the Next Month

6.3 The tentative construction programs are provided in **Appendix M**.

7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

7.1 Environmental monitoring and audit works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

7.4 No Action/Limit Level exceedance for normal working hours and restricted hours was recorded in the reporting month. Summary of exceedance is presented in **Appendix G**.

Environmental Audit

7.5 Environmental site audits were conducted on weekly basis in the reporting month. No non-compliance was recorded.

Complaint and Prosecution

7.6 No environmental complaint and prosecution was received in the reporting month.

Recommendations for the coming reporting month:

7.7 The following recommendations were made for the coming reporting month:

Air Quality

- To regularly maintain the machinery and vehicles on site;
- To mitigate dust generation by adequate water spraying or covering by tarpaulin during dry days;
- To cover the stockpile with tarpaulin to reduce dust generation;
- To follow up any exceedance caused by the construction works; and
- To implement dust suppression measures on all haul roads, stockpiles, dried/unpaved surfaces and excavation/road breaking 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;

Water Quality

- To identify any potential discharge of surface run-off from the construction site;
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed;
- To clear the sediment in the wastewater treatment tanks regularly;
- To provide adequate wastewater treatment facilities to treat the wastewater generated during construction works and heavy rain; and
- The discharged water quality must meet the requirements specified in the discharge licence.

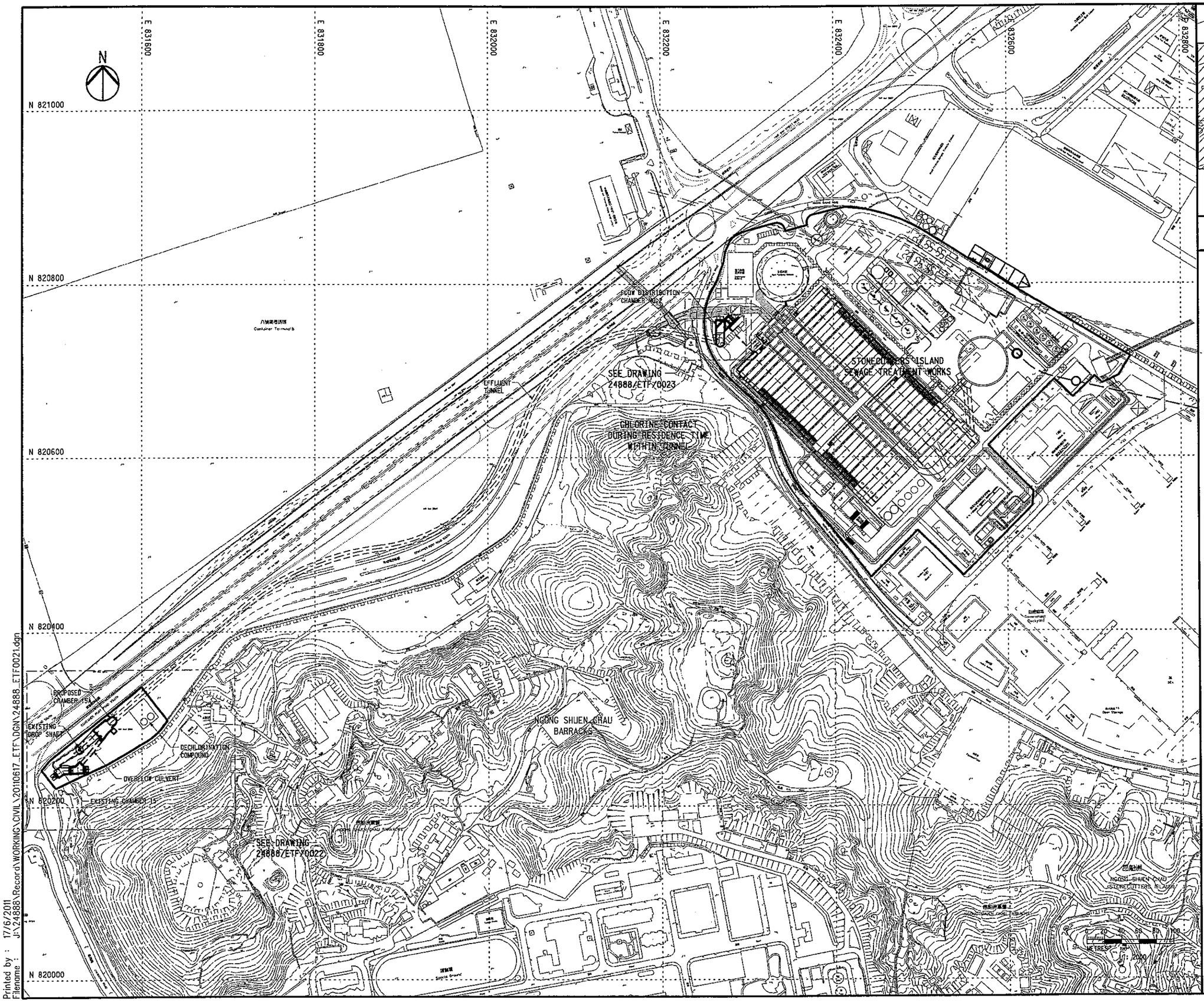
Waste/Chemical Management

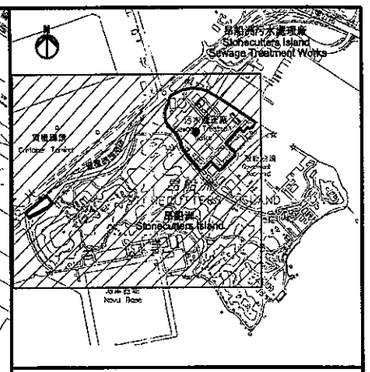
- To provide proper rubbish bins / skips for waste collection;
- To check for any accumulation of wasted materials or rubbish on site;
- To provide proper storage area or drip trays for oil containers/ equipment on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To well maintain the equipment and drip trays to avoid oil leakage; and
- To avoid improper handling or storage of oil drum on site.

Landscape and Visual

- To erect and maintain the protection fence around the retained tree within the site area; and
- To avoid placing any construction materials in the tree protection zone.

FIGURES





KEY PLAN

LEGEND:

BOUNDARY OF SCISTW

ALIGNMENT OF EFFLUENT TUNNEL

Rev	Description	By	Date
0	ISSUE FOR CONSTRUCTION	PW	06/11

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project title

Contract No. DC/2009/18
Harbour Area Treatment Scheme Stage 2A-Upgrading Works at
Stonecutters Island Sewage Treatment Works-Effluent Tunnel and Disinfection Facilities

Drawing title

GENERAL LAYOUT
(SHEET 1)

Drawing no.			Rev.
24888/ETF/0021			0
Drawn WM	Date 08/10	Checked PW	Approved DP
Scale 1:2000 @A1		Status WORKING	

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DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

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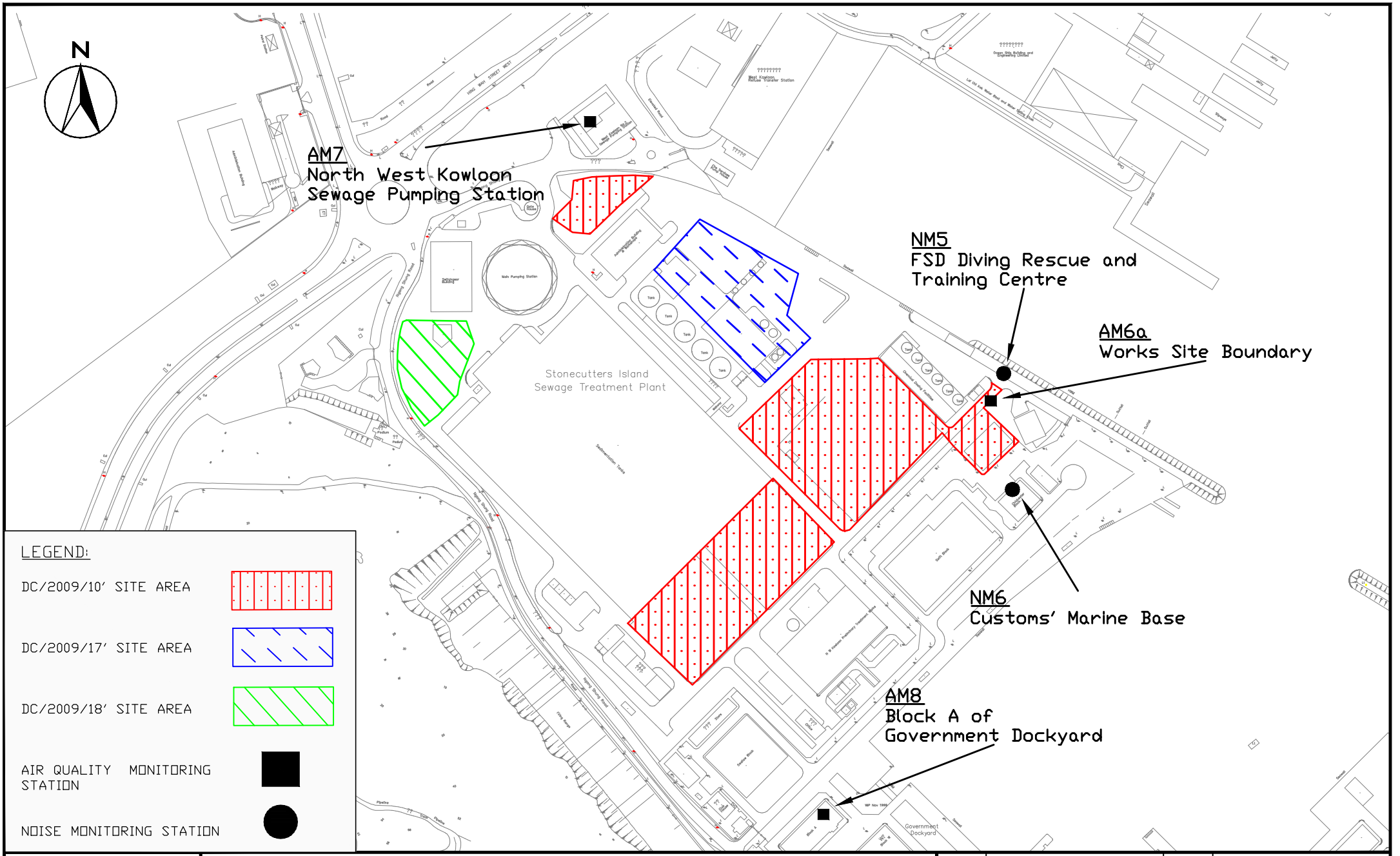

CINOTECH
Cinotech Consultants Limited

Contract No: DC/2009/10
HATS 2A - Upgrading Main Pumping Station,Sedimentation Tanks and Ancillary Facilities at SCISTW

General Location Plan of the Project and Locations of Air Quality and Noise Monitoring Stations

SCALE	N.T.S	DATE	11/2015
CHECK	–	DRAWN	VW
JOB No.	MA11007	FIGURE NO.	2
		REV	–

APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix A Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6a	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Restricted Hours (Evening Time) All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during the day-time and evening (0700 to 2300 hours)	N/A	70(1)
	Restricted Hours (Night Time) All days during the night-time (2300 to 0700 hours)	N/A	55(1)

Note(1): Construction Noise Criteria for activity other than Percussive Pilling.

APPENDIX B
ENVIRONMENTAL MONITORING SCHEDULES

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Impact Air Quality and Noise Monitoring Schedule (March 2018)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Mar	2-Mar	3-Mar
					24 hr TSP	
4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar
	1hr TSP X 3 Noise				1hr TSP X 3	
				24 hr TSP		
11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar
			1hr TSP X 3 Noise			
		24 hr TSP				
18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar
		1hr TSP X 3 Noise				
	24 hr TSP				24 hr TSP	
25-Mar	26-Mar	27-Mar	28-Mar	29-Mar	**30-Mar**	**31-Mar**
	1hr TSP X 3 Noise			1hr TSP X 3		
			24 hr TSP			

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station
AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6a - Works Site Boundary

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (April 2018)

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

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station
AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6a - Works Site Boundary

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

APPENDIX C
CALIBRATION CERTIFICATES OF THE ENVIRONMENTAL MONITORING EQUIPMENT

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/56/0014

Station: AM6 - Works Site Boundary Operator: WK

Date: 31-Jan-18 Next Due Date: 30-Mar-18

Equipment No.: A-01-56 Serial No. 2353

Ambient Condition			
Temperature, Ta (K)	283.1	Pressure, Pa (mmHg)	767.5

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.4	3.63	63.69	8.1	2.93
2	10.7	3.37	59.22	6.9	2.71
3	7.5	2.82	49.72	5.3	2.37
4	5.3	2.37	41.93	3.6	1.96
5	3.4	1.90	33.75	2.4	1.60

By Linear Regression of Y on X

Slope , mw = **0.0443** **Intercept, bw =** **0.1124**

Correlation coefficient* = **0.9981**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.83**

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 31/1/2018

Checked by: [illegible] Signature: [illegible] Date: 31 January 2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0036

Station: AM7 - North West Kowloon Sewage Pumping Station Operator: WK

Date: 25-Jan-18 Next Due Date: 24-Mar-18

Equipment No.: A-01-55 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	291.6	Pressure, Pa (mmHg)	763

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.4	3.42	60.04	6.7	2.62
2	9.9	3.19	56.01	5.7	2.42
3	8.2	2.90	51.05	4.8	2.22
4	5.3	2.33	41.21	3.1	1.78
5	3.4	1.87	33.17	2.2	1.50

By Linear Regression of Y on X

Slope , mw = 0.0417 **Intercept, bw =** 0.0938

Correlation coefficient* = 0.9987

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.47**

Remarks:

Conducted by: WK Tang Signature: Kwtang Date: 25-1-2018

Checked by: AV Signature: Date: 25 January 2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0037

Station: AM7 - North West Kowloon Sewage Pumping Station Operator: MH

Date: 26-Mar-18 Next Due Date: 25-May-18

Equipment No.: A-01-55 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	297	Pressure, Pa (mmHg)	764.7

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.7	3.44	58.73	6.9	2.64
2	9.6	3.11	53.20	5.8	2.42
3	8.1	2.86	48.87	4.7	2.18
4	5.4	2.33	39.90	3.3	1.83
5	3.3	1.83	31.19	2.1	1.46

By Linear Regression of Y on X

Slope , mw = **0.0431** **Intercept, bw =** **0.1046**

Correlation coefficient* = **0.9991**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.80**

Remarks:

Conducted by: LEE MAN HEI Signature: Lei Date: 26-3-2018

Checked by: WK Tang Signature: Kwai Date: 26/3/2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0035

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

Date: 25-Jan-18 Next Due Date: 24-Mar-18

Equipment No.: A-01-68 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	292	Pressure, Pa (mmHg)	762.7

Orifice Transfer Standard Information					
Serial No.	0993	Slope, mc	0.0578	Intercept, bc	-0.04890
Last Calibration Date:	28-Feb-17	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	27-Feb-18	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.6	3.45	60.51	7.0	2.68
2	9.8	3.17	55.68	5.9	2.46
3	7.5	2.77	48.82	4.7	2.19
4	5.1	2.29	40.41	3.3	1.84
5	3.4	1.87	33.15	2.2	1.50

By Linear Regression of Y on X

Slope , mw = 0.0425 **Intercept, bw :** 0.1073

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.65**

Remarks:

Conducted by: wk.Tang Signature: K.Wan Date: 25-1-2018

Checked by: BV Signature: Date: 25 January 2018

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0036

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

Date: 26-Mar-18 Next Due Date: 25-May-18

Equipment No.: A-01-68 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	296.6	Pressure, Pa (mmHg)	763.9

Orifice Transfer Standard Information					
Serial No.	2896	Slope, mc	0.0585	Intercept, bc	-0.00045
Last Calibration Date:	13-Feb-18	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	13-Feb-19	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.5	3.41	58.23	7.2	2.70
2	9.7	3.13	53.48	6.3	2.52
3	7.2	2.70	46.08	4.7	2.18
4	5.3	2.31	39.54	3.4	1.85
5	3.4	1.85	31.67	2.3	1.52

By Linear Regression of Y on X

Slope , mw = 0.0450 **Intercept, bw =** 0.0939

Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.08**

Remarks:

Conducted by: LEE MAN HOI Signature: [signature] Date: 26-3-2018

Checked by: WK Tang Signature: [signature] Date: 26/3/2018

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 28, 2017 Rootsmeter S/N 0438320 Ta (K) - 294
Operator Tisch Orifice I.D. - 0993 Pa (mm) - 750.57

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3860	3.2	2.00
2	NA	NA	1.00	0.9910	6.4	4.00
3	NA	NA	1.00	0.8840	7.9	5.00
4	NA	NA	1.00	0.8430	8.7	5.50
5	NA	NA	1.00	0.6970	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9967	0.7191	1.4149		0.9957	0.7184	0.8851
0.9925	1.0015	2.0010		0.9915	1.0005	1.2517
0.9904	1.1204	2.2372		0.9894	1.1192	1.3995
0.9894	1.1737	2.3464		0.9884	1.1725	1.4678
0.9842	1.4120	2.8299		0.9832	1.4106	1.7702

Qstd slope (m) =	2.04055	Qa slope (m) =	1.27776
intercept (b) =	-0.04890	intercept (b) =	-0.03059
coefficient (r) =	0.99995	coefficient (r) =	0.99995
y axis = SQRT[H2O(Pa/760)(298/Ta)]		y axis = SQRT[H2O(Ta/Pa)]	

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

TISCH Environmental

RECALIBRATION DUE DATE:
February 13, 2019

Certificate of Calibration

Calibration Certification Information					
Cal. Date:	February 13, 2018	**Rootsmeter S/N:** 438320	**Ta:** 293	°K	
Operator:	Jim Tisch		**Pa:** 763.3	mm Hg	
Calibration Model #:	TE-5025A	**Calibrator S/N:** **2896**			

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4670	3.2	2.00
2	3	4	1	1.0380	6.4	4.00
3	5	6	1	0.9220	8.0	5.00
4	7	8	1	0.8840	8.8	5.50
5	9	10	1	0.7250	12.8	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0172	0.6934	1.4293	0.9958	0.6788	0.8762
1.0129	0.9758	2.0213	0.9916	0.9553	1.2392
1.0107	1.0962	2.2599	0.9895	1.0732	1.3854
1.0097	1.1422	2.3702	0.9885	1.1182	1.4530
1.0043	1.3853	2.8586	0.9832	1.3562	1.7524
QSTD	**m=**	**2.06726**	**QA**	**m=**	**1.29448**
	b=	**-0.00045**		**b=**	**-0.00028**
	r=	**0.99992**		**r=**	**0.99992**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

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

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	28393A
Date of Issue:	2018-22-26
Date Received:	2018-02-23
Date Tested:	2018-02-23
Date Completed:	2018-02-26
Next Due Date:	2018-04-25

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020409
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-02

Test Conditions:

Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.145

****

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

PATRICK TSE
Laboratory Manager

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WELLAB LIMITED
Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	28393B
Date of Issue:	2018-22-26
Date Received:	2018-02-23
Date Tested:	2018-02-23
Date Completed:	2018-02-26
Next Due Date:	2018-04-25

ATTN: **Mr. W. K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC300
Serial No.	: 3020410
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-26-03

Test Conditions:

Room Temperatre	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.164

****

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

PATRICK TSE
Laboratory Manager

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Rms 1214, 1502, 1516, 1701 & 1716,
Technology Park, 18 On Lai Street,
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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	28392
Date of Issue:	2018-02-20
Date Received:	2018-02-15
Date Tested:	2018-02-15
Date Completed:	2018-02-20
Next Due Date:	2018-04-19
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Handheld Particle Counter
Manufacturer	: Hal Technology
Model No.	: Hal-HPC301
Serial No.	: 3011701019
Flow rate	: 0.1 cfm
Zero Count Test	: 0 count per 5 minutes
Equipment No.	: A-27-01

Test Conditions:

Room Temperature	: 17-22 degree Celsius
Relative Humidity	: 40-70%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.223

****

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

PATRICK TSE
Laboratory Manager

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WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
18 On Lai Street, Shatin, N.T., Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/170915A
Date of Issue:	2017-09-18
Date Received:	2017-09-15
Date Tested:	2017-09-15
Date Completed:	2017-09-18
Next Due Date:	2018-09-17
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 60%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/171215A
Date of Issue:	2017-12-18
Date Received:	2017-12-15
Date Tested:	2017-12-15
Date Completed:	2017-12-18
Next Due Date:	2018-12-17

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35921
Equipment No.	: N-13-02

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

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PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/170929
Date of Issue:	2017-09-30
Date Received:	2017-09-29
Date Tested:	2017-09-29
Date Completed:	2017-09-30
Next Due Date:	2018-09-29

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24803
Equipment No.	: N-09-03

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 60 %

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/170929B
Date of Issue:	2017-09-30
Date Received:	2017-09-29
Date Tested:	2017-09-29
Date Completed:	2017-09-30
Next Due Date:	2018-09-29

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 60 %

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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

Patrick Tse
PATRICK TSE
Laboratory Manager

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APPENDIX D
1-HOUR AND 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix D - 1-hour TSP Monitoring Results

Location AM6a - Works Site Boundary

Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (μg/m^3)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
5-Mar-18	9:00	Cloudy	297.1	3.6213	3.6239	0.0026	6969.6	6970.6	1.0	1.19	1.19	1.19	71.6	36.3	180201/095
5-Mar-18	10:00	Cloudy	297.3	3.6273	3.6285	0.0012	6970.6	6971.6	1.0	1.19	1.19	1.19	71.6	16.8	180201/096
5-Mar-18	11:00	Cloudy	297.5	3.6517	3.6530	0.0013	6971.6	6972.6	1.0	1.19	1.19	1.19	71.5	18.2	180201/097
9-Mar-18	9:00	Cloudy	288.9	3.3696	3.3712	0.0016	6996.6	6997.6	1.0	1.22	1.22	1.22	73.1	21.9	180201/074
9-Mar-18	10:00	Cloudy	289.1	3.3989	3.4002	0.0013	6997.6	6998.6	1.0	1.22	1.22	1.22	73.0	17.8	180201/075
9-Mar-18	11:00	Cloudy	289.3	3.4024	3.4043	0.0019	6998.6	6999.6	1.0	1.22	1.22	1.22	73.0	26.0	180201/076
14-Mar-18	13:30	Cloudy	292.7	2.8425	2.8460	0.0035	7023.6	7024.6	1.0	1.20	1.20	1.20	72.2	48.5	180301/032
14-Mar-18	14:30	Cloudy	292.9	2.8495	2.8530	0.0035	7024.6	7025.6	1.0	1.20	1.20	1.20	72.2	48.5	180301/035
14-Mar-18	15:30	Cloudy	293.1	2.8060	2.8099	0.0039	7025.6	7026.6	1.0	1.20	1.20	1.20	72.1	54.1	180301/034
20-Mar-18	9:00	Cloudy	293.3	2.7990	2.8050	0.0060	7050.6	7051.6	1.0	1.20	1.20	1.20	72.2	83.1	180301/020
20-Mar-18	10:00	Cloudy	293.5	2.8810	2.8838	0.0028	7051.6	7052.6	1.0	1.20	1.20	1.20	72.1	38.8	180301/024
20-Mar-18	11:00	Cloudy	293.7	2.8742	2.8758	0.0016	7052.6	7053.6	1.0	1.20	1.20	1.20	72.0	22.2	180301/025
26-Mar-18	10:00	Cloudy	296.4	2.8851	2.8874	0.0023	7077.6	7078.6	1.0	1.20	1.20	1.20	71.9	32.0	180301/088
26-Mar-18	11:00	Cloudy	296.6	2.9191	2.9241	0.0050	7078.6	7079.6	1.0	1.20	1.20	1.20	71.9	69.5	180301/089
26-Mar-18	13:00	Cloudy	296.8	2.8500	2.8527	0.0027	7079.6	7080.6	1.0	1.20	1.20	1.20	71.9	37.6	180301/090
29-Mar-18	9:00	Sunny	296.1	3.6282	3.6350	0.0068	7104.6	7105.6	1.0	1.20	1.20	1.20	71.8	94.7	180401/024
29-Mar-18	10:00	Sunny	296.3	3.6141	3.6211	0.0070	7105.6	7106.6	1.0	1.20	1.20	1.20	71.8	97.5	180401/023
29-Mar-18	11:00	Sunny	296.5	3.6326	3.6387	0.0061	7106.6	7107.6	1.0	1.20	1.20	1.20	71.7	85.0	180401/022
													Min	17	
													Max	98	
													Average	47	

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Mar-18	14:00	Cloudy	208.8
5-Mar-18	15:00	Cloudy	217.1
5-Mar-18	16:00	Cloudy	218.6
9-Mar-18	14:00	Sunny	36.1
9-Mar-18	15:00	Sunny	37.2
9-Mar-18	16:00	Sunny	34.9
14-Mar-18	14:00	Cloudy	240.8
14-Mar-18	15:00	Cloudy	231.4
14-Mar-18	16:00	Cloudy	262.7
20-Mar-18	14:00	Cloudy	32.6
20-Mar-18	15:00	Cloudy	36.1
20-Mar-18	16:00	Cloudy	37.2
26-Mar-18	14:00	Cloudy	45.4
26-Mar-18	15:00	Cloudy	48.9
26-Mar-18	16:00	Cloudy	52.4
29-Mar-18	14:00	Sunny	45.8
29-Mar-18	15:00	Sunny	44.7
29-Mar-18	16:00	Sunny	46.9
		Minimum	32.6
		Maximum	262.7
		Average	104.3

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (μg/m3)
5-Mar-18	9:00	Cloudy	126.2
5-Mar-18	10:00	Cloudy	128.1
5-Mar-18	11:00	Cloudy	143.2
9-Mar-18	13:00	Sunny	23.2
9-Mar-18	14:00	Sunny	24.4
9-Mar-18	15:00	Sunny	25.6
14-Mar-18	9:00	Cloudy	251.1
14-Mar-18	10:00	Cloudy	247.6
14-Mar-18	11:00	Cloudy	241.4
20-Mar-18	13:00	Cloudy	22.1
20-Mar-18	14:00	Cloudy	19.8
20-Mar-18	15:00	Cloudy	21.0
26-Mar-18	9:00	Cloudy	29.1
26-Mar-18	10:00	Cloudy	31.4
26-Mar-18	11:00	Cloudy	32.6
29-Mar-18	9:00	Sunny	37.8
29-Mar-18	10:00	Sunny	36.6
29-Mar-18	11:00	Sunny	37.8
		Minimum	19.8
		Maximum	251.1
		Average	82.2

Appendix D - 24-hour TSP Monitoring Results

Location AM6a - Works Site Boundary

Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
2-Mar-18	Cloudy	294.9	3.3873	3.4858	0.0985	6945.6	6969.6	24.0	1.18	1.18	1.18	1702.0	57.9	180201/063
8-Mar-18	Cloudy	284.7	3.6352	3.6759	0.0407	6972.6	6996.6	24.0	1.21	1.21	1.21	1740.3	23.4	180201/098
13-Mar-18	Cloudy	295.0	3.3933	3.4435	0.0502	6999.6	7023.6	24.0	1.19	1.18	1.18	1706.3	29.4	180201/077
19-Mar-18	Cloudy	295.3	2.8662	2.9543	0.0881	7026.6	7050.6	24.0	1.18	1.18	1.18	1699.9	51.8	180301/036
23-Mar-18	Cloudy	294.6	2.8576	2.9510	0.0934	7053.6	7077.6	24.0	1.19	1.19	1.19	1708.1	54.7	180301/021
28-Mar-18	Sunny	294.4	2.8636	2.9135	0.0499	7080.6	7104.6	24.0	1.18	1.18	1.18	1705.5	29.3	180301/093
												Min	23	
												Max	58	
												Average	41	

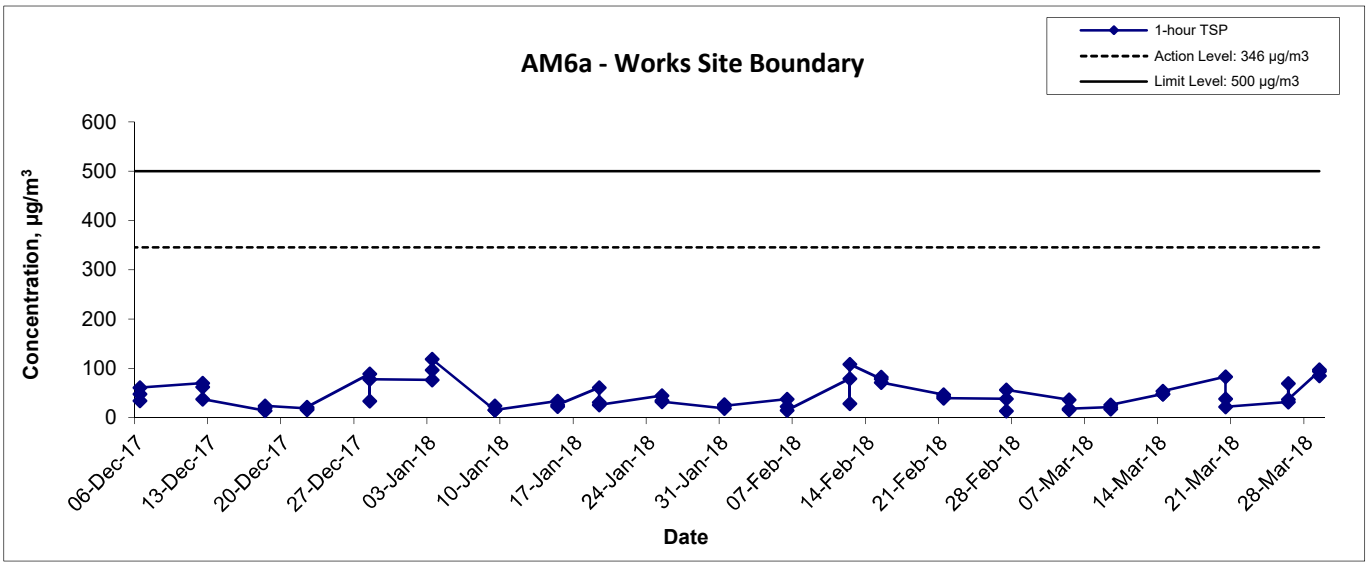
Location AM7 - North West Kowloon Sewage Pumping Station

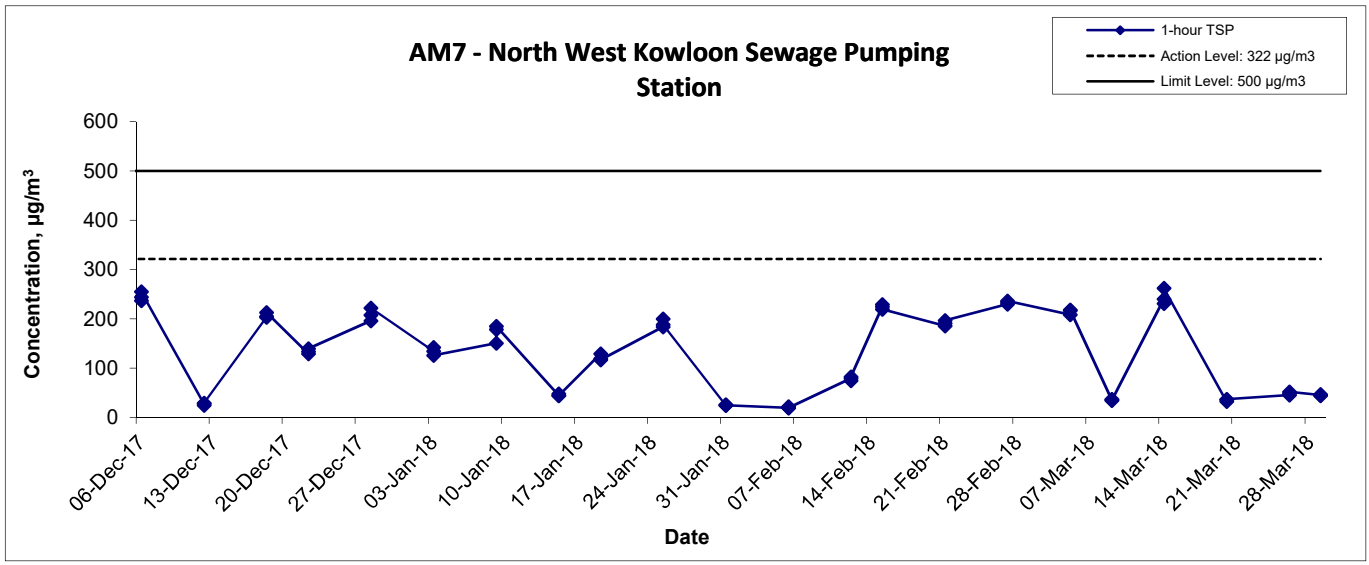
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
2-Mar-18	Cloudy	294.3	3.3757	3.4990	0.1233	35993.3	36017.3	24.0	1.22	1.22	1.22	1751.4	70.4	180201/065
8-Mar-18	Cloudy	285.2	3.6327	3.6924	0.0597	36017.3	36041.3	24.0	1.24	1.24	1.24	1784.7	33.5	180201/100
13-Mar-18	Cloudy	295.1	3.3770	3.5281	0.1511	36041.3	36065.3	24.0	1.22	1.22	1.22	1752.6	86.2	180201/079
19-Mar-18	Cloudy	295.8	3.3914	3.5339	0.1425	36065.3	36089.3	24.0	1.21	1.21	1.21	1745.0	81.7	180201/015
23-Mar-18	Cloudy	295.0	2.8616	3.1106	0.2490	36089.3	36113.3	24.0	1.22	1.22	1.22	1753.3	142.0	180301/023
28-Mar-18	Sunny	294.8	2.8288	3.0223	0.1935	36113.3	36137.3	24.0	1.22	1.22	1.22	1758.0	110.1	180301/092
												Min	33	
												Max	142	
												Average	87	

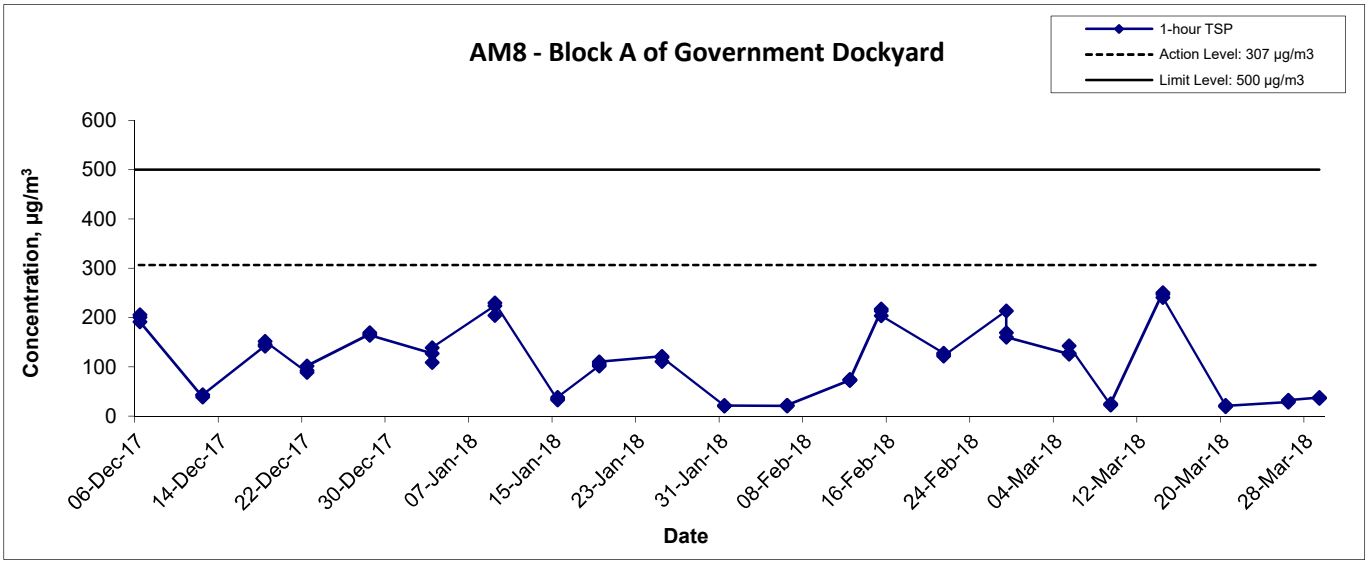
Location AM8 - Block A of Government Dockyard

Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
2-Mar-18	Cloudy	294.4	3.3818	3.4554	0.0736	9498.0	9522.0	24.0	1.22	1.22	1.22	1755.0	41.9	180201/064
8-Mar-18	Cloudy	294.5	3.6417	3.7046	0.0629	9522.0	9546.0	24.0	1.22	1.22	1.22	1760.7	35.7	180201/099
13-Mar-18	Cloudy	295.2	3.3894	3.5276	0.1382	9546.0	9570.0	24.0	1.22	1.22	1.22	1757.1	78.7	180201/078
19-Mar-18	Cloudy	296.4	3.3902	3.4503	0.0601	9570.0	9594.0	24.0	1.21	1.21	1.21	1747.1	34.4	180201/014
23-Mar-18	Cloudy	295.1	2.8528	3.0466	0.1938	9594.0	9618.0	24.0	1.22	1.22	1.22	1758.6	110.2	180301/022
28-Mar-18	Sunny	295.7	2.8131	2.9263	0.1132	9618.0	9642.0	24.0	1.22	1.22	1.22	1761.1	64.3	180301/091
												Min	34	
												Max	110	
												Average	61	

1-hr TSP Concentration Levels

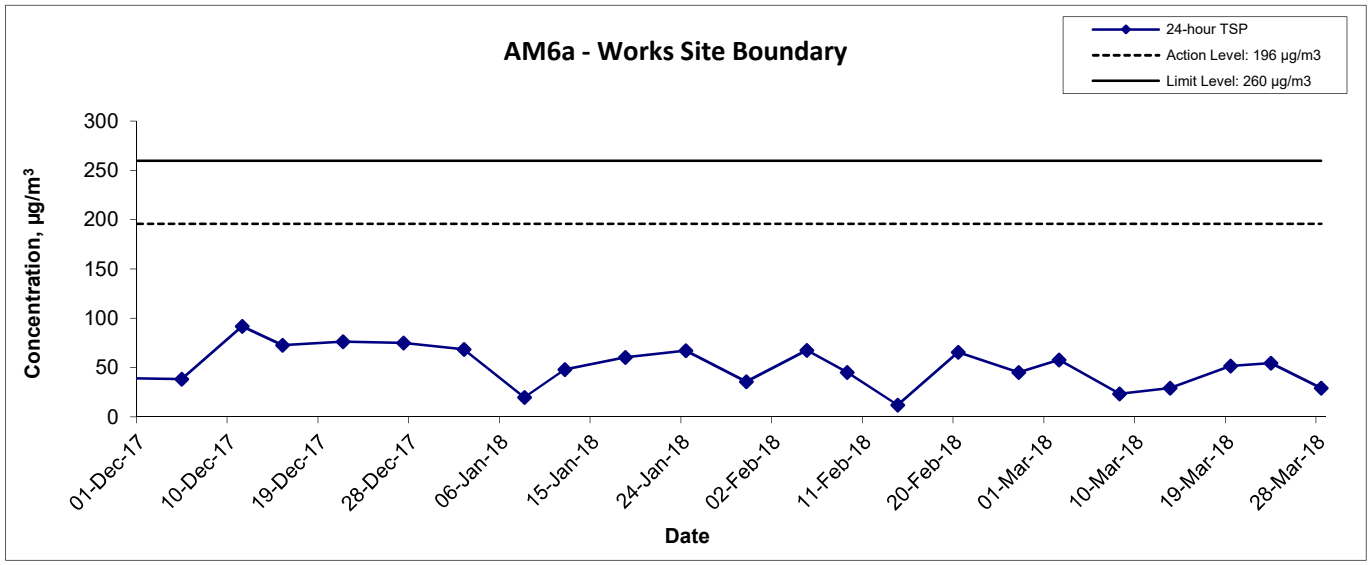


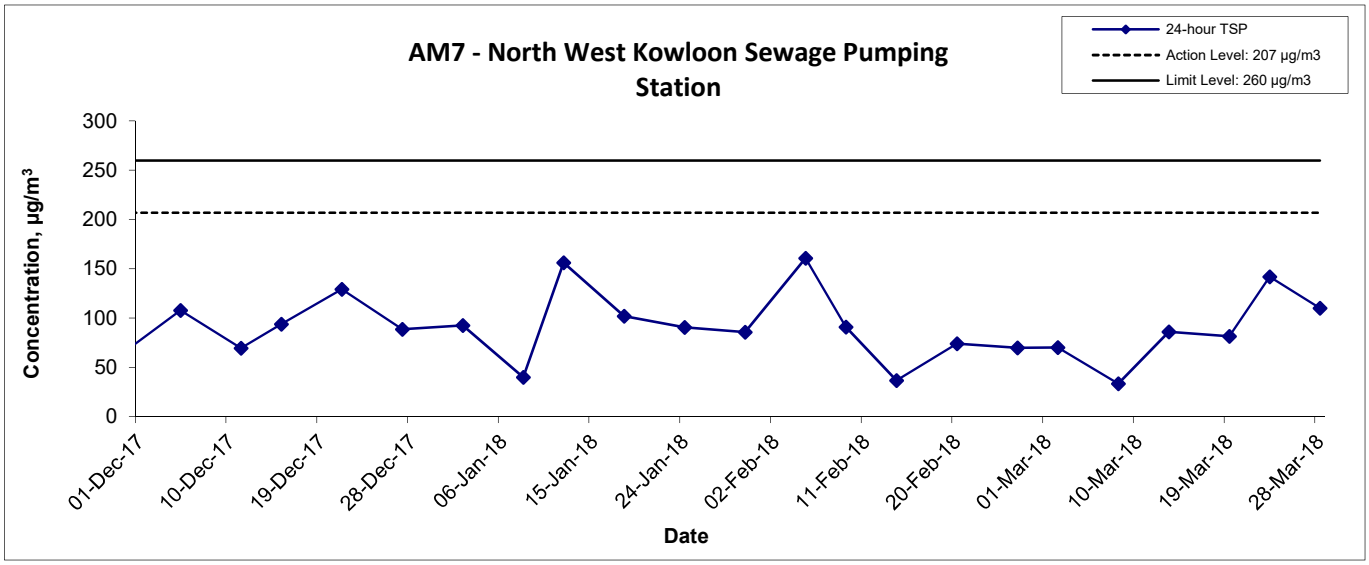


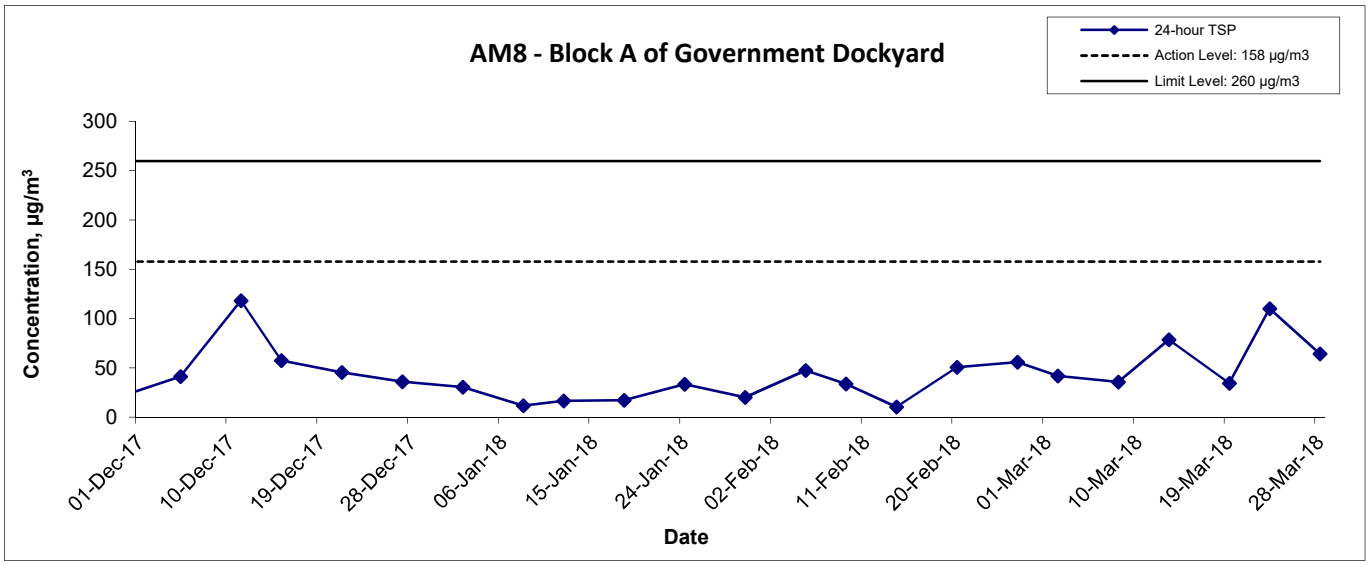


Title: Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Mar-18	Project No.: MA11007 Appendix: D	CINOTECH

24-hr TSP Concentration Levels







Title		Scale	Project
Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 24-hour TSP Monitoring Results		N.T.S	No. MA11007
		Date Mar 18	Appendix D

CINOTECH

APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - Noise Monitoring Results

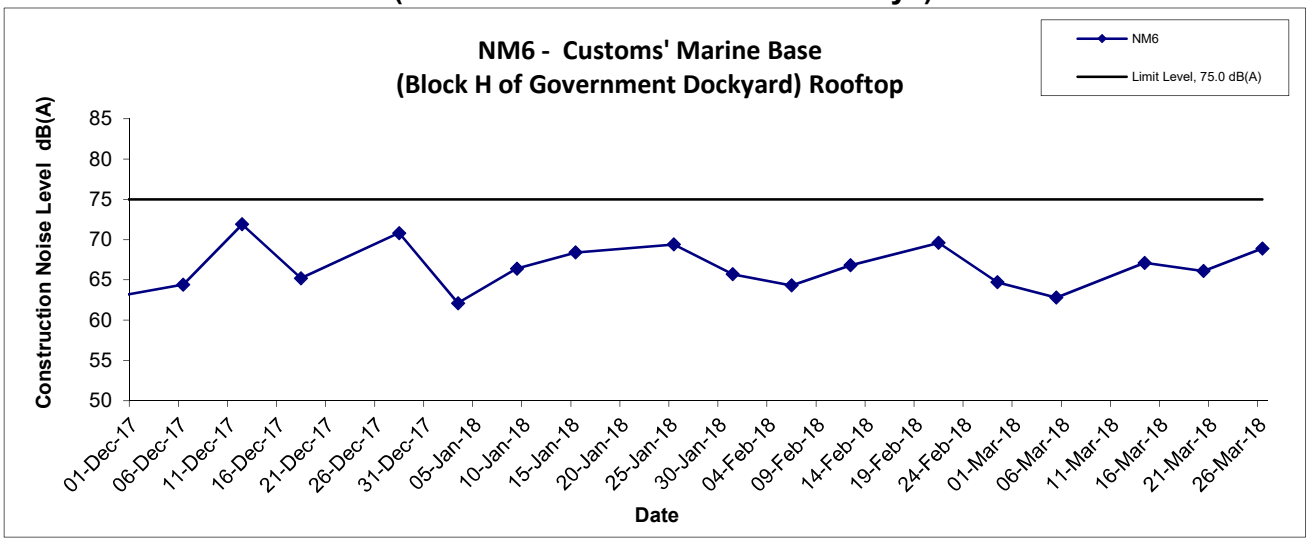
(0700-1900 hrs on Normal Weekdays)

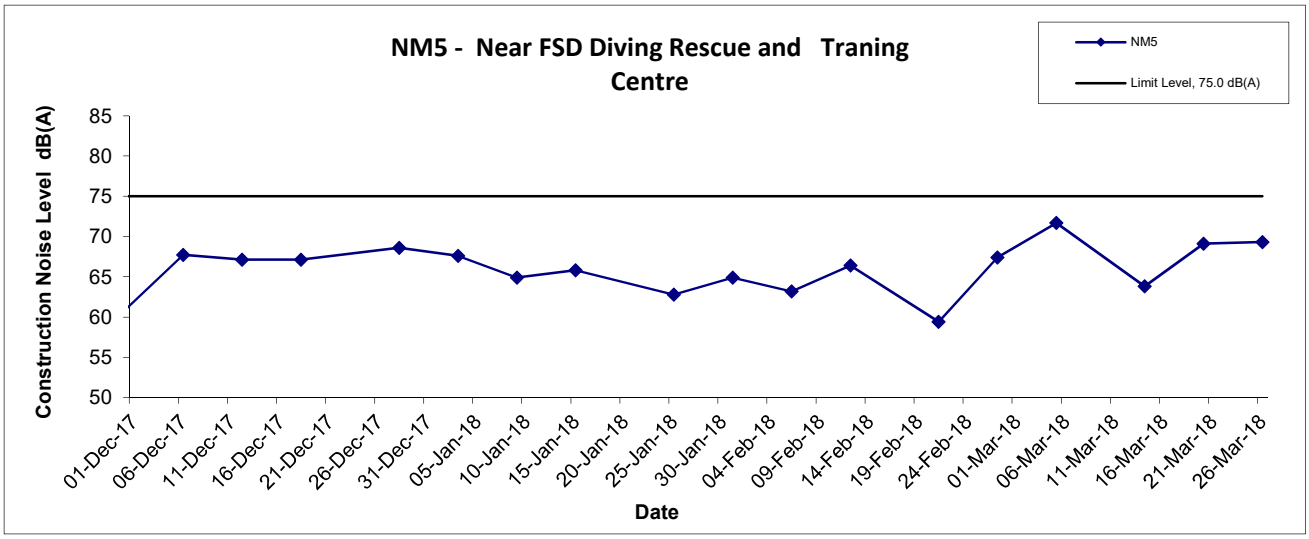
Location NM5 - Near FSD Diving Rescue and Training Centre					
Date	Time	Weather	Unit: dB (A) (30-min) Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
5-Mar-18	13:30	Cloudy	71.7	76.4	61.8
14-Mar-18	11:30	Cloudy	63.8	65.1	62.1
20-Mar-18	13:00	Cloudy	69.1	70.1	64.1
26-Mar-18	10:30	Cloudy	69.3	71.2	60.2
		Maximum	71.7		
		Minimum	63.8		

Location NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop					
Date	Time	Weather	Unit: dB (A) (30-min) Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
5-Mar-18	14:30	Cloudy	62.8	64.1	60.9
14-Mar-18	10:15	Cloudy	67.1	68.8	63.2
20-Mar-18	10:00	Cloudy	66.1	67.9	63.3
26-Mar-18	11:30	Cloudy	68.9	70.2	61.4
		Maximum	68.9		
		Minimum	62.8		

Noise Levels

(0700-1900 hrs on Normal Weekdays)





Title	Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	Scale N.T.S	Project No. MA11007	CINOTECH
		Date Mar 18	Appendix E	

APPENDIX F
ENVIRONMENTAL PERMITS AND LICENSES

APPENIDX F – Environmental Permits and Licenses

Table F.1 Summary of Environmental Licensing and Permit Status for Contract DC/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00023103-2015	19/1/2016	31/1/2021	The application was approved on 19-1-2016.	Valid
WT00024404-2016	19/5/2016	31/5/2021	The application was approved on 19-5-2016.	Valid
WT00025973-2016	22/11/2016	31/5/2021	The application was approved on 22/11/2016.	Valid
Registered Chemical Waste Producer				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
Billing Account for Disposal of Construction Waste				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
Notification of Works Under APCO				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A

Table F.2 Summary of Environmental Licensing and Permit Status for Contract DC/2009/17

Permit No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00021164-2015	13/3/2015	31/3/2020	Location: Portion 6	Valid
WT00002276-2015	6/1/2016	31/10/2020	Location: Portion 5	Valid
WT00027246-2017	9/3/2017	31/3/2022	Location: External Works	Valid
Registered Chemical Waste Producer				
WPN5213-269-C3388-02	19/10/2010	N/A	Major chemical waste types are: Spent battery, waste mechanical oil and spent lubricant.	Valid
Billing Account for Disposal of Construction Waste				
A/C No.7011408	15/09/2010	N/A	N/A	Valid
Notification of Works Under APCO				
Ref:321235	7/09/2010	N/A	--	Valid

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: March 2018

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

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

c) Exceedance Report for Construction Noise (NIL)

No Exceedance of Action/Limit Level for normal working hours and restricted hours was recorded.

APPENDIX H
SITE AUDIT SUMMARY

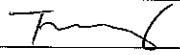
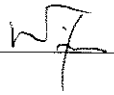
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180306
Date	6 March 2018 (Tuesday)
Time	10:00-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** -	

	Name	Signature	Date
Recorded by	Tommy Cheng		7 March 2018
Checked by	Dr. Priscilla Choy		7 March 2018

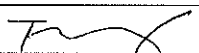
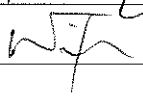
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180313
Date	13 March 2018 (Tuesday)
Time	09:30-10:30

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** -	

	Name	Signature	Date
Recorded by	Tommy Cheng		13 March 2018
Checked by	Dr. Priscilla Choy		13 March 2018

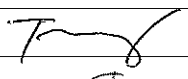
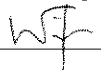
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180320
Date	20 March 2018 (Tuesday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
180322-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • Chemical containers should be stored properly in drip tray or designated area to prevent leakage.. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** -	E 7ii

	Name	Signature	Date
Recorded by	Tommy Cheng		22 March 2018
Checked by	Dr. Priscilla Choy		22 March 2018

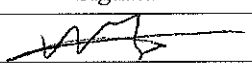
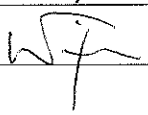
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180329
Date	29 March 2018 (Thursday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** -	

	Name	Signature	Date
Recorded by	Victor Wong		29 March 2018
Checked by	Dr. Priscilla Choy		29 March 2018

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180301
Date	1 March 2018 (Thursday)
Time	09:30-11:30

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

Ref. No.	Remarks/Observations	Related Item No.
180301-O01	***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*** • Sediment and stockpile on haul road should be watered and covered (Portion 6). ***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*** • - ***Remark:*** • -	C 5

	Name	Signature	Date
Recorded by	Victor Wong		1 March 2018
Checked by	Dr. Priscilla Choy		1 March 2018

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180308
Date	8 March 2018 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site in. ***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*** • - ***Remark:*** • -	

	Name	Signature	Date
Recorded by	Victor Wong		8 March 2018
Checked by	Dr. Priscilla Choy		8 March 2018

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180315
Date	15 March 2018 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site in. ***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*** • - ***Remark:*** • -	

	Name	Signature	Date
Recorded by	Victor Wong		15 March 2018
Checked by	Dr. Priscilla Choy		15 March 2018

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180320
Date	20 March 2018 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
180320-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site in. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • General refuse and other C&D waste should be sorted and disposed regularly. ***Part F - Permit / Licence*** • No environmental deficiency was identified during the site inspection. ***Others*** • - ***Remark:*** • -	E 1i

	Name	Signature	Date
Recorded by	Victor Wong		20 March 2018
Checked by	Dr. Priscilla Choy		20 March 2018

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	180329
Date	29 March 2018 (Thursday)
Time	09:30-12:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site in. ***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*** • - ***Remark:*** • -	

	Name	Signature	Date
Recorded by	Andy Chan	Andy	03 April 2018
Checked by	Dr. Priscilla Choy		03 April 2018

APPENDIX I
EVENT ACTION PLANS

APPENDIX I – Event / Action Plans

Table I-1 Event / Action Plan For Air Quality

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

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings;	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring	actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures.	remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table I-2 Event / Action Plan For Construction Noise

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

APPENDIX J
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract	
			DC/2009/17	DC/2009/10
A	**Air Quality**			
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^	^
	Vehicle washing facilities should be provided at every vehicle exit point.		^	^
	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.		^	^
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		N/A	N/A
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^	*
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		^	^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs		^	*
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^	^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^	^
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.		^	^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.		^	^
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract	
			DC/2009/17	DC/2009/10
B	**Airborne Noise**			
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^	^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^	^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^	^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^	^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^	^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^	^
C	**Water Quality**			
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^	^
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^	^
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.		^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract	
			DC/2009/17	DC/2009/10
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		^	^
6.379	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.		*	^
6.380	Construction Works in Close Proximity of Storm Drains or Seafront To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea.	All construction sites	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract	
			DC/2009/17	DC/2009/10
D	**Waste Management**			
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^	^
9.109	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All construction sites	^	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^	^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^	^
	Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^	^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^	^
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.		^	^
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		^	^
	Training of site personnel in proper waste management and chemical waste handling procedures.		^	^
	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^	^
	Provision of sufficient waste disposal points and regular collection of waste.		^	^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.		^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract	
			DC/2009/17	DC/2009/10
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage"	All construction sites	^	^
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^	^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		^	*
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^	^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		^	^
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A	N/A
E	**Terrestrial Ecology**			
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A	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.		^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract	
			DC/2009/17	DC/2009/10
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^	^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A	N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^	^
F	**Landscape and Visual**			
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^	^
	Existing trees to be retained on site should be carefully protected during construction.		^	^
	Trees unavoidably affected by the works should be transplanted where practical.		^	^
	Compensatory tree planting should be provided to compensate for felled trees.		^	^
	Control of night-time lighting.		^	^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.		N/A	N/A
G	**Marine Ecology**			
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^	^
H	**Hazard to Life**			
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Location determined on construction site by the engineer	^	^
I	**Cultural Heritage**			
Tables 15.8 - 15.11	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	EM&A Manual Tables 15.8, 15.9, 15.10 and 15.11	N/A	N/A

Remarks:	^ Compliance of mitigation measure;

	<> Compliance of mitigation measure but need improvement’;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	@ partially implemented
	X Non-compliance of mitigation measure;
	• Non-compliance but rectified by the contractor;
	# Recommendation was made during site audit and to be improved / rectified by the contractor.

APPENDIX K
SUMMARY OF THE MONTHLY LANDSCAPE AND VISUAL SITE AUDIT

APPENDIX K – SUMMARY OF THE MONTHLY LANDSCAPE AND VISUAL SITE AUDIT

Reporting Month: March 2018

Reference no.	Contract no. / Location	Observation / Recommendation	Follow Up Action	Status
N / A	N / A	N / A	N / A	N / A

APPENDIX L
COMPLAINT LOG

APPENDIX L – COMPLAINT LOG

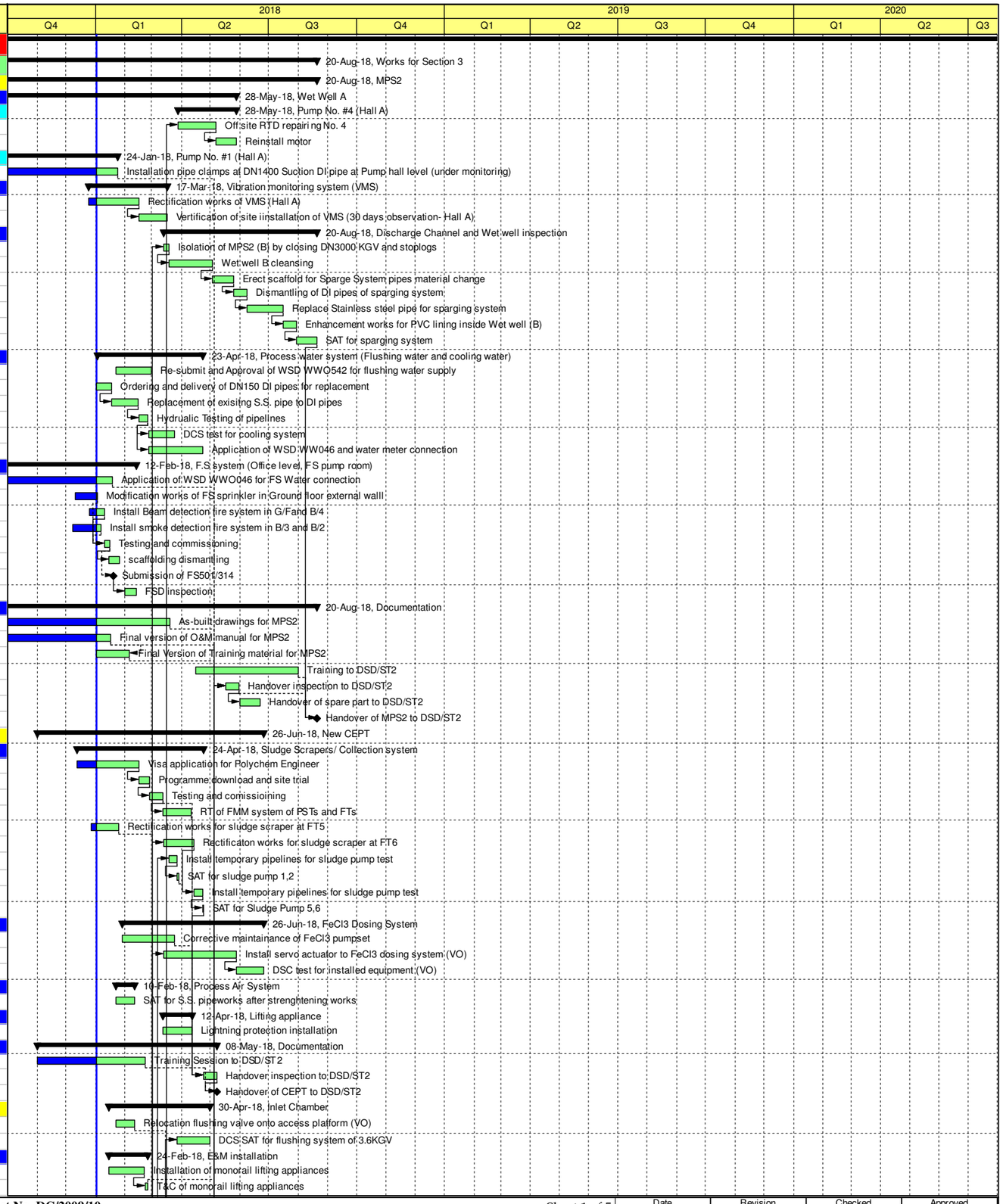
Reporting Month: March 2018

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
Com#1_22-07-13	Construction site at Portion 3 and 7(DC/2009/18)	22 July 2013	The complaint was lodged by a complainant on 22 July 2013 concerning noise generated from the construction works at 03:00am on 19 July 2013.	According to the information provided by the Contractor, mucking out excavated rocks was carried out 90m below ground within a noise enclosure area. Furthermore, the distance between the complainant's residence and the closest construction work is at least 1km away, which would have shapely minimized the chance of potential noise disturbance to the complainant's area. Based on the monitoring results and the other information collected, the complaint was considered not justifiable since no exceedance of the noise monitoring results was recorded in July The Contractor was reminded to make sure the noise enclosure door will be kept close during night time construction.	Closed

Remarks: No environmental complaint was received in the reporting period.

APPENDIX M
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Activity % Complete	Original Duration	Start	Finish
Target Works Programme (Completion for Section 3, 4 and 5)					
Works for Section 3					
MPS2					
Wet Well A					
Pump No. #4 (Hall A)					
A4710	Off site RTD repairing No. 4	0%	40	28-Mar-18	07-May-18
A4730	Reinstall motor	0%	15	07-May-18	28-May-18
Pump No. #1 (Hall A)					
A8460	Installation pipe clamps at DN1400 Suction DI pipe at Pump hall level (under monitoring)	80%	100	14-Sep-17 A	24-Jan-18
Vibration monitoring system (VMS)					
A8965	Rectification works of VMS (Hall A)	15%	45	25-Dec-17 A	15-Feb-18
A8970	Vertification of site iinstallation of VMS (30 days observation- Hall A)	0%	30	15-Feb-18	17-Mar-18
Discharge Channel and Wet well inspection					
A8480	Isolation of MPS2 (B) by closing DN3000 KGV and stoplogs	0%	5	13-Mar-18	19-Mar-18
A8490	Wet well B cleansing	0%	35	19-Mar-18	03-May-18
A9300	Erect scaffold for Sparge System pipes material change	0%	18	03-May-18	25-May-18
A9390	Dismantling of DI pipes of sparging system	0%	12	25-May-18	08-Jun-18
A9610	Replace Stainless steel pipe for sparging system	0%	30	08-Jun-18	16-Jul-18
A9615	Enhancement works for PVC lining inside Wet well (B)	0%	12	16-Jul-18	30-Jul-18
A9630	SAT for sparging system	0%	18	30-Jul-18	20-Aug-18
Process water system (Flushing water and cooling water)					
A8560	Re-submit and Approval of WSD WWO542 for flushing water supply	0%	30	22-Jan-18*	28-Feb-18
A9410	Ordering and delivery of DN150 DI pipes for replacement	30%	20	03-Jan-18 A	17-Jan-18
A9420	Replacement of exisitng S.S. pipe to DI pipes	0%	24	18-Jan-18	14-Feb-18
A9430	Hydrualic Testing of pipelines	0%	6	15-Feb-18	24-Feb-18
A9440	DCS test for cooling system	0%	24	26-Feb-18	24-Mar-18
A9450	Application of WSD WW046 and water meter connection	0%	45	26-Feb-18	23-Apr-18
F.S system (Office level, FS pump room)					
A8380	Application of WSD WWO046 for FS Water connection	75%	60	19-Jul-17 A	18-Jan-18
A8580	Modification works of FS sprinkler in Ground floor external walll	90%	15	11-Dec-17 A	03-Jan-18
A9460	Install Beam detection fire system in G/Fand B/4	35%	12	26-Dec-17 A	10-Jan-18
A9470	Install smoke detection fire system in B/3 and B/2	60%	12	08-Dec-17 A	06-Jan-18
A9480	Testing and commissioning	0%	5	10-Jan-18	16-Jan-18
A9490	scaffolding dismantling	0%	10	15-Jan-18	26-Jan-18
A9500	Submission of FS501/314	0%	0		19-Jan-18*
A9510	FSD inspection	0%	10	01-Feb-18	12-Feb-18
Documentation					
A8750	As-built drawings for MPS2	65%	180	19-Jun-17 A	19-Mar-18
A8760	Final version of O&M manual for MPS2	85%	90	19-Jun-17 A	17-Jan-18
A8770	Final Version of Training material for MPS2	0%	30	02-Jan-18	05-Feb-18
A8774	Training to DSD/ST2	0%	90	16-Apr-18*	01-Aug-18
A8780	Handover inspection to DSD/ST2	0%	12	17-May-18	31-May-18
A8790	Handover of spare part to DSD/ST2	0%	18	01-Jun-18	22-Jun-18
A8800	Handover of MPS2 to DSD/ST2	0%	0		20-Aug-18
New CEPT					
Sludge Scrapers/ Collection system					
A5995	Visa application for Polychem Engineer	15%	45	13-Dec-17 A	15-Feb-18
A6005	Programme download and site trial	0%	6	15-Feb-18	26-Feb-18
A6008	Testing and comissioining	0%	12	26-Feb-18	12-Mar-18
A6010	RT of FMM system of PSTs and FTs	0%	30	12-Mar-18	11-Apr-18
A6020	Rectification works for sludge scraper at FT5	15%	24	27-Dec-17 A	25-Jan-18
A6030	Rectificaton works for sludge scraper at FT6	0%	24	13-Mar-18	14-Apr-18
A8510	Install temporary pipelines for sludge pump test	0%	7	19-Mar-18	27-Mar-18
A9400	SAT for sludge pump 1,2	0%	2	27-Mar-18	29-Mar-18
A9640	Install temporary pipelines for sludge pump test	0%	7	14-Apr-18	23-Apr-18
A9890	SAT for Sludge Pump 5,6	0%	1	23-Apr-18	24-Apr-18
FeCl3 Dosing System					
A9520	Corrective maintainance of FeCl3 pumpset	0%	45	29-Jan-18*	24-Mar-18
A9530	Install servo actuator to FeCl3 dosing system (VO)	0%	60	13-Mar-18	28-May-18
A9540	DSC test for installed equipment (VO)	0%	24	28-May-18	26-Jun-18
Process Air System					
A5550	SAT for S.S. pipeworks after strenghtening works	0%	18	22-Jan-18*	10-Feb-18
Lifting appliance					
A9650	Lightning protection installation	0%	24	12-Mar-18*	12-Apr-18
Documentation					
A8835	Training Session to DSD/ST2	65%	120	01-Nov-17 A	22-Feb-18
A8840	Handover inspection to DSD/ST2	0%	12	24-Apr-18	08-May-18
A8850	Handover of CEPT to DSD/ST2	0%	0		08-May-18
Inlet Chamber					
A9550	Relocation flushing valve onto access platform (VO)	0%	18	22-Jan-18*	10-Feb-18
A9560	DCS SAT for flushing system of 3.6KGV	0%	24	27-Mar-18	30-Apr-18
E&M installation					
A8230	Installation of monorail lifting appliances	0%	30	15-Jan-18*	21-Feb-18
A8240	T&C of monorail lifting appliances	0%	3	22-Feb-18	24-Feb-18



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

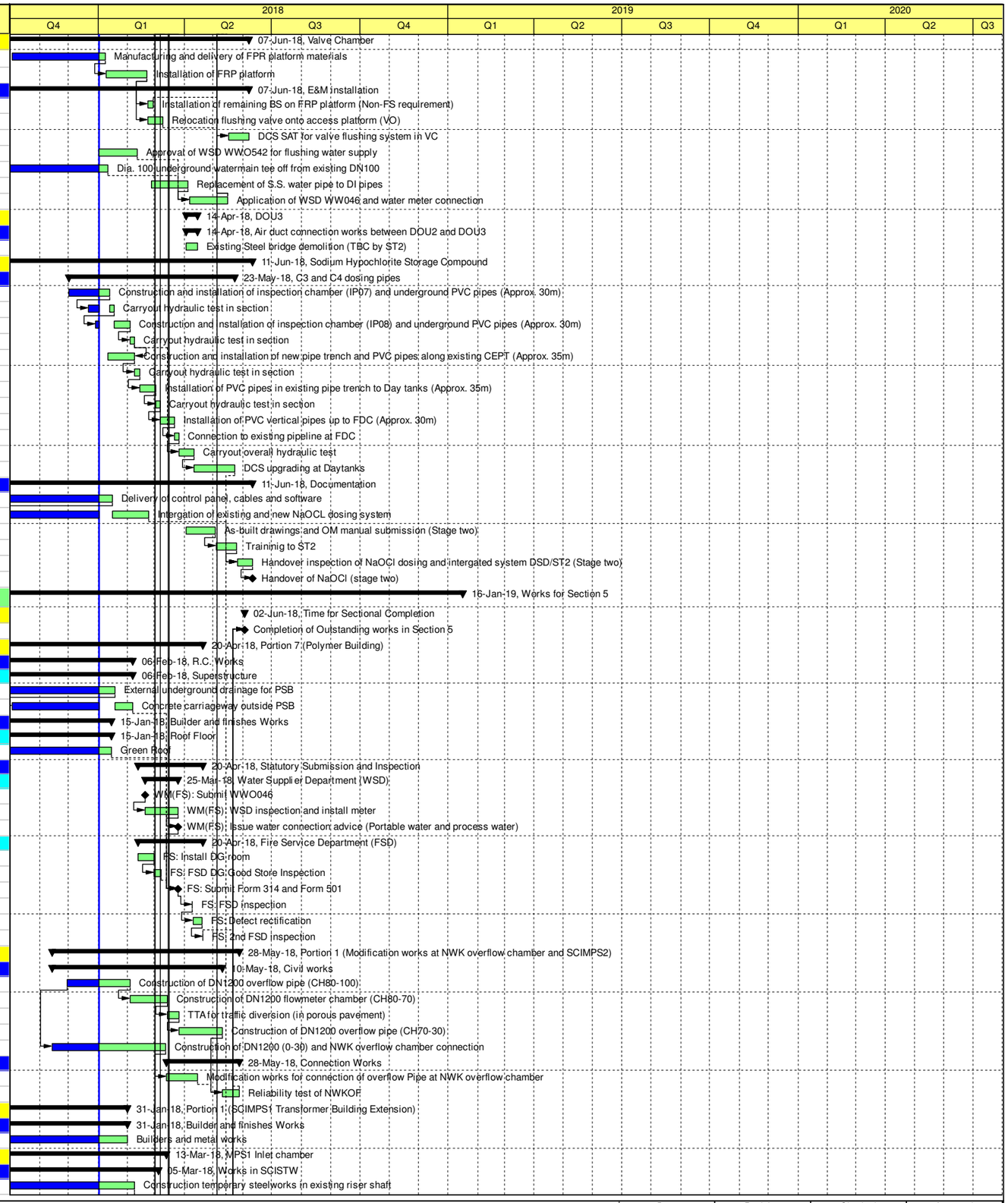
Contract No. DC/2009/10

Date	Revision	Checked	Approved
06-Sep-17	Rev. 1		

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme for Completion of Section 3, 4 and 5

Activity ID	Activity Name	Activity % Complete	Original Duration	Start	Finish
Valve Chamber					
A3570	Manufacturing and delivery of FPR platform materials	80%	30	03-Oct-17 A	08-Jan-18
A3580	Installation of FRP platform	0%	35	09-Jan-18	21-Feb-18
E&M installation					
A7525	Installation of remaining BS on FRP platform (Non-FS requirement)	0%	5	22-Feb-18	27-Feb-18
A7526	Relocation flushing valve onto access platform (VO)	0%	14	22-Feb-18	09-Mar-18
A7536	DCS SAT for valve flushing system in VC	0%	18	17-May-18	07-Jun-18
A8120	Approval of WSD WWO542 for flushing water supply	0%	35	02-Jan-18	10-Feb-18
A8130	Dia. 100 underground watermain tee off from existing DN100	80%	45	21-Aug-17 A	11-Jan-18
A8135	Replacement of S.S. water pipe to DI pipes	0%	30	26-Feb-18*	04-Apr-18
A8140	Application of WSD WW046 and water meter connection	0%	35	06-Apr-18	16-May-18
DOU3					
Air duct connection works between DOU2 and DOU3					
A8320	Existing Steel bridge demolition (TBC by ST2)	0%	10	03-Apr-18*	14-Apr-18
Sodium Hypochlorite Storage Compound					
C3 and C4 dosing pipes					
A8010	Construction and installation of inspection chamber (IP07) and underground PVC pipes (Approx. 30m)	40%	18	01-Dec-17 A	13-Jan-18
A8020	Carryout hydraulic test in section	15%	4	22-Dec-17 A	18-Jan-18
A8030	Construction and installation of inspection chamber (IP08) and underground PVC pipes (Approx. 30m)	20%	18	29-Dec-17 A	03-Feb-18
A8040	Carryout hydraulic test in section	0%	4	03-Feb-18	08-Feb-18
A8050	Construction and installation of new pipe trench and PVC pipes along existing CEPT (Approx. 35m)	0%	24	11-Jan-18	08-Feb-18
A8060	Carryout hydraulic test in section	0%	4	08-Feb-18	13-Feb-18
A8070	Installation of PVC pipes in existing pipe trench to Day tanks (Approx. 35m)	0%	12	13-Feb-18	02-Mar-18
A8080	Carryout hydraulic test in section	0%	4	02-Mar-18	07-Mar-18
A8090	Installation of PVC vertical pipes up to FDC (Approx. 30m)	0%	12	07-Mar-18	21-Mar-18
A8100	Connection to existing pipeline at FDC	0%	4	21-Mar-18	26-Mar-18
A8110	Carryout overall hydraulic test	0%	10	26-Mar-18	11-Apr-18
A8720	DCS upgrading at Daytanks	0%	30	11-Apr-18	23-May-18
Documentation					
A3578	Delivery of control panel, cables and software	85%	85	09-May-17 A	16-Jan-18
A3585	Intergation of existing and new NaOCL dosing system	25%	40	09-Sep-17 A	23-Feb-18
A3588	As-built drawings and OM manual submission (Stage two)	0%	26	03-Apr-18*	03-May-18
A3589	Trainning to ST2	0%	18	04-May-18	25-May-18
A3590	Handover inspection of NaOCl dosing and intergated system DSD/ST2 (Stage two)	0%	14	26-May-18	11-Jun-18
A3600	Handover of NaOCl (stage two)	0%	0		11-Jun-18
Works for Section 5					
Time for Sectional Completion					
TC0115	Completion of Outstanding works in Section 5	0%	0		02-Jun-18
Portion 7 (Polymer Building)					
R.C. Works					
Superstructure					
P700330	External underground drainage for PSB	75%	60	21-Jun-17 A	18-Jan-18
P700340	Concrete carriageway outside PSB	35%	24	03-Oct-17 A	06-Feb-18
Builder and finishes Works					
Roof Floor					
P701140	Green Roof	50%	24	15-Sep-17 A	15-Jan-18
Statutory Submission and Inspection					
Water Supplier Department (WSD)					
P905070	WM(FS): Submit WWO046	0%	0	19-Feb-18*	
P905080	WM(FS): WSD inspection and install meter	0%	35	19-Feb-18	25-Mar-18
P905090	WM(FS): Issue water connection advice (Portable water and process water)	0%	0		25-Mar-18
Fire Service Department (FSD)					
P905370	FS: Install DG room	0%	12	12-Feb-18*	28-Feb-18
P905380	FS: FSD DG Good Store Inspection	0%	7	28-Feb-18	07-Mar-18
P905390	FS: Submit Form 314 and Form 501	0%	0		25-Mar-18
P905400	FS: FSD inspection	0%	1	09-Apr-18	09-Apr-18
P905410	FS: Defect rectification	0%	9	10-Apr-18	19-Apr-18
P905420	FS: 2nd FSD inspection	0%	1	20-Apr-18	20-Apr-18
Portion 1 (Modification works at NWK overflow chamber and SCIMPS2)					
Civil works					
P101805	Construction of DN1200 overflow pipe (CH80-100)	5%	30	30-Nov-17 A	03-Feb-18
P101806	Construction of DN1200 flowmeter chamber (CH80-70)	0%	30	03-Feb-18	14-Mar-18
P101809	TTA for traffic diversion (in porous pavement)	0%	10	14-Mar-18	26-Mar-18
P101811	Construction of DN1200 overflow pipe (CH70-30)	0%	35	26-Mar-18	10-May-18
P101815	Construction of DN1200 (0-30) and NWK overflow chamber connection	5%	60	14-Nov-17 A	12-Mar-18
Connection Works					
P100330	Modification works for connection of overflow Pipe at NWK overflow chamber	0%	25	13-Mar-18	14-Apr-18
P100380	Reliability test of NWKOF	0%	14	10-May-18	28-May-18
Portion 1 (SCIMPS1 Transformer Building Extension)					
Builder and finishes Works					
P100210	Builders and metal works	15%	30	26-Jul-17 A	31-Jan-18
MPS1 Inlet chamber					
Works in SCISTW					
P600118	Construction temporary steelworks in existing riser shaft	75%	150	01-May-17 A	08-Feb-18



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

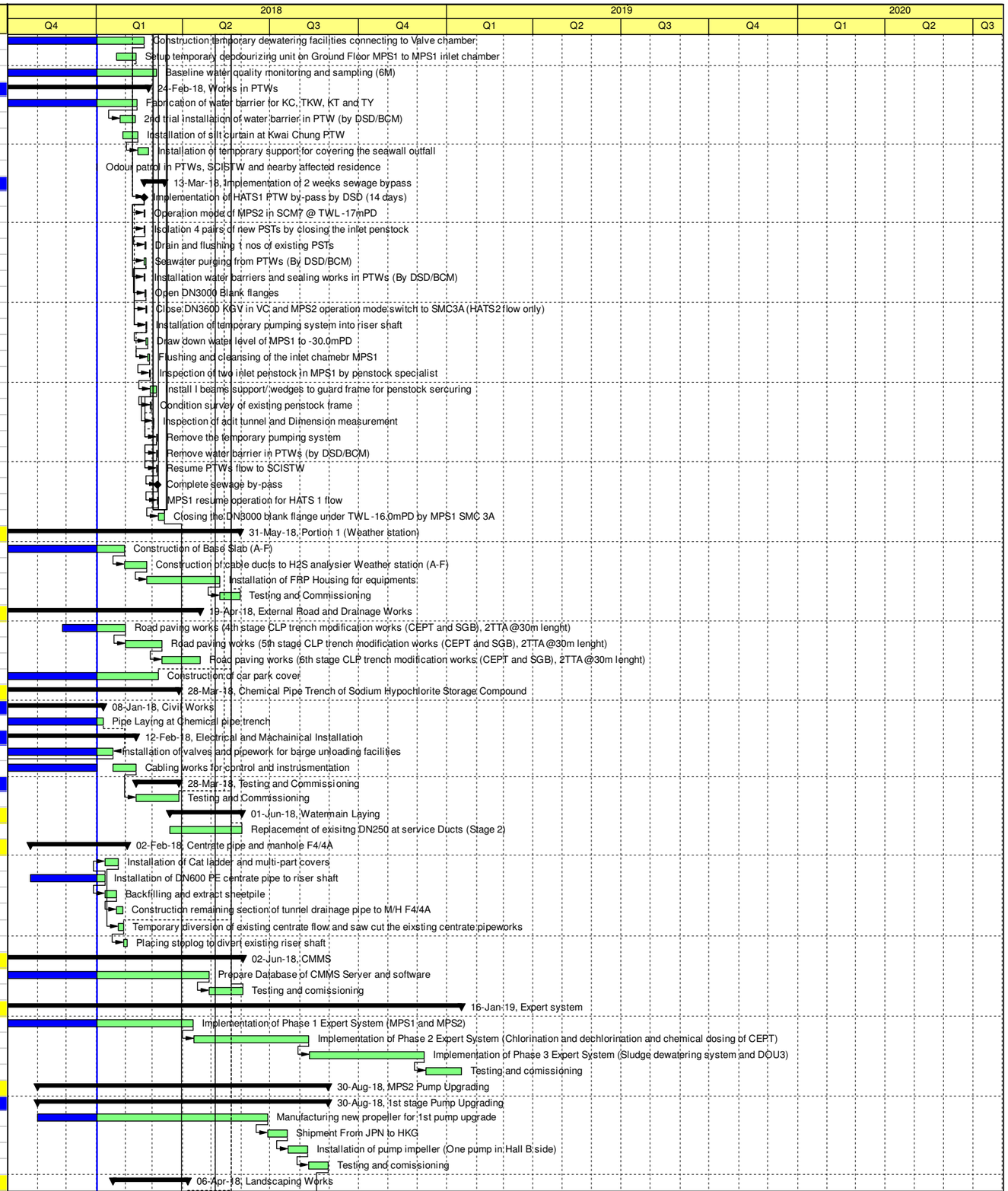
Contract No. DC/2009/10

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme for Completion of Section 3, 4 and 5

Date	Revision	Checked	Approved
06-Sep-17	Rev. 1		

Activity ID	Activity Name	Activity % Complete	Original Duration	Start	Finish
P600128	Construction temporary dewatering facilities connecting to Valve chamber	45%	90	15-Jun-17 A	20-Feb-18
P600138	Setup temporary deodourizing unit on Ground Floor MPS1 to MPS1 inlet chamber	0%	21	22-Jan-18*	11-Feb-18
P600148	Baseline water quality monitoring and sampling (6M)	65%	180	01-Sep-17 A	05-Mar-18
Works in PTWs					
P100370	Fabrication of water barrier for KC, TKW, KT and TY	20%	45	07-Mar-17 A	12-Feb-18
P100390	2nd trial installation of water barrier in PTW (by DSD/BCM)	0%	14	26-Jan-18	10-Feb-18
P100400	Installation of silt curtain at Kwai Chung PTW	0%	14	29-Jan-18*	13-Feb-18
P100410	Installation of temporary support for covering the seawall outfall	0%	7	14-Feb-18	24-Feb-18
P600268	Odour patrol in PTWs, SCISTW and nearby affected residence	0%	1	02-Jan-18	02-Jan-18
Implementation of 2 weeks sewage bypass					
P600155	Implementation of HATS1 PTW by-pass by DSD (14 days)	0%	0	20-Feb-18	
P600156	Operation mode of MPS2 in SCM7 @ TWL-17mPD	0%	1	20-Feb-18	21-Feb-18
P600157	Isolation 4 pairs of new PSTs by closing the inlet penstock	0%	1	20-Feb-18	21-Feb-18
P600159	Drain and flushing 1 nos of existing PSTs	0%	1	21-Feb-18	22-Feb-18
P600160	Seawater purging from PTWs (By DSD/BCM)	0%	2	20-Feb-18	22-Feb-18
P600162	Installation water barriers and sealing works in PTWs (By DSD/BCM)	0%	1	20-Feb-18	21-Feb-18
P600164	Open DN3000 Blank flanges	0%	1	21-Feb-18	22-Feb-18
P600166	Close DN3600 KGV in VC and MPS2 operation mode switch to SMC3A (HATS2 flow only)	0%	1	22-Feb-18	23-Feb-18
P600176	Installation of temporary pumping system into riser shaft	0%	1	22-Feb-18	23-Feb-18
P600178	Draw down water level of MPS1 to -30.0mPD	0%	2	22-Feb-18	24-Feb-18
P600188	Flushing and cleansing of the inlet chamebr MPS1	0%	1	24-Feb-18	25-Feb-18
P600198	Inspection of two inlet penstock in MPS1 by penstock specialist	0%	1	25-Feb-18	26-Feb-18
P600208	Install I beams support/ wedges to guard frame for penstock sercuring	0%	7	26-Feb-18	05-Mar-18
P600209	Condition survey of existing penstock frame	0%	1	26-Feb-18	27-Feb-18
P600210	Inspection of adit tunnel and Dimension measurement	0%	1	01-Mar-18	02-Mar-18
P600218	Remove the temporary pumping system	0%	1	05-Mar-18	06-Mar-18
P600228	Remove water barrier in PTWs (by DSD/BCM)	0%	1	05-Mar-18	06-Mar-18
P600238	Resume PTWs flow to SCISTW	0%	1	05-Mar-18	06-Mar-18
P600248	Complete sewage by-pass	0%	0		06-Mar-18
P600258	MPS1 resume operation for HATS 1 flow	0%	1	06-Mar-18	07-Mar-18
P600278	Closing the DN3000 blank flange under TWL-16.0mPD by MPS1 SMC 3A	0%	6	07-Mar-18	13-Mar-18
Portion 1 (Weather station)					
A9050	Construction of Base Slab (A-F)	45%	45	01-Aug-17 A	30-Jan-18
A9060	Construction of cable ducts to H2S analysier Weather station (A-F)	0%	18	30-Jan-18	23-Feb-18
A9070	Installation of FRP Housing for equipments	0%	60	23-Feb-18	09-May-18
A9080	Testing and Commissioning	0%	18	09-May-18	31-May-18
External Road and Drainage Works					
RW00055	Road paving works (4th stage CLP trench modification works (CEPT and SGB), 2TTA@30m lenght)	15%	30	27-Nov-17 A	31-Jan-18
RW00057	Road paving works (5th stage CLP trench modification works (CEPT and SGB), 2TTA@30m lenght)	0%	30	31-Jan-18	10-Mar-18
RW00058	Road paving works (6th stage CLP trench modification works (CEPT and SGB), 2TTA@30m lenght)	0%	30	10-Mar-18	19-Apr-18
RW00060	Construction of car park cover	65%	150	04-Apr-17 A	07-Mar-18
Chemical Pipe Trench of Sodium Hypochlorite Storage Compound					
Civil Works					
P101160	Pipe Laying at Chemical pipe trench	90%	60	09-Mar-17 A	08-Jan-18
Electrical and Machainical Installation					
P101450	Installation of valves and pipework for barge unloading facilities	75%	60	12-Aug-17 A	18-Jan-18
P101500	Cabling works for control and instrusmentation	15%	24	06-Sep-17 A	12-Feb-18
Testing and Commissioning					
P101460	Testing and Commissioning	0%	35	12-Feb-18	28-Mar-18
Watermain Laying					
A7350	Replacement of exisitng DN250 at service Ducts (Stage 2)	0%	60	19-Mar-18*	01-Jun-18
Centrate pipe and manhole F4/4A					
A8501	Installation of Cat ladder and multi-part covers	0%	12	10-Jan-18	24-Jan-18
A8515	Installation of DN600 PE centrate pipe to riser shaft	60%	18	25-Oct-17 A	10-Jan-18
A8518	Backfilling and extract sheetpile	0%	10	10-Jan-18	22-Jan-18
A8528	Construction remaining section of tunnel drainage pipe to M/H F4/4A	0%	6	22-Jan-18	29-Jan-18
A8535	Temporary diversion of existing centrate flow and saw cut the eixsting centrate pipeworks	0%	5	24-Jan-18	30-Jan-18
A8545	Placing stoplog to divert existing riser shaft	0%	3	30-Jan-18	02-Feb-18
CMMS					
A9140	Prepare Database of CMMS Server and software	51.25%	240	01-Sep-17 A	28-Apr-18
A9150	Testing and comissioning	0%	35	29-Apr-18	02-Jun-18
Expert system					
A9090	Implementation of Phase 1 Expert System (MPS1 and MPS2)	50%	160	15-Aug-17 A	12-Apr-18
A9100	Implementation of Phase 2 Expert System (Chlorination and dechlorination and chemical dosing of CE	0%	100	13-Apr-18	10-Aug-18
A9110	Implementation of Phase 3 Expert System (Sludge dewatering system and DOU3)	0%	100	11-Aug-18	08-Dec-18
A9120	Testing and comissioning	0%	30	10-Dec-18	16-Jan-19
MPS2 Pump Upgrading					
1st stage Pump Upgrading					
A9190	Manufacturing new propeller for 1st pump upgrade	25.83%	240	01-Nov-17 A	28-Jun-18
A9200	Shipment From JPN to HKG	0%	21	29-Jun-18	19-Jul-18
A9210	Installation of pump impeller (One pump in Hall B side)	0%	18	20-Jul-18	09-Aug-18
A9220	Testing and comissioning	0%	18	10-Aug-18	30-Aug-18
Landscaping Works					



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

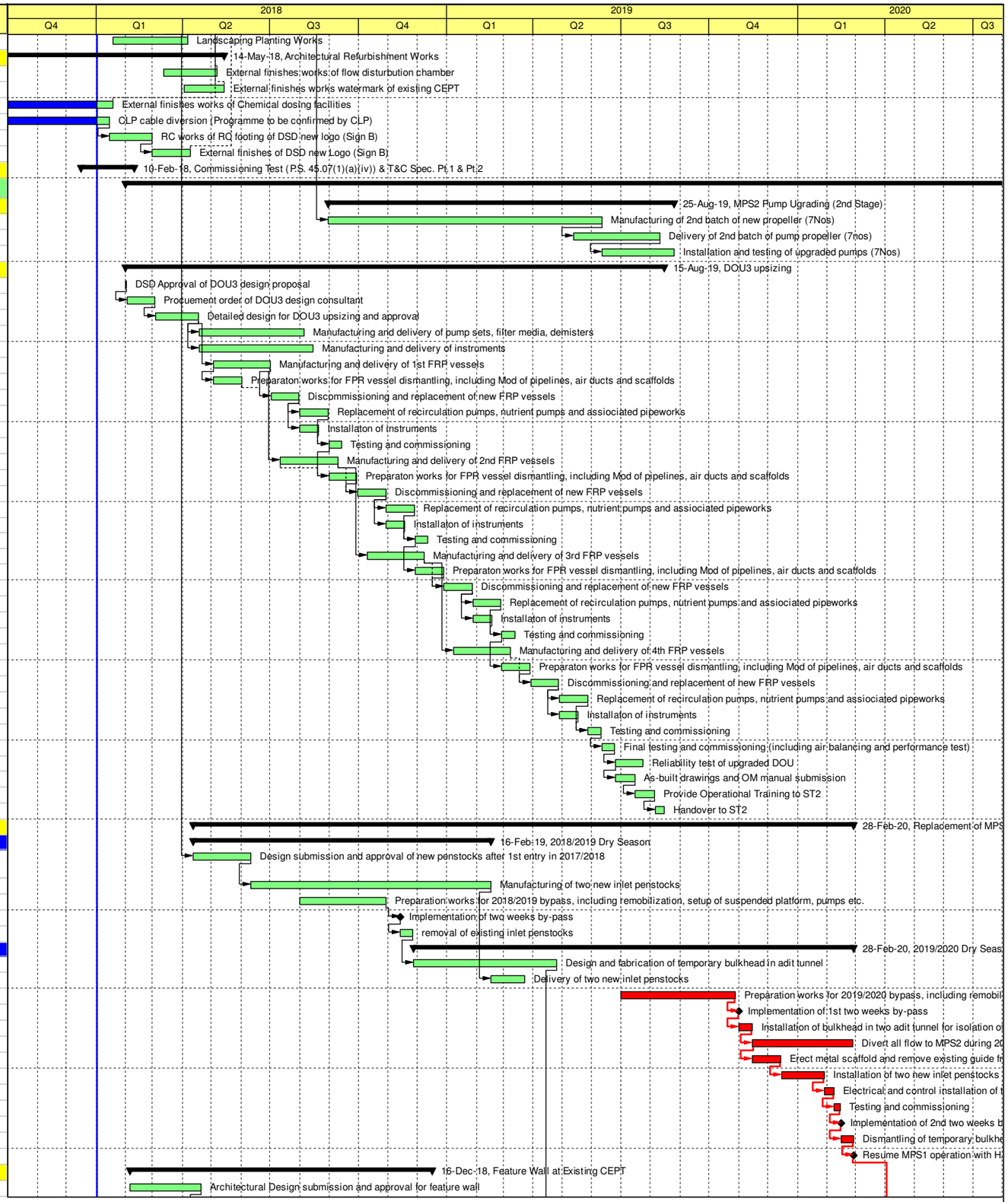
Contract No. DC/2009/10

Date	Revision	Checked	Approved
06-Sep-17	Rev. 1		

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme for Completion of Section 3, 4 and 5

Activity ID	Activity Name	Activity % Complete	Original Duration	Start	Finish
LA00010	Landscaping Planting Works	0%	60	19-Jan-18	06-Apr-18
Architectural Refurbishment Works					
AR00030	External finishes works of flow disturbution chamber	0%	45	12-Mar-18*	07-May-18
AR00045	External finishes works watermark of existing CEPT	0%	35	03-Apr-18*	14-May-18
AR00060	External finishes works of Chemical dosing facilities	75%	60	31-Aug-17 A	18-Jan-18
AR00130	CLP cable diversion (Programme to be confirmed by CLP)	85%	90	21-Jun-17 A	15-Jan-18
AR00140	RC works of RC footing of DSD new logo (Sign B)	0%	35	15-Jan-18	28-Feb-18
AR00150	External finishes of DSD new Logo (Sign B)	0%	30	28-Feb-18	09-Apr-18
Commissioning Test (P.S. 45.07(1)(a)(iv)) & T&C Spec. Pt.1 & Pt.2					
Supplementary Agreement No.2					
MPS2 Pump Ugrading (2nd Stage)					
A9230	Manufacturing of 2nd batch of new propeller (7Nos)	0%	285	30-Aug-18	11-Jun-19
A9235	Delivery of 2nd batch of pump propeller (7nos)	0%	90	12-May-19	10-Aug-19
A9240	Installation and testing of upgraded pumps (7Nos)	0%	75	11-Jun-19	25-Aug-19
DOU3 upsizing					
A9270	DSD Approval of DOU3 design proposal	0%	1	01-Feb-18*	01-Feb-18
A9280	Procuement order of DOU3 design consultant	0%	30	02-Feb-18	03-Mar-18
A9290	Detailed design for DOU3 upsizing and approval	0%	45	04-Mar-18	17-Apr-18
A9310	Manufacturing and delivery of pump sets, filter media, demisters	0%	110	18-Apr-18	05-Aug-18
A9320	Manufacturing and delivery of instruments	0%	119	18-Apr-18	14-Aug-18
A9330	Manufacturing and delivery of 1st FRP vessels	0%	60	03-May-18	01-Jul-18
A9340	Preparaton works for FPR vessel dismantling, including Mod of pipelines, air ducts and scaffolds	0%	30	03-May-18	01-Jun-18
A9350	Discommissioning and replacement of new FRP vessels	0%	30	02-Jul-18	31-Jul-18
A9360	Replacement of recirculation pumps, nutrient pumps and assiociated pipeworks	0%	30	01-Aug-18	30-Aug-18
A9370	Installaton of instruments	0%	20	01-Aug-18	20-Aug-18
A9380	Testing and commissioning	0%	14	31-Aug-18	13-Sep-18
A9660	Manufacturing and delivery of 2nd FRP vessels	0%	60	12-Jul-18	09-Sep-18
A9670	Preparaton works for FPR vessel dismantling, including Mod of pipelines, air ducts and scaffolds	0%	30	31-Aug-18	29-Sep-18
A9680	Discommissioning and replacement of new FRP vessels	0%	30	30-Sep-18	29-Oct-18
A9690	Replacement of recirculation pumps, nutrient pumps and assiociated pipeworks	0%	30	30-Oct-18	28-Nov-18
A9700	Installaton of instruments	0%	20	30-Oct-18	18-Nov-18
A9710	Testing and commissioning	0%	14	29-Nov-18	12-Dec-18
A9720	Manufacturing and delivery of 3rd FRP vessels	0%	60	10-Oct-18	08-Dec-18
A9730	Preparaton works for FPR vessel dismantling, including Mod of pipelines, air ducts and scaffolds	0%	30	29-Nov-18	28-Dec-18
A9740	Discommissioning and replacement of new FRP vessels	0%	30	29-Dec-18	27-Jan-19
A9750	Replacement of recirculation pumps, nutrient pumps and assiociated pipeworks	0%	30	28-Jan-19	26-Feb-19
A9760	Installaton of instruments	0%	20	28-Jan-19	16-Feb-19
A9770	Testing and commissioning	0%	14	27-Feb-19	12-Mar-19
A9780	Manufacturing and delivery of 4th FRP vessels	0%	60	08-Jan-19	08-Mar-19
A9790	Preparaton works for FPR vessel dismantling, including Mod of pipelines, air ducts and scaffolds	0%	30	27-Feb-19	28-Mar-19
A9800	Discommissioning and replacement of new FRP vessels	0%	30	29-Mar-19	27-Apr-19
A9810	Replacement of recirculation pumps, nutrient pumps and assiociated pipeworks	0%	30	28-Apr-19	27-May-19
A9820	Installaton of instruments	0%	20	28-Apr-19	17-May-19
A9830	Testing and commissioning	0%	14	28-May-19	10-Jun-19
A9840	Final testing and commissioning (including air balancing and performance test)	0%	14	11-Jun-19	24-Jun-19
A9850	Reliability test of upgraded DOU	0%	30	25-Jun-19	24-Jul-19
A9860	As-built drawings and OM manual submission	0%	21	25-Jun-19	15-Jul-19
A9870	Provide Operational Training to ST2	0%	21	16-Jul-19	05-Aug-19
A9880	Handover to ST2	0%	10	06-Aug-19	15-Aug-19
Replacement of MPS1 inlet penstock					
2018/2019 Dry Season					
A9900	Design submission and approval of new penstocks after 1st entry in 2017/2018	0%	60	12-Apr-18	11-Jun-18
A9910	Manufacturing of two new inlet penstocks	0%	250	11-Jun-18	16-Feb-19
A9920	Preparation works for 2018/2019 bypass, including remobilization, setup of suspended platform, pump	0%	90	01-Aug-18*	29-Oct-18
A9930	Implementation of two weeks by-pass	0%	0	13-Nov-18	
A9940	removal of existing inlet penstocks	0%	14	13-Nov-18	26-Nov-18
2019/2020 Dry Season					
A9950	Design and fabrication of temporary bulkhead in adit tunnel	0%	150	27-Nov-18	25-Apr-19
A9955	Delivery of two new inlet penstocks	0%	35	16-Feb-19	23-Mar-19
A9960	Preparation works for 2019/2020 bypass, including remobilization, setup of suspended platform, pump	0%	120	01-Jul-19*	28-Oct-19
A9970	Implementation of 1st two weeks by-pass	0%	0	01-Nov-19	
A9980	Installation of bulkhead in two adit tunnel for isolation of MPS1	0%	14	01-Nov-19	14-Nov-19
A9985	Divert all flow to MPS2 during 2019/2020 dry season	0%	105	15-Nov-19	27-Feb-20
A9988	Erect metal scaffold and remove existing guide frame	0%	30	15-Nov-19	14-Dec-19
A9990	Installation of two new inlet penstocks	0%	45	15-Dec-19	28-Jan-20
A9992	Electrical and control installation of two new inlet penstock	0%	10	29-Jan-20	07-Feb-20
A9994	Testing and commissioning	0%	7	08-Feb-20	14-Feb-20
A9997	Implementation of 2nd two weeks by-pass	0%	0	15-Feb-20	
A9998	Dismantling of temporary bulkhead in two adit tunnel	0%	14	15-Feb-20	28-Feb-20
A9999	Resume MPS1 operation with HATS1 flow	0%	0		28-Feb-20
Feature Wall at Existing CEPT					
A10000	Architectural Design submission and approval for feature wall	0%	75	05-Feb-18*	20-Apr-18



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

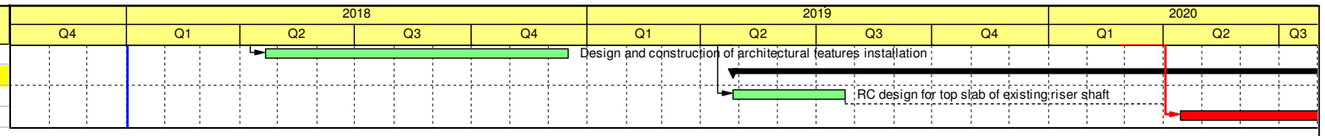
Contract No. DC/2009/10

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme for Completion of Section 3, 4 and 5

Date	Revision	Checked	Approved
06-Sep-17	Rev. 1		

Activity ID	Activity Name	Activity % Complete	Original Duration	Start	Finish
A10010	Design and construction of architectural features installation	0%	240	21-Apr-18	16-Dec-18
Existing Riser shaft					
A10020	RC design for top slab of existing riser shaft	0%	90	26-Apr-19	24-Jul-19
A10030	Cosntruction top slab of existing riser shaft	0%	120	14-Apr-20	11-Aug-20



Actual Work
Remaining Work
Critical Remaining Work
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Summary

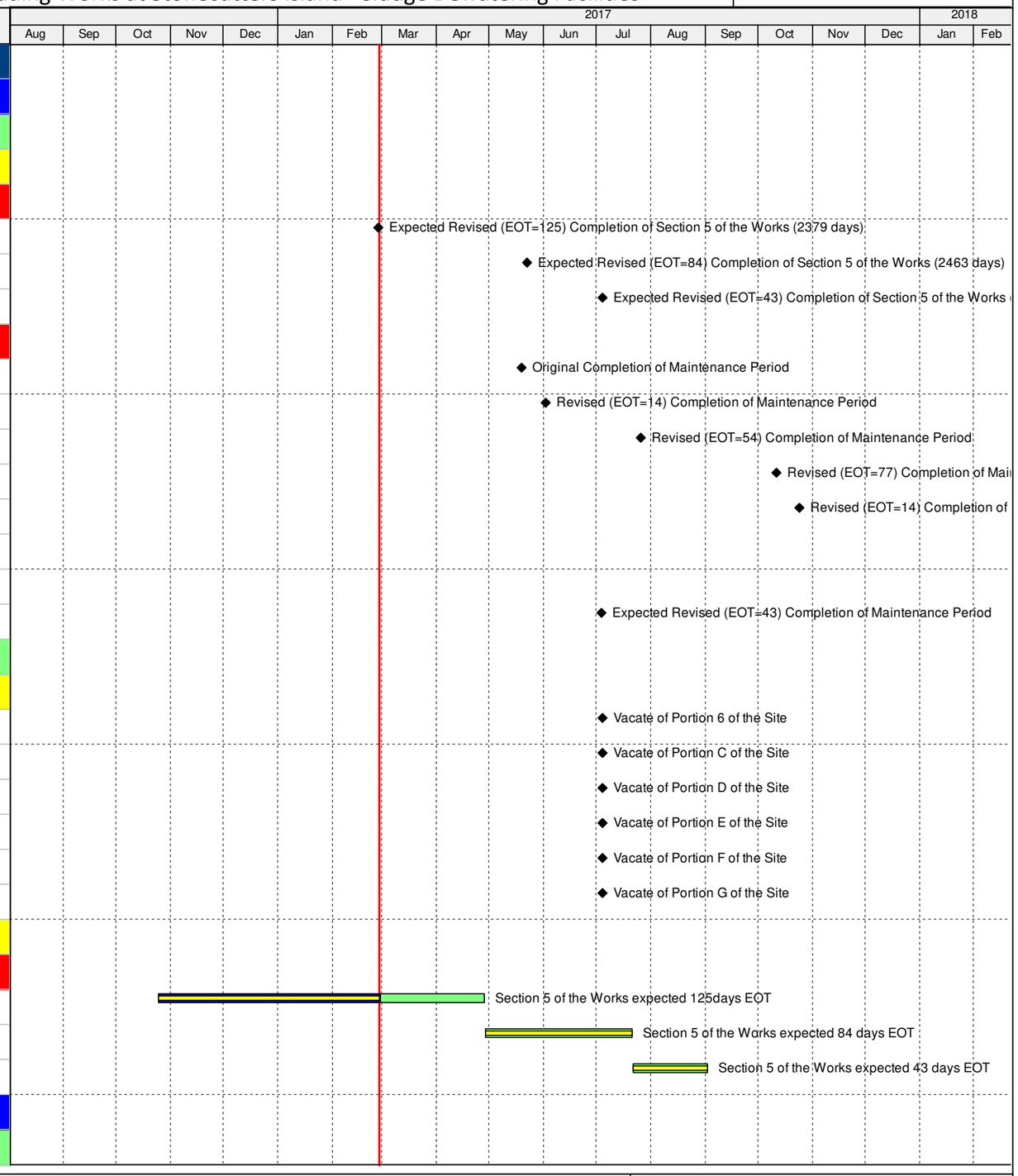
Contract No. DC/2009/10

HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme for Completion of Section 3, 4 and 5

Date	Revision	Checked	Approved
06-Sep-17	Rev. 1		

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
DC/2009/17 Detailed Works Programme Revision 3B_Updated up to 28-Feb-17					
KEY DATE					
Contract Dates					
Commencement and Completion					
Section 5 of the Works					
KD000058	Expected Revised (EOT=125) Completion of Section 5 of the Works (2379 days)	0d		27-Feb-17 A	
KD0000582	Expected Revised (EOT=84) Completion of Section 5 of the Works (2463 days)	0d		22-May-17*	0d
KD0000602	Expected Revised (EOT=43) Completion of Section 5 of the Works (2506 days)	0d		04-Jul-17*	0d
Maintenance Period					
KD000060	Original Completion of Maintenance Period	0d		19-May-17*	0d
KD000061	Revised (EOT=14) Completion of Maintenance Period	0d		02-Jun-17*	0d
KD000062	Revised (EOT=54) Completion of Maintenance Period	0d		26-Jul-17*	0d
KD000063	Revised (EOT=77) Completion of Maintenance Period	0d		11-Oct-17*	0d
KD000064	Revised (EOT=14) Completion of Maintenance Period	0d		24-Oct-17*	0d
KD000065	Expected Revised (EOT=125) Completion of Maintenance Period	0d		27-Feb-18*	0d
KD582	Expected Revised (EOT=84) Completion of Maintenance Period	0d		22-May-18*	0d
KD592	Expected Revised (EOT=43) Completion of Maintenance Period	0d		04-Jul-17*	0d
Completion					
Vacating of Area					
AD000150	Vacate of Portion 6 of the Site	0d		04-Jul-17*	0d
AD000180	Vacate of Portion C of the Site	0d		04-Jul-17*	0d
AD000190	Vacate of Portion D of the Site	0d		04-Jul-17*	0d
AD000200	Vacate of Portion E of the Site	0d		04-Jul-17*	0d
AD000210	Vacate of Portion F of the Site	0d		04-Jul-17*	0d
AD000220	Vacate of Portion G of the Site	0d		04-Jul-17*	0d
Extension of Time					
Section 5 of the Works					
KD0000472	Section 5 of the Works expected 125days EOT	126d	25-Oct-16 A	28-Apr-17	274d
KD0000473	Section 5 of the Works expected 84 days EOT	84d	29-Apr-17	21-Jul-17	274d
KD0000483	Section 5 of the Works expected 43 days EOT	43d	22-Jul-17	02-Sep-17	274d
Section 5 of the Works					
Completion					



Actual Work
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Project Baseline Bar
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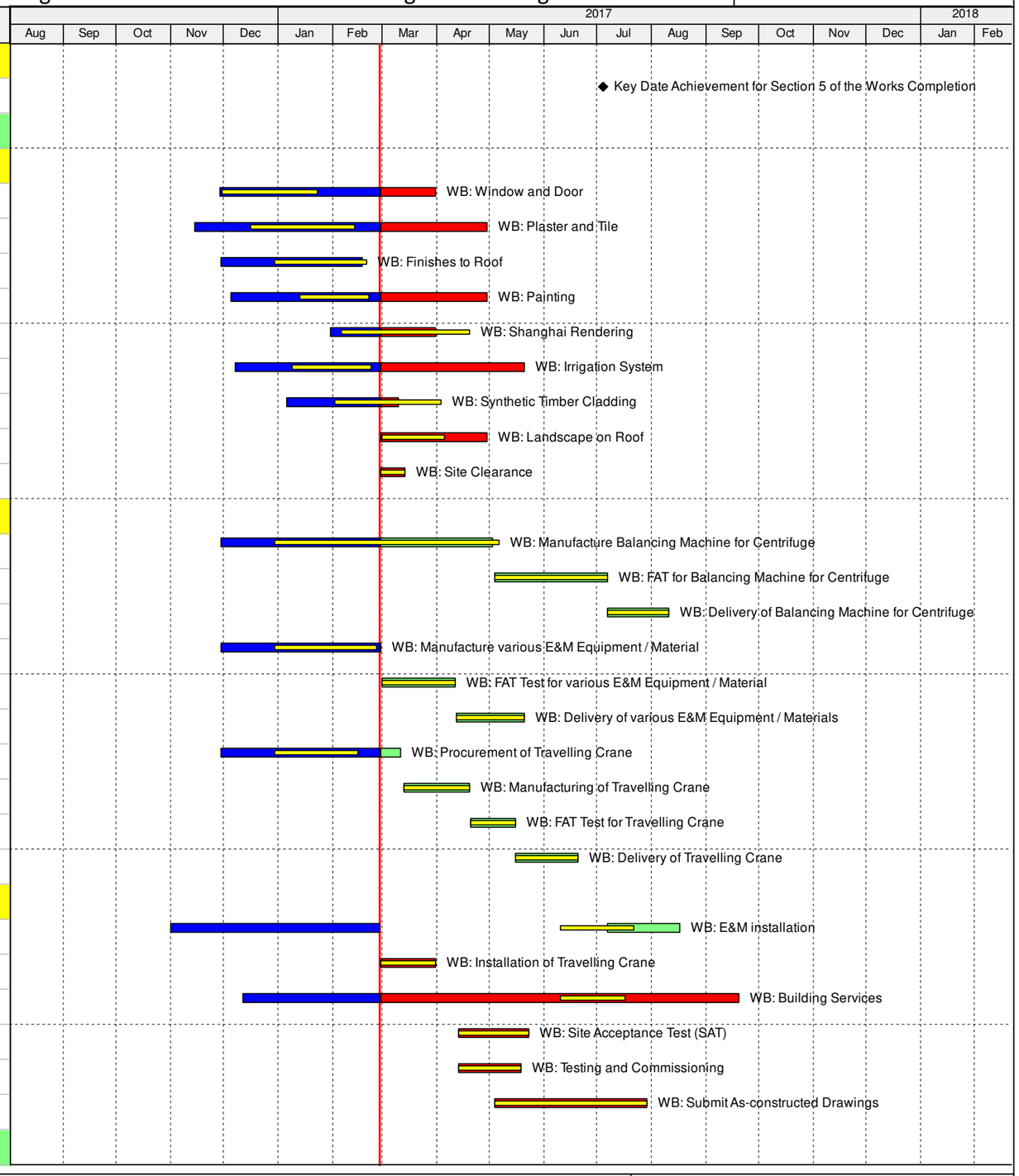
Remaining Level of Effort
Actual Level of Effort

Monthly Progress Report updated up to 28-Feb-17

(Based on Detail Works Programme Rev.3B)

Updated Detail Works Programme Revision 3-B			
Date	Revision	Checked	Approved
28-Feb-17			

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
	Commencement and Completion				
S5000010	Key Date Achievement for Section 5 of the Works Completion	0d		04-Jul-17*	0d
	Workshop Building				
	Architectural Finishes				
S5002620	WB: Window and Door	45d	29-Nov-16 A	31-Mar-17	-29d
S5002630	WB: Plaster and Tile	45d	15-Nov-16 A	29-Apr-17	-39d
S5002640	WB: Finishes to Roof	40d	30-Nov-16 A	18-Feb-17 A	
S5002650	WB: Painting	30d	05-Dec-16 A	29-Apr-17	1d
S5002660	WB: Shanghai Rendering	60d	31-Jan-17 A	31-Mar-17	1d
S5002670	WB: Irrigation System	35d	08-Dec-16 A	20-May-17	-39d
S5002680	WB: Synthetic Timber Cladding	52d	06-Jan-17 A	10-Mar-17	1d
S5002690	WB: Landscape on Roof	30d	01-Mar-17 A	29-Apr-17	-39d
S5002695	WB: Site Clearance	12d	28-Feb-17*	14-Mar-17	-1d
	Procurement, Manufacture and Delivery				
S5002915	WB: Manufacture Balancing Machine for Centrifuge	100d	30-Nov-16 A	02-May-17	235d
S5002920	WB: FAT for Balancing Machine for Centrifuge	53d	04-May-17	07-Jul-17	235d
S5002925	WB: Delivery of Balancing Machine for Centrifuge	30d	07-Jul-17	11-Aug-17	235d
S5002935	WB: Manufacture various E&M Equipment / Material	45d	30-Nov-16 A	28-Feb-17	303d
S5002940	WB: FAT Test for various E&M Equipment / Material	35d	01-Mar-17	11-Apr-17	303d
S5002945	WB: Delivery of various E&M Equipment / Materials	30d	12-Apr-17	20-May-17	303d
S5002950	WB: Procurement of Travelling Crane	36d	30-Nov-16 A	11-Mar-17	283d
S5002955	WB: Manufacturing of Travelling Crane	30d	13-Mar-17	19-Apr-17	283d
S5002960	WB: FAT Test for Travelling Crane	20d	20-Apr-17	15-May-17	283d
S5002965	WB: Delivery of Travelling Crane	30d	16-May-17	20-Jun-17	283d
	E&M Installation and T&C				
S5002968	WB: E&M installation	35d	01-Nov-16 A	17-Aug-17	235d
S5002970	WB: Installation of Travelling Crane	28d	28-Feb-17*	31-Mar-17	-44d
S5002980	WB: Building Services	30d	12-Dec-16 A	19-Sep-17	0d
S5002985	WB: Site Acceptance Test (SAT)	30d	13-Apr-17*	23-May-17	0d
S5002990	WB: Testing and Commissioning	27d	13-Apr-17*	19-May-17	0d
S5002995	WB: Submit As-constructed Drawings	73d	04-May-17*	29-Jul-17	0d
	Southern Sludge Cake Silo				



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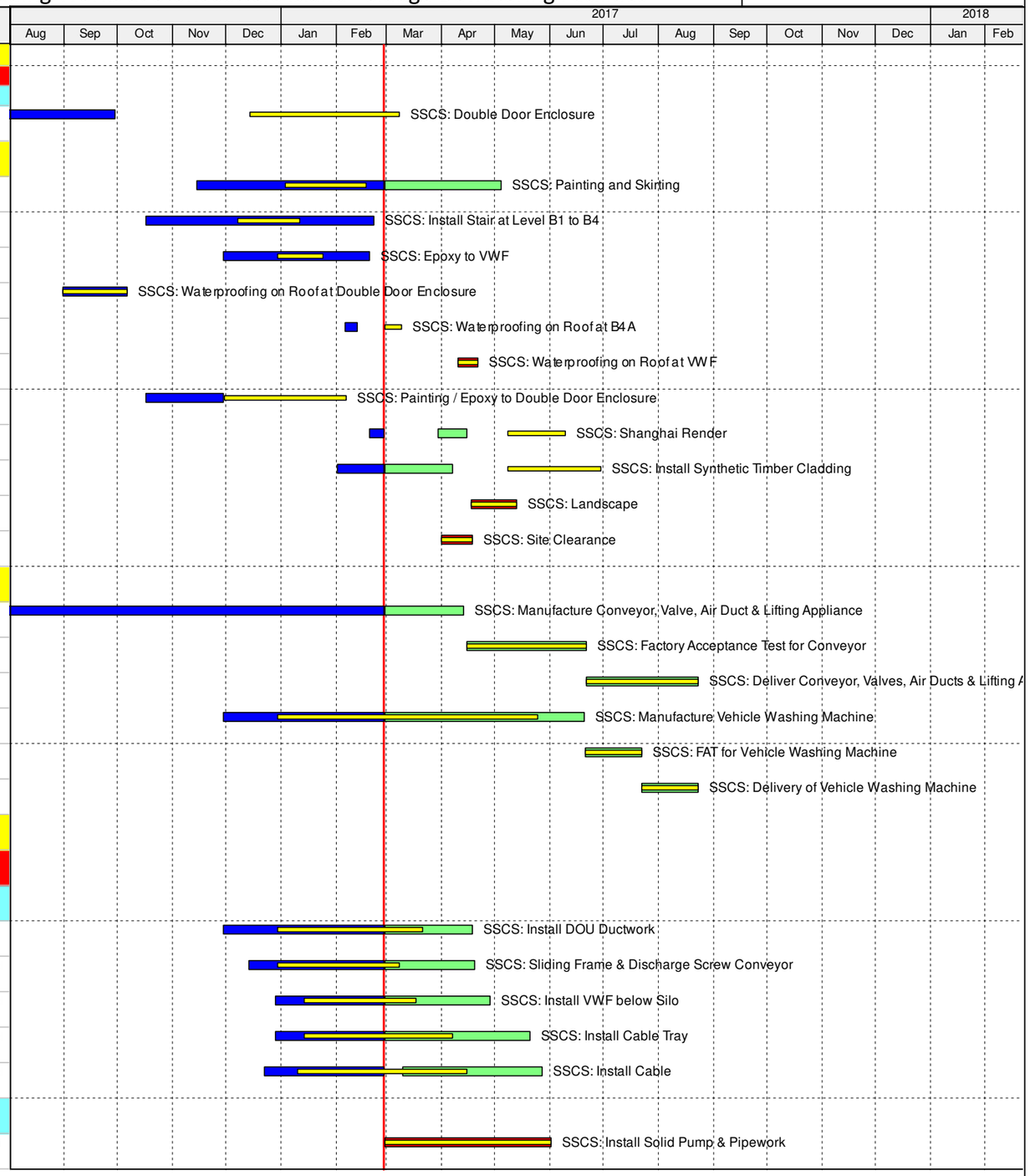
Updated Detail Works Programme Revision 3-B			
Date	Revision	Checked	Approved
28-Feb-17			

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Structure					
Superstructure					
Vehicular Washing Area					
S5003240	SSCS: Double Door Enclosure	67d	14-Jan-15 A	30-Sep-16 A	
Architecture Finishes					
S5003320	SSCS: Painting and Skirting	35d	15-Nov-16 A	04-May-17	39d
S5003340	SSCS: Install Stair at Level B1 to B4	28d	17-Oct-16 A	22-Feb-17 A	
S5003350	SSCS: Epoxy to VWF	21d	30-Nov-16 A	20-Feb-17 A	
S5003380	SSCS: Waterproofing on Roof at Double Door Enclosure	30d	31-Aug-16 A	06-Oct-16 A	
S5003385	SSCS: Waterproofing on Roof at B4A	9d	06-Feb-17 A	13-Feb-17 A	
S5003386	SSCS: Waterproofing on Roof at VWF	9d	10-Apr-17*	21-Apr-17	0d
S5003390	SSCS: Painting / Epoxy to Double Door Enclosure	53d	17-Oct-16 A	30-Nov-16 A	
S5003400	SSCS: Shanghai Render	28d	20-Feb-17 A	15-Apr-17	44d
S5003410	SSCS: Install Synthetic Timber Cladding	45d	02-Feb-17 A	07-Apr-17	39d
S5003420	SSCS: Landscape	21d	18-Apr-17*	13-May-17	0d
S5003430	SSCS: Site Clearance	12d	01-Apr-17*	18-Apr-17	0d
Procurement, Manufacture and Delivery					
S5003530	SSCS: Manufacture Conveyor, Valve, Air Duct & Lifting Appliance	157d	15-Oct-15 A	13-Apr-17	69d
S5003535	SSCS: Factory Acceptance Test for Conveyor	53d	15-Apr-17	21-Jun-17	69d
S5003540	SSCS: Deliver Conveyor, Valves, Air Ducts & Lifting Appliance	53d	21-Jun-17	23-Aug-17	69d
S5003555	SSCS: Manufacture Vehicle Washing Machine	116d	30-Nov-16 A	20-Jun-17	70d
S5003565	SSCS: FAT for Vehicle Washing Machine	27d	21-Jun-17	22-Jul-17	70d
S5003575	SSCS: Delivery of Vehicle Washing Machine	27d	22-Jul-17	23-Aug-17	70d
E&M Installation and T&C					
E&M Works					
Level GF, B1 & B2					
S5004020	SSCS: Install DOU Ductwork	65d	30-Nov-16 A	18-Apr-17	70d
S5004030	SSCS: Sliding Frame & Discharge Screw Conveyor	53d	14-Dec-16 A	19-Apr-17	150d
S5004040	SSCS: Install VWF below Silo	50d	29-Dec-16 A	28-Apr-17	150d
S5004050	SSCS: Install Cable Tray	67d	29-Dec-16 A	20-May-17	151d
S5004060	SSCS: Install Cable	76d	23-Dec-16 A	27-May-17	151d
Level B2A, B3, B4 & B4A					
S5004080	SSCS: Install Solid Pump & Pipework	75d	28-Feb-17*	01-Jun-17	-28d



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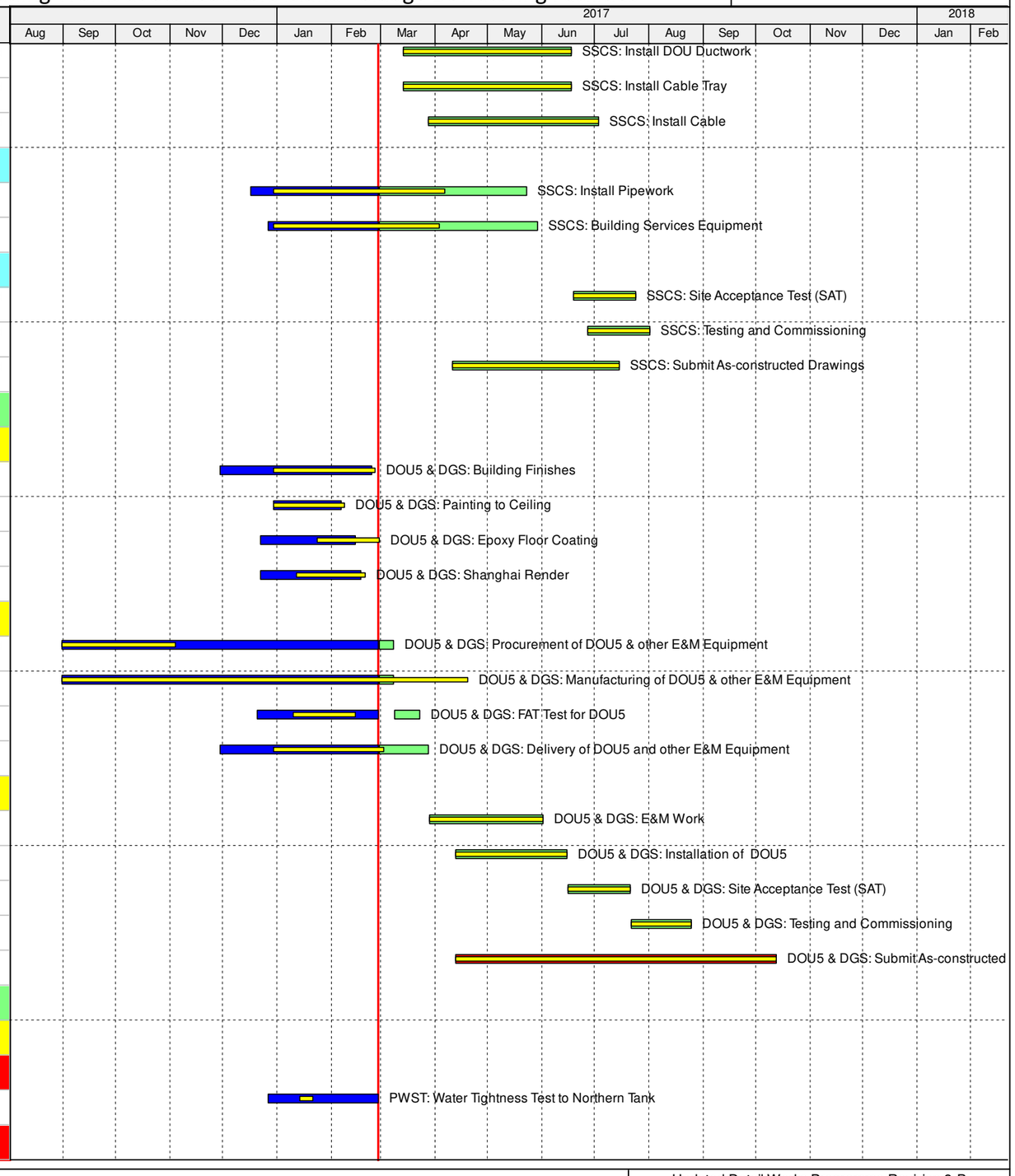
Updated Detail Works Programme Revision 3-B			
Date	Revision	Checked	Approved
28-Feb-17			

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
S5004090	SSCS: Install DOU Ductwork	77d	14-Mar-17	17-Jun-17	110d
S5004100	SSCS: Install Cable Tray	77d	14-Mar-17	17-Jun-17	122d
S5004110	SSCS: Install Cable	77d	28-Mar-17	03-Jul-17	122d
Miscellaneous					
S5004130	SSCS: Install Pipework	78d	17-Dec-16 A	23-May-17	70d
S5004140	SSCS: Building Services Equipment	76d	27-Dec-16 A	29-May-17	70d
Site Acceptance Test (SAT)					
S5004150	SSCS: Site Acceptance Test (SAT)	30d	19-Jun-17	24-Jul-17	110d
S5004160	SSCS: Testing and Commissioning	30d	27-Jun-17	01-Aug-17	110d
S5004170	SSCS: Submit As-constructed Drawings	76d	11-Apr-17	15-Jul-17	110d
Deodourization Unit 5 and DG Store					
Architecture Finishes					
S5008400	DOU5 & DGS: Building Finishes	45d	30-Nov-16 A	24-Feb-17 A	
S5008410	DOU5 & DGS: Painting to Ceiling	30d	30-Dec-16 A	07-Feb-17 A	
S5008420	DOU5 & DGS: Epoxy Floor Coating	27d	23-Dec-16 A	15-Feb-17 A	
S5008430	DOU5 & DGS: Shanghai Render	30d	23-Dec-16 A	18-Feb-17 A	
Procurement and Delivery					
S5008510	DOU5 & DGS: Procurement of DOU5 & other E&M Equipment	53d	31-Aug-16 A	08-Mar-17	146d
S5008520	DOU5 & DGS: Manufacturing of DOU5 & other E&M Equipment	187d	31-Aug-16 A	08-Mar-17	64d
S5008525	DOU5 & DGS: FAT Test for DOU5	27d	21-Dec-16 A	23-Mar-17	64d
S5008530	DOU5 & DGS: Delivery of DOU5 and other E&M Equipment	49d	30-Nov-16 A	28-Mar-17	40d
E&M Installation and T&C					
S5008560	DOU5 & DGS: E&M Work	50d	29-Mar-17	01-Jun-17	40d
S5008570	DOU5 & DGS: Installation of DOU5	50d	13-Apr-17	15-Jun-17	40d
S5008575	DOU5 & DGS: Site Acceptance Test (SAT)	30d	16-Jun-17	21-Jul-17	40d
S5008650	DOU5 & DGS: Testing and Commissioning	30d	22-Jul-17	25-Aug-17	40d
S5008700	DOU5 & DGS: Submit As-constructed Drawings	150d	13-Apr-17*	12-Oct-17	0d
Process Water Storage Tank					
Structure					
Northern PWST					
S5009440	PWST: Water Tightness Test to Northern Tank	7d	27-Dec-16 A	28-Feb-17 A	
Southern PWST					



Actual Work
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Monthly Progress Report updated up to 28-Feb-17

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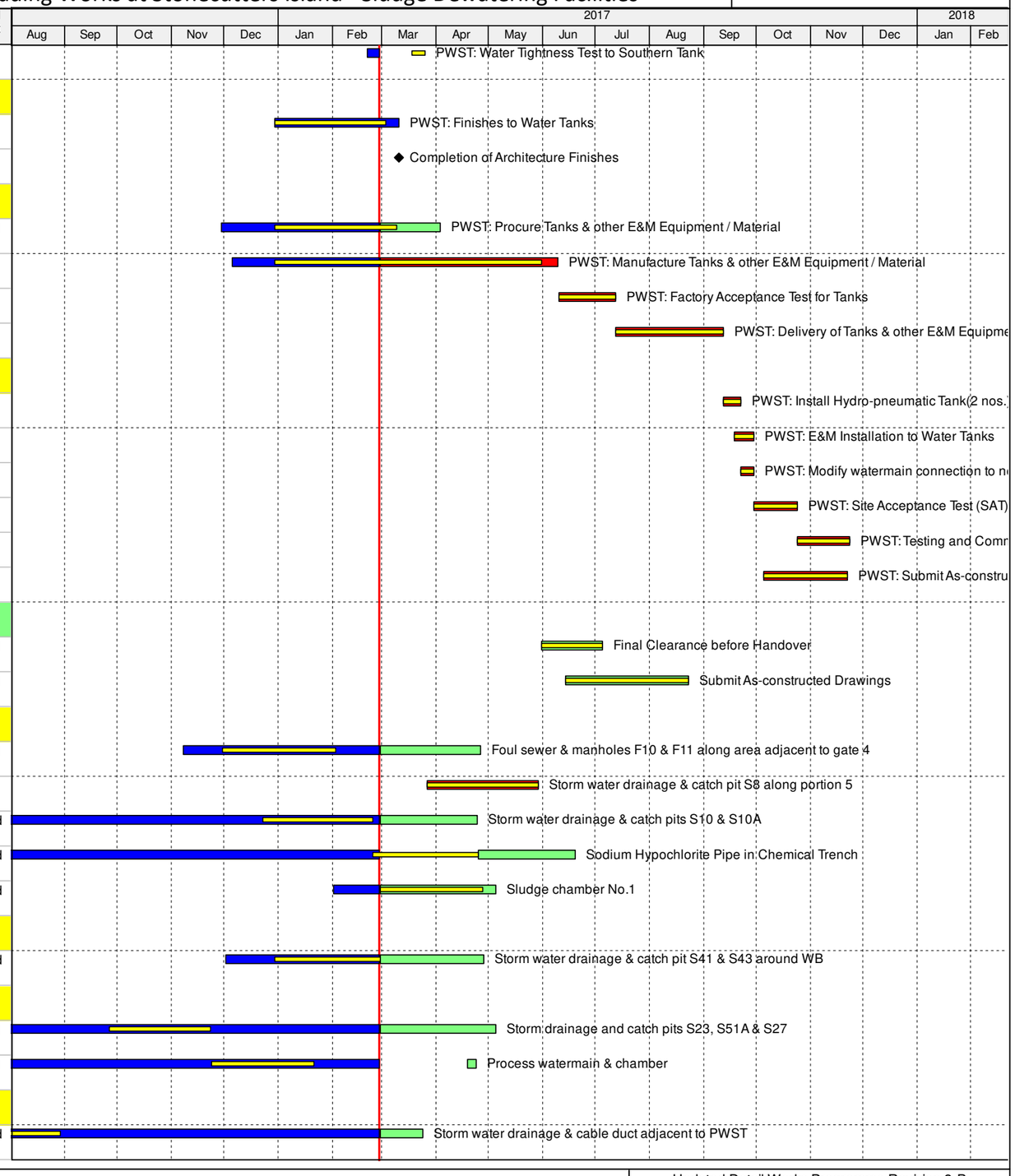
Updated Detail Works Programme Revision 3-B

Date	Revision	Checked	Approved
28-Feb-17			

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
S5009590	PWST: Water Tightness Test to Southern Tank	7d	21-Feb-17 A	28-Feb-17 A	
Architecture Finishes					
S5009600	PWST: Finishes to Water Tanks	50d	30-Dec-16 A	11-Mar-17 A	
S5009601	Completion of Architecture Finishes	0d		11-Mar-17 A	
Procurement, Manufacture and Delivery					
S5009660	PWST: Procure Tanks & other E&M Equipment / Material	55d	30-Nov-16 A	03-Apr-17	20d
S5009670	PWST: Manufacture Tanks & other E&M Equipment / Material	120d	06-Dec-16 A	09-Jun-17	0d
S5009675	PWST: Factory Acceptance Test for Tanks	27d	10-Jun-17	12-Jul-17	0d
S5009680	PWST: Delivery of Tanks & other E&M Equipment / Material	53d	12-Jul-17	12-Sep-17	0d
E&M Installation and T&C					
S5009712	PWST: Install Hydro-pneumatic Tank(2 nos.)	9d	12-Sep-17	22-Sep-17	0d
S5009714	PWST: E&M Installation to Water Tanks	10d	18-Sep-17	29-Sep-17	0d
S5009720	PWST: Modify watermain connection to new structure	6d	22-Sep-17	29-Sep-17	0d
S5009725	PWST: Site Acceptance Test (SAT)	20d	29-Sep-17	24-Oct-17	0d
S5009730	PWST: Testing and Commissioning	25d	24-Oct-17	23-Nov-17	0d
S5009740	PWST: Submit As-constructed Drawings	40d	05-Oct-17	22-Nov-17	1d
External (Civil) Works					
S5009970	Final Clearance before Handover	30d	31-May-17	05-Jul-17	76d
S5009980	Submit As-constructed Drawings	60d	14-Jun-17	23-Aug-17	76d
General Area					
S5009838	Foul sewer & manholes F10 & F11 along area adjacent to gate 4	50d	08-Nov-16 A	26-Apr-17	12d
S5009846	Storm water drainage & catch pit S8 along portion 5	50d	27-Mar-17*	29-May-17	0d
S5009868	Storm water drainage & catch pits S10 & S10A	48d	01-Jun-16 A	24-Apr-17	284d
S5009872	Sodium Hypochlorite Pipe in Chemical Trench	48d	01-Jun-16 A	19-Jun-17	284d
S5009876	Sludge chamber No.1	48d	02-Feb-17 A	05-May-17	138d
WB Area					
S5009842	Storm water drainage & catch pit S41 & S43 around WB	47d	02-Dec-16 A	28-Apr-17	100d
SSCS Area					
S5009878	Storm drainage and catch pits S23, S51A & S27	49d	01-Jun-16 A	05-May-17	57d
S5009882	Process watermain & chamber	49d	01-Jun-16 A	24-Apr-17	57d
PWST Area					
S5009844	Storm water drainage & cable duct adjacent to PWST	47d	01-Jun-16 A	24-Mar-17	127d



Actual Work
Remaining Work
Critical Remaining Work
Project Baseline Bar
Milestone
Remaining Level of Effort
Actual Level of Effort

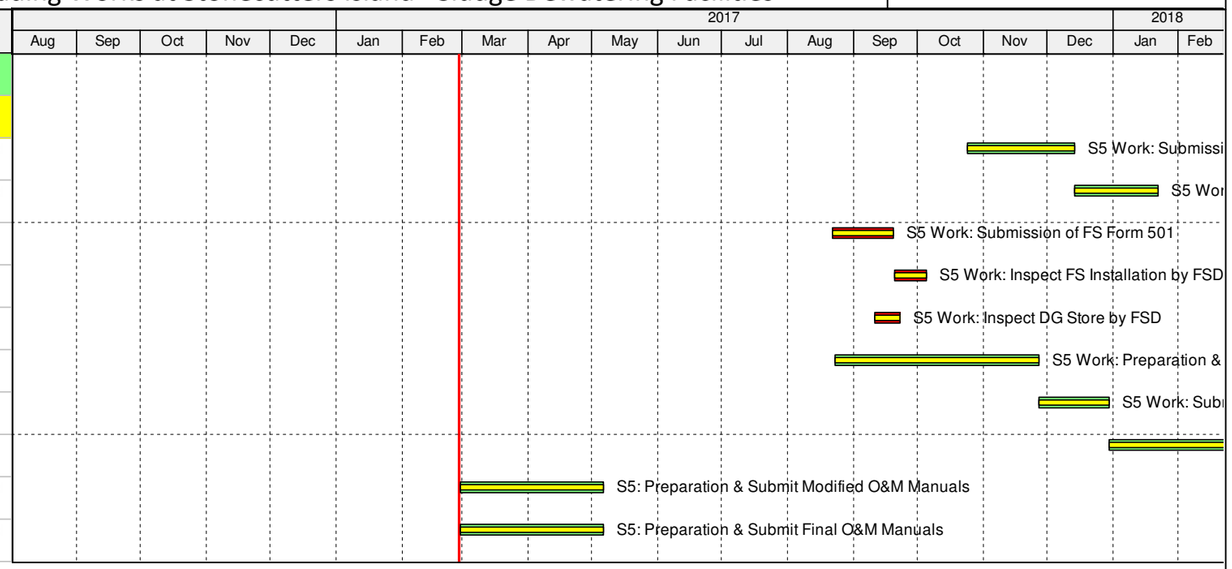
Monthly Progress Report updated up to 28-Feb-17

(Based on Detail Works Programme Rev.3B)

Updated Detail Works Programme Revision 3-B

Date	Revision	Checked	Approved
28-Feb-17			

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Statutory Inspection and Training					
E&M: Testing and Commissionings					
S5010110	S5 Work: Submission of WWO46	43d	24-Oct-17	14-Dec-17	105d
S5010120	S5 Work: Inspect Water Supply by WSD	30d	14-Dec-17	22-Jan-18	105d
S5010130	S5 Work: Submission of FS Form 501	25d	22-Aug-17	19-Sep-17	0d
S5010140	S5 Work: Inspect FS Installation by FSD	12d	20-Sep-17	05-Oct-17	0d
S5010150	S5 Work: Inspect DG Store by FSD	11d	11-Sep-17	23-Sep-17	0d
S5010210	S5 Work: Preparation & Submit Draft O&M Manuals	80d	23-Aug-17	27-Nov-17	69d
S5010220	S5 Work: Submit Training Programme and Syllabus	27d	27-Nov-17	30-Dec-17	69d
S5010230	S5 Work: Training of Employer Staff (3 Sessions)	53d	30-Dec-17	08-Mar-18	69d
S5010250	S5: Preparation & Submit Modified O&M Manuals	53d	28-Feb-17	06-May-17	168d
S5010260	S5: Preparation & Submit Final O&M Manuals	53d	28-Feb-17	06-May-17	168d



Actual Work
Remaining Work
Critical Remaining Work
Project Baseline Bar
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(Based on Detail Works Programme Rev.3B)

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