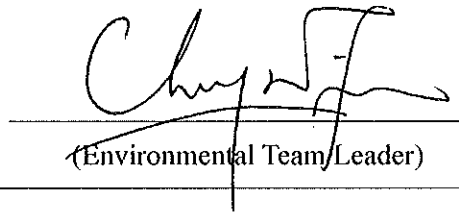
Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23, DC/2009/10, DC/2009/17 and DC/2009/18

Consolidated Monthly Environmental Monitoring and Audit Report December 2012

(Version 1.1)

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

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

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY 1

Introduction 1
Environmental Monitoring and Audit Works 2
Key Information in the Reporting Month 3
Key Information in the EIA Report 3

1. INTRODUCTION 4

Background 4
Current Contracts at SCISTW 4
Project Organizations 5
Construction Programme 6
Summary of EM&A Requirements 7

2. AIR QUALITY 8

Monitoring Requirements 8
Monitoring Locations 8
Monitoring Equipment 8
Monitoring Parameters, Frequency and Duration 8
Monitoring Methodology and QA/QC Procedure 9
Results and Observations 9

3. NOISE 10

Monitoring Requirements 10
Monitoring Locations 10
Monitoring Equipment 10
Monitoring Parameters, Frequency and Duration 10
Monitoring Methodology and QA/QC Procedures 11
Results and Observations 11

4. ENVIRONMENTAL AUDIT 12

Site Audits 12
Review of Environmental Monitoring Procedures 12
Status of Environmental Licensing and Permitting 12
Status of Waste Management 12
Implementation Status of Event Action Plans 13
Summary of Complaints and Prosecutions 14

5. FUTURE KEY ISSUES 15

Key Issues for the Coming Month 15
Monitoring Schedule for the Next Month 15
Construction Program for the Next Month 15

6. CONCLUSIONS AND RECOMMENDATIONS 16

Conclusions 16
Recommendations for the coming reporting month: 16

LIST OF TABLES

Table I Summary Table for Executive Summaries and Web Sites
Table II Summary Table for Non-compliance Recorded in the Reporting Month
Table III Monthly Consolidated Summary Table for Key Information

Table 1.1 Key Project Contacts
Table 1.2 Construction Works in the Reporting Month
Table 2.1 Locations for Air Quality Monitoring
Table 2.2 Air Quality Monitoring Equipment
Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration
Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Results in Reporting Month
Table 3.1 Noise Monitoring Stations
Table 3.2 Noise Monitoring Equipment
Table 3.3 Noise Monitoring Parameters, Frequency and Duration
Table 3.4 Summary of Noise Monitoring Results in Reporting Month
Table 4.1 Summary of Date of Site Inspection
Table 4.2 Summary of Amount of Waste Generated in Reporting Month
Table 4.3 Summary of Disposal Location of Waste Generated in Reporting Month

LIST OF FIGURES

Figures 1-3 General Location Plan of the Project and Location of Air Quality and Noise Monitoring Stations

LIST OF APPENDICES

A Action and Limit Levels for Air Quality and Noise
B Environmental Monitoring Schedules
C Calibration Certificates of the Environmental Monitoring Equipment
D 1-hour and 24-hour TSP Monitoring Results and Graphical Presentations
E Noise Monitoring Results and Graphical Presentations
F Environmental Permits and Licenses
G Summary of Exceedance
H Site Audit Summary
I Event Action Plans
J Environmental Mitigation Implementation Schedule (EMIS)
K Complaint Log
L Construction Programme

ABBREVIATION AND ACRONYM

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

EXECUTIVE SUMMARY

Introduction

1. This is the 37th Consolidated Environmental Monitoring and Audit (EM&A) Report summaries the key information of EM&A monthly reports for the following construction contracts at the Stonecutters Island Sewage Treatment Works (SCISTW) under the Project of Harbour Area Treatment Scheme Stage 2A (the Project) and prepared by Cinotech Consultants Limited, the Environmental Team (ET) for Contract no. DC/2009/10.

   - Contract no. DC/2007/23 – Construction of Sewage Conveyance System from North Point to Stonecutters Island;
   - 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/F and separate ETs were appointed under each contract pursuant to Condition 2.1 of the EP.

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

4. No amendment of the information in the EM&A reports for each individual contract was made in this consolidated monthly report.

5. This Report documents the findings of EM&A Works for the Project covering the period in December 2012.

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

Table I Summary Table for Executive Summaries and Web Sites:

Contract no.	ES/Web Site	Details:
DC/2007/23	Executive Summary	At SCISTW, air quality monitoring station AM6 and noise monitoring station NM5 were monitored by ET for Contract no. DC/2007/23.
	Web Site	http://www.hats2a-ema.com/RP_EMA/DC200723/EM&A%20Report-DC200723.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/DC200917/EM&A%20Report-DC200917.html
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/EM&A%20Report-DC200910.html
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/EM&A%20Report-DC200918.html

Environmental Monitoring and Audit Works

7. The environmental monitoring works in the Project were covered by the ETs for the Contracts: DC/2007/23, DC/2009/10 and DC/2009/18 and the site audits were conducted once per week for each contract by their ETs.

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

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

Monitored By	Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
			Action Level	Limit Level	Action Level	Limit Level	
DC/2007/23	AM6	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	
DC/2009/10	AM7	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
	AM8	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
DC/2009/18	AM9	1-hr TSP	0	0	0	0	
		24-hr TSP	0	0	0	0	
DC/2007/23	NM5	Noise	0	0	0	0	
DC/2009/10	NM6		0	0	0	0	
DC/2009/18	NM7		0	0	0	0	

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise

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

Key Information in the Reporting Month

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

Table III Monthly Consolidated Summary Table for Key Information

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	1	Monthly Consolidated EM&A Report for Stonecutters Island Sewage Treatment Works for November 2012	Submitted to EPD	No comment	---
Notifications of any summons & prosecutions received	0	--	N/A	N/A	---

Key Information in the EIA Report

13. 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 four contracts are provided in the **Appendix J**.

1. INTRODUCTION

Background

1.1 Harbour Area Treatment Scheme (HATS) Stage 2A is a designated project (Register No. : AEIAR-121/2008). The Environmental Permit (Permit No. EP-322/2008/F) for the Project was issued on 10th October 2012 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.

1.2 The general location plan for the Contracts: DC/2007/23, DC/2009/10, DC/2009/17 and DC/2009/18 are shown in **Figures 1 to Figure 3**.

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

1.4 The 1st to 11th consolidated monthly EM&A reports were prepared by Ove Arup & Partners Hong Kong Ltd (Arup) and submitted to EPD. From November 2010 onwards, the 12th and subsequent consolidated monthly EM&A report will be prepared and submitted by Cinotech Consultant Limited, the ET for the Contracts DC/2009/10, DC/2009/17 and DC/2009/18.

1.5 This is the 37th consolidated monthly EM&A report summarizing the EM&A works conducted for the Project at SCISTW in December 2012.

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

Current Contracts at SCISTW

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

Contract no. DC/2007/23
- Construction of sewage conveyance system between Sai Ying Pun junction shaft and Stonecutters Island Sewage Treatment Works;
- Construction of riser shaft at Stonecutters Island Sewage Treatment Works;
- Construction of Stage 2 Connecting Adit between the riser shaft and Stage 2 Main Pumping Station side chamber (by others) at Stonecutters Island Sewage Treatment Works.

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

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

Table 1.1 Key Project Contacts

Contract No./ Position	DC/2007/23	DC/2009/10
Contract Title:	Construction of Sewage Conveyance System from North Point to Stonecutters Island;	Upgrading Works at SCISTW - Main Pumping Station, Sedimentation Tanks and Ancillary Facilities
Consultant	Metcalf & Eddy – AECOM JV	Ove Arup & Partners HK Ltd
The Engineer	Keith Tsang (Tel:2605 6262)	S.Y.Chan (Tel: 2528 3031)
The Engineer Representative	Y.H. Fung (Tel: 3713 3110)	Ted Tang (Tel: 2370 4311)
ER's Coordinator	Y.H. Fung (Tel: 3713 3110)	Natalie Kwok (Tel: 6794 8844)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)	Dr. Anne Kerr (Tel:2828 5757)
Contractor	Gammon Construction Ltd	Sun Fook Kong – Biwater Joint Venture
Site Agent	Mr. Max Ko (Tel: 9033 1292)	Mr. Ivan Tse (Tel: 6200 2149)
Environmental Officer	Mr. Leo Chow (Tel:9300 2013)	Mr. Leo Lau (Tel:9209 2703)
Environmental Team	Environmental Resources Management Ms.Winnie Ko (Tel: 2271 3000)	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)

Contract No.	DC/2009/17	DC/2009/18
The Engineer Representative	Ted Tang (Tel: 2370 4311)	Ted Tang (Tel: 2370 4311)
ER's Coordinator	Natalie Kwok (Tel: 6794 8844)	Natalie Kwok (Tel: 6794 8844)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)	Dr. Anne Kerr (Tel:2828 5757)
Contractor	China State- ATAL Joint Venture	Chun Wo – CEC Joint Venture
Site Agent	Mr. Tony Wong (Tel: 2370 3166)	Mr. Daniel Tai (Tel: 6688 5680)
Environmental Officer	Mr. H.S.Lui (Tel: 9050 2212)	Mr. Shelton Chan (Tel: 5395 5470)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)

Construction Programme

1.9 The construction program for the four Contracts at SCISTW are provided in **Appendix L**. Major construction works undertaken during the reporting month include:

Table 1.2 Construction Works in the Reporting Month

Contract No.	Construction Works in the Reporting Month
DC/2007/23	Riser Shaft • Pre-excavation grouting; and Production Shaft • Shaft steel work installation.
DC/2009/17	Portion 3: • Concreting of columns (from +16.075 to +18.4mPD) of Double Door Enclosure were completed; • Construction of block work walls on G/F were in progress; • Spatter dash works of external walls of vehicles wash area were in progress; and • Installation of FRP UB on level B4 was in progress. Portion 4: • Installation of windows and doors were in progress; • Installation of handrails on R/F was in progress; • Construction of block work wall on 1/F and 2/F were in progress; and • Plastering and spatter dash works of external walls were in progress. Portion 5: • Spark test of PVC lining at SST. No. 7 was in progress. External Works: • Trench excavation, laying of cable ducts & DN200 water main and reinstatement of carriageway at Zone A1 (Stage 3) were completed; • Trench excavation and laying of cable ducts & DN200 water main at Zone A2 (Stage 2) were in progress; • Excavation work at Zone B1 was in progress; • Installation of multipart cover for Chemical Pipe Trench (CH0+122 to CH0+126) at Zone B2 was in progress; • Backfilling work at Zone B2 was in progress; • Construction of Valve Chamber C1 was completed. Pipe laying and reinstatement works at Zone B4 (Stage 4) were completed; • Trench excavation at Zone B5a was in progress; • Laying of water mains & Storm water drain and construction of Catch pit S21 at Zone B5b was in progress; • Reinstatement of carriageway at Zone C2 (Stage 2) was completed; • Backfilling work at Zone C3 was in progress; • Trench excavation and shoring installation around SST no.6 & no.7 at Zone C3 were

	completed. Construction of Sludge Chambers 4 & 5 was in progress; and • Trench excavation and shoring installation for laying DN250 and DN600 Centrate Pipe at Zone C4 (stage 2) were completed. And backfilling work was in progress.
DC/2009/10	• Building services installation at 1/F and G/F in storage building is in progress; • Building services installation at Container Maintenance Building is in progress; • All prebored H-pile at distribution channel was completed; • All prebored H-pile at flocculation tank was completed; • Construction of pile caps of effluent culvert at cofferdam No. 1 and 6 are in progress; • 8th Concreting of wet well wall (from -4.85mPD to -0.10mPD) completed on 16 December 2012; • Construction of Column, Staircase up to -9.5mPD are in progress; • Erection of falsework and RC works for -10.0mPD access floor are in progress; • CLP cable trench is in progress.
DC/2009/18	• Portion 3: Blasting at Riser Shaft; installation of shaft utilities at Riser Shaft; excavation and construction of Dechlorination Plant Pile Cap and Structure; and • Portion 7: Carry out first blast and succeeding blasts at Drop Shaft and rock excavation.

Summary of EM&A Requirements

1.10 The EM&A programme requires construction phase monitoring for air quality and noise, as well as site audits covering environmental mitigation measures, including landscape and visual impact, waste/chemicals management, and general compliance with the EM&A Manual and relevant permits/licenses. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

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

1.12 This report summarized the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project in December 2012, 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, AM6, AM7, AM8 and AM9 were selected for impact dust monitoring. Table 2.1 describes the air quality monitoring locations, which are also depicted in **Figures 1 and 3**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Responsible Contracts	Location of Measurement
AM6	DC/2007/23	Works site boundary of DC/2007/23
AM7	DC/2009/10	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)

Monitoring Equipment

2.3 **Table 2.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates were shown in **Appendix C**.

Table 2.2 Air Quality Monitoring Equipment

Contract No.	DC/2007/23	DC/2009/10	DC/2009/18
Laser Dust Monitor	N/A*	Sibata; Model no. LD-3B/ LD-3	Sibata; Model no. LD-3B / LD-3
HVS Sampler	GMW GS-2310	TISCH Model no. TE-5170	TISCH Model no. TE-5170
Calibrator	CM-AIR-43	TISCH Model TE-5025A	TISCH Model TE-5025A

N/A*: 1-hr TSP monitoring by DC/2007/23 was carried out by using HVS sampler.

Monitoring Parameters, Frequency and Duration

2.4 Table 2.3 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting period is shown in **Appendix B**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedure

2.5 The monitoring methodology and QA/QC procedure for monitoring equipment are presented in the monthly reports for Contracts DC/2007/23, DC/2009/10 and DC/2009/18.

Results and Observations

2.6 **Table 2.4** summaries the air quality monitoring results at AM6, AM7, AM8 and AM9 in reporting month.

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

Air Quality Monitoring Station	Average μgm^{-3}	Range μgm^{-3}	Action Level μgm^{-3}	Limit Level μgm^{-3}
1 hour TSP				
AM6	181	161-196	346	500
AM7	130	74-229	322	
AM8	121	66-265	307	
AM9	105	67-179	318	
24 hours TSP				
AM6	98	86-104	196	260
AM7	118	62-156	207	
AM8	72	46-98	158	
AM9	121	83-147	169	

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

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

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

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

3. NOISE

Monitoring Requirements

3.1 Three noise monitoring stations, namely NM5, 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 as listed in Table 3.1. **Figures 1 and 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Station	Responsible Contracts	Location of Measurement
NM5	DC/2007/23	Near FSD Diving Rescue and Training Centre
NM6	DC/2009/10	Customs' Marine Base
NM7	DC/2009/18	Open Area near Naval Base Barrack

Monitoring Equipment

3.3 Table 3.2 summarizes the noise monitoring equipment. Copies of calibration certificates were shown in **Appendix C**.

Table 3.2 Noise Monitoring Equipment

Contract No.	DC/2007/23	DC/2009/10	DC/2009/18
Sound Level Meter	Rion NL-31	SVANTEK Model no: SVAN 959	SVANTEK Model no: SVAN 959
Calibrator	Rion NC-73	SVANTEK Model no: SV 30A	SVANTEK Model no: SV 30A

Monitoring Parameters, Frequency and Duration

3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix B**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedures

3.5 The monitoring methodology and QA/QC procedure are presented in the monthly reports of the Contract DC/2007/23, DC/2009/10 and DC/2009/18.

Results and Observations

3.6 **Table 3.4** summaries the noise monitoring results at NM5, NM6 and NM7 in reporting month.

Table 3.4 Summary of Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Monitoring Station	Range, dB(A) L_{eq}(30 min.)	Limit Level ,dB(A) L_{eq}(30 min.)
NM5	61.0-64.4	75.0
NM6	65.0-73.5	
NM7	68.6-71.4	
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.)
NM5	59.0-61.9	70.0
NM7	62.3-63.9	
All days during 2300 to 0700 hrs. of the next day		
NM7	52.1-59.3	55.0

Remark:* 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, the construction noise levels were considered non-valid exceedance of Limit Level.

3.7 All construction noise monitoring at three designated locations were conducted by their ETs as scheduled in the reporting month.

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

3.9 Noise monitoring results and graphical presentations are shown in **Appendix E**.

3.10 The major noise sources identified at the designated noise monitoring stations during day time were the traffic noise from the Container Port Road South and those generated from the moving trucks in construction area; while the major noise sources identified during the evening and night time was the traffic noise from the Container Port Road South and Stonecutters Bridge near to the Project area since the Construction works were mainly conducted within the noise enclosure during restricted hours.

4. ENVIRONMENTAL AUDIT

Site Audits

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

4.2 Environmental site audits were conducted in the reporting month for each Contract is the following. No non-compliance was observed during the site audits.

Table 4.1 Summary of Date of Site Inspection

Contract No.	Date of Site Inspection
DC/2007/23	6, 13, 20 and 27 December 2012
DC/2009/10	7, 13, 20 and 28 December 2012
DC/2009/17	6, 13, 18 and 27 December 2012
DC/2009/18	5, 12, 18 and 27 December 2012

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 month 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 four contracts are attached in **Appendix H**.

Review of Environmental Monitoring Procedures

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

Status of Environmental Licensing and Permitting

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

Status of Waste Management

4.7 The amount of wastes generated by the activities of four contracts in the reporting month is the following:

Table 4.2 Summary of Amount of Waste Generated in Reporting Month

Contract	Inert C&D[1] Materials	Other C&D[2] Waste	Chemical Waste (kg)	Marine Deposit		
				Type 1 (m^3)	Type 2 (m^3)	Type 3 (Tonnes)
DC/2007/23	13,264.48* (Tonnes)	29.11* (Tonnes)	800(L)	0*	0*	0*
DC/2009/10	3317 (m^3)	230 kg and 11m^3	0	0	0	0
DC/2009/17	530(m^3)	177kg and 36.88 (Tons)	0	0	0	0
DC/2009/18	2859(m^3)	7370kg and	0	0	0	0

		4(m^3)				

Remark*: The amount of waste generated is from all sites in this Contract.
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.

4.8 The disposal location of wastes generated by the activities of four contracts is the following:

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

Contract No.	Disposal Location of Wastes in Report Month
DC/2007/23	Tuen Mun Area 38 Fill Bank/Tseung Kwan O Area 137 Fill Bank/ Chai Wan Barging Point and 13264.48 tonnes broken rock have been transferred to SENT Landfill/Lam Tei Quarry for use. No plastics, but 5 kg of steels and 102kg of paper/cardboard packaging were sent to recyclers for recycling during the reporting period.
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill. 177kg paper/cardboard packaging sent to recyclers during the reporting period.
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill. 60kg paper/cardboard packaging, 20kg plastic and 150 kg of metals were sent to recyclers during the reporting period.
DC/2009/18	Tuen Mun Area 38 Fill Bank and NENT Landfill and Tseung Kwan O Area 137 Fill Bank 7370kg of metal were sent to recycler during the reporting period.

4.9 The summaries of amount of waste generated in four contracts could be referred to respective monthly report.

Implementation Status of Environmental Mitigation Measures

4.10 Details of the implementation of mitigation measures for four contracts are provided in the **Appendix J**.

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

Implementation Status of Event Action Plans

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

1-hr TSP

4.13 No Action/Limit Level exceedance was recorded.

24-hr TSP

4.14 No Action/Limit Level exceedance was recorded.

Construction Noise

4.15 No Action/Limit Level exceedance for normal working hours and restricted hours was

recorded in the reporting month. Summary of exceedance is presented in **Appendix G**.

Landscape and Visual

4.16 No non-compliance was recorded.

Summary of Complaints and Prosecutions

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

4.18 There were no environmental complaint and prosecution received since the commencement of four contracts. The Complaint Log is presented in **Appendix K**.

5. FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key environmental issues in the coming month include:

- 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;
- 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.

Monitoring Schedule for the Next Month

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

Construction Program for the Next Month

5.3 The tentative construction programs are provided in **Appendix L**.

6. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

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

Environmental Audit

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

Complaint and Prosecution

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

Recommendations for the coming reporting month:

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

Air Quality

- To prohibit any open burning on site;
- To regularly maintain the machinery and vehicles on site;
- To mitigate the dust generation by adequate water spraying in dry days;
- 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.

Noise

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from

sensitive receivers;
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location;
- To provide adequate lubricant on mechanical equipment to reduce frictional noise; and
- To well maintain the mechanical equipment / machineries to avoid abnormal noise nuisance.

Water Quality

- To identify any discharge of wastewater from the construction site;
- To avoid water from accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.

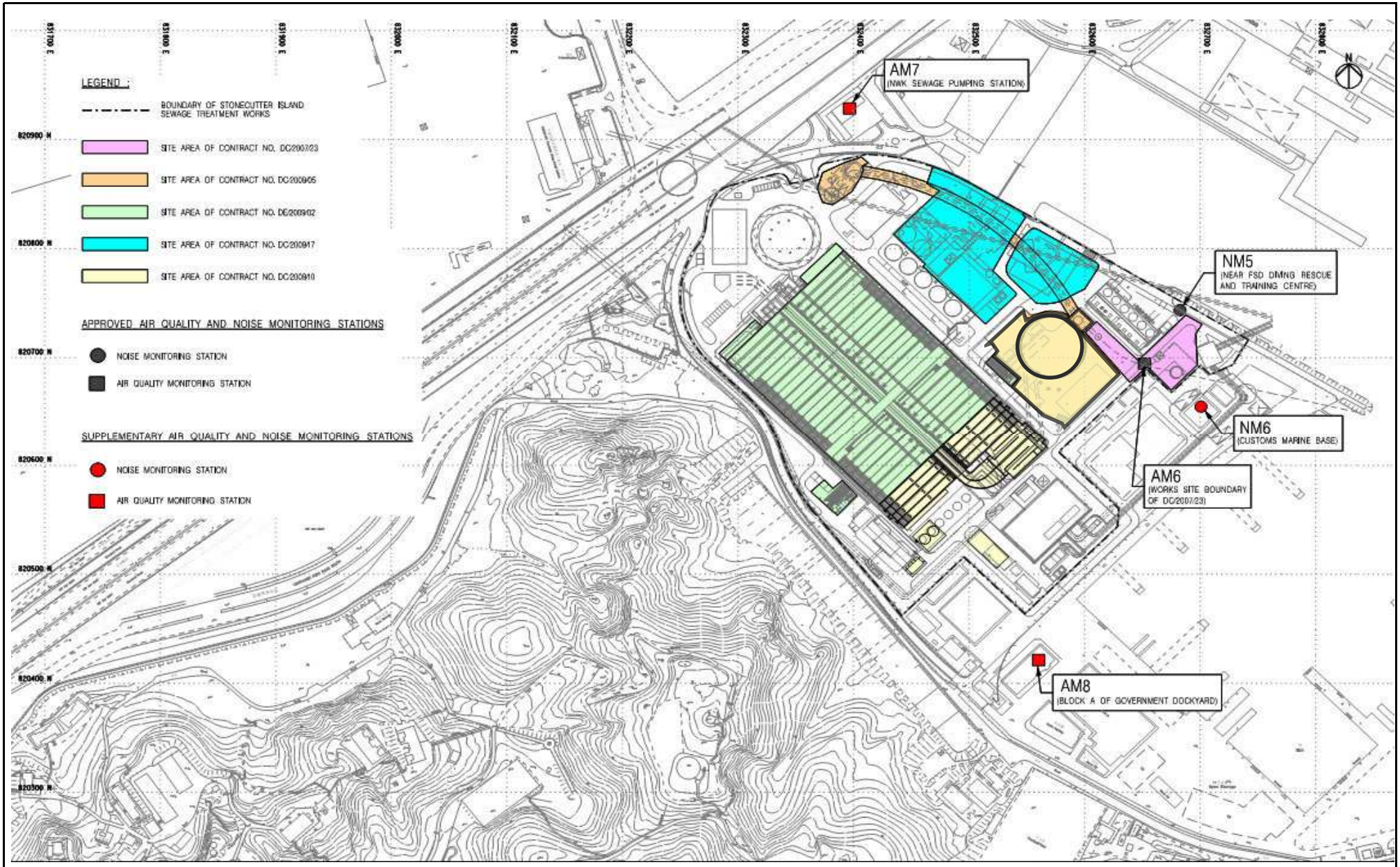
Waste/Chemical Management

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

Landscape and Visual

- To erect and maintain the protection fence around the retaining tree; and
- To avoid any heavy materials placed into tree protection zone.

FIGURES



Title	Contract No: DC/2009/10 HATS 2A - Upgrading Main Pumping Station,Sedimentation Tanks and Ancillary Facilities at SISTW	Scale N.T.S	Project No. MA11007	CINOTECH
	General Location Plan of the Project and Locations of Air Quality and Noise Monitoring Stations	Date 8/2011	Figure 1	

E 831600
E 831800
E 832000
E 832200
E 832400
E 832600
E 832800
N 821000
N 820800
N 820600
N 820400
N 820200
N 820000
八號貨櫃碼頭
Container Terminal 8
FLOW DISTRIBUTION CHAMBER No.2
EFFLUENT TUNNEL
SEE DRAWING 24888/ETF/0023
CHLORINE CONTACT DURING RESIDENCE TIME WITHIN TUNNEL
STONECUTTERS ISLAND SEWAGE TREATMENT WORKS
PROPOSED CHAMBER 15A
EXISTING DROP SHAFT
DECHLORINATION COMPOUND
OVERFLOW CULVERT
EXISTING CHAMBER 15
SEE DRAWING 24888/ETF/0022
NGONG SHUEN CHAU BARRACKS
Sports Ground
Open Storage
Government Quarters
Nova Base
Stonecutters Island
Sewage Treatment Works
Drilled Tunnel
Shaft
Tunnel
Stonecutters Island
Nova Base
KEY PLAN
LEGEND:
BOUNDARY OF SCISTW
ALIGNMENT OF EFFLUENT TUNNEL
0 20 40 60 80 100
METRES
1 : 2000

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

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

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

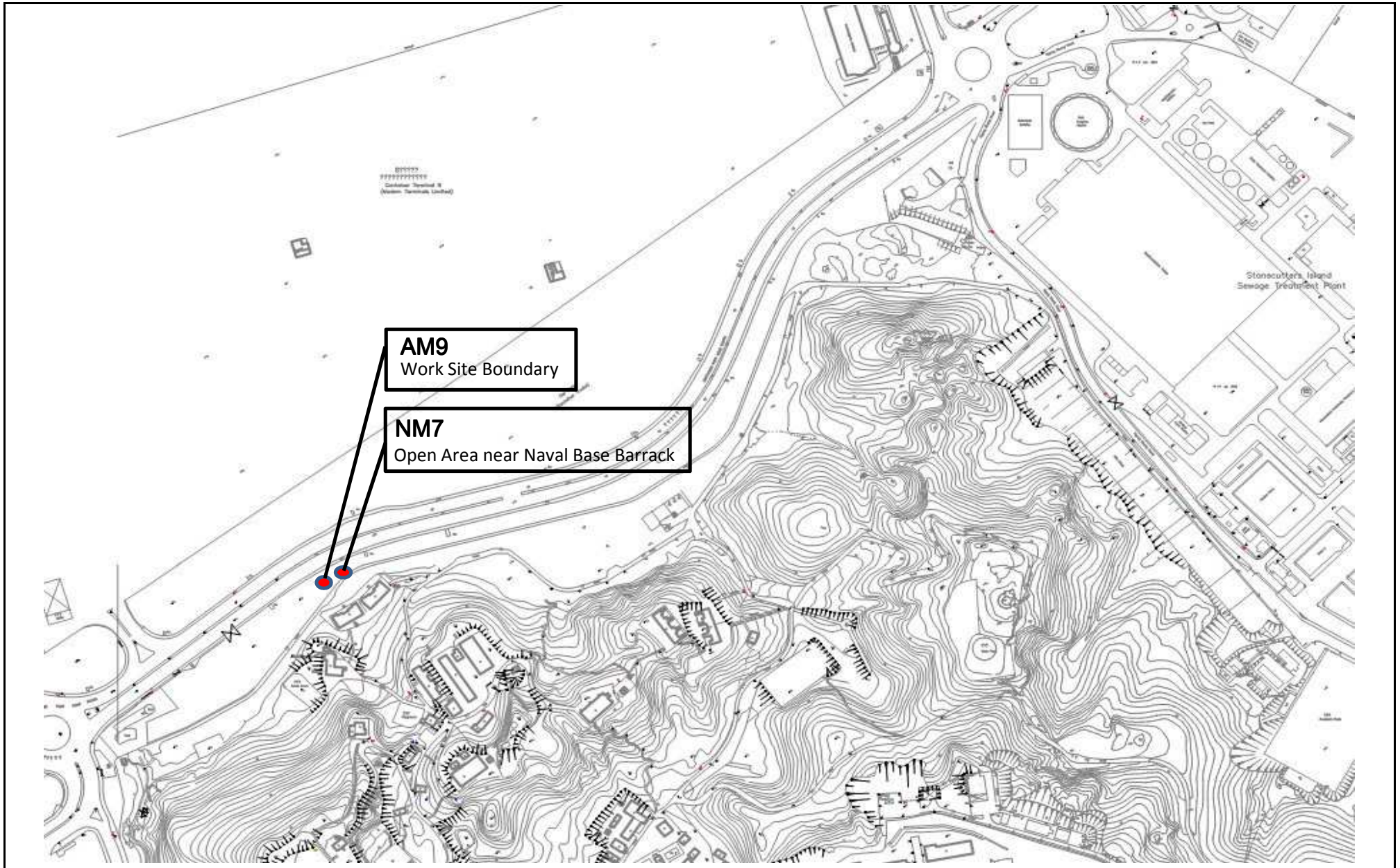
Drawing title
GENERAL LAYOUT
(SHEET 1)

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

COPYRIGHT RESERVED

香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

Printed by : 17/6/2011
Filename : J:\24888\Record\WORKING\CIVIL\20110617_ETF\DGN\24888_ETF0021.dgn



Title	Contract No. DC/2009/18 HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities	Scale N.T.S	Project No. MA11043	CINOTECH
	Locations of Impact Air Quality and Noise Monitoring Stations	Date 12/2011	Figure 3	

APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	138	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 Pilling.

APPENDIX B
ENVIRONMENTAL MONITORING SCHEDULES

Annex G3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Air Quality Monitoring Schedule

AM6 - Works Site Boundary
Monitoring Month : December 2012

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

Monitoring Month : January 2013

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

Annex G3 Monitoring Schedule of the Reporting Month and Next Month

DC/2007/23
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from North Point to Stonecutters Island
Impact Construction Noise Quality Monitoring Schedule

NM5 - A Location near the FSD Diving Rescue and Diving Training Centre near the Site Boundary
Monitoring Month : December 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Dec
2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	8-Dec
Noise Monitoring		Noise Monitoring				
9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec
	Noise Monitoring	Noise Monitoring (evening time)				
16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec
Noise Monitoring				Noise Monitoring		
23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec
	Noise Monitoring	Public Holiday	Public Holiday	Noise Monitoring (evening time)		
30-Dec	31-Dec					

Monitoring Month : January 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
			Noise Monitoring			
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
		Noise Monitoring (day and evening time)				
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
Noise Monitoring	Noise Monitoring					
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		Noise Monitoring (evening time)		Noise Monitoring		
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
Noise Monitoring	Noise Monitoring		Noise Monitoring			

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SISTW
Impact Air Quality and Noise Monitoring Schedule (December 2012)

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

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

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (January 2013)

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

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

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

Noise Monitoring Station
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop

Contract No. DC/2009/18

HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities

Impact Air Quality and Noise Monitoring Schedule (December 2012)

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

Air Quality Monitoring Location:
AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Noise Monitoring Location:
NM7 - Open Area near Naval Base Barrack

Contract No. DC/2009/18

HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities

Tentative Impact Air Quality and Noise Monitoring Schedule (January 2013)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
			24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)		
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
		24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
	24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	1hr TSP X 3	
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
			24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)		

Air Quality Monitoring Location:
AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Noise Monitoring Location:
NM7 - Open Area near Naval Base Barrack

APPENDIX C
CALIBRATION CERTIFICATES OF THE ENVIRONMENTAL MONITORING EQUIPMENT

High-Volume TSP Sampler
5-Point Calibration Record9

Location	:	AM6
Calibrated by	:	P.F.Yeung
Date	:	20/11/2012

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 1254

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	1378
Service Date	:	22 Feb 2012
Slope (m)	:	1.99405
Intercept (b)	:	-0.00397
Correlation Coefficient(r)	:	0.99984

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1017
Ta(K)	:	293

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	9.2	2.999	1.506	61	60.3
2	13 holes	7.0	2.616	1.314	53	52.4
3	10 holes	5.6	2.340	1.175	48	47.5
4	7 holes	3.8	1.927	0.969	39	38.6
5	5 holes	2.2	1.467	0.737	29	28.7

Sampler Calibration Relationship

Slope(m):41.065 Intercept(b): -1.342 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 23/11/2012

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C123580
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC12-1472)

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00410224
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 June 2012

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Precision Measurement Ltd., UK
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : L K Yeung

Certified By 核證 : K C Lee

Date of Issue 簽發日期 : 15 June 2012

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel 電話: 2927 2606 Fax 傳真: 2744 8986 E-mail 電郵: callab@suncreation.com Website 網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C123580
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C120016
CL281	Multifunction Acoustic Calibrator	DC110233

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.7	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.7	Ref.
			Slow			93.6	± 0.3

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel 電話: 2927 2606 Fax 傳真: 2744 8986 E-mail 電郵: callab@suncreation.com Website 網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C123580
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	63 Hz	67.3	-26.2 ± 1.5
					125 Hz	77.4	-16.1 ± 1.5
					250 Hz	85.0	-8.6 ± 1.4
					500 Hz	90.4	-3.2 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	95.0	+1.2 ± 1.6
					4 kHz	94.8	+1.0 ± 1.6
					8 kHz	92.7	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.5
					250 Hz	93.7	0.0 ± 1.4
					500 Hz	93.8	0.0 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	93.6	-0.2 ± 1.6
					4 kHz	93.1	-0.8 ± 1.6
					8 kHz	90.8	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.0	-6.2 (+3.0 ; -6.0)

Remarks : - Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB : 63 Hz - 125 Hz : ± 0.35 dB
  250 Hz - 500 Hz : ± 0.30 dB
  1 kHz : ± 0.20 dB
  2 kHz - 4 kHz : ± 0.35 dB
  8 kHz : ± 0.45 dB
  12.5 kHz : ± 0.70 dB
  104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C124011
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC12-1674)

Description / 儀器名稱	:	Sound Level Calibrator
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NC-73
Serial No. / 編號	:	10997142
Supplied By / 委託者	:	Envirotech Services Co. Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 9 July 2012

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : L K Yeung

Certified By 核證 : K C Lee

Date of Issue 簽發日期 : 10 July 2012

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel 電話: 2927 2606 Fax 傳真: 2744 8986 E-mail 電郵: callab@suncreation.com Website 網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C124011
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.990	1 kHz ± 2 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel 電話: 2927 2606 Fax 傳真: 2744 8986 E-mail 電郵: callab@suncreation.com Website 網址: www.suncreation.com

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 22, 2012 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 1378 Pa (mm) - 740.41

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3940	3.2	2.00
2	NA	NA	1.00	0.9740	6.4	4.00
3	NA	NA	1.00	0.8720	8.0	5.00
4	NA	NA	1.00	0.8340	8.8	5.50
5	NA	NA	1.00	0.6870	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9799	0.7029	1.4029		0.9957	0.7142	0.8927
0.9756	1.0017	1.9841		0.9914	1.0178	1.2624
0.9734	1.1163	2.2183		0.9891	1.1343	1.4114
0.9724	1.1660	2.3265		0.9881	1.1848	1.4803
0.9671	1.4077	2.8059		0.9827	1.4304	1.7853
Qstd slope (m) =		1.99405		Qa slope (m) =		1.24864
intercept (b) =		-0.00397		intercept (b) =		-0.00252
coefficient (r) =		0.99984		coefficient (r) =		0.99984
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0003

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

Date: 5-Nov-12 Next Due Date: 4-Jan-13

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

Ambient Condition			
Temperature, Ta (K)	297.2	Pressure, Pa (mmHg)	764.8

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0574	Intercept, bc	-0.0478
Last Calibration Date:	3-Oct-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	2-Oct-13	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.7	3.44	60.69	8.2	2.88
2	9.5	3.10	54.77	6.9	2.64
3	6.8	2.62	46.47	4.8	2.20
4	4.2	2.06	36.70	3.0	1.74
5	3.0	1.74	31.14	2.0	1.42

By Linear Regression of Y on X

Slope , mw = 0.0494 **Intercept, bw =** -0.0940

Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

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

Remarks:

Conducted by: W.K. Tang Signature: Kwai Date: 5/11/2012

Checked by: Hengdong Signature: Date: 5 Nov 2012

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0002

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

Date: 5-Nov-12 Next Due Date: 4-Jan-13

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

Ambient Condition			
Temperature, Ta (K)	297	Pressure, Pa (mmHg)	765.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0574	Intercept, bc	-0.0478
Last Calibration Date:	3-Oct-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	2-Oct-13	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.3	3.38	59.69	7.8	2.81
2	9.2	3.05	53.94	6.5	2.56
3	6.7	2.60	46.15	5.0	2.25
4	4.3	2.08	37.14	3.2	1.80
5	2.8	1.68	30.13	2.1	1.46

By Linear Regression of Y on X

Slope , mw = 0.0457 **Intercept, bw =** 0.0977

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.22

Remarks:

Conducted by: Ivh. Tang Signature: Kwai Date: 5/11/2012

Checked by: Henry Kelly Signature: Date: 5 Nov 2012

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/121026/1
Date of Issue:	2012-10-29
Date Received:	2012-10-26
Date Tested:	2012-10-26
Date Completed:	2012-10-29
Next Due Date:	2012-12-28

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

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0033

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/121102/1
Date of Issue:	2012-11-05
Date Received:	2012-11-02
Date Tested:	2012-11-02
Date Completed:	2012-11-05
Next Due Date:	2013-01-04

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

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 853944
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-04

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 62%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0031

****

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

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Mr. WK Tang**

Test Report No.:	C/121012/1
Date of Issue:	2012-10-15
Date Received:	2012-10-12
Date Tested:	2012-10-12
Date Completed:	2012-10-15
Next Due Date:	2012-12-14
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 954253
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 685 CPM
Equipment No.	: A-02-05

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0032

****

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

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T. Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/121102/2
Date of Issue:	2012-11-05
Date Received:	2012-11-02
Date Tested:	2012-11-02
Date Completed:	2012-11-05
Next Due Date:	2013-01-04
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 014750
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 62%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0030

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/121102/5
Date of Issue:	2012-11-05
Date Received:	2012-11-02
Date Tested:	2012-11-02
Date Completed:	2012-11-05
Next Due Date:	2013-01-04
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 541146
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 62%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0031

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/121102/4
Date of Issue:	2012-11-05
Date Received:	2012-11-02
Date Tested:	2012-11-02
Date Completed:	2012-11-05
Next Due Date:	2013-01-04
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 62%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0032

****

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

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT:	**CINOTECH SOLUTIONS LTD.** **Room 1710, Technology Park,** **18 On Lai Street, Shatin,** **N.T. , Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	SC/121222/01 2012-12-22 2012-12-20 2012-12-21 2012-12-22 2013-02-21
ATTN:	**Mr. Henry Leung**	Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: SIBATA
Model No.	: LD-3B
Serial No.	: 2Y6193
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 554 CPM
Equipment No.	: SA-01-01

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 55%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	**0.0028**

****

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

Patrick Tse
PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **CINOTECH SOLUTIONS LTD.**
Room 1710, Technology Park,
18 On Lai Street, Shatin,
N.T. , Hong Kong

ATTN: **Mr. Henry Leung**

Test Report No.:	SC/121222/02
Date of Issue:	2012-12-22
Date Received:	2012-12-20
Date Tested:	2012-12-21
Date Completed:	2012-12-22
Next Due Date:	2013-02-21
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: SIBATA
Model No.	: LD-3B
Serial No.	: 2Y6194
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 578 CPM
Equipment No.	: SA-01-02

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 55%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	**0.0028**

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

ATTN: **Mr. Henry Leung**

Test Report No.:	C/N/120924/1
Date of Issue:	2012-09-24
Date Received:	2012-09-22
Date Tested:	2012-09-24
Date Completed:	2012-09-24
Next Due Date:	2013-09-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 959
Serial No.	: 11275
Microphone No.	: 86553
Equipment No.	: N-08-01

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 54%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T. Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/121105/1
Date of Issue:	2012-11-05
Date Received:	2012-11-03
Date Tested:	2012-11-03
Date Completed:	2012-11-05
Next Due Date:	2013-11-04

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

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 10965
Equipment No.	: N-09-02

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 64%

Methodology:

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

Results:

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

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

Patrick Tse
PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0008

Project No. AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Operator: WK

Date: 5-Nov-12 Next Due Date: 4-Jan-13

Equipment No.: A-01-63 Serial No. 2356

Ambient Condition			
Temperature, Ta (K)	297.6	Pressure, Pa (mmHg)	764.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0574	Intercept, bc	-0.0478
Last Calibration Date:	3-Oct-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	2-Oct-13	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.3	3.37	59.61	8.3	2.89
2	9.5	3.09	54.72	6.7	2.60
3	6.8	2.62	46.42	4.9	2.22
4	4.3	2.08	37.09	3.2	1.80
5	3.0	1.74	31.12	2.1	1.45

By Linear Regression of Y on X

Slope , mw = 0.0491 **Intercept, bw =** -0.0548

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.19

Remarks:

Conducted by: Wh. Tang Signature: Date: 5/11/2012

Checked by: Henry Leung Signature: Date: 5 NOV 2012

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/121026/2
Date of Issue:	2012-10-29
Date Received:	2012-10-26
Date Tested:	2012-10-26
Date Completed:	2012-10-29
Next Due Date:	2012-12-28
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095039
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 764 CPM
Equipment No.	: A-02-08

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0032

****

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

PATRICK TSE
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

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

Annex G5 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM6

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed * (m/s)	Sampler ID	Filter ID
4-Dec-12	13:30	14:30	Cloudy	185	346	500	Construction work in progress	18	<5	1254	5732
	14:32	15:43	Cloudy	192	346	500	Construction work in progress	18	<5	1254	5733
	15:34	16:34	Cloudy	172	346	500	Construction work in progress	18	<5	1254	5734
10-Dec-12	13:50	14:50	Sunny	194	346	500	Construction work in progress	19	<5	1254	5736
	14:52	15:52	Sunny	181	346	500	Construction work in progress	19	<5	1254	5737
	15:54	16:54	Sunny	179	346	500	Construction work in progress	19	<5	1254	5738
14-Dec-12	13:00	14:00	Sunny	179	346	500	Construction work in progress	22	<5	1254	5740
	14:02	15:02	Sunny	161	346	500	Construction work in progress	22	<5	1254	5741
	15:04	16:04	Sunny	169	346	500	Construction work in progress	22	<5	1254	5742
20-Dec-12	13:50	14:50	Cloudy	179	346	500	Construction work in progress	18	<5	1254	5744
	14:52	15:52	Cloudy	185	346	500	Construction work in progress	18	<5	1254	5745
	15:54	16:54	Cloudy	171	346	500	Construction work in progress	18	<5	1254	5746
24-Dec-12	13:00	14:00	Sunny	186	346	500	Construction work in progress	13	<5	1254	5954
	14:02	15:02	Sunny	194	346	500	Construction work in progress	13	<5	1254	5955
	15:04	16:04	Sunny	171	346	500	Construction work in progress	13	<5	1254	5956
28-Dec-12	11:04	12:04	Sunny	196	346	500	Construction work in progress	19	<5	1254	5960
	10:02	11:02	Sunny	190	346	500	Construction work in progress	19	<5	1254	5959
	9:00	10:00	Sunny	182	346	500	Construction work in progress	19	<5	1254	5958
			Min.	**161**							
			Max.	**196**							
			Average	**181**							

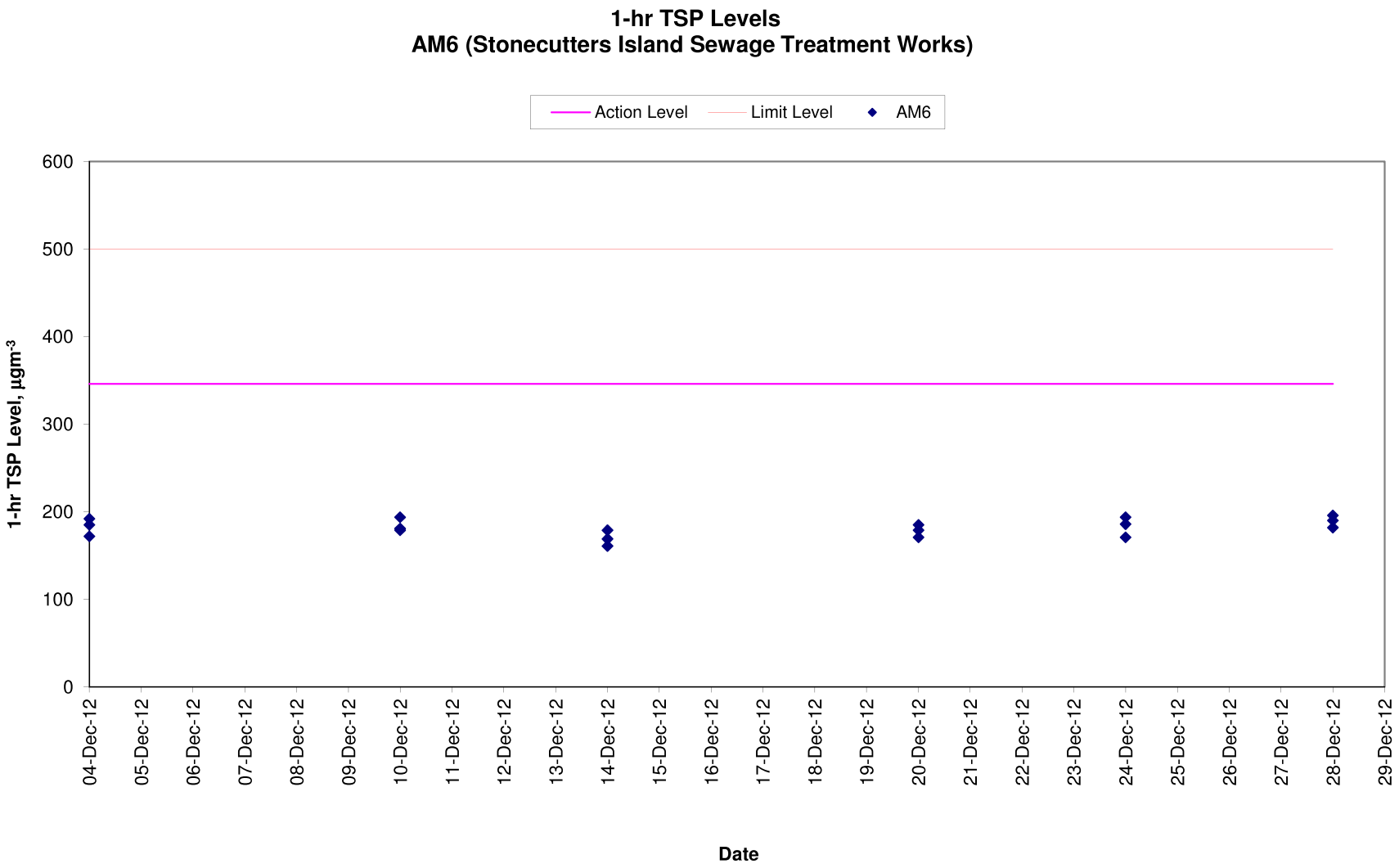
* Wind Speed data is presented in the Meteorological Data table

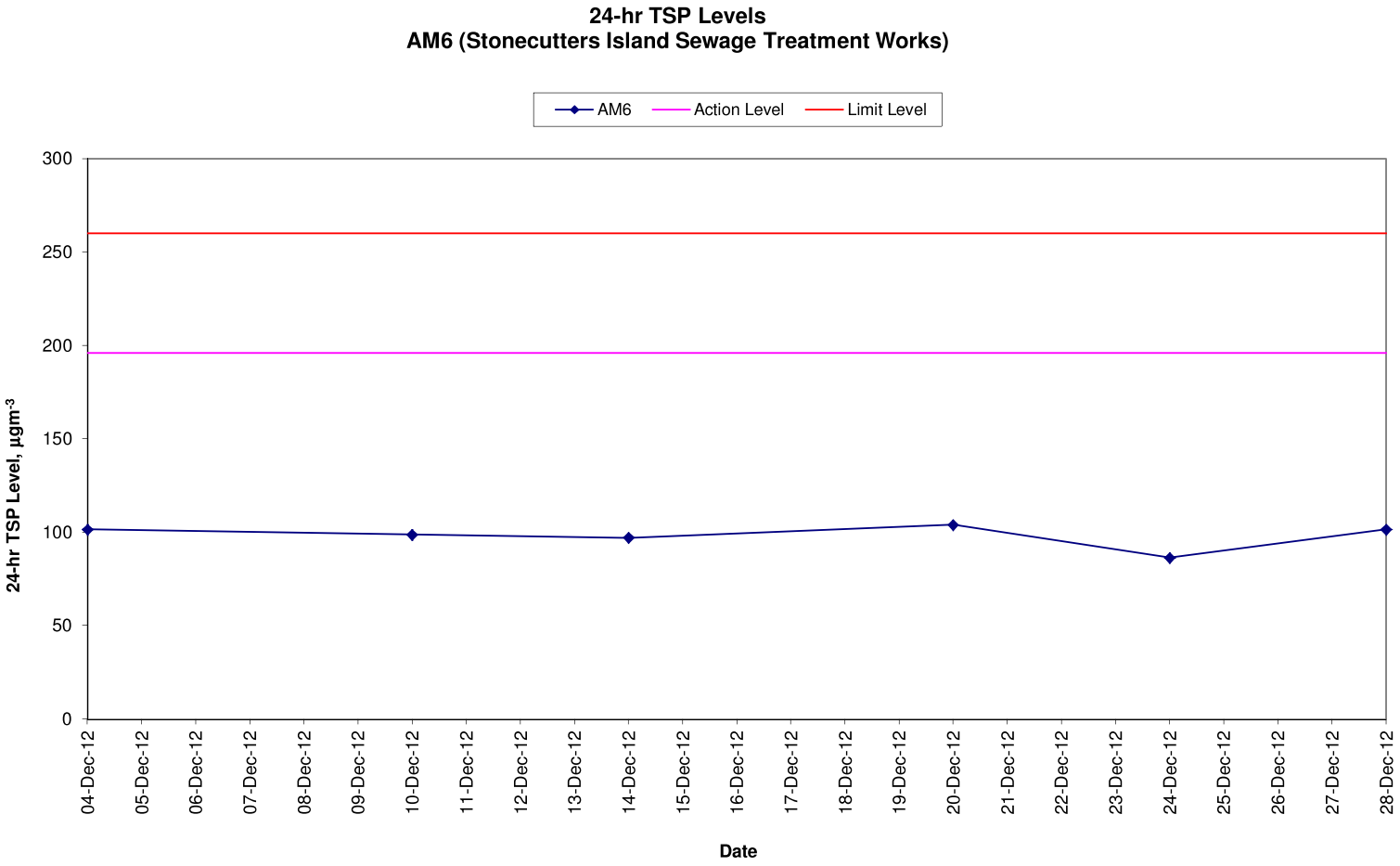
Annex G5 24-hour and 1-hour TSP Monitoring Results

24-hour TSP Monitoring Results

Station AM6

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(μg/m^3)	(μg/m^3)	(μg/m^3)		ID	ID
4-Dec-12	16:36	5-Dec-12	16:36	Cloudy	2.8000	2.9755	10815.03	10839.03	24.00	1.20	1.20	1.20	102	196	260	Construction work in progress	1254	5735
10-Dec-12	16:56	11-Dec-12	16:56	Sunny	2.8103	2.9809	10842.03	10866.03	24.00	1.20	1.20	1.20	99	196	260	Construction work in progress	1254	5739
14-Dec-12	16:06	15-Dec-12	16:06	Sunny	2.8094	2.9771	10869.03	10893.03	24.00	1.20	1.20	1.20	97	196	260	Construction work in progress	1254	5743
24-Dec-12	16:06	25-Dec-12	16:06	Sunny	2.8268	2.9759	10923.03	10947.03	24.00	1.20	1.20	1.20	86	196	260	Construction work in progress	1254	5957
20-Dec-12	16:56	21-Dec-12	16:56	Cloudy	2.8006	2.9997	10896.03	10920.03	24.00	1.20	1.20	1.20	104	196	260	Construction work in progress	1254	5747
28-Dec-12	12:06	29-Dec-12	12:06	Sunny	2.8228	2.9981	10950.03	10974.03	24.00	1.20	1.20	1.20	101	196	260	Construction work in progress	1254	5961
												Min.	**86**					
												Max.	**104**					
												Average	**98**					


1-hr TSP Levels
AM6 (Stonecutters Island Sewage Treatment Works)
Action Level
Limit Level
AM6
1-hr TSP Level, µgm-3
600
500
400
300
200
100
0
04-Dec-12
05-Dec-12
06-Dec-12
07-Dec-12
08-Dec-12
09-Dec-12
10-Dec-12
11-Dec-12
12-Dec-12
13-Dec-12
14-Dec-12
15-Dec-12
16-Dec-12
17-Dec-12
18-Dec-12
19-Dec-12
20-Dec-12
21-Dec-12
22-Dec-12
23-Dec-12
24-Dec-12
25-Dec-12
26-Dec-12
27-Dec-12
28-Dec-12
29-Dec-12
Date


24-hr TSP Levels
AM6 (Stonecutters Island Sewage Treatment Works)
AM6
Action Level
Limit Level
300
250
200
150
100
50
0
24-hr TSP Level, µgm-3
04-Dec-12
05-Dec-12
06-Dec-12
07-Dec-12
08-Dec-12
09-Dec-12
10-Dec-12
11-Dec-12
12-Dec-12
13-Dec-12
14-Dec-12
15-Dec-12
16-Dec-12
17-Dec-12
18-Dec-12
19-Dec-12
20-Dec-12
21-Dec-12
22-Dec-12
23-Dec-12
24-Dec-12
25-Dec-12
26-Dec-12
27-Dec-12
28-Dec-12
Date

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (μg/m^3)
3-Dec-12	13:00	Cloudy	117
3-Dec-12	14:00	Cloudy	115
3-Dec-12	15:00	Cloudy	117
6-Dec-12	13:50	Cloudy	117
6-Dec-12	14:50	Cloudy	114
6-Dec-12	15:50	Cloudy	117
12-Dec-12	9:45	Sunny	156
12-Dec-12	10:45	Sunny	160
12-Dec-12	13:00	Sunny	161
18-Dec-12	11:00	Cloudy	84
18-Dec-12	13:00	Cloudy	87
18-Dec-12	14:00	Cloudy	88
24-Dec-12	9:00	Cloudy	229
24-Dec-12	10:00	Cloudy	225
24-Dec-12	11:00	Cloudy	227
28-Dec-12	10:00	Sunny	75
28-Dec-12	11:00	Sunny	77
28-Dec-12	13:00	Sunny	74
		Average	130
		Maximum	229
		Minimum	74

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (μg/m3)
3-Dec-12	13:15	Cloudy	94
3-Dec-12	14:15	Cloudy	88
3-Dec-12	15:15	Cloudy	90
6-Dec-12	14:15	Cloudy	102
6-Dec-12	15:15	Cloudy	98
6-Dec-12	16:15	Cloudy	101
12-Dec-12	9:30	Sunny	132
12-Dec-12	10:30	Sunny	135
12-Dec-12	13:20	Sunny	137
18-Dec-12	11:00	Cloudy	71
18-Dec-12	13:00	Cloudy	69
18-Dec-12	14:00	Cloudy	71
24-Dec-12	13:00	Cloudy	260
24-Dec-12	14:00	Cloudy	265
24-Dec-12	15:00	Cloudy	263
28-Dec-12	10:00	Sunny	66
28-Dec-12	11:00	Sunny	68
28-Dec-12	13:00	Sunny	69
		Average	121
		Maximum	265
		Minimum	66

Appendix D - 24-hour TSP Monitoring Results

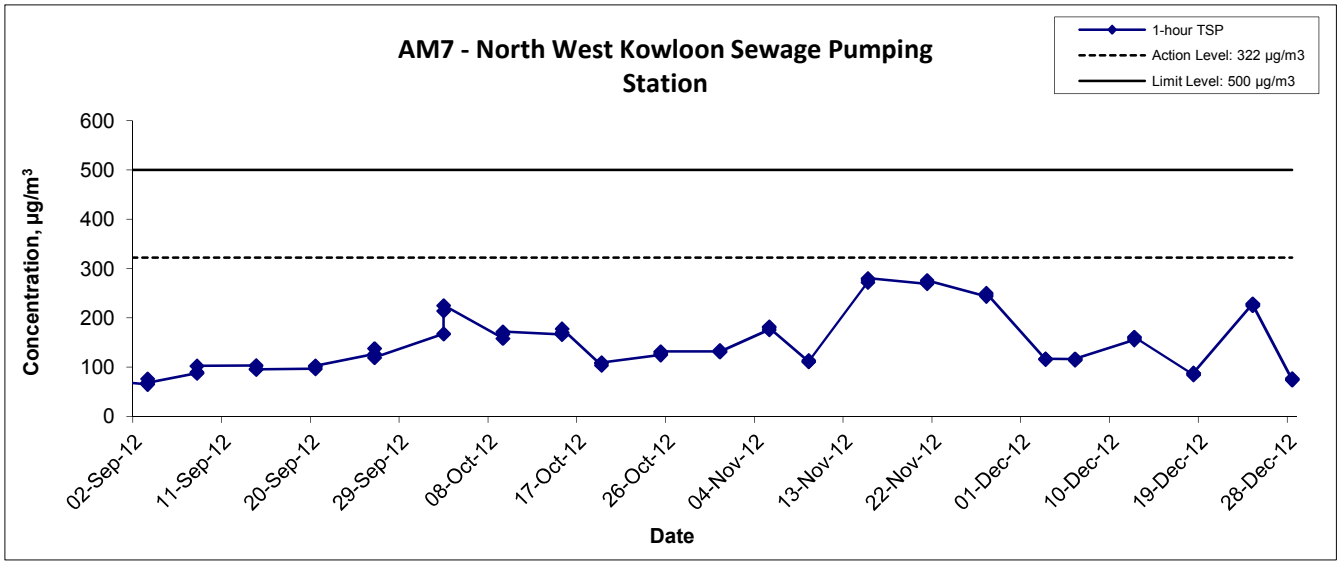
Location AM7 - North West Kowloon Sewage Pumping Station

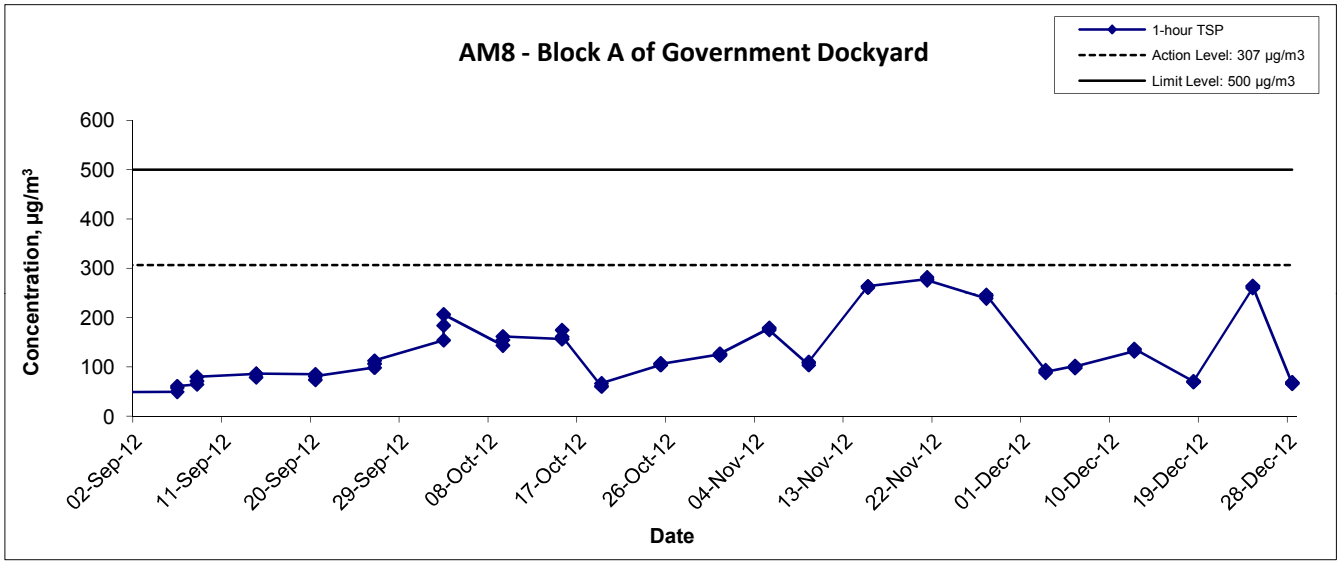
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
5-Dec-12	Cloudy	288.1	3.0553	3.2653	0.2100	27641.2	27665.2	24.0	1.24	1.24	1.24	1784.4	117.7
11-Dec-12	Sunny	291.0	3.0144	3.2921	0.2777	27665.3	27689.3	24.0	1.23	1.23	1.23	1775.7	156.4
17-Dec-12	Cloudy	293.9	3.0591	3.1694	0.1103	27689.3	27713.3	24.0	1.23	1.23	1.23	1765.8	62.5
21-Dec-12	Cloudy	292.3	3.0844	3.3221	0.2377	27713.3	27737.3	24.0	1.23	1.23	1.23	1770.1	134.3
27-Dec-12	Sunny	291.3	3.1671	3.3820	0.2149	27737.3	27761.3	24.0	1.23	1.23	1.23	1773.3	121.2
												Min	62
												Max	156
												Average	118

Location AM8 - Block A of Government Dockyard

Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
5-Dec-12	Cloudy	288.1	3.1777	3.2591	0.0814	1311.2	1335.2	24.0	1.24	1.24	1.24	1780.3	45.7
11-Dec-12	Sunny	291.0	3.0867	3.2595	0.1728	1336.0	1360.0	24.0	1.23	1.23	1.23	1770.8	97.6
17-Dec-12	Cloudy	293.9	3.1063	3.1976	0.0913	1361.0	1385.0	24.0	1.22	1.22	1.22	1760.0	51.9
21-Dec-12	Cloudy	292.3	3.1231	3.2631	0.1400	1385.0	1409.0	24.0	1.23	1.23	1.23	1764.9	79.3
27-Dec-12	Sunny	291.3	3.1130	3.2667	0.1537	1409.0	1433.0	24.0	1.23	1.23	1.23	1768.2	86.9
												Min	46
												Max	98
												Average	72

1-hr TSP Concentration Levels

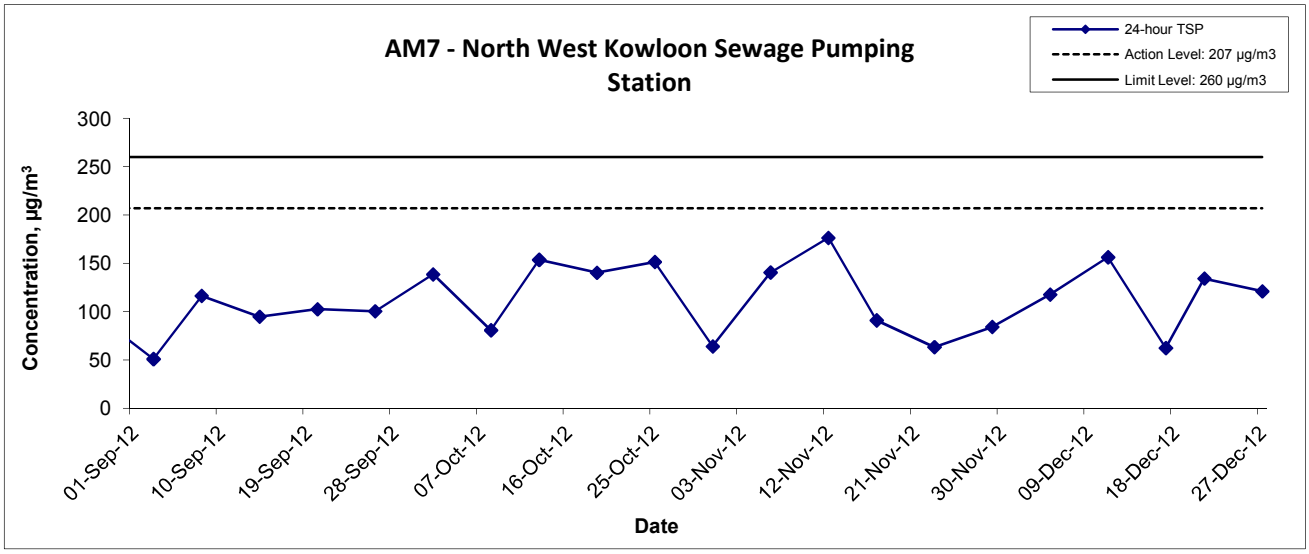


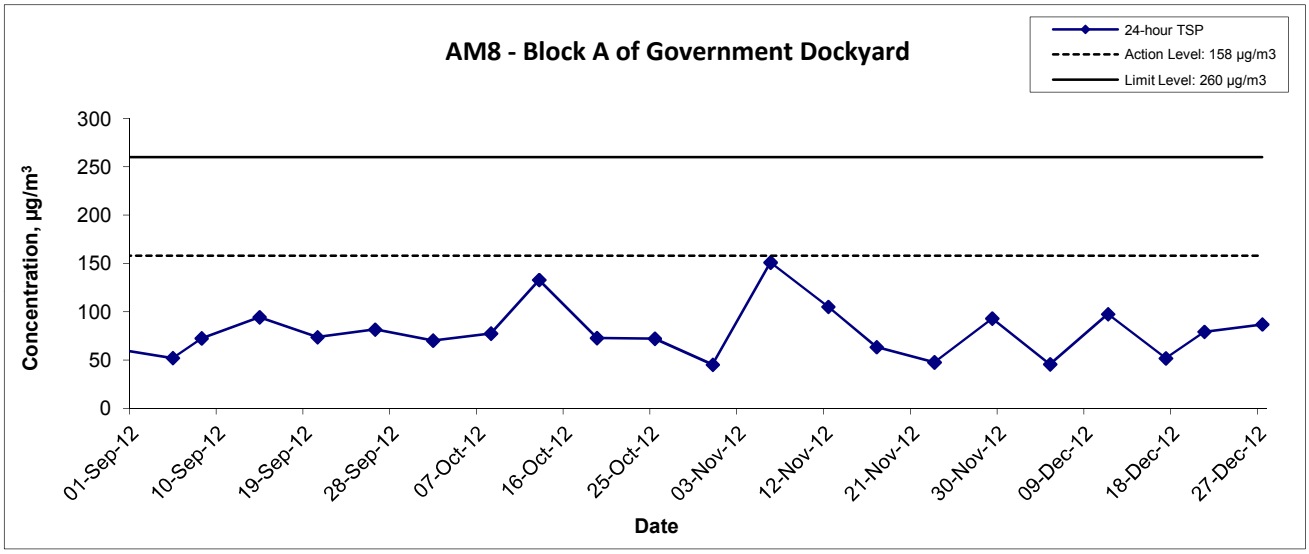


Title	Scale	Project No.
Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results	N.T.S	MA11007
	Date Dec 12	Appendix D

CINOTECH

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 Date Dec 12	Project No. MA11007 Appendix D	CINOTECH

Appendix D - 1-hour TSP Monitoring Results

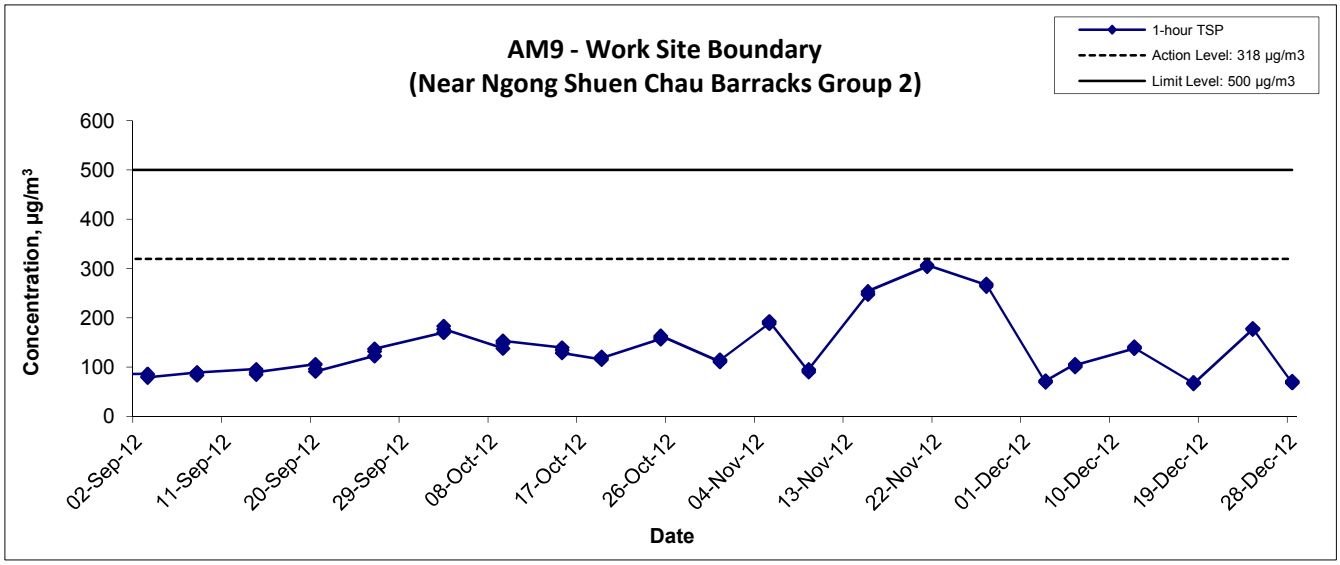
Location AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
3-Dec-12	13:50	Cloudy	69.5
3-Dec-12	14:50	Cloudy	72.9
3-Dec-12	15:50	Cloudy	71.7
6-Dec-12	13:10	Cloudy	106.1
6-Dec-12	14:10	Cloudy	100.9
6-Dec-12	15:10	Cloudy	104.0
12-Dec-12	10:00	Sunny	138.1
12-Dec-12	11:00	Sunny	141.7
12-Dec-12	13:40	Sunny	139.2
18-Dec-12	9:00	Cloudy	67.7
18-Dec-12	10:00	Cloudy	69.5
18-Dec-12	11:00	Cloudy	66.6
24-Dec-12	9:00	Cloudy	176.8
24-Dec-12	10:00	Cloudy	178.3
24-Dec-12	11:00	Cloudy	179.0
28-Dec-12	10:00	Sunny	68.3
28-Dec-12	11:00	Sunny	71.7
28-Dec-12	13:00	Sunny	69.8
		Average	105.1
		Maximum	179.0
		Minimum	66.6

Appendix D - 24-hour TSP Monitoring Results

Location AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

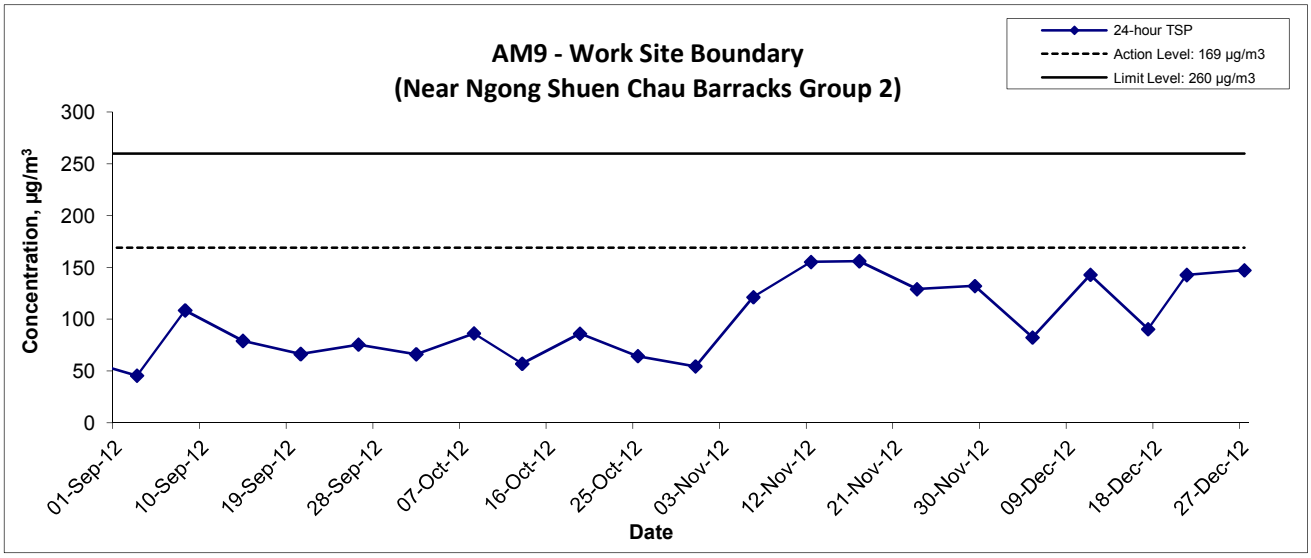
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
5-Dec-12	Cloudy	288.1	3.1075	3.2546	0.1471	512.8	536.8	24.0	1.24	1.24	1.24	1783.6	82.5
11-Dec-12	Sunny	291.0	3.1354	3.3890	0.2536	536.8	560.8	24.0	1.23	1.23	1.23	1774.7	142.9
17-Dec-12	Cloudy	293.9	3.1354	3.2950	0.1596	560.8	584.8	24.0	1.23	1.23	1.23	1764.7	90.4
21-Dec-12	Cloudy	292.3	3.1712	3.4238	0.2526	584.8	608.8	24.0	1.23	1.23	1.23	1769.0	142.8
27-Dec-12	Sunny	291.3	3.0895	3.3507	0.2612	608.8	632.8	24.0	1.23	1.23	1.23	1772.3	147.4
												Min	82.5
												Max	147.4
												Average	121.2

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 Date: Dec 12	Project No.: MA11043 Appendix: D	CINOTECH

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 Date Dec 12	Project No. MA11043 Appendix D	CINOTECH

APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Annex G6 Noise Monitoring Results

Daytime Noise Monitoring Results

Station NM5

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
4-Dec-12	15:10	15:40	Cloudy	64.2	65.8	60.7	-	traffic noise	-	18	0.5	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
10-Dec-12	15:05	15:35	Sunny	61.0	62.5	59.3	-	traffic noise	-	19	0.5	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
20-Dec-12	14:20	14:50	Cloudy	64.4	66.1	62.5	-	traffic noise	-	18	0.9	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
24-Dec-12	15:30	16:00	Sunny	62.9	64.4	59.4	-	traffic noise	-	13	0.8	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
			Min.	**61.0**									
			Max.	**64.4**									

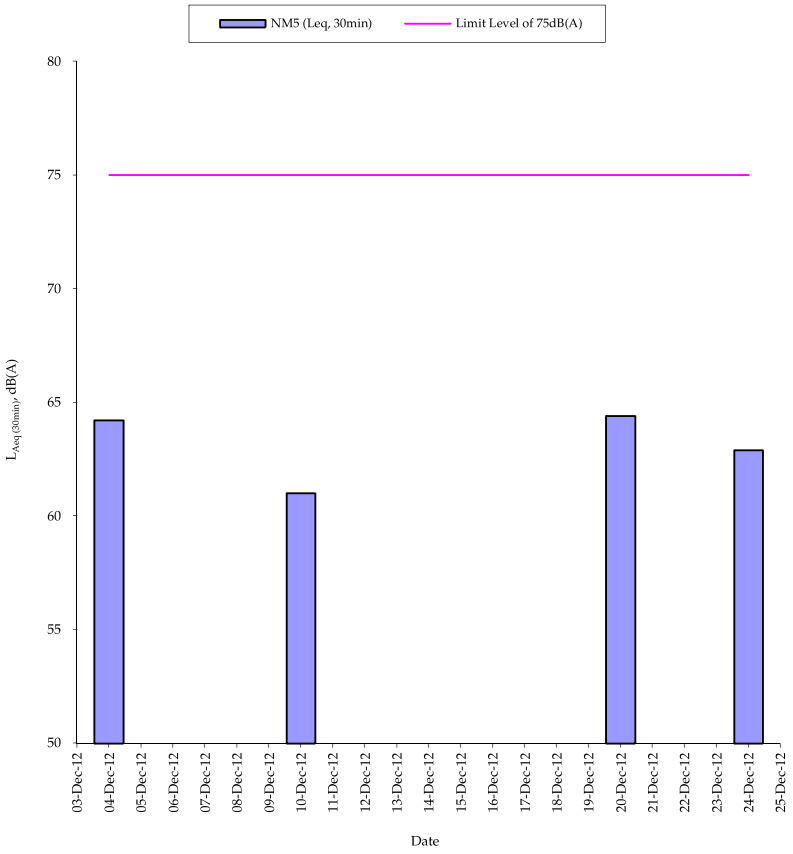
Annex G6 Noise Monitoring Results

Restricted Hours Noise Monitoring Results

Station NM5

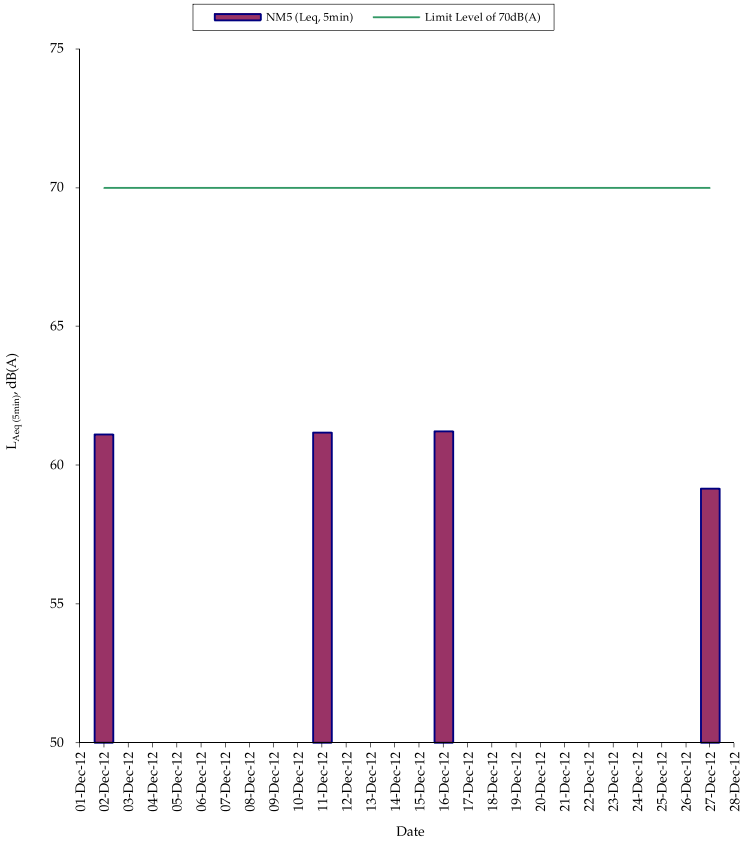
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
2-Dec-12	15:00	15:05	Cloudy	60.8	62.7	59.2	No construction activities	Traffic noise & aircraft noise	-	18	0.8	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	15:05	15:10	Cloudy	61.4	63.1	59.7			-				
	15:10	15:15	Cloudy	61.1	62.9	59.6			-				
	15:00	15:15	Cloudy	61.1	62.9	59.5			-				
11-Dec-12	19:03	19:08	Cloudy	61.5	63.3	59.6	No construction activities	Traffic noise & aircraft noise	-	19	0.3	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	19:08	19:13	Cloudy	61.2	62.7	59.4			-				
	19:13	19:18	Cloudy	60.8	62.5	59.0			-				
	19:03	19:18	Cloudy	61.2	62.8	59.3			-				
16-Dec-12	14:08	14:13	Cloudy	61.9	63.7	59.6	Drill rig	Traffic noise & aircraft noise	-	24	0.7	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	14:13	14:18	Cloudy	61.0	62.8	59.1			-				
	14:18	14:23	Cloudy	60.7	62.5	59.0			-				
	14:08	14:23	Cloudy	61.2	63.0	59.2			-				
27-Dec-12	19:20	19:25	Cloudy	59.4	63.3	59.4	No construction activities	Traffic noise & aircraft noise	-	19	0.8	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	19:25	19:30	Cloudy	59.1	62.8	59.1			-				
	19:30	19:35	Cloudy	59.0	62.9	59.0			-				
	19:20	19:35	Cloudy	59.2	63.0	59.2			-				
			Min.	**59.0**									
			Max.	**61.9**									

Normal Weekdays Noise Monitoring Results at NM5 ($L_{eq, 30min}$)



Remark:
- 75dB(A) was adopted as the Limit Level during normal weekdays in the reporting period

Restricted Hours Noise Monitoring Results at NM5 ($L_{eq, 5min}$)



Remark:
- 70dB(A) was adopted as the Limit Level during restricted hours in the

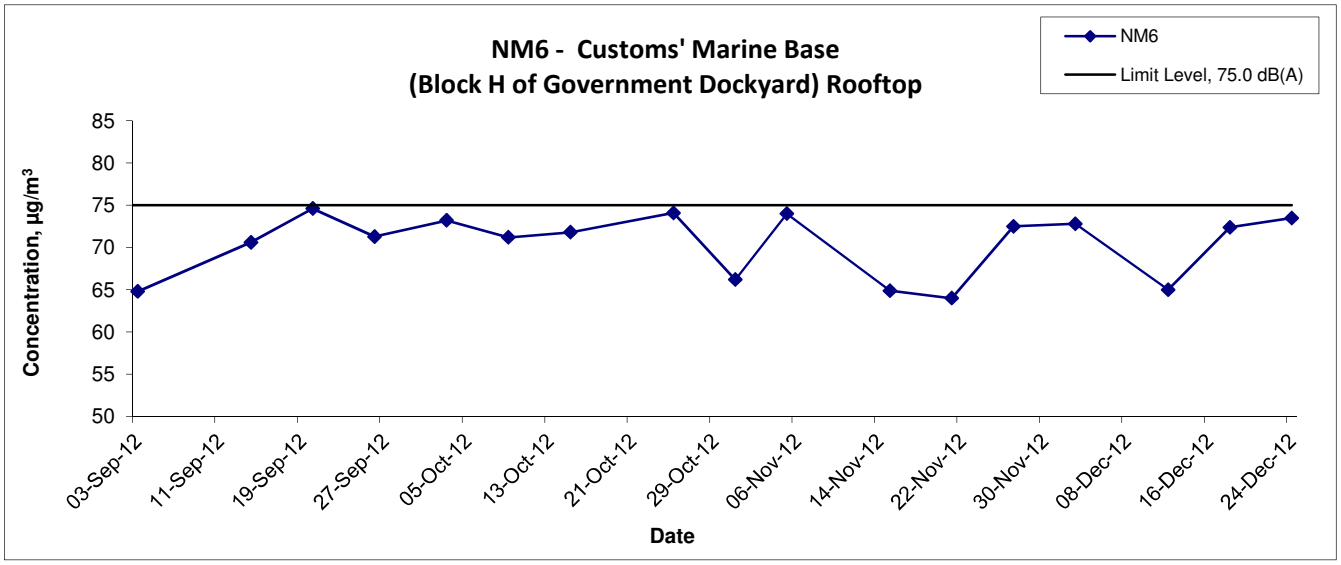
Appendix E - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop					
Date	Time	Weather	Unit: dB (A) (30-min) Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
3-Dec-12	13:30	Cloudy	72.8	75.1	70.6
12-Dec-12	14:40	Sunny	65.0	66.5	63.3
18-Dec-12	11:10	Cloudy	72.4	74.3	68.9
24-Dec-12	13:50	Cloudy	73.5	78.4	65.6

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 (NM6)	Scale N.T.S Date Dec 12	Project No. MA11007 Appendix E	CINOTECH

Appendix E - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location NM7 - Open Area near Naval Base Barrack					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
3-Dec-12	13:55	Cloudy	68.6	71.2	63.9
12-Dec-12	10:43	Sunny	70.2	72.2	66.8
18-Dec-12	10:30	Cloudy	71.4	73.5	68.0
24-Dec-12	10:15	Cloudy	69.6	71.9	65.5

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

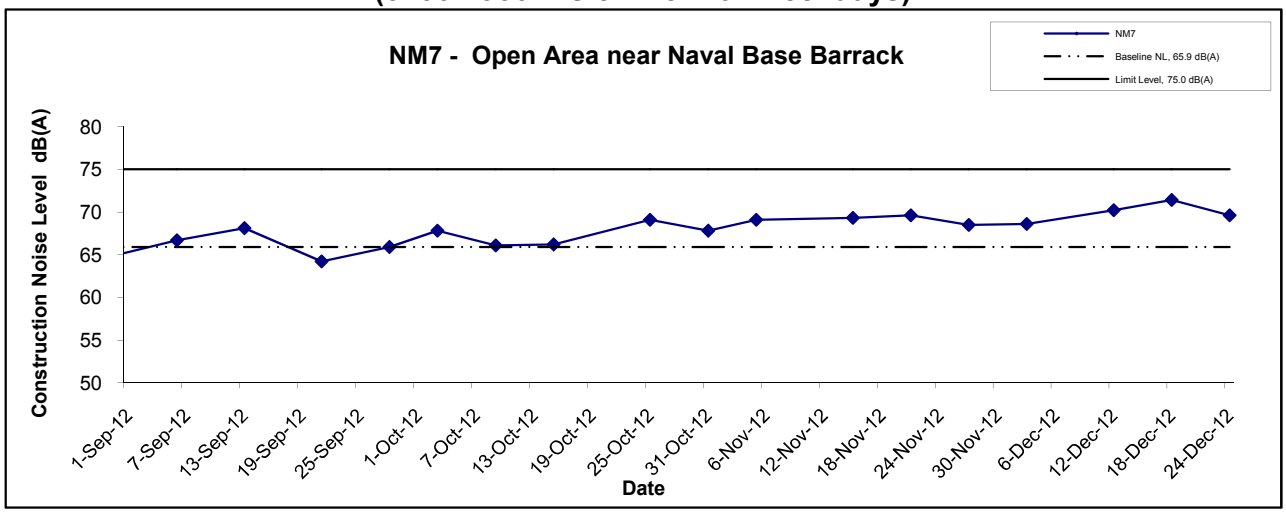
Location NM7 - Customs' Marine Base (Block H of Government Dockyard) Rooftop						
Date	Time	Weather	dB (A) (5-min)			
			L_{eq}	L_{10}	L_{90}	Average L_{eq}
3-Dec-12	20:30	Cloudy	63.8	66.7	59.4	63.0
	20:35		62.9	66.1	58.9	
	20:40		62.0	64.8	58.7	
12-Dec-12	19:30	Cloudy	63.9	66.1	60.2	63.0
	19:35		62.0	64.9	59.1	
	19:40		62.8	65.9	58.2	
18-Dec-12	19:10	Cloudy	62.7	65.3	59.5	62.3
	19:15		63.3	65.6	59.8	
	19:20		60.6	62.8	57.7	
24-Dec-12	19:25	Cloudy	64.1	66.6	60.8	63.9
	19:30		63.5	65.5	61.0	
	19:35		64.2	66.7	60.7	

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

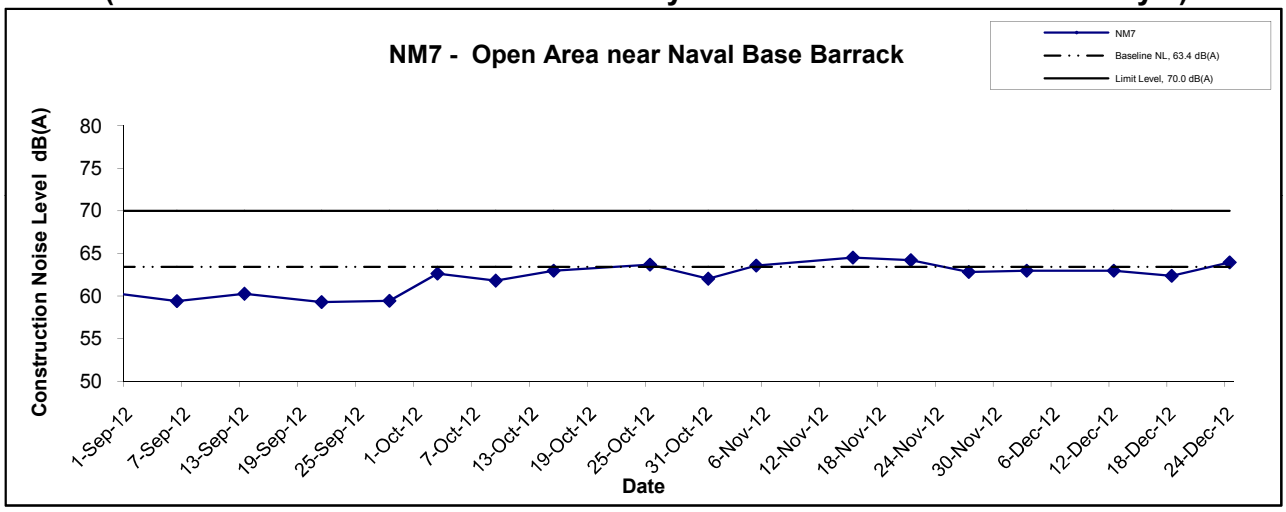
Location NM7 - Customs' Marine Base (Block H of Government Dockyard) Rooftop								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
3-Dec-12	23:15	Cloudy	58.2	61.0	54.5	58.2	59.7	58.2 Measured ≦ Basline
	23:20		58.2	60.8	54.5			
	23:25		58.3	61.4	54.9			
12-Dec-12	23:10	Cloudy	60.3	62.8	56.4	60.4		52.2
	23:15		60.7	62.0	56.2			
	23:20		60.2	63.6	55.2			
18-Dec-12	23:00	Cloudy	59.8	61.0	54.7	59.3		59.3 Measured ≦ Basline
	23:05		58.9	60.5	55.5			
	23:10		59.2	61.7	56.0			
24-Dec-12	23:15	Cloudy	60.3	61.9	57.9	60.4		52.1
	23:20		60.5	63.5	58.5			
	23:25		60.4	62.5	58.0			

Noise Levels

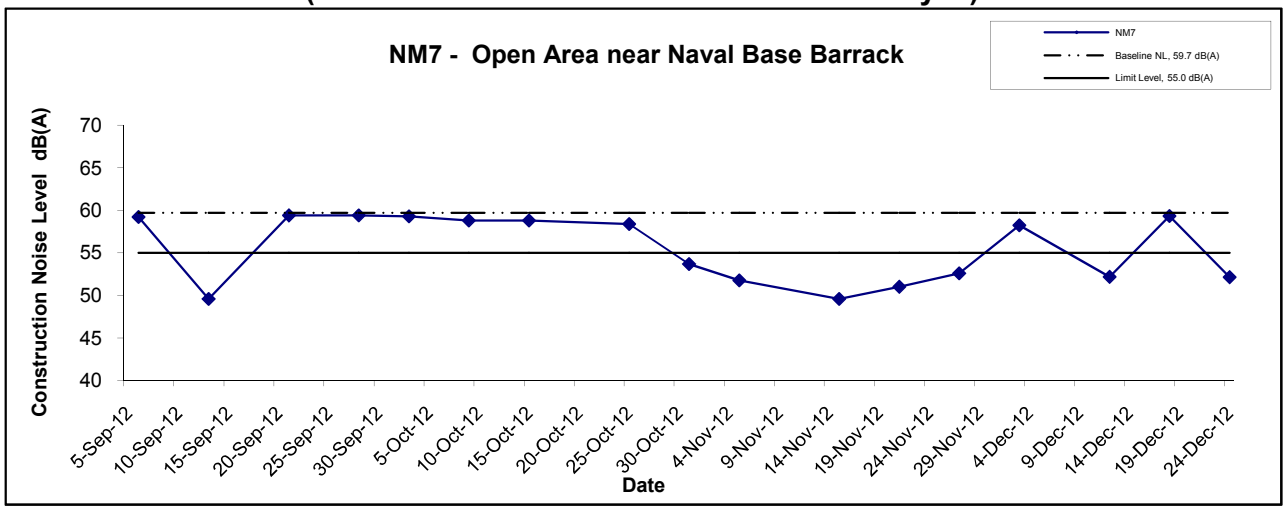
(0700-1900 hrs on Normal Weekdays)



(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	Scale	Project No.
Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of Noise Monitoring Result (NM7)	N.T.S	MA11043
	Date: Dec 12	Appendix: E

CINOTECH

APPENDIX F
ENVIRONMENTAL PERMITS AND LICENSES

APPENIDX F –Environmental Permits and Licenses

Table F.1 Summary of Environmental Licensing and Permit Status for Contract DC/2007/23

Permit No.	Valid Period		Details	Status
	From	To		
Wastewater Discharge License				
WT00005069-2009	11/8/2010	31/10/2014	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
Chemical Waste Producer Registration				
5213-269-G2449-07	--	--	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
Construction Noise Permit				
GW-RW0523-12	4/7/2012	28/12/2012	Location: Stonecutters Island Production Shaft and Riser Shaft	Expired in the Reporting Month
GW-RW0545-12	10/7/2012	8/1/2013	Location: Stonecutters Island Area K-1	Valid
GW-RW0856-12	17/11/2012	15/5/2013	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid

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

Permit No.	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00007763-2010	22/10/2010	31/10/2015	Location: Portion 5	Valid
WT00007921-2010	23/11/2010	30/11/2015	Location: Portion C	Valid
WT00007982-2010	3/12/2010	31/12/2015	Location: Portion 3&4	Valid
Registered Chemical Waste Producer				
5213-239-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	16/09/2010	N/A	N/A	Valid
Notification of Works Under APCO				
Ref:321235	7/09/2010	N/A	--	Valid
Construction Noise Permit				
GW-RW0746-12	21/10/2012	20/4/2013	Location: Portion 3, 4 and 5	Valid

Table F.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	13/10/2011	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-RW0804-12	4/11/2012	3/5/2013	Location: Construction site at Stonecutters Island Sewage treatment works. (Portion 3)	Valid
GW-RW0846-12	1/12/2012	31/5/2013	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	Valid

Table F.4 Summary of Environmental Licensing and Permit Status for Contract DC/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00009245-2011	1/6/2011	30/6/2016	The application was approved on 1-6-2011.	Valid
WT00012151-2012	28/2/2012	28/2/2017	The application was approved on 28-2-2012.	Valid
Registered Chemical Waste Producer				
WPN5213-269-S3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
Billing Account for Disposal of Construction Waste				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
Notification of Works Under APCO				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
Construction Noise Permit for Percussive Pilling (driving steel pile)				
PP-RW0016-12	8/8/2012	2/5/2013	Location: Portion 3 and 8.	Valid
PP-RW0004-12	10/4/2012	9/1/2013	Location: Portion 4.	Valid
Construction Noise Permit for use of mechanical equipment outside permitted working hours				
GW-RW0504-12	30/6/2012	24/12/2012	Location: Portion 4	Expired in the Reporting Month
GW-RW0971-12	25/12/2012	24/6/2013	Location: Portion 4	Valid
GW-RW0503-12	28/6/2012	24/12/2012	Location: Portion B	Expired in the Reporting Month
GW-RW0952-12	25/12/2012	24/6/2013	Location: Portion B	Valid

Reference Number	Valid Period		Details	Status
	From	To		
GW-RW0611-12	11/8/2012	31/1/2013	Location: Portion 3, 8 and 9.	Valid
Renewal of Admission Ticket for Disposal of Special Waste (Grit) at Landfills				
No. 10279	23/11/2012	22/5/2013	N/A	Valid

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: December 2012

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

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

c) Exceedance Report for Construction Noise (NIL)

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

APPENDIX H
SITE AUDIT SUMMARY

7.6 *ENVIRONMENTAL SITE INSPECTION*

Weekly site inspections were carried out by representatives of the Contractor, Engineer and the ET. Site inspections were conducted on 6, 13, 20 and 27 December 2012. The representative of the IEC joined the site inspection on 27 December 2012. No non-compliance was recorded during the site inspections.

Major findings and recommendations are summarised as follows:

Riser Shaft

- Nil.

Production Shaft

- On 6 December, chemical drums were stored at the back of the noise enclosure without drip trays. The Contractor was reminded to put the chemical drums on drip trays or remove them if not in use.
- On 6 December, chemical waste was observed accumulating in the chemical waste storage container. The Contractor was reminded to properly dispose of the chemical waste regularly.
- On 13 December, the chemical drums at the back of the noise enclosure were still observed to be stored on a rack since last site audit. The Contractor was recommended to provide a tray at the bottom to collect any potential leakage.
- On 13 December, chemical waste was still observed accumulating in the chemical waste storage container since last site audit. The Contractor was reminded to properly dispose of the chemical waste and create holes on the storage container to provide proper ventilation.
- On 20 December, oil stains was observed at oil storage area near Gate 2. The contractor was reminded to remove the oil stain.
- On 20 December, the chemical drums at the back of the noise enclosure were still observed to be stored on a rack since last audit. The contractor was recommended to provide a drip tray to prevent potential chemical leakage.
- On 20 December, oil stain was observed at K1 storage area. The contractor was reminded to remove the oil stain.
- On 27 December, oil stains was observed at oil storage area near Gate 2. The contractor was reminded to remove the oil stain.
- On 27 December, the chemical drums at the back of the noise enclosure were still observed to be stored on a rack since last audit. The contractor was recommended to provide a drip tray to prevent potential chemical leakage.
- On 27 December, two chemical drums with impervious sheet covered were not stored on the drip tray near the chemical storage area at Gate 2. The Contractor was reminded to provide a drip tray to prevent potential chemical leakage..

4. ENVIRONMENTAL AUDIT

Site Audits

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

4.2 Environmental site audits were conducted on 6, 13, 18 and 27 December 2012 for the Project. 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 mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

4.4 The summaries of site audits are attached in **Appendix C**.

Implementation Status of Environmental Mitigation Measures

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

4.6 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1.**

Table 4.1 Observations of Site Audit

Parameters	Date/Ref. Number	Observations	Follow Up Action
Water Quality	**6/12/2012 R-02**	The wastewater between portion 3 and 4 should be cleared to avoid spillage.	Wastewater between portion 3 and 4 was cleared by the Contractor.
	18/12/2012 O-01	Bund should be provided to confine the debris and run-off to prevent leakage.	Debris was confined within the site area and no further spillage of run-off was observed during the site inspection.
Air Quality	**27/12/2012 R-01**	To ensure the stockpile was covered properly to reduce dust generation in dry days. (Portion 4)	Stockpile in Portion 4 was covered by tarpaulin by the Contractor.
Waste/ Chemical Management	N/A	There was no observation in the reporting period.	N/A
Landscape and Visual	N/A	There was no observation in the reporting period.	N/A
Noise	N/A	There was no observation in the reporting period.	N/A
Permit/ Licenses	**6/12/2012 R-01**	To update the EP displaced at the entrance of portion 3.	EP displaced at the entrance of portion 3 was updated by the Contractor.

Review of Environmental Monitoring Procedures

4.7 The monitoring works conducted by the monitoring teams of Contracts DC/2007/23 and DC/2009/10. The monitoring procedures were reviewed by their respective ETs.

4 ENVIRONMENTAL AUDIT

Site Audits

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

4.2 Environmental site audits were conducted on 5, 12, 18 and 27 December 2012 for the Project. 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 mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

Implementation Status of Environmental Mitigation Measures

4.4 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1**.

Table 4.1 Observations of Site Audit

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	121205-O02	The oily water in the U-channel should be removed before discharge (portion 7).	No oily water was observed in the U-channel in Portion 7.
	121218-R03	The water treatment facilities in Portion 7 should be free from silt and sediment for better wastewater sedimentation.	Sediment in the water treatment facilities in Portion 7 was cleared by the Contractor.
	121227-O01	Oil spillage during oil filling should be prevented and oil stain should be cleared.(Portion 7)	This item was found outstanding and will be followed up in the next site inspection.
Air Quality	121218-O02	Adequate water spraying should be provided to area with traffic to reduce dust generation (Portion3).	Water spraying was observed in the area with vehicles movement in Portion 3.
Waste/ Chemical Management	121205-O01	To seal the drip tray in portion 7 to prevent oily water spillage.	The drip tray was sealed and the oily water was cleared by the Contractor.
	121205-O02	The oily water in the U-channel should be removed before discharge (portion 7).	No oily water was observed in the U-channel in Portion 7.
	121212-O01	Proper maintenance should be provided equipment to prevent oil leakage.(Portion 7)	This item was found outstanding and recorded as item ref: 121218-O1 and rectified in the site inspection on 27th December 2012.
	121218-O01	Proper maintenance should be provided equipment in Portion 3 and 7 to prevent oil leakage.	Tarpaulins were provided as isolating materials underlying the equipment and oil stains were cleared by the Contractor.
	121227-O01	Oil spillage during oil filling should be prevented and oil stain should be cleared. (Portion 7)	This item was found outstanding and will be followed up in the next site inspection.

	121227-O02	Drip tray should be provided to contain the chemicals in Portion 3.	Chemicals in Portion 3 were contained by drip trays.
	121227-O03	Drip tray should be sealed to avoid further leakage in Portion 7.	Drip tray in Portion 7 was sealed by the Contractor.
Landscape and Visual	N/A	There was no observation in the reporting period.	N/A
Noise	N/A	There was no observation in the reporting period.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting period.	N/A

4.5 The summaries of site audits are attached in **Appendix G**.

4.6 Details of the implementation of mitigation measures are provided in the **Appendix J**.

Status of Environmental Licensing and Permitting

4.7 All permits/licenses obtained for the Contract DC/2009/18 are summarized in **Table 4.2**.

Table 4.2 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	13/10/2011	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-RW0804-12	4/11/2012	3/5/2013	Location: Construction site at Stonecutters Island Sewage treatment works. (Portion 3)	Valid
GW-RW0846-12	1/12/2012	31/5/2013	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	Valid

Status of Waste Management

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

Review of Environmental Monitoring Procedures

4.9 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

4. ENVIRONMENTAL AUDIT

Site Audits

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

4.2 Environmental site audits were conducted on 7, 13, 20 and 28 December 2012 for the Project. 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 mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

4.4 The summaries of site audits are attached in **Appendix G**.

Implementation Status of Environmental Mitigation Measures

4.5 Details of the implementation of mitigation measures are provided in the **Appendix J**.

4.6 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1**.

Table 4.1 Observations of Site Audit

Parameters	Date/Ref. Number	Observations	Follow Up Action
Water Quality	N/A	There was no observation in the reporting month.	N/A
Air Quality	**13/12/2012 R-01**	Stockpile materials in Portion 3&4 should be properly covered to reduce dust generation.	Stockpile materials were covered by the Contractor.
	28/12/2012 R-02	To provide adequate water spraying in area with vehicles movement in Portion 3 to reduce dust generation.	Water spraying was observed during the site inspection.
Waste/ Chemical Management	**20/12/2012 O-01**	Leakage from drip tray in Portion 3 was observed. The Contractor was reminded to repair it and remove the oil stained soil as chemical waste.	No leakage from the drip tray was found and oil stained soil was cleared by the Contractor.
	20/12/2012 O-02	Muddy water in drip tray should be cleared to ensure it has an adequate capacity.	No muddy water was observed in the drip tray during the site inspection.
	28/12/2012 R-01	To properly dispose of the waste oil drum in Portion 3.	The empty oil drum was removed by the Contractor.
Landscape and Visual	**7/12/2012 R-01**	C & D materials should be removed from the tree protection area at Portion 9.	C & D materials were removed from the tree protection zone in Portion 9.
Noise	N/A	There was no observation in the reporting month.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

APPENDIX I
EVENT ACTION PLANS

APPENDIX I – Event / Action Plans

Table I-1 Event / Action Plan For Air Quality

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

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
2. Exceedance for two or more consecutive samples	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	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.	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.	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 I-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance	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

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring		until the exceedance is abated	the ER until the exceedance is abated

APPENDIX J
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	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			^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	the recommended limit.					
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.			^	^	^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.			^	*	^
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites		^	^	^
B	**Airborne Noise**					
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^	^	^	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^	^	^	^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^	^	^	^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^	^	^	^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^	^	^	^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby		^	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	NSRs.					
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^	^	^	^
C	**Water Quality**					
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^	*	^	*
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^	*	^	*
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste		<>	^	*	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	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 activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		^	^	^	^
6.379	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.		^	^	*	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
6.380	Construction Works in Close Proximity of Storm Drains or Seafront To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. Construction activities, which generate large amount of wastewater, should be carried out in a distance • away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea.	All construction sites	^	^	^	^
D	**Waste Management**					

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites		^	^	^
9.109	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All construction sites	^	^	^	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^	^	^	^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^	^	^	^
	Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^	^	^	^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.		^	^	^	^
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		^	^	*	^
	Training of site personnel in proper waste management and chemical waste handling procedures.			^	^	^
	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.			^	^	^
	Provision of sufficient waste disposal points and regular collection of waste.			^	^	^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.			^	^	^
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage"	All construction sites	^	^	^	^
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^	^	^	^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		^	^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^	^	^	^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		^	^	*	*
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment		^	N/A	N/A	N/A

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
	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.					
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 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^	^	^	^
	Existing trees to be retained on site should be carefully protected during construction.			^	*	^
	Trees unavoidably affected by the works should be transplanted where practical.			^	^	^
	Compensatory tree planting should be provided to compensate for felled trees.			^	^	^
	Control of night-time lighting.			^	^	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Contract			
			DC/2007/23	DC/2009/17	DC/2009/10	DC/2009/18
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.			N/A	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	^	^	^	^

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

APPENDIX K
COMPLAINT LOG

APPENDIX K – COMPLAINT LOG

Reporting Month: December 2012

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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

APPENDIX L
CONSTRUCTION PROGRAMME

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp
HATS Stage 2A - Contract DC/2007/23					
Stonecutters Island STW Production Shaft					
Preliminaries Works					
SCPS10070	SCPS: Construct/Install Blast Protection	2	22SEP10	24SEP10	0
SCPS10075	SCPS: Site Inspection from Mines	1	25SEP10	25SEP10	0
SCPS10080	SCPS: Issue Blasting Permit	1	27SEP10	27SEP10	0
EBS, Env. & Geotechnical Instrumentations					
Markers/UMP's/Others(Same note as Piez.)					
SCPS0391	SCPS: Install GS Markers (17 Nos.)	74	01SEP09A	01FEB10	85
SCPS0393	SCPS: JointSurvey&EstablishBaseline Readings GSM	14	02FEB10	20FEB10	0
Piezometers(NearbyPTWorPScovered inthisInstalln)					
SCPS0375	SCPS: BH907 Piezometer Baseline Establishment	26	10NOV09A	23JAN10	85
SCPS0381	SCPS: BH908 Piezometer Baseline Establishment	26	10NOV09A	27JAN10	73
SCPS0387	SCPS: BH906 Piezometer Baseline Establishment	26	15JAN10A	06FEB10	40
Electrical & Mechanical Installations					
SCPS0620	SCPS: Installation Works for 11KV Application	60	08APR10	18JUN10	0
SCPS0625	SCPS: 11 KV Connection & Power On	4	19JUN10	23JUN10	0
Marine Dumping Permit					
SCPS0370	SCPS: Request for Disposal Site&Get Permit	24	02JAN10A	05FEB10	38
Diaphragm Wall					
SCPS0279	SCPS: Excavate 3rd Panel to Formation Level	12	16JAN10A	20JAN10	92
SCPS0281	SCPS: 3rd Panel Desanding & Preparation Works	4	21JAN10	25JAN10	0
SCPS0282	SCPS: Grouting Works Phase 1	45	21JAN10	17MAR10	0
SCPS0283	SCPS: 3rd Panel Rebar Cage Installation	3	26JAN10	28JAN10	0
SCPS0285	SCPS: 3rd Panel Concreting Works	1	29JAN10	29JAN10	0
SCPS0287	SCPS: Excavate 4th Panel to Formation Level	23	30JAN10	01MAR10	0
SCPS0289	SCPS: 4th Panel Desanding & Preparation Works	9	02MAR10	11MAR10	0
SCPS0291	SCPS: 4th Panel Rebar Cage Installation	6	12MAR10	18MAR10	0
SCPS0292	SCPS: Grouting Works Phase 2	45	18MAR10	11MAY10	0
SCPS0293	SCPS: 4th Panel Concreting Works	1	19MAR10	19MAR10	0
SCPS0297	SCPS: Excavate 5th Panel to Formation Level	8	20MAR10	29MAR10	0
SCPS0299	SCPS: 5th Panel Desanding & Preparation Works	3	30MAR10	01APR10	0
SCPS0301	SCPS: 5th Panel Rebar Cage Installation	2	02APR10	03APR10	0
SCPS0303	SCPS: 5th Panel Concreting Works	1	06APR10	06APR10	0
SCPS0307	SCPS: Excavate 6th Panel to Formation Level	23	07APR10	04MAY10	0
SCPS0309	SCPS: 6th Panel Desanding & Preparation Works	9	05MAY10	14MAY10	0
SCPS0310	SCPS: Grouting Works Phase 3	50	12MAY10	10JUL10	0
SCPS0311	SCPS: 6th Panel Rebar Cage Installation	6	15MAY10	21MAY10	0
SCPS0313	SCPS: 6th Panel Concreting Works	1	22MAY10	22MAY10	0
SCPS0317	SCPS: Excavate 7th Panel to Formation Level	8	24MAY10	01JUN10	0
SCPS0319	SCPS: 7th Panel Desanding & Preparation Works	3	02JUN10	04JUN10	0
SCPS0321	SCPS: 7th Panel Rebar Cage Installation	2	05JUN10	07JUN10	0
SCPS0323	SCPS: 7th Panel Concreting Works	1	08JUN10	08JUN10	0
SCPS0327	SCPS: Excavate 8th Panel to Formation Level	8	09JUN10	18JUN10	0
SCPS0329	SCPS: 8th Panel Desanding & Preparation Works	3	19JUN10	22JUN10	0
SCPS0331	SCPS: 8th Panel Rebar Cage Installation	2	23JUN10	24JUN10	0
SCPS0333	SCPS: 8th Panel Concreting Works	1	25JUN10	25JUN10	0
SCPS0335	SCPS: Install Dewatering Wells for Pump-test	12	05JUL10	17JUL10	0
SCPS0337	SCPS: Pumping Test	6	19JUL10	24JUL10	0
SCPS0338	SCPS: Submission of Pumping Test Report	6	26JUL10	31JUL10	0
SCPS0341	SCPS: Demobilization	6	26JUL10	31JUL10	0
Shaft Excavation					
SCPS0500	SCPS: Construct Capping Beam & Shaft Collar	12	26JUL10	07AUG10	0
SCPS0510	SCPS: Initial Excavation of Shaft (7m)	4	09AUG10	12AUG10	0
SCPS0520	SCPS: Set-Up Equipment for Shaft Sink	12	13AUG10	26AUG10	0
SCPS0525	SCPS: Erect Noise Enclosure at Shaft Top	12	13AUG10	26AUG10	0
SCPS0530	SCPS: Excavate Soil & Ring Beams (50m)	22	27AUG10	21SEP10	0
SCPS0575	SCPS: Probe, Grout, D&B Rock, Muck Out (87m)	100	28SEP10	26JAN11	0
SCPS0640	SCPS: Construct Sump at Shaft Bottom	2	27JAN11	28JAN11	0
SCPS0665	SCPS: Erect Tunnel Hoist & Muck Out System	10	29JAN11	12FEB11	0
Backfill, Reinstatement & Landscaping					
SCPS0910	SCPS: Backfill Shaft (20%)	8	12SEP13	21SEP13	0
SCPS0920	SCPS: Backfill Shaft (40%)	8	23SEP13	02OCT13	0
SCPS0930	SCPS: Backfill Shaft (60%)	8	03OCT13	11OCT13	0
SCPS0940	SCPS: Backfill Shaft (80%)	8	12OCT13	22OCT13	0
SCPS0950	SCPS: Backfill Shaft (100%)	8	23OCT13	31OCT13	0
SCPS0960	SCPS: Reinstatement Around PS Area	12	01NOV13	14NOV13	0
SCPS0970	SCPS: Demobilise Clear Area	6	15NOV13	21NOV13	0
SCPS0975	SCPS: Complete All Works at SCI PS (KD-11)	0		21NOV13	0
SCPS0980	SCPS: Landscaping & Planting Works	60	22NOV13*	20JAN14	0
SCPS0990	SCPS: Period of Establishment Works	360	21JAN14	15JAN15	0
SCPS1000	SCPS: End of Establishment Period	0		15JAN15	0

Start Date	31JUL09
Finish Date	15JAN15
Data Date	20JAN10
Run Date	01FEB10 10:42

© Primavera Systems, Inc.

Early Bar
Progress Bar
Critical Activity

WPU7 Sheet 1 of 1

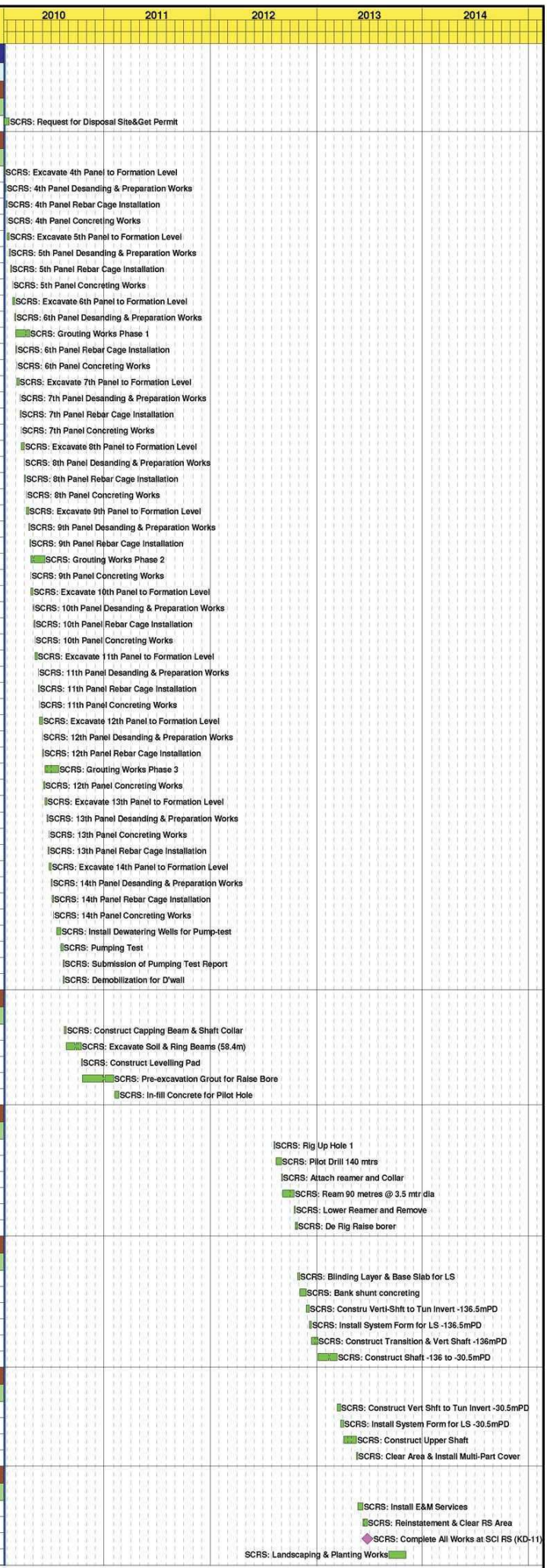
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Annex G8 Construction Programme for the Project

Gammon

Date	Revision	Checked	Approved

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp
HATS Stage 2A - Contract DC/2007/23					
Stonecutters Island STW Riser Shaft					
Marine Dumping Permit					
SCRS0370	SCRS: Request for Disposal Site&Get Permit	24	05JAN10A	06FEB10	33
Diaphragm Wall					
SCRS0287	SCRS: Excavate 4th Panel to Formation Level	7	09JAN10A	23JAN10	50
SCRS0289	SCRS: 4th Panel Desanding & Preparation Works	3	25JAN10	27JAN10	0
SCRS0291	SCRS: 4th Panel Rebar Cage Installation	2	28JAN10	29JAN10	0
SCRS0293	SCRS: 4th Panel Concreting Works	1	30JAN10	30JAN10	0
SCRS0295	SCRS: Excavate 5th Panel to Formation Level	7	01FEB10	08FEB10	0
SCRS0297	SCRS: 5th Panel Desanding & Preparation Works	3	09FEB10	11FEB10	0
SCRS0299	SCRS: 5th Panel Rebar Cage Installation	2	12FEB10	13FEB10	0
SCRS0301	SCRS: 5th Panel Concreting Works	1	18FEB10	18FEB10	0
SCRS0303	SCRS: Excavate 6th Panel to Formation Level	7	19FEB10	26FEB10	0
SCRS0305	SCRS: 6th Panel Desanding & Preparation Works	3	27FEB10	02MAR10	0
SCRS0306	SCRS: Grouting Works Phase 1	40	03MAR10	19APR10	0
SCRS0307	SCRS: 6th Panel Rebar Cage Installation	2	03MAR10	04MAR10	0
SCRS0309	SCRS: 6th Panel Concreting Works	1	05MAR10	05MAR10	0
SCRS0311	SCRS: Excavate 7th Panel to Formation Level	7	06MAR10	13MAR10	0
SCRS0313	SCRS: 7th Panel Desanding & Preparation Works	3	15MAR10	17MAR10	0
SCRS0315	SCRS: 7th Panel Rebar Cage Installation	2	18MAR10	19MAR10	0
SCRS0317	SCRS: 7th Panel Concreting Works	1	20MAR10	20MAR10	0
SCRS0319	SCRS: Excavate 8th Panel to Formation Level	7	22MAR10	29MAR10	0
SCRS0321	SCRS: 8th Panel Desanding & Preparation Works	3	30MAR10	01APR10	0
SCRS0323	SCRS: 8th Panel Rebar Cage Installation	2	02APR10	03APR10	0
SCRS0325	SCRS: 8th Panel Concreting Works	1	06APR10	06APR10	0
SCRS0327	SCRS: Excavate 9th Panel to Formation Level	7	07APR10	14APR10	0
SCRS0329	SCRS: 9th Panel Desanding & Preparation Works	3	15APR10	17APR10	0
SCRS0331	SCRS: 9th Panel Rebar Cage Installation	2	19APR10	20APR10	0
SCRS0332	SCRS: Grouting Works Phase 2	40	21APR10	07JUN10	0
SCRS0333	SCRS: 9th Panel Concreting Works	1	21APR10	21APR10	0
SCRS0335	SCRS: Excavate 10th Panel to Formation Level	7	22APR10	29APR10	0
SCRS0337	SCRS: 10th Panel Desanding & Preparation Works	3	30APR10	04MAY10	0
SCRS0339	SCRS: 10th Panel Rebar Cage Installation	2	05MAY10	06MAY10	0
SCRS0341	SCRS: 10th Panel Concreting Works	1	07MAY10	07MAY10	0
SCRS0343	SCRS: Excavate 11th Panel to Formation Level	7	08MAY10	15MAY10	0
SCRS0345	SCRS: 11th Panel Desanding & Preparation Works	3	17MAY10	19MAY10	0
SCRS0347	SCRS: 11th Panel Rebar Cage Installation	2	20MAY10	21MAY10	0
SCRS0349	SCRS: 11th Panel Concreting Works	1	22MAY10	22MAY10	0
SCRS0351	SCRS: Excavate 12th Panel to Formation Level	7	24MAY10	31MAY10	0
SCRS0353	SCRS: 12th Panel Desanding & Preparation Works	3	01JUN10	03JUN10	0
SCRS0355	SCRS: 12th Panel Rebar Cage Installation	2	04JUN10	05JUN10	0
SCRS0356	SCRS: Grouting Works Phase 3	40	08JUN10	26JUL10	0
SCRS0357	SCRS: 12th Panel Concreting Works	1	07JUN10	07JUN10	0
SCRS0359	SCRS: Excavate 13th Panel to Formation Level	7	08JUN10	15JUN10	0
SCRS0361	SCRS: 13th Panel Desanding & Preparation Works	3	17JUN10	19JUN10	0
SCRS0365	SCRS: 13th Panel Concreting Works	1	23JUN10	23JUN10	0
SCRS0366	SCRS: 13th Panel Rebar Cage Installation	2	21JUN10	22JUN10	0
SCRS0367	SCRS: Excavate 14th Panel to Formation Level	7	24JUN10	02JUL10	0
SCRS0369	SCRS: 14th Panel Desanding & Preparation Works	3	03JUL10	06JUL10	0
SCRS0371	SCRS: 14th Panel Rebar Cage Installation	2	07JUL10	08JUL10	0
SCRS0373	SCRS: 14th Panel Concreting Works	1	09JUL10	09JUL10	0
SCRS0380	SCRS: Install Dewatering Wells for Pump-test	12	20JUL10	02AUG10	0
SCRS0390	SCRS: Pumping Test	6	03AUG10	09AUG10	0
SCRS0392	SCRS: Submission of Pumping Test Report	6	10AUG10	16AUG10	0
SCRS0394	SCRS: Demobilization for D'wall	6	10AUG10	16AUG10	0
Shaft Excavation					
SCRS0400	SCRS: Construct Capping Beam & Shaft Collar	6	17AUG10	23AUG10	0
SCRS0410	SCRS: Excavate Soil & Ring Beams (58.4m)	42	24AUG10	13OCT10	0
SCRS0420	SCRS: Construct Levelling Pad	3	14OCT10	18OCT10	0
SCRS0430	SCRS: Pre-excavation Grout for Raise Bore	90	19OCT10	02FEB11	0
SCRS0440	SCRS: In-fill Concrete for Pilot Hole	12	07FEB11	19FEB11	0
Raised Boring					
SCRS0700	SCRS: Rig Up Hole 1	5	07AUG12	11AUG12	0
SCRS0710	SCRS: Pilot Drill 140 mtrs	16	13AUG12	30AUG12	0
SCRS0720	SCRS: Attach reamer and Collar	3	31AUG12	03SEP12	0
SCRS0730	SCRS: Ream 90 metres @ 3.5 mtr dia	35	04SEP12	16OCT12	0
SCRS0740	SCRS: Lower Reamer and Remove	3	17OCT12	19OCT12	0
SCRS0750	SCRS: De Rig Raise borer	5	20OCT12	26OCT12	0
Lower Shaft Construction					
SCRS0835	SCRS: Blinding Layer & Base Slab for LS	6	27OCT12	02NOV12	0
SCRS0840	SCRS: Bank shunt concreting	18	03NOV12	23NOV12	0
SCRS0875	SCRS: Constru Verti-Shft to Tun Invert -136.5mPD	9	24NOV12	04DEC12	0
SCRS0885	SCRS: Install System Form for LS -136.5mPD	9	05DEC12	14DEC12	0
SCRS0935	SCRS: Construct Transition & Vert Shaft -136mPD	15	15DEC12	03JAN13	0
SCRS0940	SCRS: Construct Shaft -136 to -30.5mPD	55	04JAN13	12MAR13	0
Upper Shaft Construction					
SCRS0975	SCRS: Construct Vert Shft to Tun Invert -30.5mPD	9	13MAR13	22MAR13	0
SCRS0995	SCRS: Install System Form for LS -30.5mPD	9	23MAR13	02APR13	0
SCRS1045	SCRS: Construct Upper Shaft	36	03APR13	16MAY13	0
SCRS1065	SCRS: Clear Area & Install Multi-Part Cover	3	17MAY13	20MAY13	0
Miscellaneous Works					
SCRS2010	SCRS: Install E&M Services	18	21MAY13	10JUN13	0
SCRS2020	SCRS: Reinstatement & Clear RS Area	12	11JUN13	25JUN13	0
SCRS2025	SCRS: Complete All Works at SCI RS (KD-11)	0		25JUN13	0
SCRS2030	SCRS: Landscaping & Planting Works	60	08SEP13*	06NOV13	0



Start Date	31JUL09
Finish Date	15JAN15
Data Date	20JAN10
Run Date	01FEB10 10:50

© Primavera Systems, Inc.

Early Bar
Progress Bar
Critical Activity

WPU7 Sheet 1 of 2

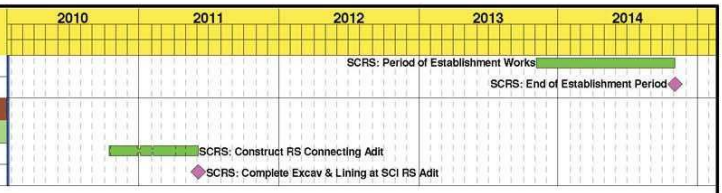
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Annex G8 Construction Programme for the Project

Gammon

Date	Revision	Checked	Approved

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp
SCRS2060	SCRS: Period of Establishment Works	360	07NOV13	01NOV14	0
SCRS2070	SCRS: End of Establishment Period	0		01NOV14	0
Connecting Adit					
SCRS2040	SCRS: Construct RS Connecting Adit	192	14OCT10	03JUN11	0
SCRS2050	SCRS: Complete Excav & Lining at SCI RS Adit	0		03JUN11	0



Start Date	31JUL09
Finish Date	15JAN15
Data Date	20JAN10
Run Date	01FEB10 10:50

© Primavera Systems, Inc.

Early Bar
Progress Bar
Critical Activity

Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island
Programme

Annex G8 Construction Programme for the Project

Gammon

Date	Revision	Checked	Approved

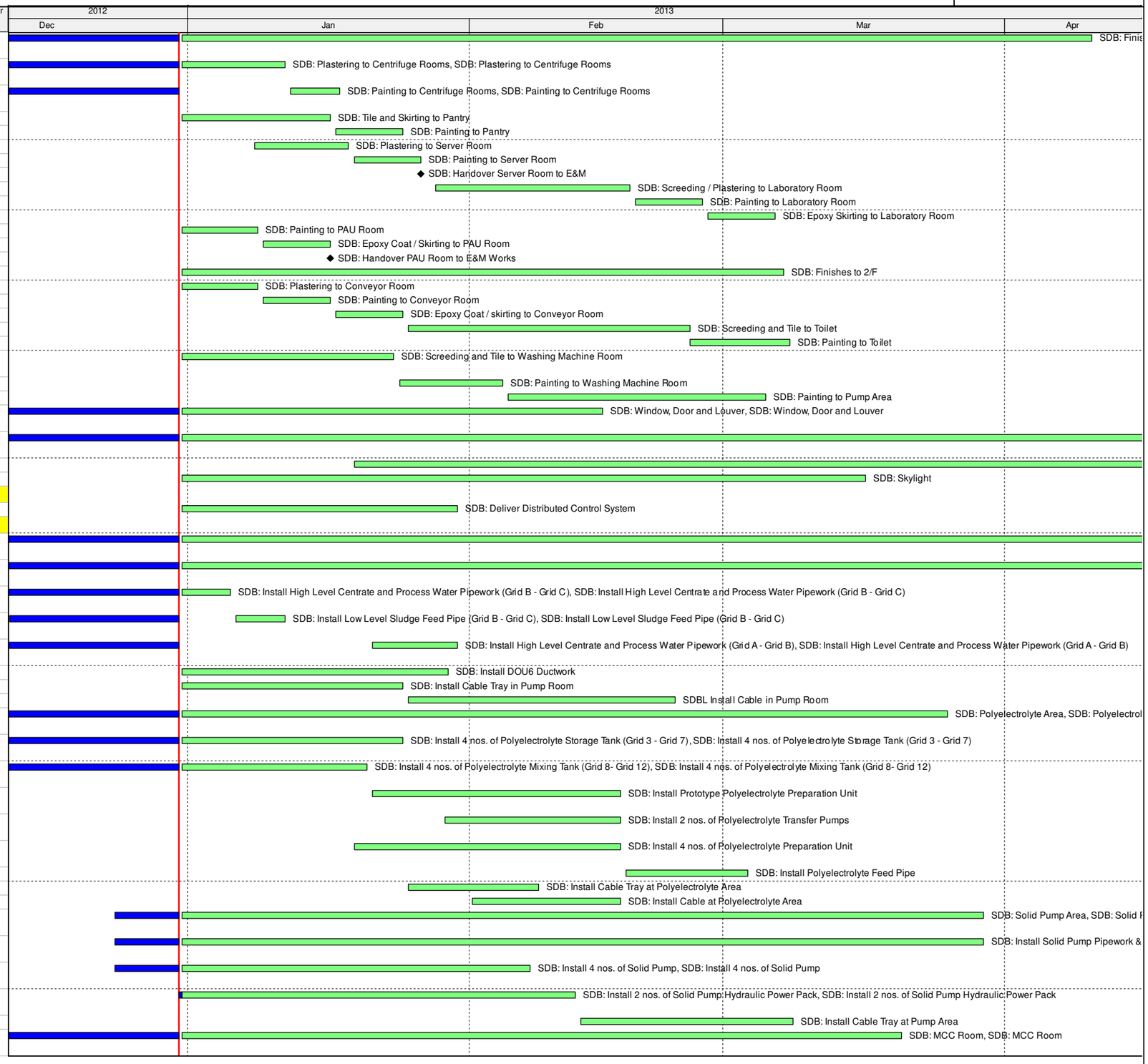
Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
Preliminaries and General Requirement					
General Requirements					
Initial Works					
PG000172	Maintenance and Security for Portion F	1463	01-Jun-12 A	26-May-16	1243
PG000190	Environmental Impact Monitoring	2000	04-Dec-10 A	26-May-16	1243
PG000260	Maintenance and Upkeeping of Portion D	2095	25-Aug-10 A	26-May-16	1243
PG000300	Maintenance and Security in Portion E	2095	25-Aug-10 A	26-May-16	1243
PG000310	Maintenance and Security in Portion G	1463	01-Jun-12 A	26-May-16	1243
PG000410	HAZOP Studies and Report	15	06-Feb-13	28-Feb-13	15
Design of Permanent Works					
DDA 1 (SDB and Associated Structure)					
Sub-Package F					
DP024190	DDA: SDB - Landscape (Irrigation) Design and Approval	175	26-Nov-12 A	22-May-13	143
DP024200	DDA: SDB - Submit Landscape Design	49	26-Nov-12 A	16-Jan-13	17
DP024210	DDA: SDB - ICE Approve Landscape Design	21	17-Jan-13	06-Feb-13	21
DP024220	DDA: SDB - Eng Comment on Landscape Design	42	07-Feb-13	20-Mar-13	42
Section 3 of the Works					
Northern Sludge Cake Silo					
Structure					
S3000442	NSCS: Pipe Support bet SDB to NSCS	18	10-Jan-13	30-Jan-13	18
Architecture Finishes					
S3000450	NSCS: Building Finishes and Landscape	230	29-Sep-12 A	11-Oct-13	230
S3000470	NSCS: Plastering	40	05-Dec-12 A	29-Jan-13	25
S3000480	NSCS: Painting and skirting	60	12-Jan-13	28-Mar-13	60
S3000490	NSCS: Install Stair at Level B1 - B4	75	31-Dec-12	03-Apr-13	75
S3000500	NSCS: Epoxy to VWF	30	31-Dec-12	04-Feb-13	30
S3000505	NSCS: Handover VWF to E&M Works	0		04-Jan-13	0
S3000510	NSCS: Waterproofing on roof at VWF	21	05-Feb-13	07-Mar-13	21
S3000540	NSCS: Painting / Epoxy to Double Door Enclosure	30	08-Jan-13	16-Feb-13	30
S3000550	NSCS: Shanghai Render	60	31-Jan-13	19-Apr-13	60
E&M Installation and T&C					
S3000800	NSCS: Commencement of E&M works at G/F, B1 and B2	0	31-Dec-12*		0
S3000810	NSCS: E&M Installation at G/F, B1 and B2	123	31-Dec-12	02-May-13	123
S3000820	NSCS: Install DOU Ductwork at G/F, B1 and B2	30	31-Dec-12	29-Jan-13	30
S3000830	NSCS: Install 8 sets of Sliding Frames and discharge screw conveyors	60	30-Jan-13	30-Mar-13	60
S3000840	NSCS: Install 2 nos. of Vehical Washing Facilities	109	04-Jan-13	22-Apr-13	109
S3000870	NSCS: Commencement of E&M works at B2A, B3, B4, B4	0	03-Jan-13		0
S3000880	NSCS: E&M Installation at B2A, B3, B4 and B4A	120	03-Jan-13	02-May-13	120
S3000890	NSCS: Install Solid Pump Pipework	75	31-Jan-13	15-Apr-13	75
S3000900	NSCS: Install DOU Ductwork at B2a, B3, B4 and B4A	30	03-Jan-13	01-Feb-13	30
S3000910	NSCS: Install Cable Tray at B2a, B3, B4 and B4A	18	02-Feb-13	19-Feb-13	18
S3000920	NSCS: Install Cable at B2a, B3, B4 and B4A	14	19-Feb-13	05-Mar-13	14
S3000940	NSCS: Commencement of E&M works at Pipe Support between SDB and NSCS	0	31-Jan-13		0
S3000950	NSCS: Install Solid Pump Pipework to SDB	70	31-Jan-13	10-Apr-13	70
S3000960	NSCS: Building Services Equipment	66	31-Jan-13	06-Apr-13	66
S3000966	NSCS: Install Lighting System	35	31-Jan-13	06-Mar-13	35
Sludge Dewatering Building and DOU6					
Structure					
S3001200	SDB: Remaining Piling and Structure	490	08-Feb-11 A	21-Jan-13	18
S3001340	SDB: Close Wall Stem at DG Store	12	17-Aug-12 A	19-Jan-13	12
Architecture Finishes					
S3001380	SDB: Building Finishes and Landscape	320	05-Jul-12 A	10-Oct-13	229
S3001390	SDB: Finishes to G/F	180	05-Jul-12 A	15-Feb-13	35
S3001398	SDB: Chequer Plate Flooring	30	16-Feb-13	23-Mar-13	30
S3001410	SDB: Epoxy Coat to Mezzanine Floor	20	31-Dec-12	23-Jan-13	20

Actual Work ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - January to March 2013

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3001420	SDB: Finishes to 1/F	150	16-Jul-12 A	10-Apr-13	80
S3001421	SDB: Plastering to Centrifuge Rooms	30	30-Nov-12 A	11-Jan-13	10
S3001422	SDB: Painting to Centrifuge Rooms	30	31-Oct-12 A	17-Jan-13	5
S3001432	SDB: Tile and Skirting to Pantry	14	31-Dec-12	16-Jan-13	14
S3001433	SDB: Painting to Pantry	7	17-Jan-13	24-Jan-13	7
S3001434	SDB: Plastering to Server Room	10	08-Jan-13	18-Jan-13	10
S3001435	SDB: Painting to Server Room	7	19-Jan-13	26-Jan-13	7
S3001436	SDB: Handover Server Room to E&M	0		26-Jan-13	0
S3001437	SDB: Screeding / Plastering to Laboratory Room	14	28-Jan-13	18-Feb-13	14
S3001438	SDB: Painting to Laboratory Room	7	19-Feb-13	26-Feb-13	7
S3001439	SDB: Epoxy Skirting to Laboratory Room	7	27-Feb-13	06-Mar-13	7
S3001452	SDB: Painting to PAU Room	7	31-Dec-12	08-Jan-13	7
S3001454	SDB: Epoxy Coat / Skirting to PAU Room	7	09-Jan-13	16-Jan-13	7
S3001455	SDB: Handover PAU Room to E&M Works	0		16-Jan-13	0
S3001463	SDB: Finishes to 2/F	52	31-Dec-12	07-Mar-13	52
S3001464	SDB: Plastering to Conveyor Room	7	31-Dec-12	08-Jan-13	7
S3001466	SDB: Painting to Conveyor Room	7	09-Jan-13	16-Jan-13	7
S3001468	SDB: Epoxy Coat / skirting to Conveyor Room	7	17-Jan-13	24-Jan-13	7
S3001470	SDB: Screeding and Tile to Toilet	21	25-Jan-13	25-Feb-13	21
S3001472	SDB: Painting to Toilet	10	25-Feb-13	08-Mar-13	10
S3001474	SDB: Screeding and Tile to Washing Machine Room	20	31-Dec-12	23-Jan-13	20
S3001476	SDB: Painting to Washing Machine Room	10	24-Jan-13	04-Feb-13	10
S3001478	SDB: Painting to Pump Area	20	05-Feb-13	05-Mar-13	20
S3001500	SDB: Window, Door and Louver	80	03-Oct-12 A	15-Feb-13	35
S3001515	SDB: External Finishes	145	11-Dec-12 A	13-Jun-13	130
S3001520	SDB: Shanghai Render	80	19-Jan-13	02-May-13	80
S3001524	SDB: Skylight	60	31-Dec-12	16-Mar-13	60
Procurement, Manufacture and Delivery					
S3001630	SDB: Deliver Distributed Control System	31	31-Dec-12	30-Jan-13	31
E&M Installation and T&C					
S3003020	SDB: E&M Works at Ground Floor	220	06-Sep-12 A	22-Apr-13	113
S3003030	SDB: Pump Room Area	220	06-Sep-12 A	22-Apr-13	113
S3003040	SDB: Install High Level Centrate and Process Water Pipework (Grid B - Grid C)	30	22-Oct-12 A	05-Jan-13	6
S3003070	SDB: Install Low Level Sludge Feed Pipe (Grid B - Grid C)	18	12-Dec-12 A	11-Jan-13	6
S3003080	SDB: Install High Level Centrate and Process Water Pipework (Grid A - Grid B)	30	10-Dec-12 A	30-Jan-13	10
S3003130	SDB: Install DOU6 Ductwork	30	31-Dec-12	29-Jan-13	30
S3003140	SDB: Install Cable Tray in Pump Room	25	31-Dec-12	24-Jan-13	25
S3003150	SDBL Install Cable in Pump Room	30	25-Jan-13	23-Feb-13	30
S3003170	SDB: Polyelectrolyte Area	145	05-Oct-12 A	25-Mar-13	85
S3003190	SDB: Install 4 nos. of Polyelectrolyte Storage Tank (Grid 3 - Grid 7)	26	31-Oct-12 A	24-Jan-13	25
S3003200	SDB: Install 4 nos. of Polyelectrolyte Mixing Tank (Grid 8- Grid 12)	26	06-Nov-12 A	20-Jan-13	21
S3003210	SDB: Install Prototype Polyelectrolyte Preparation Unit	28	21-Jan-13	17-Feb-13	28
S3003220	SDB: Install 2 nos. of Polyelectrolyte Transfer Pumps	20	29-Jan-13	17-Feb-13	20
S3003230	SDB: Install 4 nos. of Polyelectrolyte Preparation Unit	30	19-Jan-13	17-Feb-13	30
S3003240	SDB: Install Polyelectrolyte Feed Pipe	14	18-Feb-13	03-Mar-13	14
S3003260	SDB: Install Cable Tray at Polyelectrolyte Area	15	25-Jan-13	08-Feb-13	15
S3003270	SDB: Install Cable at Polyelectrolyte Area	17	01-Feb-13	17-Feb-13	17
S3003290	SDB: Solid Pump Area	111	24-Dec-12 A	29-Mar-13	89
S3003300	SDB: Install Solid Pump Pipework & Support	100	24-Dec-12 A	29-Mar-13	89
S3003310	SDB: Install 4 nos. of Solid Pump	45	24-Dec-12 A	07-Feb-13	39
S3003320	SDB: Install 2 nos. of Solid Pump Hydraulic Power Pack	45	31-Dec-12 A	12-Feb-13	44
S3003330	SDB: Install Cable Tray at Pump Area	24	13-Feb-13	08-Mar-13	24
S3003360	SDB: MCC Room	74	12-Nov-12 A	20-Mar-13	80



Actual Work ◆ ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - January to March 2013

Date	Revision	Checked	Approved

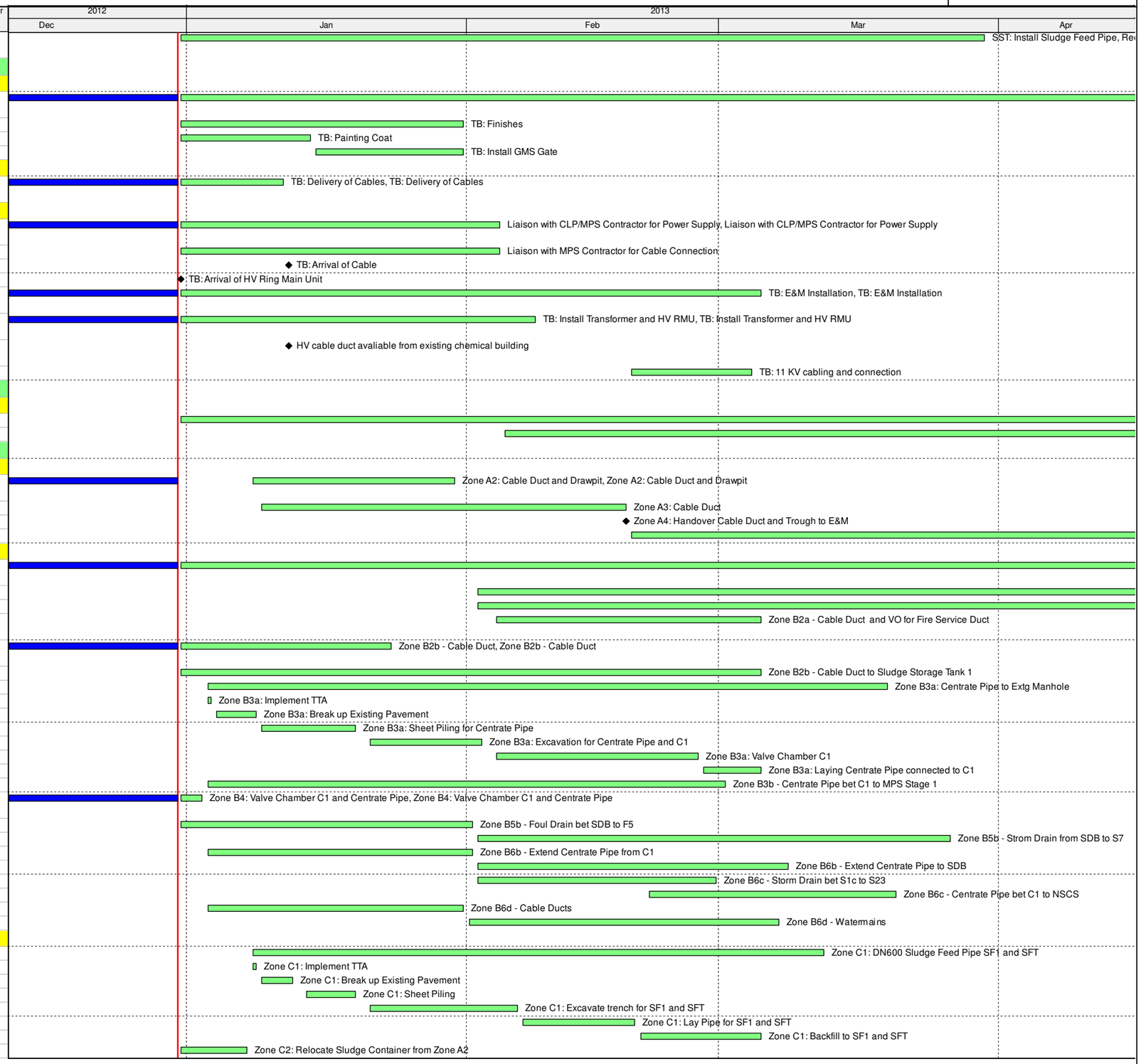
Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3003370	SDB: Install panel support in MCC Room	28	12-Nov-12 A	06-Jan-13	7
S3003380	SDB: Install Main Switch Board & Control Panel LV System	60	07-Jan-13	07-Mar-13	60
S3003390	SDB: Install Cable Tray in MCC Room	15	07-Jan-13	21-Jan-13	15
S3003400	SDB: Install Cable in MCC Room	25	22-Jan-13	15-Feb-13	25
S3003410	SDB: Commencement of E&M works at DOU6 and DG Store	0	19-Jan-13		0
S3003420	SDB: DOU6 and DG Store Area	90	19-Jan-13	19-Apr-13	90
S3003430	SDB: Install 4 nos. of DOU6	60	19-Jan-13	20-Mar-13	60
S3003440	SDB: Install 1 set of Process Water Pumping System	85	19-Jan-13	14-Apr-13	85
S3003445	SDB: Install Storage Tanks at DGS	7	31-Dec-12	06-Jan-13	7
S3003450	SDB: Install Pumping System at DGS	60	18-Feb-13	19-Apr-13	60
S3003490	SDB: E&M Works at First Floor	165	05-Oct-12 A	20-Apr-13	111
S3003500	SDB: Centrifuge Room 2 (South)	107	05-Oct-12 A	19-Mar-13	79
S3003530	SDB: Install DOU6 Ductwork in South Centrifuge Room	30	31-Dec-12	29-Jan-13	30
S3003540	SDB: Install Cable Tray in South Centrifuge Room	56	31-Dec-12	24-Feb-13	56
S3003550	SDB: Install Cable in South Centrifuge Room	56	17-Jan-13	13-Mar-13	56
S3003570	SDB: Centrifuge Room 1 (North)	150	31-Oct-12 A	09-Apr-13	100
S3003590	SDB: Install 7 nos. of Centrifuges (Centrifuge no. 1, 3, 5, 7, 9, 11, 13)	60	06-Dec-12 A	04-Jan-13	5
S3003600	SDB: Install DOU6 Ductwork in North Centrifuge Room	30	15-Jan-13	13-Feb-13	30
S3003610	SDB: Install Cable Tray in North Centrifuge Room	50	16-Feb-13	06-Apr-13	50
S3003640	SDB: Control Room	120	25-Dec-12 A	11-Apr-13	102
S3003650	SDB: Install 14 nos. of Centrifuge Control Panel	90	25-Dec-12 A	24-Mar-13	84
S3003660	SDB: Install Cable Tray in Control Room	14	31-Dec-12	13-Jan-13	14
S3003680	SDB: Commencement of E&M works at Hydraulic Power Pack Room	0	12-Jan-13		0
S3003690	SDB: Hydraulic Power Pack Room	60	12-Jan-13	12-Mar-13	60
S3003700	SDB: Install 2 nos. of Solid Pump Hydraulic Power Pack	20	12-Jan-13	31-Jan-13	20
S3003710	SDB: Install Cable Tray in Power Pack Room	20	01-Feb-13	20-Feb-13	20
S3003720	SDB: Install Cable in Power Pack Room	20	21-Feb-13	12-Mar-13	20
S3003730	SDB: Commencement of E&M works at Server Room	0	31-Jan-13		0
S3003740	SDB: DCS Server Room	80	31-Jan-13	20-Apr-13	80
S3003750	SDB: Install Server	38	31-Jan-13	09-Mar-13	38
S3003790	SDB: E&M Works at Roof Floor	123	03-Oct-12 A	24-Mar-13	84
S3003800	SDB: Install 6 nos. of Carbon Filter on Roof	60	03-Oct-12 A	31-Jan-13	32
S3003810	SDB: Install DOU6 Ductwork on Roof	30	16-Jan-13	14-Feb-13	30
S3003820	SDB: Install Cable Tray on Roof	15	15-Feb-13	01-Mar-13	15
S3003840	SDB: Building Services	105	14-Jan-13	28-Apr-13	105
S3003850	SDB: Install AFA Panel	30	14-Jan-13	12-Feb-13	30
S3003860	SDB: Install FS Pump Panel	30	13-Feb-13	14-Mar-13	30
S3003880	SDB: Install Air Purifer Unit	30	14-Jan-13	12-Feb-13	30
S3003890	SDB: Install VRV Units	30	13-Feb-13	14-Mar-13	30
S3003940	SDB: Install Fire Service Pipe Line	75	13-Feb-13	28-Apr-13	75
Sludge Storage Tank 6 and 7					
Structure					
S3005850	SST: External Painting for Tank 6	30	22-Jan-13	02-Mar-13	30
S3006310	SST: Finishes for Tank 6 and 7	113	31-Oct-12 A	24-Apr-13	90
S3006340	SST: Water Tightness Test to Tank 7	18	31-Dec-12	21-Jan-13	18
S3006350	SST: Install Railing at Tank 7	18	22-Jan-13	16-Feb-13	18
S3006360	SST: External Painting for Tank 7	30	18-Feb-13	23-Mar-13	30
E&M Installation and T&C					
S3006505	SST: Liaise with ST2 for System Connection	30	30-Nov-12 A	29-Jan-13	30
S3006670	SST: Commencement of E&M at Sludge Storage TanK 6	0	31-Dec-12		0
S3006680	SST: Install Sludge Feed Pipe, Recirculation Pipe and Scum Pipe	89	31-Dec-12	30-Mar-13	89
S3006685	SST: Install Jet Mixer at Sludge Storage Tank 6	45	18-Feb-13	04-Apr-13	45
S3006700	SST: Commencement of E&M at Sludge Storage Tank 7	0	31-Dec-12		0
S3006710	SST: Install Jet Mixer at Sludge Storage Tank 7	45	18-Feb-13	04-Apr-13	45

Actual Work ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - January to March 2013

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3006720	SST: Install Sludge Feed Pipe, Recirculation Pipe and Scum Pipe	89	31-Dec-12	30-Mar-13	89
Transformer Bay					
Structure					
S3007010	TB: Structure and Finishes	300	21-Nov-11 A	02-May-13	96
S3007310	TB: Finishes	27	31-Dec-12	31-Jan-13	27
S3007320	TB: Painting Coat	12	31-Dec-12	14-Jan-13	12
S3007330	TB: Install GMS Gate	15	15-Jan-13	31-Jan-13	15
Procurement, Manufacture and Delivery					
S3007560	TB: Delivery of Cables	30	10-Nov-12 A	11-Jan-13	12
E&M Installation and T&C					
S3007510	Liaison with CLP/MPS Contractor for Power Supply	75	22-Oct-12 A	04-Feb-13	30
S3007520	Liaison with MPS Contractor for Cable Connection	30	31-Dec-12	04-Feb-13	30
S3007555	TB: Arrival of Cable	0	12-Jan-13		0
S3007575	TB: Arrival of HV Ring Main Unit	0	31-Dec-12		0
S3007800	TB: E&M Installation	72	19-Nov-12 A	05-Mar-13	65
S3007820	TB: Install Transformer and HV RMU	58	19-Nov-12 A	08-Feb-13	40
S3007830	HV cable duct avaliable from existing chemical building	0	12-Jan-13		0
S3007840	TB: 11 KV cabling and connection	14	19-Feb-13	04-Mar-13	14
System					
Piping and Ducting					
S3009940	Firemains bet External Suppy Point to Zone B1	105	31-Dec-12*	13-May-13	105
S3009950	Additional Fire Signal Duct bet Admin Bldg - SDB	70	05-Feb-13	07-May-13	70
External (Civil) Works					
Zone A					
S3008410	Zone A2: Cable Duct and Drawpit	24	08-Dec-12 A	30-Jan-13	20
S3008420	Zone A3: Cable Duct	30	09-Jan-13	18-Feb-13	30
S3008434	Zone A4: Handover Cable Duct and Trough to E&M	0		18-Feb-13	0
S3008440	Zone A5: Cabe Trough to MPS	50	19-Feb-13	20-Apr-13	50
Zone B					
S3008460	Zone B1 - Drainage bet S12a to S12c	100	26-Nov-12 A	22-Apr-13	88
S3008490	Zone B1 - Watermains	60	02-Feb-13	22-Apr-13	60
S3008500	Zone B1 - DN200 Watermains	60	02-Feb-13	22-Apr-13	60
S3008535	Zone B2a - Cable Duct and VO for Fire Service Duct	21	04-Feb-13	05-Mar-13	21
S3008600	Zone B2b - Cable Duct	36	11-Dec-12 A	23-Jan-13	20
S3008605	Zone B2b - Cable Duct to Sludge Storage Tank 1	50	31-Dec-12	05-Mar-13	50
S3008610	Zone B3a: Centrate Pipe to Extg Manhole	60	03-Jan-13	19-Mar-13	60
S3008620	Zone B3a: Implement TTA	1	03-Jan-13	03-Jan-13	1
S3008630	Zone B3a: Break up Existing Pavement	4	04-Jan-13	08-Jan-13	4
S3008640	Zone B3a: Sheet Piling for Centrate Pipe	10	09-Jan-13	19-Jan-13	10
S3008645	Zone B3a: Excavation for Centrate Pipe and C1	12	21-Jan-13	02-Feb-13	12
S3008655	Zone B3a: Valve Chamber C1	15	04-Feb-13	26-Feb-13	15
S3008660	Zone B3a: Laying Centrate Pipe connected to C1	6	27-Feb-13	05-Mar-13	6
S3008690	Zone B3b - Centrate Pipe bet C1 to MPS Stage 1	45	03-Jan-13	01-Mar-13	45
S3008750	Zone B4: Valve Chamber C1 and Centrate Pipe	84	17-Aug-12 A	02-Jan-13	2
S3008900	Zone B5b - Foul Drain bet SDB to F5	28	31-Dec-12	01-Feb-13	28
S3008910	Zone B5b - Strom Drain from SDB to S7	40	02-Feb-13	26-Mar-13	40
S3008959	Zone B6b - Extend Centrate Pipe from C1	26	03-Jan-13	01-Feb-13	26
S3008960	Zone B6b - Extend Centrate Pipe to SDB	25	02-Feb-13	08-Mar-13	25
S3008970	Zone B6c - Storm Drain bet S1c to S23	18	02-Feb-13	28-Feb-13	18
S3008980	Zone B6c - Centrate Pipe bet C1 to NSCS	24	21-Feb-13	20-Mar-13	24
S3009020	Zone B6d - Cable Ducts	25	03-Jan-13	31-Jan-13	25
S3009030	Zone B6d - Watermains	25	01-Feb-13	07-Mar-13	25
Zone C					
S3009090	Zone C1: DN600 Sludge Feed Pipe SF1 and SFT	50	08-Jan-13	12-Mar-13	50
S3009100	Zone C1: Implement TTA	1	08-Jan-13	08-Jan-13	1
S3009110	Zone C1: Break up Existing Pavement	4	09-Jan-13	12-Jan-13	4
S3009120	Zone C1: Sheet Piling	6	14-Jan-13	19-Jan-13	6
S3009130	Zone C1: Excavate trench for SF1 and SFT	15	21-Jan-13	06-Feb-13	15
S3009140	Zone C1: Lay Pipe for SF1 and SFT	6	07-Feb-13	19-Feb-13	6
S3009150	Zone C1: Backfill to SF1 and SFT	12	20-Feb-13	05-Mar-13	12
S3009315	Zone C2: Relocate Sludge Container from Zone A2	8	31-Dec-12	07-Jan-13	8

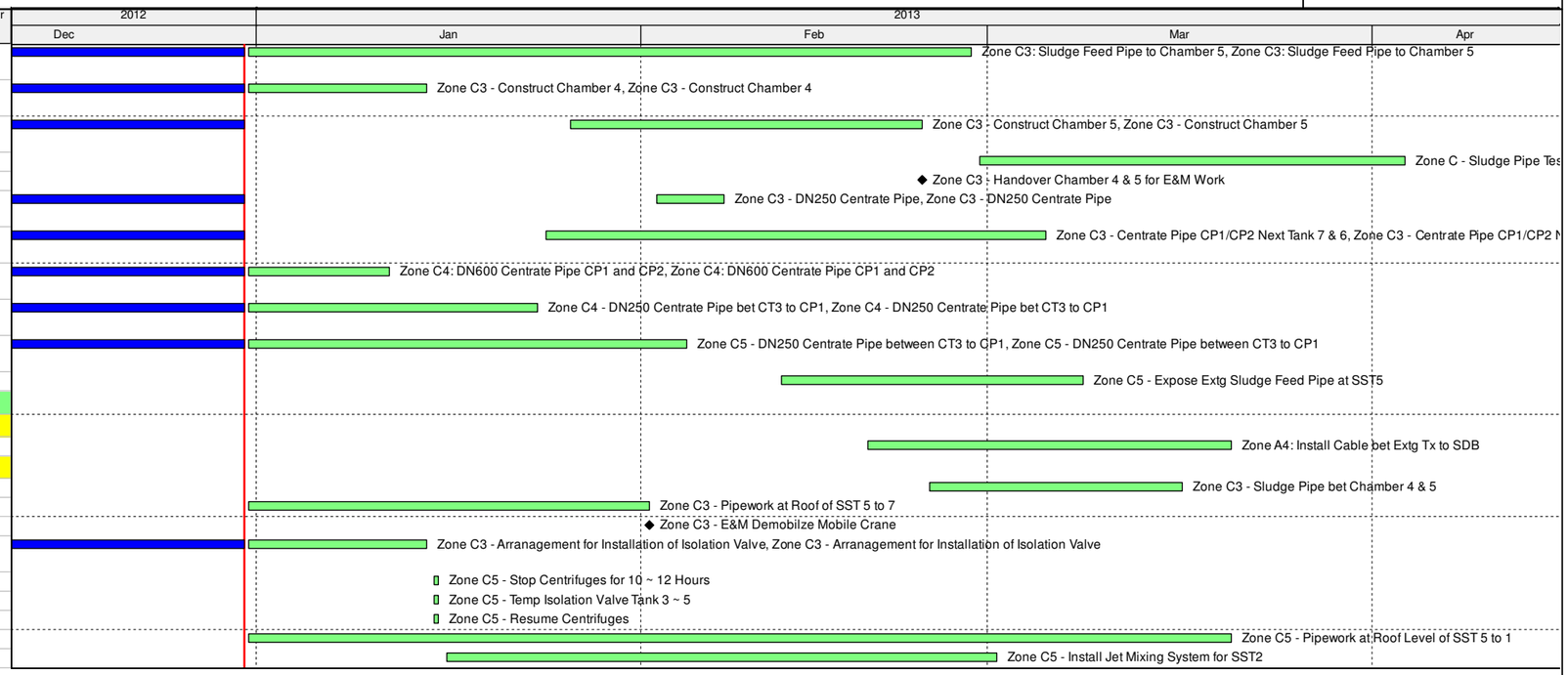


Actual Work ◆ ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - January to March 2013

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3009410	Zone C3: Sludge Feed Pipe to Chamber 5	75	05-Nov-12 A	27-Feb-13	45
S3009430	Zone C3 - Construct Chamber 4	49	05-Nov-12 A	14-Jan-13	12
S3009440	Zone C3 - Construct Chamber 5	49	05-Nov-12 A	23-Feb-13	20
S3009450	Zone C - Sludge Pipe Test bet Chamber 5 to SDB	30	28-Feb-13	03-Apr-13	30
S3009460	Zone C3 - Handover Chamber 4 & 5 for E&M Work	0		23-Feb-13	0
S3009500	Zone C3 - DN250 Centrate Pipe	50	01-Dec-12 A	07-Feb-13	5
S3009510	Zone C3 - Centrate Pipe CP1/CP2 Next Tank 7 & 6	60	19-Nov-12 A	05-Mar-13	30
S3009540	Zone C4: DN600 Centrate Pipe CP1 and CP2	120	05-Jun-12 A	11-Jan-13	10
S3009550	Zone C4 - DN250 Centrate Pipe bet CT3 to CP1	35	19-Oct-12 A	23-Jan-13	20
S3009570	Zone C5 - DN250 Centrate Pipe between CT3 to CP1	85	01-Aug-12 A	04-Feb-13	30
S3009630	Zone C5 - Expose Extg Sludge Feed Pipe at SST5	25	12-Feb-13	08-Mar-13	25
External (E&M) Works					
Zone A					
S3008435	Zone A4: Install Cable bet Extg Tx to SDB	30	19-Feb-13	20-Mar-13	30
Zone C					
S3009470	Zone C3 - Sludge Pipe bet Chamber 4 & 5	21	24-Feb-13	16-Mar-13	21
S3009480	Zone C3 - Pipework at Roof of SST 5 to 7	33	31-Dec-12	01-Feb-13	33
S3009490	Zone C3 - E&M Demobilze Mobile Crane	0		01-Feb-13	0
S3009495	Zone C3 - Arranagement for Installation of Isolation Valve	15	31-Oct-12 A	14-Jan-13	15
S3009590	Zone C5 - Stop Centrifuges for 10 ~ 12 Hours	1	15-Jan-13	15-Jan-13	1
S3009600	Zone C5 - Temp Isolation Valve Tank 3 ~ 5	1	15-Jan-13	15-Jan-13	1
S3009610	Zone C5 - Resume Centrifuges	1	15-Jan-13	15-Jan-13	1
S3009620	Zone C5 - Pipework at Roof Level of SST 5 to 1	80	31-Dec-12	20-Mar-13	80
S3009625	Zone C5 - Install Jet Mixing System for SST2	45	16-Jan-13	01-Mar-13	45



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

Three Month Rolling Programme - January to March 2013

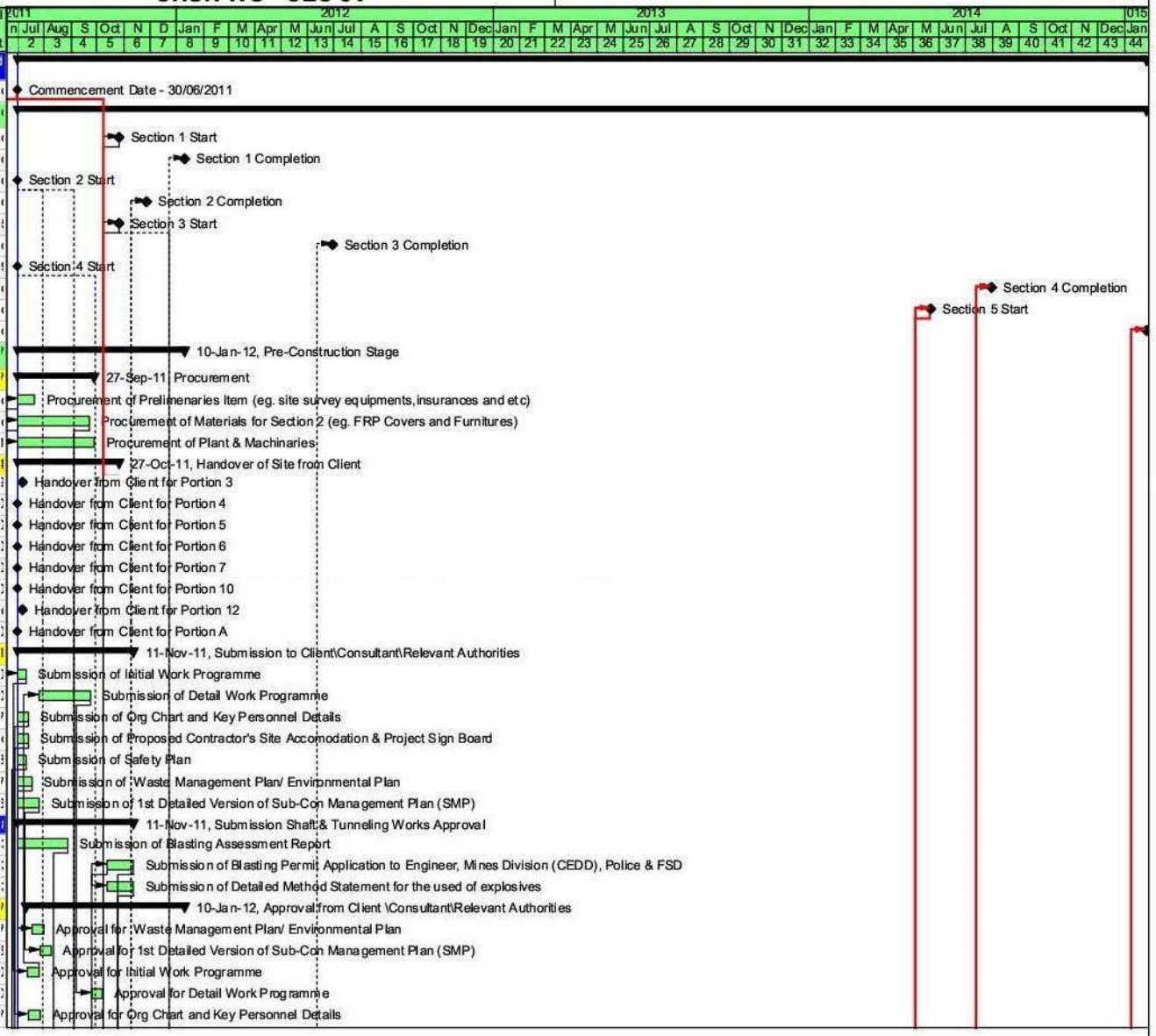
Date	Revision	Checked	Approved

Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

Activity Name	Original Duration	Start	Finish
Harbour Area Treatment Scheme Stage 2	1263d	30-Jun-11	26-Jan-15
Commencement Date - 30/06/2011	0d	30-Jun-11	
Sectional Completion Milestones	1263d	30-Jun-11	26-Jan-15
Section 1 Start	0d	27-Oct-11	
Section 1 Completion	0d		10-Jan-12*
Section 2 Start	0d	30-Jun-11*	
Section 2 Completion	0d		26-Nov-11*
Section 3 Start	0d	27-Oct-11	
Section 3 Completion	0d		28-Jun-12*
Section 4 Start	0d	30-Jun-11	
Section 4 Completion	0d		30-Jul-14*
Section 5 Start	0d	22-May-14	
Section 5 Completion	0d		26-Jan-15*
Pre-Construction Stage	188d	30-Jun-11	10-Jan-12
Procurement	87d	30-Jun-11	27-Sep-11
Procurement of Prelimenaries Item (eg. site survey eq	21d	30-Jun-11	20-Jul-11
Procurement of Materials for Section 2 (eg. FRP Cove	84d	30-Jun-11	21-Sep-11
Procurement of Plant & Machinaries	90d	30-Jun-11	27-Sep-11
Handover of Site from Client	115d	30-Jun-11	27-Oct-11
Handover from Client for Portion 3	0d	07-Jul-11*	
Handover from Client for Portion 4	0d	30-Jun-11	
Handover from Client for Portion 5	0d	30-Jun-11	
Handover from Client for Portion 6	0d	30-Jun-11	
Handover from Client for Portion 7	0d	30-Jun-11	
Handover from Client for Portion 10	0d	30-Jun-11	
Handover from Client for Portion 12	0d	07-Jul-11*	
Handover from Client for Portion A	0d	30-Jun-11*	
Submission to Client\Consultant\Relevant Author	130d	30-Jun-11	11-Nov-11
Submission of Initial Work Programme	12d	30-Jun-11	11-Jul-11
Submission of Detail Work Programme	60d	26-Jul-11	23-Sep-11
Submission of Org Chart and Key Personnel Details	14d	30-Jun-11	13-Jul-11
Submission of Proposed Contractor's Site Accomodati	14d	30-Jun-11	13-Jul-11
Submission of Safety Plan	11d	30-Jun-11	10-Jul-11
Submission of Waste Management Plan/ Environmen	18d	30-Jun-11	17-Jul-11
Submission of 1st Detailed Version of Sub-Con Manag	27d	30-Jun-11	26-Jul-11
Submission Shaft & Tunneling Works Approval	130d	30-Jun-11	11-Nov-11
Submission of Blasting Assessment Report	60d	30-Jun-11	28-Aug-11
Submission of Blasting Permit Application to Engine	30d	13-Oct-11	11-Nov-11
Submission of Detailed Method Statement for the us	30d	13-Oct-11	11-Nov-11
Approval from Client \Consultant\Relevant Autho	177d	11-Jul-11	10-Jan-12
Approval for Waste Management Plan/ Environmental	14d	18-Jul-11	31-Jul-11
Approval for 1st Detailed Version of Sub-Con Manage	14d	27-Jul-11	09-Aug-11
Approval for Initial Work Programme	14d	12-Jul-11	25-Jul-11
Approval for Detail Work Programme	14d	24-Sep-11	07-Oct-11
Approval for Org Chart and Key Personnel Details	14d	14-Jul-11	27-Jul-11



Actual Work ◆ Milestone
Remaining Work ▼ Summary
Critical Work

DC/2009/18 - HARBOUR AREA TREATMENT SCHEME STAGE 2A - Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities.

INITIAL WORK PROGRAMME, REV.0 (1st Submission)

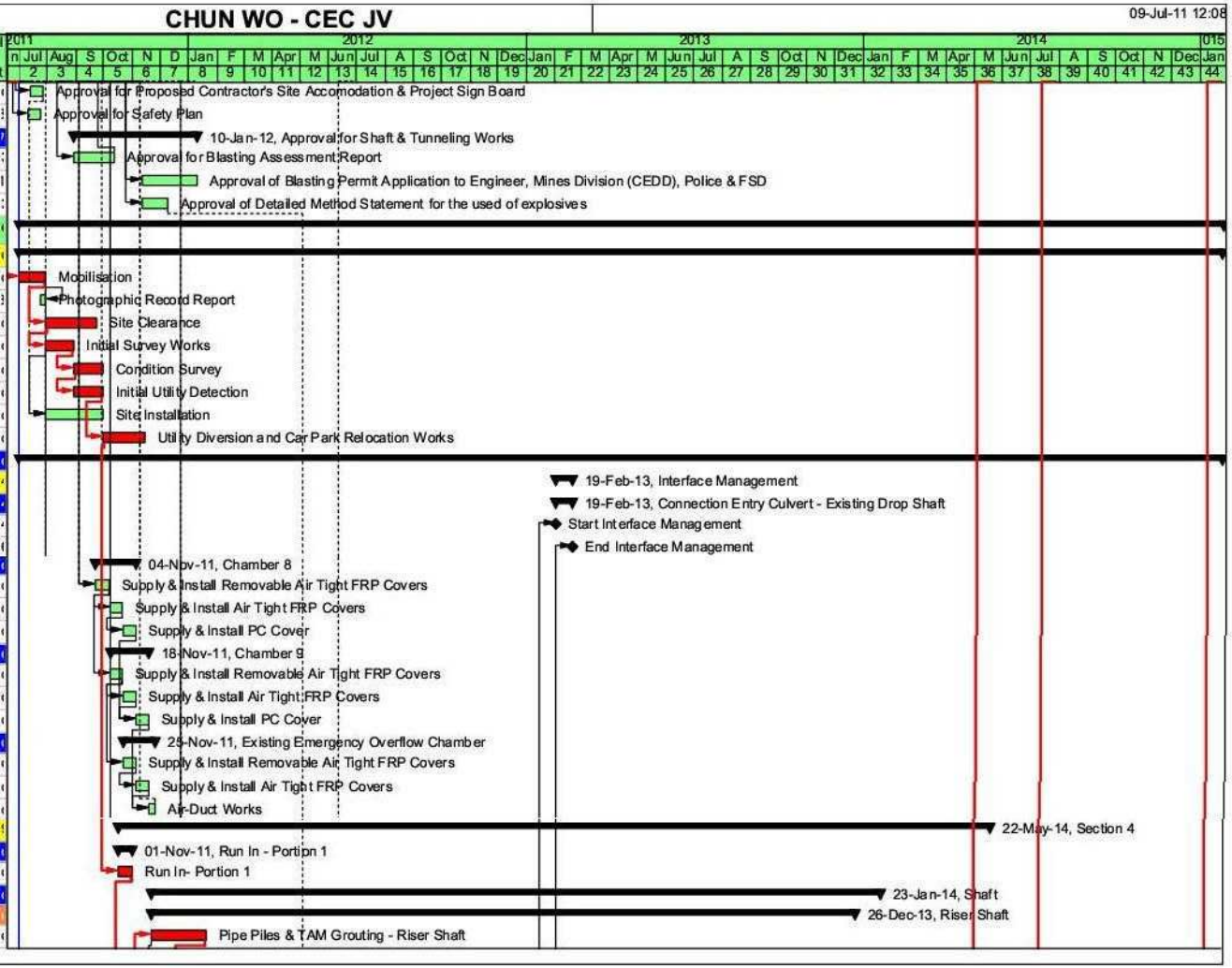
Date	Revision	Checked	Approved
11-Jul-11	Initial Work Programme		

Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

Activity Name	Original Duration	Start	Finish
Approval for Proposed Contractor's Site Accomodation	14d	14-Jul-11	27-Jul-11
Approval for Safety Plan	14d	11-Jul-11	24-Jul-11
Approval for Shaft & Tunneling Works	128d	29-Aug-11	10-Jan-12
Approval for Blasting Assessment Report	45d	29-Aug-11	12-Oct-11
Approval of Blasting Permit Application to Engineer,	60d	12-Nov-11	10-Jan-12
Approval of Detailed Method Statement for the used	28d	12-Nov-11	09-Dec-11
Construction Stage	1263d	30-Jun-11	26-Jan-15
Preliminaries	1262d	30-Jun-11	24-Jan-15
Mobilisation	24d	30-Jun-11	30-Jul-11
Photographic Record Report	5d	25-Jul-11	30-Jul-11
Site Clearance	42d	30-Jul-11	23-Sep-11
Initial Survey Works	24d	30-Jul-11	30-Aug-11
Condition Survey	24d	30-Aug-11	30-Sep-11
Initial Utility Detection	24d	30-Aug-11	30-Sep-11
Site Installation	48d	30-Jul-11	30-Sep-11
Utility Diversion and Car Park Relocation Works	36d	30-Sep-11	14-Nov-11
Reccuring Items	1262d	30-Jun-11	24-Jan-15
Interface Management	17d	01-Feb-13	19-Feb-13
Connection Entry Culvert - Existing Drop Shaft	17d	01-Feb-13	19-Feb-13
Start Interface Management	0d	01-Feb-13	
End Interface Management	0d		19-Feb-13
Chamber 8	42d	22-Sep-11	04-Nov-11
Supply & Install Removable Air Tight FRP Covers	12d	22-Sep-11	07-Oct-11
Supply & Install Air Tight FRP Covers	12d	08-Oct-11	21-Oct-11
Supply & Install PC Cover	12d	22-Oct-11	04-Nov-11
Chamber 9	41d	08-Oct-11	18-Nov-11
Supply & Install Removable Air Tight FRP Covers	12d	08-Oct-11	21-Oct-11
Supply & Install Air Tight FRP Covers	12d	22-Oct-11	04-Nov-11
Supply & Install PC Cover	12d	05-Nov-11	18-Nov-11
Existing Emergency Overflow Chamber	33d	22-Oct-11	25-Nov-11
Supply & Install Removable Air Tight FRP Covers	12d	22-Oct-11	04-Nov-11
Supply & Install Air Tight FRP Covers	12d	05-Nov-11	18-Nov-11
Air-Duct Works	6d	19-Nov-11	25-Nov-11
Section 4	918d	17-Oct-11	22-May-14
Run In - Portion 1	14d	17-Oct-11	01-Nov-11
Run In- Portion 1	13d	17-Oct-11	01-Nov-11
Shaft	767d	22-Nov-11	23-Jan-14
Riser Shaft	740d	22-Nov-11	26-Dec-13
Pipe Piles & TAM Grouting - Riser Shaft	49d	22-Nov-11	20-Jan-12

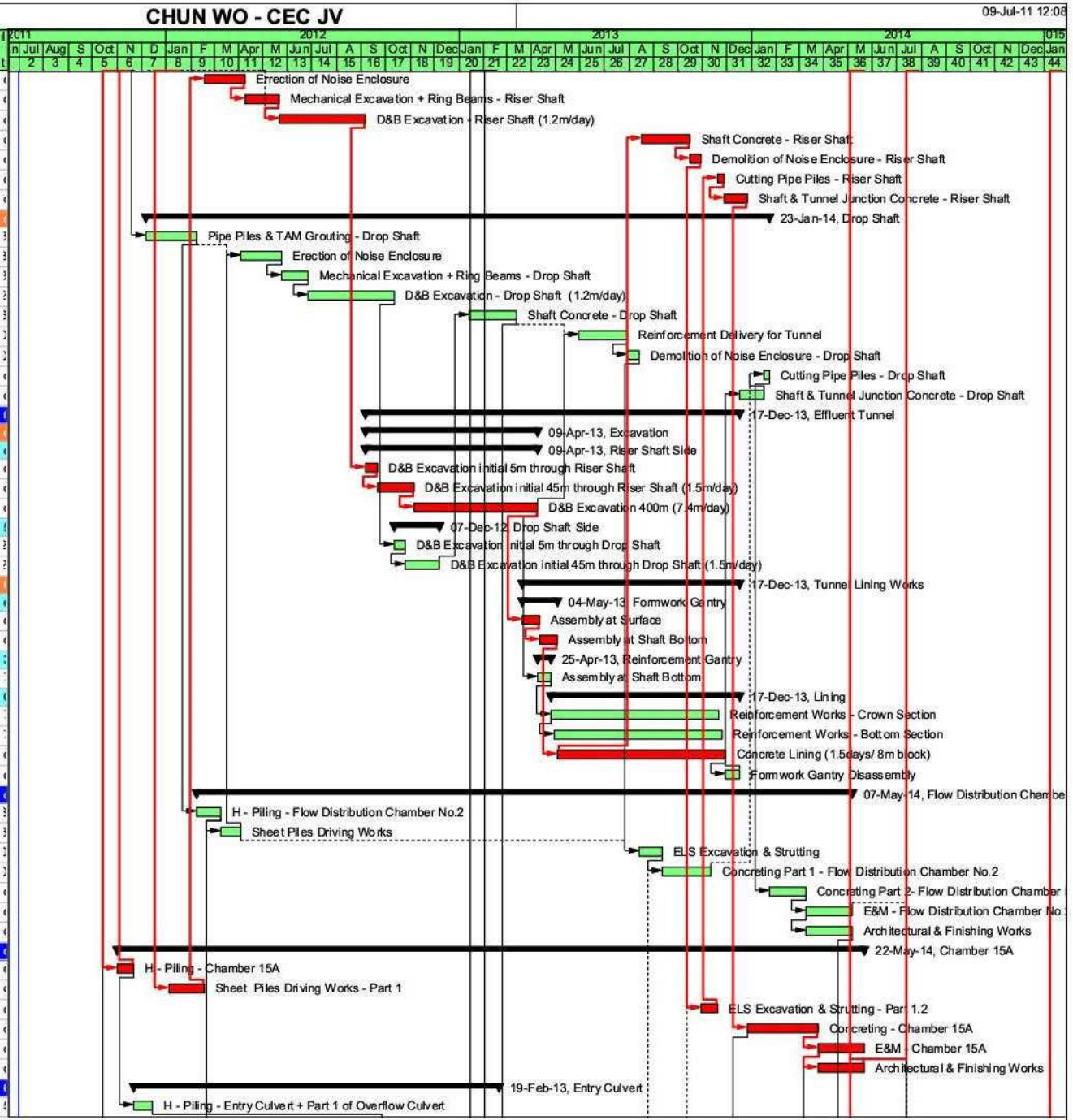


Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

Activity Name	Original Duration	Start	Finish
Erection of Noise Enclosure	42d	18-Feb-12	09-Apr-12
Mechanical Excavation + Ring Beams - Riser Sh	35d	09-Apr-12	21-May-12
D&B Excavation - Riser Shaft (1.2m/day)	72d	21-May-12	06-Sep-12
Shaft Concrete - Riser Shaft	46d	16-Aug-13	16-Oct-13
Demolition of Noise Enclosure - Riser Shaft	12d	16-Oct-13	30-Oct-13
Cutting Pipe Piles - Riser Shaft	6d	20-Nov-13	27-Nov-13
Shaft & Tunnel Junction Concrete - Riser Shaft	24d	27-Nov-13	26-Dec-13
Drop Shaft	754d	07-Dec-11	23-Jan-14
Pipe Piles & TAM Grouting - Drop Shaft	49d	07-Dec-11	08-Feb-12
Erection of Noise Enclosure	42d	03-Apr-12	24-May-12
Mechanical Excavation + Ring Beams - Drop Sha	27d	24-May-12	26-Jun-12
D&B Excavation - Drop Shaft (1.2m/day)	69d	26-Jun-12	12-Oct-12
Shaft Concrete - Drop Shaft	48d	14-Jan-13	14-Mar-13
Reinforcement Delivery for Tunnel	48d	30-May-13	29-Jul-13
Demolition of Noise Enclosure - Drop Shaft	12d	29-Jul-13	13-Aug-13
Cutting Pipe Piles - Drop Shaft	6d	16-Jan-14	23-Jan-14
Shaft & Tunnel Junction Concrete - Drop Shaft	24d	17-Dec-13	16-Jan-14
Effluent Tunnel	453d	06-Sep-12	17-Dec-13
Excavation	209d	06-Sep-12	09-Apr-13
Riser Shaft Side	209d	06-Sep-12	09-Apr-13
D&B Excavation initial 5m through Riser Shaft	10d	06-Sep-12	21-Sep-12
D&B Excavation initial 45m through Riser Sha	30d	21-Sep-12	06-Nov-12
D&B Excavation 400m (7.4m/day)	105d	06-Nov-12	09-Apr-13
Drop Shaft Side	54d	12-Oct-12	07-Dec-12
D&B Excavation initial 5m through Drop Shaft	10d	12-Oct-12	26-Oct-12
D&B Excavation initial 45m through Drop Sha	30d	26-Oct-12	07-Dec-12
Tunnel Lining Works	263d	21-Mar-13	17-Dec-13
Formwork Gantry	43d	21-Mar-13	04-May-13
Assembly at Surface	18d	21-Mar-13	12-Apr-13
Assembly at Shaft Bottom	18d	12-Apr-13	04-May-13
Reinforcement Gantry	16d	09-Apr-13	25-Apr-13
Assembly at Shaft Bottom	14d	09-Apr-13	25-Apr-13
Lining	228d	25-Apr-13	17-Dec-13
Reinforcement Works - Crown Section	169d	25-Apr-13	21-Nov-13
Reinforcement Works - Bottom Section	169d	29-Apr-13	25-Nov-13
Concrete Lining (1.5days/ 8m block)	169d	04-May-13	29-Nov-13
Formwork Gantry Disassembly	15d	29-Nov-13	17-Dec-13
Flow Distribution Chamber No.2	795d	08-Feb-12	07-May-14
H - Piling - Flow Distribution Chamber No.2	26d	08-Feb-12	09-Mar-12
Sheet Piles Driving Works	21d	09-Mar-12	03-Apr-12
ELS Excavation & Strutting	23d	13-Aug-13	11-Sep-13
Concreting Part 1 - Flow Distribution Chamber No.2	48d	11-Sep-13	11-Nov-13
Concreting Part 2- Flow Distribution Chamber No.2	36d	23-Jan-14	10-Mar-14
E&M - Flow Distribution Chamber No.2	48d	10-Mar-14	07-May-14
Architectural & Finishing Works	48d	10-Mar-14	07-May-14
Chamber 15A	904d	01-Nov-11	22-May-14
H - Piling - Chamber 15A	18d	01-Nov-11	22-Nov-11
Sheet Piles Driving Works - Part 1	36d	04-Jan-12	18-Feb-12
ELS Excavation & Strutting - Part 1.2	18d	30-Oct-13	20-Nov-13
Concreting - Chamber 15A	72d	26-Dec-13	25-Mar-14
E&M - Chamber 15A	48d	25-Mar-14	22-May-14
Architectural & Finishing Works	48d	25-Mar-14	22-May-14
Entry Culvert	439d	22-Nov-11	19-Feb-13
H - Piling - Entry Culvert + Part 1 of Overflow Culvert	20d	22-Nov-11	15-Dec-11

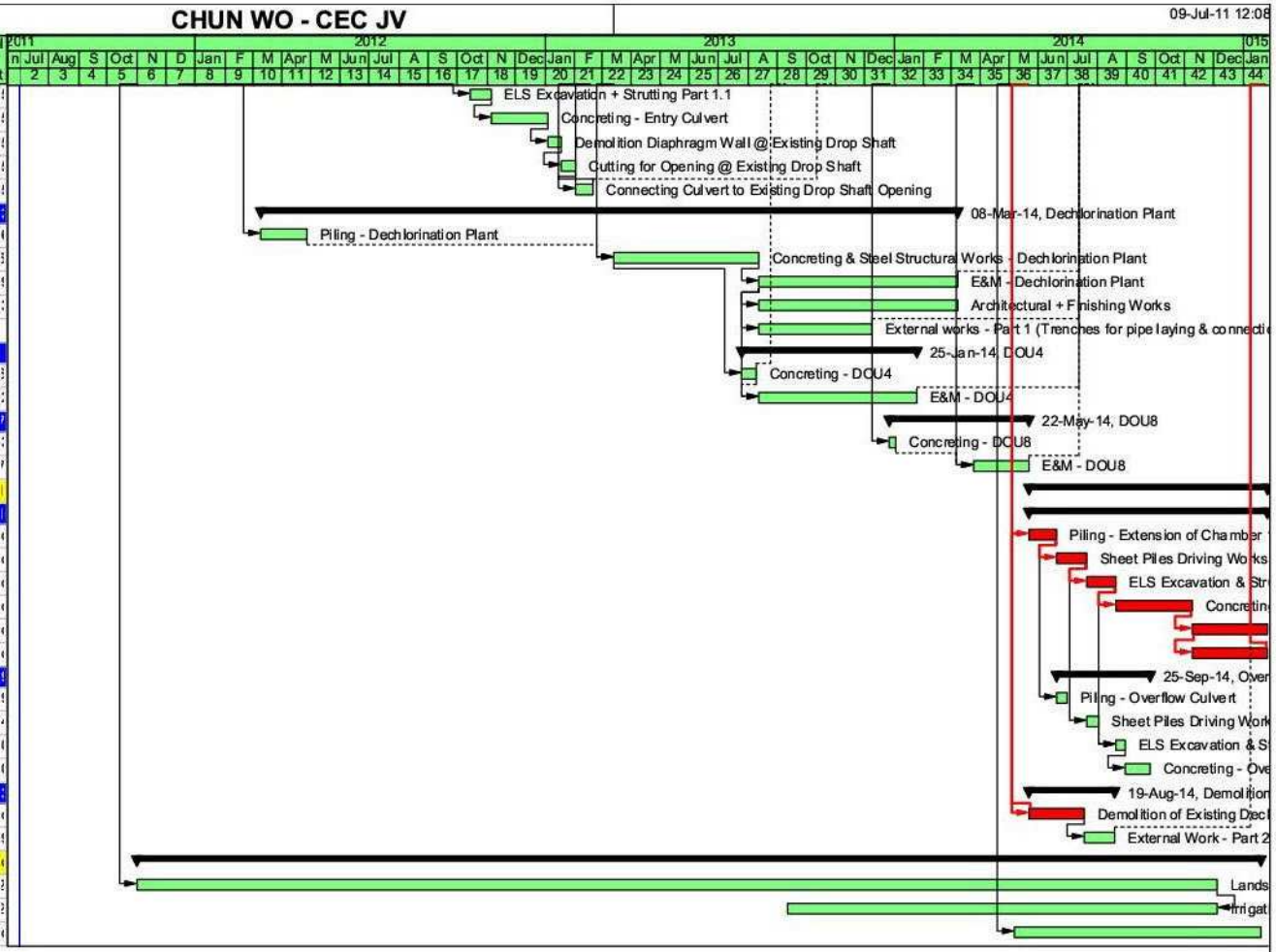


Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

Activity Name	Original Duration	Start	Finish
ELS Excavation + Strutting Part 1.1	18d	15-Oct-12	05-Nov-12
Concreting - Entry Culvert	50d	05-Nov-12	04-Jan-13
Demolition Diaphragm Wall @ Existing Drop Shaft	12d	04-Jan-13	18-Jan-13
Cutting for Opening @ Existing Drop Shaft	12d	18-Jan-13	01-Feb-13
Connecting Culvert to Existing Drop Shaft Opening	12d	01-Feb-13	19-Feb-13
Dechlorination Plant	706d	09-Mar-12	08-Mar-14
Piling - Dechlorination Plant	40d	09-Mar-12	26-Apr-12
Concreting & Steel Structural Works - Dechlorinatio	123d	14-Mar-13	12-Aug-13
E&M - Dechlorination Plant	168d	12-Aug-13	08-Mar-14
Architectural + Finishing Works	168d	12-Aug-13	08-Mar-14
External works - Part 1 (Trenches for pipe laying &	96d	12-Aug-13	09-Dec-13
DOU4	176d	25-Jul-13	25-Jan-14
Concreting - DOU4	12d	25-Jul-13	09-Aug-13
E&M - DOU4	135d	12-Aug-13	25-Jan-14
DOU8	143d	26-Dec-13	22-May-14
Concreting - DOU8	6d	26-Dec-13	03-Jan-14
E&M - DOU8	48d	25-Mar-14	22-May-14
Section 5	240d	22-May-14	26-Jan-15
Extension of Chamber	240d	22-May-14	26-Jan-15
Piling - Extension of Chamber 15	24d	22-May-14	20-Jun-14
Sheet Piles Driving Works - Part 2	25d	20-Jun-14	21-Jul-14
ELS Excavation & Strutting - Part 2	24d	21-Jul-14	20-Aug-14
Concreting - Extension of Chamber 15	63d	20-Aug-14	08-Nov-14
E&M - Extension of Chamber 15	65d	08-Nov-14	26-Jan-15
Architectural & Finishing Works - Extension of Chan	65d	08-Nov-14	26-Jan-15
Overflow Culvert	92d	20-Jun-14	25-Sep-14
Piling - Overflow Culvert	8d	20-Jun-14	30-Jun-14
Sheet Piles Driving Works - Overflow Culvert	10d	21-Jul-14	02-Aug-14
ELS Excavation & Strutting - Overflow Culvert	8d	20-Aug-14	30-Aug-14
Concreting - Overflow Culvert	20d	30-Aug-14	25-Sep-14
Demolition of Existing Dechlorination Plant	86d	22-May-14	19-Aug-14
Demolition of Existing Dechlorination Plant	48d	22-May-14	19-Jul-14
External Work - Part 2 (Concrete Pavement)	24d	19-Jul-14	19-Aug-14
Landscape Works	1138d	01-Nov-11	19-Jan-15
Landscaping Softwork	918d	01-Nov-11	05-Dec-14
Irrigation System	450d	11-Sep-13	05-Dec-14
Establishment Works	258d	07-May-14	19-Jan-15



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
C10TGP01UTGP						
Portion of Site						
Possession/ Vacation of Portion						
PS1040	Portion 5 Handover	0	23-Nov-12		-212	0%
PS1060	Portion 6 Handover	0	25-Dec-12		0	0%
PS1100	Portion 8 Handover	0	23-Nov-12		-273	0%
PS1130	Portion 9 Vacation	0		23-Nov-12	49	0%
Civil and Geotechnical Submission						
Contractor Design, Submission and Approval						
Detailed Design Approval (DDA) Submission for Structural/ Builder Works						
DDA5 (SCIMPS No. 1 Valve Chamber)						
CCD00131	Prepare/ Submission of Structural Design of RC for SCIMPS No.1 Valve Chamber (DDA 5)	412	01-Dec-11 A	15-Jan-13	7	86.89%
CCD00132	Comment of Structural Design of RC for SCIMPS No.1 Valve Chamber	30	16-Jan-13	14-Feb-13	7	0%
CCD00133	Resubmission of Structural Design of RC for SCIMPS No.1 Valve Chamber	30	15-Feb-13	16-Mar-13	7	0%
CCD00134	Final Approval of Structural Design of RC for SCIMPS No.1 Valve Chamber	30	17-Mar-13	15-Apr-13	7	0%
DDA7 (Main Flow Culvert)						
CCD00153	Resubmission of Structural Design of RC for Main flow culvert	75	02-Aug-12 A	15-Oct-12 A		100%
CCD00154	Final Approval of Structural Design of RC for Main flow culvert	30	16-Oct-12 A	14-Nov-12 A		100%
DDA8 (Extension of CEPT tanks)						
CCD00590	Resubmission of Structural Design of RC for CEPT tank - Above G.L.	75	31-Jul-12 A	13-Oct-12 A		100%
CCD00600	Final Approval of Structural Design of RC for CEPT tank - Above G.L.	45	14-Oct-12 A	27-Nov-12	147	88.89%
CCD00670	Resubmission of Structural Design of RC for Flocculation tank and main disturbution channel - Above G.L.	75	31-Aug-12 A	13-Nov-12 A		100%
CCD00680	Final Approval of Structural Design of RC for Flocculation tank and main disturbution channel - Above G.L.	45	14-Nov-12 A	28-Dec-12	207	20%
DDA9 (Extension of NaHClO Bldg)						
CCD00161	Prepare/ Submission of Structural Design of RC for Extension of NaHClO Bldg (DDA 9)	201	19-Apr-12 A	05-Nov-12 A		100%
CCD00162	Comment of Structural Design of RC for for Extension of NaHClO Bldg	45	23-Nov-12	06-Jan-13	111	0%
CCD00163	Resubmission of Structural Design of RC for Extension of NaHClO Bldg	45	07-Jan-13	20-Feb-13	111	0%
CCD00164	Final Approval of Structural Design of RC for Extension of NaHClO Bldg	30	21-Feb-13	22-Mar-13	111	0%
CCD00207	Comment of Structural Design of Steel Structures	45	01-Sep-12 A	15-Oct-12 A		100%
CCD00208	Resubmission of Structural Design of Steel Structures	45	16-Oct-12 A	29-Nov-12	368	84.44%
CCD00209	Final Approval of Structural Design of Steel Structures	30	30-Nov-12	29-Dec-12	368	0%
DDA11 (DOU No. 3 and DOU No. 1b)						
CCD00201	Prepare/ Submission of Structural Design of RC for DOU No. 1b (DDA 11)	175	08-Jun-12 A	29-Nov-12	333	96%
CCD00202	Comment of Structural Design of RC for for DOU No. 1b	45	30-Nov-12	13-Jan-13	333	0%
CCD00203	Resubmission of Structural Design of RC for DOU No. 1b	75	14-Jan-13	29-Mar-13	333	0%
CCD00205	Prepare/ Submission of Structural Design of RC for DOU No. 3 (DDA 11)	175	08-Jun-12 A	29-Nov-12	323	96%
CCD00221	Comment of Structural Design of RC for for DOU No. 3	45	30-Nov-12	13-Jan-13	323	0%
CCD00222	Resubmission of Structural Design of RC for DOU No. 3	75	14-Jan-13	29-Mar-13	323	0%
DDA12 (Odour Duct Bridge)						
CCD00181	Prepare/ Submission of Structural Design of RC for Odour Duct bridge (DDA 12)	175	08-Jun-12 A	29-Nov-12	344	96%
CCD00182	Comment of Structural Design of RC for for Odour Duct bridge	45	30-Nov-12	13-Jan-13	344	0%
CCD00183	Resubmission of Structural Design of RC for Odour Duct bridge	75	14-Jan-13	29-Mar-13	344	0%
CCD00500	Comment of Cost saving design and Geotechnical Design review of Structures	14	06-Oct-12 A	19-Oct-12 A		100%
CCD00510	Resubmission of Cost saving design and Geotechnical Design review of Structures	14	20-Oct-12 A	02-Nov-12 A		100%
CCD00520	Final Approval of Cost saving design and Geotechnical Design review of Structures	14	03-Nov-12 A	16-Nov-12 A		100%
Electrical & Mechanical Equipment Submission						
Contractor Design, Submission and Approval						
Aproved In-princple (AIP) Submission						
AIP No. 4 - Piping system for recirculation and centrate flow/ NWK overflow pipe						
ECD00052	Comment/ Approval of AIP for piping system for Recirculation system in SCIMPS2 (AIP No. 4)	306	31-Mar-12 A	07-Jan-13	239	85%
ECD00057	Comment/ Approval of AIP for piping system for centrate return systen in SCIMPS2 (AIP No. 4)	309	28-Mar-12 A	08-Jan-13	144	85%
ECD00059	Comment/ Approval of AIP for piping system for NWK overflow pipe (AIP No. 4)	309	28-Mar-12 A	08-Jan-13	244	85%
AIP No. 5 - Air mixing System for Wet Well						
ECD00055	Comment/ Approval of AIP for air mixing system for wet well (AIP No. 5)	335	31-Mar-12 A	26-Dec-12	12	90%
AIP No. 6 - Flushing water System for MPS2 and Inlet chamber						
ECD00070	Comment/ Approval of AIP for flushing water system for interconnection tunnels, valve chamber (AIP No. 6)	321	14-Apr-12 A	19-Nov-12 A		100%
AIP No. 7 - Proccess Air Supply System for Flocculation tanks and Extended Disturbution Channel						
ECD00080	Comment/ Approval of AIP for Process Air Supply System for Extended CEPT Tanks (AIP No. 7)	265	10-Apr-12 A	20-Jan-13	63	78%
AIP No. 8 - Sludge and Scum Pumping System						
ECD00086	Comment/ Approval of AIP for Sludge Pumping System (AIP No. 8)	245	31-Mar-12 A	05-Nov-12 A		100%
ECD00088	Comment/ Approval of AIP for Scum Pumping System (AIP No. 8)	273	28-Mar-12 A	20-Dec-12	152	90%
AIP No. 9 - Process & Protected Water Supply System						
ECD00160	Comment/ Approval of AIP for Process Water supply System for CEPT Tanks (AIP No. 9)	254	21-Apr-12 A	18-Dec-12	218	90%
ECD00162	Comment/ Approval of AIP for Protected Water supply System for CEPT Tanks (AIP No. 9)	257	21-Apr-12 A	25-Oct-12 A		100%
AIP No. 11 - Chemical (FECl3 and Polymer) Dosing System						
ECD00180	Comment/ Approval of AIP for Chemical Storage and Dosing System (AIP No. 11)	327	31-Mar-12 A	09-Feb-13	105	76%
AIP No. 12 - Sodium Hypochlorite Storage, transfer and dosing system						
ECD00200	Comment/ Approval of AIP for Sodium Hypochorite storage, transfer and dosing system (AIP No. 12)	273	23-Mar-12 A	13-Nov-12 A		100%
AIP No. 13 - Deodourization System for MPS, CEPT tanks, NWK PS						
ECD00210	Comment/ Approva AIP for Deodourization System DOU1b for NWK PS, CMB & NWKPTW overflow chamber (AIP No	260	16-Mar-12 A	22-Oct-12 A		100%
ECD00212	Comment/ Approva AIP for Deodourization System DOU3 for MPS2 and Extended CEPT tanks (AIP No. 13)	294	13-Mar-12 A	04-Feb-13	75	75%
AIP No. 18 - Ventilation System of MPS, valve chamber and Switchgear bldg						
ECD00260	Comment/ Approval of AIP for Ventilation System for MPS,Valve chamber and Switchroom (AIP No. 18)	327	08-Apr-12 A	01-Mar-13	-15	70%

Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
ECD00430	Comment/ Approval of AIP for Mechanical Ventilation System and A/C at Switchgear Bldg (AIP No. 18)	330	05-Apr-12 A	01-Mar-13	-16	70%
ECD00450	Comment/ Approval of AIP for air conditioning, air exhaust Fan and pre-heated air handling unit at MPS (AIP No. 18)	330	05-Apr-12 A	01-Mar-13	-16	70%
ECD00470	Comment/ Approval of AIP for Staircase Pressuization for Staircase No. 3 at MPS (AIP No. 18)	330	05-Apr-12 A	01-Mar-13	-16	70%
AIP No. 19 - Fire Service Installation						
ECD00270	Comment/ Approval of AIP for Fire Hydrant, Hose Reel and Automatic Sprinkler System (AIP No. 19)	228	01-May-12	22-Feb-13	12	60%
AIP No. 23 - Lifting applicance						
ECD00410	Comment/ Approval of AIP for Lifting appliance (AIP No. 23)	224	13-Mar-12 A	22-Oct-12 A		100%
Infrastructure Construction Works						
Works for Section 1A						
Time for Sectional Completion						
TC0040	Sectional Completion Date	0		10-Jan-13*	0	0%
TC0045	Anticipated Completion Date (Section 1A)	0		05-Dec-12*	0	0%
Portion 3 (Extension of CEPT Tanks)						
Civil Works						
P904230	Construction of Dia 250 watermain and connection	55	11-Aug-12 A	16-Oct-12 A		100%
P904250	Construction of Chemical pipe trench (CH90-100)	18	17-Oct-12 A	07-Nov-12 A		100%
Portion 9 (Permanent Storage Building)						
Contractor Design for Structural and E&M						
P900434	Approval/ Comment of GBP from FSD	40	25-Sep-12 A	13-Nov-12 A		100%
P900472	Approval/ comment of WSD submission of Fire services water	21	25-Sep-12 A	20-Oct-12 A		100%
P900473	Submission of WSD WWO046	1	15-Nov-12 A	16-Nov-12 A		100%
P900500	Submission of FSD Form 314	1	13-Nov-12 A	14-Nov-12 A		100%
P904870	Submission of Design for New Genset Room of SB/ CMB	10	18-Oct-12 A	30-Oct-12 A		100%
P904880	Approval/ comment of New Genset Room of SB/ CMB	6	30-Oct-12 A	05-Nov-12 A		100%
RC Works						
P900550	Removal of existing chemical waste containers and shelter	4	25-Oct-12 A	29-Oct-12 A		100%
P900560	Construction of new genset room	18	06-Nov-12 A	15-Nov-12 A		100%
P900570	Construction of new footing for relocation of chemical waste containers and shelter	12	23-Nov-12	06-Dec-12	-9	0%
Electrical and Machainical Installation						
P900510	Electricial cable laying (External)	107	06-Jul-12 A	05-Dec-12	-3	90%
P900580	Genset installation and electrical works	5	07-Dec-12	12-Dec-12	-9	0%
Builder and finishes Works						
P900165	Dismantle external scaffolding	9	05-Oct-12 A	15-Oct-12 A		100%
External underground works						
P901030	F.S. watermain laying (from Ngong Shung Rd)	18	22-Oct-12 A	12-Nov-12 A		100%
P901120	Sewage pipe laying	18	16-Oct-12 A	06-Nov-12 A		100%
P901170	Construction of Surface channel	18	07-Nov-12 A	28-Nov-12	24	75%
Testing and Commissioning						
P900150	Testing and Commissioning	2	13-Dec-12	14-Dec-12	-9	0%
P900250	FSD inspection	1	15-Dec-12	15-Dec-12	-9	0%
P900530	Final Testing and commissioning	10	15-Dec-12	25-Dec-12	12	0%
P900540	Handover to ST2	4	25-Dec-12	29-Dec-12	12	0%
Portion 1 (Container Maintenance Building)						
Contractor Design for Structural and E&M						
P904850	Submission of RC Design for FS pump room of Container Maintenance Building	21	25-Sep-12 A	15-Oct-12 A		100%
P904860	Approval/ Comment for Design fo FS pump room of Container Maintenance Building	14	16-Oct-12 A	29-Oct-12 A		100%
Civil Works						
P902045	Construction of underground cable ducts	21	22-Sep-12 A	13-Oct-12 A		100%
RC works						
P100110	Construction of columns and roof slabs for main structures	25	20-Sep-12 A	20-Oct-12 A		100%
P100400	Dismantle scaffoldings for plant rooms	3	12-Oct-12 A	15-Oct-12 A		100%
P100405	Dismantle scaffoldings for main structures	2	30-Oct-12 A	31-Oct-12 A		100%
P100450	Construction of RC footing FS water tank and Pump room	21	30-Oct-12 A	19-Nov-12 A		100%
Electrical and Machainical Installation						
P100070	Spreader overhead crane Installation	44	06-Nov-12 A	31-Dec-12	-2	30%
P100075	Pressure jet system installation	25	20-Nov-12 A	18-Dec-12	7	12%
P100310	Electrical and FS Installation for plant rooms	12	24-Oct-12 A	06-Nov-12 A		100%
P100380	Electrical and FS Installation for main structures	12	06-Nov-12 A	19-Nov-12 A		100%
P100460	Water tank installation and FS pipe for FS pump room	5	22-Nov-12 A	26-Nov-12	3	20%
Builder and finishes Works						
P100080	Internal Finishes for plant rooms	6	16-Oct-12 A	22-Oct-12 A		100%
P100390	Internal finishes for main structures	4	01-Nov-12 A	05-Nov-12 A		100%
P100395	Internal finishes for FS pump room	2	20-Nov-12 A	21-Nov-12 A		100%
P100410	External finishes	21	31-Oct-12 A	20-Nov-12 A		100%
P100420	Installation of FRP platform	21	06-Nov-12 A	30-Nov-12	0	70%
Testing and Commissioning						
P100090	Testing and Commissioning for FSD inspection	4	30-Nov-12	05-Dec-12	0	0%
P100320	FSD inspection	1	05-Dec-12	06-Dec-12	0	0%
P100430	Final Testing and commissioning	10	31-Dec-12	10-Jan-13	-3	0%
P100440	Handover to ST2	3	10-Jan-13	13-Jan-13	-3	0%
Works for Section 2						
Portion 4 (Switchgear Building)						
Submission of Design for Structural and E&M						
P401080	DDA of Lifting Appliance	90	15-Jul-12 A	12-Oct-12 A		100%
P401090	Approval/ Comment of DDA of Lifting Appliance	90	14-Aug-12 A	11-Nov-12 A		100%

Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

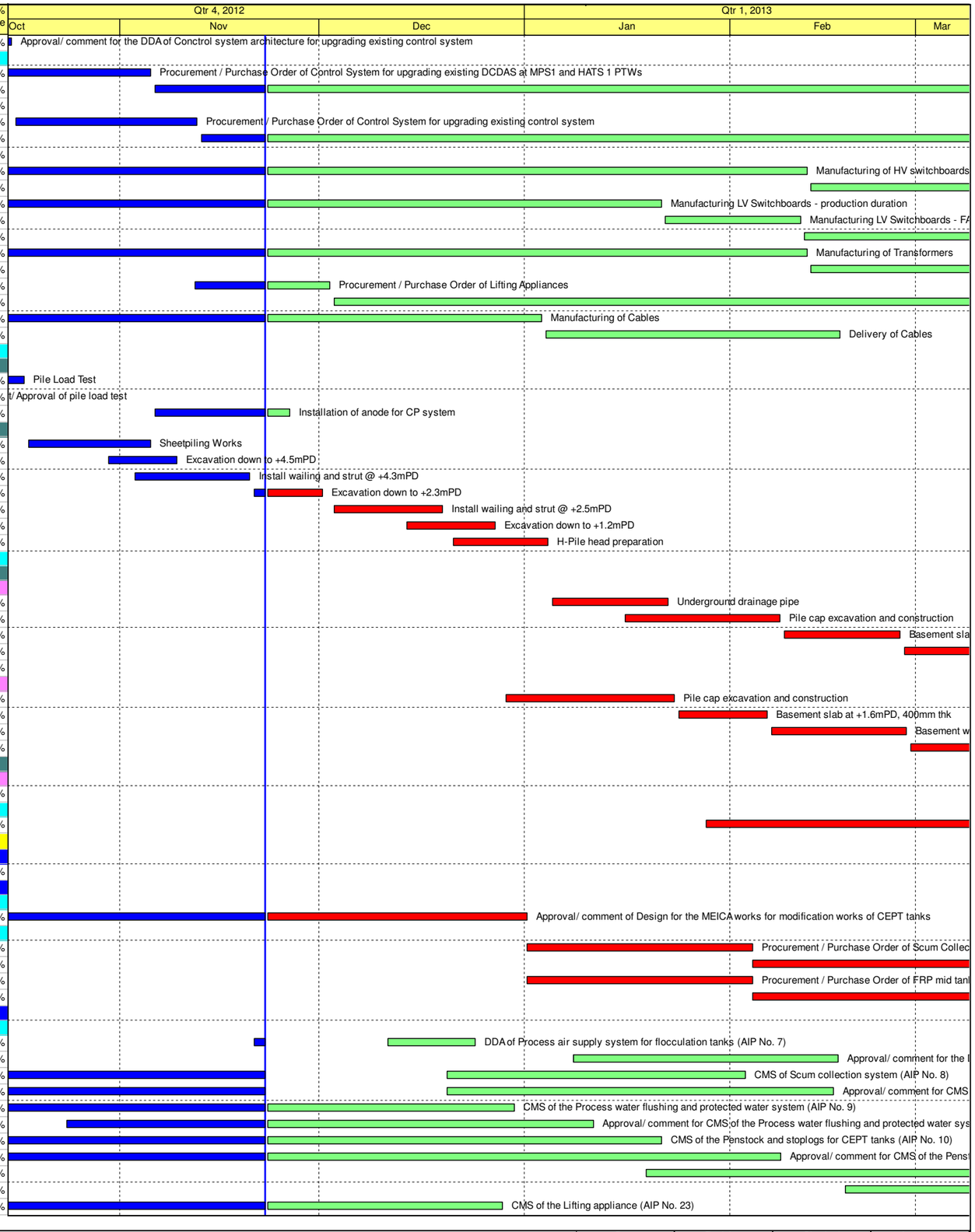
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P401104	Approval/ comment for the DDA of Conctrol system architecture for upgrading existing control system	123	15-Jun-12 A	15-Oct-12 A		100%
Procurement/ Order/ Manufacturing/ Delivery						
P302550	Procurement / Purchase Order of Control System for upgrading existing DCDAS at MPS1 and HATS 1 PTWs	28	09-Oct-12 A	05-Nov-12 A		100%
P302560	Manufacturing of Control System for upgrading existing DCDAS at MPS1 and HATS 1 PTWs	125	06-Nov-12 A	10-Mar-13	2	13.6%
P302570	Delivery of Control System for upgrading existing DCDAS at MPS1 and HATS 1 PTWs	30	11-Mar-13	09-Apr-13	2	0%
P302580	Procurement / Purchase Order of Control System for upgrading existing control system	28	16-Oct-12 A	12-Nov-12 A		100%
P302590	Manufacturing of Control System for upgrading existing control system	125	13-Nov-12 A	17-Mar-13	51	8%
P302600	Delivery of Control System for upgrading existing control system	30	18-Mar-13	16-Apr-13	51	0%
P402050	Manufacturing of HV switchboards	250	08-Jun-12 A	12-Feb-13	90	67.2%
P402060	Delivery of HV switchboards	30	13-Feb-13	14-Mar-13	90	0%
P402082	Manufacturing LV Switchboards - production duration	180	26-Jul-12 A	21-Jan-13	119	66.67%
P402083	Manufacturing LV Switchboards - FAT	21	22-Jan-13	11-Feb-13	119	0%
P402090	Delivery of LV switchboards	30	12-Feb-13	13-Mar-13	119	0%
P402110	Manufacturing of Transformers	245	13-Jun-12 A	12-Feb-13	99	66.53%
P402120	Delivery of Transformers	30	13-Feb-13	14-Mar-13	99	0%
P402160	Procurement / Purchase Order of Lifting Appliances	21	12-Nov-12 A	02-Dec-12	19	52.38%
P402170	Manufacturing of Lifting Appliances	150	03-Dec-12	01-May-13	19	0%
P402230	Manufacturing of Cables	210	08-Jun-12 A	03-Jan-13	116	80%
P402240	Delivery of Cables	45	04-Jan-13	17-Feb-13	116	0%
Foundation Works						
Driven H-Pile						
P400025	Pile Load Test	12	04-Oct-12 A	17-Oct-12 A		100%
P400030	Submit/ Approval of pile load test	5	04-Oct-12 A	09-Oct-12 A		100%
P400050	Installation of anode for CP system	18	06-Nov-12 A	26-Nov-12	53	83.33%
Excavation and Lateral Support for Substructure						
P400060	Sheetpiling Works	15	18-Oct-12 A	05-Nov-12 A		100%
P400930	Excavation down to +4.5mPD	10	30-Oct-12 A	09-Nov-12 A		100%
P400940	Install wailing and strut @ +4.3mPD	15	03-Nov-12 A	20-Nov-12 A		100%
P400941	Excavation down to +2.3mPD	10	21-Nov-12 A	01-Dec-12	-47	20%
P400942	Install wailing and strut @ +2.5mPD	15	03-Dec-12	19-Dec-12	-47	0%
P400950	Excavation down to +1.2mPD	10	14-Dec-12	27-Dec-12	-47	0%
P400960	H-Pile head preparation	10	21-Dec-12	04-Jan-13	-47	0%
R.C. Works						
Substructure						
GL1-GL5						
P400070	Underground drainage pipe	15	05-Jan-13	22-Jan-13	-47	0%
P400970	Pile cap excavation and construction	21	16-Jan-13	08-Feb-13	-47	0%
P400980	Basement slab at +1.6mPD, 400mm thk	12	09-Feb-13	26-Feb-13	-47	0%
P400990	Basement wall and column	15	27-Feb-13	15-Mar-13	-47	0%
P401120	Ground Floor slab at +5.0 and 4.6mPD	12	16-Mar-13	02-Apr-13	-47	0%
GL6-10						
P902340	Pile cap excavation and construction	21	29-Dec-12	23-Jan-13	-33	0%
P902350	Basement slab at +1.6mPD, 400mm thk	12	24-Jan-13	06-Feb-13	-33	0%
P902360	Basement wall, column and staircase	15	07-Feb-13	27-Feb-13	-33	0%
P902380	Ground Floor slab at +5.0, +4.6 and +5.75mPD	12	28-Feb-13	13-Mar-13	-33	0%
Superstructure						
GL6-GL10						
P902390	Columns between G/F and 1/F	12	14-Mar-13	27-Mar-13	-33	0%
Civil Works						
P400080	CLP Cable Trench	35	28-Jan-13	13-Mar-13	-57	0%
Works for Section 3						
Interface between Civil/ ABWF/ E&M works (Access Floor No. 1, -32.0mPD)						
MPS0010	Access Floor No. 1 (-32.0mPD) interface for start of installation of BS and E&M equipment	0		19-Mar-13	1588	0%
Portion 1 (Existing CEPT tanks)						
Submission of design of E&M works						
P106010	Approval/ comment of Design for the MEICA works for modification works of CEPT tanks	197	13-May-12	01-Jan-13	-32	80%
Procurement/ Order/ Manufacturing/ Delivery						
P106110	Procurement / Purchase Order of Scum Collection System	34	01-Jan-13	04-Feb-13	-32	0%
P106120	Manufacturing of Scum Collection System	240	04-Feb-13	02-Oct-13	-32	0%
P106140	Procurement / Purchase Order of FRP mid tank baffles	34	01-Jan-13	04-Feb-13	-32	0%
P106150	Manufacturing of FRP mid tank baffles	240	04-Feb-13	02-Oct-13	-32	0%
Portion 3 (Extension of CEPT Tank)						
Submission of design of E&M works						
P301000	DDA of Process air supply system for flocculation tanks (AIP No. 7)	90	21-Nov-12 A	24-Dec-12	63	85%
P301010	Approval/ comment for the DDA of Process air supply system for flocculation tanks	100	08-Jan-13 A	17-Feb-13	63	60%
P301031	CMS of Scum collection system (AIP No. 8)	90	03-Sep-12 A	03-Feb-13	152	50%
P301032	Approval/ comment for CMS of the Scum collection system	90	15-Oct-12 A	16-Feb-13	152	35%
P301480	CMS of the Process water flushing and protected water system (AIP No. 9)	75	26-Sep-12 A	30-Dec-12	214	50%
P301490	Approval/ comment for CMS of the Process water flushing and protected water system	90	24-Oct-12 A	11-Jan-13	214	45%
P301500	CMS of the Penstock and stoplogs for CEPT tanks (AIP No. 10)	120	30-Jun-12 A	21-Jan-13	31	50%
P301510	Approval/ comment for CMS of the Penstock and stoplogs for CEPT tanks	120	30-Jul-12 A	08-Feb-13	31	35%
P301520	DDA of the Chemical (FECL3 and polymer) dosing system (AIP No. 11)	90	19-Jan-13	19-Apr-13	105	0%
P301530	Approval/ comment for DDA of the Chemical (FECL3 and polymer) dosing system	90	18-Feb-13	19-May-13	105	0%
P301550	CMS of the Lifting appliance (AIP No. 23)	90	02-Oct-12 A	28-Dec-12	77	60%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

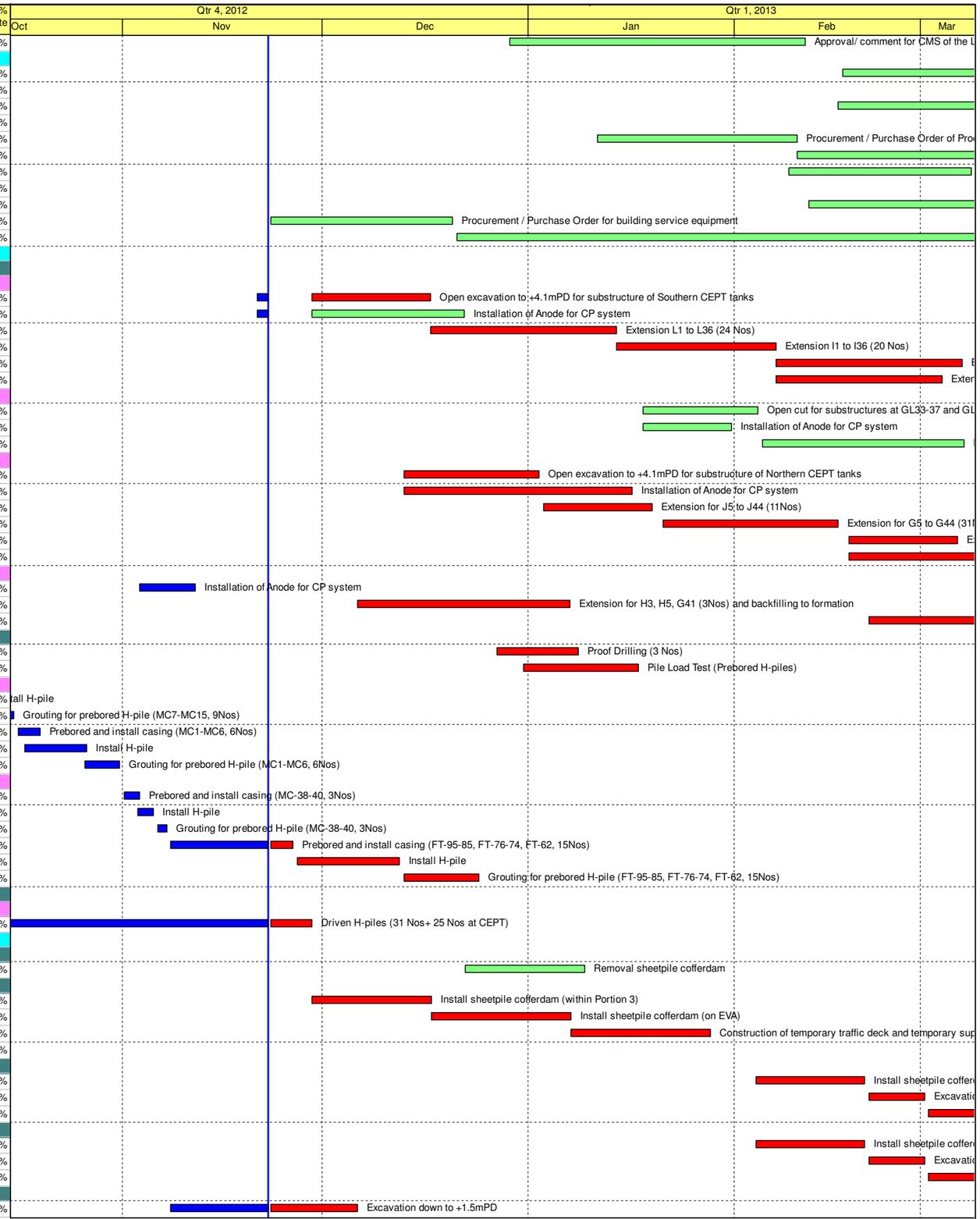
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P301560	Approval/ comment for CMS of the Lifting appliance	45	29-Dec-12	11-Feb-13	77	0%
Procurement/ Order/ Manufacturing/ Delivery						
P301090	Procurement / Purchase Order of Process air supply system for flocculation tanks	28	17-Feb-13	17-Mar-13	63	0%
P301690	Manufacturing of Process air supply system for flocculation tanks	300	17-Mar-13	11-Jan-14	63	0%
P301731	Procurement / Purchase Order of scum collection systems	28	16-Feb-13	16-Mar-13	152	0%
P301732	Manufacturing of scum collection systems	150	16-Mar-13	13-Aug-13	152	0%
P301740	Procurement / Purchase Order of Process water flushing and protected water system	30	11-Jan-13	10-Feb-13	214	0%
P301750	Manufacturing of Process water flushing and protected water system	120	10-Feb-13	10-Jun-13	214	0%
P301770	Procurement / Purchase Order of penstocks and stoplogs	28	09-Feb-13	08-Mar-13	31	0%
P301780	Manufacturing of penstocks and stoplogs	210	09-Mar-13	04-Oct-13	31	0%
P301830	Procurement / Purchase Order for Lifting Appliance	45	12-Feb-13	28-Mar-13	77	0%
P301860	Procurement / Purchase Order for building service equipment	28	23-Nov-12	20-Dec-12	273	0%
P301870	Manufacturing of building service equipment	150	21-Dec-12	19-May-13	273	0%
Foundation Works						
Extension/ trimming of Existing Daido Piles						
Row C, F, I & L						
P321000	Open excavation to +4.1mPD for substructure of Southern CEPT tanks	15	21-Nov-12 A	17-Dec-12	-48	3%
P321005	Installation of Anode for CP system	35	21-Nov-12 A	22-Dec-12	12	35%
P321010	Extension L1 to L36 (24 Nos)	21	17-Dec-12	14-Jan-13	-48	0%
P902490	Extension I1 to I36 (20 Nos)	21	14-Jan-13	07-Feb-13	-48	0%
P902500	Extension F1 to F36 (27 Nos)	21	07-Feb-13	07-Mar-13	-48	0%
P902510	Extension C1 to C64 (12 Nos)	18	07-Feb-13	04-Mar-13	-48	0%
Row M						
P902590	Open cut for substructures at GL33-37 and GL B-C	15	18-Jan-13	04-Feb-13	5	0%
P902595	Installation of Anode for CP system	12	18-Jan-13	31-Jan-13	32	0%
P902600	Extension for M1 to M 59 (40Nos)	24	05-Feb-13	07-Mar-13	5	0%
Row A, D, G & J						
P902550	Open excavation to +4.1mPD for substructure of Northern CEPT tanks	15	13-Dec-12	02-Jan-13	-54	0%
P902551	Installation of Anode for CP system	35	13-Dec-12	16-Jan-13	-14	0%
P902555	Extension for J5 to J44 (11Nos)	15	03-Jan-13	19-Jan-13	-54	0%
P902560	Extension for G5 to G44 (31Nos)	21	21-Jan-13	16-Feb-13	-54	0%
P902570	Extension for D5 to D44 (16Nos)	15	18-Feb-13	06-Mar-13	-54	0%
P902580	Extension for A7 to A73 (10Nos)	18	18-Feb-13	09-Mar-13	-54	0%
Row B, E, H & K						
P902645	Installation of Anode for CP system	21	03-Nov-12 A	12-Nov-12 A		100%
P902660	Extension for H3, H5, G41 (3Nos) and backfilling to formation	24	06-Dec-12	07-Jan-13	-35	0%
P902670	Extension for K6, J41, J42 and J44 (4Nos) and backfilling to formation	28	21-Feb-13	26-Mar-13	-44	0%
Prebored Rock Socketted H-Pile						
P300130	Proof Drilling (3 Nos)	10	27-Dec-12	08-Jan-13	-46	0%
P300140	Pile Load Test (Prebored H-piles)	15	31-Dec-12	17-Jan-13	-46	0%
Zone 1 - Disturbution Channel, Rig No. 1						
P310530	Install H-pile	9	29-Sep-12 A	11-Oct-12 A		100%
P310540	Grouting for prebored H-pile (MC7-MC15, 9Nos)	6	09-Oct-12 A	15-Oct-12 A		100%
P310550	Prebored and install casing (MC1-MC6, 6Nos)	4	16-Oct-12 A	19-Oct-12 A		100%
P310560	Install H-pile	8	17-Oct-12 A	26-Oct-12 A		100%
P310570	Grouting for prebored H-pile (MC1-MC6, 6Nos)	5	26-Oct-12 A	31-Oct-12 A		100%
Zone 2 - Flocculation tanks and Rapid Mix tank, Rig No. 2						
P310280	Prebored and install casing (MC-38-40, 3Nos)	3	01-Nov-12 A	03-Nov-12 A		100%
P310290	Install H-pile	2	03-Nov-12 A	05-Nov-12 A		100%
P310300	Grouting for prebored H-pile (MC-38-40, 3Nos)	2	06-Nov-12 A	07-Nov-12 A		100%
P310310	Prebored and install casing (FT-95-85, FT-76-74, FT-62, 15Nos)	16	08-Nov-12 A	26-Nov-12	-54	81.25%
P310320	Install H-pile	14	27-Nov-12	12-Dec-12	-54	0%
P310330	Grouting for prebored H-pile (FT-95-85, FT-76-74, FT-62, 15Nos)	10	13-Dec-12	24-Dec-12	-46	0%
Driven H-Pile						
Zone 4 - Inlet Section of Flocculation tank						
P904240	Driven H-piles (31 Nos+ 25 Nos at CEPT)	40	04-Oct-12 A	29-Nov-12	-57	86%
Excavation and Lateral Support for Substructure						
Cofferdam No. 1 (GL29-33, A-B)						
P322020	Removal sheetpile cofferdam	12	22-Dec-12	09-Jan-13	101	0%
Cofferdam No. 2 (GL34-36, A)						
P322200	Install sheetpile cofferdam (within Portion 3)	15	29-Nov-12	17-Dec-12	-57	0%
P904265	Install sheetpile cofferdam (on EVA)	15	17-Dec-12	07-Jan-13	-57	0%
P904270	Construction of temporary traffic deck and temporary support for CLP cable trench	18	07-Jan-13	28-Jan-13	-57	0%
P904290	Grout Curtain for exisitng service ducts	45	13-Mar-13	10-May-13	-57	0%
Cofferdam No. 3 (GL33-38, B1)						
P322300	Install sheetpile cofferdam	12	04-Feb-13	20-Feb-13	-46	0%
P322310	Excavation down to +4.0mPD	8	21-Feb-13	01-Mar-13	-46	0%
P322320	Install 1st layer wailing and strut at +4.5mPD	21	02-Mar-13	26-Mar-13	-46	0%
Cofferdam No. 4 (GL33-38, B3-B6)						
P322400	Install sheetpile cofferdam	12	04-Feb-13	20-Feb-13	-46	0%
P322410	Excavation down to +4.0mPD	8	21-Feb-13	01-Mar-13	-46	0%
P322420	Install 1st layer wailing and strut at +4.5mPD	21	02-Mar-13	26-Mar-13	-46	0%
Cofferdam No. 5 (GL29-33, D-K)						
P322530	Excavation down to +1.5mPD	15	08-Nov-12 A	06-Dec-12	-44	25%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

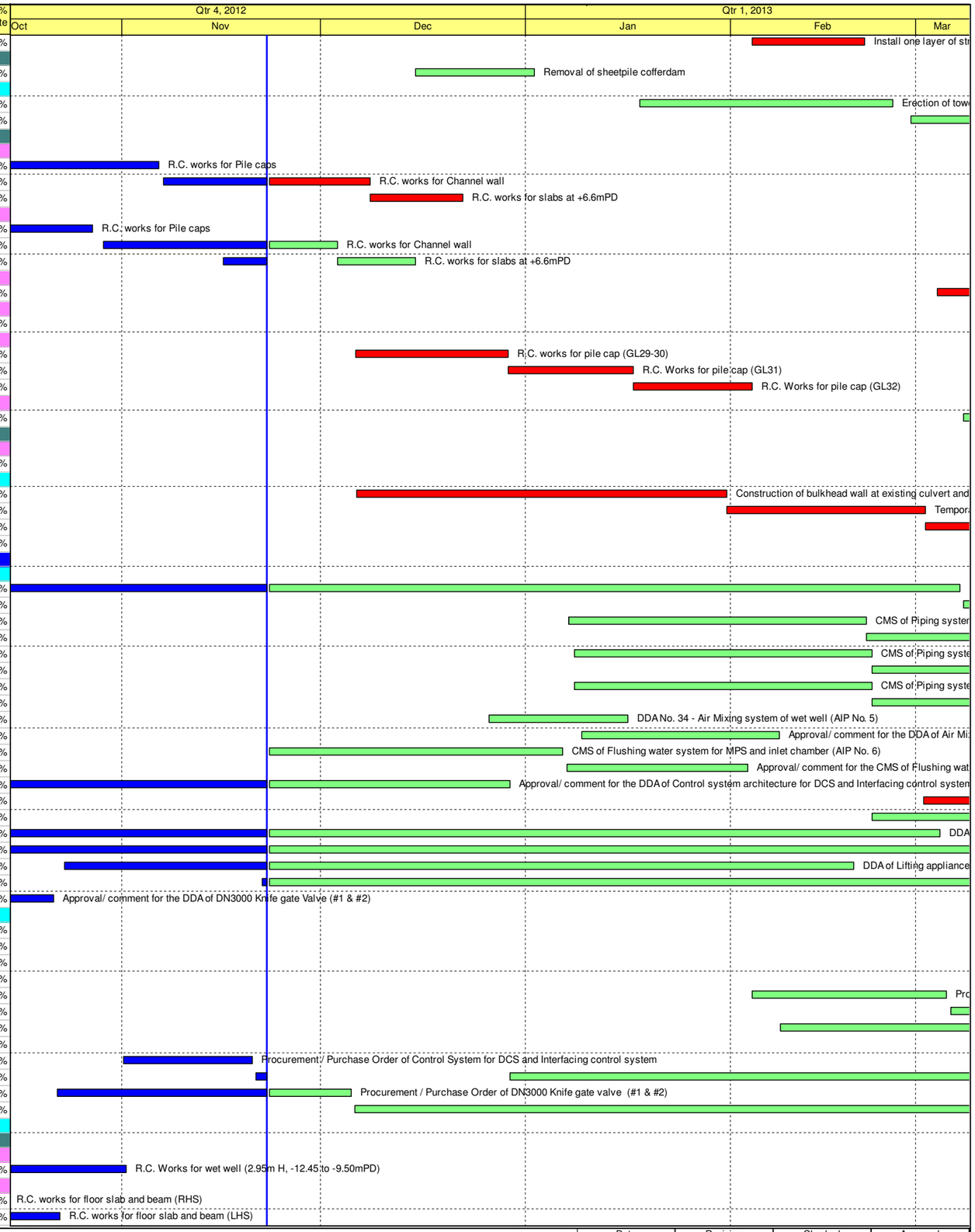
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P322531	Install one layer of strut to support sheetpile wall and excavation at GL31	12	04-Feb-13	21-Feb-13	-44	0%
Cofferdam No. 6 (GL29-33, N-M)						
P322620	Removal of sheetpile cofferdam	12	15-Dec-12	02-Jan-13	89	0%
R.C. Works						
P300180	Erection of tower crane TC2	30	18-Jan-13	25-Feb-13	17	0%
P300185	Erection of tower crane TC3	30	28-Feb-13	08-Apr-13	3	0%
Substructure						
GL 33-29 & GL A-B (Northern Effluent tunnel)						
P330000	R.C. works for Pile caps	24	09-Oct-12 A	06-Nov-12 A		100%
P330010	R.C. works for Channel wall	16	07-Nov-12 A	08-Dec-12	-5	15%
P330030	R.C. works for slabs at +6.6mPD	12	08-Dec-12	22-Dec-12	-5	0%
GL 33-29 & GL M-N (Southern Effluent Tunnel)						
P330100	R.C. works for Pile caps	35	14-Sep-12 A	27-Oct-12 A		100%
P330105	R.C. works for Channel wall	16	29-Oct-12 A	03-Dec-12	2	45%
P330110	R.C. works for slabs at +6.6mPD	12	16-Nov-12 A	15-Dec-12	2	12%
GL 33-29 & GL B-D (Northern CEPT tanks)						
P330200	R.C. works for pile cap (GL29-30)	24	04-Mar-13	04-Apr-13	-48	0%
GL 33-29 & GL M-K (Southern CEPT tanks)						
P333000	R.C. works for pile cap (GL29-30)	24	11-Mar-13	11-Apr-13	-54	0%
GL 33-29 & GL D-K (Disturbution Channel)						
P335000	R.C. works for pile cap (GL29-30)	18	06-Dec-12	29-Dec-12	-44	0%
P335010	R.C. Works for pile cap (GL31)	15	29-Dec-12	17-Jan-13	-44	0%
P335020	R.C. Works for pile cap (GL32)	15	17-Jan-13	04-Feb-13	-44	0%
GL 33-38 & GL B-C (Flocculation tanks)						
P338010	Pile head preparation	24	08-Mar-13	09-Apr-13	5	0%
Superstructure						
GL33-29 & GL A-B (Northern Effluent tunnel)						
P330040	R.C.works for Channel wall (From +6.6 to +14.5mPD)	55	16-Mar-13	27-May-13	48	0%
Effluent Culvert Connection works						
P300280	Construction of bulkhead wall at existing culvert and installation of lifting appliances	45	06-Dec-12	31-Jan-13	-5	0%
P300281	Temporary flow diversion with ST2 coordination (for northern effluent culvert connection)	30	31-Jan-13	02-Mar-13	-6	0%
P300285	Connection of Effluent Culvert at Northern CEPT tanks	14	02-Mar-13	16-Mar-13	-6	0%
P300286	Temporary flow diversion with ST2 coordination (for southern effluent culvert connection)	30	16-Mar-13	15-Apr-13	-6	0%
Portion 4 (Main Pumping Station)						
Submission of design of E&M works						
P301108	DDA No. 31-05 - Vibration Monitoring System (AIP No. 1)	210	28-Apr-12 A	07-Mar-13	255	50%
P301109	Approval/ comment for the DDA of Vibration Monitoring System	280	08-Mar-13	12-Dec-13	255	0%
P301240	CMS of Piping system for recirculation (AIP No. 4)	45	07-Jan-13 A	21-Feb-13	239	0%
P301250	Approval/ comment for the CMS of Piping system for recirculation	28	21-Feb-13	21-Mar-13	239	0%
P301253	CMS of Piping system for centrate flow (AIP No. 4)	45	08-Jan-13	22-Feb-13	144	0%
P301254	Approval/ comment for the CMS of Piping system for centrate flow	28	22-Feb-13	22-Mar-13	144	0%
P301255	CMS of Piping system for NWK overflow (AIP No. 4)	45	08-Jan-13	22-Feb-13	244	0%
P301256	Approval/ comment for the CMS of Piping system for NWK overflow	28	22-Feb-13	22-Mar-13	244	0%
P301260	DDA No. 34 - Air Mixing system of wet well (AIP No. 5)	21	26-Dec-12	16-Jan-13	12	0%
P301270	Approval/ comment for the DDA of Air Mixing system of wet well	30	09-Jan-13	08-Feb-13	12	0%
P301271	CMS of Flushing water system for MPS and inlet chamber (AIP No. 6)	45	23-Nov-12	06-Jan-13	342	0%
P301272	Approval/ comment for the CMS of Flushing water system for MPS and inlet chamber	28	07-Jan-13	03-Feb-13	342	0%
P301310	Approval/ comment for the DDA of Control system architecture for DCS and Interfacing control system	123	01-Jul-12 A	29-Dec-12	79	70%
P301390	DDA of Ventilation system of MPS (AIP No. 18)	120	02-Mar-13	29-Jun-13	-16	0%
P301410	DDA of Fire service of MPS (AIP No. 19)	120	22-Feb-13	22-Jun-13	12	0%
P301430	DDA of Plumbling system (AIP No. 20)	201	16-Aug-12 A	04-Mar-13	191	49.25%
P301460	Approval/ comment for the DDA of Drainage system	200	13-Oct-12 A	30-Apr-13	2	20.5%
P301470	DDA of Lifting appliance (AIP No. 23)	120	23-Oct-12 A	19-Feb-13	125	25.83%
P301540	Approval/ comment for the DDA of Lifting appliance	120	22-Nov-12 A	21-Mar-13	125	0.83%
P301542	Approval/ comment for the DDA of DN3000 Knife gate Valve (#1 & #2)	120	24-Jun-12 A	21-Oct-12 A		100%
Procurement/ Order/ Manufacturing/ Delivery						
P302340	Procurement / Purchase Order of Lifting Appliance	25	22-Mar-13	15-Apr-13	125	0%
P302421	Procurement / Purchase Order of Piping system for NWK overflow	25	22-Mar-13	16-Apr-13	244	0%
P302430	Procurement / Purchase Order of Piping system for recirculation	30	21-Mar-13	20-Apr-13	239	0%
P302440	Procurement / Purchase Order of Piping system for centrate flow	30	22-Mar-13	21-Apr-13	144	0%
P302444	Procurement / Purchase Order of flushing water system for MPS and inlet chamber	30	04-Feb-13	05-Mar-13	342	0%
P302445	Manufacturing of flushing water system for MPS and inlet chamber	120	06-Mar-13	03-Jul-13	342	0%
P302460	Procurement / Purchase Order of Air Mixing system of wet well	30	08-Feb-13	10-Mar-13	12	0%
P302470	Manufacturing of Air Mixing system of wet well	300	10-Mar-13	04-Jan-14	12	0%
P302520	Procurement / Purchase Order of Control System for DCS and Interfacing control system	20	01-Nov-12 A	20-Nov-12 A		100%
P302530	Manufacturing of Control System for DCS and Interfacing control system	223	21-Nov-12 A	07-Aug-13	79	0.9%
P904890	Procurement / Purchase Order of DN3000 Knife gate valve (#1 & #2)	45	22-Oct-12 A	05-Dec-12	138	71.11%
P904900	Manufacturing of DN3000 Knife gate valve (#1 & #2)	340	06-Dec-12	10-Nov-13	138	0%
R.C. Works						
Access Floor No. 2 (-18.0mPD)						
Wet Well						
P400415	R.C. Works for wet well (2.95m H, -12.45 to -9.50mPD)	18	15-Oct-12 A	01-Nov-12 A		100%
Floor slab and beams (-18.0mPD)						
P400400	R.C. works for floor slab and beam (RHS)	42	03-Sep-12 A	14-Oct-12 A		100%
P400405	R.C. works for floor slab and beam (LHS)	41	03-Sep-12 A	22-Oct-12 A		100%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

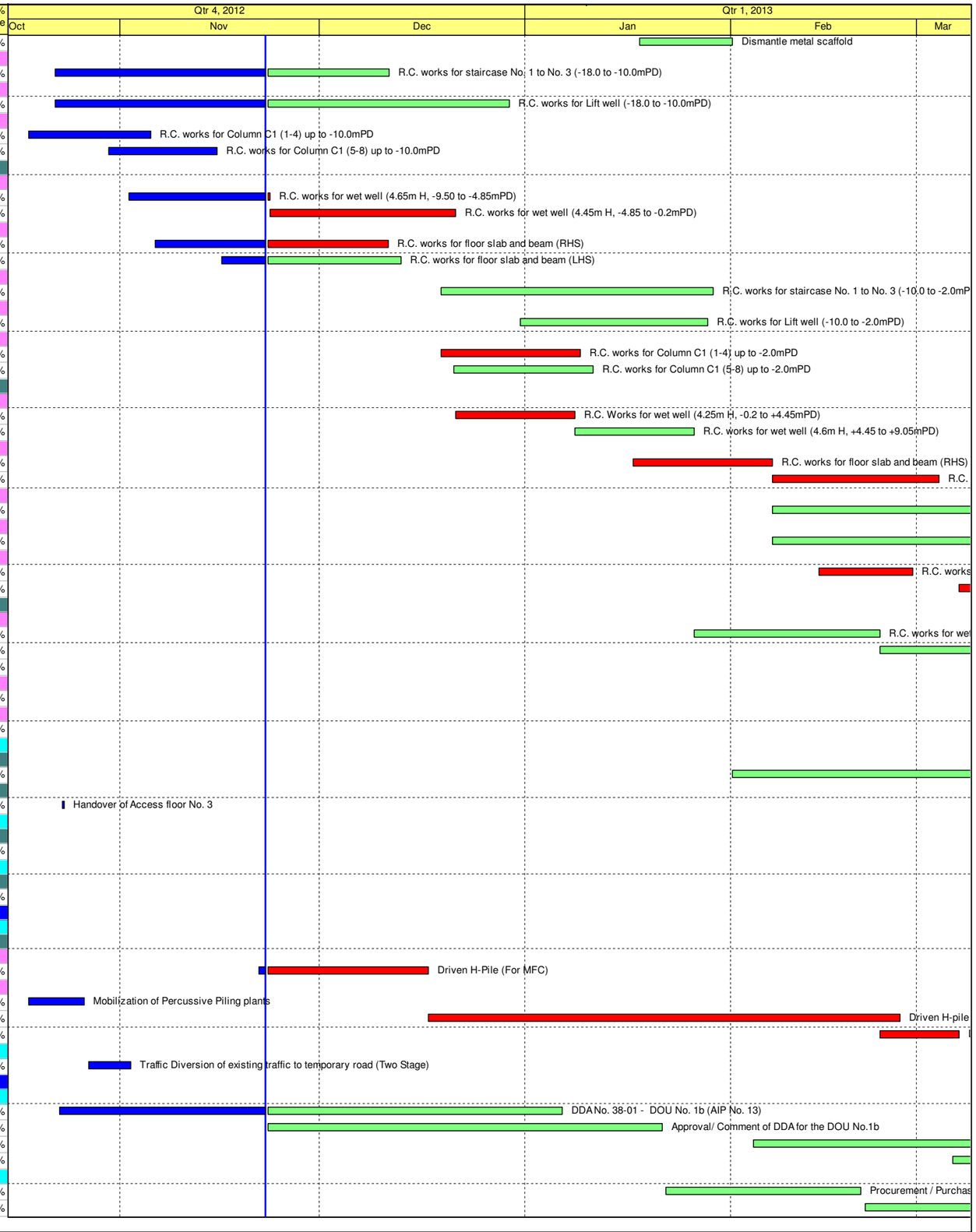
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P400475	Dismantle metal scaffold	12	18-Jan-13	01-Feb-13	108	0%
Staircase No. 1 to No. 3						
P400435	R.C. works for staircase No. 1 to No. 3 (-18.0 to -10.0mPD)	45	22-Oct-12 A	11-Dec-12	54	65%
Lift Well						
P400445	R.C. works for Lift well (-18.0 to -10.0mPD)	30	22-Oct-12 A	29-Dec-12	176	0%
Columns C1 (8 Nos)						
P400455	R.C. works for Column C1 (1-4) up to -10.0mPD	15	18-Oct-12 A	05-Nov-12 A		100%
P400465	R.C. works for Column C1 (5-8) up to -10.0mPD	15	30-Oct-12 A	15-Nov-12 A		100%
Access Floor No. 3 (-10.0mPD)						
Wet Well						
P400425	R.C. works for wet well (4.65m H, -9.50 to -4.85mPD)	21	02-Nov-12 A	23-Nov-12	-6	96%
P400505	R.C. works for wet well (4.45m H, -4.85 to -0.2mPD)	28	23-Nov-12	21-Dec-12	-6	0%
Floor slab and beams (-10.0mPD)						
P902680	R.C. works for floor slab and beam (RHS)	18	06-Nov-12 A	11-Dec-12	-15	15%
P902690	R.C. works for floor slab and beam (LHS)	18	16-Nov-12 A	13-Dec-12	3	5%
Staircase No. 1 to No. 3						
P902700	R.C. works for staircase No. 1 to No. 3 (-10.0 to -2.0mPD)	32	19-Dec-12	29-Jan-13	48	0%
Lift Well						
P902710	R.C. works for Lift well (-10.0 to -2.0mPD)	24	31-Dec-12	28-Jan-13	176	0%
Columns C1 (8 Nos)						
P902720	R.C. works for Column C1 (1-4) up to -2.0mPD	15	19-Dec-12	09-Jan-13	-15	0%
P902730	R.C. works for Column C1 (5-8) up to -2.0mPD	15	21-Dec-12	11-Jan-13	8	0%
Access Floor No. 4 (-2.0mPD)						
Wet Well						
P902740	R.C. Works for wet well (4.25m H, -0.2 to +4.45mPD)	18	21-Dec-12	08-Jan-13	-6	0%
P902750	R.C. works for wet well (4.6m H, +4.45 to +9.05mPD)	18	08-Jan-13	26-Jan-13	45	0%
Floor slab and beams (-2.0mPD)						
P902760	R.C. works for floor slab and beam (RHS)	18	17-Jan-13	07-Feb-13	-15	0%
P902770	R.C. works for floor slab and beam (LHS)	18	07-Feb-13	04-Mar-13	-15	0%
Staircase No. 1 to No. 3						
P902790	R.C. works for staircase No. 1 to No. 3 (-2.0 to +5.9mPD)	32	07-Feb-13	20-Mar-13	40	0%
Lift Well						
P902800	R.C. works for Lift well (-2.0 to +5.9mPD)	24	07-Feb-13	11-Mar-13	168	0%
Columns C1 (8 Nos)						
P902810	R.C. works for Column C1 (1-4) up to +5.9mPD	12	14-Feb-13	28-Feb-13	-4	0%
P902820	R.C. works for Column C1 (5-8) up to +5.9mPD	12	07-Mar-13	21-Mar-13	-15	0%
Ground floor slab (+5.9mPD)						
Wet Well						
P902860	R.C. works for wet well (4.5m H, +5.9 to +10.4mPD)	21	26-Jan-13	23-Feb-13	35	0%
P902870	R.C. works for wet well (4.2m H, +10.4 to +14.65mPD)	21	23-Feb-13	20-Mar-13	35	0%
P902890	R.C. works for wet well (4.0m H, +14.65 to +18.65mPD)	21	20-Mar-13	18-Apr-13	35	0%
Floor slab and beams (+5.9mPD)						
P902840	R.C. works for floor slab and beam (RHS)	18	21-Mar-13	16-Apr-13	-15	0%
Perimeter Wall						
P903040	R.C. works for Perimeter Wall (+5.9 to +20.4mPD)	60	21-Mar-13	06-Jun-13	91	0%
Builder and finishes Works						
Access Floor No. 1 (-32.0mPD)						
P400345	Wall/ ceiling finishes (fair face)	36	01-Feb-13	19-Mar-13	108	0%
Access Floor No. 3 (-10.0mPD)						
P400545	Handover of Access floor No. 3	1	23-Oct-12 A	23-Oct-12 A		100%
Building Service Installation						
Access Floor No. 1 (-32.0mPD)						
P400280	Installation of Building services equipment	45	19-Mar-13	16-May-13	380	0%
Electrical and Machainical Installation						
Access Floor No. 1 (-32.0mPD)						
P903760	Installation of Main Sewage Pumps pipeworks (Main Sewage Pump No.1 & 2)	55	19-Mar-13	29-May-13	108	0%
Portion 4 (Main flow Culvert)						
Foundation Works						
Driven H-Pile						
Zone 1, on EVA						
P903210	Driven H-Pile (For MFC)	21	22-Nov-12 A	17-Dec-12	-57	2%
Zone 2, within Portion 4						
P903150	Mobilization of Percussive Piling plants	7	18-Oct-12 A	26-Oct-12 A		100%
P903160	Driven H-pile (For MFC, DOU, Odour Duct Bridge, 70 Nos)	55	17-Dec-12	26-Feb-13	-10	0%
P903170	Driven temporary pile for underpinning works (T-01 to 08, 8Nos)	10	23-Feb-13	07-Mar-13	-10	0%
Civil Works						
P400375	Traffic Diversion of existing traffic to temporary road (Two Stage)	6	27-Oct-12 A	02-Nov-12 A		100%
Portion 4 (Deodourization Unit No. 3 & 1b and Odour duct bridge)						
Submission of design of E&M works						
P403000	DDA No. 38-01 - DOU No. 1b (AIP No. 13)	45	23-Oct-12 A	06-Jan-13	155	0%
P403001	Approval/ Comment of DDA for the DOU No.1b	60	23-Nov-12	21-Jan-13	155	0%
P403002	DDA No. 38-02 - DOU No. No. 3 (AIP No. 13)	60	04-Feb-13	05-Apr-13	75	0%
P403003	Approval/ Comment of DDA for the DOU No. 3	75	06-Mar-13	20-May-13	75	0%
Procurement/ Order/ Manufacturing/ Delivery						
P403140	Procurement / Purchase Order of equipment for DOU No. 1b	30	22-Jan-13	20-Feb-13	300	0%
P403150	Manufacturing of equipment for DOU No. 1b	100	21-Feb-13	31-May-13	300	0%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

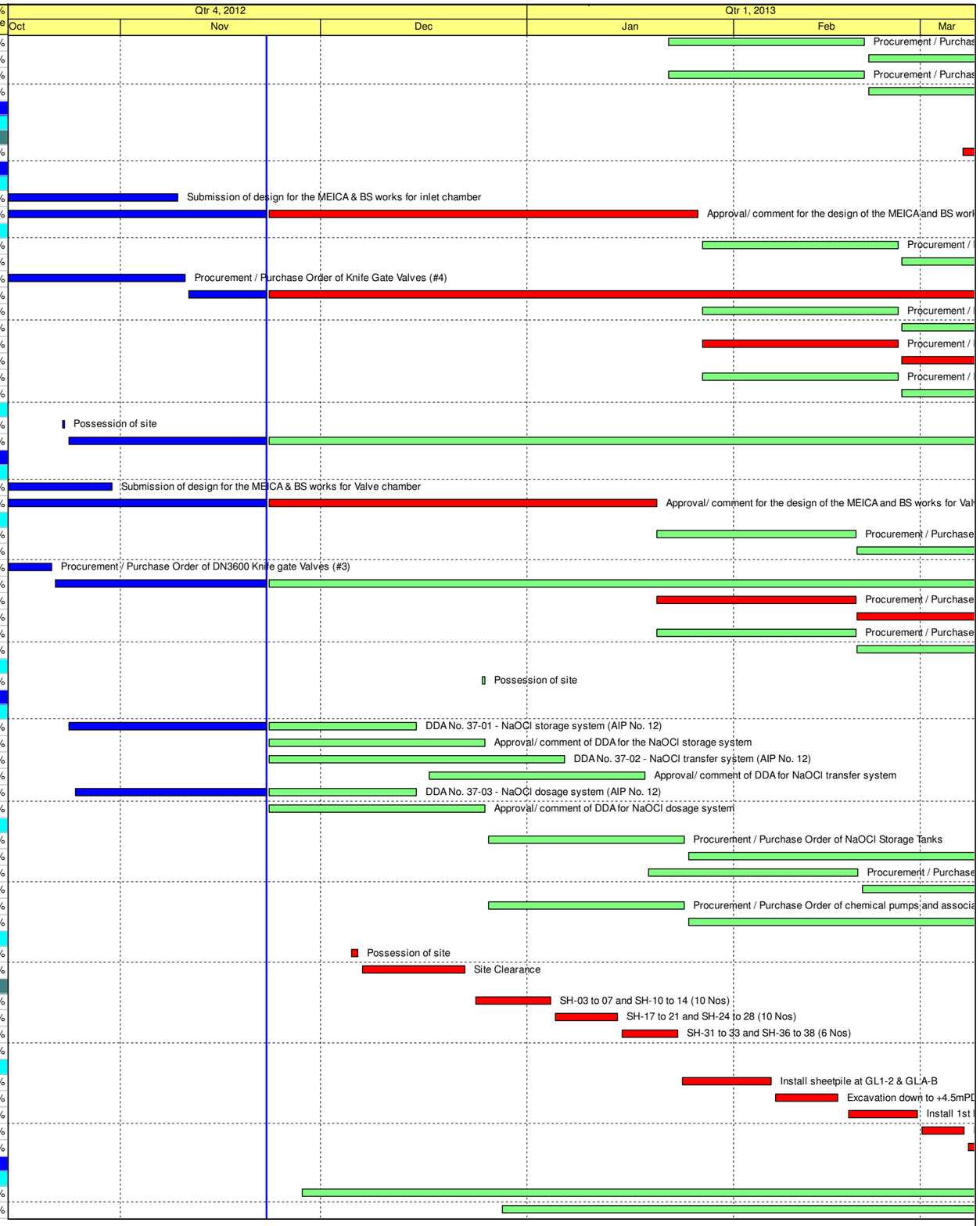
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P403170	Procurement / Purchase order of ductworks for DOU No. 1b	30	22-Jan-13	20-Feb-13	337	0%
P403180	Manufacturing of ductworks for DOU No. 1b	100	21-Feb-13	31-May-13	337	0%
P403200	Procurement / Purchase Order of switchboard and LCPs	30	22-Jan-13	20-Feb-13	155	0%
P403210	Manufacturing of switchboard and LCPs	360	21-Feb-13	15-Feb-14	155	0%
Portion 4 (Service Ducts)						
Foundation Works						
Driven H-pile						
P903540	Driven H-Piles (24 Nos)	24	07-Mar-13	09-Apr-13	-10	0%
Portion 5 (Inlet Chamber)						
Submission of design of E&M works						
P501210	Submission of design for the MEICA & BS works for inlet chamber	100	02-Aug-12 A	09-Nov-12 A		100%
P501220	Approval/ comment for the design of the MEICA and BS works for inlet chamber	100	01-Sep-12 A	26-Jan-13	-5	35%
Procurement/ Order/ Manufacturing/ Delivery						
P501480	Procurement / Purchase Order of Lifting Appliance	30	27-Jan-13	25-Feb-13	223	0%
P501490	Manufacturing of Lifting Appliance	120	26-Feb-13	25-Jun-13	223	0%
P501510	Procurement / Purchase Order of Knife Gate Valves (#4)	60	12-Sep-12 A	10-Nov-12 A		100%
P501520	Manufacturing of Knife Gate Valves (#4)	450	11-Nov-12 A	03-Feb-14	-78	2.67%
P501540	Procurement / Purchase Order of pipeworks	30	27-Jan-13	25-Feb-13	45	0%
P501550	Manufacturing of pipeworks	240	26-Feb-13	23-Oct-13	45	0%
P501570	Procurement / Purchase order of drainage and flushing water pumping system	30	27-Jan-13	25-Feb-13	-5	0%
P501580	Manufacturing of drainage and flushing water pumping system	300	26-Feb-13	22-Dec-13	-5	0%
P501600	Procurement / Purchase Order of building service equipment	30	27-Jan-13	25-Feb-13	21	0%
P501610	Manufacturing of building service equipment	210	26-Feb-13	23-Sep-13	21	0%
R.C. Works						
P400630	Possession of site	1	23-Oct-12 A	23-Oct-12 A		100%
P400631	R.C. works for plinth of pipeworks and valves	150	24-Oct-12 A	27-Apr-13	216	17.33%
Portion 6 (Valve Chamber)						
Submission of design of E&M works						
P501290	Submission of design for the MEICA & BS works for Valve chamber	90	02-Aug-12 A	30-Oct-12 A		100%
P501300	Approval/ comment for the design of the MEICA and BS works for Valve chamber	90	01-Sep-12 A	20-Jan-13	-27	35%
Procurement/ Order/ Manufacturing/ Delivery						
P501690	Procurement / Purchase Order of Lifting Appliance	30	20-Jan-13	19-Feb-13	25	0%
P501700	Manufacturing of Lifting Appliance	390	19-Feb-13	16-Mar-14	25	0%
P501720	Procurement / Purchase Order of DN3600 Knife gate Valves (#3)	30	22-Sep-12 A	21-Oct-12 A		100%
P501730	Manufacturing of DN3600 Knife gate Valves (#3)	450	22-Oct-12 A	14-Jan-14	47	7.11%
P501780	Procurement / Purchase order of drainage and flushing water pumping system	30	20-Jan-13	19-Feb-13	-27	0%
P501790	Manufacturing of drainage and flushing water pumping system	400	19-Feb-13	26-Mar-14	-27	0%
P501810	Procurement / Purchase Order of building service equipment	30	20-Jan-13	19-Feb-13	3	0%
P501820	Manufacturing of building service equipment	300	19-Feb-13	16-Dec-13	3	0%
R.C. Works						
P600000	Possession of site	1	25-Dec-12	25-Dec-12	118	0%
Portion 8 (Extension of Sodium Hypochlorite Storage Compound)						
Submission of design of E&M works						
P801000	DDA No. 37-01 - NaOCl storage system (AIP No. 12)	45	24-Oct-12 A	15-Dec-12	127	50%
P801001	Approval/ comment of DDA for the NaOCl storage system	33	23-Nov-12	25-Dec-12	127	0%
P801002	DDA No. 37-02 - NaOCl transfer system (AIP No. 12)	45	23-Nov-12	06-Jan-13	90	0%
P801003	Approval/ comment of DDA for NaOCl transfer system	33	17-Dec-12	18-Jan-13	90	0%
P801004	DDA No. 37-03 - NaOCl dosage system (AIP No. 12)	45	25-Oct-12 A	15-Dec-12	91	50%
P801005	Approval/ comment of DDA for NaOCl dosage system	33	23-Nov-12	25-Dec-12	91	0%
Procurement/ Order/ Manufacturing/ Delivery						
P801140	Procurement / Purchase Order of NaOCl Storage Tanks	30	26-Dec-12	24-Jan-13	127	0%
P801150	Manufacturing of NaOCl Storage Tanks	120	25-Jan-13	24-May-13	127	0%
P801170	Procurement / Purchase Order of valves and pipeworks	32	19-Jan-13	19-Feb-13	90	0%
P801180	Manufacturing of valves and pipeworks	270	20-Feb-13	16-Nov-13	90	0%
P801200	Procurement / Purchase Order of chemical pumps and associated equipment	30	26-Dec-12	24-Jan-13	91	0%
P801210	Manufacturing of chemical pumps and associated equipment	310	25-Jan-13	30-Nov-13	91	0%
Foundation Works						
P800000	Possession of site	1	05-Dec-12	06-Dec-12	-50	0%
P800010	Site Clearance	14	07-Dec-12	22-Dec-12	-42	0%
Re-driving test for existing daido Piles						
P800020	SH-03 to 07 and SH-10 to 14 (10 Nos)	8	24-Dec-12	04-Jan-13	-42	0%
P800030	SH-17 to 21 and SH-24 to 28 (10 Nos)	8	05-Jan-13	14-Jan-13	-42	0%
P800040	SH-31 to 33 and SH-36 to 38 (6 Nos)	8	15-Jan-13	23-Jan-13	-42	0%
P800050	SH-01, 02, 08, 09, 15, 16, 22, 23, 29, 30, 34 & 35	12	15-Mar-13	28-Mar-13	-42	0%
Excavation and Lateral Support for Substructure						
P802000	Install sheetpile at GL1-2 & GL A-B	12	24-Jan-13	06-Feb-13	-42	0%
P802005	Excavation down to +4.5mPD	6	07-Feb-13	16-Feb-13	-42	0%
P802010	Install 1st layer wailing and struts at +4.8mPD	10	18-Feb-13	28-Feb-13	-42	0%
P802030	Install temporary prop at +2.9mPD	6	01-Mar-13	07-Mar-13	-42	0%
P802040	Excavation for exposing daido pile heads	6	08-Mar-13	14-Mar-13	-42	0%
Sai Ying Pun Junction Shaft						
Submission of design of E&M works						
P801050	Submission of design for the MEICA & BS at Sai Ying Pun Junction shaft	210	28-Nov-12	25-Jun-13	47	0%
P801060	Approval/ comment of design for the MEICA & BS at Sai Ying Pun Junction shaft	210	28-Dec-12	25-Jul-13	47	0%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Nov 2012 to 24 Feb 2013)

Date	Revision	Checked	Approved