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 March 2013

(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.

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CE/Harbour Area Treatment Scheme
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16 April 2013
By Post

Attn: Mr. William Cheung

Dear Sir,

Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation
Submission of Monthly EM&A Consolidated Report for Stonecutters Island Sewage Treatment Works for March 2013 (Issue No. 40) Version 1.1

We refer to the captioned report consolidating the individual ETL certified and IEC verified Monthly EM&A Reports for Contract Nos. DC/2007/23, DC/2009/10, DC/2009/17 and DC/2009/18 at Stonecutters Island works site for HATS Stage 2A. We hereby verify the consolidated report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c. ARUP Mr. Ted Y F Tang Fax: 2370 4377

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ABBREVIATION AND ACRONYM

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

EXECUTIVE SUMMARY

Introduction

1. This is the 40th 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 March 2013.

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/DC%202009%2017/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 February 2013	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 40th consolidated monthly EM&A report summarizing the EM&A works conducted for the Project at SCISTW in March 2013.

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 • Second stage shaft sinking by soil excavation. Production Shaft • Pre-excavation grouting; and • Drilling and blasting.
DC/2009/17	Portion 3: • Painting of wall and ceiling on G/F were in progress; and • Installation of FRP floor panels on Level B3 was in progress Portion 4: • Applying bituminous paint on floor of R/F was in progress; and • Installation of chequer plate at MCC room was in progress Portion 5: • FRP walkways across SSTs No. 4 and No. 6, SSTs No. 6 and 7 were erected; and • Watertightness test for SST No. 6 was completed. External Works: • Reinstatement works at Zone A4 were completed; • Laying of DN80, DN150, DN200 & DN250 watermains at Zone B1 were in progress; • Laying of DN80, DN150, DN200 & 2 nos. DN250 watermains at Zone B5a were in progress; • Laying of DN150, & 2 nos. DN250 watermains at B5b were completed; • Laying of cable ducts and construction of cable drawpits P12 & P14 were completed; And the construction of chemical pipe trench was in progress; • Reinstatement works at Zone C2 (Stage 3) were in progress; • Backfilling work at Zone C4 (stage 2) was completed; • Laying of additional DN80, DN150 & DN200 watermains at Zone E1 were completed. And reinstatement works were in progress; • Breaking of concrete pavement at Zone E4 was in progress; • Installation of solid pump pipeworks on crossing in between SDB and NSCS was in progress; • Installation of pipeworks and ductworks for the following systems at SDB was in

	progress; • Installation of screw conveyors and hydraulic power packs in NSCS was in progress; Installation of Vehicle Washing Machine was in progress; and • Installation of U/G pipeworks at Sludge Storage Tanks 6 & 7 was in progress.
DC/2009/10	• 22 out of 52 nos of driven H-pile for main flow culvert are in progress; 12 nos of temporary driven H-pile for underpinning system of CLP trench were completed; and 8 nos of temporary driven H-pile for underpinning system of existing service ducts were completed. • Construction of Column, Staircase up to -1.0mPD are in progress; • Erection of falsework and RC works for -2.0mPD access floor are in progress; • Construction of pile caps of effluent culvert at cofferdam No. 1 and 5 are in progress; • Construction of substructure and superstructure at Switchgear Building are in progress; and • Widening of CLP cable trench is in progress.
DC/2009/18	Portion 3: • Blasting at Riser Shaft and shaft excavation; • Construction of Dechlorination Compound Structure; and • Pre-bored sheet piling works at Entry Culvert. Portion 7: • Blasts at Drop Shaft and shaft 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 March 2013, 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	Sibata; Model no. LD-3B
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	188	113-219	346	500
AM7	196	115-296	322	
AM8	177	111-291	307	
AM9	202	116-315	318	
24 hours TSP				
AM6	97	90-110	196	260
AM7	144	99-172	207	
AM8	82	49-112	158	
AM9	132	86-158	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	61.3-62.1	75.0
NM6	71.2-72.4	
NM7	68.1-72.7	
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	59.4-61.4	70.0
NM5 (Monitoring conducted on 29 March 2013)	61.9	
NM6 (Monitoring conducted on 29 March 2013)	59.6	
NM7	64.7-65.9	
All days during 2300 to 0700 hrs. of the next day		
NM7	49.4-51.5	55.0

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 noise generated from trucks movement outside the noise enclosure, concreting work and the traffic noise from the Container Port Road South close to the site boundary of Contract No: DC/2009/18; 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	7, 14, 21 and 27 March 2013
DC/2009/10	1, 8, 15, 21 and 27 March 2013
DC/2009/17	7, 14, 22 and 28 March 2013
DC/2009/18	6, 13, 20 and 27 March 2013

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	Marine Deposit		
				Type 1 (m^3)	Type 2 (m^3)	Type 3 (Tonnes)
DC/2007/23	17,449*(m^3)	111* (m^3)	0	0*	0*	0*
DC/2009/10	507(m^3)	5058 kg and 15m^3	430(kg)	0	0	0
DC/2009/17	217.15(m^3)	15.15 (Tonnes)	200(L)	0	0	0
DC/2009/18	2671(m^3)	66 kg and 2(m^3)	0	0	0	0

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	9229m^3 of Inert C&D have were reused in other project and 8220 m^3 of Inert C&D were used in SENT landfill/ Lam Tei Quarry or disposed of in Tuen Mun Area 38 Fill Bank/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point. No plastics and steels, but 111 kg of paper/cardboard packaging were generated and sent to recyclers for recycling and disposed of at SENT Landfill.
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill. 200L of chemical waste was collected by licensed Collector.
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill. 60kg paper/cardboard packaging, 3kg plastic and 4995 kg of metals were sent to recyclers during the reporting period. 430kg of chemical waste was collected by licensed Collector.
DC/2009/18	Tuen Mun Area 38 Fill Bank and NENT Landfill and Tseung Kwan O Area 137 Fill Bank 66kg paper/cardboard packaging was 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;
- Stockpile should be covered by tarpaulin to reduce dust generation;
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities; and
- Proper tree and shrub protection works should be provided when carrying out works near existing trees and shrubs.

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

Noise

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

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

Water Quality

- To identify any 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;and
- To clear the sediment in the wastewater treatment tanks regularly.

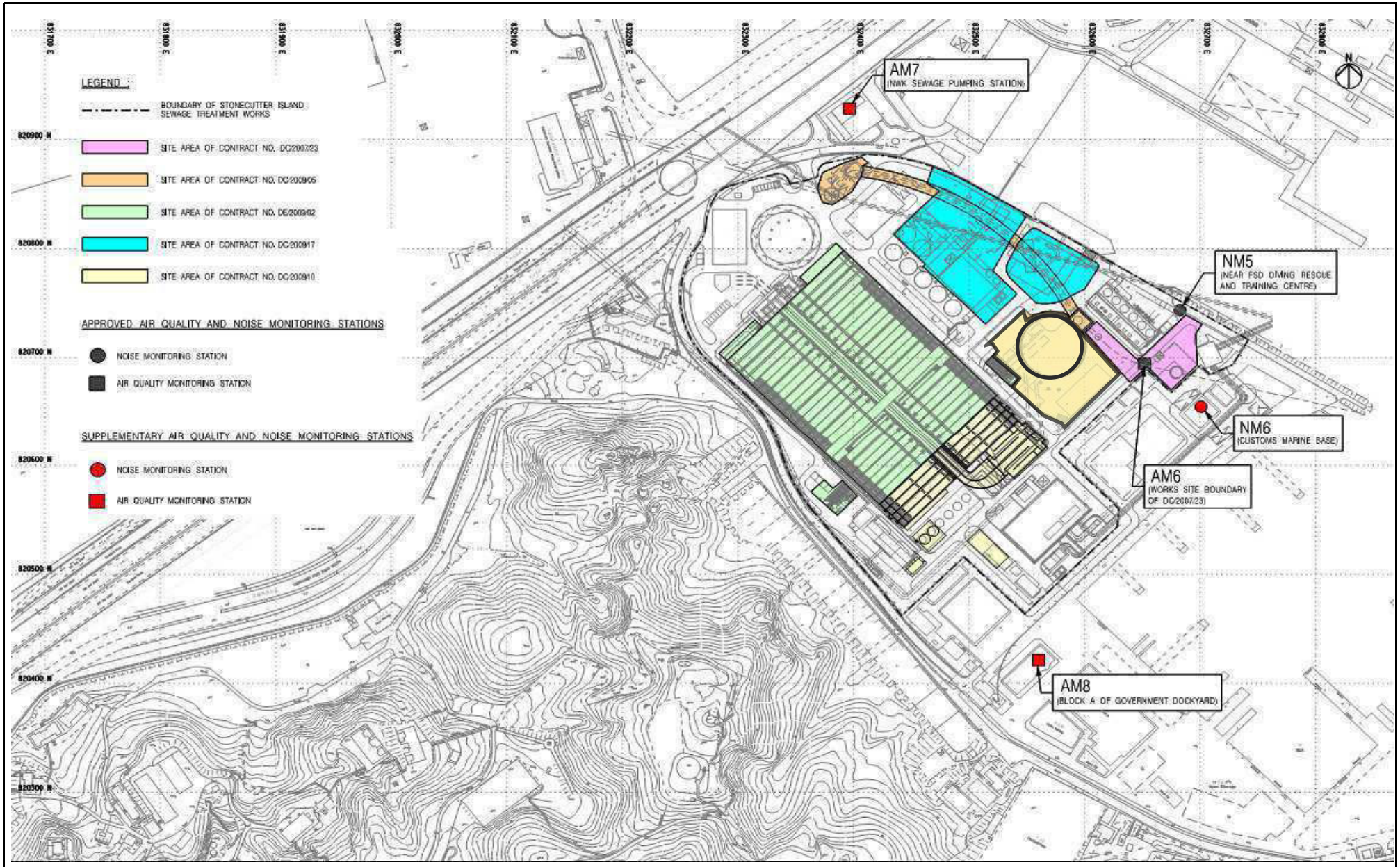
Waste/Chemical Management

- 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

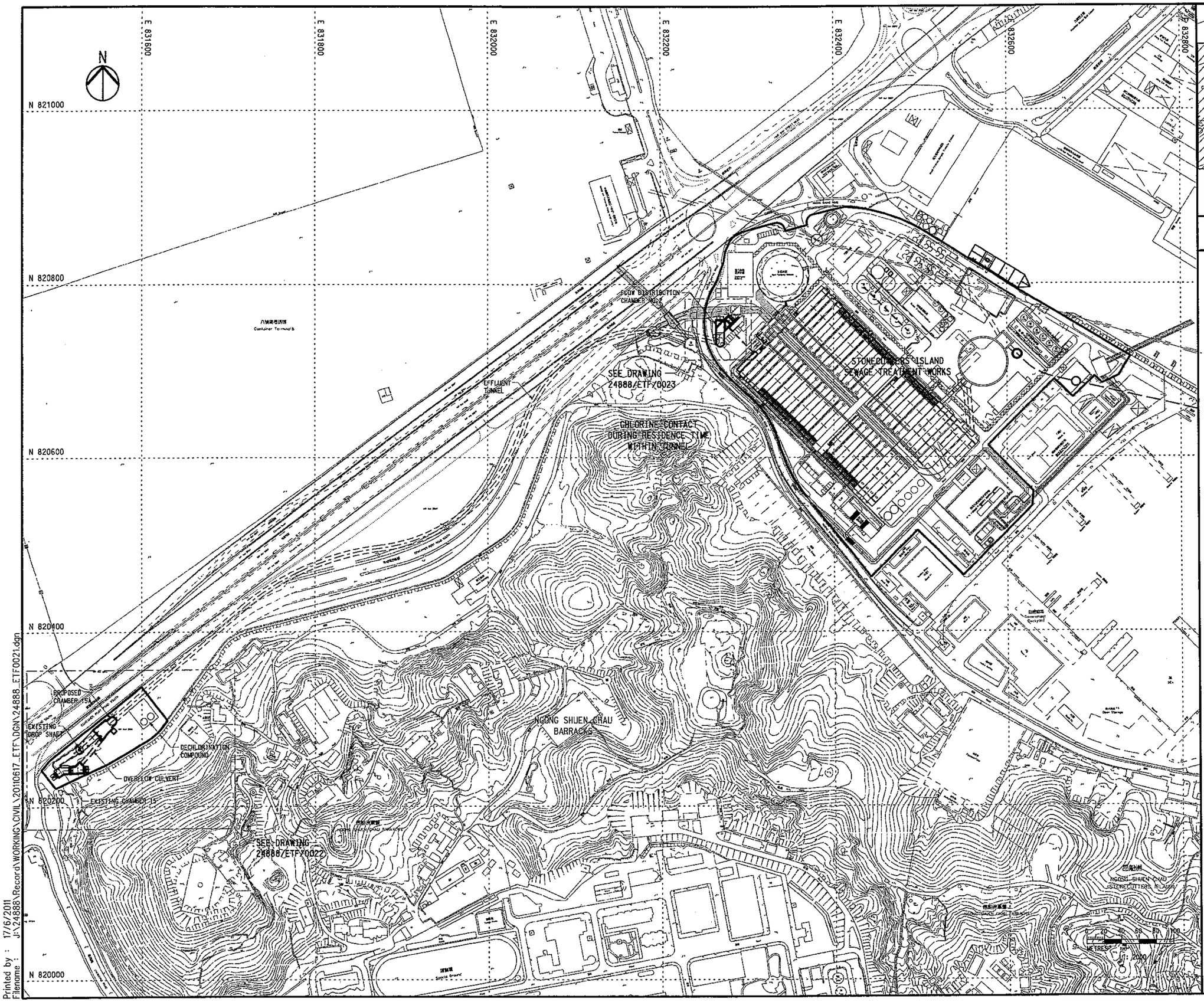
- To erect and maintain the protection fence around the retaining tree; and
- To avoid any heavy materials placed into tree protection zone.

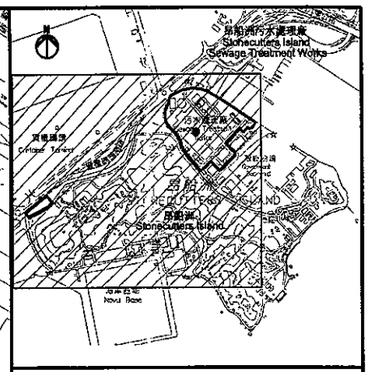
FIGURES



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
	General Location Plan of the Project and Locations of Air Quality and Noise Monitoring Stations	Date 8/2011	Figure 1

CINOTECH





KEY PLAN

LEGEND:

BOUNDARY OF SCISTW

ALIGNMENT OF EFFLUENT TUNNEL

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

Consultant

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

Project title

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

Drawing title

GENERAL LAYOUT
(SHEET 1)

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

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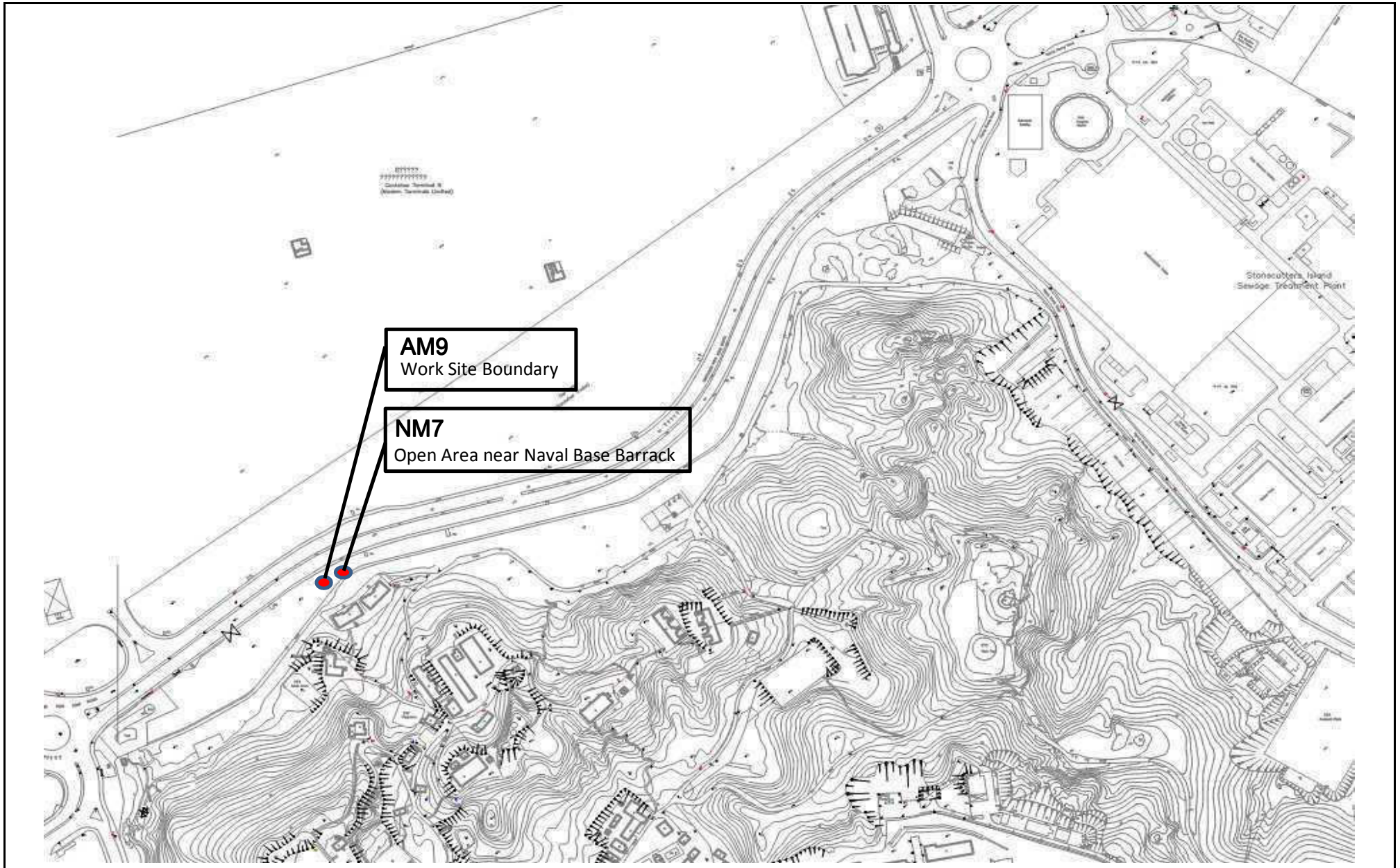

Title	Contract No. DC/2009/18 HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities	Scale N.T.S	Project No. MA11043	CINOTECH
	Locations of Impact Air Quality and Noise Monitoring Stations	Date 12/2011	Figure 3	

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 : March 2013

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

Monitoring Month : April 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr
	Public Holiday		1-hr and 24-hr Monitoring	Public Holiday		
7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr	13-Apr
		1-hr and 24-hr Monitoring			1-hr and 24-hr Monitoring	
14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr
				1-hr and 24-hr Monitoring		
21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr
			1-hr and 24-hr Monitoring			
28-Apr	29-Apr	30-Apr				
		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 : March 2013

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

Monitoring Month : April 2013

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

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Mar	2-Mar
3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar
	24 hr TSP	1hr TSP X 3 Noise (NM6)			24 hr TSP	
10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar
	1hr TSP X 3 Noise (NM6)			24 hr TSP	1hr TSP X 3 Noise (NM6)	
17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar
			24 hr TSP	1hr TSP X 3 Noise (NM6)		
24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	**29-Mar**	**30-Mar**
		24 hr TSP	1hr TSP X 3 Noise (NM6)		Noise (NM5 and NM6)	
31-Mar						

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
NM5 - Near FSD Diving Rescue and Training Centre
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 (April 2013)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Apr	2-Apr	3-Apr	**4-Apr**	5-Apr	6-Apr
	Noise (NM 5 and NM6) 24 hr TSP	1hr TSP X 3 Noise (NM6)			24 hr TSP	
7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr	13-Apr
	1hr TSP X 3 Noise (NM6)			24 hr TSP	1hr TSP X 3	
14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr
			24 hr TSP	1hr TSP X 3 Noise (NM6)		
21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr
		24 hr TSP	1hr TSP X 3 Noise (NM6)			
28-Apr	29-Apr	30-Apr	**1-May**	2-May	3-May	4-May
	24 hr TSP	1hr TSP X 3 Noise (NM6)				

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
NM5 - Near FSD Diving Rescue and Training Centre
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

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

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

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

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 (April 2013)

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

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

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	:	18/01/2013

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)	:	1027
Ta(K)	:	288

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	9.5	3.157	1.585	61	62.5
2	13 holes	7.2	2.748	1.380	53	54.3
3	10 holes	5.8	2.467	1.239	47	48.1
4	7 holes	3.8	1.997	1.003	38	38.9
5	5 holes	2.2	1.519	0.764	27	27.7

Sampler Calibration Relationship

Slope(m):42.14 Intercept(b): -4.036 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan Date: 24/01/2013

High-Volume TSP Sampler
5-Point Calibration Record9

Location	:	AM6
Calibrated by	:	P.F.Yeung
Date	:	18/03/2013

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2323
Service Date	:	26 Dec 2012
Slope (m)	:	2.09107
Intercept (b)	:	-0.02838
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1014
Ta(K)	:	294

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	9.5	3.105	1.551	66	66.5
2	13 holes	7.2	2.703	1.352	55	55.4
3	10 holes	5.5	2.362	1.183	48	48.3
4	7 holes	3.8	1.964	0.985	39	39.3
5	5 holes	2.2	1.494	0.752	27	27.2

Sampler Calibration Relationship

Slope(m):48.266 Intercept(b): -8.877 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan Date: 22/03/2013

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

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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.
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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
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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.
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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
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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.
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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0005

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

Date: 27-Feb-13 Next Due Date: 26-Apr-13

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

Ambient Condition			
Temperature, Ta (K)	298.5	Pressure, Pa (mmHg)	762.4

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	11.8	3.44	60.72	8.6	2.93
2	9.3	3.05	54.00	6.7	2.59
3	6.7	2.59	45.96	5.2	2.28
4	4.2	2.05	36.56	3.5	1.87
5	2.5	1.58	28.40	2.3	1.52

By Linear Regression of Y on X

Slope , mw = 0.0432 **Intercept, bw =** 0.2888

Correlation coefficient* = 0.9994

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.60**

Remarks:

Conducted by: Shing Signature: Date: 27-2-2013

Checked by: Signature: Date: 27-2-2013

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0004

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

Date: 27-Feb-13 Next Due Date: 26-Apr-13

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

Ambient Condition			
Temperature, Ta (K)	298.7	Pressure, Pa (mmHg)	762.3

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	11.5	3.39	59.93	8.6	2.93
2	8.7	2.95	52.24	7.0	2.65
3	6.8	2.61	46.28	5.4	2.32
4	4.5	2.12	37.80	3.9	1.98
5	2.1	1.45	26.09	2.0	1.41

By Linear Regression of Y on X

Slope , mw = 0.0452 **Intercept, bw =** 0.2487

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.80

Remarks:

Conducted by: Shing Signature: Date: 27-2-2013

Checked by: Signature: Date: 27-2-2013

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0010

Project No. AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)
Operator: Shing
Date: 27-Feb-13 Next Due Date: 26-Apr-13
Equipment No.: A-01-63 Serial No. 2356

Ambient Condition			
Temperature, Ta (K)	298.4	Pressure, Pa (mmHg)	762.5

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	3.42	60.48	8.7	2.95
2	9.4	3.07	54.30	6.9	2.63
3	6.7	2.59	45.97	5.1	2.26
4	4.7	2.17	38.64	3.8	1.95
5	2.5	1.58	28.41	2.1	1.45

By Linear Regression of Y on X

Slope , mw = 0.0461 **Intercept, bw =** 0.1474

Correlation coefficient* = 0.9995

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.53**

Remarks:

Conducted by: Shing Signature: Date: 27-2-2013

Checked by: HL Signature: Date: 27-2-2013

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/120104/5
Date of Issue:	2013-01-07
Date Received:	2013-01-04
Date Tested:	2013-01-04
Date Completed:	2013-01-07
Next Due Date:	2013-03-06

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.	: 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	: 66%

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

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Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/130306/3
Date of Issue:	2013-03-09
Date Received:	2013-03-06
Date Tested:	2013-03-06
Date Completed:	2013-03-09
Next Due Date:	2013-05-08
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	: 18 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

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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/130221/01
Date of Issue:	2013-02-21
Date Received:	2013-02-20
Date Tested:	2013-02-20
Date Completed:	2013-02-21
Next Due Date:	2013-04-20
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	: 20 degree Celsius
Relative Humidity	: 56 %

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)	**0.0029**

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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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/130221/02
Date of Issue:	2013-02-21
Date Received:	2013-02-20
Date Tested:	2013-02-20
Date Completed:	2013-02-21
Next Due Date:	2013-04-20
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	: 20 degree Celsius
Relative Humidity	: 56 %

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)	**0.0029**

****

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

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/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

ATTN: **Mr. Henry Leung**

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
PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/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
Page:	1 of 1

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

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:
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Patrick Tse
PATRICK TSE
Laboratory Manager

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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 (°C)	Wind Speed * (m/s)	Sampler ID	Filter ID
6-Mar-13	14:00	15:00	Sunny	183	346	500	Construction work in progress	20	<5	1254	6513
	15:02	16:02	Sunny	194	346	500	Construction work in progress	20	<5	1254	6514
	16:04	17:04	Sunny	192	346	500	Construction work in progress	20	<5	1254	6515
12-Mar-13	13:50	14:50	Sunny	200	346	500	Construction work in progress	22	<5	1254	6517
	14:52	15:52	Sunny	113	346	500	Construction work in progress	22	<5	1254	6518
	15:54	16:54	Sunny	188	346	500	Construction work in progress	22	<5	1254	6519
18-Mar-13	13:00	14:00	Sunny	177	346	500	Construction work in progress	22	<5	1254	6949
	14:02	15:02	Sunny	204	346	500	Construction work in progress	22	<5	1254	6950
	15:04	16:04	Sunny	187	346	500	Construction work in progress	22	<5	1254	6951
22-Mar-13	13:05	14:05	Cloudy	191	346	500	Construction work in progress	24	<5	1254	6953
	14:07	15:07	Cloudy	219	346	500	Construction work in progress	24	<5	1254	6954
	15:09	16:09	Cloudy	190	346	500	Construction work in progress	24	<5	1254	6955
28-Mar-13	14:00	15:00	Cloudy	189	346	500	Construction work in progress	20	<5	1254	6957
	15:02	16:02	Cloudy	194	346	500	Construction work in progress	20	<5	1254	6958
	16:04	17:04	Cloudy	195	346	500	Construction work in progress	20	<5	1254	6959
			Min.	**113**							
			Max.	**219**							
			Average	**188**							

* Wind Speed data is presented in the Meteorological Data table

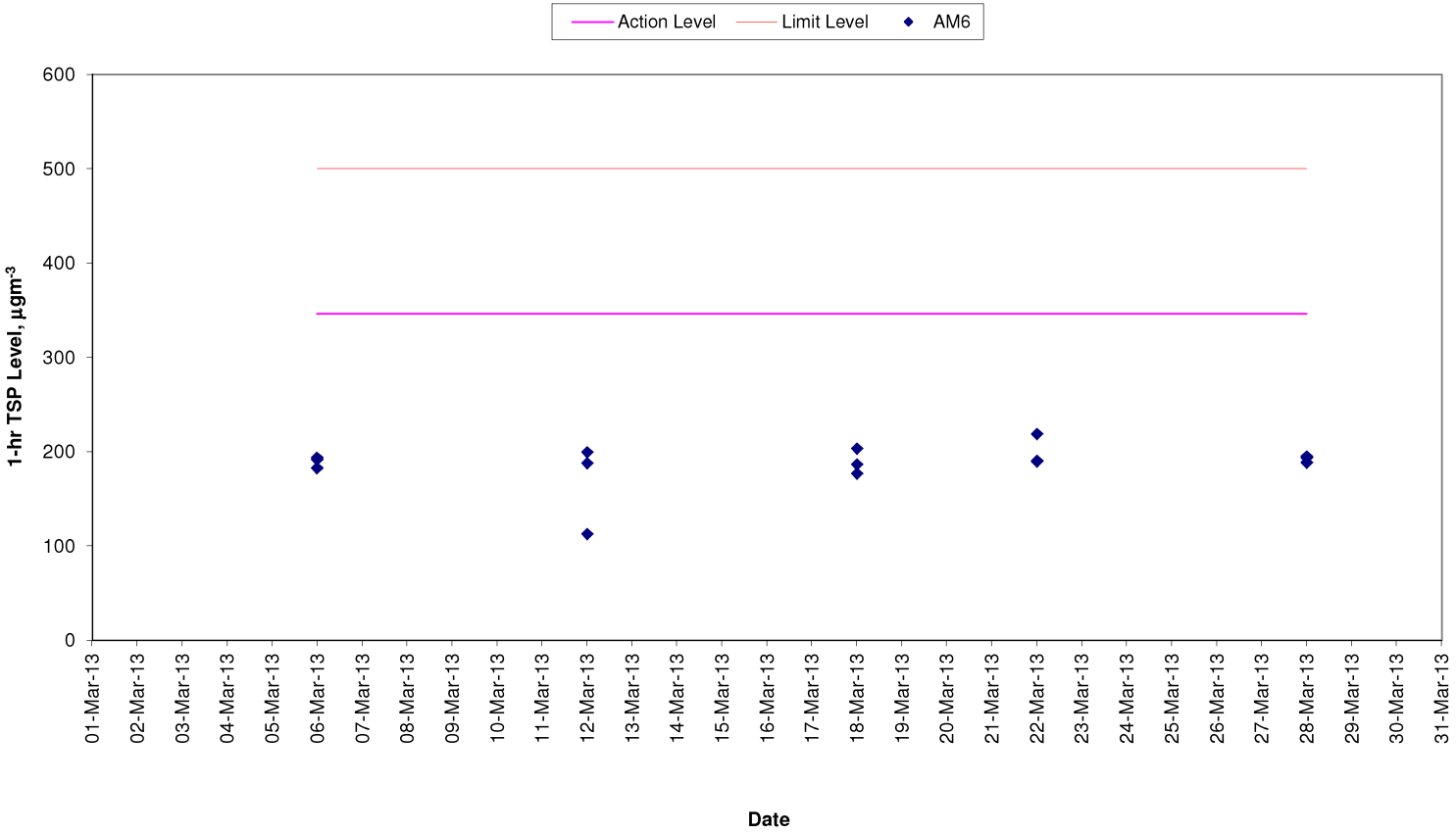
Annex G5 24-hour and 1-hour TSP Monitoring Results

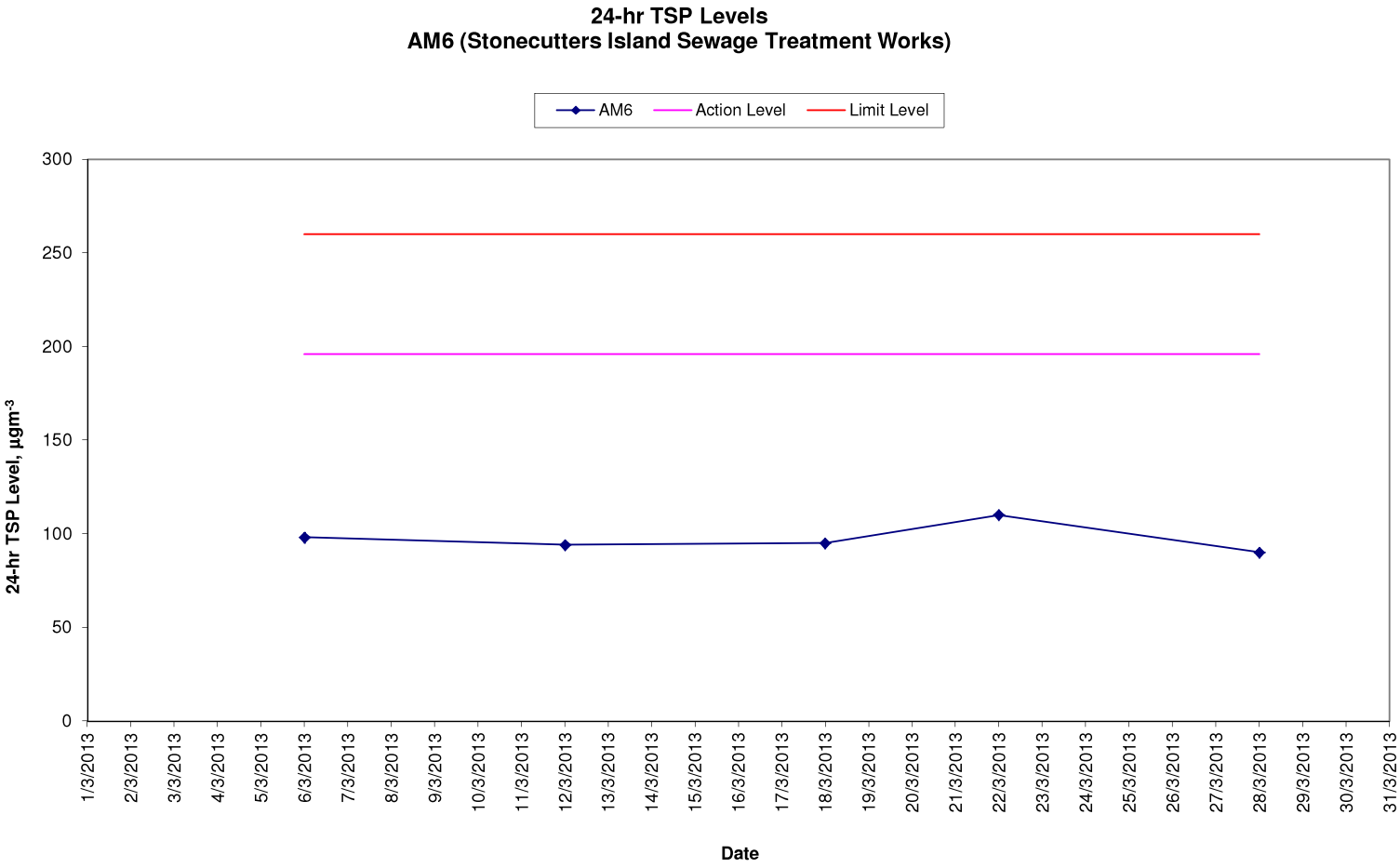
24-hour TSP Monitoring Results

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
6-Mar-13	17:06	7-Mar-13	17:06	Sunny	2.8121	2.9671	11301.03	11325.03	24.00	1.24	1.24	1.24	98	196	260	Construction work in progress	1254	6516
12-Mar-13	16:56	13-Mar-13	16:56	Sunny	2.8241	2.9927	11328.03	11352.03	24.00	1.24	1.24	1.24	94	196	260	Construction work in progress	1254	6520
18-Mar-13	16:06	19-Mar-13	16:06	Sunny	2.7825	2.9515	11355.03	11379.03	24.00	1.24	1.24	1.24	95	196	260	Construction work in progress	1254	6952
22-Mar-13	16:11	23-Mar-13	16:11	Cloudy	2.7839	2.9771	11382.03	11406.03	24.00	1.22	1.22	1.22	110	196	260	Construction work in progress	1254	6956
28-Mar-13	17:06	29-Mar-13	17:06	Cloudy	2.7766	2.9339	11409.03	11433.03	24.00	1.22	1.22	1.22	90	196	260	Construction work in progress	1254	6960
												Min.	**90**					
												Max.	**110**					
												Average	**97**					

1-hr TSP Levels
AM6 (Stonecutters Island Sewage Treatment Works)




24-hr TSP Levels
AM6 (Stonecutters Island Sewage Treatment Works)
AM6
Action Level
Limit Level
24-hr TSP Level, µgm-3
300
250
200
150
100
50
0
1/3/2013
2/3/2013
3/3/2013
4/3/2013
5/3/2013
6/3/2013
7/3/2013
8/3/2013
9/3/2013
10/3/2013
11/3/2013
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24/3/2013
25/3/2013
26/3/2013
27/3/2013
28/3/2013
29/3/2013
30/3/2013
31/3/2013
Date

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Mar-13	10:00	Sunny	131
5-Mar-13	11:00	Sunny	124
5-Mar-13	13:00	Sunny	115
11-Mar-13	9:00	Sunny	280
11-Mar-13	10:00	Sunny	291
11-Mar-13	11:00	Sunny	296
15-Mar-13	10:00	Sunny	214
15-Mar-13	11:00	Sunny	207
15-Mar-13	12:00	Sunny	189
21-Mar-13	11:00	Cloudy	150
21-Mar-13	13:00	Cloudy	148
21-Mar-13	14:00	Cloudy	154
27-Mar-13	9:00	Cloudy	212
27-Mar-13	10:00	Cloudy	209
27-Mar-13	11:00	Cloudy	215
		Average	196
		Maximum	296
		Minimum	115

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (μg/m3)
5-Mar-13	11:00	Sunny	111
5-Mar-13	13:00	Sunny	128
5-Mar-13	14:00	Sunny	113
11-Mar-13	13:00	Sunny	291
11-Mar-13	14:00	Sunny	289
11-Mar-13	15:00	Sunny	286
15-Mar-13	13:00	Sunny	171
15-Mar-13	14:00	Sunny	184
15-Mar-13	15:00	Sunny	177
21-Mar-13	10:00	Cloudy	135
21-Mar-13	11:00	Cloudy	123
21-Mar-13	13:00	Cloudy	132
27-Mar-13	13:00	Cloudy	171
27-Mar-13	14:00	Cloudy	164
27-Mar-13	15:00	Cloudy	175
		Average	177
		Maximum	291
		Minimum	111

Appendix D - 24-hour TSP Monitoring Results

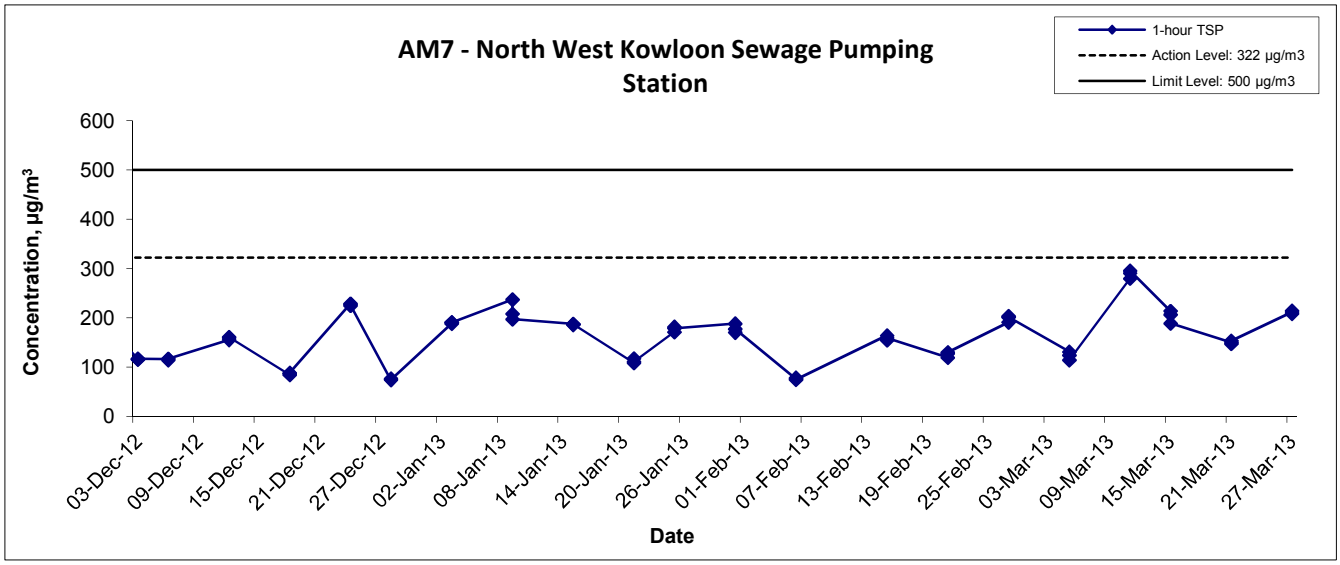
Location AM7 - North West Kowloon Sewage Pumping Station

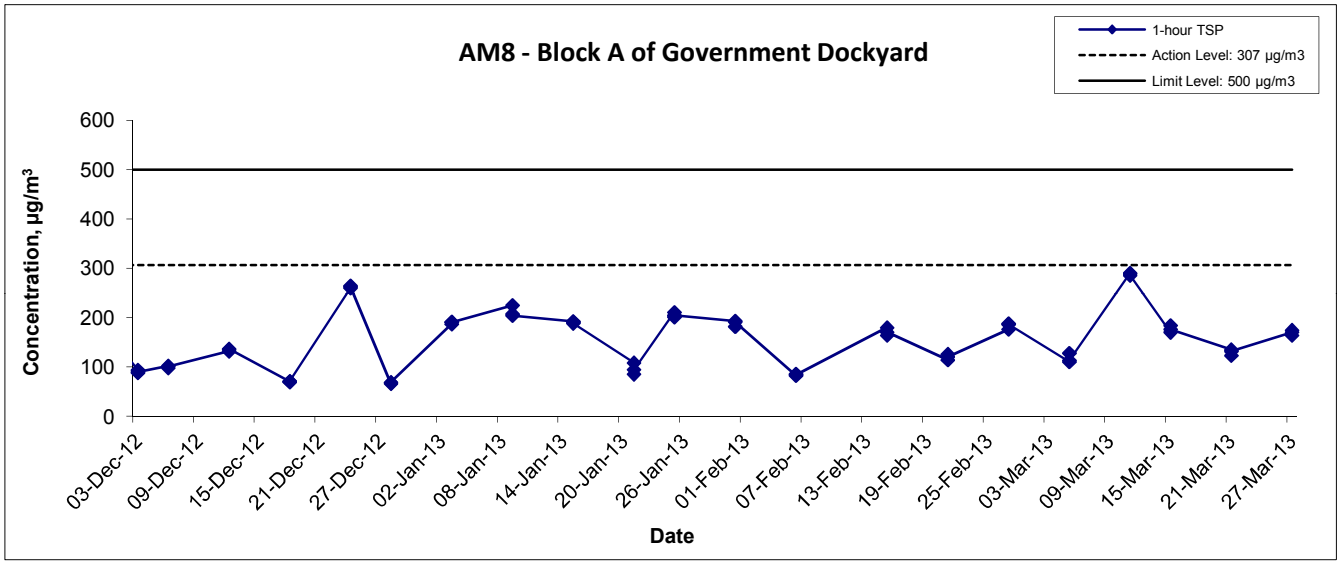
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
4-Mar-13	Sunny	287.6	3.1431	3.3897	0.2466	28001.3	28025.3	24.0	1.25	1.25	1.25	1803.0	136.8
8-Mar-13	Sunny	292.3	3.1173	3.4115	0.2942	28025.3	28049.3	24.0	1.24	1.24	1.24	1779.4	165.3
14-Mar-13	Sunny	292.1	3.0747	3.3811	0.3064	28049.3	28073.3	24.0	1.24	1.24	1.24	1781.6	172.0
20-Mar-13	Cloudy	297.9	3.0399	3.3010	0.2611	28073.3	28097.3	24.0	1.22	1.22	1.22	1754.3	148.8
26-Mar-13	Cloudy	291.5	3.1053	3.2819	0.1766	28097.3	28121.3	24.0	1.23	1.23	1.23	1775.6	99.5
												Min	99
												Max	172
												Average	144

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			
4-Mar-13	Sunny	287.6	3.0760	3.2245	0.1485	1673.1	1697.1	24.0	1.25	1.25	1.25	1802.0	82.4
8-Mar-13	Sunny	292.3	3.0891	3.2880	0.1989	1697.1	1721.1	24.0	1.24	1.24	1.24	1779.0	111.8
14-Mar-13	Sunny	292.1	3.1313	3.3315	0.2002	1721.1	1745.1	24.0	1.24	1.24	1.24	1781.2	112.4
20-Mar-13	Cloudy	297.9	3.0412	3.1374	0.0962	1745.1	1769.1	24.0	1.22	1.22	1.22	1754.5	54.8
26-Mar-13	Cloudy	291.5	3.0946	3.1810	0.0864	1769.1	1793.1	24.0	1.23	1.23	1.23	1775.3	48.7
												Min	49
												Max	112
												Average	82

1-hr TSP Concentration Levels

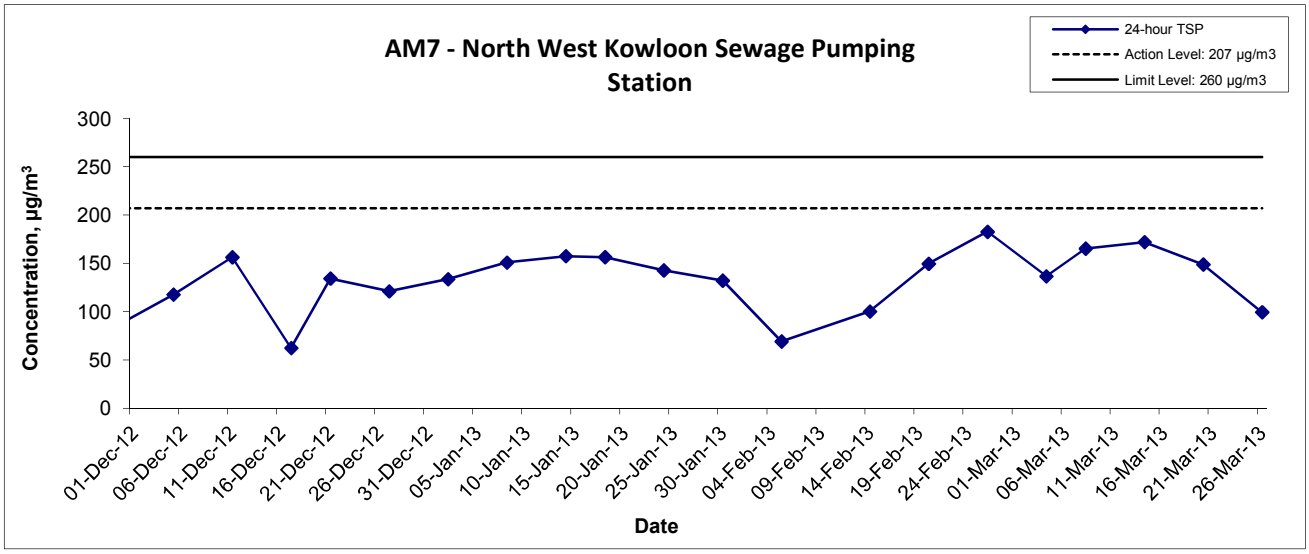


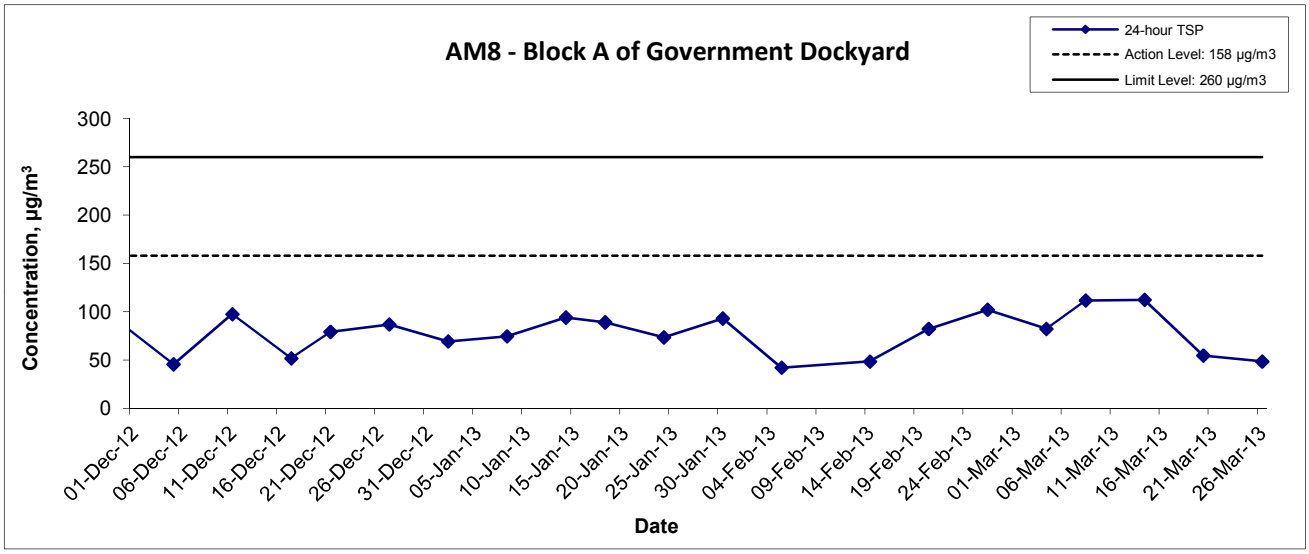


Title		Scale	Project No.
Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results		N.T.S	MA11007
		Date Mar 13	Appendix D

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: Mar 13	Project No.: MA11007 Appendix: D	CINOTECH

Appendix D - 1-hour TSP Monitoring Results

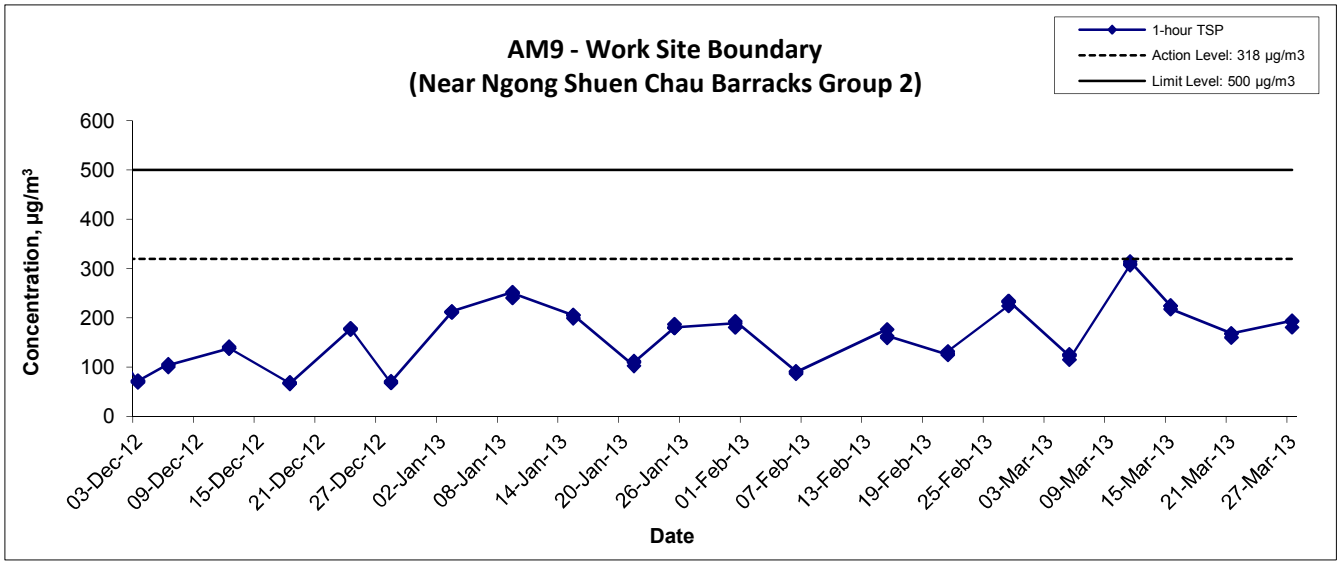
Location AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
5-Mar-13	9:00	Sunny	123.1
5-Mar-13	10:00	Sunny	126.2
5-Mar-13	11:00	Sunny	115.5
11-Mar-13	10:00	Sunny	307.5
11-Mar-13	11:00	Sunny	309.9
11-Mar-13	13:00	Sunny	314.6
15-Mar-13	9:00	Sunny	224.8
15-Mar-13	10:00	Sunny	224.8
15-Mar-13	11:00	Sunny	218.2
21-Mar-13	9:00	Cloudy	168.8
21-Mar-13	10:00	Cloudy	160.6
21-Mar-13	11:00	Cloudy	168.2
27-Mar-13	9:00	Cloudy	194.4
27-Mar-13	10:00	Cloudy	193.1
27-Mar-13	11:00	Cloudy	181.1
		Average	202.1
		Maximum	314.6
		Minimum	115.5

Appendix D - 24-hour TSP Monitoring Results

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

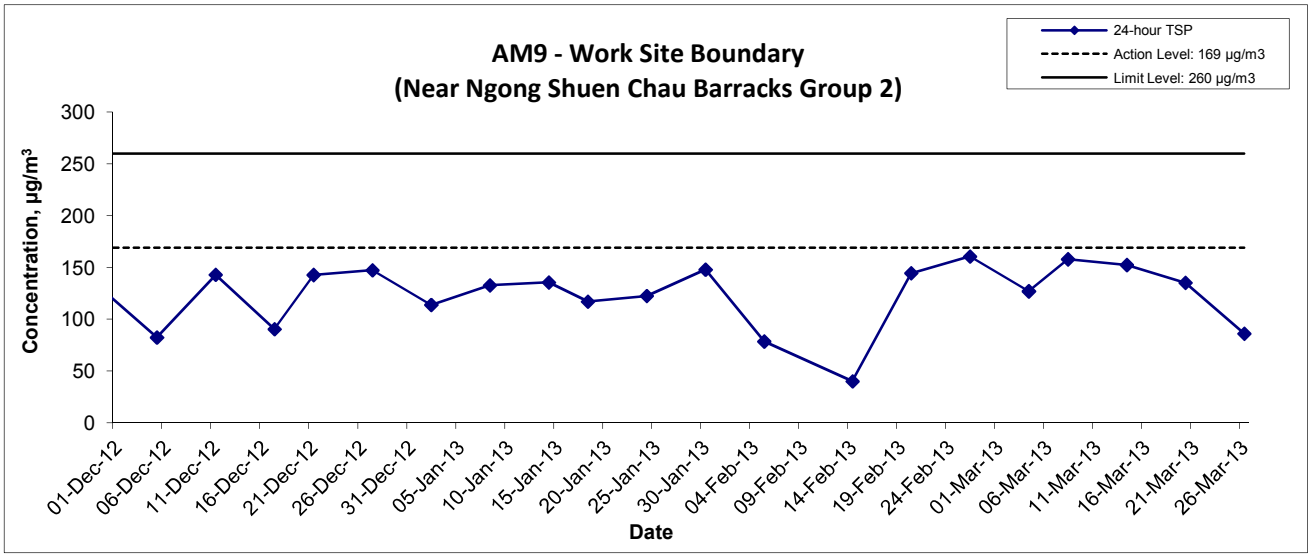
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
4-Mar-13	Sunny	287.6	3.1067	3.3345	0.2278	873.6	897.6	24.0	1.25	1.25	1.25	1793.3	127.0
8-Mar-13	Sunny	292.3	3.0832	3.3630	0.2798	897.6	921.6	24.0	1.23	1.23	1.23	1771.5	157.9
14-Mar-13	Sunny	292.1	3.1054	3.3757	0.2703	921.6	945.6	24.0	1.23	1.23	1.23	1773.5	152.4
20-Mar-13	Cloudy	297.9	3.1080	3.3444	0.2364	945.6	969.6	24.0	1.21	1.21	1.21	1748.2	135.2
26-Mar-13	Cloudy	291.5	2.9980	3.1502	0.1522	969.6	993.6	24.0	1.23	1.23	1.23	1767.9	86.1
												Min	86.1
												Max	157.9
												Average	131.7

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: Mar 13	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: Mar 13	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							
6-Mar-13	14:10	14:40	Sunny	61.9	64.2	58.6	Drill rig, excavator, dump truck	Traffic noise	-	19	0.6	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
12-Mar-13	14:10	14:40	Sunny	62.1	63.6	60.2	Drill rig, excavator, dump truck	Traffic noise	-	21	0.7	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
18-Mar-13	13:05	13:35	Sunny	61.3	62.7	60.2	Drill rig, excavator, dump truck	traffic noise	-	23	0.6	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
28-Mar-13	14:10	14:40	Cloudy	61.7	63.9	58.8	Drill rig, excavator, dump truck	traffic noise	-	19	0.6	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
			Min.	**61.3**									
			Max.	**62.1**									

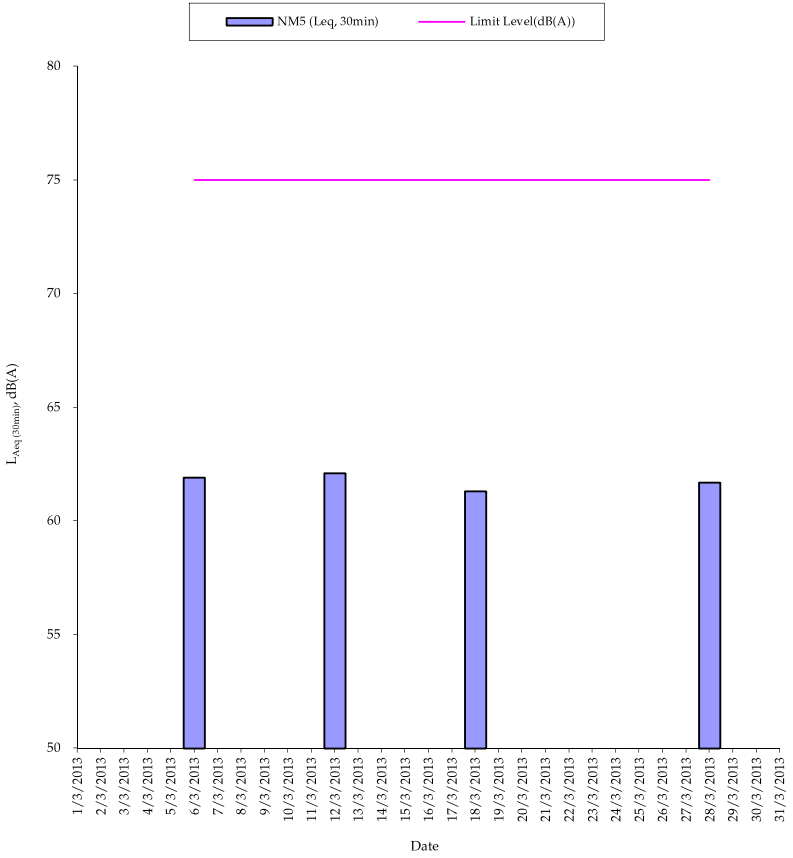
Annex G6 Noise Monitoring Results

Restricted Hours Noise Monitoring Results

Station NM5

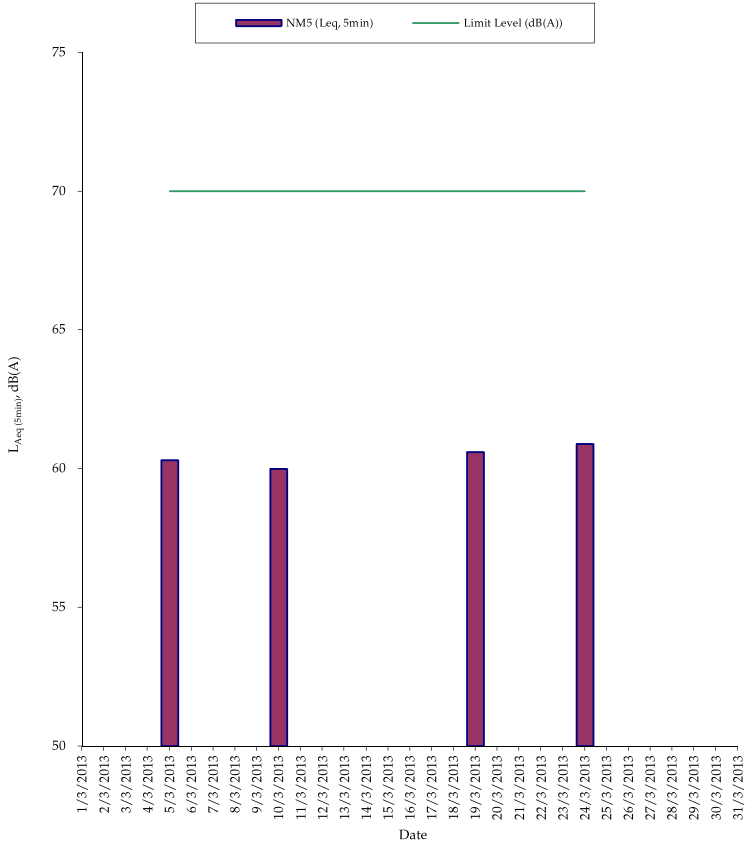
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
5-Mar-13	19:08	19:13	Cloudy	59.4	61.0	57.1	Drill rig	Traffic noise & aircraft noise	-	18	3.0	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	19:13	19:18	Cloudy	60.8	64.3	57.5			-				
	19:18	19:23	Cloudy	60.5	62.2	58.0			-				
	19:08	19:23	Cloudy	60.3	62.7	57.5			-				
10-Mar-13	10:00	10:05	Sunny	59.8	61.4	58.1	Drill rig	Traffic noise & aircraft noise	-	22	6.0	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	10:05	10:10	Sunny	60.4	62.7	58.3			-				
	10:10	10:15	Sunny	59.7	61.1	58.4			-				
	10:00	10:15	Sunny	60.0	61.8	58.3			-				
19-Mar-13	19:20	19:25	Cloudy	60.3	61.9	58.1	Drill rig	Traffic noise	-	24	0.8	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	19:25	19:30	Cloudy	60.8	62.7	58.5			-				
	19:30	19:35	Cloudy	60.6	62.2	58.2			-				
	19:20	19:35	Cloudy	60.6	62.3	58.3			-				
24-Mar-13	14:00	14:05	Cloudy	61.4	63.1	59.5	Drill rig	Traffic noise	-	23	0.6	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	14:05	14:10	Cloudy	60.8	62.2	59.3			-				
	14:10	14:15	Cloudy	60.6	62.1	58.8			-				
	14:00	14:15	Cloudy	60.9	62.5	59.2			-				
			Min.	**59.4**									
			Max.	**61.4**									

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 reporting period

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}
5-Mar-13	16:15	Sunny	72.4	76.3	69.5
11-Mar-13	14:00	Sunny	72.1	75.0	68.9
15-Mar-13	14:25	Sunny	72.3	74.9	69.5
21-Mar-13	10:45	Cloudy	71.2	72.8	69.3
27-Mar-13	15:10	Cloudy	71.8	73.9	68.2

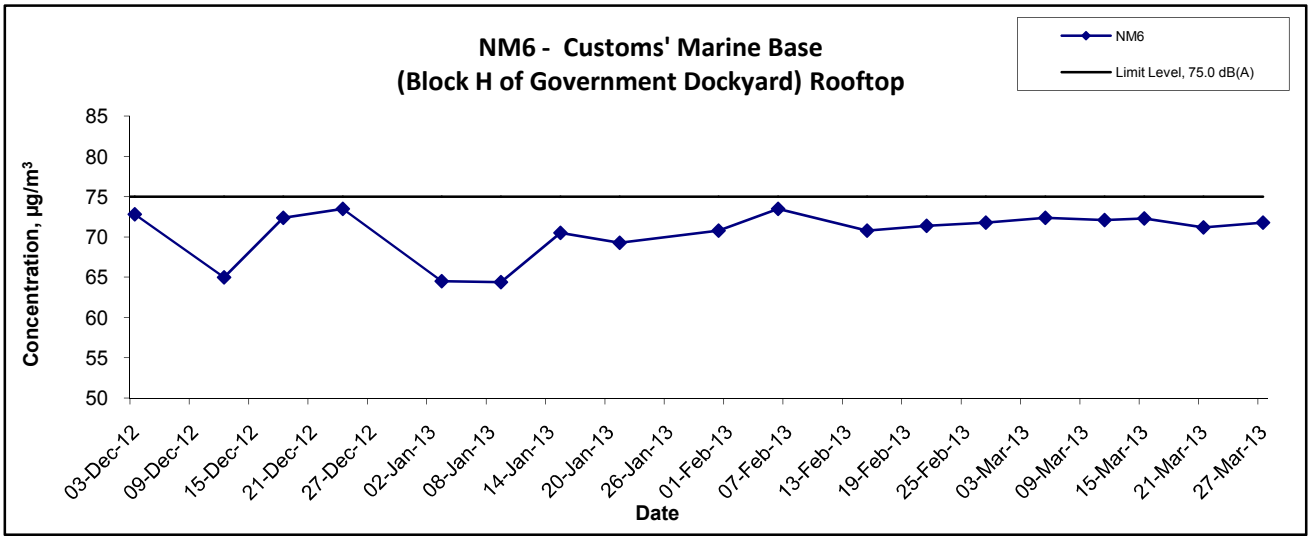
(0700 to 2300 hrs on general holidays [including Sundays])

Location NM5 - Near FSD Diving Rescue and Training Centre							
Date	Time	Weather	dB (A) (5-min)				Limit Level dB (A) (5-min)
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}
29-Mar-13	16:00	Cloudy	61.3	63.8	59.8	61.9	70.0
	16:05		61.7	63.6	59.9		
	16:10		62.5	64.2	60.6		

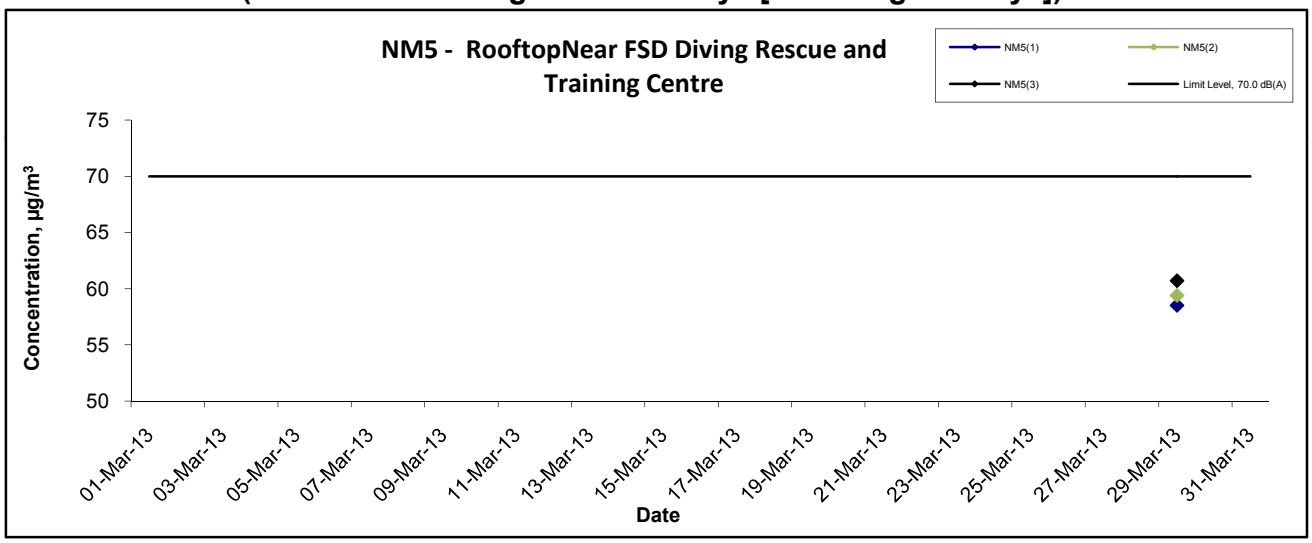
Location NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop							
Date	Time	Weather	dB (A) (5-min)				Limit Level dB (A) (5-min)
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}
29-Mar-13	15:00	Cloudy	58.5	62.0	56.0	59.6	70.0
	15:05		59.4	62.3	56.8		
	15:10		60.7	63.6	57.7		

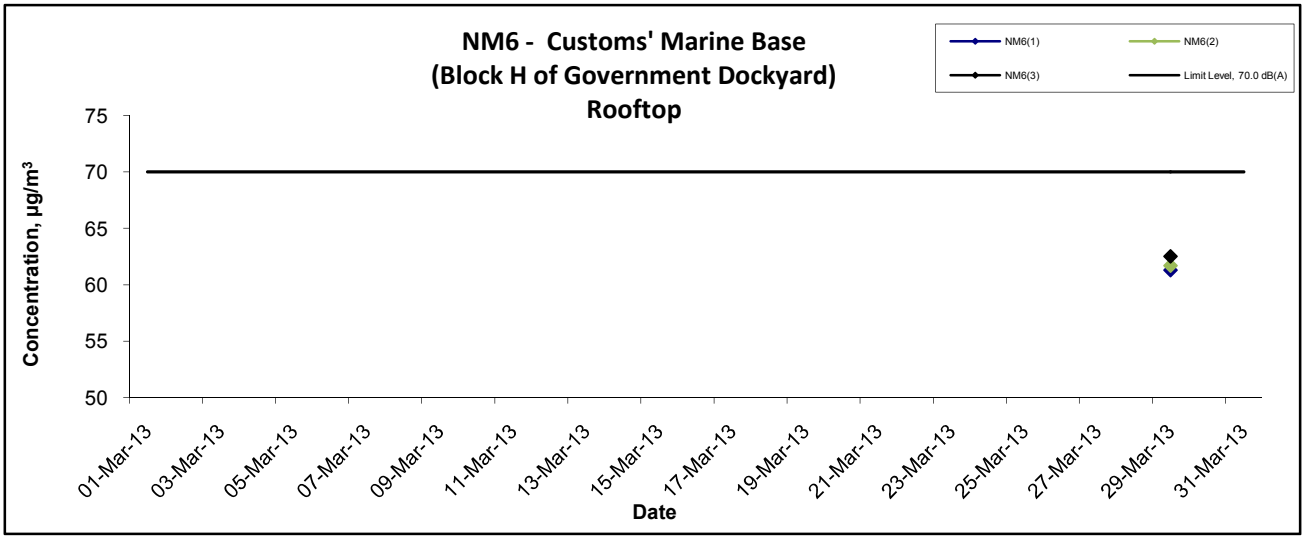
Noise Levels

(0700-1900 hrs on Normal Weekdays)



(0700-2300 hrs on general holidays [including Sundays])





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 Noise Monitoring Result		N.T.S	MA11007
		Date Mar 13	Appendix E

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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}
5-Mar-13	11:30	Sunny	68.1	70.8	63.8
11-Mar-13	10:40	Sunny	68.7	70.8	65.2
15-Mar-13	10:00	Sunny	71.1	73.8	67.2
21-Mar-13	09:50	Cloudy	70.9	72.1	68.5
27-Mar-13	11:05	Cloudy	72.7	74.9	70.1

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

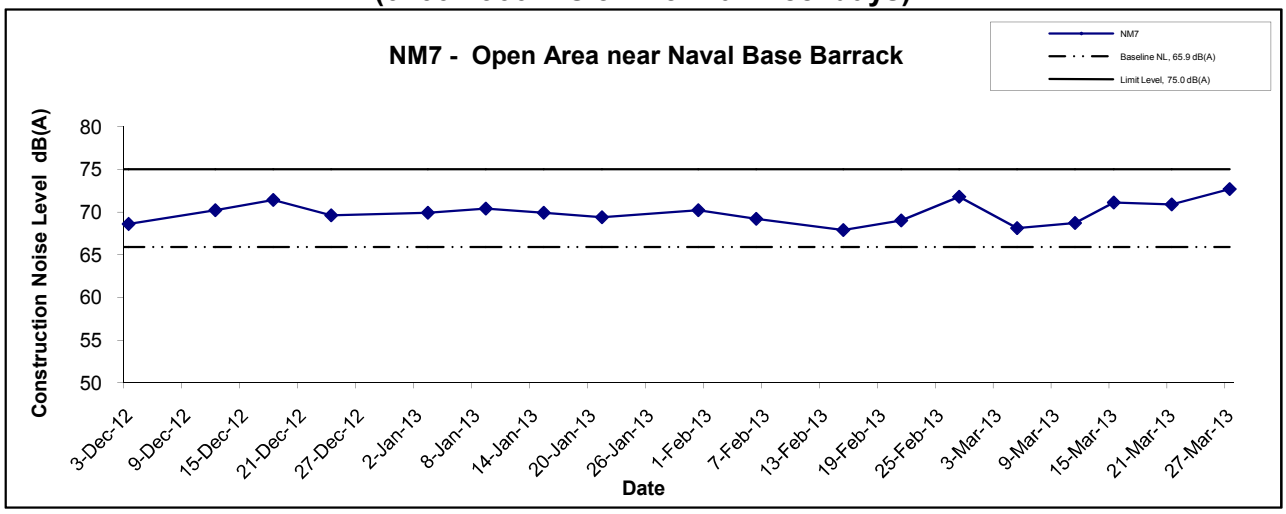
Location NM7 - Customs' Marine Base (Block H of Government Dockyard) Rooftop						
Date	Time	Weather	dB (A) (5-min)			
			L_{eq}	L_{10}	L_{90}	Average L_{eq}
5-Mar-13	19:05	Cloudy	65.2	67.2	61.5	64.7
	19:10		64.8	65.9	61.0	
	19:15		63.9	65.5	61.1	
11-Mar-13	19:12	Cloudy	65.7	67.4	61.2	65.8
	19:17		66.0	67.5	61.1	
	19:22		65.8	66.9	60.7	
15-Mar-13	19:10	Fine	64.3	67.1	61.3	64.8
	19:15		65.0	67.3	61.1	
	19:20		65.1	67.3	60.8	
21-Mar-13	19:10	Cloudy	66.3	67.8	62.1	65.9
	19:15		65.9	67.7	61.8	
	19:20		65.5	67.5	61.4	
27-Mar-13	19:10	Cloudy	65.3	67.8	60.9	65.0
	19:15		64.9	67.1	59.4	
	19:20		64.8	67.2	59.5	

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

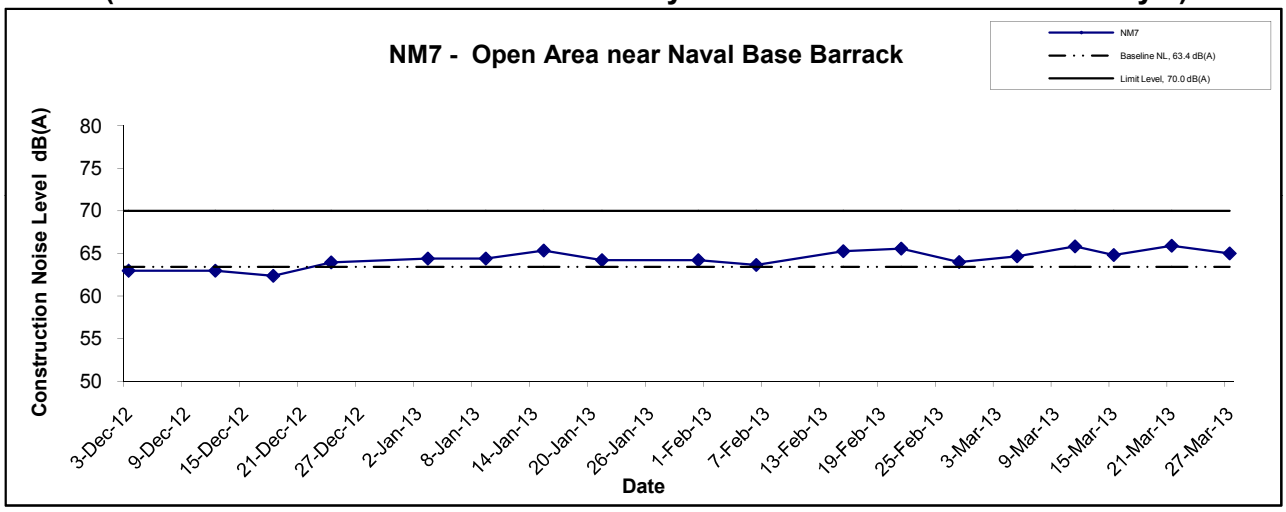
Location NM7 - Customs' Marine Base (Block H of Government Dockyard) Rooftop								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
5-Mar-13	23:05	Cloudy	60.1	62.0	57.2	60.2	59.7	51.0
	23:10		60.7	62.1	57.2			
	23:15		59.9	62.0	56.8			
11-Mar-13	23:10	Cloudy	60.2	61.1	56.3	60.2		50.3
	23:15		60.4	61.2	56.3			
	23:20		59.9	61.2	56.1			
15-Mar-13	23:05	Fine	60.7	61.8	56.3	60.1		49.4
	23:10		60.3	61.8	56.4			
	23:15		59.1	60.5	56.7			
21-Mar-13	23:05	Cloudy	60.7	61.3	56.4	60.3		51.5
	23:10		59.9	60.8	55.6			
	23:15		60.3	61.2	55.9			
27-Mar-13	23:15	Cloudy	60.7	61.9	56.4	60.3		51.5
	23:20		60.3	61.8	56.5			
	23:25		59.9	61.5	55.9			

Noise Levels

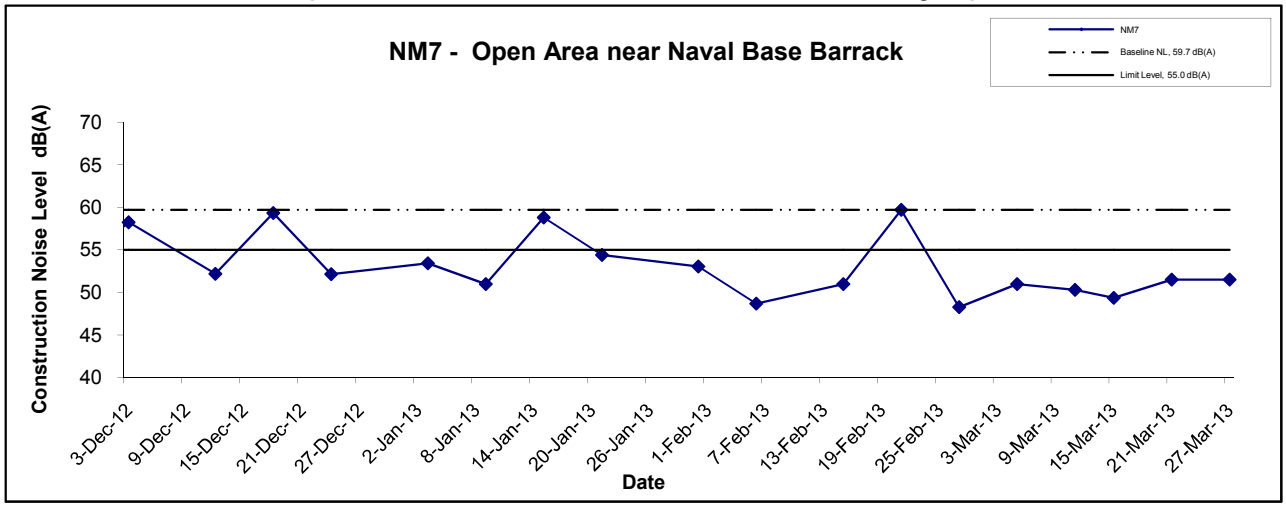
(0700-1900 hrs on Normal Weekdays)



(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 Mar 13	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-RW0990-12	9/1/2013	8/7/2013	Location: Stonecutters Island Production Shaft and Riser Shaft	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
GW-RW0116-13	22/2/2013	21/8/2013	Location: Construction site at Stonecutters Island Sewage treatment works (Portion C2)	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
WT00015128-2013	31/1/2013	31/1/2018	The application was approved on 31-1-2013.	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-RW0027-12	10/1/2013	1/10/2013	Location: Portion 4.	Valid
Construction Noise Permit for use of mechanical equipment outside permitted working hours				
GW-RW0971-12	25/12/2012	24/6/2013	Location: Portion 4	Valid
GW-RW0952-12	25/12/2012	24/6/2013	Location: Portion B	Valid
GW-RW0053-13	1/2/2013	31/7/2013	Location: Portion 3 and 8	Valid
GW-RW0038-13	1/2/2013	31/7/2013	Location: Portion 6	Valid

Reference Number	Valid Period		Details	Status
	From	To		
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: March 2013

Exceedance Report for 1-hr TSP (NIL)

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

b) 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

generated from the Project were disposed of at Tuen Mun Area 38/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point and SENT Landfill respectively.

Table 7.10 Quantities of Waste Generated from the Project for all Sites

Month / Year	Quantity			
	C&D Materials (inert) [a]	Recycled C&D Materials (non-inert) [b]	Others C&D Materials (non-inert)	Chemical Waste
March 2013	17,449 m^3	111 kg	110 m^3	0L

Notes:

(i) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil. The inert C&D materials and general refuse generated from the Project were disposed of at SENT Landfill/ Lam Tei Quarry for use or the Tuen Mun Area 38/Tseung Kwan O Area 137 Fill Bank/Chai Wan Barging Point. 9,229 m^3 of inert C&D materials were reused in other projects and 8,220 m^3 of inert C&D materials were disposed of as public fill.

(j) Non-inert C&D materials include steel, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. No plastic and steels was generated but 111 kg of paper/cardboard packaging were generated and sent to recyclers for recycling and disposed of at SENT Landfill.

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 7, 14, 21 and 27 March 2013. The representative of the IEC joined the site inspection on 27 March 2013. No non-compliance was recorded during the site inspections.

Major findings and recommendations are summarised as follows:

Riser Shaft

- No observation was recorded during the reporting month.

Production Shaft

- On 7 March, several chemical drums without impervious sheets were still observed being stored behind the noise enclosure. The Contractor was further reminded to cover them by impervious sheet to prevent accumulating of water.
- On 14 March, a chemical drum without drip tray was observed being stored next to the chemical storage. The Contractor was reminded to provide drip tray to prevent chemical spillage.
- On 21 March, several chemical drums without drip tray were observed being stored in front of the noise enclosure. The Contractor was reminded to provide drip tray for the chemical drums to prevent chemical spillage.
- On 27 March, several chemical containers without drip tray were observed being stored under the chemical sedimentation tank. The Contractor was reminded to provide drip tray for the chemical drums to prevent chemical spillage.

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, 14, 22 and 28 March 2013 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	Ref. Number	Observations	Follow Up Action
Water Quality	130307-O02	Chemical waste storage area should be relocated and away from seafront (Portion 3)	Chemical waste storage area was removed from seafront.
	130314-O01	Oil leakage from the equipment should be avoided and oil stains should be cleared. (Portion 4)	Equipment and oil stain were cleared by the Contractor
	130314-R02	Sand and debris next to seafront next to Portion 3 should be cleared to reduce run-off generation.	Sand and debris next to seafront next to Portion 3 were cleared.
	130322-R01	Stagnant water in drip tray and wheel washing facilities should be cleared regularly.	Stagnant water was cleared during the site inspection.
	130328-R01	Stagnant water neat to Portion 4 should be cleared after rainstorm.	Stagnant water was cleared during the site inspection.
Air Quality	130307-O01	Sand and debris at the site boundary and next to road with vehicle movement should be cleared to reduce dust generation. (Portion 3 and 4)	Sand and debris at the site boundary was cleared.
	130307-O03	Water spraying should be enhanced in dry days for dust suppression. (Portion 3 and 4).	Water spraying was observed during the site inspection.
Waste/ Chemical Management	130314-O01	Oil leakage from the equipment should be avoided and oil stains should be cleared. (Portion 4)	Equipment and oil stain were cleared by the Contractor

	130322-R01	Stagnant water in drip tray and wheel washing facilities should be cleared regularly.	Stagnant water was cleared during the site inspection.
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

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.

Status of Environmental Licensing and Permitting

4.8 All permits/licenses obtained for the Contract DC/2009/17 are summarized in **Table 4.2**.

Table 4.2 Summary of Environmental Licensing and Permit Status

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

Status of Waste Management

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

Implementation Status of Event Action Plans

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

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 1, 8, 15, 21 and 27 March 2013 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	Ref. Number	Observations	Follow Up Action
Water Quality	130315-R02	Stagnant water next to the workshop in Portion 4 should be cleared regularly.	Stagnant water was cleared and the oil stains nearby will be followed with item ref: 130321-R02.
	130321-R02	Oil stains in Portion 4 should be cleared and the oily water should be disposed of as chemical waste.	Oil stains in Portion was cleared.
	130327-O01	Stagnant water in MPS2 and Portion 4 should be cleared after rainstorm.	Stagnant water was cleared by the Contractor.
Air Quality	130301-R01	Cement bags (>20s) should be properly covered in Portion 3.	Cement bags in Portion 3 was used by the Contractor.
	130308-O01	Adequate water spraying should be provided at the site exit of Portion 4 to reduce dust generation.	Water sprayed was observed during the site inspection.
	130321-R01	Stockpile in Portion 4 should be properly covered to reduce dust generation.	Stockpile in Portion 4 was covered by tarpaulin.
Waste/ Chemical Management	130308-O03	To avoid the chemical with direct contact with earth in Portion 3 by providing drip tray.	The chemical in Portion 3 was removed by the Contractor.
	130315-R01	Oil drums and chemical containers in Portion 4 should be contained by drip tray to prevent oil leakage.	Oil drums and chemical containers in Portion 4 were removed.

	130321-R02	Oil stains in Portion 4 should be cleared and the oily water should be disposed of as chemical waste.	Oil stains in Portion was cleared.
	130327-O02	General refuse accumulated in MPS2 should be cleared.	General refuses accumulated in MPS2 were cleared by the Contractor.
Landscape and Visual	N/A	There was no observation in the reporting month.	N/A
Noise	130308-O02	To provide noise label to air compressor in Portion 3.	Noise label was attached to the air compressor in Portion 3.
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

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.

Status of Environmental Licensing and Permitting

4.8 All permits/licenses obtained for the Contract DC/2009/10 are summarized in **Table 4.2**.

Table 4.2 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
WT00015128-2013	31/1/2012	31/1/2018	The application was approved on 31-1-2012.	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-RW0027-12	10/1/2013	1/10/2013	Location: Portion 4.	Valid
Construction Noise Permit for use of mechanical equipment outside permitted working hours				
GW-RW0971-12	25/12/2012	24/6/2013	Location: Portion 4	Valid
GW-RW0952-12	25/12/2012	24/6/2013	Location: Portion B	Valid

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, 20 and 27 March 2013 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	130306-O01	Sediment accumulated in the sedimentation tanks should be cleared to avoid overflowing.(Portion 3)	Sediment in the sedimentation tanks in Portion 3 was cleared.
	130320-O01	Spillage of muddy water in Portion 7 should be prevented and the bund surrounding Portion 7 should be repaired.	The bund at Portion 7 was setting up during the site inspection while the muddy water observed would be followed up with item 130327-O02.
	130320-O02	The gully next to the excavating area in Portion 3 should be surrounding by sand bags.	Sand bags was provided to surround the excavating area in Portion 3
	130327-O01	Spillage of wastewater in Portion 3 should be prevented and work area should be bund for confining wastewater in site for treatment.	This item was find outstanding and recorded as item 130403-O01 and the spillage was rectified on 10th April 2013.
	130327-O02	The muddy water in Portion 7 should be cleared.	The muddy water in Portion 7 was cleared.
Air Quality	130306-O02	Wheels washing and water spraying should be provided at the site exit of Portion 3; the mud trail should be cleared.	Wheel washing was provided and the mud trail near the site exit of Portion 3 was cleared.
	130313-R01	To enhance dust suppression measures during sheet pilling works in Portion 3.	Water spray was observed at the sheet pilling area in Portion 3.
Waste/ Chemical Management	130313-R02	Drip tray should be provided to contain the chemicals in Portion 3.	Chemical in Portion 3 was removed by the Contractor.
Landscape and Visual	N/A	There was no observation in the reporting period.	N/A

Noise	130320-R03	Noise label should be provided to air compressors in Portion 3.	Noise label was attached on the air compressors in Portion 3.
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
GW-RW0116-13	22/2/2013	21/8/2013	Location: Construction site at Stonecutters Island Sewage treatment works (Portion C2)	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:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.

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	^	*	^	^

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

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

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: March 2013

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

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Early Bar
Progress Bar
Critical Activity

WPU7 Sheet 1 of 1

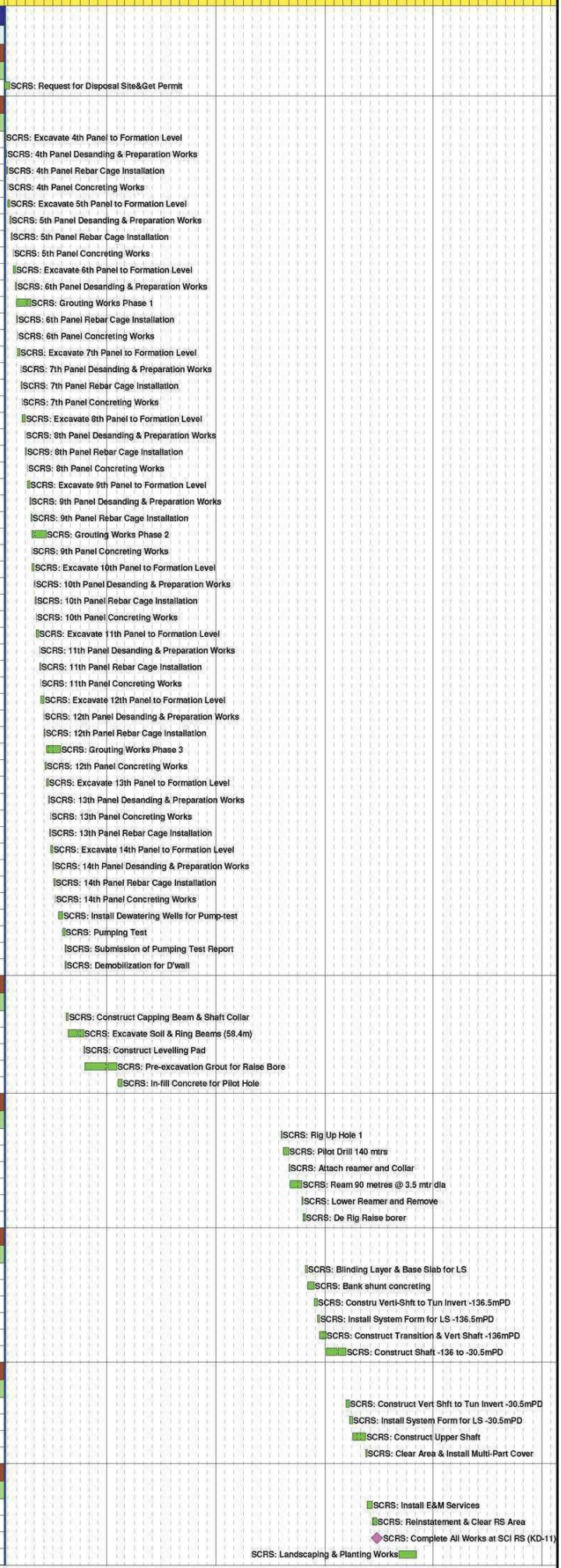
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

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

Early Bar
Progress Bar
Critical Activity

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WPU7 Sheet 1 of 2

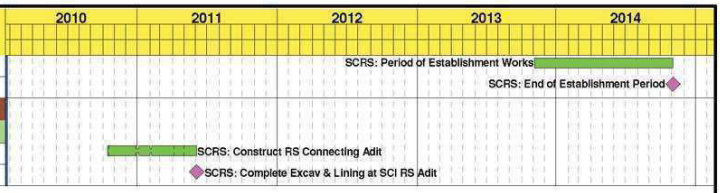
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

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

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Early Bar
Progress Bar
Critical Activity

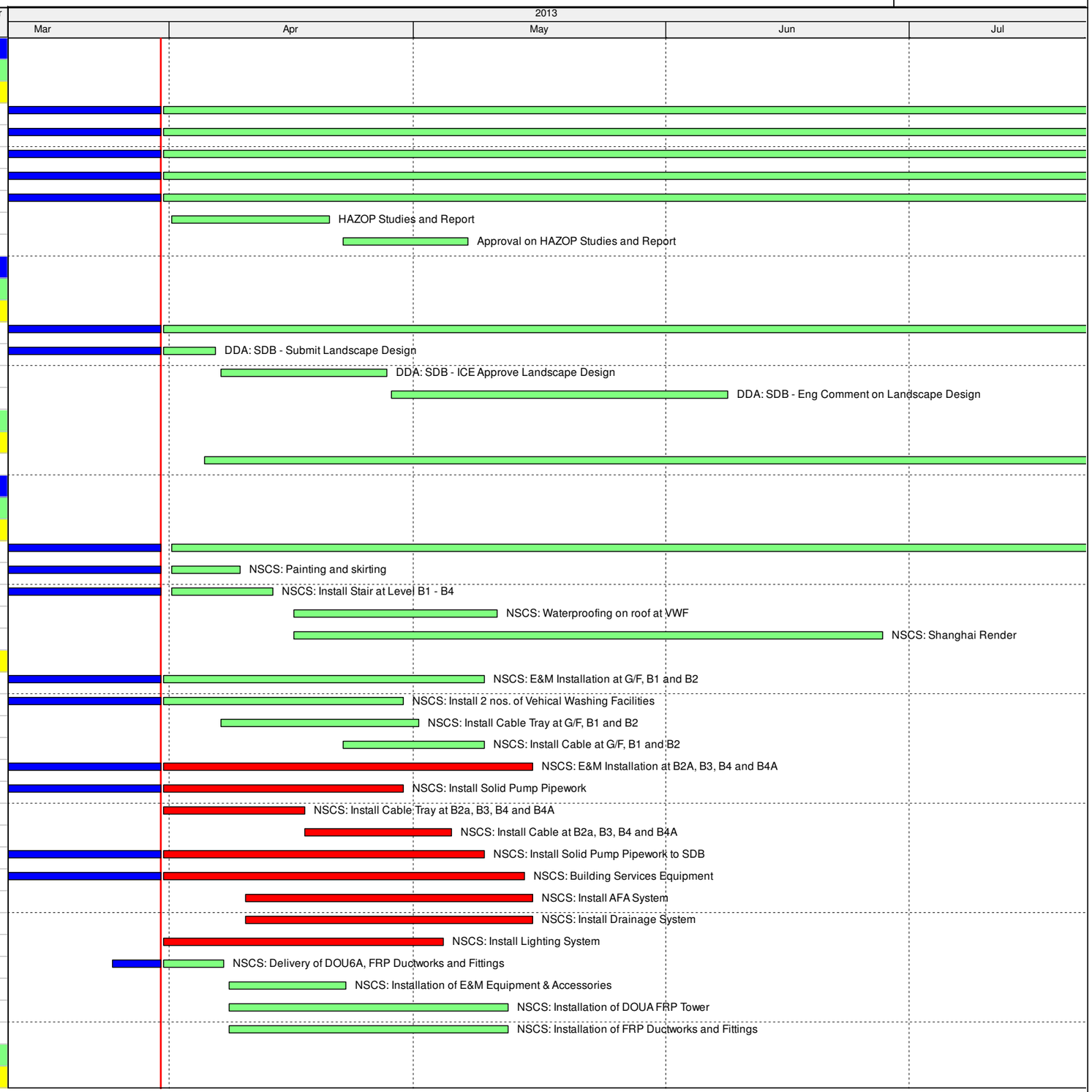
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island
Programme

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	1463d	01-Jun-12 A	26-May-16	1153d
PG000190	Environmental Impact Monitoring	2000d	04-Dec-10 A	26-May-16	1153d
PG000260	Maintenance and Upkeeping of Portion D	2095d	25-Aug-10 A	26-May-16	1153d
PG000300	Maintenance and Security in Portion E	2095d	25-Aug-10 A	26-May-16	1153d
PG000310	Maintenance and Security in Portion G	1463d	01-Jun-12 A	26-May-16	1153d
PG000410	HAZOP Studies and Report	15d	01-Apr-13	20-Apr-13	15d
PG000420	Approval on HAZOP Studies and Report	13d	22-Apr-13	07-May-13	13d
Design of Permanent Works					
DDA 1 (SDB and Associated Structure)					
Sub-Package F					
DP024190	DDA: SDB - Landscape (Irrigation) Design and Approval	175d	26-Nov-12 A	10-Aug-13	133d
DP024200	DDA: SDB - Submit Landscape Design	49d	26-Nov-12 A	06-Apr-13	7d
DP024210	DDA: SDB - ICE Approve Landscape Design	21d	07-Apr-13	27-Apr-13	21d
DP024220	DDA: SDB - Eng Comment on Landscape Design	42d	28-Apr-13	08-Jun-13	42d
Design of Permanent Work					
DDA 35 - Workshop Equipment					
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	120d	05-Apr-13	02-Aug-13	120d
Section 3 of the Works					
Northern Sludge Cake Silo					
Architecture Finishes					
S3000450	NSCS: Building Finishes and Landscape	230d	29-Sep-12 A	22-Nov-13	193d
S3000480	NSCS: Painting and skirting	60d	12-Jan-13 A	09-Apr-13	7d
S3000490	NSCS: Install Stair at Level B1 - B4	75d	03-Jan-13 A	13-Apr-13	10d
S3000510	NSCS: Waterproofing on roof at VWF	21d	16-Apr-13	11-May-13	21d
S3000550	NSCS: Shanghai Render	60d	16-Apr-13	27-Jun-13	60d
E&M Installation and T&C					
S3000810	NSCS: E&M Installation at G/F, B1 and B2	98d	02-Jan-13 A	09-May-13	40d
S3000840	NSCS: Install 2 nos. of Vehical Washing Facilities	95d	14-Jan-13 A	29-Apr-13	30d
S3000850	NSCS: Install Cable Tray at G/F, B1 and B2	25d	07-Apr-13	01-May-13	25d
S3000860	NSCS: Install Cable at G/F, B1 and B2	18d	22-Apr-13	09-May-13	18d
S3000880	NSCS: E&M Installation at B2A, B3, B4 and B4A	75d	02-Jan-13 A	15-May-13	46d
S3000890	NSCS: Install Solid Pump Pipework	75d	04-Feb-13 A	29-Apr-13	30d
S3000910	NSCS: Install Cable Tray at B2a, B3, B4 and B4A	18d	31-Mar-13	17-Apr-13	18d
S3000920	NSCS: Install Cable at B2a, B3, B4 and B4A	18d	17-Apr-13	05-May-13	18d
S3000950	NSCS: Install Solid Pump Pipework to SDB	70d	04-Feb-13 A	09-May-13	40d
S3000960	NSCS: Building Services Equipment	66d	26-Jan-13 A	14-May-13	45d
S3000962	NSCS: Install AFA System	36d	10-Apr-13	15-May-13	36d
S3000964	NSCS: Install Drainage System	36d	10-Apr-13	15-May-13	36d
S3000966	NSCS: Install Lighting System	35d	31-Mar-13	04-May-13	35d
S3001000	NSCS: Delivery of DOU6A, FRP Ductworks and Fittings	18d	25-Mar-13 A	07-Apr-13	8d
S3001010	NSCS: Installation of E&M Equipment & Accessories	15d	08-Apr-13	22-Apr-13	15d
S3001020	NSCS: Installation of DOUA FRP Tower	35d	08-Apr-13	12-May-13	35d
S3001030	NSCS: Installation of FRP Ductworks and Fittings	35d	08-Apr-13	12-May-13	35d
Sludge Dewatering Building and DOU6					
Architecture Finishes					



Actual Work ◆ ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - April to June 2013

Date	Revision	Checked	Approved

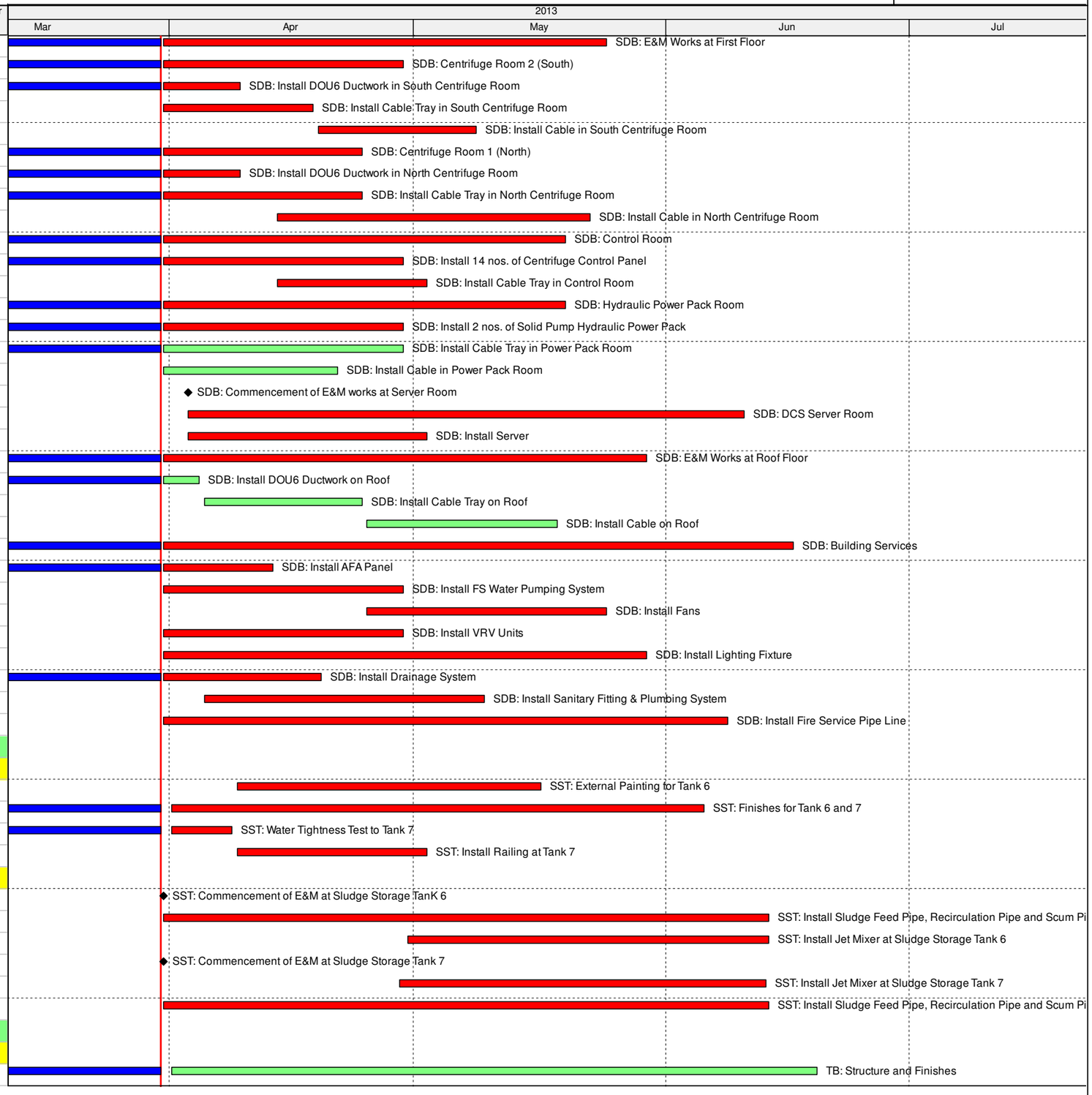
Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3001380	SDB: Building Finishes and Landscape	385d	05-Jul-12 A	26-Oct-13	170d
S3001398	SDB: Chequer Plate Flooring	30d	01-Apr-13	10-May-13	30d
S3001410	SDB: Epoxy Coat to Mezzanine Floor	20d	16-Apr-13	10-May-13	20d
S3001420	SDB: Finishes to 1/F	150d	16-Jul-12 A	26-Apr-13	20d
S3001432	SDB: Tile and Skirting to Pantry	14d	01-Apr-13	19-Apr-13	14d
S3001433	SDB: Painting to Pantry	7d	20-Apr-13	27-Apr-13	7d
S3001436	SDB: Handover Server Room to E&M	0d		01-Apr-13	0d
S3001463	SDB: Finishes to 2/F	52d	31-Dec-12 A	26-Apr-13	20d
S3001479	SDB: Finishes to Stair 1 and 2	118d	27-Apr-13	17-Sep-13	118d
S3001480	SDB: Granolithic Screeding to Stair 1	20d	27-Apr-13	22-May-13	20d
S3001515	SDB: External Finishes	145d	11-Dec-12 A	22-Jul-13	90d
S3001520	SDB: Shanghai Render	80d	01-Apr-13	10-Jul-13	80d
S3001524	SDB: Skylight	60d	01-Apr-13	15-Jun-13	60d
Procurement, Manufacture and Delivery					
S3001630	SDB: Deliver Distributed Control System	21d	22-Jan-13 A	02-Apr-13	3d
E&M Installation and T&C					
S3003020	SDB: E&M Works at Ground Floor	220d	06-Sep-12 A	11-May-13	42d
S3003030	SDB: Pump Room Area	220d	06-Sep-12 A	11-May-13	42d
S3003040	SDB: Install High Level Centrate and Process Water Pipev	153d	02-Oct-12 A	19-Apr-13	20d
S3003080	SDB: Install High Level Centrate and Process Water Pipev	153d	02-Oct-12 A	19-Apr-13	20d
S3003110	SDB: Install Sludge Collecting Conveyor 2 nos. (Grid B - C	73d	28-Jan-13 A	09-May-13	40d
S3003120	SDB: Install Sludge Collecting Conveyor 2 nos. (Grid A - G	57d	31-Mar-13	26-May-13	57d
S3003130	SDB: Install DOU6 Ductwork	60d	09-Jan-13 A	07-Apr-13	8d
S3003140	SDB: Install Cable Tray in Pump Room	52d	08-Jan-13 A	14-Apr-13	15d
S3003150	SDBL Install Cable in Pump Room	53d	31-Mar-13	22-May-13	53d
S3003170	SDB: Polyelectrolyte Area	175d	05-Oct-12 A	09-May-13	40d
S3003190	SDB: Install 4 nos. of Polyelectrolyte Storage Tank (Grid 3	121d	31-Oct-12 A	04-Apr-13	5d
S3003200	SDB: Install 4 nos. of Polyelectrolyte Mixing Tank (Grid 8- (	115d	06-Nov-12 A	09-Apr-13	10d
S3003220	SDB: Install 2 nos. of Polyelectrolyte Transfer Pumps	14d	18-Feb-13 A	04-Apr-13	5d
S3003230	SDB: Install 4 nos. of Polyelectrolyte Preparation Unit	32d	24-Jan-13 A	04-Apr-13	5d
S3003240	SDB: Install Polyelectrolyte Feed Pipe	57d	21-Jan-13 A	05-May-13	36d
S3003250	SDB: Install 14 nos. of Polyelectrolyte Feed Pump	30d	18-Feb-13 A	20-Apr-13	12d
S3003260	SDB: Install Cable Tray at Polyelectrolyte Area	15d	25-Feb-13 A	11-Apr-13	12d
S3003270	SDB: Install Cable at Polyelectrolyte Area	53d	18-Feb-13 A	09-May-13	40d
S3003290	SDB: Solid Pump Area	111d	24-Dec-12 A	14-May-13	45d
S3003300	SDB: Install Solid Pump Pipework & Support	100d	24-Dec-12 A	09-Apr-13	10d
S3003310	SDB: Install 4 nos. of Solid Pump	45d	24-Dec-12 A	04-Apr-13	5d
S3003320	SDB: Install 2 nos. of Solid Pump Hydraulic Power Pack	45d	21-Dec-12 A	09-Apr-13	10d
S3003330	SDB: Install Cable Tray at Pump Area	24d	21-Jan-13 A	11-Apr-13	12d
S3003340	SDB: Install Cable at Pump Area	21d	12-Apr-13	02-May-13	21d
S3003360	SDB: MCC Room	74d	12-Nov-12 A	29-May-13	60d
S3003380	SDB: Install Main Switch Board & Control Panel LV System	60d	07-Jan-13 A	24-Apr-13	25d
S3003400	SDB: Install Cable in MCC Room	60d	31-Mar-13	29-May-13	60d
S3003420	SDB: DOU6 and DG Store Area	90d	07-Jan-13 A	19-May-13	50d
S3003440	SDB: Install 1 set of Process Water Pumping System	85d	31-Dec-12 A	29-Apr-13	30d
S3003450	SDB: Install Pumping System at DGS	60d	31-Mar-13	29-May-13	60d
S3003460	SDB: Install Cable Tray	22d	31-Mar-13	21-Apr-13	22d
S3003470	SDB: Install Cable	16d	28-Apr-13	13-May-13	16d

Actual Work ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - April to June 2013

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3003490	SDB: E&M Works at First Floor	175d	05-Oct-12 A	24-May-13	55d
S3003500	SDB: Centrifuge Room 2 (South)	107d	05-Oct-12 A	29-Apr-13	30d
S3003530	SDB: Install DOU6 Ductwork in South Centrifuge Room	60d	09-Jan-13 A	09-Apr-13	10d
S3003540	SDB: Install Cable Tray in South Centrifuge Room	19d	31-Mar-13	18-Apr-13	19d
S3003550	SDB: Install Cable in South Centrifuge Room	20d	19-Apr-13	08-May-13	20d
S3003570	SDB: Centrifuge Room 1 (North)	149d	31-Oct-12 A	24-Apr-13	25d
S3003600	SDB: Install DOU6 Ductwork in North Centrifuge Room	60d	09-Jan-13 A	09-Apr-13	10d
S3003610	SDB: Install Cable Tray in North Centrifuge Room	39d	21-Jan-13 A	24-Apr-13	25d
S3003620	SDB: Install Cable in North Centrifuge Room	39d	14-Apr-13	22-May-13	39d
S3003640	SDB: Control Room	97d	25-Dec-12 A	19-May-13	50d
S3003650	SDB: Install 14 nos. of Centrifuge Control Panel	90d	25-Dec-12 A	29-Apr-13	30d
S3003660	SDB: Install Cable Tray in Control Room	19d	14-Apr-13	02-May-13	19d
S3003690	SDB: Hydraulic Power Pack Room	79d	14-Jan-13 A	19-May-13	50d
S3003700	SDB: Install 2 nos. of Solid Pump Hydraulic Power Pack	79d	14-Jan-13 A	29-Apr-13	30d
S3003710	SDB: Install Cable Tray in Power Pack Room	32d	28-Jan-13 A	29-Apr-13	30d
S3003720	SDB: Install Cable in Power Pack Room	22d	31-Mar-13	21-Apr-13	22d
S3003730	SDB: Commencement of E&M works at Server Room	0d	03-Apr-13		0d
S3003740	SDB: DCS Server Room	69d	03-Apr-13	10-Jun-13	69d
S3003750	SDB: Install Server	30d	03-Apr-13	02-May-13	30d
S3003790	SDB: E&M Works at Roof Floor	202d	03-Oct-12 A	29-May-13	60d
S3003810	SDB: Install DOU6 Ductwork on Roof	19d	18-Feb-13 A	04-Apr-13	5d
S3003820	SDB: Install Cable Tray on Roof	20d	05-Apr-13	24-Apr-13	20d
S3003830	SDB: Install Cable on Roof	24d	25-Apr-13	18-May-13	24d
S3003840	SDB: Building Services	117d	02-Jan-13 A	16-Jun-13	78d
S3003850	SDB: Install AFA Panel	30d	14-Jan-13 A	13-Apr-13	14d
S3003860	SDB: Install FS Water Pumping System	30d	31-Mar-13	29-Apr-13	30d
S3003870	SDB: Install Fans	30d	25-Apr-13	24-May-13	30d
S3003890	SDB: Install VRV Units	30d	31-Mar-13	29-Apr-13	30d
S3003900	SDB: Install Lighting Fixture	60d	31-Mar-13	29-May-13	60d
S3003920	SDB: Install Drainage System	60d	10-Jan-13 A	19-Apr-13	20d
S3003930	SDB: Install Sanitary Fitting & Plumbing System	35d	05-Apr-13	09-May-13	35d
S3003940	SDB: Install Fire Service Pipe Line	70d	31-Mar-13	08-Jun-13	70d
Sludge Storage Tank 6 and 7					
Structure					
S3005850	SST: External Painting for Tank 6	30d	09-Apr-13	16-May-13	30d
S3006310	SST: Finishes for Tank 6 and 7	152d	31-Oct-12 A	05-Jun-13	52d
S3006340	SST: Water Tightness Test to Tank 7	18d	01-Mar-13 A	08-Apr-13	6d
S3006350	SST: Install Railing at Tank 7	18d	09-Apr-13	02-May-13	18d
E&M Installation and T&C					
S3006670	SST: Commencement of E&M at Sludge Storage TanK 6	0d	31-Mar-13		0d
S3006680	SST: Install Sludge Feed Pipe, Recirculation Pipe and Scu	75d	31-Mar-13	13-Jun-13	75d
S3006685	SST: Install Jet Mixer at Sludge Storage Tank 6	45d	30-Apr-13	13-Jun-13	45d
S3006700	SST: Commencement of E&M at Sludge Storage Tank 7	0d	31-Mar-13		0d
S3006710	SST: Install Jet Mixer at Sludge Storage Tank 7	45d	29-Apr-13	13-Jun-13	45d
S3006720	SST: Install Sludge Feed Pipe, Recirculation Pipe and Scu	75d	31-Mar-13	13-Jun-13	75d
Transformer Bay					
Structure					
S3007010	TB: Structure and Finishes	430d	21-Nov-11 A	19-Jun-13	63d



Actual Work
Remaining Work
Critical Remaining Work
Milestone

Three Month Rolling Programme - April to June 2013

Date	Revision	Checked	Approved

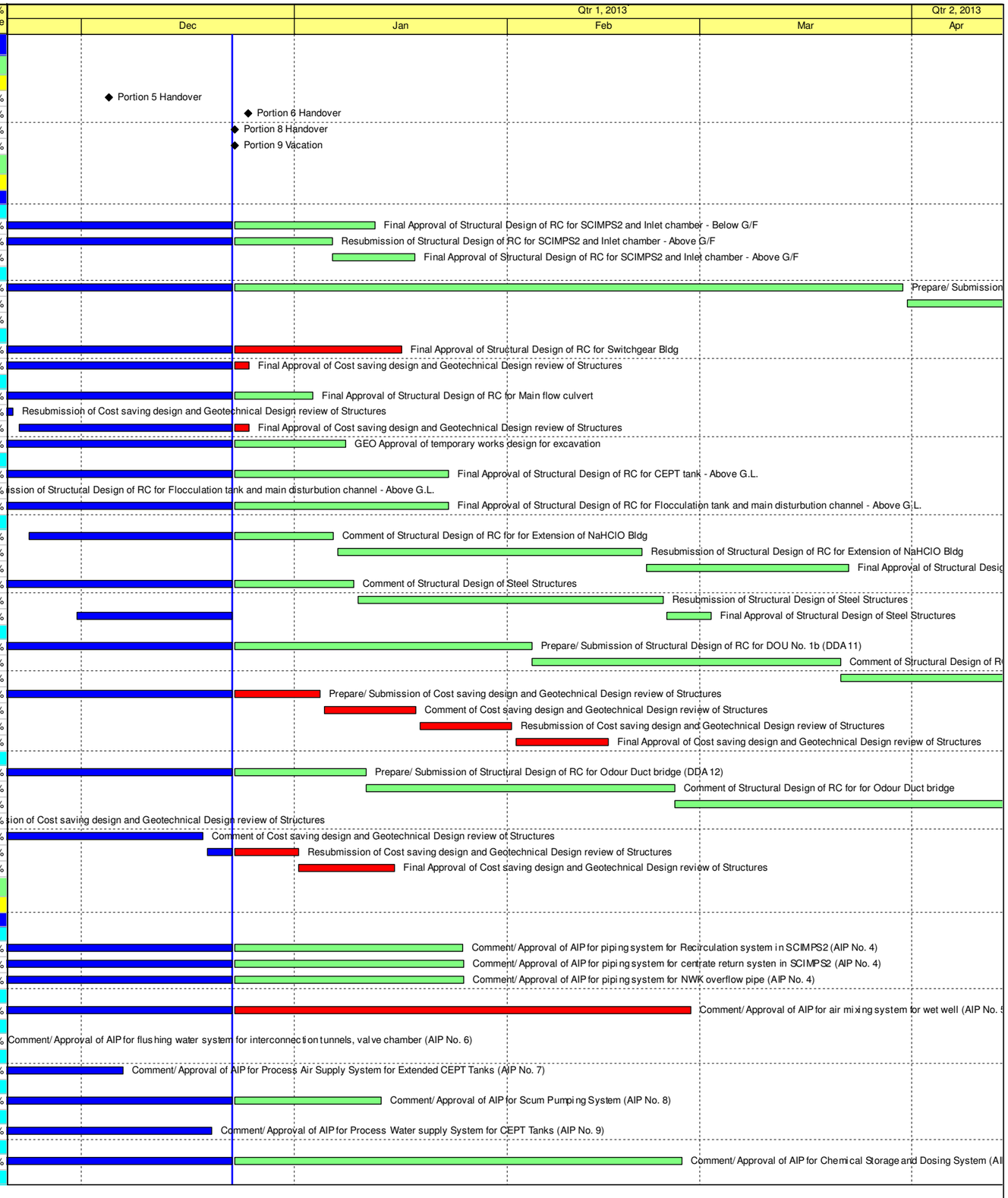
Activity ID	Activity Name	Original Duration	Start	Finish	Rem Dur
S3007310	TB: Finishes	27d	18-Mar-13 A	21-May-13	12d
E&M Installation and T&C					
S3007800	TB: E&M Installation	100d	19-Nov-12 A	06-May-13	37d
S3007820	TB: Install Transformer and HV RMU	58d	19-Nov-12 A	17-Apr-13	18d
S3007830	HV cable duct avaliable from existing chemical building	0d	31-Mar-13		0d
S3007840	TB: 11 KV cabling and connection	14d	25-Apr-13	08-May-13	14d
System					
Piping and Ducting					
S3009940	Firemains bet External Suppy Point to Zone B1	105d	01-Mar-13 A	31-Jul-13	98d
S3009950	Additional Fire Signal Duct bet Admin Bldg - SDB	70d	06-Apr-13	03-Jul-13	70d
External (Civil) Works					
Zone A					
S3008440	Zone A5: Cabe Trough to MPS	70d	01-Apr-13	27-Jun-13	70d
Zone B					
S3008470	Zone B1-2 - Drainage bet S12b to S12c	40d	01-Apr-13	22-May-13	40d
S3008500	Zone B1-1 - Watermain at S12a to 12b	15d	01-Apr-13	20-Apr-13	15d
S3008540	Zone B2a-2 - Cable Duct Road Crossing	25d	25-Apr-13	25-May-13	25d
S3008560	Zone B2a-2 - Cable Duct to Sludge Storage Tank 1	40d	01-Apr-13	22-May-13	40d
S3008580	Zone B2b-2 - Cable Ducts	12d	09-Apr-13	24-Apr-13	12d
S3008585	Zone B2b-2 - Chemical Pipe Trench	30d	25-Apr-13	31-May-13	30d
S3008610	Zone B3a: Centrate Pipe to Extg Manhole	60d	09-Apr-13	22-Jun-13	60d
S3008620	Zone B3a: Implement TTA	1d	09-Apr-13	09-Apr-13	1d
S3008630	Zone B3a: Break up Existing Pavement	4d	10-Apr-13	16-Apr-13	4d
S3008640	Zone B3a: Sheet Piling for Centrate Pipe	10d	17-Apr-13	27-Apr-13	10d
S3008645	Zone B3a: Excavation for Centrate Pipe and C1	12d	29-Apr-13	13-May-13	12d
S3008690	Zone B3b - Centrate Pipe bet C1 to MPS Stage 1	36d	27-Apr-13	10-Jun-13	36d
S3008710	Zone B3b - Storm Drain between S7 to 12c	40d	01-Apr-13	22-May-13	40d
S3008885	Zone B5b-2: DN200 Watermain next to DOU6	21d	03-Jan-13 A	08-Apr-13	6d
S3008930	Zone B5b-1: Chemical Pipe Trench to DGS	15d	01-Apr-13	20-Apr-13	15d
S3008980	Zone B6-2: Centrate Pipe bet C1 to NSCS	24d	07-Feb-13 A	17-Apr-13	12d
S3008990	Zone B6-2: Cable Ducts	18d	23-Feb-13 A	06-Apr-13	5d
S3008995	Zone B6-2: - Handover Cable Ducts bet SDB to NSCS to E	0d		06-Apr-13	0d
S3009000	Zone B6-2: Watermains from SDB to NSCS	15d	08-Apr-13	26-Apr-13	15d
S3009010	Zone B6-1&2: Chemical Pipe Trench	60d	27-Apr-13	10-Jul-13	60d
Zone C					
S3009410	Zone C3: Sludge Feed Pipe to Chamber 5	75d	05-Nov-12 A	13-Apr-13	10d
S3009450	Zone C - Sludge Pipe Test bet Chamber 5 to SDB	30d	16-Apr-13	22-May-13	30d
S3009540	Zone C4: DN600 Centrate Pipe CP1 and CP2	120d	05-Jun-12 A	03-May-13	25d
S3009630	Zone C5 - Expose Extg Sludge Feed Pipe at SST5	25d	18-Mar-13 A	18-Apr-13	18d
External (E&M) Works					
Zone C					
S3009475	Zone C3 - Pipework at valve pit 4 for SST6 & 7	45d	07-Mar-13 A	29-Apr-13	30d
S3009478	Zone C3 - Pipework at valve pit 5	30d	18-Feb-13 A	14-Apr-13	15d
S3009480	Zone C3 - Pipework at Roof of SST 5 to 7	45d	07-Apr-13	21-May-13	45d
s3009490	Zone C3 - Install Overflow Pipe for SST 6 and 7	7d	31-Mar-13	06-Apr-13	7d
S3009640	Zone C5 - Isolation Blank Flange for SST5	7d	24-Apr-13	30-Apr-13	7d
S3009645	Zone C5 - Handover for Civil Work	0d		30-Apr-13	0d

Actual Work ◆ Milestone
Remaining Work
Critical Remaining Work

Three Month Rolling Programme - April to June 2013

Date	Revision	Checked	Approved

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	05-Dec-12 A			100%
PS1060	Portion 6 Handover	0	25-Dec-12		0	0%
PS1100	Portion 8 Handover	0	23-Dec-12		-303	0%
PS1130	Portion 9 Vacation	0		23-Dec-12	26	0%
Civil and Geotechnical Submission						
Contractor Design, Submission and Approval						
Detailed Design Approval (DDA) Submission for Structural/ Builder Works						
DDA4 (SCIMPS2 and Inlet Chamber)						
CCD00124	Final Approval of Structural Design of RC for SCIMPS2 and Inlet chamber - Below G/F	30	25-Feb-12 A	12-Jan-13	50	30%
CCD00145	Resubmission of Structural Design of RC for SCIMPS2 and Inlet chamber - Above G/F	21	29-Apr-12 A	06-Jan-13	18	30%
CCD00155	Final Approval of Structural Design of RC for SCIMPS2 and Inlet chamber - Above G/F	12	06-Jan-13	18-Jan-13	18	0%
DDA5 (SCIMPS No. 1 Valve Chamber)						
CCD00131	Prepare/ Submission of Structural Design of RC for SCIMPS No.1 Valve Chamber (DDA 5)	180	01-Oct-12 A	30-Mar-13	4	45.56%
CCD00132	Comment of Structural Design of RC for SCIMPS No.1 Valve Chamber	21	31-Mar-13	20-Apr-13	4	0%
CCD00133	Resubmission of Structural Design of RC for SCIMPS No.1 Valve Chamber	21	21-Apr-13	11-May-13	4	0%
DDA6 (Switchgear Bldg)						
CCD00144	Final Approval of Structural Design of RC for Switchgear Bldg	45	18-Jun-12 A	16-Jan-13	-19	45%
CCD00240	Final Approval of Cost saving design and Geotechnical Design review of Structures	7	22-Apr-12 A	25-Dec-12	-36	70%
DDA7 (Main Flow Culvert)						
CCD00154	Final Approval of Structural Design of RC for Main flow culvert	30	16-Oct-12 A	03-Jan-13	277	60%
CCD00310	Resubmission of Cost saving design and Geotechnical Design review of Structures	14	04-Aug-12 A	21-Nov-12 A		100%
CCD00320	Final Approval of Cost saving design and Geotechnical Design review of Structures	14	22-Nov-12 A	25-Dec-12	-83	85%
CCD00560	GEO Approval of temporary works design for excavation	30	01-Sep-12 A	08-Jan-13	58	45%
DDA8 (Extension of CEPT tanks)						
CCD00600	Final Approval of Structural Design of RC for CEPT tank - Above G.L.	45	14-Oct-12 A	23-Jan-13	91	30%
CCD00670	Resubmission of Structural Design of RC for Flocculation tank and main disturbution channel - Above G	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	45	14-Nov-12 A	23-Jan-13	182	30%
DDA9 (Extension of NaHClO Bldg)						
CCD00162	Comment of Structural Design of RC for for Extension of NaHClO Bldg	45	23-Nov-12 A	06-Jan-13	111	66.67%
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	03-Nov-12 A	09-Jan-13	305	60%
CCD00208	Resubmission of Structural Design of Steel Structures	45	10-Jan-13	23-Feb-13	305	0%
CCD00209	Final Approval of Structural Design of Steel Structures	30	30-Nov-12 A	02-Mar-13	305	76.67%
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	04-Feb-13	266	75%
CCD00202	Comment of Structural Design of RC for for DOU No. 1b	45	04-Feb-13	21-Mar-13	266	0%
CCD00203	Resubmission of Structural Design of RC for DOU No. 1b	75	21-Mar-13	04-Jun-13	266	0%
CCD00450	Prepare/ Submission of Cost saving design and Geotechnical Design review of Structures	65	27-Jan-12 A	04-Jan-13	-135	80%
CCD00460	Comment of Cost saving design and Geotechnical Design review of Structures	14	05-Jan-13	18-Jan-13	-135	0%
CCD00470	Resubmission of Cost saving design and Geotechnical Design review of Structures	14	19-Jan-13	01-Feb-13	-135	0%
CCD00480	Final Approval of Cost saving design and Geotechnical Design review of Structures	14	02-Feb-13	15-Feb-13	-135	0%
DDA12 (Odour Duct Bridge)						
CCD00181	Prepare/ Submission of Structural Design of RC for Odour Duct bridge (DDA 12)	175	08-Jun-12 A	11-Jan-13	302	89%
CCD00182	Comment of Structural Design of RC for for Odour Duct bridge	45	11-Jan-13	25-Feb-13	302	0%
CCD00183	Resubmission of Structural Design of RC for Odour Duct bridge	75	25-Feb-13	11-May-13	302	0%
CCD00490	Prepare/ Submission of Cost saving design and Geotechnical Design review of Structures	210	10-Mar-12 A	08-Nov-12 A		100%
CCD00500	Comment of Cost saving design and Geotechnical Design review of Structures	14	09-Nov-12 A	18-Dec-12 A		100%
CCD00510	Resubmission of Cost saving design and Geotechnical Design review of Structures	14	19-Dec-12 A	01-Jan-13	-41	30%
CCD00520	Final Approval of Cost saving design and Geotechnical Design review of Structures	14	01-Jan-13	15-Jan-13	-41	0%
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	25-Jan-13	221	89%
ECD00057	Comment/ Approval of AIP for piping system for centrate return systen in SCIMPS2 (AIP No. 4)	309	28-Mar-12 A	25-Jan-13	126	89%
ECD00059	Comment/ Approval of AIP for piping system for NWK overflow pipe (AIP No. 4)	309	28-Mar-12 A	25-Jan-13	226	89%
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	27-Feb-13	-52	80%
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	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	07-Dec-12 A		100%
AIP No. 8 - Sludge and Scum Pumping System						
ECD00088	Comment/ Approval of AIP for Scum Pumping System (AIP No. 8)	273	28-Mar-12 A	13-Jan-13	137	92%
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	20-Dec-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	26-Feb-13	88	80%
AIP No. 12 - Sodium Hypochlorite Storage, transfer and dosing system						



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 Dec 2012 to 24 Mar 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
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						
ECD00212	Comment/ Approva AIP for Deodourization System DOU3 for MPS2 and Extended CEPT tanks (AIP No.	294	13-Mar-12 A	05-Feb-13	74	85%
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	14-Mar-13	-29	75%
ECD00430	Comment/ Approval of AIP for Mechanical Ventilation System and A/C at Switchgear Bldg (AIP No. 18)	330	05-Apr-12 A	15-Mar-13	-30	75%
ECD00450	Comment/ Approval of AIP for air conditioning, air exhaust Fan and pre-heated air handling unit at MPS (	330	05-Apr-12 A	15-Mar-13	-30	75%
ECD00470	Comment/ Approval of AIP for Staircase Pressuization for Staircase No. 3 at MPS (AIP No. 18)	330	05-Apr-12 A	15-Mar-13	-30	75%
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	27-Dec-12	68	98%
Infrastructure Construction Works						
Works for Section 1A						
Time for Sectional Completion						
TC0040	Sectional Completion Date	0		17-Jan-13*	0	0%
TC0045	Anticipated Completion Date (Section 1A)	0		03-Jan-13*	0	0%
Portion 3 (Extension of CEPT Tanks)						
Civil Works						
P904250	Construction of Chemical pipe trench (CH90-100)	18	17-Oct-12 A	14-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%
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%
RC Works						
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 A	06-Dec-12 A		100%
Electrical and Machainical Installation						
P900510	Electricial cable laying (External)	107	16-Aug-12 A	27-Dec-12	1	99%
P900580	Genset installation and electrical works	5	07-Dec-12 A	27-Dec-12	0	60%
External underground works						
P901030	F.S. watermain laying (from Ngong Shung Rd)	18	22-Oct-12 A	12-Nov-12 A		100%
P901170	Construction of Surface channel	18	07-Nov-12 A	27-Nov-12 A		100%
Testing and Commissioning						
P900150	Testing and Commissioning	5	13-Dec-12 A	02-Jan-13	0	25%
P900250	FSD inspection	1	02-Jan-13	03-Jan-13	0	0%
P900530	Final Testing and commissioning	10	03-Jan-13	13-Jan-13	0	0%
P900540	Handover to ST2	4	13-Jan-13	17-Jan-13	0	0%
Portion 1 (Container Maintenance Building)						
RC works						
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	14-Feb-13	-32	10%
P100075	Pressure jet system installation	25	20-Nov-12 A	18-Dec-12 A		100%
P100380	Electrical and FS Installation for main structures	12	06-Nov-12 A	29-Dec-12	-1	70%
P100460	Water tank installation and FS pipe for FS pump room	5	22-Nov-12 A	26-Nov-12 A		100%
Builder and finishes Works						
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	29-Nov-12 A		100%
Testing and Commissioning						
P100090	Testing and Commissioning for FSD inspection	3	29-Dec-12	03-Jan-13	-1	0%
P100320	FSD inspection	1	03-Jan-13	04-Jan-13	-1	0%
P100430	Final Testing and commissioning	10	14-Feb-13	24-Feb-13	-41	0%
P100440	Handover to ST2	3	24-Feb-13	27-Feb-13	-41	0%
Works for Section 2						
Portion 4 (Switchgear Building)						
Submission of Design for Structural and E&M						
P401090	Approval/ Comment of DDA of Lifting Appliance	90	14-Aug-12 A	11-Nov-12 A		100%
Procurement/ Order/ Manufacturing/ Delivery						
P302560	Manufacturing of Control System for upgrading existing DCDAS at MPS1 and HATS 1 PTWs	125	06-Nov-12 A	10-Mar-13	2	37.6%
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	32%
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	79.2%
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	83.33%
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	78.78%
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 A		100%
P402170	Manufacturing of Lifting Appliances	150	03-Dec-12 A	01-May-13	19	13.33%
P402230	Manufacturing of Cables	210	08-Jun-12 A	03-Jan-13	116	94.29%

Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

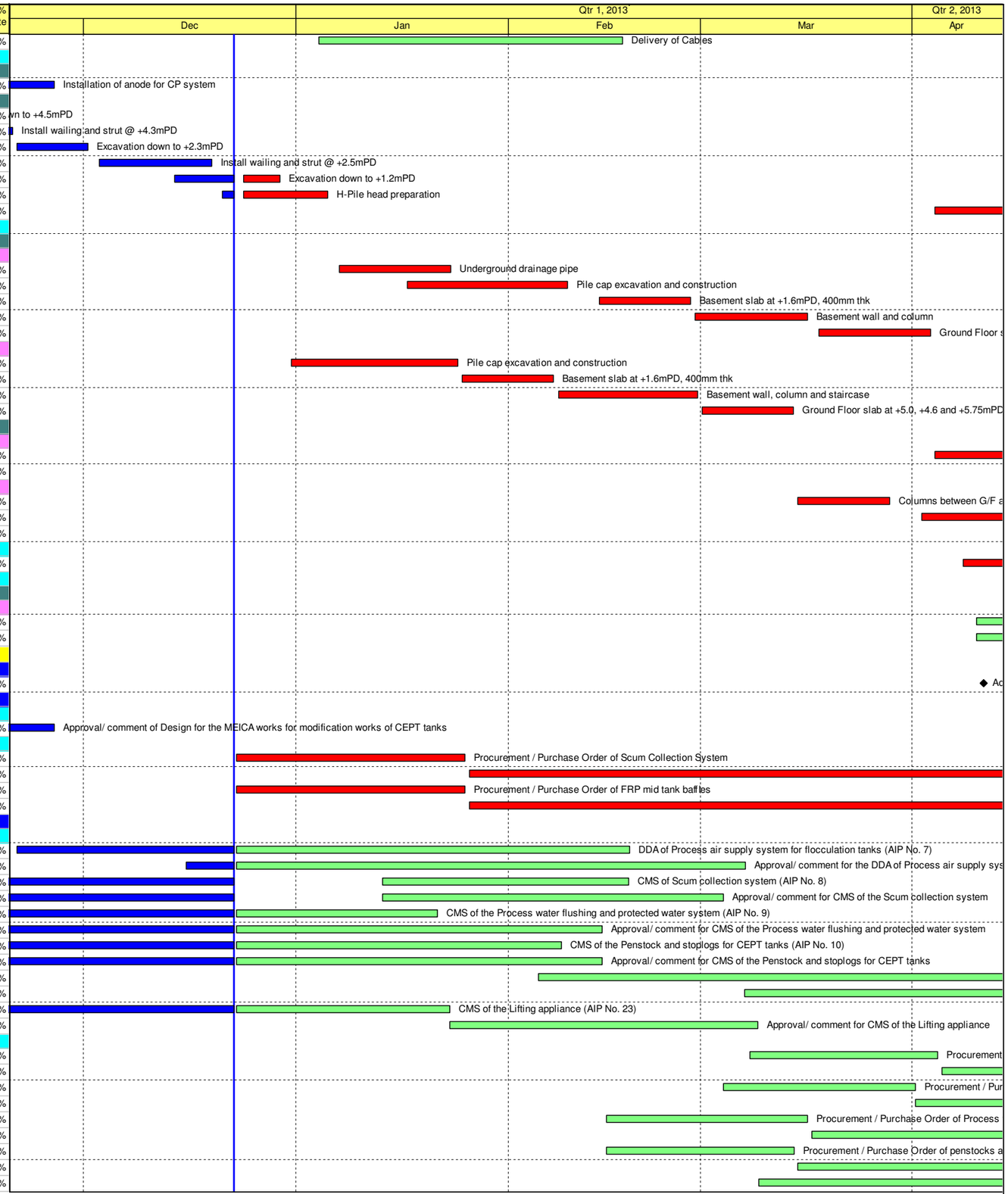
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Dec 2012 to 24 Mar 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P402240	Delivery of Cables	45	04-Jan-13	17-Feb-13	116	0%
Foundation Works						
Driven H-Pile						
P400050	Installation of anode for CP system	18	06-Nov-12 A	26-Nov-12 A		100%
Excavation and Lateral Support for Substructure						
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 A		100%
P400942	Install wailing and strut @ +2.5mPD	15	03-Dec-12 A	19-Dec-12 A		100%
P400950	Excavation down to +1.2mPD	10	14-Dec-12 A	29-Dec-12	-48	60%
P400960	H-Pile head preparation	10	21-Dec-12 A	05-Jan-13	-48	10%
P401340	Removal sheetpile cofferdam	10	04-Apr-13	16-Apr-13	-48	0%
R.C. Works						
Substructure						
GL1-GL5						
P400070	Underground drainage pipe	15	07-Jan-13	23-Jan-13	-48	0%
P400970	Pile cap excavation and construction	21	17-Jan-13	09-Feb-13	-48	0%
P400980	Basement slab at +1.6mPD, 400mm thk	12	14-Feb-13	27-Feb-13	-48	0%
P400990	Basement wall and column	15	28-Feb-13	16-Mar-13	-48	0%
P401120	Ground Floor slab at +5.0 and 4.6mPD	12	18-Mar-13	03-Apr-13	-48	0%
GL6-10						
P902340	Pile cap excavation and construction	21	31-Dec-12	24-Jan-13	-34	0%
P902350	Basement slab at +1.6mPD, 400mm thk	12	25-Jan-13	07-Feb-13	-34	0%
P902360	Basement wall, column and staircase	15	08-Feb-13	28-Feb-13	-34	0%
P902380	Ground Floor slab at +5.0, +4.6 and +5.75mPD	12	01-Mar-13	14-Mar-13	-34	0%
Superstructure						
GL1-GL5						
P902430	Columns between G/F and 1/F	12	04-Apr-13	18-Apr-13	-48	0%
P902440	1st Floor Slab at +10.75mPD	15	19-Apr-13	07-May-13	-48	0%
GL6-GL10						
P902390	Columns between G/F and 1/F	12	15-Mar-13	28-Mar-13	-34	0%
P902400	1st Floor Slab at +10.75mPD	15	02-Apr-13	19-Apr-13	-34	0%
P902410	Columns between 1/F and R/F	12	20-Apr-13	04-May-13	-34	0%
Civil Works						
P400080	CLP Cable Trench	35	08-Apr-13	21-May-13	-109	0%
Electrical and Mechainical Installation						
First Floor						
Control Room						
P904180	Upgrading of the existing DCDAS at HATS stage 1 PTWs	136	10-Apr-13	19-Sep-13	2	0%
P904190	Integration with the upgraded DCDAS under Contract DE/2009/02	136	10-Apr-13	19-Sep-13	2	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		11-Apr-13	1565	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	26-Nov-12 A		100%
Procurement/ Order/ Manufacturing/ Delivery						
P106110	Procurement / Purchase Order of Scum Collection System	34	23-Dec-12	25-Jan-13	-23	0%
P106120	Manufacturing of Scum Collection System	240	26-Jan-13	22-Sep-13	-23	0%
P106140	Procurement / Purchase Order of FRP mid tank baffles	34	23-Dec-12	25-Jan-13	-23	0%
P106150	Manufacturing of FRP mid tank baffles	240	26-Jan-13	22-Sep-13	-23	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	18-Feb-13	44	35.56%
P301010	Approval/ comment for the DDA of Process air supply system for flocculation tanks	100	16-Dec-12 A	07-Mar-13	44	25%
P301031	CMS of Scum collection system (AIP No. 8)	90	03-Sep-12 A	18-Feb-13	137	60%
P301032	Approval/ comment for CMS of the Scum collection system	90	15-Oct-12 A	04-Mar-13	137	45%
P301480	CMS of the Process water flushing and protected water system (AIP No. 9)	75	26-Sep-12 A	21-Jan-13	179	60%
P301490	Approval/ comment for CMS of the Process water flushing and protected water system	90	24-Oct-12 A	14-Feb-13	179	40%
P301500	CMS of the Penstock and stoplogs for CEPT tanks (AIP No. 10)	120	30-Jun-12 A	08-Feb-13	25	60%
P301510	Approval/ comment for CMS of the Penstock and stoplogs for CEPT tanks	120	30-Jul-12 A	14-Feb-13	25	55%
P301520	DDA of the Chemical (FECL3 and polymer) dosing system (AIP No. 11)	90	05-Feb-13	06-May-13	88	0%
P301530	Approval/ comment for DDA of the Chemical (FECL3 and polymer) dosing system	90	07-Mar-13	05-Jun-13	88	0%
P301550	CMS of the Lifting appliance (AIP No. 23)	90	02-Oct-12 A	23-Jan-13	52	65%
P301560	Approval/ comment for CMS of the Lifting appliance	45	23-Jan-13	09-Mar-13	52	0%
Procurement/ Order/ Manufacturing/ Delivery						
P301090	Procurement / Purchase Order of Process air supply system for flocculation tanks	28	08-Mar-13	04-Apr-13	44	0%
P301690	Manufacturing of Process air supply system for flocculation tanks	300	05-Apr-13	29-Jan-14	44	0%
P301731	Procurement / Purchase Order of scum collection systems	28	04-Mar-13	01-Apr-13	137	0%
P301732	Manufacturing of scum collection systems	150	01-Apr-13	29-Aug-13	137	0%
P301740	Procurement / Purchase Order of Process water flushing and protected water system	30	15-Feb-13	16-Mar-13	179	0%
P301750	Manufacturing of Process water flushing and protected water system	120	17-Mar-13	14-Jul-13	179	0%
P301770	Procurement / Purchase Order of penstocks and stoplogs	28	15-Feb-13	14-Mar-13	25	0%
P301780	Manufacturing of penstocks and stoplogs	210	15-Mar-13	10-Oct-13	25	0%
P301830	Procurement / Purchase Order for Lifting Appliance	45	09-Mar-13	23-Apr-13	52	0%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

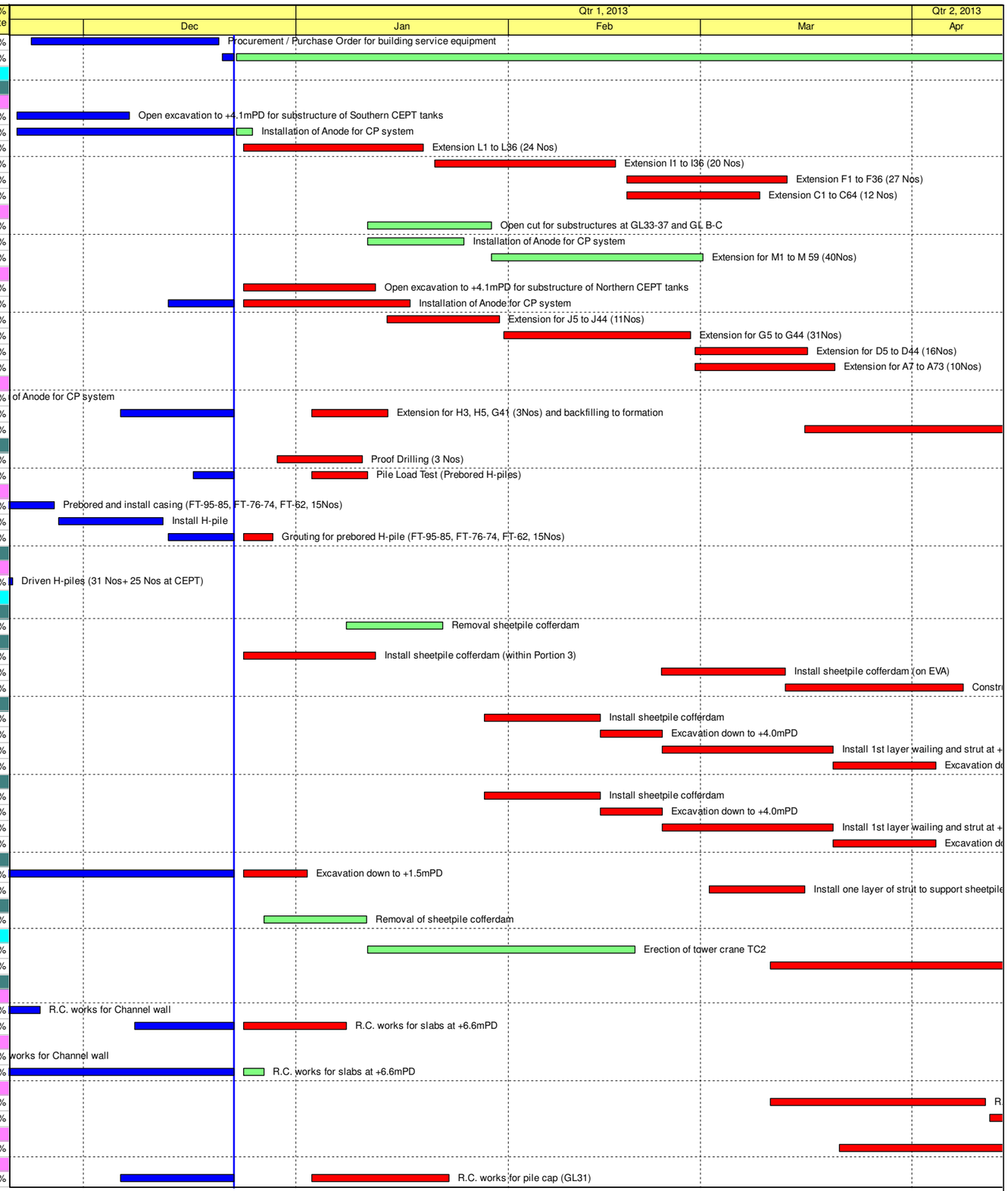
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Dec 2012 to 24 Mar 2013)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P301860	Procurement / Purchase Order for building service equipment	28	23-Nov-12 A	20-Dec-12 A		100%
P301870	Manufacturing of building service equipment	150	21-Dec-12 A	19-May-13	273	1.33%
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	07-Dec-12 A		100%
P321005	Installation of Anode for CP system	35	21-Nov-12 A	25-Dec-12	8	91.43%
P321010	Extension L1 to L36 (24 Nos)	21	24-Dec-12	19-Jan-13	-54	0%
P902490	Extension I1 to I36 (20 Nos)	21	21-Jan-13	16-Feb-13	-54	0%
P902500	Extension F1 to F36 (27 Nos)	21	18-Feb-13	13-Mar-13	-54	0%
P902510	Extension C1 to C64 (12 Nos)	18	18-Feb-13	09-Mar-13	-54	0%
Row M						
P902590	Open cut for substructures at GL33-37 and GL B-C	15	11-Jan-13	29-Jan-13	11	0%
P902595	Installation of Anode for CP system	12	11-Jan-13	25-Jan-13	38	0%
P902600	Extension for M1 to M 59 (40Nos)	24	29-Jan-13	01-Mar-13	11	0%
Row A, D, G & J						
P902550	Open excavation to +4.1mPD for substructure of Northern CEPT tanks	15	24-Dec-12	12-Jan-13	-63	0%
P902551	Installation of Anode for CP system	35	13-Dec-12 A	17-Jan-13	-15	28.57%
P902555	Extension for J5 to J44 (11Nos)	15	14-Jan-13	30-Jan-13	-63	0%
P902560	Extension for G5 to G44 (31Nos)	21	31-Jan-13	27-Feb-13	-63	0%
P902570	Extension for D5 to D44 (16Nos)	15	28-Feb-13	16-Mar-13	-63	0%
P902580	Extension for A7 to A73 (10Nos)	18	28-Feb-13	20-Mar-13	-63	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 A	14-Jan-13	-41	61.46%
P902670	Extension for K6, J41, J42 and J44 (4Nos) and backfilling to formation	28	16-Mar-13	23-Apr-13	-64	0%
Prebored Rock Socketted H-Pile						
P300130	Proof Drilling (3 Nos)	10	29-Dec-12	10-Jan-13	-41	0%
P300140	Pile Load Test (Prebored H-piles)	15	17-Dec-12 A	11-Jan-13	-41	50%
Zone 2 - Flocculation tanks and Rapid Mix tank, Rig No. 2						
P310310	Prebored and install casing (FT-95-85, FT-76-74, FT-62, 15Nos)	16	08-Nov-12 A	26-Nov-12 A		100%
P310320	Install H-pile	14	27-Nov-12 A	12-Dec-12 A		100%
P310330	Grouting for prebored H-pile (FT-95-85, FT-76-74, FT-62, 15Nos)	10	13-Dec-12 A	28-Dec-12	-41	70%
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	20-Nov-12 A		100%
Excavation and Lateral Support for Substructure						
Cofferdam No. 1 (GL29-33, A-B)						
P322020	Removal sheetpile cofferdam	12	08-Jan-13	22-Jan-13	91	0%
Cofferdam No. 2 (GL34-36, A)						
P322200	Install sheetpile cofferdam (within Portion 3)	15	24-Dec-12	12-Jan-13	-77	0%
P904265	Install sheetpile cofferdam (on EVA)	15	23-Feb-13	13-Mar-13	-109	0%
P904270	Construction of temporary traffic deck and temporary support for CLP cable trench	18	13-Mar-13	08-Apr-13	-109	0%
Cofferdam No. 3 (GL33-38, B1)						
P322300	Install sheetpile cofferdam	12	28-Jan-13	14-Feb-13	-41	0%
P322310	Excavation down to +4.0mPD	8	14-Feb-13	23-Feb-13	-41	0%
P322320	Install 1st layer wailing and strut at +4.5mPD	21	23-Feb-13	20-Mar-13	-41	0%
P322330	Excavation down formation level to +1.8mPD	10	20-Mar-13	04-Apr-13	-41	0%
Cofferdam No. 4 (GL33-38, B3-B6)						
P322400	Install sheetpile cofferdam	12	28-Jan-13	14-Feb-13	-41	0%
P322410	Excavation down to +4.0mPD	8	14-Feb-13	23-Feb-13	-41	0%
P322420	Install 1st layer wailing and strut at +4.5mPD	21	23-Feb-13	20-Mar-13	-41	0%
P322430	Excavation down formation level to +2.5mPD	10	20-Mar-13	04-Apr-13	-41	0%
Cofferdam No. 5 (GL29-33, D-K)						
P322530	Excavation down to +1.5mPD	15	08-Nov-12 A	02-Jan-13	-64	60%
P322531	Install one layer of strut to support sheetpile wall and excavation at GL31	12	02-Mar-13	16-Mar-13	-64	0%
Cofferdam No. 6 (GL29-33, N-M)						
P322620	Removal of sheetpile cofferdam	12	27-Dec-12	11-Jan-13	81	0%
R.C. Works						
P300180	Erection of tower crane TC2	30	11-Jan-13	19-Feb-13	23	0%
P300185	Erection of tower crane TC3	30	11-Mar-13	18-Apr-13	-6	0%
Substructure						
GL 33-29 & GL A-B (Northern Effluent tunnel)						
P330010	R.C. works for Channel wall	16	07-Nov-12 A	24-Nov-12 A		100%
P330030	R.C. works for slabs at +6.6mPD	12	08-Dec-12 A	08-Jan-13	-4	15%
GL 33-29 & GL M-N (Southern Effluent Tunnel)						
P330105	R.C. works for Channel wall	16	29-Oct-12 A	15-Nov-12 A		100%
P330110	R.C. works for slabs at +6.6mPD	12	16-Nov-12 A	27-Dec-12	5	90%
GL 33-29 & GL B-D (Northern CEPT tanks)						
P330200	R.C. works for pile cap (GL29-30)	24	11-Mar-13	11-Apr-13	-54	0%
P330205	R.C. Works for pile cap (GL31)	18	12-Apr-13	03-May-13	-54	0%
GL 33-29 & GL M-K (Southern CEPT tanks)						
P333000	R.C. works for pile cap (GL29-30)	24	21-Mar-13	22-Apr-13	-63	0%
GL 33-29 & GL D-K (Disturbution Channel)						
P335000	R.C. works for pile cap (GL31)	18	06-Dec-12 A	23-Jan-13	-64	5%



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

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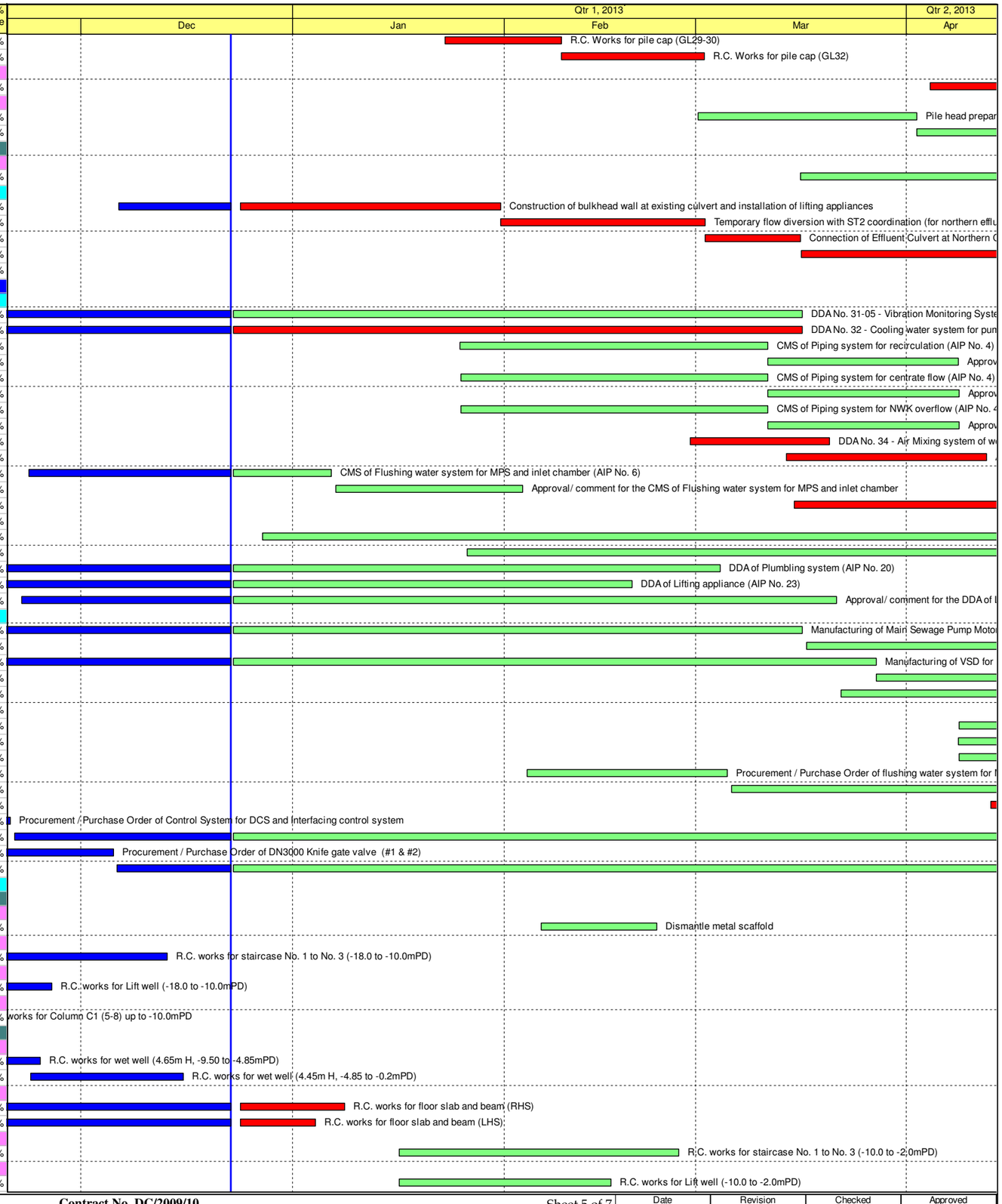
P335010	R.C. Works for pile cap (GL29-30)	15	23-Jan-13	09-Feb-13	-64	0%
P335020	R.C. Works for pile cap (GL32)	15	09-Feb-13	02-Mar-13	-64	0%
GL 33-38 & GL B1-B9 (Disturbution Channel)						
P334000	R.C. work for ground beam and pile caps at GL B1-B3	24	04-Apr-13	04-May-13	-41	0%
GL 33-38 & GL B-C (Flocculation tanks)						
P338010	Pile head preparation	24	01-Mar-13	02-Apr-13	11	0%
P338020	R.C. works for pile caps	60	02-Apr-13	15-Jun-13	11	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 A	31-Jan-13	-5	32%
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%
P300380	Connection of Effluent Culvert at Southern CEPT tanks	14	15-Apr-13	29-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	16-Mar-13	400	60%
P301120	DDA No. 32 - Cooling water system for pump bearing and motors (AIP No. 2)	120	06-May-12	16-Mar-13	-85	30%
P301240	CMS of Piping system for recirculation (AIP No. 4)	45	25-Jan-13	11-Mar-13	221	0%
P301250	Approval/ comment for the CMS of Piping system for recirculation	28	11-Mar-13	08-Apr-13	221	0%
P301253	CMS of Piping system for centrate flow (AIP No. 4)	45	25-Jan-13	11-Mar-13	126	0%
P301254	Approval/ comment for the CMS of Piping system for centrate flow	28	11-Mar-13	08-Apr-13	126	0%
P301255	CMS of Piping system for NWK overflow (AIP No. 4)	45	25-Jan-13	11-Mar-13	226	0%
P301256	Approval/ comment for the CMS of Piping system for NWK overflow	28	11-Mar-13	08-Apr-13	226	0%
P301260	DDA No. 34 - Air Mixing system of wet well (AIP No. 5)	21	28-Feb-13	20-Mar-13	-52	0%
P301270	Approval/ comment for the DDA of Air Mixing system of wet well	30	14-Mar-13	12-Apr-13	-52	0%
P301271	CMS of Flushing water system for MPS and inlet chamber (AIP No. 6)	45	23-Nov-12 A	06-Jan-13	342	66.67%
P301272	Approval/ comment for the CMS of Flushing water system for MPS and inlet chamber	28	07-Jan-13	03-Feb-13	342	0%
P301390	DDA of Ventilation system of MPS (AIP No. 18)	120	15-Mar-13	13-Jul-13	-30	0%
P301400	Approval/ comment for the DDA of Ventilation system of MPS2	107	14-Apr-13	30-Jul-13	-30	0%
P301410	DDA of Fire service of MPS (AIP No. 19)	120	27-Dec-12	26-Apr-13	68	0%
P301420	Approval/ comment for the DDA of Fire service of MPS2	109	26-Jan-13	15-May-13	68	0%
P301430	DDA of Plumbling system (AIP No. 20)	201	16-Aug-12 A	04-Mar-13	161	64.18%
P301470	DDA of Lifting appliance (AIP No. 23)	120	23-Oct-12 A	19-Feb-13	125	50.83%
P301540	Approval/ comment for the DDA of Lifting appliance	120	22-Nov-12 A	21-Mar-13	125	25.83%
Procurement/ Order/ Manufacturing/ Delivery						
P302290	Manufacturing of Main Sewage Pump Motors	240	21-Jul-12 A	16-Mar-13	376	65%
P302300	Delivery of Main Sewage Pump Motors	30	17-Mar-13	15-Apr-13	376	0%
P302320	Manufacturing of VSD for Main Sewage Pumps	270	31-May-12	27-Mar-13	170	65%
P302330	Delivery of VSD for Main Sewage Pumps	61	27-Mar-13	27-May-13	170	0%
P302340	Procurement / Purchase Order of Lifting Appliance	25	22-Mar-13	15-Apr-13	125	0%
P302350	Manufacturing of Lifting Appliance	120	16-Apr-13	13-Aug-13	125	0%
P302421	Procurement / Purchase Order of Piping system for NWK overflow	25	08-Apr-13	03-May-13	226	0%
P302430	Procurement / Purchase Order of Piping system for recirculation	30	08-Apr-13	08-May-13	221	0%
P302440	Procurement / Purchase Order of Piping system for centrate flow	30	08-Apr-13	08-May-13	126	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	13-Apr-13	12-May-13	-52	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	01-Jul-13	116	14.35%
P904890	Procurement / Purchase Order of DN3000 Knife gate valve (#1 & #2)	45	22-Oct-12 A	05-Dec-12 A		100%
P904900	Manufacturing of DN3000 Knife gate valve (#1 & #2)	340	06-Dec-12 A	10-Nov-13	138	5%
R.C. Works						
Access Floor No. 2 (-18.0mPD)						
Floor slab and beams (-18.0mPD)						
P400475	Dismantle metal scaffold	12	06-Feb-13	23-Feb-13	92	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	13-Dec-12 A		100%
Lift Well						
P400445	R.C. works for Lift well (-18.0 to -10.0mPD)	30	22-Oct-12 A	26-Nov-12 A		100%
Columns C1 (8 Nos)						
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	25-Nov-12 A		100%
P400505	R.C. works for wet well (4.45m H, -4.85 to -0.2mPD)	28	23-Nov-12 A	16-Dec-12 A		100%
Floor slab and beams (-10.0mPD)						
P902680	R.C. works for floor slab and beam (RHS)	18	06-Nov-12 A	08-Jan-13	-37	40%
P902690	R.C. works for floor slab and beam (LHS)	18	16-Nov-12 A	04-Jan-13	-13	60%
Staircase No. 1 to No. 3						
P902700	R.C. works for staircase No. 1 to No. 3 (-10.0 to -2.0mPD)	32	16-Jan-13	26-Feb-13	26	0%
Lift Well						
P902710	R.C. works for Lift well (-10.0 to -2.0mPD)	24	16-Jan-13	16-Feb-13	162	0%



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	Columns C1 (8 Nos)					
P902720	R.C. works for Column C1 (1-4) up to -2.0mPD	15	16-Jan-13	02-Feb-13	-37	0%
P902730	R.C. works for Column C1 (5-8) up to -2.0mPD	15	12-Jan-13	30-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	08-Jan-13	26-Jan-13	-24	0%
P902750	R.C. works for wet well (4.6m H, +4.45 to +9.05mPD)	18	26-Jan-13	13-Feb-13	27	0%
	Floor slab and beams (-2.0mPD)					
P902760	R.C. works for floor slab and beam (RHS)	18	14-Feb-13	07-Mar-13	-37	0%
P902770	R.C. works for floor slab and beam (LHS)	18	07-Mar-13	28-Mar-13	-37	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-Mar-13	18-Apr-13	18	0%
	Lift Well					
P902800	R.C. works for Lift well (-2.0 to +5.9mPD)	24	07-Mar-13	09-Apr-13	146	0%
	Columns C1 (8 Nos)					
P902810	R.C. works for Column C1 (1-4) up to +5.9mPD	12	11-Mar-13	25-Mar-13	-26	0%
P902820	R.C. works for Column C1 (5-8) up to +5.9mPD	12	04-Apr-13	19-Apr-13	-37	0%
	Ground floor slab (+5.9mPD)					
	Wet Well					
P902860	R.C. works for wet well (4.5m H, +5.9 to +10.4mPD)	21	14-Feb-13	09-Mar-13	23	0%
P902870	R.C. works for wet well (4.2m H, +10.4 to +14.65mPD)	21	11-Mar-13	08-Apr-13	23	0%
P902890	R.C. works for wet well (4.0m H, +14.65 to +18.65mPD)	21	09-Apr-13	03-May-13	23	0%
	Floor slab and beams (+5.9mPD)					
P902840	R.C. works for floor slab and beam (RHS)	18	19-Apr-13	11-May-13	-37	0%
	Perimeter Wall					
P903040	R.C. works for Perimeter Wall (+5.9 to +20.4mPD)	60	19-Apr-13	03-Jul-13	69	0%
	Builder and finishes Works					
	Access Floor No. 1 (-32.0mPD)					
P400345	Wall/ ceiling finishes (fair face)	36	23-Feb-13	11-Apr-13	92	0%
	Building Service Installation					
	Access Floor No. 1 (-32.0mPD)					
P400280	Installation of Building services equipment	45	11-Apr-13	05-Jun-13	364	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	11-Apr-13	18-Jun-13	92	0%
	Portion 4 (Main flow Culvert)					
	Foundation Works					
	Driven H-Pile					
	Zone 1, on EVA					
P903210	Driven H-Pile (For MFC)	21	03-Nov-12 A	23-Feb-13	-109	70%
	Zone 2, within Portion 4					
P903160	Driven H-pile (For MFC, DOU, Odour Duct Bridge, 70 Nos)	55	23-Feb-13	04-May-13	-62	0%
	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-Nov-12 A	27-Jan-13	131	20%
P403001	Approval/ Comment of DDA for the DOU No.1b	60	23-Nov-12 A	14-Feb-13	131	10%
P403002	DDA No. 38-02 - DOU No. No. 3 (AIP No. 13)	60	05-Feb-13	06-Apr-13	74	0%
P403003	Approval/ Comment of DDA for the DOU No. 3	75	07-Mar-13	21-May-13	74	0%
	Procurement/ Order/ Manufacturing/ Delivery					
P403140	Procurement / Purchase Order of equipment for DOU No. 1b	30	15-Feb-13	16-Mar-13	276	0%
P403150	Manufacturing of equipment for DOU No. 1b	100	17-Mar-13	24-Jun-13	276	0%
P403170	Procurement / Purchase order of ductworks for DOU No. 1b	30	15-Feb-13	16-Mar-13	313	0%
P403180	Manufacturing of ductworks for DOU No. 1b	100	17-Mar-13	24-Jun-13	313	0%
P403200	Procurement / Purchase Order of switchboard and LCPs	30	15-Feb-13	16-Mar-13	131	0%
P403210	Manufacturing of switchboard and LCPs	360	17-Mar-13	11-Mar-14	131	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	20-Feb-13	-30	40%
	Procurement/ Order/ Manufacturing/ Delivery					
P501480	Procurement / Purchase Order of Lifting Appliance	30	21-Feb-13	22-Mar-13	198	0%
P501490	Manufacturing of Lifting Appliance	120	23-Mar-13	20-Jul-13	198	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	9.33%
P501540	Procurement / Purchase Order of pipeworks	30	21-Feb-13	22-Mar-13	20	0%
P501550	Manufacturing of pipeworks	240	23-Mar-13	17-Nov-13	20	0%
P501570	Procurement / Purchase order of drainage and flushing water pumping system	30	21-Feb-13	22-Mar-13	-30	0%
P501580	Manufacturing of drainage and flushing water pumping system	300	23-Mar-13	16-Jan-14	-30	0%
P501600	Procurement / Purchase Order of building service equipment	30	21-Feb-13	22-Mar-13	-4	0%
P501610	Manufacturing of building service equipment	210	23-Mar-13	18-Oct-13	-4	0%
	R.C. Works					
P400630	Possession of site	1	05-Dec-12 A	05-Dec-12 A		100%
P400631	R.C. works for plinth of pipeworks and valves	150	24-Dec-12	02-Jul-13	164	0%
	Portion 6 (Valve Chamber)					
	Submission of design of E&M works					
P501300	Approval/ comment for the design of the MEICA and BS works for Valve chamber	90	01-Sep-12 A	29-Nov-12 A		100%

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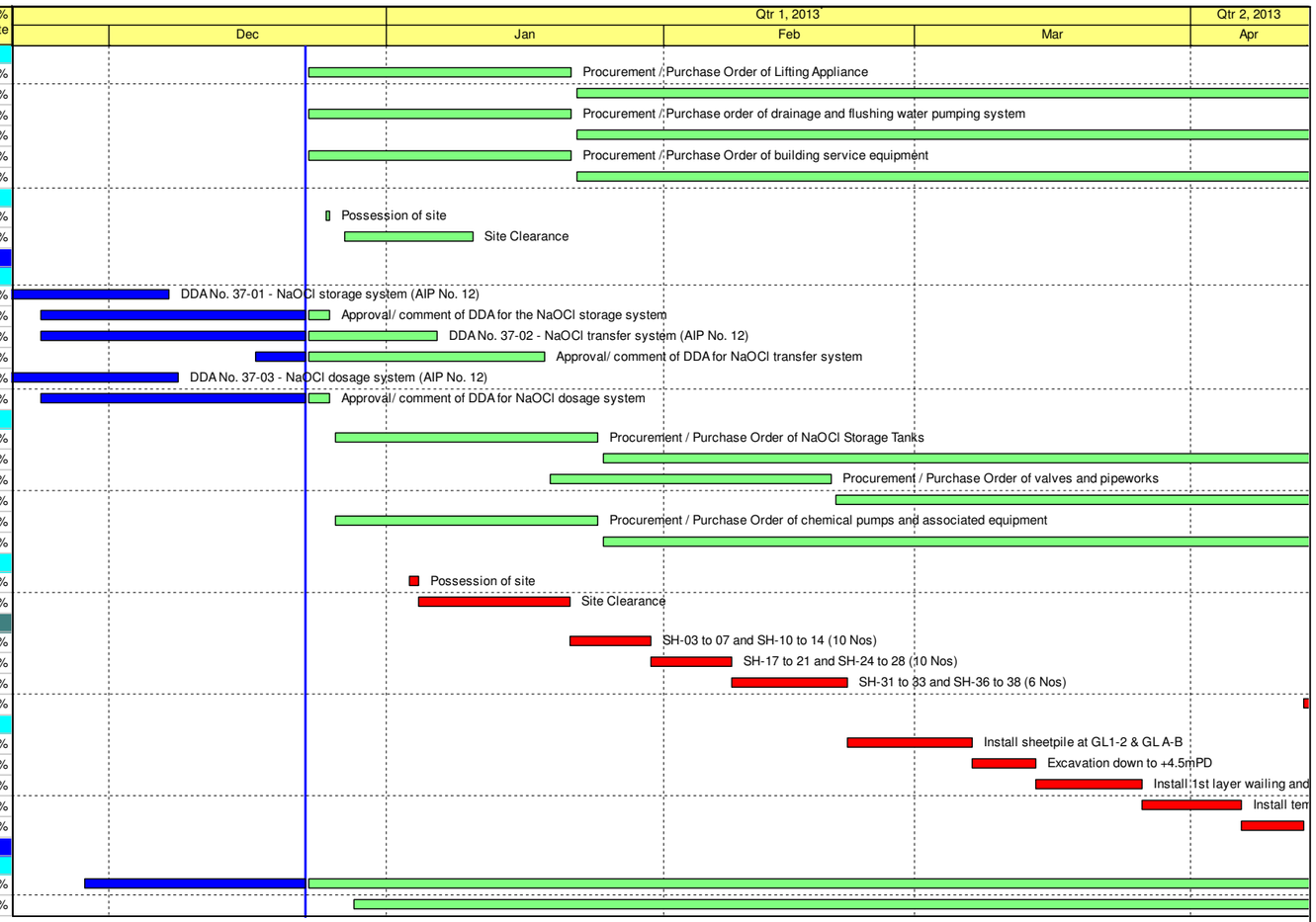
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
Procurement/ Order/ Manufacturing/ Delivery						
P501690	Procurement / Purchase Order of Lifting Appliance	30	23-Dec-12	21-Jan-13	53	0%
P501700	Manufacturing of Lifting Appliance	390	22-Jan-13	15-Feb-14	53	0%
P501780	Procurement / Purchase order of drainage and flushing water pumping system	30	23-Dec-12	21-Jan-13	2	0%
P501790	Manufacturing of drainage and flushing water pumping system	400	22-Jan-13	25-Feb-14	2	0%
P501810	Procurement / Purchase Order of building service equipment	30	23-Dec-12	21-Jan-13	31	0%
P501820	Manufacturing of building service equipment	300	22-Jan-13	17-Nov-13	31	0%
R.C. Works						
P600000	Possession of site	1	25-Dec-12	25-Dec-12	127	0%
P600010	Site Clearance	12	27-Dec-12	10-Jan-13	99	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	07-Dec-12 A		100%
P801001	Approval/ comment of DDA for the NaOCl storage system	33	23-Nov-12 A	25-Dec-12	127	90.91%
P801002	DDA No. 37-02 - NaOCl transfer system (AIP No. 12)	45	23-Nov-12 A	06-Jan-13	90	66.67%
P801003	Approval/ comment of DDA for NaOCl transfer system	33	17-Dec-12 A	18-Jan-13	90	18.18%
P801004	DDA No. 37-03 - NaOCl dosage system (AIP No. 12)	45	25-Oct-12 A	08-Dec-12 A		100%
P801005	Approval/ comment of DDA for NaOCl dosage system	33	23-Nov-12 A	25-Dec-12	91	90.91%
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	03-Jan-13	04-Jan-13	-79	0%
P800010	Site Clearance	14	04-Jan-13	21-Jan-13	-64	0%
Re-driving test for existing daido Piles						
P800020	SH-03 to 07 and SH-10 to 14 (10 Nos)	8	21-Jan-13	30-Jan-13	-64	0%
P800030	SH-17 to 21 and SH-24 to 28 (10 Nos)	8	30-Jan-13	08-Feb-13	-64	0%
P800040	SH-31 to 33 and SH-36 to 38 (6 Nos)	8	08-Feb-13	21-Feb-13	-64	0%
P800050	SH-01, 02, 08, 09, 15, 16, 22, 23, 29, 30, 34 & 35	12	13-Apr-13	27-Apr-13	-64	0%
Excavation and Lateral Support for Substructure						
P802000	Install sheetpile at GL1-2 & GL A-B	12	21-Feb-13	07-Mar-13	-64	0%
P802005	Excavation down to +4.5mPD	6	07-Mar-13	14-Mar-13	-64	0%
P802010	Install 1st layer wailing and struts at +4.8mPD	10	14-Mar-13	26-Mar-13	-64	0%
P802030	Install temporary prop at +2.9mPD	6	26-Mar-13	06-Apr-13	-64	0%
P802040	Excavation for exposing daido pile heads	6	06-Apr-13	13-Apr-13	-64	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 A	27-Apr-13	47	40%
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 Dec 2012 to 24 Mar 2013)

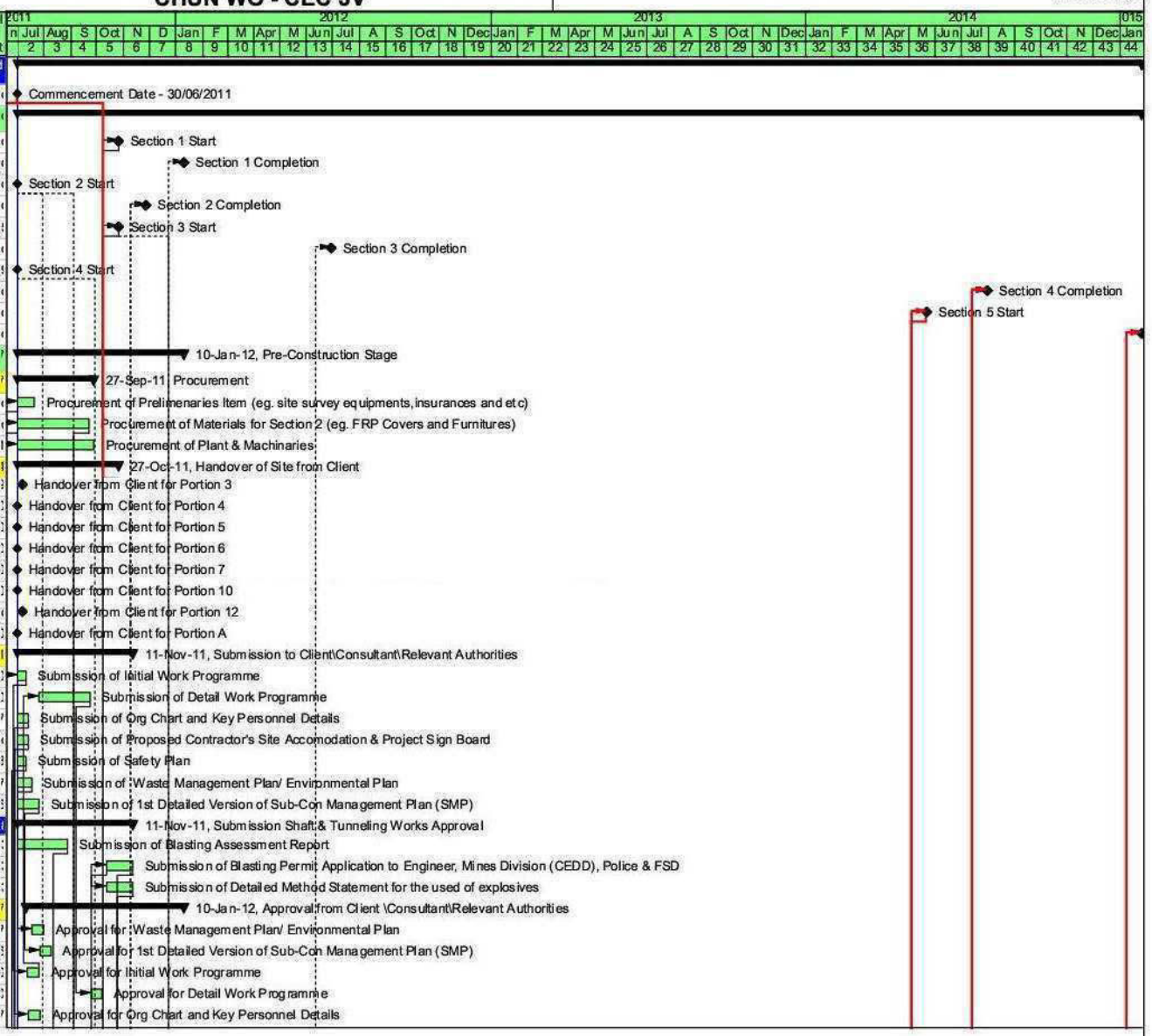
Date	Revision	Checked	Approved

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)

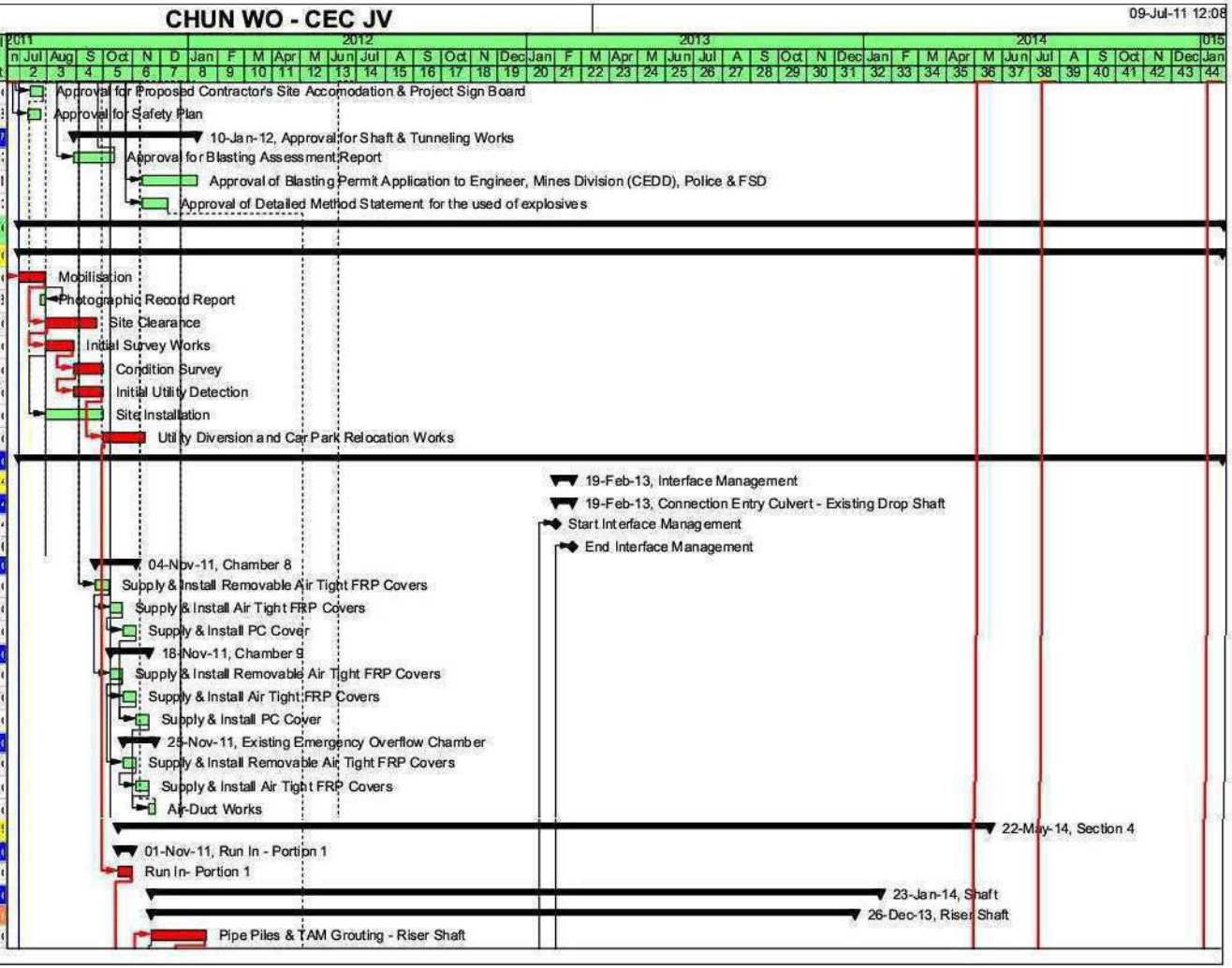
Date	Revision	Checked	Approved
11-Jul-11	Initial Work Programme		

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

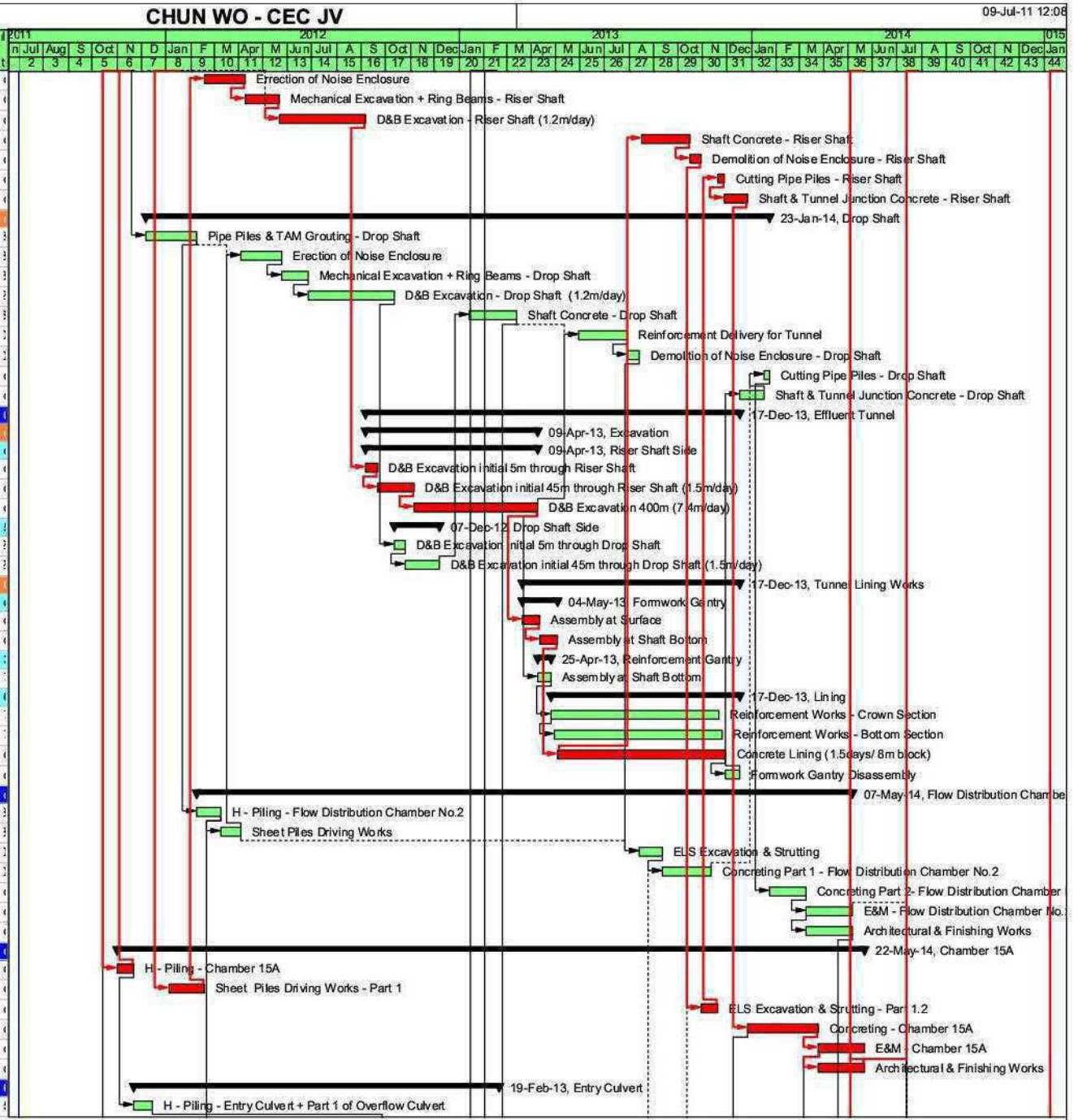


Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

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

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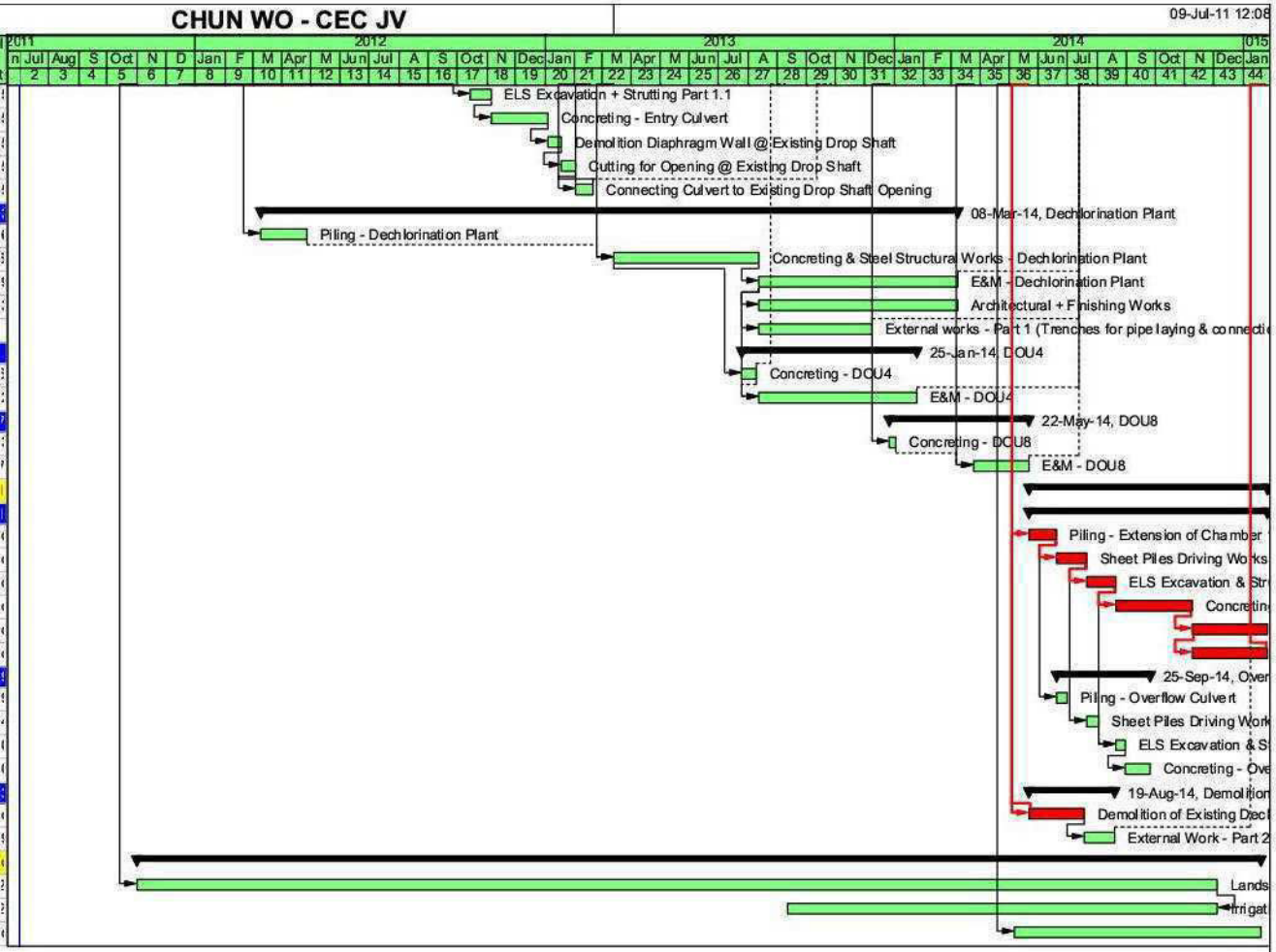
Activity Name	Original Duration	Start	Finish
ELS Excavation + Strutting Part 1.1	18d	15-Oct-12	05-Nov-12
Concreting - Entry Culvert	50d	05-Nov-12	04-Jan-13
Demolition Diaphragm Wall @ Existing Drop Shaft	12d	04-Jan-13	18-Jan-13
Cutting for Opening @ Existing Drop Shaft	12d	18-Jan-13	01-Feb-13
Connecting 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