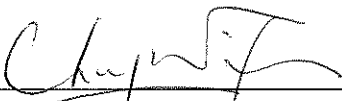


Harbour Area Treatment Scheme Stage 2A

**Contract No. DC/2009/10, DC/2009/17
and DC/2009/18**

**Consolidated Quarterly Environmental
Monitoring and Audit Report
June 2016 to August 2016**

(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.

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

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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-1134

**Submission of Quarterly EM&A Consolidated Report (Version 1.0) for
Stonecutters Island Sewage Treatment Works for June 2016 to August 2016
(No. 27)**

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Dear Sir,

We refer to the captioned report consolidating the individual ETL certified and IEC verified Quarterly EM&A Reports for Contract Nos. DC/2009/10, DC/2009/17 and DC/2009/18 at Stonecutters Island Sewage Treatment Works site for HATS Stage 2A. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED



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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	Harbour Area Treatment Scheme

EXECUTIVE SUMMARY

Introduction

1. This is the 27th Consolidated Quarterly Environmental Monitoring and Audit (EM&A) Report summaries the key information of EM&A quarterly 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, DC/2009/17 and DC/2009/18.
 - 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; and
 - Contract no. DC/2009/18 - Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection 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 quarterly summary of the EM&A works at SCISTW for the purpose of ease of references. 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. The EM&A programme of Contract DC/2009/19 and DC/2007/23 have completed all major construction works in the Stonecutters Island respectively on 5 March 2015 and 16 October 2015.
5. No amendment of the information in the EM&A reports for each individual contract was made in this consolidated quarterly report.
6. This Report documents the findings of EM&A Works for the Project covering the period from June 2016 to August 2016.
7. The details of the EM&A for individual contracts can be found in the separate EM&A quarterly 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/2009/10	Executive Summary	At SCISTW, air quality monitoring station AM7, AM8 and noise monitoring station 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
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

Contract no.	ES/Web Site	Details:
DC/2009/18	Executive Summary	At SCISTW, air quality monitoring station AM9 and noise monitoring station NM7 were monitored by ET for Contract no. DC/2009/18.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC200918/EMA%20Report-DC200918.html

Environmental Monitoring Works

- The environmental monitoring works were conducted by the ETs for the Contract DC/2009/10 and DC/2009/18, while no monitoring work is requested for DC/2009/17 since the monitoring stations were duplicated. Site audits were conducted once per week for each contract by their ETs.
- Summary of the non-compliance of the reporting quarter is tabulated in **Table II**.

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

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	N/A
	AM7	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	AM8	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
DC/2009/18	AM9	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
DC/2009/10	NM5	Noise	0	0	0	0	N/A
	NM6		0	0	0	0	N/A
DC/2009/18	NM7		0	0	0	0	N/A

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Key Information in the Reporting Quarter

- Summary of key information in the reporting quarter is tabulated in **Table III**.

Table III Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	3	Monthly Consolidated EM&A Reports for SCISTW For June, July and August 2016	Submitted to EPD	No comment	---
Notifications of any summons & prosecutions received	0	--	N/A	N/A	---

Key Information in the EIA Report

14. 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 three contracts are provided in the **Appendix H**.

1. INTRODUCTION

Background

- 1.1 Harbour Area Treatment Scheme (HATS) Stage 2A is a designated project with Register No.: AEIAR-121/2008. The Environmental Permit (Permit No. EP-322/2008/G) 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, DC/2009/17 and DC/2009/18 are shown in **Figure 1** and **2**.
- 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 responsible to coordinate all submissions from the ETs of other contractors at SCISTW as required in the EP, EIA Report and EM&A Manual for the Project.
- 1.4 The 1st to 3rd consolidated quarterly EM&A reports were prepared by Ove Arup & Partners Hong Kong Ltd (Arup) and submitted to EPD. From November 2010 and onwards, the 4th and subsequent consolidated quarterly EM&A report will be prepared and submitted by Cinotech Consultant Limited, the ET for the Contract DC/2009/17, DC/2009/10 and DC/2009/18.
- 1.5 This is the 27th consolidated quarterly EM&A report summarizing the EM&A works conducted for the Project at SCISTW during June 2016 to August 2016.
- 1.6 The quarterly 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 quarterly EM&A Reports are provided in the Project Website.
- 1.7 The environmental monitoring works in the Project were covered by the ETs for the Contracts: DC/2009/10 (AM6a, AM7, AM 8; NM5 and NM6) and DC/2009/18 (AM9 and NM7).

Current Contracts at SCISTW

- 1.8 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.

Contract no. DC/2009/18

- The Construction of an 880m long effluent tunnel at Stonecutters Island; and
- The Construction of disinfection facilities at Stonecutters Island Sewage Treatment Works (SCISTW).

Project Organizations

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

Table 1.1 Key Project Contacts

Contract No./ Position	DC/2009/10
Contract Title:	Upgrading Works at SCISTW - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Consultant	Ove Arup & Partners HK Ltd
The Engineer	S.Y.Chan (Tel: 2528 3031)
The Engineer Representative	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Ms Natalie Kwok (Tel: 6794 8844)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)
Contractor	Sun Fook Kong – Biwater Joint Venture
Site Agent	Mr. Keith Ho (Tel: 2620 0070)
Environmental Officer	Mr. Albus Cheung (Tel:2620 0070)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Table 1.1(cont'd) Key Project Contacts

Contract No.	DC/2009/17	DC/2009/18
Contract Title:	Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities	Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection 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	Mr Jason Yu (Tel: 2371 9407)	Mr Jason Yu (Tel: 2371 9407)
Independent Environmental Checker	Dr. Anne Kerr (Tel:28285757)	Dr. Anne Kerr (Tel:28285757)
Contractor	China State- ATAL Joint Venture	Chun Wo – CEC Joint Venture
Site Agent	Charles Tse (Tel: 9270 3384)	Mr. W.C. Lee (Tel: 3975 6388)
Environmental Officer	K.K Tam (Tel: 2370 3010)	Mr. Shelton Chan (Tel: 3975 6331)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Construction Programme

- 1.10 The construction program for the Contracts at SCISTW are provided in **Appendix K**. Major construction works undertaken during the reporting quarter include:

Table 1.2 Construction Works in the Reporting Quarter

Contract No.	Construction Works in the Reporting Quarter
DC/2009/10	<p><u>June 2016:</u></p> <ul style="list-style-type: none"> At MPS2, installation of hand railing of FRP Working Platform at A & B sides of Access Floor 1 (-32mPD) At Portion 3, replacement of multi-part covers at PST 39/41 At Portion 8, for E&M works, Dosing pump and truck unloading pump tests completed, End-to-end test and software simulation test in progress, Installation for Dosing pipe from storage area to FDC in progress, and Overhead crane installations in progress. At Portion 6, Steel fixing for last Concrete pour of Staircases, and Construction additional concrete slab of Riser Shaft. At Portion 7, Construction for ground beam and pile cap (G.L. 1-6/A-C) up to +4.95mPD is completed on 23 June 2016, and Backfilling works for G.L. 1-6/A-C up to +4.85mPD For External works, Driving Sheetpile for NWK Overflow Pipe, Backfilling for NWK Overflow Pipe, Excavation Work for NWK Overflow Pipe and Construction of Concrete Pavement. <p><u>July 2016:</u></p> <ul style="list-style-type: none"> At MPS2, installation of hand railing of FRP Working Platform at A & B sides of Access Floor 1 (-32mPD). Installation of Drainage Pipe at MPS2 B4/F, Megger Test of MVAC ATS

	<p>Power Cables, and Installation of 10T Monorail Crane at -2mPD.</p> <ul style="list-style-type: none"> • At Portion 3, replacement of multi-part covers at PST 39/41; Installation of FRP covers at extended MDC and FT outlet. • At Portion 8, for E&M works, Dosing pump and truck unloading pump tests completed, End-to-end test and software simulation test in progress, Installation for Dosing pipe from storage area to FDC in progress, and Overhead crane installations in progress. • At Portion 6, Steel fixing for last Concrete pour of Staircases, and Construction additional concrete slab of Riser Shaft. • Construction of Ground floor slab at Potion 7. • For External works, Driving Sheetpile for NWK Overflow Pipe, Backfilling for NWK Overflow Pipe, Excavation Work for NWK Overflow Pipe and Construction of Concrete Pavement. <p><u>August 2016:</u></p> <ul style="list-style-type: none"> • At MPS2, FRP Working Platform of Access Floor 1 (-32mPD) was completed. • At Portion 3, replacement of multi-part covers at PST 39/41. • At Portion 8, For E&M works, End-to-end test and software simulation test in progress, Installation for Dosing pipe from storage area to FDC completed, and Overhead crane load tests completed. • At Portion 6, Construction of ground slab from +2.8mPD to +4.8mPD of Valve Chamber, and Construction of wall from -24.2mPD to -17.6mPD at Riser shaft. • At Potion 7, Rebar fixing and formwork erection from G/F to 1/F. • For External works, Painting works for external wall Existing MPS1, Timber cladding installation at ST2 administration building, Synthetic timber cladding at CEPT MCC Room, Labeling the Sludge holding tanks after paintings, Backfilling Trench of DN1200 next to CDB; Demolish the existing concrete pavement for construction of Porous Pavement, and Driving Sheet Pipe for trench of DN1200 adjacent to Storage Building.
DC/2009/17	<p><u>June 2016:</u> Portion 6:</p> <ul style="list-style-type: none"> • Pre-drilling for Section 5 piling works was completed on 9 June 2015. • Construction of sub structure of Southern Sludge Cake Silos (SSCS) was completed. • Construction of superstructure of Southern Sludge Cake Silos (SSCS) was in progress. • Construction of sub structure of Workshop Building (WB) was in progress. • Construction of superstructure of Workshop Building (WB) was in progress. <p><u>July 2016:</u> Portion 6:</p> <ul style="list-style-type: none"> • Construction of superstructure of Southern Sludge Cake Silos (SSCS) was in progress. • Construction of sub structure of Workshop Building (WB) was in progress. • Construction of superstructure of Workshop Building (WB) was in progress. <p>External Works:</p> <ul style="list-style-type: none"> • Laying of centrate pipe (CP1 and CP2) at Portion 6 was complete and the final connection was completed on 23 July 2015.

	<p><u>August 2016:</u> Portion 6:</p> <ul style="list-style-type: none"> • Construction of superstructure of Southern Sludge Cake Silos (SSCS) was in progress. • Construction of sub structure of Workshop Building (WB) was in progress. • Construction of superstructure of Workshop Building (WB) was in progress.
DC/2009/18	<p><u>June 2016:</u> Portion 3:</p> <ul style="list-style-type: none"> • ABWF Works and Installation of FRP Cover at Chamber 15A; • Trial trench excavation at Piling Locations and pre-bored H-pile construction at Extension of Chamber 15; and • Maintain operation of New DCP. <p>Portion 7:</p> <ul style="list-style-type: none"> • Construction of surface channel and pavement at Portion 7; • Installation of FRP Cover for FDC No.2; and • Installation of E&M Equipment and electrical work at DOU 4. <p><u>July 2016:</u> Portion 3:</p> <ul style="list-style-type: none"> • ABWF Works and Installation of FRP Cover at Chamber 15A; • Construction of surface channel and pavement at Portion 3, 5 & 12; • Pre-bored H-pile construction and Demolition of portion of Existing Box Culvert for pre-bored H-pile construction at Extension of Chamber 15; and • Maintain operation of New DCP. <p>Portion 7:</p> <ul style="list-style-type: none"> • Construction of surface channel and pavement at Portion 7; • Installation of FRP Cover for FDC No.2; and • Installation of E&M Equipment and electrical work at DOU 4. <p><u>August 2016:</u> Portion 3:</p> <ul style="list-style-type: none"> • ABWF Works and Installation of FRP Cover & Walkway at Chamber 15A; • Remove Sheet Piles at Overflow Culvert; • Construction of surface channel and pavement at Portion 3, 5 & 12; • Installation of Sheet Piles by Pre-boring method for construction at Extension of Chamber 15; • Maintain operation of New DCP. <p>Portion 7:</p> <ul style="list-style-type: none"> • Construction of surface channel and pavement at Portion 7; • Installation of FRP Cover for FDC No.2; • Reinstatement of pavement and fence wall of Gate 6; and • Installation of E&M Equipment, electrical works, Bacterial Incubation and T&C at DOU 4.

Summary of EM&A Requirements

1.11 The EM&A programme requires construction phase monitoring for air quality and construction noise, landscape and visual and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;

- Event Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

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

1.13 This report summarized the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project from June 2016 to August 2016, and the methodology and QA/QC procedures of the monitoring parameters.

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 Four designated monitoring stations, AM6a, AM7, AM8 and AM9 were selected for impact dust monitoring. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Responsible Contracts	Location of Measurement
AM6a	DC/2009/10	Works site boundary of DC/2009/10
AM7		North West Kowloon Sewage Pumping Station
AM8		Block A of Government Dockyard
AM9	DC/2009/18	Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Remark:

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

Monitoring Equipment

- 2.3 The equipment used in the impact air monitoring programme and the copies of calibration certificates could be referred to the relevant monthly reports for the respective contracts.

Monitoring Parameters, Frequency and Duration

- 2.4 Table 2.2 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period.

Table 2.2 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

- 2.5 The monitoring methodology, QA/QC procedure and copies of calibration certificates for monitoring equipment could be refer to the relevant monthly reports for respective Contract.

Results and Observations

2.6 **Table 2.3** summaries the air quality monitoring results at AM6a, AM7, AM8 and AM9 in reporting quarter.

Table 2.3 Summary of 1-hour and 24-hour TSP Monitoring Results

Air Quality Monitoring Station	Average μgm^{-3}	Range μgm^{-3}	Action Level μgm^{-3}	Limit Level μgm^{-3}
June 2016				
1 hour TSP				
AM6a	64	22 - 255	346	500
AM7	126	82 - 184	322	
AM8	97	61 - 173	307	
AM9	117.4	71.7 - 200.6	318	
24 hours TSP				
AM6a	37	28 - 44	196	260
AM7	73	51 - 103	207	
AM8	17	15 - 19	158	
AM9	51.8	43.0 - 63.1	169	
July 2016				
1 hour TSP				
AM6a	65	15 - 203	346	500
AM7	98	68 - 121	322	
AM8	72	50 - 94	307	
AM9	91.0	62.7 - 117.1	318	
24 hours TSP				
AM6a	41	29 - 69	196	260
AM7	76	46 - 132	207	
AM8	35	13 - 65	158	
AM9	49.8	21.7 - 72.5	169	
August 2016				
1 hour TSP				
AM6a	59	18 - 87	346	500
AM7	106	36 - 176	322	
AM8	80	31 - 126	307	
AM9	115.2	75.4 - 170.4	318	
24 hours TSP				
AM6a	44	16 - 59	196	260
AM7	123	43 - 169	207	
AM8	25	14 - 60	158	
AM9	78.5	28.8 - 109.4	169	

2.7 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix E**.

2.8 All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded. Summary of exceedance is presented in **Appendix E**.

- 2.9 The graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix B**.
- 2.10 According to 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, NM6 and NM7 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 three designated monitoring stations by the ETs of the responsible Contracts as listed in **Table 3.1**. **Figure 1** 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
NM7	DC/2009/18	Open Area near Naval Base Barrack

Monitoring Equipment

- 3.3 The equipment used in the impact noise monitoring programme and the copies of calibration certificates could be referred to the relevant monthly report for respective contracts.

Monitoring Parameters, Frequency and Duration

- 3.4 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM5	$L_{eq}(30 \text{ min.})$ dB(A)	0700-1900 hrs on weekdays	Once per week
NM6 NM7	$L_{eq}(5 \text{ min.})$ dB(A)	During restricted hours	Weekly monitoring to be conducted during the construction works

Monitoring Methodology and QA/QC Procedures

- 3.5 The monitoring methodology, copies of calibration certificates for monitoring equipments and QA/QC procedure could be refer to the relevant monthly reports for Contract DC/2009/10 and DC/2009/18.

Results and Observations

- 3.6 **Table 3.3** summaries the noise monitoring results at NM5, NM6 and NM7 in reporting quarter.

Table 3.3 Summary of Noise Monitoring Results

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.)
<i>June 2016</i>		
NM5	63.7 - 70.6	75.0
NM6	63.6 – 69.5	
NM7	64.0 - 71.1	
<i>July 2016</i>		
NM5	60.6 - 66.9	75.0
NM6	61.4 – 64.2	
NM7	70.0 - 70.8	
<i>August 2016</i>		
NM5	62.5 - 65.3	75.0
NM6	61.9 – 71.8	
NM7	63.8 - 71.2	
For the time period 1900-2300 hrs. on Normal Weekdays, And 0700-2300 of Sundays and Public Holiday		
Monitoring Station	Range, dB(A) L _{eq} (5 min.)	Limit Level ,dB(A) L _{eq} (5 min.)
<i>June 2016</i>		
NM7	63.6 - 64.3	70.0
<i>July 2016</i>		
NM7	64.1 - 64.4	70.0
<i>August 2016</i>		
NM7	64.3 - 65.0	70.0
All days during 2300 to 0700 hrs. of the next day		
<i>June 2016</i>		
NM7	58.1 - 58.6 ⁽¹⁾	55.0
<i>July 2016</i>		
NM7	58.3 - 58.6 ⁽¹⁾	55.0
<i>August 2016</i>		
NM7	57.5 - 58.7 ⁽¹⁾	55.0

Remarks:

¹⁾ Since the construction noise levels recorded in restricted hour from 23:00 to 07:00 of the next day were lower than the baseline level (i.e. 59.7 dB (A)), the recorded noise levels were considered non-valid exceedance of Limit Level.

- 3.7 No Action/Limit Level exceedance of Noise in normal working hours and restricted hours was recorded in the reporting quarter. Summary of exceedance is presented in **Appendix G**.
- 3.8 The graphical presentations of Noise monitoring results are shown in **Appendix C**.
- 3.9 The major noise sources identified at the designated noise monitoring stations during day time were the noise generated from onsite trucks movement, concreting work and the traffic noise from the Container Port Road South close to the site boundary of the SCISTW; while the major noise sources identified during the restricted time period was the construction works of Contract No: DC/2009/18 and traffic noise from the nearby Container Port Road South and Stonecutters Bridge.

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 each Project site.
- 4.2 No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of landscape and visual mitigation measures are being properly carried out in the reporting quarter in accordance to section 11.10 of the EM&A Manual. No non-compliance was observed during the site inspections.
- 4.4 The summaries of site audits for the three contracts were extracted from their reports and presented in **Appendix F**.

Review of Environmental Monitoring Procedures

- 4.5 The monitoring works conducted by the monitoring team of respective Contracts and were inspected regularly by their ETs.

Status of Environmental Licensing and Permitting

- 4.6 All permits/licenses obtained for the each Contract are summarized in **Appendix D**.

5 STATUS OF WASTE MANAGEMENT

5.1 The amount of wastes generated by the activities of contracts in the reporting quarter is the following:

Table 5.1 Summary of Amount of Waste Generated in Reporting Quarter

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)
<i>June 2016</i>						
DC/2009/10	328(m ³)	175(kg) and 7 (m ³)	0	0	0	0
DC/2009/17	141(m ³)	11(ton)	0	0	0	0
DC/2009/18	608(m ³)	8(m ³)	0	0	0	0
<i>July 2016</i>						
DC/2009/10	446(m ³)	19 (m ³)	0	0	0	0
DC/2009/17	209(m ³)	23(ton)	0	0	0	0
DC/2009/18	20(m ³)	16(m ³)	0	0	0	0
<i>August 2016</i>						
DC/2009/10	293(m ³)	330(kg) and 23(m ³)	0	0	0	0
DC/2009/17	191(m ³)	18(ton)	0	0	0	0
DC/2009/18	105(m ³)	1,800(kg) and 7(m ³)	376(kg)	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 and other General Refuse.

5.2 The disposal location of wastes generated by the activities of the three contracts is the following:

Table 5.2 Summary of Disposal Location of Waste Generated in Reporting Quarter

Contract No.	Disposal Location of Wastes in Report Quarter
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill
DC/2009/18	Lam Tei Quarry, Tuen Mun Area 38 Fill Bank and NENT Landfill and Tseung Kwan O Area 137 Fill Bank

Landscape and Visual Monitoring

5.3 Landscape and visual monitoring as described in the EM&A Manual has been implemented by the individual Contracts. The major findings and recommendations are summarized in **Appendix I**.

Implementation Status of Environmental Mitigation Measures

5.4 Details of the implementation of mitigation measures for the five contacts are provided in the **Appendix H**.

5.5 In the weekly environmental site inspections during the reporting quarterly period, no non-conformance was identified. The observations and recommendations for the Projects are summarized in **Appendix F**.

Implementation Status of Event Action Plans

5.9 The Event Action Plans for air quality and noise are presented in **Appendix G**.

1-hr TSP

5.10 No Action/Limit Level exceedance was recorded.

24-hr TSP

5.11 No Action/Limit Level exceedance was recorded.

Construction Noise

5.12 No Action/Limit Level exceedance for normal working hours and restricted hours was recorded.

Summary of Complaints and Prosecutions

5.13 No environmental complaint and prosecution was received at SCISTW for the three contracts during the reporting quarterly period.

5.14 There was a total of 1 project-related environmental complaint received since the commencement of the three contracts. The Complaint Log is presented in **Appendix J**.

6. FUTURE KEY ISSUES

Key Issues for the Coming Quarter

6.1 Key environmental issues in the coming quarter include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, roadworks, excavation works and loading and unloading dusty materials on-site;
- Noise from operation of equipment and machinery on-site;
- Storage of chemicals/fuel and chemical waste/waste oil on-site;
- Ponding water generated in pre-drillings;
- Drainage system should be well designed and maintained to prevent flooding and silty water getting into the public area;
- Oil leakage from equipment and spillage;
- Silty surface runoff generated from the site area during raining;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Stockpile should be covered by tarpaulin to reduce dust generation;
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities; and
- Proper tree and shrub protection works should be provided when carrying out works near existing trees and shrubs.

Construction Program for the Coming Quarter

6.2 The tentative construction programs for respective Contracts are provided in **Appendix K**.

7 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 7.1 Environmental monitoring and audit works were performed in the reporting quarter 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 quarter. 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 quarter. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

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

Site Audit

- 7.5 Weekly Environmental Site Audits and Landscape and Visual Monitoring were conducted in a weekly basis during the reporting quarter. No non-compliance was recorded.

Complaint and Prosecution

- 7.6 There are no environmental related summonses, prosecutions and complaints in the reporting quarter.

Recommendations

- 7.7 The following recommendations were made for the coming reporting quarter:

Dust Impact

- 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 Impact

- 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; and
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

Water Impact

- 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.

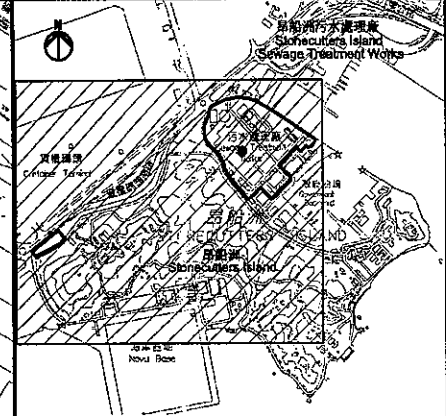
Waste/Chemical Management

- 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/ equipments on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment;
- To well maintain the equipments 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; and
- To avoid any construction materials being placed within the tree protection zone.

FIGURES



KEY PLAN

LEGEND:

- BOUNDARY OF SCISTW
- ALIGNMENT OF EFFLUENT TUNNEL

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

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

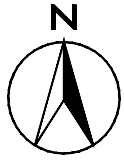
Drawing title
**GENERAL LAYOUT
 (SHEET 1)**
 Fig. 1B

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

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DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE
 HONG KONG
 SPECIAL ADMINISTRATIVE REGION

Printed by : 17/16/2011
 Filename : J:\24888\Record\WORKING\CIVIL\2010617_ETF\DCN\24888_ETF0021.dgn



AM7
North West Kowloon
Sewage Pumping Station

NM5
FSD Diving Rescue and
Training Centre

AM6a
Works Site Boundary

Stonecutters Island
Sewage Treatment Plant

NM6
Customs' Marine Base

AM8
Block A of
Government Dockyard

LEGEND:

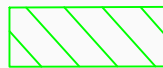
DC/2009/10' SITE AREA



DC/2009/17' SITE AREA



DC/2009/18' SITE AREA



AIR QUALITY MONITORING
STATION



NOISE MONITORING STATION



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.

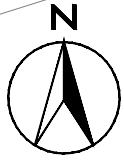
MA11007

FIGURE NO.

2

REV

-



Container Terminal 8
(Modern Terminals Limited)

Stonecutters Island
Sewage Treatment Plant

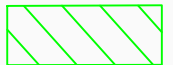
Car Park
(Container Trucks)

NM7
Open Area near Naval Base Barrack

AM9
Work Site Boundary

LEGEND:

DC/2009/18' SITE AREA



AIR QUALITY MONITORING
STATION



NOISE MONITORING STATION



CINOTECH
Cinotech Consultants Limited

Contract No: DC/2009/18
HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment
Works - Effluent Tunnel and Disinfection Facilities

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.

MA11043

FIGURE NO.

3

REV

-

**APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR
QUALITY AND NOISE QUALITY**

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6a	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	318	169	500	260

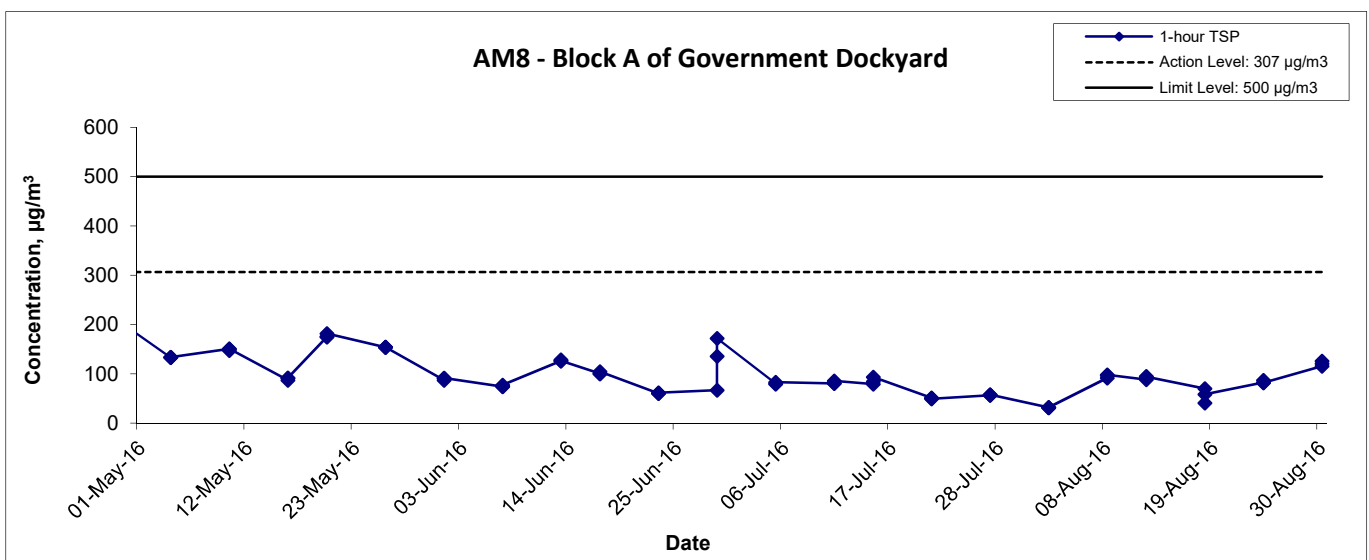
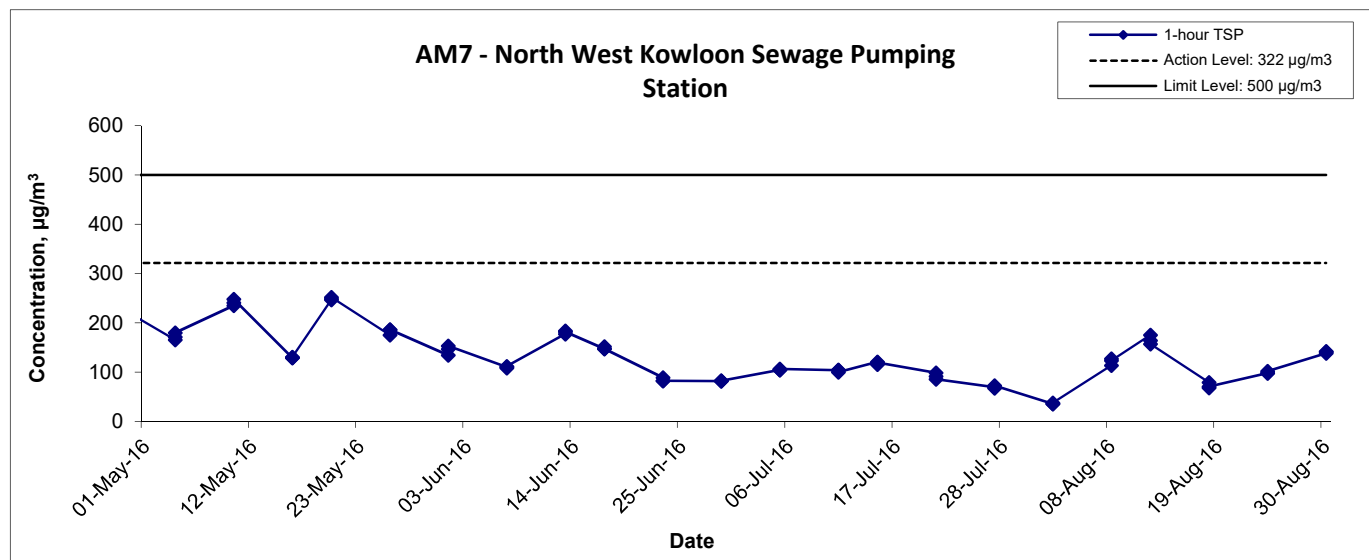
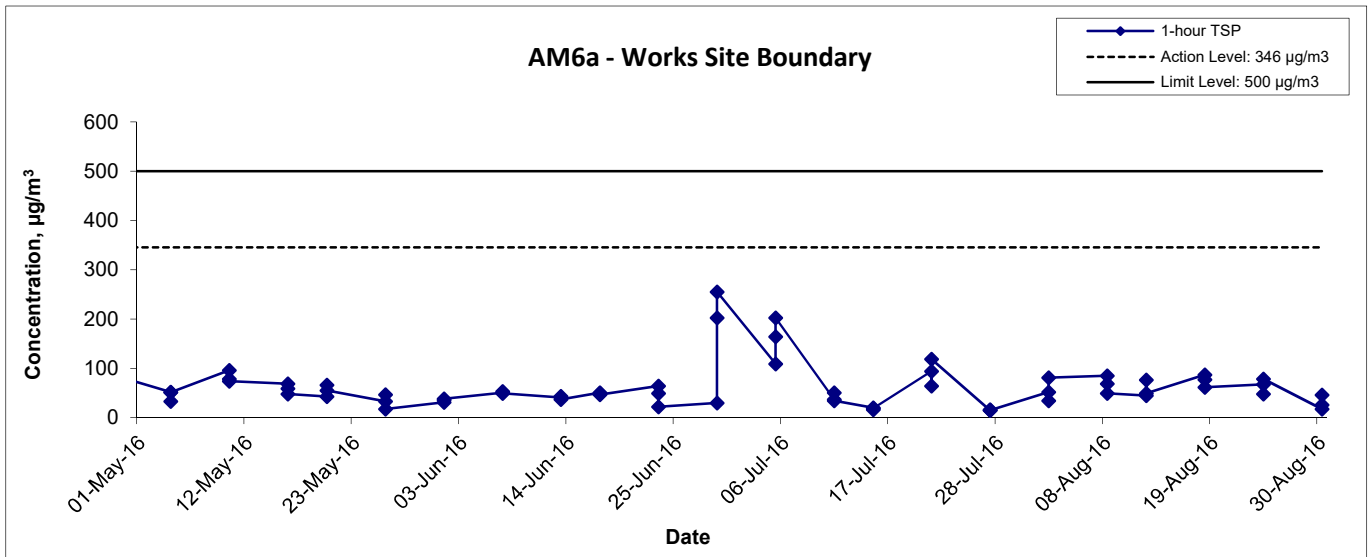
Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6 NM7	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 Piling.

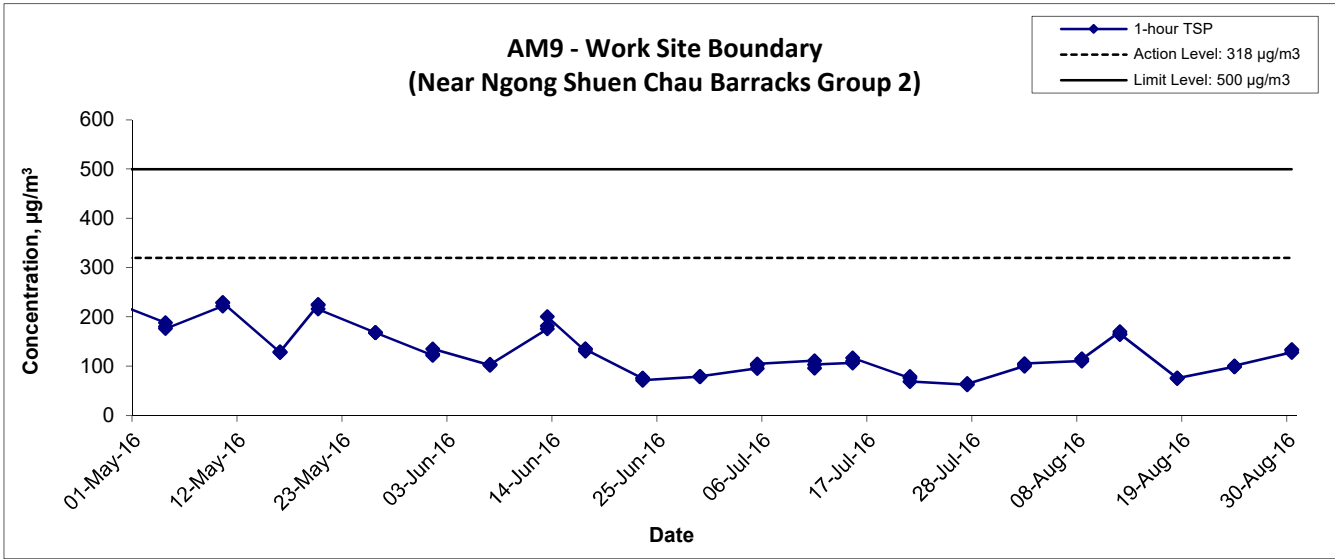
**APPENDIX B
GRAPHICAL PRESENTATIONS OF 1-
HOUR AND 24-HOUR TSP MONITORING
RESULTS**

1-hr TSP Concentration Levels



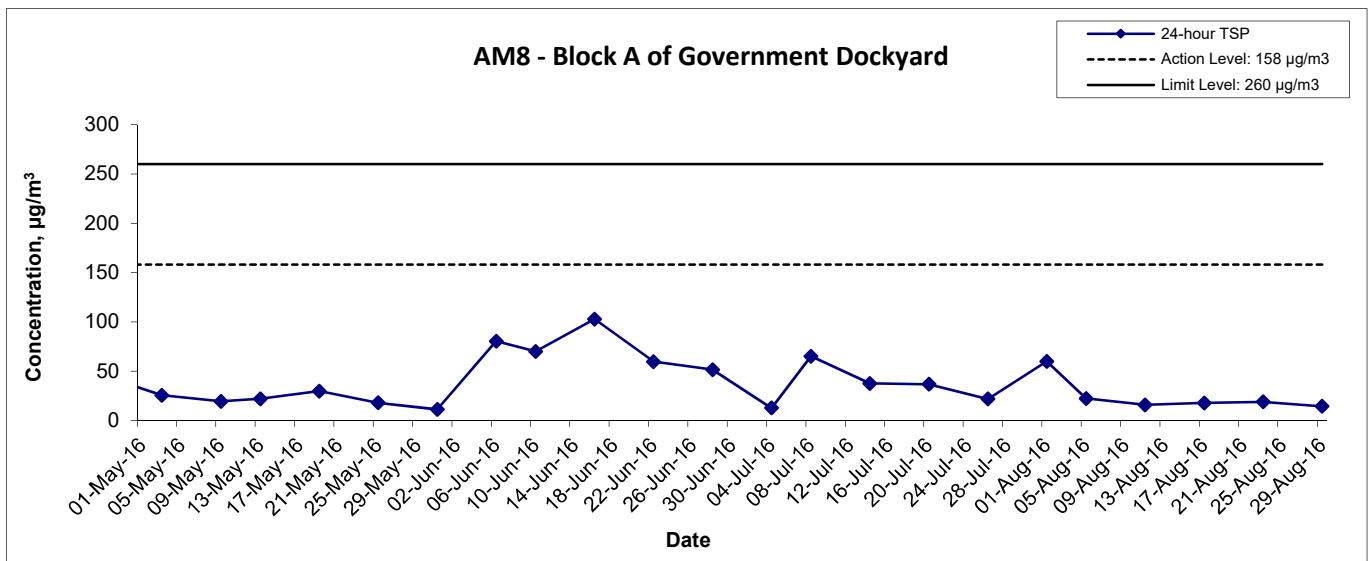
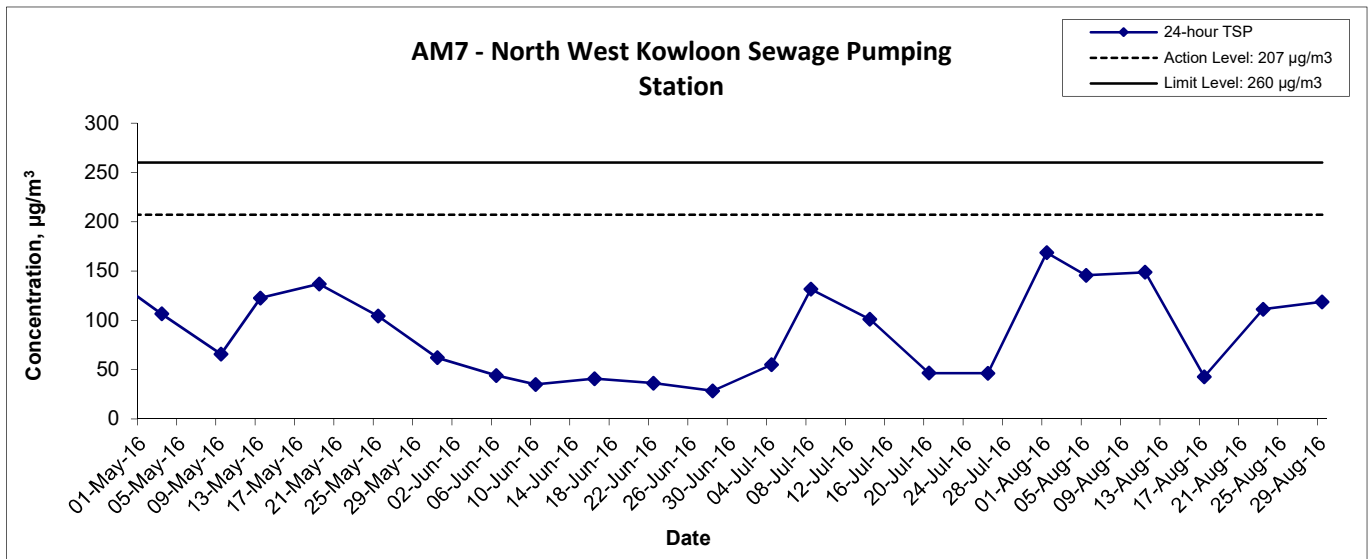
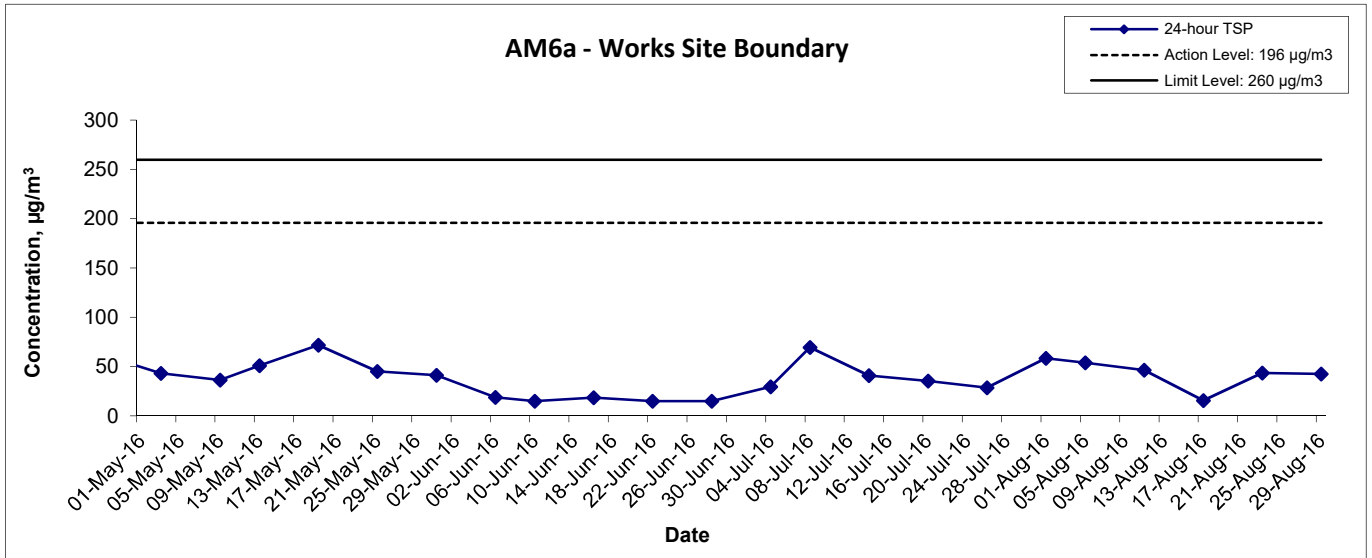
Title Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11007	
	Date Aug 16	Appendix C	

1-hr TSP Concentration Levels



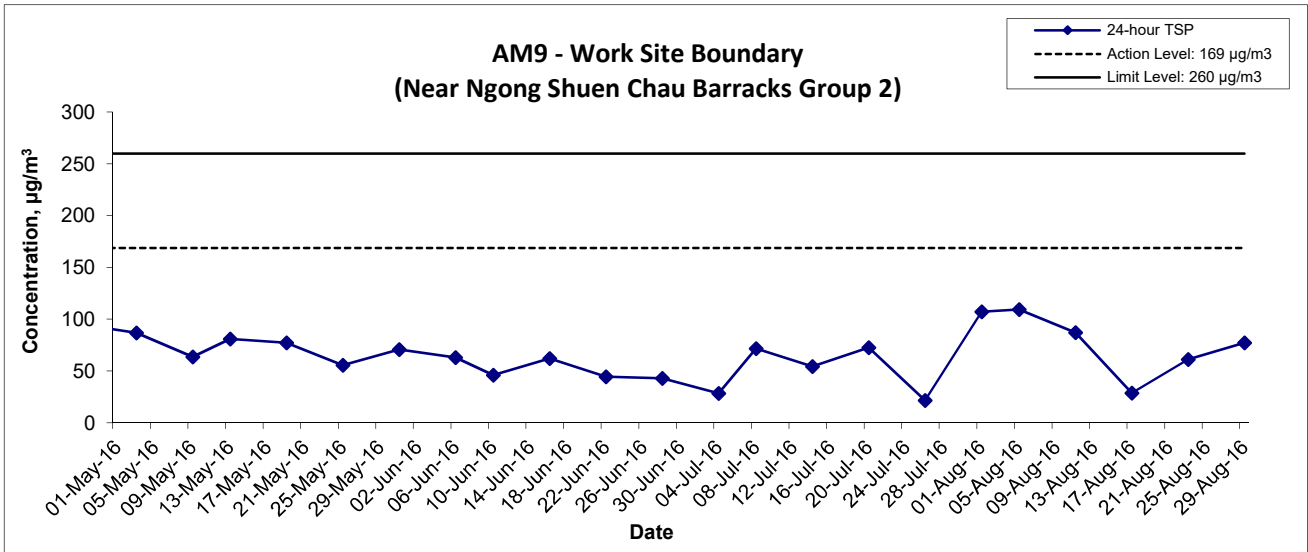
Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Aug 16	Appendix C	

24-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 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11007	
	Date Aug 16	Appendix C	

24-hr TSP Concentration Levels

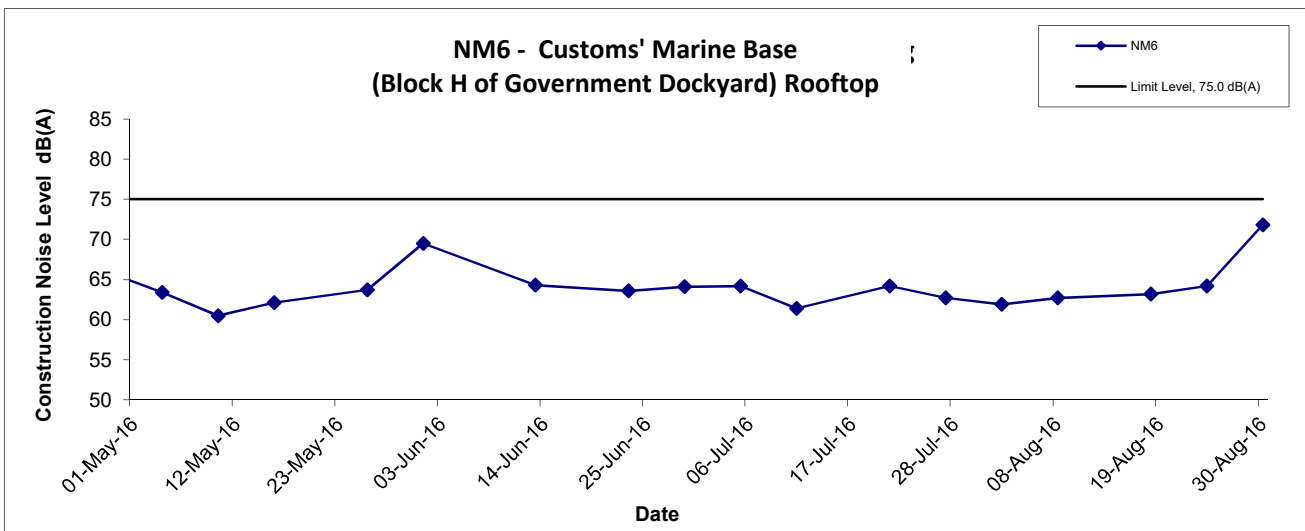
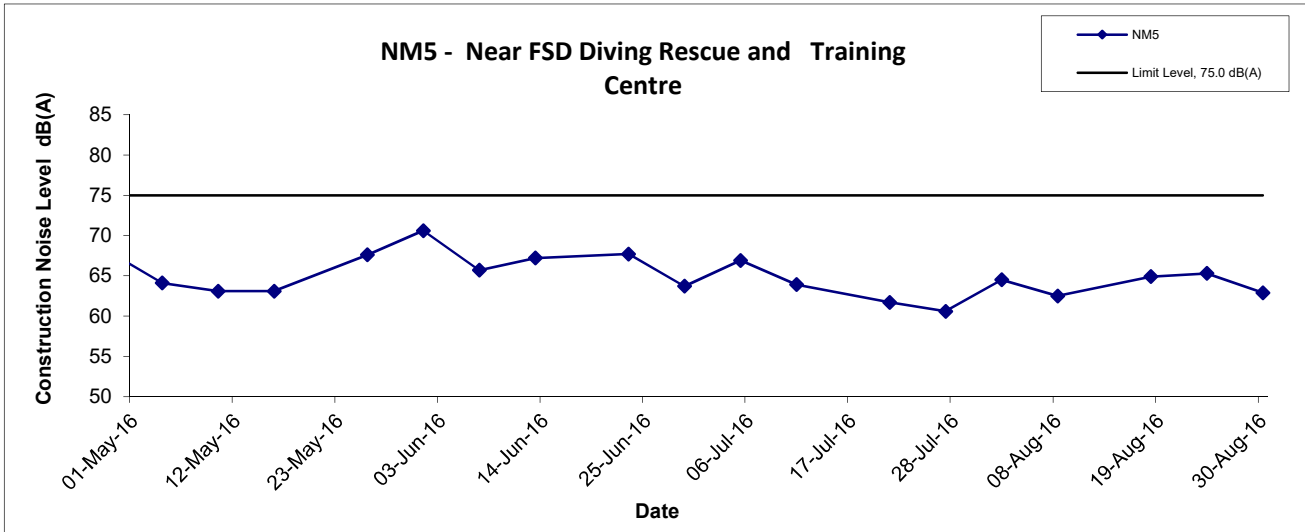


Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Aug 16	Appendix C	

**APPENDIX C
GRAPHICAL PRESENTATIONS OF
NOISE MONITORING RESULTS**

Noise Levels

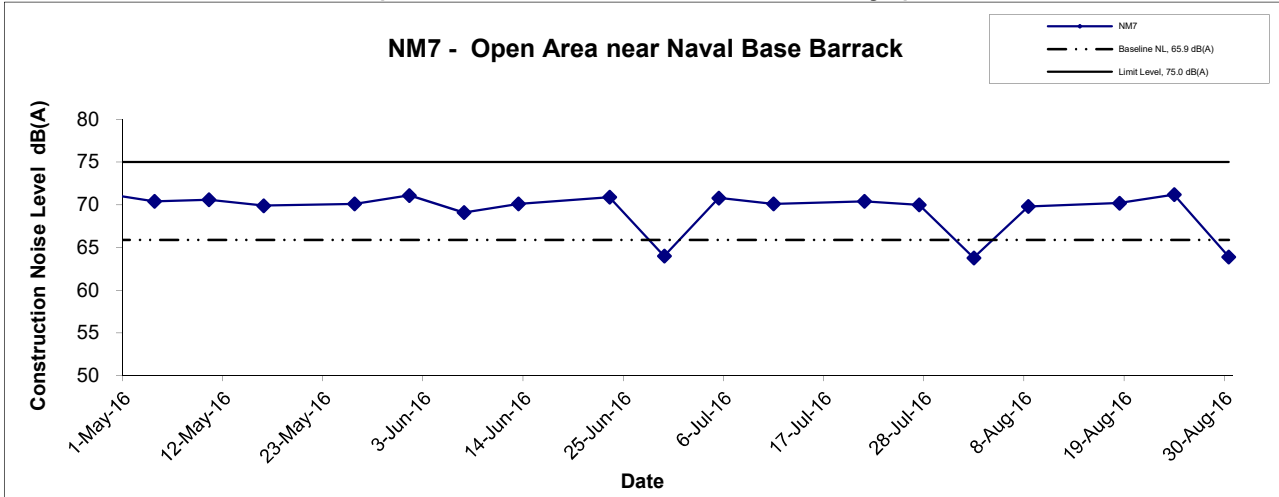
(0700-1900 hrs on Normal Weekdays)



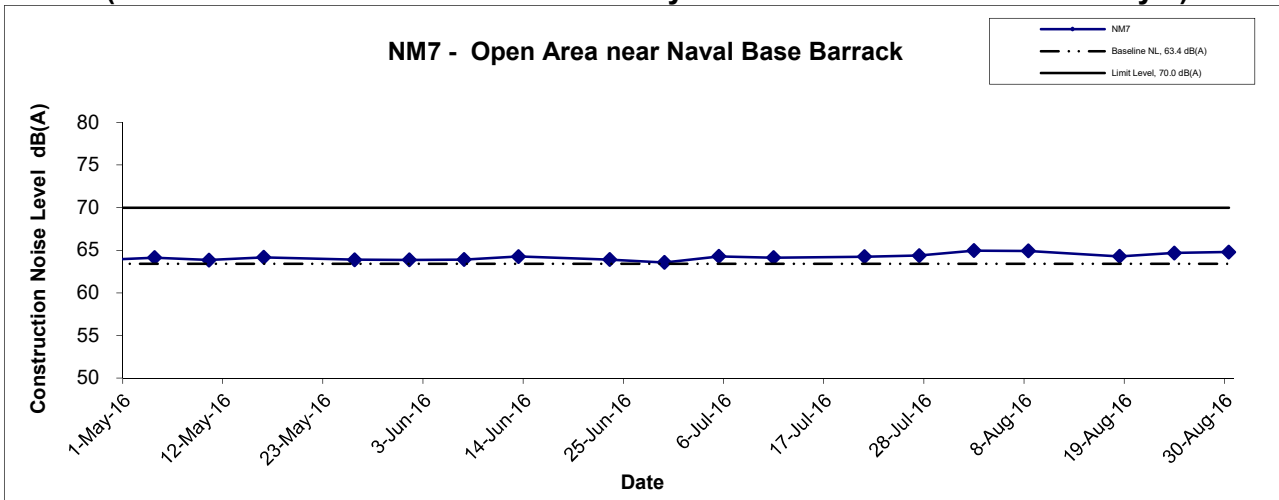
Title Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	Scale	N.T.S	Project No.	MA11007	CINOTECH
	Date	Aug 16	Appendix	D	

Noise Levels

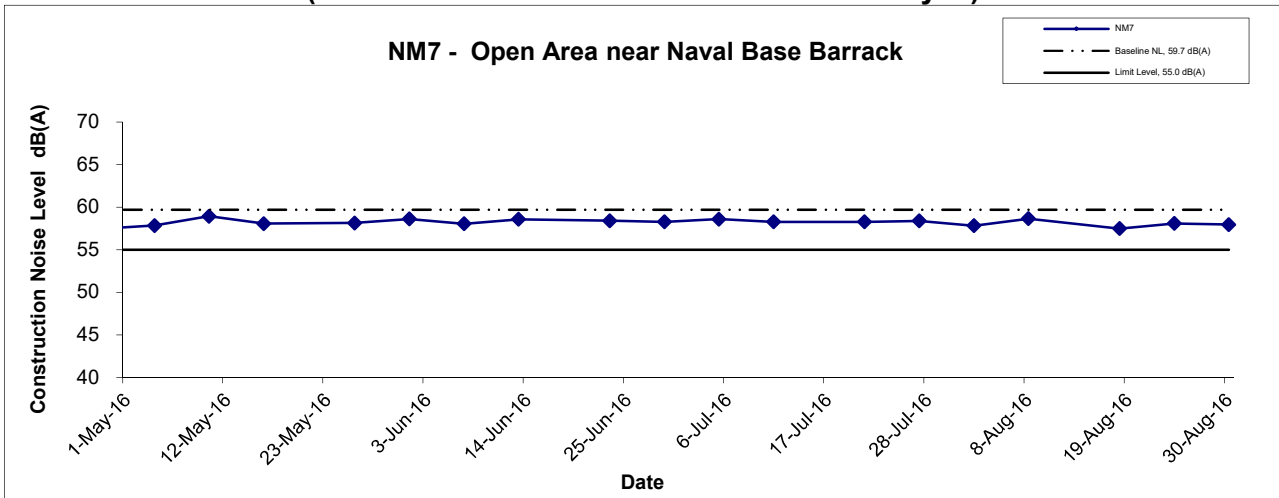
(0700-1900 hrs on Normal Weekdays)



(Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days)



(Restricted Hours - 23:00 to 07:00 on all days)



Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of Noise Monitoring Result (NM7)	Scale N.T.S	Project No. MA11043	
	Date Aug 16	Appendix D	

**APPENDIX D
ENVIRONMENTAL PERMITS AND
LICENSES**

APPENIDX D – Environmental Permits and Licenses

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

Reference Number	Valid Period		Details	Status
	From	To		
<i>Water Discharge License</i>				
WT00009245-2011	1/6/2011	30/6/2016	The application was approved on 1-6-2011.	Expired
WT00012151-2012	23/7/2014	28/2/2017	The application was approved on 23-7-2014.	Valid
WT00015128-2013	28/1/2013	31/1/2018	The application was approved on 28-1-2013.	Valid
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
<i>Registered Chemical Waste Producer</i>				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
<i>Billing Account for Disposal of Construction Waste</i>				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
<i>Notification of Works Under APCO</i>				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
<i>Construction Noise Permit for use of mechanical equipment outside permitted working hours</i>				
GW-RW0655-15	25/12/2015	24/6/2016	Location: Portion B	Expired
GW-RW0656-15	25/12/2015	24/6/2016	Location: Portion 4	Expired
GW-RW0657-15	25/12/2015	20/6/2016	Location: Portion 3 and 8	Expired
GW-RW0220-16	26/4/2016	25/10/2016	Location: Portion 3 and 7	Valid
GW-RW0346-16	25/6/2016	24/12/2016	Location: Portion B	Valid
GW-RW0351-16	21/6/2016	20/12/2016	Location: Portion 3 and 8	Valid
GW-RW0349-16	25/6/2016	24/12/2016	Location: Portion 4	Valid
GW-RW0410-16	1/8/2016	31/1/2017	Location: Portion 6	Valid

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

Permit No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT0002116 4-2015	13/3/2015	31/3/2020	Location: Portion 6	Valid
WT0000227 76-2015	6/1/2016	31/10/2020	Location: Portion 5	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
Construction Noise Permit				
GW- RW0201-16	21/4/2016	20/10/2016	Location: Site office storage area	Valid
GW- RW0203-16	21/4/2016	20/10/2016	Location: Portion 5 and 6	Valid

Table D.3 Summary of Environmental Licensing and Permit Status for Contract DC/2009/18

Permit/ A/C Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00010571- 2011	18/03/2015	31/10/2016	Location: Portion 7A and 15A	Valid
Registered Chemical Waste Producer				
5213-269- C3689-01	8/9/2011	N/A	Site Area under the Project	Valid
Billing Account for Disposal of Construction Waste				
7013233	18/7/2011	N/A	N/A	Valid
Notification of Works Under APCO				
Ref: 332427	15/7/2011	N/A	N/A	N/A
Construction Noise Permit				
GW-RW0065- 16	18/2/2016	17/8/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Expired
GW-RW0064- 16	5/2/2016	31/7/2016	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	Expired
GW-RW0421- 16	18/8//2016	17/2/2017	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid

APPENDIX E
SUMMARY OF EXCEEDANCE

APPENDIX E – SUMMARY OF EXCEEDANCE

Reporting Quarter: June 2016 to August 2016

- a) Exceedance Report for 1-hr TSP (NIL)**
- b) Exceedance Report for 24-hr TSP (NIL)**
- c) I: Exceedance Report for Construction Noise during normal working hours(NIL)**
II: Exceedance Report for Construction Noise during restricted hours (NIL)

**APPENDIX F
SITE AUDIT SUMMARY IN REPORTING
QUARTER**

APPENDIX F - SITE AUDIT SUMMARY IN THE REPORTING QUARTER (DC/2009/10, DC/2009/17 and DC/2009/18)

DC/2009/10:

June 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160602-O01	Soil stockpile should be covered properly (Portion 4).	Remarked as ref.no 160608-O01
	160608-O01	Stockpile should be covered or relocated to avoid generating muddy run-off (Portion 4).	The stockpiles have been removed or covered with tarpaulin.
	160615-R02	Reminder: Discharge system should be checked and reviewed (Portion 7).	The identified drainage system has been redesigned.
	160630-O01	Stockpile should be stored at location away from the drainage channel to avoid generating muddy runoff (Portion 4).	The identified stockpile has been covered and the mud on the drainage channel was not observed.
Air Quality	160615-O01	Dust on the road should be cleared (Portion 7).	Bunding was emplaced on the site entrance to prevent the road dust from spreading outside the site boundary through vehicles movement.
Waste/ Chemical Management	160602-R02	Reminder: Oil drum should be contained by drip tray for storage (Portion 4, -32).	The oil drum has been removed.
	160622-R01	Reminder: General refuse and other waste should be contained and removed regularly (Portion 4, -32).	The accumulated waste was observed to be contained by plastic bags or removed.
	160630-O02	Chemical waste and other general refuse should be collected for removal (Portion 4).	The identified waste has been removed.

July 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160707-O01	The mud and dust near the site entrance should be removed; Dust on the haul road should be cleared or watered to avoid dust emission (Portion 7)	Remarked as ref.no 160804-O01
	160714-O02	Sand bags bunding should be provided to the drainage outlet (Portion 6)	Bunding has been provided to the drainage outlet.
	160720-O01	The standing water should be pumped to the designated discharge system (Portion 6).	The site surface runoff was not being pumped to the nearby tree zone.
	160728-O02	Sediment in the u-channel should be cleared (Portion 4).	The Contractor has cleared the identified sediment in the u-channel.
Air Quality	160728-O01	Dust on the haul road should be cleared regularly (Portion 7); Dust control in Portion 7 should be reviewed.	Remarked as ref.no 160804-O01

Parameters	Ref. Number	Observations	Follow Up Action
Waste/ Chemical Management	160714-001	General refuse should be contained by rubbish bags before disposal (Portion 4).	Major accumulation of general refuse was not observed.
Landscape and Visual	160714-003	Fence should be provided to the tree zone (Portion 7)	Fence has been provided to the tree zone.

August 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160804-001	Sediment near the haul road should be cleared (Portion 4 and 7).	The site run-off and sediment on the haul road were redirected to the AquaSed.
	160811-002	Standing water should be pumped to the proper discharge system (Portion 6).	The water has been pumped to the AquaSed for treatment.
Air Quality	160804-001	Sediment near the haul road should be cleared (Portion 4 and 7).	The site run-off and sediment on the haul road were redirected to the AquaSed.
	160825-002	Dusty road should be sprayed with water for dust suppression (Portion 7).	The dust control was observed to be implemented on the identified haul road.
Waste/ Chemical Management	160811-001	General refuse should be cleared regularly (Portion 4).	The identified general refuse has been reduced or contained properly.
	160817-001	General refuse and construction waste should be sorted before disposal (Portion 4).	Waste disposal management was observed to be improved.
Permit/ Licenses	160825-001	CNP should be updated in Portion 6.	The updated CNP has been attached.

DC/2009/17:

June 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160607- R01	Reminder: The Contractor is reminded to check the chemical dosage of the AquaSed to ensure the site water is treated before discharging.	The AquaSed was observed to be maintained and functioned properly.
Waste/ Chemical Management	160628- 001	General refuse should be collected regularly for removal or recycling.	The identified waste was not observed.
	160628- R01	Reminder: Oil containers should be stored within drip tray or other bunding.	The identified containers have been removed.

July 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160705- O01	The bunding for the discharge point should be replaced.	The sand bags have been replaced.
	160712- O01	Concrete works should take place away from the discharge point to avoid accidentally discharging cement water (Workshop).	Concrete works were not observed in the identified area.
	160726- O01	Soil stockpile should be placed at a distance from the discharge point in the Workshop.	Remarked as ref.no 160803- O01
Air Quality	160705- O02	Dust control should be provided while removing the construction waste.	No dust emission was observed after spraying water on the waste container
Waste/ Chemical Management	160705- O03	Oil stains are observed under the excavator and should be cleared.	The identified oil stain was not observed.
	160726- O02	Accumulated waste should be removed regularly after sorting has been carried out.	The accumulated waste was removed.

August 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160803- O01	The soil accumulated near the discharge in the Workshop should be cleared.	Remarked as ref.no 160809- R01
	160809- R01	Reminder: The Contractor is reminded to avoid the discharge point during stockpiling works in the Workshop.	The discharge point was observed to be protected from the stockpiling works.
	160817- O01	Waste water should be prevented from entering the u-channel (Portion 6, SDB).	Remarked as ref.no 160823- O01
	160817- O02	pH indicator should be switched on during water discharge (Gate A).	The pH meter was observed to be switched on
	160823- O01	The Contractor is reminded to prevent muddy or cement water from entering the u-channel; Precaution should be taken when works were carried out near the on-site drainage system (Between Area A and SDB).	Muddy site run-off was not observed near the u-channel; while the materials that were found in the u-channel still requires attention and was remarked as ref.no 160830-R01.
	160830- R01	Reminder: The dusty material accumulated near u-channel should be cleared (between Area A and SDB).	The identified material was not observed in the u-channel.
	160830- O04	The mud accumulated in the discharge point of the drainage channel should be cleared (near Workshop).	The drainage gully was observed to contain minimum sediment as the discharged water quality was observed to be acceptable.
Waste/ Chemical Management	160803- R02	Reminder: The construction waste materials placed near the access road should be disposed properly.	The identified materials have been removed.
	160830- O02	Construction materials should be properly removed to maintain good site housekeeping (Portion 6, workshop).	Accumulated construction waste has been cleared.

	160830-003	Drip tray should be provided to chemical container to prevent chemical leakage (near Workshop).	The identified containers have been removed.
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DC/2009/18:

June 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160602-001	Contractor should ensure sediment tank is well-operated. (Portion 3)	Sediment tank was well-maintained and operated.
	160610-R01	Blockage in u-channel should be strengthened to avoid muddy runoff to drainage. (Portion 7)	Item was remarked as 160615-001.
	160615-001	Blockage in u-channel should be strengthened to avoid muddy runoff to drainage. (Portion 7)	Item was remarked as 160621-001
	160615-002	Vehicle washing facility should be well-maintained. (Portion 3)	Vehicle washing facility was repaired and functional.
	160621-001	Blockage in u-channel should be strengthened to avoid muddy runoff to drainage. (Portion 7)	Sandbags were placed in u-channel.
Air Quality	160630-R01	The site should be sprayed with water regularly. (Portion 3)	Item was remarked as 160707-R02.
	160630-R02	For cement batching, contractor is reminded to provide 3 sides and top shelter and be well-maintained. (Portion 3)	3 sides and top shelter were provided and well-maintained.
Waste/ Chemical Management	160602-002	Oil stain should be removed as chemical waste. (Portion 3)	Oil absorbent sheet was provided to remove oil and no oil was observed.
	160602-R01	General refuse should be cleared. (Portion 3)	General refuse was removed and site was clean and tidy.
	160610-001	Oil containers should be provided with drip tray and labels. (Portion 3)	Oil containers were removed.
	160621-002	Oil found in drip tray should be cleared. (Portion 3)	Oil was cleared. No oil was observed in the drip tray.
	160621-R01	Construction waste and general waste should be sorted and cleared to avoid accumulation. (Portion 3)	Waste was cleared. No construction waste was accumulated.
	160630-001	Oil/ Chemical container should be provided with drip tray and general refuse should be removed or recycled. (Portion 3)	Oil/ Chemical container was removed. No general refuse was found on site.

July 2016

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	160707-R01	Contractor was reminded to provide sufficient spillage control to minipiling work. (Portion 3)	No minipiling work was observed.
	160707-R02	The site should be sprayed with water regularly. (Portion 3)	The site was observed wet.
Air Quality	160719-O01	Site should be sprayed with water. (Portion 3)	Unpaved area was observed wet.
	160728-R01	Stockpile of dusty material should be covered. (Portion 3)	Stockpile of dusty material was covered.
	160714-O01	Oil leakage was observed. Contractor was reminded to clear the oil and prevent any oil to runoff the drainage.	Oil was cleared. Pavement was observed dry.
Waste/ Chemical Management	160728-O01	Oil stain should be removed and contractor should provide mitigation measure to prevent any oil leakage. (Portion 3)	Oil stain was cleared.
	160719-R02	Contractor should provide tree protection zone to existing tree. (Portion 7)	Fencing was observed in the tree protection zone.

August 2016

Parameters	Ref. Number	Observations	Follow Up Action
Air Quality	160823-R01	Contractor should provide sufficient water-spraying in the site area. (Portion 3)	Site area was observed wet.
Waste/ Chemical Management	160811-O02	General refuse and stand water in the container should be removed. (Portion 3)	Item was remarked as 160818-O02.
	160811-R01	Chemical containers should be placed properly to avoid any leakage. (Portion 7)	Item was remarked as 160818-O01.
	160818-O01	Chemical containers should be placed properly to avoid any leakage. (Portion 3 & 7)	Item was remarked as 160823-O01.
	160818-O02	General refuse in the container should be removed. (Portion 3)	Item was remarked as 160823-O02.
	160823-O01	Chemical containers should be placed properly to avoid any leakage. (Portion 3 & 7)	Chemical containers were removed.
	160823-O02	General refuse and stand water in the container should be removed. (Portion 3)	No general refuse and stand water was observed.

Parameters	Ref. Number	Observations	Follow Up Action
Landscape and Visual	160804-R01	Contractor was reminded to provide tree protection zone and place the construction material away from the zone. (Portion 7)	Item was remarked as 160811-O01
	160811-O01	Contractor should provide tree protection zone and remove all construction waste within in the zone. (Portion 7)	Tree protection zone was provided and construction waste was removed.

APPENDIX G
EVENT ACTION PLANS

APPENDIX G – Event / Action Plans

Table G-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 meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be 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 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 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. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table G-2 Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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 H
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

APPENDIX H IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
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	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.		^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	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	^	^	^
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.	All construction sites	^	^	^
	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.		^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
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.		*	^	^
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		^	^	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.				
6.379	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>Construction Works in Close Proximity of Storm Drains or Seafront</p> <p>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.</p> <ul style="list-style-type: none"> • 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 	All construction sites	*	*	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	<p>should be located well away from any water courses during carrying out of the construction works.</p> <ul style="list-style-type: none"> • 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. 				
D	Waste Management				
9.107	<p>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.</p>	All construction sites	^	^	^
9.109	<p>All waste materials should be segregated into categories covering:</p> <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling 	All construction	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	facilities; <ul style="list-style-type: none"> • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	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.		*	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.		^	^	*
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage"	All construction sites	N/A	^	^
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,		*	*	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
	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	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	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^	^	^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^	^	^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A	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	Topsoil, where identified, should be stripped and	All	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
13.7	stored for re-use in the construction of the soft landscape works, where practical.	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.	Exact location will be 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.	Identified historical buildings/struct	N/A	N/A	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract		
			DC/2009/17	DC/2009/10	DC/2009/18
		ures as mentioned in EM&A Manual Tables 15.8, 15.9, 15.10 and 15.11			

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 I
SUMMARY OF THE MONTHLY
LANDSCAPE AND VISUAL SITE AUDIT**

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

Reporting Month: July to August 2016

Reference no.	Contract no. / Location	Observation	Recommendation	Follow Up Action	Status
160714-O03	DC/2009/10 - Portion 7	Inadequate placement of protective fences were observed around the trees near works area	Fences should be provided to the tree zone	Fences have been provided to the tree zone.	Closed
160719-R02	DC/2009/18 - Portion 7	Inadequate placement of protective fences were observed around the trees near works area	Contractor should set up tree protection zone for the existing trees.	Fences have been provided to the tree zone.	Closed
160804-R01	DC/2009/18 - Portion 7	Construction waste and materials were observed near unfenced tree in the site area	Contractor was reminded to set up tree protection zone and place the construction material away from the zone.	Tree protection zone was provided and the identified construction materials were removed.	Remarked as ref no. 160811-O01
160811-O01	DC/2009/18 - Portion 7	Construction waste and materials were observed near unfenced tree in the site area	Contractor should provide and maintain the tree protection zone and remove all construction waste within in the zone.	Tree protection zone was provided and the identified construction waste was removed.	Closed

**APPENDIX J
COMPLAINT LOG**

APPENDIX I – COMPLAINT LOG

Reporting Quarter: June 2016 to August 2016

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.	<p>According to the information provided by the Contractor, mucking out excavated rocks was carried out 90m below ground within a noise enclosure area.</p> <p>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.</p> <p>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</p> <p>The Contractor was reminded to make sure the noise enclosure door will be kept close during night time construction.</p>	Closed

**APPENDIX K
CONSTRUCTION PROGRAMME**

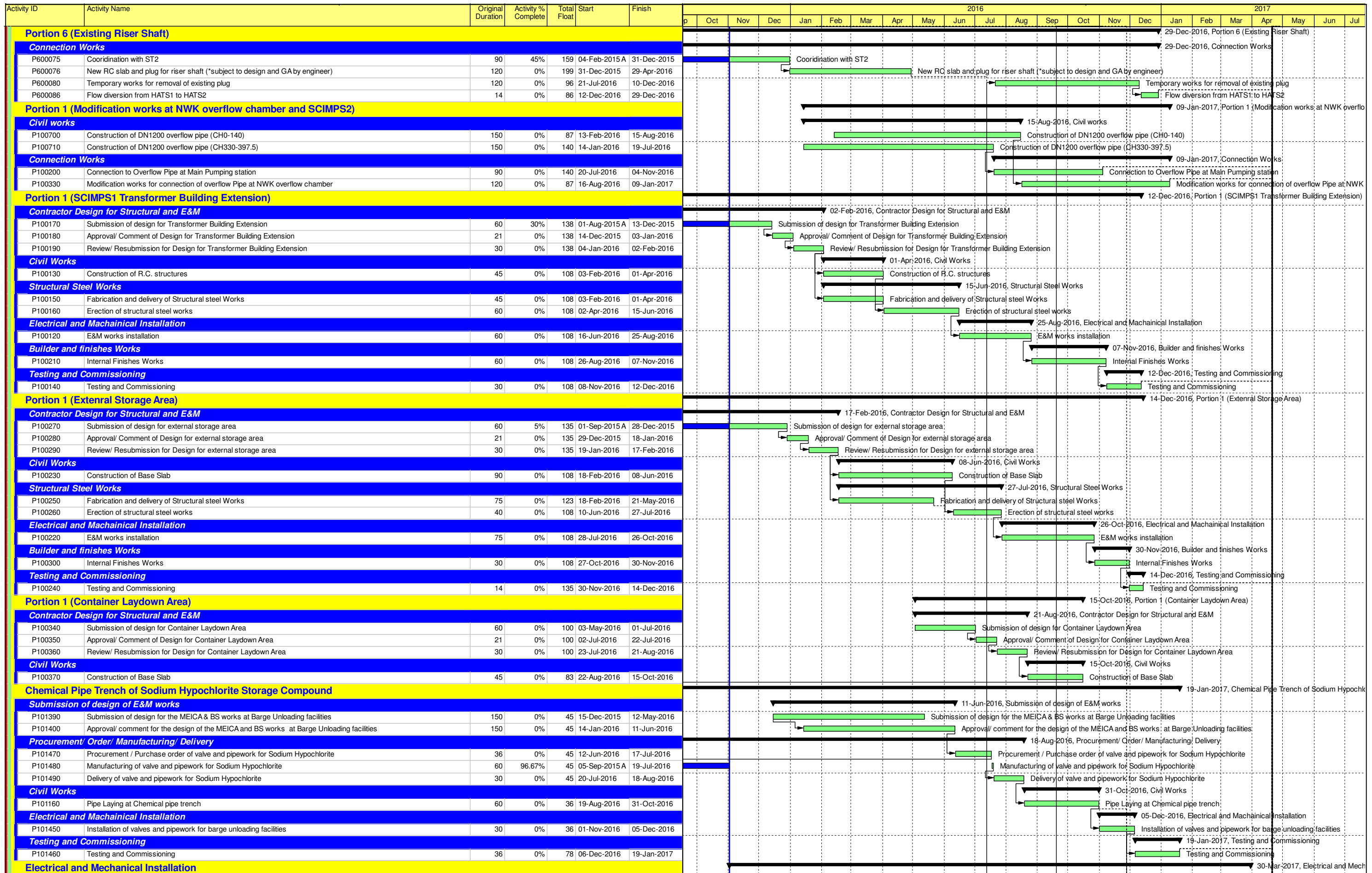
Activity ID	Activity Name	Original Duration	Activity % Complete	Total Float	Start	Finish	2016												2017										
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul				
TWP R9 (Completion for Section 3, 4 and 5)							29-Apr-2017, TWP R9																						
Section 3 (Phase A2)							23-Jan-2016, Section 3 (Phase A2)																						
KD00015	Turnflow Date (12 Dec 15)	0	0%	0	12-Dec-2015*	Turnflow Date (12 Dec 15)																							
MPS2							16-Jan-2016, MPS2																						
Wet Well A							18-Nov-2015, Wet Well A																						
A4170	Pump performance test #1-#4	12	45%	528	30-Oct-2015 A	08-Nov-2015	Pump performance test #1-#4																						
A4180	VSD, Surge and closed valve test	2	0%	528	08-Nov-2015	10-Nov-2015	VSD, Surge and closed valve test																						
A4181	24 Hours Endurance test	8	0%	528	10-Nov-2015	18-Nov-2015	24 Hours Endurance test																						
External and civil works							30-Nov-2015, External and civil works																						
A2780	Portable watermain laying for MPS, DOU3	45	75%	429	12-Aug-2015 A	14-Nov-2015	Portable watermain laying for MPS, DOU3																						
A2790	Storm drainage pipe laying	45	45%	416	30-Jul-2015 A	30-Nov-2015	Storm drainage pipe laying																						
Air Scouring System							19-Nov-2015, Air Scouring System																						
A3320	E&M installation for Air scouring system	10	0%	527	07-Nov-2015	16-Nov-2015	E&M installation for Air scouring system																						
A3330	Testing and commissioning	3	0%	527	17-Nov-2015	19-Nov-2015	Testing and commissioning																						
Smoke Extraction system (Basement floor)							18-Dec-2015, Smoke Extraction system (Basement floor)																						
A2470	Ordering and manufacturing of extraction Fans	75	75%	491	26-May-2015	20-Nov-2015	Ordering and manufacturing of extraction Fans																						
A2480	Smoke Extraction installation (Basement Floor)	40	65%	491	18-Aug-2015 A	04-Dec-2015	Smoke Extraction installation (Basement Floor)																						
A2640	Testing and commissioning	14	0%	491	04-Dec-2015	18-Dec-2015	Testing and commissioning																						
Staircase Pressurisation System (ST3)							16-Jan-2016, Staircase Pressurisation System (ST3)																						
A2500	Ordering and manufacturing of extraction Fans	75	75%	469	26-May-2015	20-Nov-2015	Ordering and manufacturing of extraction Fans																						
A2510	Staircase Pressurisation (ST3)	40	10%	469	18-Aug-2015 A	26-Dec-2015	Staircase Pressurisation (ST3)																						
A2650	Testing and commissioning	14	0%	469	26-Dec-2015	09-Jan-2016	Testing and commissioning																						
A2750	FSD inspection	7	0%	469	09-Jan-2016	16-Jan-2016	FSD inspection																						
New CEPT							19-Dec-2015, New CEPT																						
Connection works at Northern Effluent Culvert							23-Nov-2015, Connection works at Northern Effluent Culvert																						
S0796	Concrete slab inside effluent drop shaft	6	26.67%	374	29-Oct-2015 A	11-Nov-2015	Concrete slab inside effluent drop shaft																						
S0805	Water tightness test for the Northern effluent culvert	7	0%	422	12-Nov-2015	19-Nov-2015	Water tightness test for the Northern effluent culvert																						
S0815	Dismantling of bulkhead at Northern effluent culvert	3	0%	422	20-Nov-2015	23-Nov-2015	Dismantling of bulkhead at Northern effluent culvert																						
Hydro-Turbine							13-Nov-2015, Hydro-Turbine																						
A6235	E&M installation for Hydroturbine	14	75%	374	15-Oct-2015 A	05-Nov-2015	E&M installation for Hydroturbine																						
A6240	E&M installation for scum pump room 13	14	15%	530	29-Oct-2015 A	13-Nov-2015	E&M installation for scum pump room 13																						
Architectural Builders and finishes works							19-Dec-2015, Architectural Builders and finishes works																						
A5450	External wall painting (facing MPS2)	18	0%	399	30-Nov-2015*	19-Dec-2015	External wall painting (facing MPS2)																						
FRP Odour Containment cover							21-Nov-2015, FRP Odour Containment cover																						
A5950	Installation of FRP flat cover (PST (N), effluent launder and drop shaft)	5	0%	525	12-Nov-2015	16-Nov-2015	Installation of FRP flat cover (PST (N), effluent launder and drop shaft)																						
A5960	Installation of FRP Cover at PST (N) 47-53	4	0%	526	06-Nov-2015*	09-Nov-2015	Installation of FRP Cover at PST (N) 47-53																						
A5970	Installation of odour ductworks (branch, PSTs 47-53)	3	0%	526	10-Nov-2015	12-Nov-2015	Installation of odour ductworks (branch, PSTs 47-53)																						
A5980	Installation of odour ductworks (branch, FT and MDC)	3	0%	526	13-Nov-2015	15-Nov-2015	Installation of odour ductworks (branch, FT and MDC)																						
A6040	Installation of FRP cover at RMT and FT5	12	45%	429	16-Sep-2015 A	09-Nov-2015	Installation of FRP cover at RMT and FT5																						
A6050	Installation of FRP cover at MDC (N)	12	65%	535	02-Oct-2015 A	06-Nov-2015	Installation of FRP cover at MDC (N)																						
A6060	Testing and commissioning (smoke test)	5	0%	525	17-Nov-2015	21-Nov-2015	Testing and commissioning (smoke test)																						
Scum Collection system							19-Nov-2015, Scum Collection system																						
S2500	Process water and Protected water installation	25	30%	527	28-Sep-2015 A	19-Nov-2015	Process water and Protected water installation																						
S2550	T&C for Scum collection systems at PSTs	3	0%	542	02-Nov-2015	04-Nov-2015	T&C for Scum collection systems at PSTs																						
Sludge Scrapers							20-Nov-2015, Sludge Scrapers																						
A5600	Longitudinal Sludge scraper at FT5	5	45%	528	30-Oct-2015 A	04-Nov-2015	Longitudinal Sludge scraper at FT5																						
A5610	Cross sludge scrapers at FT5	5	45%	528	30-Oct-2015 A	04-Nov-2015	Cross sludge scrapers at FT5																						
A5640	Sludge scrapers at new Northern PSTs 47, 49, 51, 54	12	50%	525	30-Oct-2015 A	07-Nov-2015	Sludge scrapers at new Northern PSTs 47, 49, 51, 54																						
A5680	T&C for sludge scrapers at FT and PSTs	3	0%	525	08-Nov-2015	10-Nov-2015	T&C for sludge scrapers at FT and PSTs																						
A5690	Water filling for SAT Sludge pump	6	0%	423	11-Nov-2015	17-Nov-2015	Water filling for SAT Sludge pump																						
A5740	T&C for sludge piping system	3	0%	375	17-Nov-2015	20-Nov-2015	T&C for sludge piping system																						
Polymer Dosing System							22-Nov-2015, Polymer Dosing System																						
A5790	Installation of PVC dosing pipes at FT5 and RMT	12	0%	524	06-Nov-2015*	17-Nov-2015	Installation of PVC dosing pipes at FT5 and RMT																						
A5795	Replacement of Temporary pipeworks	10	0%	529	05-Nov-2015	15-Nov-2015	Replacement of Temporary pipeworks																						
A5800	Testing and commissioning	5	0%	524	18-Nov-2015	22-Nov-2015	Testing and commissioning																						
FeCl3 Dosing System							22-Nov-2015, FeCl3 Dosing System																						
A6320	Installation of PVC dosing pipes at FT5 and RMT	12	0%	524	06-Nov-2015*	17-Nov-2015	Installation of PVC dosing pipes at FT5 and RMT																						
A6330	Replacement of Temporary pipeworks	10	0%	529	05-Nov-2015	15-Nov-2015	Replacement of Temporary pipeworks																						
A6340	Testing and commissioning	5	0%	524	18-Nov-2015	22-Nov-2015	Testing and commissioning																						
Process Air System							16-Nov-2015, Process Air System																						
A5530	Water filling of MDC and FT5	5	0%	378	09-Nov-2015*	13-Nov-2015	Water filling of MDC and FT5																						
A5540	Testing and commissioning at MDC (N)	3	0%	530	14-Nov-2015	16-Nov-2015	Testing and commissioning at MDC (N)																						
A5550	Testing and commissioning at FT5	3	0%	530	14-Nov-2015	16-Nov-2015	Testing and commissioning at FT5																						
Static Mixer							13-Nov-2015, Static Mixer																						
A6130	Installation of Static mixer	2	0%	533	12-Nov-2015*	13-Nov-2015	Installation of Static mixer																						
DCS works							09-Dec-2015, DCS works																						
A6150	Point to point test (DCS panels to HMI)	60	80%	31	29-Jun-2015 A	13-Nov-2015	Point to point test (DCS panels to HMI)																						
A6160	End to end point test (Field to HMI)	30	60%	31	06-Jul-2015 A	25-Nov-2015	End to end point test (Field to HMI)																						

■ Actual Work
■ Remaining Work
■ Critical Remaining Work
◆ Milestone
▶ Summary

Contract No. DC/2009/10
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatment Works
Target Works Programme (Revision 9)

Sheet 1 of 5
 DD: 6 Nov 2015

Date	Revision	Checked	Approved
19-Jun-2015	Rev. 8A		
30-Jun-2015	Rev. 8B		
10-Jul-2015	Rev. 8C		
17-Jul-2015	Rev. 8D		
31-Jul-2015	Rev. 8E		
17-Aug-2015	Rev. 8F		



- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- Summary

Contract No. DC/2009/10
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatment Works
 Target Works Programme (Revision 9)

Sheet 4 of 5	Date	Revision	Checked	Approved
	19-Jun-2015	Rev. 8A		
	30-Jun-2015	Rev. 8B		
	10-Jul-2015	Rev. 8C		
	17-Jul-2015	Rev. 8D		
	31-Jul-2015	Rev. 8E		
	17-Aug-2015	Rev. 8F		

DD: 6 ov 2015

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2016				
							Jul	Aug	Sep	Oct	Nov
DC/2009/17 Detailed Works Programme Revision 3B_Updated up to 31-Jul-16											
KEY DATE											
Contract Dates											
Commencement and Completion											
Section 5 of the Works											
KD000053	Revised (EOT=77) Completion of Section 5 of the Works (2240 days)	0		11-Oct-16		11-Oct-16*					◆ Revised (EOT=77) Completion of Section
KD000054	Revised (EOT=14) Completion of Section 5 of the Works (2254 days)	0		24-Oct-16		24-Oct-16*					◆ Revised (EOT=14)
Completion											
Extension of Time											
Section 5 of the Works											
KD000047	Section 5 of the Works granted 77 days EOT	77	31-Jul-16	15-Oct-16	27-Jul-16 A	11-Oct-16					
KD0000471	Section 5 of the Works granted 14 days EOT	13	12-Oct-16	24-Oct-16	12-Oct-16*	24-Oct-16					
KD0000472	Section 5 of the Works expected 125days EOT	126	25-Oct-16	27-Feb-17	25-Oct-16*	27-Feb-17					
Design of Permanent Works											
DDA7 (DOU5 and DGS)											
Sub-Package - B											
DP034230	DDA: DOU5&DGS - Engineer Comment Structural Design	19	09-Apr-16	03-May-16	09-Apr-16 A	01-Aug-16					
DP034240	DDA: DOU5&DGS - Finalize Structural Design	19	05-Jul-16	27-Jul-16	01-Jun-16 A	05-Aug-16					
DP034250	DDA: DOU5&DGS - Engineer Approve Structural Design	21	05-Aug-16	30-Aug-16	05-Aug-16	30-Aug-16					
DDA5 (PWST & Pumping System)											
Sub-Package - B											
DP030210	DDA: PWST&PS - Submit Structure Design	142	30-May-15	18-Nov-15	28-Jul-14 A	09-Aug-16					
DP030220	DDA: PWST&PS - ICE Approve Structure Design	96	17-Mar-16	16-Jul-16	13-Jan-16 A	26-Aug-16					
DP030230	DDA: PWST&PS - Engineer Comment Structure Design	19	26-Aug-16	19-Sep-16	26-Aug-16	19-Sep-16					
DP030240	DDA: PWST&PS - Finalize Structure Design	19	19-Sep-16	12-Oct-16	19-Sep-16	12-Oct-16					
DP030250	DDA: PWST&PS - Engineer Approve Structure Design	21	12-Oct-16	05-Nov-16	12-Oct-16	05-Nov-16					
Detailed Design Approval (DDA) Submission											
DDA 35 - Workshop Equipment											
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	107	05-Apr-13	14-Aug-13	05-Apr-13 A	01-Aug-16					
DP008815	DDA: Workshop (E&M) - Comment, Review & Approval	56	01-Sep-15	07-Nov-15	08-Apr-15 A	08-Aug-16					
DP008830	DDA: Workshop (E&M) - Engineer Comment	12	31-Dec-15	16-Jan-16	21-Dec-15 A	01-Aug-16					
DP008840	DDA: Workshop (E&M) - Designer Response/Revision	19	29-Feb-16	21-Mar-16	11-Feb-16 A	02-Aug-16					
DP008850	DDA: Workshop (E&M) - 2nd Submission & ICE Cert	6	02-Jul-16	11-Jul-16	02-May-16 A	03-Aug-16					
DP008860	DDA: Workshop (E&M) - Engineer Approval	28	03-Aug-16	05-Sep-16	03-Aug-16	05-Sep-16					
Section 5 of the Works											
Workshop Building											
Structure											
Superstructure											

◆ Milestone
■ Actual Work
■ Remaining Work
■ Critical Remaining Work

Page 1 of 4

Three Months Rolling Programme - August to October 2016

(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2016				
							Jul	Aug	Sep	Oct	Nov
S5002555	WB: Commencement of E&M Works	0		31-Jul-16		31-Jul-16	WB: Commencement of E&M Works				
1st Floor, +13.65mPD											
S5010270	WB First Floor: Installation of scaffolding, west portion	20	01-Aug-16	23-Aug-16	01-Aug-16	23-Aug-16	[Green bar: 01-Aug-16 to 23-Aug-16]				
S5010280	WB First Floor: Installation of formworks at west portion	24	15-Aug-16	10-Sep-16	15-Aug-16	10-Sep-16	[Green bar: 15-Aug-16 to 10-Sep-16]				
S5010290	WB First Floor: Fixing of rebars at west portion	18	05-Sep-16	26-Sep-16	05-Sep-16	26-Sep-16	[Green bar: 05-Sep-16 to 26-Sep-16]				
S5010300	WB First Floor: Concreting at west portion	1	27-Sep-16	27-Sep-16	27-Sep-16	27-Sep-16	[Green bar: 27-Sep-16 to 27-Sep-16]				
S5010310	WB First Floor: Installation of scaffolding, east portion	18	24-Aug-16	13-Sep-16	24-Aug-16	13-Sep-16	[Green bar: 24-Aug-16 to 13-Sep-16]				
S5010320	WB First Floor: Installation of formworks at east portion	24	07-Sep-16	06-Oct-16	07-Sep-16	06-Oct-16	[Green bar: 07-Sep-16 to 06-Oct-16]				
S5010330	WB First Floor: Fixing of rebars at east portion	16	29-Sep-16	19-Oct-16	29-Sep-16	19-Oct-16	[Green bar: 29-Sep-16 to 19-Oct-16]				
S5010340	WB First Floor: Concreting at east portion	1	20-Oct-16	20-Oct-16	20-Oct-16	20-Oct-16	[Green bar: 20-Oct-16 to 20-Oct-16]				
2nd Floor, +18.65mPD											
S5002510	WB Second Floor: Installation of scaffolding, west portion	18	28-Sep-16	20-Oct-16	28-Sep-16	20-Oct-16	[Green bar: 28-Sep-16 to 20-Oct-16]				
S5002520	WB Second Floor: Installation of formworks at west portion	24	14-Oct-16	10-Nov-16	14-Oct-16	10-Nov-16	[Green bar: 14-Oct-16 to 10-Nov-16]				
S5002565	WB Second Floor: Installation of scaffolding, east portion	18	21-Oct-16	10-Nov-16	21-Oct-16	10-Nov-16	[Green bar: 21-Oct-16 to 10-Nov-16]				
Procurement, Manufacture and Delivery											
S5002910	WB: Procure Balancing Machine for Centrifuge	35	01-Aug-16	09-Sep-16	01-Aug-16	09-Sep-16	[Red bar: 01-Aug-16 to 09-Sep-16]				
S5002915	WB: Manufacture Balancing Machine for Centrifuge	100	10-Sep-16	10-Jan-17	10-Sep-16	10-Jan-17	[Green bar: 10-Sep-16 to 10-Jan-17]				
S5002930	WB: Procure various E&M Equipment / Material	35	01-Aug-16	09-Sep-16	01-Aug-16	09-Sep-16	[Red bar: 01-Aug-16 to 09-Sep-16]				
S5002935	WB: Manufacture various E&M Equipment / Material	120	10-Sep-16	07-Feb-17	10-Sep-16	07-Feb-17	[Green bar: 10-Sep-16 to 07-Feb-17]				
S5002950	WB: Procurement of Travelling Crane	36	10-Sep-16	25-Oct-16	10-Sep-16	25-Oct-16	[Red bar: 10-Sep-16 to 25-Oct-16]				
S5002955	WB: Manufacturing of Travelling Crane	142	25-Oct-16	19-Apr-17	25-Oct-16	19-Apr-17	[Red bar: 25-Oct-16 to 19-Apr-17]				
Southern Sludge Cake Silo											
Structure											
Superstructure											
Zone 1											
S5003126	SSCS: Zone 1 Level B3 to B3A (+14.782 to 19.0mPD)	10	25-May-16	04-Jun-16	25-May-16 A	02-Aug-16	[Blue bar: 25-May-16 to 02-Aug-16]				
S5003128	SSCS: Zone 1 Level B3A to B3C (+19.0 to 23.768mPD)	12	03-Aug-16	16-Aug-16	03-Aug-16	16-Aug-16	[Green bar: 03-Aug-16 to 16-Aug-16]				
S5003130	SSCS: Zone 1 Level B3C to B4 (+23.768 to +24.8mPD)	1	17-Aug-16	17-Aug-16	17-Aug-16	17-Aug-16	[Green bar: 17-Aug-16 to 17-Aug-16]				
S5003132	SSCS: Zone 1 Level B3C to B4 (+23.768 to +28.364mPD)	12	18-Aug-16	31-Aug-16	18-Aug-16	31-Aug-16	[Green bar: 18-Aug-16 to 31-Aug-16]				
Zone 2											
S5003152	SSCS: Zone 2 Grd Level to B2	12	01-Aug-16	13-Aug-16	25-May-16 A	02-Aug-16	[Blue bar: 01-Aug-16 to 02-Aug-16]				
S5003162	SSCS: Zone 2 B2 to B3 (+10.15 to +14.782mPD)	14	02-Aug-16	18-Aug-16	02-Aug-16	18-Aug-16	[Green bar: 02-Aug-16 to 18-Aug-16]				
S5003164	SSCS: Zone 2 B3 to B3A (+14.782 to +19.0mPD)	14	18-Aug-16	03-Sep-16	18-Aug-16	03-Sep-16	[Green bar: 18-Aug-16 to 03-Sep-16]				
S5003165	SSCS: E&M to install Silo 13 - 16	0		03-Sep-16		03-Sep-16	◆ SSCS: E&M to install Silo 13 - 16				
S5003166	SSCS: Zone 2 B3A to B3C (+19.0 to +23.768mPD)	12	03-Sep-16	19-Sep-16	03-Sep-16	19-Sep-16	[Green bar: 03-Sep-16 to 19-Sep-16]				
S5003176	SSCS: Zone 2 B3C to B4 (+23.768 to +24.8mPD)	14	19-Sep-16	06-Oct-16	19-Sep-16	06-Oct-16	[Green bar: 19-Sep-16 to 06-Oct-16]				
S5003178	SSCS: Zone 2 B3C to B4 (+23.768 to +28.364mPD)	14	06-Oct-16	24-Oct-16	06-Oct-16	24-Oct-16	[Green bar: 06-Oct-16 to 24-Oct-16]				
Zone 3											

◆ Milestone
 Actual Work
 Remaining Work
 Critical Remaining Work

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Three Months Rolling Programme - August to October 2016

(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2016						
							Jul	Aug	Sep	Oct	Nov		
S5003214	SSCS: Zone 3 B3 to B3A (+14.782 to +19.0mPD)	14	03-Nov-16	19-Nov-16	15-Jun-16 A	02-Aug-16							
S5003216	SSCS: Zone 3 B3A to B3C (+19.0 to +23.768mPD)	14	02-Aug-16	18-Aug-16	02-Aug-16	18-Aug-16							
S5003218	SSCS: Zone 3 B3C to B4 (+23.768 to +24.8mPD)	14	18-Aug-16	03-Sep-16	18-Aug-16	03-Sep-16							
S5003220	SSCS: Zone 3 B3C to B4 (+23.768 to 28.364mPD)	14	03-Sep-16	21-Sep-16	03-Sep-16	21-Sep-16							
Vehicular Washing Area													
S5003230	SSCS: Vehicular Washing Area	49	01-Aug-16	27-Sep-16	01-Aug-16	27-Sep-16							
S5003240	SSCS: Double Door Enclosure	67	14-Dec-16	08-Mar-17	14-Jan-15 A	01-Aug-16							
Pipe Support													
S5003245	SSCS: Pipe Support bet SDB and SSCS	35	01-Aug-16	09-Sep-16	01-Aug-16	09-Sep-16							
S5003248	SSCS: Handover Pipe Support bet SDB/SSCS to E&M	0		09-Sep-16		09-Sep-16							
Architecture Finishes													
S5003300	SSCS: Blockwork	45	24-Oct-16	15-Dec-16	24-Oct-16	15-Dec-16							
S5003350	SSCS: Epoxy to VWF	21	09-Sep-16	05-Oct-16	09-Sep-16	05-Oct-16							
S5003380	SSCS: Waterproofing on Roof at Double Door Enclosure	30	01-Aug-16	03-Sep-16	01-Aug-16	03-Sep-16							
S5003385	SSCS: Waterproofing on Roof at B4A	30	05-Sep-16	12-Oct-16	05-Sep-16	12-Oct-16							
S5003386	SSCS: Waterproofing on Roof at VWF	21	06-Oct-16	31-Oct-16	06-Oct-16	31-Oct-16							
S5003390	SSCS: Painting / Epoxy to Double Door Enclosure	53	17-Aug-16	20-Oct-16	17-Aug-16	20-Oct-16							
Procurement, Manufacture and Delivery													
S5003530	SSCS: Manufacture Conveyor, Valve, Air Duct & Lifting Appliance	157	16-Nov-15	31-May-16	15-Oct-15 A	15-Oct-16							
S5003535	SSCS: Factory Acceptance Test for Conveyor	53	15-Oct-16	17-Dec-16	15-Oct-16	17-Dec-16							
S5003555	SSCS: Manufacture Vehicle Washing Machine	116	01-Aug-16	16-Dec-16	01-Aug-16	16-Dec-16							
S5003596	SSCS: FAT Test for 2nd lot Silos (4 nos)	13	01-Aug-16	16-Aug-16	01-Aug-16	16-Aug-16							
S5003610	SSCS: Delivery of 2nd Lot Silos (4 nos.)	18	16-Aug-16	06-Sep-16	16-Aug-16	06-Sep-16							
E&M Installation and T&C													
Silos Installation by E&M													
S5003562	SSCS: Commencement of E&M Works	0	31-Jul-16		31-Jul-16								
Silo Installation													
S5003570	SSCS: Installation of Silo No. 9 - 12	30	01-Aug-16	03-Sep-16	01-Aug-16	03-Sep-16							
S5003580	SSCS: Installation of Silo No. 13 - 16	30	06-Sep-16	14-Oct-16	06-Sep-16	14-Oct-16							
E&M Works													
Level GF, B1 & B2													
S5004020	SSCS: Install DOU Ductwork	65	10-Sep-16	28-Nov-16	10-Sep-16	28-Nov-16							
S5004030	SSCS: Sliding Frame & Discharge Screw Conveyor	53	26-Sep-16	29-Nov-16	26-Sep-16	29-Nov-16							
Level B2A, B3, B4 & B4A													
S5004080	SSCS: Install Solid Pump & Pipework	75	14-Oct-16	12-Jan-17	14-Oct-16	12-Jan-17							
S5004090	SSCS: Install DOU Ductwork	77	28-Oct-16	02-Feb-17	28-Oct-16	02-Feb-17							
S5004100	SSCS: Install Cable Tray	77	28-Oct-16	02-Feb-17	28-Oct-16	02-Feb-17							
Miscellaneous													

◆ Milestone
 Actual Work
 Remaining Work
 Critical Remaining Work

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Three Months Rolling Programme - August to October 2016
(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

Activity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Start	Finish	2016					
							Jul	Aug	Sep	Oct	Nov	
S5004130	SSCS: Install Pipework	78	29-Sep-16	31-Dec-16	29-Sep-16	31-Dec-16						
S5004140	SSCS: Building Services Equipment	76	08-Oct-16	09-Jan-17	08-Oct-16	09-Jan-17						
Deodourization Unit 5 and DG Store												
Structure												
S5008290	DOU5 & DGS: Excavation for Ground Beam and Slab	27	30-Aug-16	03-Oct-16	30-Aug-16	03-Oct-16						
S5008300	DOU5 & DGS: Ground Floor	72	03-Oct-16	28-Dec-16	03-Oct-16	28-Dec-16						
Procurement and Delivery												
S5008510	DOU5 & DGS: Procurement of DOU5 & other E&M Equipment	53	01-Aug-16	04-Oct-16	01-Aug-16	04-Oct-16						
S5008520	DOU5 & DGS: Manufacturing of DOU5 & other E&M Equipment	187	01-Aug-16	16-Mar-17	01-Aug-16	16-Mar-17						
Process Water Storage Tank												
Procurement, Manufacture and Delivery												
S5009660	PWST: Procure Tanks & other E&M Equipment / Material	55	01-Aug-16	05-Oct-16	01-Aug-16	05-Oct-16						
S5009670	PWST: Manufacture Tanks & other E&M Equipment / Material	120	06-Aug-16	28-Dec-16	06-Aug-16	28-Dec-16						
External (Civil) Works												
SDB Area												
S5009812	Concrete pillar box	52	14-Nov-14	16-Jan-15	29-Sep-14 A	01-Aug-16						
S5009814	Permanent carriageway	52	14-Nov-14	16-Jan-15	29-Sep-14 A	06-Aug-16						
S5009818	Cable duct and draw pit P29	12	06-Aug-16	20-Aug-16	06-Aug-16	20-Aug-16						
General Area												
S5009832	Cable duct at portion 3 & 4	50	22-Jul-16	20-Sep-16	01-Jun-16 A	06-Oct-16						
S5009836	Laying of fresh watermain line around entrance of Gammon site	8	22-Aug-16	31-Aug-16	22-Aug-16	31-Aug-16						
S5009838	Foul sewer & manholes F10 & F11 along area adjacent to gate 4	50	07-Oct-16	06-Dec-16	07-Oct-16	06-Dec-16						
S5009846	Storm water drainage & catch pit S8 along portion 5	50	31-Oct-16	29-Dec-16	31-Oct-16 A	06-Feb-17						
S5009866	PCCW cable duct & draw pit T1 & T2	48	28-Oct-16	23-Dec-16	01-Jun-16 A	26-Oct-16						
S5009868	Storm water drainage & catch pits S10 & S10A	48	23-Dec-16	24-Feb-17	01-Jun-16 A	19-Dec-16						
S5009872	Sodium Hypochlorite Pipe in Chemical Trench	48	24-Feb-17	25-Apr-17	01-Jun-16 A	16-Feb-17						
WB Area												
S5009842	Storm water drainage & catch pit S41 & S43 around WB	47	04-Aug-16	28-Sep-16	04-Aug-16	28-Sep-16						
SSCS Area												
S5009862	Cable duct and draw pits P8, P9 & P10	49	29-Jul-16	24-Sep-16	01-Jun-16 A	24-Sep-16						
S5009878	Storm drainage and catch pits S23, S51A & S27	49	26-Sep-16	23-Nov-16	01-Jun-16 A	21-Nov-16						
S5009882	Process watermain & chamber	49	24-Nov-16	21-Jan-17	01-Jun-16 A	16-Jan-17						
S5009884	Cable duct & draw pit P12A	49	23-Jan-17	24-Mar-17	01-Jun-16 A	16-Mar-17						
PWST Area												
S5009844	Storm water drainage & cable duct adjacent to PWST	47	05-Jul-16	29-Aug-16	01-Jun-16 A	26-Sep-16						

- ◆ Milestone
- Actual Work
- Remaining Work
- Critical Remaining Work

Three Months Rolling Programme - August to October 2016
(Based on Detail Works Programme Rev.3B)

3-M Rolling Programme			
Date	Revision	Checked	Approved
30-Jun-16			

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017			
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr				
6.06.5.5 - Finishing Works																				
18-66320N	FDC2- PVC Liner Touch Up Work	22-Sep-15 A	10-Oct-15 A	100%																
18-66310	FDC2- Install FRP Covers & Handrail	26-Sep-15 A	06-Feb-16 A	100%																
18-66330N	FDC2- Waterproofing System	01-Oct-15 A	08-Oct-15 A	100%																
18-66180	FDC2 - Staircase	07-Oct-15 A	12-Oct-15 A	100%																
18-66290	FDC2 - Install Temp Cover	12-Oct-15 A	16-Oct-15 A	100%																
18-66890	FDC2 - Installation of Precast Concrete Panel	08-Apr-16 A	22-Jul-16 A	100%																
18-66900	FDC2 - Erection of Bamboo Scaffolding	23-Jul-16 A	03-Aug-16 A	100%																
18-66200	FDC2 - Painting Works	05-Aug-16 A	02-Sep-16	80%																
18-66190	FDC2 - Installation of Timber Board Cladding	03-Sep-16	22-Sep-16	0%																
6.06.5.6 - E&M Works																				
18-66220	Static Mixer On-site Assembly	19-Aug-15 A	21-Sep-15 A	100%																
18-66170	Handover to E&M Works	22-Sep-15 A		100%																
18-66300	Install Static Mixer	24-Sep-15 A	30-Sep-15 A	100%																
18-66240	Install Flow Measurement Sensor/Transducer	08-Oct-15 A	19-Oct-15 A	100%																
18-66230	Install Air Duct	14-Jan-16 A	18-Mar-16 A	100%																
18-66210	Install Power Supply System	07-Mar-16 A	10-Jun-16 A	100%																
6.06.6 - Chamber 15A																				
6.06.6.1 - Foundation																				
18-58650	Cham 15A - G.I - Pre Drilling (4 Nos.)	11-Oct-11 A	09-Nov-11 A	100%																
18-58700	Cham 15A - Setting Out Pile Points	03-Nov-11 A	09-Nov-11 A	100%																
18-58800	Cham 15A - H-Piles (15 nos.)	30-Mar-12 A	29-May-12 A	100%																
6.06.6.2 - Temporary Works																				
18-58910	Cham 15A - Trial Pile	26-Aug-14 A	30-Aug-14 A	100%																
18-58900	Cham 15A - Sheet Pile Driving Works	13-Sep-14 A	28-Nov-14 A	100%																
18-58950	Cham 15A - ELS 1st Layer	03-Dec-14 A	17-Jan-15 A	100%																
18-58960	Cham 15A - ELS 2nd Layer	18-Jan-15 A	09-Feb-15 A	100%																
18-58980	Cham 15A - ELS Formation + Blinding	09-Feb-15 A	12-Mar-15 A	100%																
18-59000	Cham 15A - ELS Removal + Backfill	15-Apr-15 A	23-May-15 A	100%																
18-58990	Cham 15A - Sheet Pile Removal	22-Aug-15 A	26-Aug-15 A	100%																
6.06.6.3 - Structure																				
C181120	Cham 15A - Installation of Pile Head	13-Mar-15 A	20-Mar-15 A	100%																
C181140	Cham 15A - Diaphragm Wall Cutting Works	16-Mar-15 A	14-Jul-15 A	100%																
6.06.6.3.1 Stage 1																				
C183040	Cham 15A - Base Slab (Level -2.0 to 0 mPD)	20-Mar-15 A	14-Apr-15 A	100%																
C181260	Cham 15A - Lower Wall (Level 0 to +5.15 mPD)	15-Apr-15 A	20-May-15 A	100%																
C181530	Cham 15A - Upper Wall (Level + 5.15 to +11.5 mPD)	21-May-15 A	02-Jul-15 A	100%																
6.06.6.3.2 Stage 2																				
C181800	Cham 15A - Base Slab (Level -2.0 to 0 mPD)	15-Jun-15 A	27-Jul-15 A	100%																
C181910	Cham 15A - Lower Wall (Level 0 to +5.2 mPD)	28-Jul-15 A	17-Aug-15 A	100%																
C181900	Cham 15A - Removal of 1st Layer Struct and Backfill	19-Aug-15 A	20-Aug-15 A	100%																
C181960	Cham 15A - Removal of 2nd Layer Struct and Backfill	21-Aug-15 A	22-Aug-15 A	100%																
C182180	Cham 15A - Upper Wall (Level + 5.2 to +11.5 mPD)	22-Aug-15 A	05-Sep-15 A	100%																
C181970	Cham 15A - Temporary Scaffolding for Wall Construction	24-Aug-15 A	28-Aug-15 A	100%																
6.06.6.4 - Finishing Works																				
18-59060N	Cham 15A - Handover for Finishing Works	22-Sep-15 A		100%																
18-66320	Cham 15A - Install FRP Covers & Handrail	23-Sep-15 A	15-Dec-15 A	100%																
18-59110	Cham 15A - FRP Baffle Wall	24-Sep-15 A	19-Oct-15 A	100%																
18-59080	Cham 15A - Shanghai Render Panels	22-Jun-16 A	01-Aug-16 A	100%																
18-66910	Cham 15A - Painting Works	02-Aug-16 A	31-Aug-16	90%																
18-59090	Cham 15A - Installation of Timber Board Cladding	01-Sep-16	20-Sep-16	0%																
6.06.6.5 - E&M Works																				
18-59140	Cham 15A - Install Power Supply System	01-Aug-15 A	20-Nov-15 A	100%																
18-59150D	Cham 15A - Install TRC Measurement System	05-Aug-15 A	26-Sep-15 A	100%																
18-59100D	Cham 15A - Install Penstock	10-Aug-15 A	22-Sep-15 A	100%																
18-59120	Cham 15A - Install Effluent Pumps	25-Aug-15 A	14-Nov-15 A	100%																
18-59099N	Chamber 15A Handover for E&M Works	15-Sep-15 A		100%																
18-59100D10	Cham 15A - Install Chemical Dosing Unit	24-Sep-15 A	02-Oct-15 A	100%																
18-59100D20	Cham 15A - Install Air Ducts at Area 2	26-Sep-15 A	14-Nov-15 A	100%																



- █ Actual Level of Effort
- █ Remaining Work
- █ Primary Baseline
- █ Critical Remaining Work
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Updated Detail Works Programme

Data Date: 26-Aug-16 Run Date: 26-Aug-16

Project ID : C18DWPE160826

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Detail Works Programme

Date	Revision	Checked	Approved
26-Jul-16	DWP Rev E Update		
26-Aug-16	DWP Rev E Update		

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017							
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr								
18-59160	Cham 15A - Install Odour Ducts	26-Sep-15 A	14-Nov-15 A	100%																				
18-59130	Cham 15A - Install Pipes & Valves	26-Sep-15 A	20-Nov-15 A	100%																				
6.06.7 - Entry Culvert																								
6.06.7.1 - Foundation																								
18-59550	Entry Culvert - G.I - Pre-drilling (2 Nos.)	24-Nov-11 A	07-Dec-11 A	100%																				
18-59600	Entry Culvert - Pre-Bored H-Pile (6 Nos.@2d/no.)	04-Sep-12 A	19-Sep-12 A	100%																				
6.06.7.2 - Temporary Works																								
18-59651N	Entry Culvert - Concrete Breaking	25-Feb-13 A	02-Mar-13 A	100%																				
18-59650D	Entry Culvert - Sheet Piling (194 sheet piles)	05-Mar-13 A	17-Apr-13 A	100%																				
18-59679N	Entry Culvert - Excavation	18-Apr-13 A	06-Aug-13 A	100%																				
18-59680N	Existing Drop Shaft - Breaking of Existing D-wall	03-May-13 A	12-Sep-13 A	100%																				
18-59660D	Entry Culvert - ELS 1st Layer + Removal of Existing D-wall Panel	06-May-13 A	14-Jun-13 A	100%																				
18-59662N	Entry Culvert - Breaking of Underground RC Block	07-Jun-13 A	04-Jul-13 A	100%																				
18-59670D	Entry Culvert - ELS 2nd Layer + Removal of Existing D-wall Panel	12-Jul-13 A	25-Sep-13 A	100%																				
18-59680D	Entry Culvert - ELS Formation + Blinding	06-Aug-13 A	10-Aug-13 A	100%																				
18-59681N	Entry Culvert - ELS Formation + Blinding at C-Clamp Area	11-Sep-13 A	13-Sep-13 A	100%																				
18-59682N	Existing Drop Shaft - Coring of Holes for Installation of T25 Post Drill Links	13-Sep-13 A	29-Sep-13 A	100%																				
18-59683N	Existing Drop Shaft - Trimming of CJ	18-Sep-13 A	30-Sep-13 A	100%																				
6.06.7.3 - Structure																								
18-59711N	Entry Culvert - Installation of H-Pile Steel Top Plates	13-Aug-13 A	31-Aug-13 A	100%																				
18-59712N	Entry Culvert - Backfilling of Soft Spot Below the Foundation Layer	02-Sep-13 A	17-Sep-13 A	100%																				
18-59710D	Entry Culvert - Base Slab + Kicker	18-Sep-13 A	21-Oct-13 A	100%																				
18-64295D	Entry Culvert - Wall Construction	15-Oct-13 A	06-Dec-13 A	100%																				
18-64296N	Entry Culvert - Removal of Formworks	07-Dec-13 A	19-Dec-13 A	100%																				
18-64315	Entry Culvert - Backfill + ELS Removal	21-Dec-13 A	14-Jan-15 A	100%																				
18-64340N	Entry Culvert - Construct Remaining Top Slab of New Culvert	27-Jan-14 A	26-Feb-14 A	100%																				
18-64350N	Entry Culvert - Connection of Precast Top Slab and Entry Culvert	03-Jun-14 A	12-Jul-14 A	100%																				
6.06.7.4 - E&M Works																								
18-64304N	Entry Culvert Handover for E&M Works	23-Jun-15 A		100%																				
18-64355D	Entry Culvert - TRC Measurement System	03-Jul-15 A	26-Sep-15 A	100%																				
18-64335D	Entry Culvert - Install Pipes & Valves	03-Jul-15 A	26-Sep-15 A	100%																				
18-64345D	Entry Culvert - Install Power Supply System	05-Jul-15 A	29-Sep-15 A	100%																				
18-64360	Entry Culvert - Install Odour Ducts [Remaining Works will be Carried Out During Section 5]	22-Aug-15 A	19-Oct-16	72%																				
18-64305D	Entry Culvert - Install Effluent Pumps	25-Aug-15 A	29-Sep-15 A	100%																				
18-64365	Entry Culvert - Functional Test for Equipments [Remaining Works will be Carried Out During Section 5]	29-Sep-15 A	05-Nov-16	60%																				
6.06.7.5 - Connect to Existing Drop Shaft																								
18-59310N	Temp Steel Panel - Trial Installation at Existing Chamber 15	29-Aug-13 A	29-Aug-13 A	100%																				
18-59541N	Initial Environmental Water Monitoring	18-Oct-13 A	31-Oct-13 A	100%																				
18-59542N	Impact Environmental Water Monitoring	01-Nov-13 A	27-Feb-14 A	100%																				
18-59390	Dry Season Onset 2013-2014	01-Nov-13 A		100%																				
18-59312N	Temp Water Gate - Installation of Slot Material	04-Nov-13 A	07-Nov-13 A	100%																				
18-59311N	Temp Flow Diversion - Coring of Holes at Existing Drop Shaft as Advance Work for Pilot Wall Cutting	24-Nov-13 A	24-Nov-13 A	100%																				
18-64337N	Temp Flow Diversion - Stage 1 Pilot Wall Cutting L1-1 for Cantilever Beam Construction	26-Nov-13 A	26-Nov-13 A	100%																				
18-64338N	Temp Flow Diversion - Construction of Cantilever Beam	27-Nov-13 A	06-Dec-13 A	100%																				
18-64341N	Temp Flow Diversion - Construction of Strengthening Beam	27-Nov-13 A	06-Dec-13 A	100%																				
18-64342N	Temp Flow Diversion - Existing DS Top Slab Cutting and Modification Works	07-Dec-13 A	15-Dec-13 A	100%																				
18-64336N	Temp Flow Diversion - Installation of Protective Railing	15-Dec-13 A	15-Dec-13 A	100%																				
18-64339N	Temp Flow Diversion - Stage 2 Pilot Wall Cutting (L1 to L2 fr +7 to +3.625 mPD)	16-Dec-13 A	24-Dec-13 A	100%																				
18-59314N	Temp Water Barrier Platform - Trial Assembly	21-Dec-13 A	26-Dec-13 A	100%																				
18-59450D	Temp Flow Diversion - Stage 3 Wall Cutting and Removal (L3 to L5 fr +3.625 to -0.5 mPD)	26-Dec-13 A	16-Jan-14 A	100%																				
18-59420D	Temp Flow Diversion - Erection of Temp Water Barrier Platform at Existing Drop Shaft	26-Dec-13 A	26-Dec-13 A	100%																				
18-59421N	Temp Steel Panel - Installation at Existing Chamber 15	27-Dec-13 A	27-Dec-13 A	100%																				
18-59410	Divert Flow to Northwest Kowloon Outfall	27-Dec-13 A	27-Dec-13 A	100%																				
18-59530N	Temp Flow Diversion - Final Touch Up for New Entry Culvert and Existing DS Connection	17-Jan-14 A	26-Feb-14 A	100%																				
18-59313N	Temp Water Gate - Installation of Temp Water Gate	22-Feb-14 A	22-Feb-14 A	100%																				
18-59500	Divert Flow Back to Existing Drop Shaft	27-Feb-14 A	27-Feb-14 A	100%																				
18-59543N	Post Environmental Water Monitoring	28-Feb-14 A	13-Mar-14 A	100%																				
18-59530	Dry Season End 2013-2014		28-Feb-14 A	100%																				
18-59532N	Temp Flow Diversion - Dismantle Temporary Water Barrier Platform	18-Apr-14 A	18-Apr-14 A	100%																				



- Actual Level of Effort
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Updated Detail Works Programme

Data Date: 26-Aug-16

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Project ID : C18DWPE160826

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Detail Works Programme

Date	Revision	Checked	Approved
26-Jul-16	DWP Rev E Update		
26-Aug-16	DWP Rev E Update		

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017						
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr							
18-59533	Existing Outfall Drop Shaft - Installation of FRP Cover	23-Nov-15 A	01-Dec-15 A	100%																			
6.06.8 - Dechlorination Plant (DCP)																							
6.06.8.1 - DCP - Foundation																							
18-59800	DCP - G.I- Pre Drilling (7 Nos.)	08-Dec-11 A	31-Jan-12 A	100%																			
18-59810	DCP -Setting Out Pile Points	05-Mar-12 A	13-Mar-12 A	100%																			
18-59850	DCP - Pre-Bore H-Piles (20 nos.)	14-Mar-12 A	30-Jun-12 A	100%																			
18-59930	DCP - Test Piles	06-Oct-12 A	15-Oct-12 A	100%																			
6.06.8.2 - DCP - Structure																							
18-60010D	DCP - Excavate Foundation + Blinding	10-Dec-12 A	24-Dec-12 A	100%																			
18-60040N	DCP - Mobilization and Breaking of Concrete Surface	10-Dec-12 A	13-Dec-12 A	100%																			
18-60050N	DCP - Pile Cap Excavation	14-Dec-12 A	29-Dec-12 A	100%																			
18-60070N	DCP - Pile Cap Blinding	24-Dec-12 A	24-Dec-12 A	100%																			
18-60051N	DCP - Steel Top Plates for H-Piles	27-Dec-12 A	02-Jan-13 A	100%																			
18-60015D	DCP - R.C. Pile Cap (Base Slab)	28-Dec-12 A	19-Jan-13 A	100%																			
18-60090N	DCP - Pile Cap Formworks	28-Dec-12 A	02-Jan-13 A	100%																			
18-60101N	DCP - Pile Cap Steel Fixing	03-Jan-13 A	18-Jan-13 A	100%																			
18-60020D	DCP - R.C. Intermediate Slab	08-Jan-13 A	02-May-13 A	100%																			
18-60120N	DCP - Construction of Toe Wall	08-Jan-13 A	18-Jan-13 A	100%																			
18-60111N	DCP - Pile Cap Concreting	19-Jan-13 A	19-Jan-13 A	100%																			
18-60140N	DCP - Ground Slab, Waterproofing	22-Jan-13 A	22-Jan-13 A	100%																			
18-60130N	DCP - Ground Slab, Erection of Permanent Formworks	23-Jan-13 A	02-May-13 A	100%																			
18-60025	DCP - R.C. Plinths and Boundary Wall	28-Jan-13 A	04-Mar-13 A	100%																			
18-60160N	DCP - Ground Slab Steel Fixing	28-Jan-13 A	02-May-13 A	100%																			
18-60141N	DCP - Ground Slab, Installation of UPVC Cable Ducting	26-Feb-13 A	13-Apr-13 A	100%																			
18-60142N	DCP - Ground Slab, Installation of UPVC Cast-Iron Pipe	11-Apr-13 A	18-Apr-13 A	100%																			
18-60143N	DCP - Ground Slab Cast-Iron Pipe Water Test	19-Apr-13 A	22-Apr-13 A	100%																			
18-60170N	DCP - Ground Slab, Concreting	02-May-13 A	02-May-13 A	100%																			
18-60171N	DCP - Ground Slab, Removal of Formworks	03-May-13 A	08-May-13 A	100%																			
18-60030D	DCP - R.C. Walls/Roof	04-Jul-13 A	04-Oct-13 A	100%																			
18-60030N	DCP - R.C. Wall Scaffolding & Formworks Erection	04-Jul-13 A	17-Aug-13 A	100%																			
18-60053N	DCP - R.C. Walls Steel Fixing	29-Jul-13 A	10-Aug-13 A	100%																			
18-60052N	DCP - R.C. Roof Formworks Erection	12-Aug-13 A	20-Aug-13 A	100%																			
18-60055N	DCP - R.C. Roof Steel Fixing	21-Aug-13 A	26-Aug-13 A	100%																			
18-60054N	DCP - R.C. Walls/Roof, Cast Concrete	27-Aug-13 A	27-Aug-13 A	100%																			
18-60056N	DCP - R.C. Walls/Roof, Concrete Wall and Roof Curing	28-Aug-13 A	12-Sep-13 A	100%																			
18-60046N	DCP - R.C. Roof Parapet, Fix Roof Parapet Wall Reinforcement	05-Sep-13 A	13-Sep-13 A	100%																			
18-60035D	DCP - R.C. Roof Parapet	05-Sep-13 A	04-Oct-13 A	100%																			
18-60045N	DCP - R.C. Roof Parapet, Erection of Formwork	09-Sep-13 A	18-Sep-13 A	100%																			
18-60058N	DCP - R.C. Walls/Roof, Removal of Formworks and Falseworks	13-Sep-13 A	04-Oct-13 A	100%																			
18-60048N	DCP - R.C. Roof Parapet, Cast Roof Concrete Parapet	19-Sep-13 A	19-Sep-13 A	100%																			
18-60049N	DCP - R.C. Roof Parapet, Curing and Removal of Formworks	20-Sep-13 A	04-Oct-13 A	100%																			
18-60065N	DCP - Cleaning and Preparation for Finishing and E&M	05-Oct-13 A	02-Nov-13 A	100%																			
18-64651N	DCP - 3600x1200 Sump Pit Near Bund Wall	17-Oct-13 A	02-Nov-13 A	100%																			
18-60059N	DCP - R.C. Roof Parapet, Waterproofing	01-May-14 A	31-May-14 A	100%																			
18-60173N	DCP - Ground Slab, Bund Wall Waterproofing	01-Feb-15 A	20-Apr-15 A	100%																			
18-60040D	DCP - Steel Structure & Roof Delivery		19-May-15 A	100%																			
18-60042N	DCP - Steel Structure & Roof, Steel Structure Installation	19-May-15 A	20-Jul-15 A	100%																			
18-60043N	DCP - Steel Structure & Roof, Installation of FRP Shelter Sheets	21-Jul-15 A	06-Aug-15 A	100%																			
6.06.8.3 - DCP - Storage Tank Compound																							
6.06.8.3.1 - Finishing Works																							
18-60047N	DCP - STC Handover for Finishing Works	19-Jun-14 A		100%																			
18-60048D	DCP - STC - Install Storage Tanks	19-Jun-14 A	02-Sep-14 A	100%																			
18-60060	DCP - STC - Epoxy Coating & Painting	04-Jul-14 A	14-Jul-14 A	100%																			
18-60051	DCP - STC - Metal Works	23-May-15 A	22-Jun-15 A	100%																			
18-60056	DCP - STC - FRP Open Mesh Flooring	12-Sep-15 A	09-Jan-16 A	100%																			
18-60058	DCP - STC - Synthetic Timber Board Screen	13-Nov-15 A	28-Nov-15 A	100%																			
6.06.8.3.2 - E&M Works																							
18-60066N	DCP Storage Tank Compound Handover for E&M Work	15-May-14 A		100%																			
18-60075N	DCP - STC - Install Sodium Bisulphate Dosing Pumps	20-May-14 A	20-Jul-15 A	100%																			

 <p>俊和-大陸工程聯營 CHUN WO - CEC JOINT VENTURE</p>	<p>Actual Level of Effort</p> <p>Primary Baseline</p> <p>Actual Work</p>	<p>Remaining Work</p> <p>Critical Remaining Work</p> <p>Milestone</p>	<p>Updated Detail Works Programme</p> <p>Data Date: 26-Aug-16</p> <p>Run Date: 26-Aug-16</p>	<p>Project ID : C18DWPE160826</p> <p>Layout : C18160826UDWP</p> <p>Page 35 of 40</p>	<p>Detail Works Programme</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>26-Jul-16</td> <td>DWP Rev E Update</td> <td></td> <td></td> </tr> <tr> <td>26-Aug-16</td> <td>DWP Rev E Update</td> <td></td> <td></td> </tr> </tbody> </table>	Date	Revision	Checked	Approved	26-Jul-16	DWP Rev E Update			26-Aug-16	DWP Rev E Update		
	Date	Revision	Checked	Approved													
	26-Jul-16	DWP Rev E Update															
26-Aug-16	DWP Rev E Update																

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017			
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr				
18-60052D	DCP - STC - Piping Works	27-Jun-14 A	20-Nov-15 A	100%																
18-60066	DCP - STC - Cabling & Wiring	22-Dec-14 A	15-Jul-15 A	100%																
18-60054D	DCP - STC - Cable Containment Works	22-Dec-14 A	02-Jul-15 A	100%																
18-60068D	DCP - STC - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%																
18-60067	DCP - STC - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%																
18-60070D	DCP - STC - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																
18-60074N	DCP - STC - Install Sodium Bisulphate Dosing Units	24-Sep-15 A	10-Oct-15 A	100%																
18-60080	DCP - STC - Functional Test	25-Sep-15 A	29-Sep-15 A	100%																
6.06.8.4 - DCP - Pump Hall																				
6.06.8.4.1 - Finishing Works																				
18-63555	DCP - PH - Epoxy Coating & Painting	16-Jun-14 A	12-Jul-14 A	100%																
18-63493N	DCP - PH Handover for Finishing Works	15-Jul-14 A		100%																
18-63515	DCP - PH - Door, Shutter and Louvre	03-Nov-14 A	17-Nov-14 A	100%																
18-63495	DCP - PH - FRP Open Mesh Flooring	12-Sep-15 A	09-Jan-16 A	100%																
6.06.8.4.2 - E&M Works																				
18-63485D	DCP - PH - Airducts	14-Jul-14 A	29-Apr-15 A	100%																
18-63492D	DCP - PH - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%																
18-63474N	DCP Pump Hall Handover for E&M Works	15-Jul-14 A		100%																
18-63489	DCP - PH - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%																
18-63480D	DCP - PH - Cable Containment	22-Dec-14 A	29-Apr-15 A	100%																
18-63487D	DCP - PH - Cabling & Wiring	22-Dec-14 A	29-Apr-15 A	100%																
18-63488D	DCP - PH - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%																
18-63478D	DCP - PH - Piping Works	05-Jan-15 A	20-Sep-15 A	100%																
18-63476D	DCP - PH - Fume Recovery System	15-Jan-15 A	15-Jul-15 A	100%																
18-63490D	DCP - PH - Fire Services	03-Feb-15 A	10-Aug-15 A	100%																
18-63475D	DCP - PH - Pump & Dehumidifier Install	01-Jun-15 A	15-Jun-15 A	100%																
18-63494D	DCP - PH - Functional Test	21-Sep-15 A	29-Sep-15 A	100%																
6.06.8.5 - DCP - Sensor Store Room																				
6.06.8.5.1 - Finishing Works																				
18-63624N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%																
18-63635D	DCP - SSR - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%																
18-63625	DCP - SSR - Door & Louvres	03-Nov-14 A	18-Nov-14 A	100%																
6.06.8.5.2 - E&M Works																				
18-63574N	DCP Sensor Store Room Handover for E&M Works	15-May-14 A		100%																
18-63585D	DCP - SSR - Airducts	14-Jul-14 A	29-Apr-15 A	100%																
18-63655D	DCP - SSR - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%																
18-63595D	DCP - SSR - Cabling & wiring	22-Dec-14 A	10-Aug-15 A	100%																
18-63575D	DCP - SSR - Cable Containment	22-Dec-14 A	01-Aug-15 A	100%																
18-63645D	DCP - SSR - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%																
18-63491D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																
18-63658D	DCP - SSR - Functional Test	21-Sep-15 A	22-Sep-15 A	100%																
6.06.8.6 - DCP - Control Room & UPS Room																				
6.06.8.6.1 - Finishing Works																				
18-63709N	DCP - CR/UPS Handover for Finishing Works	31-Mar-14 A		100%																
18-63720N	DCP - CR/UPS Partition Wall	31-Mar-14 A	11-Apr-14 A	100%																
18-63725D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%																
18-63715	DCP - CR/UPS - Door & Louvre	03-Nov-14 A	18-Nov-14 A	100%																
18-63710	DCP - CR/UPS - Metal Works	01-Jun-15 A	19-Jun-15 A	100%																
6.06.8.6.2 - E&M Works																				
18-63604N	DCP Handover for E&M Works at Control Room & UPS Room	15-May-14 A		100%																
18-63615D	DCP - CR/UPS - Airducts	14-Jul-14 A	29-Apr-15 A	100%																
18-63705D	DCP - CR/UPS - Air grilles	14-Jul-14 A	29-Apr-15 A	100%																
18-63605D	DCP - CR/UPS - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%																
18-63685D	DCP - CR/UPS - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%																
18-63695D	DCP - CR/UPS - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%																
18-63495D	DCP - CR/UPS - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																
18-63736	DCP - CR/UPS - Control System Equipment	21-Sep-15 A	20-Nov-15 A	100%																
18-63748	DCP - CR/UPS - Functional Test	23-Sep-15 A	26-Dec-15 A	100%																
18-63735	DCP - CR/UPS - UPS Equipment	09-Nov-15 A	20-Nov-15 A	100%																



█ Actual Level of Effort █ Remaining Work
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Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017					
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr						
6.06.8.6.2.3 - Completion of DCS Works																						
18-63760	DCS Pre-inspection Works Before Handover	04-Jan-16 A	07-Sep-16	95%	■ DCS Pre-inspection Works Before Handover																	
18-63761	DCS Handover Completed Works		07-Sep-16	0%	◆ DCS Handover Completed Works																	
6.06.8.6.2.3 - DCS Training																						
18-63828N	DCS Training - Submission of Training Programme and Material	01-Apr-15 A	15-Apr-15 A	100%																		
18-63838N	DCS Training - Engineer's Review	02-Jul-15 A	10-Jul-15 A	100%																		
18-63848	DCS Training - Re-submission	05-Jan-16 A	19-Apr-16 A	100%	■ Training - Re-submission																	
18-63858	DCS Training - Engineer's Approval	11-Jan-16 A	30-Aug-16	90%	■ DCS Training - Engineer's Approval																	
18-63868	Conduct Training to DSD	31-Aug-16	02-Sep-16	0%	■ Conduct Training to DSD																	
6.06.8.6.2.1 - DCS On-Site Installation																						
18-63758	DCS Equipment On-Site Installation (Including Control Panels, Work Station, and Control Desk)	01-Aug-15 A	27-Jan-16 A	100%	■ Panels, Work Station, and Control Desk																	
18-63768	DCS Equipment Cabling Works	02-Aug-15 A	30-Jan-16 A	100%																		
18-63778	DCS Functional Testing	20-Jan-16 A	27-Jan-16 A	100%																		
18-63759	DCS Commissioning Work	22-Feb-16 A	07-Sep-16	90%	■ DCS Commissioning Work																	
6.06.8.6.2.2 - DCS O&M Manual Submission																						
18-63788	DCS O&M Manual Submission	22-Sep-15 A	09-Oct-15 A	100%																		
18-63798	DCS O&M Manual Submission - Engineer's Review and Comment	23-Sep-15 A	18-Aug-16 A	100%	■ DCS O&M Manual Submission - Engineer's Review and Comment																	
18-63808	DCS O&M Manual Submission - Re-submission	08-Dec-15 A	15-Jan-16 A	100%	■ Submission																	
18-63818	DCS O&M Manual Submission - Engineer's Approval	19-Aug-16 A	22-Sep-16	20%	■ DCS O&M Manual Submission - Engineer's Approval																	
6.06.8.7 - DCP - Switch Room																						
6.06.8.7.1 - Finishing Works																						
18-63774N	DCP - CR/UPS Switch Room Handover for Finishing Works	15-Apr-14 A		100%																		
18-63795D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%																		
18-63785	DCP - CR/UPS - Door and Lovre	03-Nov-14 A	18-Nov-14 A	100%																		
18-63775	DCP - SR - Metal Works	01-Jun-15 A	19-Jun-15 A	100%																		
6.06.8.7.2 - E&M Works																						
18-63754N	DCP Switch Room Handover for E&M Works	15-May-14 A		100%																		
18-63765D	DCP - SR - Airducts	14-Jul-14 A	29-Apr-15 A	100%																		
18-63755D	DCP - SR - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%																		
18-63825D	DCP - SR - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%																		
18-63815D	DCP - SR - Cabling and Wiring	22-Dec-14 A	10-Jul-15 A	100%																		
18-63491D20	DCP - SR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																		
18-63805D	DCP - SR - LV Switchboard	29-Jun-15 A	20-Aug-15 A	100%																		
18-63835	DCP - SR - Power on	20-Aug-15 A	20-Aug-15 A	100%																		
6.06.8.8 - DCP - Potable Water Pump House																						
6.06.8.8.1 - Finishing Works																						
18-63944N	DCP - PWP Handover for Finishing Works	15-Apr-14 A		100%																		
18-63955D	DCP - PWP - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%																		
18-63945	DCP - PWP - Door and Louvre	03-Nov-14 A	18-Nov-14 A	100%																		
18-63965	DCP - PWP - ABWF Works	16-Mar-16 A	15-Aug-16 A	100%	■ DCP - PWP - ABWF Works																	
6.06.8.8.2 - E&M Works																						
18-63865D	DCP - PWP - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%																		
18-63885D	DCP - PWP - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%																		
18-63905D	DCP - PWP - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%																		
18-63895D	DCP - PWP - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%																		
18-63844N	DCP Potable Water Pump House Handover for E&M Works	05-Jan-15 A		100%																		
18-63855D	DCP - PWP - Piping Works	05-Jan-15 A	05-Jul-15 A	100%																		
18-63915D	DCP - PWP - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																		
18-63845D	DCP - PWP - Pump Instal	25-Jul-15 A	02-Aug-15 A	100%																		
18-64415D	DCP - PWP - Functional Test	26-Sep-15 A	20-Nov-15 A	100%																		
6.06.8.9 - DCP - Spare Storage Room/Toilet																						
6.06.8.9.1 - Finishing Works																						
18-63975D	DCP - SSR - Partion Wall & Plaster	31-Mar-14 A	11-Apr-14 A	100%																		
18-63974N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%																		
18-64005D	DCP - SSR - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%																		
18-63985	DCP - SSR - Tile Works	28-Jun-14 A	12-Jul-14 A	100%																		
18-63995	DCP - SSR - Doors and Lovres	03-Nov-14 A	17-Nov-14 A	100%																		
6.06.8.9.2 - E&M Works																						
18-64014N	DCP Spare Storage Room/Toilet Handover for E&M Works	15-May-14 A		100%																		

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- Actual Level of Effort
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- Actual Work
- ◆ Milestone

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017			
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr				
18-63896D	DCP - SSR - MVAC System	22-Dec-14 A	29-Apr-15 A	100%																
18-64015D	DCP - SSR - Electrical Works	22-Dec-14 A	10-Jul-15 A	100%																
18-64025D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																
6.06.8.10 - DCP Statutory Inspection																				
18-60600	WSD Connection	28-Oct-15 A	12-Nov-15 A	100%																
18-60650	Prep & Sub Form 314 to FSD	13-Nov-15 A	19-Nov-15 A	100%																
18-60700	Prep & Sub Form 501 to FSD	13-Nov-15 A	19-Nov-15 A	100%																
18-60750	FSD Inspection	11-Mar-16 A	11-Mar-16 A	100%																
6.06.8.11 - DCP External Works																				
18-64649N	Ext Works - RS Stage 1, DN 600 Manhole & Drain Pipe	25-Mar-14 A	13-May-14 A	100%																
18-64650N	Ext Works - Riser Shaft - Stage 1 Before NE Demolition (Main Drainage, Ducting, Pipe Trench)	25-Mar-14 A	02-Jun-14 A	100%																
18-64647N	Ext Works - RS Stage 1, Draw Pit & Cable Duct	25-Apr-14 A	15-Jul-14 A	100%																
18-64670N	Ext Works - MH (SW) 01		25-Apr-14 A	100%																
18-64648N	Ext Works - RS Stage 1, Pipe Trench & DN300 Pipe & DN150 Pipe	14-May-14 A	06-Aug-14 A	100%																
18-64668N	Ext Works - E3 Cable Draw Pit		07-Jun-14 A	100%																
18-64667N	Ext Works - MH (FS) 10		12-Jun-14 A	100%																
18-64666N	Ext Works - E14 Cable Draw Pit		25-Jun-14 A	100%																
18-64687N	Ext Works - E15 Cable Draw Pit		25-Jun-14 A	100%																
18-64660N	Ext Works - Riser Shaft - Stage 2 After NE Demolition (Main Drainage, Ducting, Water Supply, Pipe Trench)	27-Jun-14 A	17-Jul-15 A	100%																
18-64680N	Ext Works - E13 Cable Draw Pit		27-Jun-14 A	100%																
18-64644	Ext Works - RS Stage 2, Draw Pit and Ducting and Water Mains	10-Jul-14 A	29-Feb-16 A	100%																
18-64690N	Ext Works - MH (FS) 06		11-Jul-14 A	100%																
18-64665N	Ext Works - MH (FS) 05		11-Jul-14 A	100%																
18-64688N	Ext Works - E16 Cable Draw Pit		15-Jul-14 A	100%																
18-64662N	Ext Works - MH (FS) 03		19-Jul-14 A	100%																
18-64663N	Ext Works - Last Manhole		04-Oct-14 A	100%																
18-64646N	Ext Works - RS Stage 2, Last Manhole and 1050mm Pipe	04-Oct-14 A	06-Nov-14 A	100%																
18-64645N	Ext Works - RS Stage 2, Remaining Pipe Trench	12-Jul-15 A	17-Jul-15 A	100%																
18-64661	Ext Works - Riser Shaft - Stage 3 Remaining Works	22-Jul-15 A	29-Feb-16 A	100%																
18-64671	Ext Works - Installation of Access Control System and CCTV System	15-Sep-15 A	25-Oct-16	80%																
6.06.9 - DOU4 (Variation Order No. 0092)																				
18-60800	DOU4 - Plinth [Part 1]	10-Jul-15 A	03-Aug-15 A	100%																
18-60100	DOU4 Handover for E&M Works	05-Aug-15 A		100%																
18-61050	DOU4 - Install Air Extraction Fan	22-Sep-15 A	07-Nov-15 A	100%																
18-61000	DOU4 - Install Bio Trickling Filters	22-Sep-15 A	14-Dec-15 A	100%																
18-61100	DOU4 - Install Pumps	05-Oct-15 A	04-Jan-16 A	100%																
18-66340	DOU4 - MCC Room	15-Oct-15 A	20-Nov-15 A	100%																
18-61120	DOU4 - Install Pipes & Valves	01-Nov-15 A	25-Feb-16 A	100%																
18-66360	DOU4 - Pipe Trench	04-Nov-15 A	07-Dec-15 A	100%																
18-61140	DOU4 - Install Tanks	21-Nov-15 A	08-Jan-16 A	100%																
18-61220	DOU4 - External Works - Laying Cable Duct	01-Dec-15 A	30-Dec-15 A	100%																
18-61170	DOU4 - MCC Room - Install BS Electrical	15-Dec-15 A	29-Jan-16 A	100%																
18-60110	DOU4 - Plinth [Part 2]	19-Dec-15 A	11-Jan-16 A	100%																
18-61070	DOU4 - Install FRP Air Duct & Accessories	05-Jan-16 A	29-Feb-16 A	100%																
18-61110	DOU4 - MCC Room - Install MVAC	11-Jan-16 A	20-Feb-16 A	100%																
18-61310	DOU4 - MCC Room - Install FS System	15-Jan-16 A	29-Feb-16 A	100%																
18-61160	DOU4 - Install Power Supply System	27-Jan-16 A	17-Feb-16 A	100%																
18-61260	DOU4 - MCC Room - Install Electrical Field Equipment	15-Feb-16 A	08-Jul-16 A	100%																
18-61210	DOU4 - External Works - Laying Water Pipe	23-Feb-16 A	07-Jul-16 A	100%																
18-61180	DOU4 - Install Control Panel	28-Mar-16 A	08-Jul-16 A	100%																
18-61275	DOU4 - Drain Pipe and Odour Duct Connection to Sed. Tank	25-Apr-16 A	23-Jun-16 A	100%																
18-61280	DOU4 - MCC Room - UPS System	01-Jun-16 A	30-Aug-16	95%																
18-61290	DOU4 - MCC Room - DCS System	01-Jun-16 A	14-Jul-16 A	100%																
18-61270	DOU4 - Switch Room in Sed. Tank - Install ATS Panel for Dual Source	01-Jun-16 A	02-Jun-16 A	100%																
18-61230	DOU4 - External Works - Odour Duct to MPS1	27-Jun-16 A	30-Sep-16	60%																
18-61250	DOU4 - Install CCTV Remote Monitoring & FS Common Alarm to MPS1	11-Jul-16 A	30-Sep-16	50%																
18-61200	DOU4 - Functional Test for Equipments	18-Jul-16 A	19-Sep-16	50%																
18-61190	DOU4 - Bacterial Incubation	22-Jul-16 A	02-Sep-16	30%																
18-61300	DOU4 - MCC Room - Install CCTV	25-Jul-16 A	12-Aug-16 A	100%																



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