Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23, DC/2009/10, DC/2009/17, DC/2009/18 and DC/2009/19

Consolidated Monthly Environmental Monitoring and Audit Report January 2014

(Version 1.0)

Certified By

(Environmental Team Leader)

REMARKS:

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

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17 February 2014
By Post

Attn: Mr. Danny Tang

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 January 2014 (Issue No. 50) Version 1.0

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, DC/2009/18 and DC/2009/19 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. Ove Arup & Partners HK Ltd. 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 50th 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;
   - Contract no. DC/2009/18 – Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection Facilities; and
   - Contract no. DC/2009/19 – Upgrading Woks at Stonecutters Island Sewage Treatment Works – Sludge Handling and Disposal 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. The EM&A programme of Contract DC/2009/19 was commenced on 1 September 2013.

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

6. This Report documents the findings of EM&A Works for the Project covering the period in January 2014.

7. 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/EMA%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/EMA%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/EMA%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/EMA%20Report-DC200918.html
DC/2009/19	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/DC200919/EMA%20Report-DC200919.html

Environmental Monitoring and Audit Works

8. 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.

9. 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

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

24-hour TSP Monitoring

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

Construction Noise

12. 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

13. 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 December 2013	Submitted to EPD	No comment	---
Notifications of any summons & prosecutions received	0	--	N/A	N/A	---

Key Information in the EIA Report

14. According to the EIA Report, air quality, noise, water quality, ecology and landscape and visual would be the key environmental issues during the construction of the project. Details of the implementation of mitigation measures for the five 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, DC/2009/18 and DC/2009/19 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 50th consolidated monthly EM&A report summarizing the EM&A works conducted for the Project at SCISTW in January 2014.

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).

Contract no. DC/2009/19

- Construction of two brand new purpose-built self-propelled vessels with cranes mounted on vessels;
- Construction of ultimate 400 number of sludge containers for transporting dewatered sludge; and
- Improvement and refurbishment works at 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. Ray Cheung (Tel:2620 0070)
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)
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. Ken Chong (Tel: 2370 3166)	Mr. W.C. Lee (Tel: 6688 5680)
Environmental Officer	Mr. Vincent Lai (Tel: 2370 2717)	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)
Contract No.	**DC/2009/19**	
Contract Title:	Upgrading Woks at Stonecutters Island Sewage Treatment Works – Sludge Handling and Disposal Facilities	
Consultant	Ove Arup & Partners HK Ltd	
The Engineer	Mr. Tang (Tel: 2990 6992)	
The Engineer Representative	Mr. Johnny Mak (Tel: 2990 6986)	
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)	
Contractor	SITA – ATAL Joint Venture	
Project Manager	Mr. Laurent Bickert (Tel: 2590 5680)	
Environmental Team	Material Lab Consultants Limited Mr. Joseph Poon (Tel: 2450 8238)	

Construction Programme

1.9 The construction program for the five 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: • Construction of shaft-tunnel junction formwork. Production Shaft (Tunnel L): • Pre-excavation grouting; and • Drilling and blasting.
DC/2009/17	Portion 3: • Installation of FRP works was in progress.

	• Waterproofing works on R/F of vehicle washing bay were in progress. Portion 4: • Installation of green roof system was in progress. • Finishing works of external walls were in progress. • Waterproofing works on R/F of DG Store and Staircase 2 were completed. • Installation of Linwood cladding on external wall of SDB was completed. • Installation of FRP works was in progress. • Epoxy painting on 1/F of SDB was in progress. Portion 5: • Nil External Works: • SWAC / PMAC submission and implementation of TTA for the commencement of external works were in progress. • ELS for construction of cable duct, drawpit & trench at Zone A5 (Stage 1) was in progress. • Reinstatement works at Zone B2a were completed. • Reinstatement works at Zone C2 (Stage 4) were in progress. • Backfilling works at Zone C3 were in progress. • Backfilling works and construction of cable ducts & drawpit at Zone C3a were in completed. Laying of vent pipe for manhole was in progress. • Backfilling works at Zone C5 were in progress. • Builder's works of master meter room at Zone E6 were completed. • Painting of pipe supports of watermains inside CEPT Tank at Zone G was completed. • Laying of cable ducts and construction of cable draw pits for T&C works at related zones were completed. • Installation of pipe-in-pipe for chemical and sodium hypochlorite pipe trenches at related zones for T&C works was completed.
DC/2009/10	• At MPS2, Construction of Slab & Kicker of Discharge Channel up to +15.15mPD was completed on 23 January 2014 and remaining construction of discharge channel is scheduled on mid of February 2014. Construction of Sector 3a up to +5.9mPD was completed and the construction of perimeter wall up to +10.4mPD was also completed on 28 Jan 2014.The construction of 1sf Floor is in progress and concreting is scheduled mid of February 2014. • At Switchgear Building, the external finishing work and green roof construction are in progress. • At Portion 3, construction of RC slab of upper deck at G.L 29-33/L-M and G.L 29-33/J-M up to +10.3mPD were completed on 13 Jan 2014 and 28 Jan 2014 respectively. Construction of MCC/Switch Room and Main Distribution channel are in progress. Superstructure construction of walls and upper deck at +10.3mPD of PSTs are in progress.

	• Driven H-pile works piling for the Main Flow Culvert, Odour Duct Bridge and DOU No.3 were completed during this report period. Piles foundation for service duct is in progress. • At Portion 8, steel fixing of base slab for Sodium Hypochlorite Storage Compound is in progress and the concreting scheduled on early of February 2014
DC/2009/18	<u>Portion 3:</u> • Blasting and rock excavation at Riser Shaft Tunnel Extension; • Commence tunnel lining shutter fabrication; • Demolition of existing D-wall and; • Entry Culvert Flow Diversion Works. <u>Portion 7:</u> • Blasting and rock excavation at Drop Shaft Tunnel Extension;
DC/2009/19	• Interim Operation commenced on 1 November 2013. No construction works have been carried out in the reporting period.

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 January 2014, 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*	Met One Instruments: AEROCET-531 Sibata: LD-3B	Met One Instruments: AEROCET-531 Sibata: 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	210	172 - 340	346	500
AM7	106	23 - 298	322	
AM8	62	29 - 129	307	
AM9	207.0	39.6 - 265.7	318	
24 hours TSP				
AM6	110	93 - 128	196	260
AM7	150	128 - 188	207	
AM8	94	62 - 126	158	
AM9	120.0	87.8 - 133.0	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 955	SVANTEK Model no: SVAN 955
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	59 - 61	75.0
NM6	63.8 - 66.1	
NM7	66.2 - 72.4	
For the time period 1900-2300 hrs. on Normal Weekdays, And 0700-2300 of Sundays and Public Holiday		
Monitoring Station	Range, dB(A) L_{eq}(5 min.)	Limit Level ,dB(A) L_{eq}(5 min.)
NM5	56 - 61	70.0
NM7	63.4 - 64.6	
All days during 2300 to 0700 hrs. of the next day		
NM7	58.5 - 59.5*	55.0

Remark:* Since the construction noise levels recorded in restricted hour from 23:00 to 07:00 of the next day were lower than the baseline level, the construction noise levels were considered non-valid exceedance of Limit Level.

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

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

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

3.10 The major noise sources identified at the designated noise monitoring stations during day time were the 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	2, 9, 16, 23 and 30 January 2014
DC/2009/10	2, 9, 16, 23 and 28 January 2014
DC/2009/17	2, 8, 16, 23 and 28 January 2014
DC/2009/18	8, 15, 22 and 29 January 2014
DC/2009/19	3, 10, 13, 24 and 28 January 2014

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 the five 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 the five 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	14,837*(m^3)	124*(kg) and 99*(m^3)	400(kg)	0*	0*	0*
DC/2009/10	77(m^3)	120(kg) and 36(m^3)	0	0	0	0
DC/2009/17	49(m^3)	13 (tons)	0	0	0	0
DC/2009/18	10,925 (m^3)	42,360(kg) and 8(m^3)	0	0	0	0
DC/2009/19	0	0	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 (kg) and other General Refuse (m^3, Ton).

4.8 The disposal location of wastes generated by the activities of the five 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	13,864m^3 of Inert C&D materials were reused in other projects and 973m^3 of Inert C&D materials were dumped at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38. No plastics, but 70 kg of steel and 54 kg of paper/cardboard packaging were sent for recycling. 400 kg of chemical waste was collected by licensed Collector during the reporting period.
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill. No plastics and metals, but 120 kg paper/cardboard packaging was sent for recycling during the reporting period.
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill. No plastics and metals, 180 kg paper/cardboard packaging was sent to recyclers during the reporting period.
DC/2009/18	Lam Tei Quarry, Tuen Mun Area 38 Fill Bank and NENT Landfill and Tseung Kwan O Area 137 Fill Bank. No plastics and paper/cardboard packaging, but 42,360kg of metals was sent to recyclers for recycling during the reporting period.
DC/2009/19	No waste was generated in the reporting period.

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

Implementation Status of Environmental Mitigation Measures

4.10 Details of the implementation of mitigation measures for the five 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 the five contracts in the reporting month.

4.18 There were no environmental complaint and prosecution received since the commencement of the five 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.

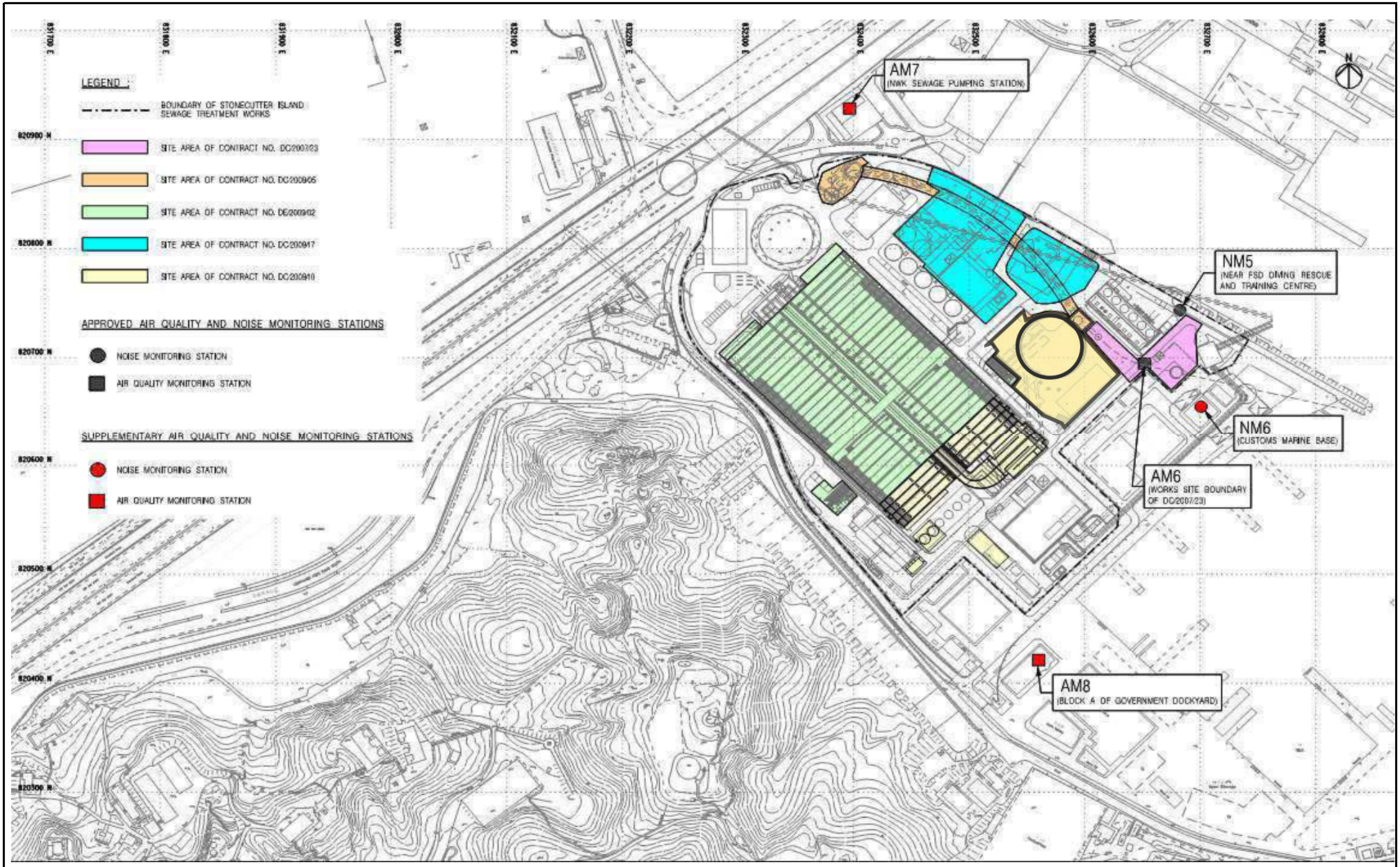
Waste/Chemical Management

- 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

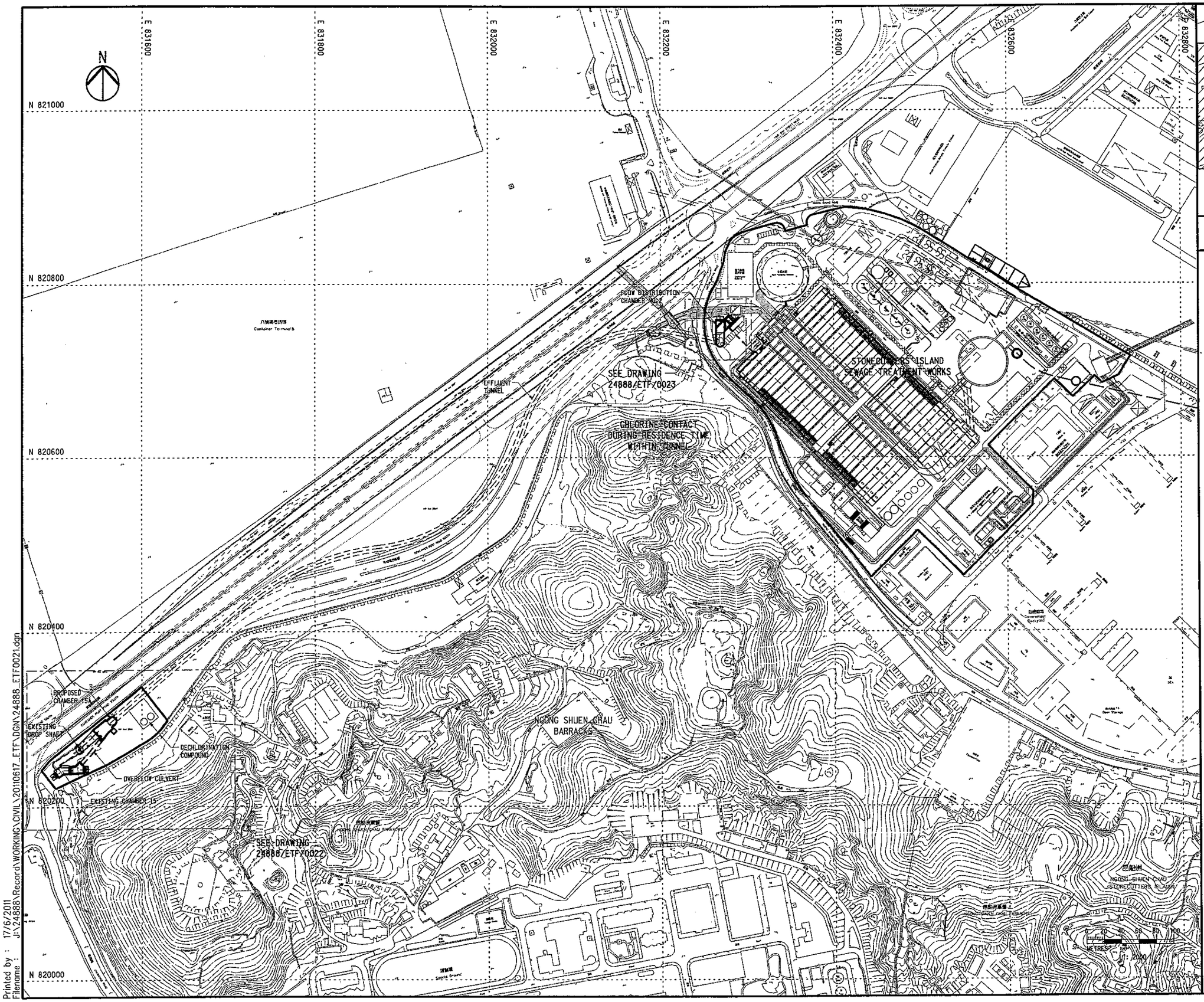
- To erect and maintain the protection fence around the retaining tree; and
- To avoid any heavy materials placed into tree protection zone.

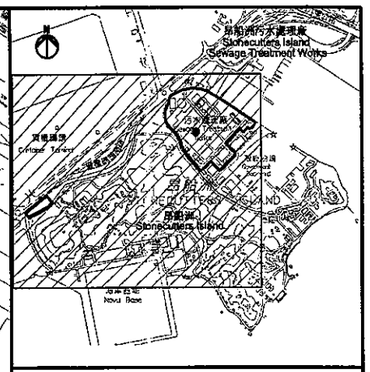
FIGURES



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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GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

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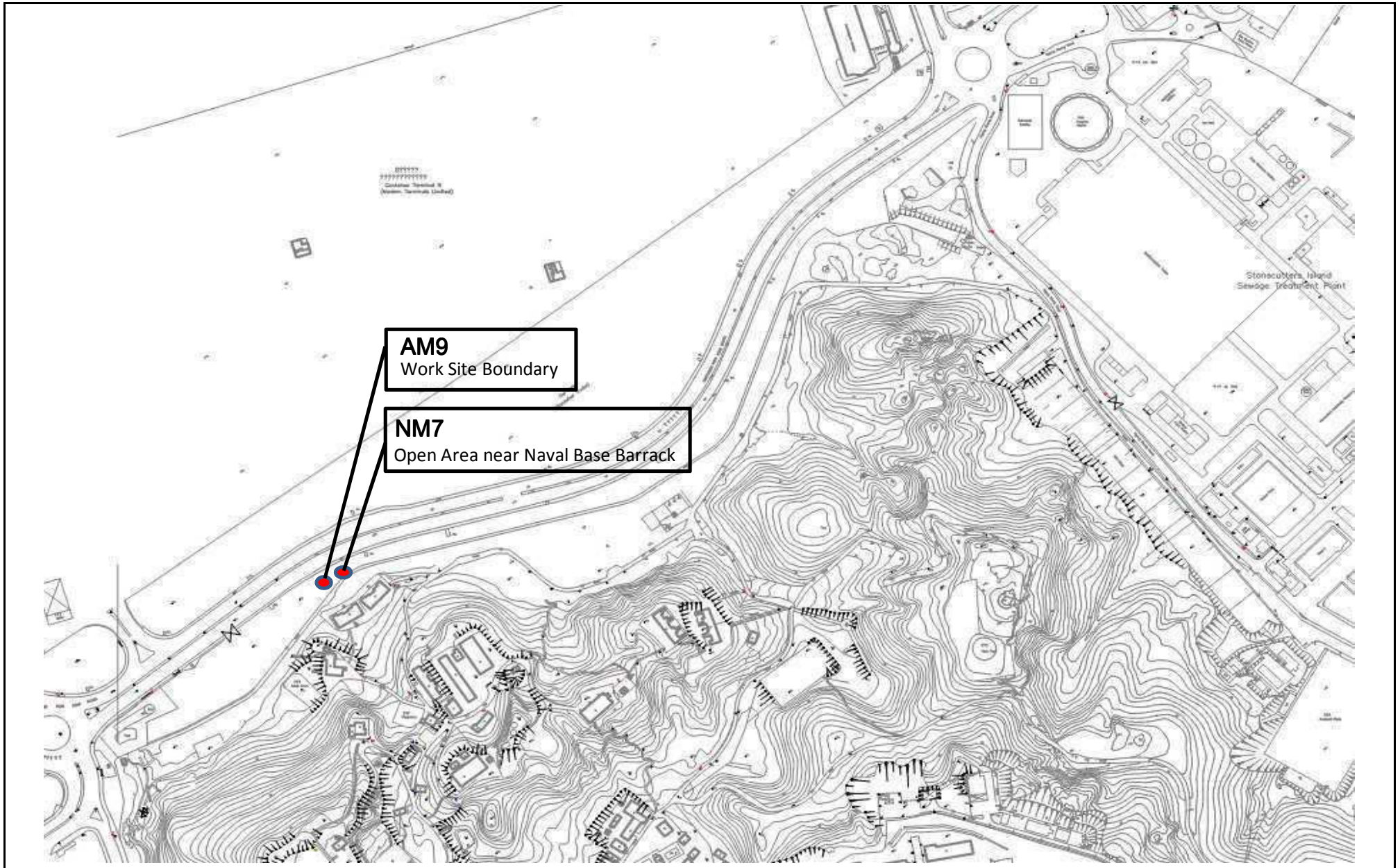
Filename : J:\24888\Record\WORKING\CIVIL\20110617_ETF\DGN\24888_ETF0021.dgn



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

APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	318	169	500	260

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 **NM6** **NM7**	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Restricted Hours (Evening Time) All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during the day-time and evening (0700 to 2300 hours)	N/A	70(1)
	Restricted Hours (Night Time) All days during the night-time (2300 to 0700 hours)	N/A	55(1)

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

APPENDIX B
ENVIRONMENTAL MONITORING SCHEDULES

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 : January 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jan	02-Jan	03-Jan	04-Jan
			Public Holiday	1-hr and 24-hr Monitoring		
05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan
			1-hr and 24-hr Monitoring			
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
		1-hr and 24-hr Monitoring				
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
	1-hr and 24-hr Monitoring				1-hr and 24-hr Monitoring	
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	
				1-hr and 24-hr Monitoring	Public Holiday	

Monitoring Month : February 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Feb
						Public Holiday
02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb
	Public Holiday		1-hr and 24-hr Monitoring			
09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
		1-hr and 24-hr Monitoring				
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
	1-hr and 24-hr Monitoring				1-hr and 24-hr Monitoring	
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	
				1-hr and 24-hr Monitoring		

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 : January 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jan	02-Jan	03-Jan	04-Jan
			Public Holiday	Noise Monitoring		
05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan
		Noise Monitoring (Evening Time)	Noise Monitoring			
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
Noise Monitoring		Noise Monitoring				
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
	Noise Monitoring	Noise Monitoring (Evening Time)				
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	
Noise Monitoring				Noise Monitoring	Public Holiday	

Monitoring Month: February 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Feb
						Public Holiday
02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb
	Public Holiday	Noise Monitoring (Evening Time)	Noise Monitoring			
09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
Noise Monitoring		Noise Monitoring				
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
	Noise Monitoring	Noise Monitoring (Evening Time)				
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	
Noise Monitoring				Noise Monitoring		

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SISTW
Impact Air Quality and Noise Monitoring Schedule (January 2014)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jan	2-Jan	3-Jan	4-Jan
				24 hr TSP	1hr TSP X 3 (AM8)	1hr TSP X 3 (AM7)
5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan
			24 hr TSP	1hr TSP X 3 Noise (NM6)		
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
		24 hr TSP	1hr TSP X 3 Noise (NM6)			
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
	24 hr TSP	1hr TSP X 3 Noise (NM6)			24 hr TSP	
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	**31-Jan**	
	1hr TSP X 3 Noise (NM6)		24 hr TSP	1hr TSP X 3		

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

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

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

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (February 2014)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Feb
2-Feb	**3-Feb**	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb
		24 hr TSP	1hr TSP X 3 Noise (NM6)		24 hr TSP	
9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
	1hr TSP X 3 Noise (NM6)			24 hr TSP	1hr TSP X 3	
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
			24 hr TSP	1hr TSP X 3 Noise (NM6)		
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	
		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
NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop

Contract No. DC/2009/18

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

Impact Air Quality and Noise Monitoring Schedule (January 2014)

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

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 (February 2014)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Feb
2-Feb	**3-Feb**	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb
		24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)		24 hr TSP	
9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
	1hr TSP X 3 Noise (Daytime, Evening and Night Time)			24 hr TSP	1hr TSP X 3	
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
			24 hr TSP	1hr TSP X 3 Noise (Daytime, Evening and Night Time)		
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	
		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	:	18/11/2013

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)	:	1018
Ta(K)	:	295

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.2	3.191	1.540	57	56.95
2	13 holes	8.5	2.913	1.407	51	50.96
3	10 holes	6.5	2.547	1.232	45	44.96
4	7 holes	4.5	2.119	1.027	38	37.97
5	5 holes	2.8	1.672	0.813	30	29.97

Sampler Calibration Relationship

Slope(m):36.430 Intercept(b): 0.313 Correlation Coefficient(r): 0.9992

Checked by: Magnum Fan Date: 22/11/2013

High-Volume TSP Sampler
5-Point Calibration Record9

Location	:	AM6
Calibrated by	:	P.F.Yeung
Date	:	18/01/2014

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)	:	1026
Ta(K)	:	291

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.8	3.347	1.617	58	59.07
2	13 holes	8.5	2.969	1.433	52	52.96
3	10 holes	6.8	2.656	1.281	45	45.83
4	7 holes	4.5	2.160	1.040	36	36.66
5	5 holes	3.2	1.822	0.875	30	30.55

Sampler Calibration Relationship

Slope(m):39.082 Intercept(b):-3.815 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan Date: 22/01/2014

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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Dec 26, 2012 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 2323 Pa (mm) - 753.11

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4440	3.2	2.00
2	NA	NA	1.00	1.0240	6.4	4.00
3	NA	NA	1.00	0.9120	8.0	5.00
4	NA	NA	1.00	0.8720	8.8	5.50
5	NA	NA	1.00	0.7200	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
0.9967	0.6902	1.4149
0.9925	0.9693	2.0010
0.9903	1.0858	2.2372
0.9893	1.1345	2.3464
0.9840	1.3666	2.8299
Qstd slope (m) =		2.09107
intercept (b) =		-0.02838
coefficient (r) =		0.99996

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.6896	0.8851
0.9915	0.9683	1.2517
0.9893	1.0847	1.3995
0.9883	1.1334	1.4678
0.9830	1.3652	1.7702
Qa slope (m) =		1.30939
intercept (b) =		-0.01775
coefficient (r) =		0.99996

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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. : C133573
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1422)

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 : 14 June 2013

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 : K C Lee

Certified By 核證 : K K Wong

Date of Issue 簽發日期 : 17 June 2013

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
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. : C133573
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	C130019
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	93.6	± 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	93.6 (Ref.)
				104.00		103.6
				114.00		113.6

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	93.6	Ref.
			Slow			93.5	± 0.3

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Certificate of Calibration
校正證書

Certificate No. : C133573
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	77.3	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.3	-3.2 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	94.9	+1.2 ± 1.6
					4 kHz	94.8	+1.0 ± 1.6
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.7	-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	92.7	-0.8 ± 1.5
					125 Hz	93.4	-0.2 ± 1.5
					250 Hz	93.6	0.0 ± 1.4
					500 Hz	93.7	0.0 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	93.5	-0.2 ± 1.6
					4 kHz	93.0	-0.8 ± 1.6
					8 kHz	90.7	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307154

- 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.

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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. : C134307
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1709)

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 : 12 July 2013

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 : K C Lee

Certified By 核證 : K M Wu

Date of Issue 簽發日期 : 15 July 2013

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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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. : C134307
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	C133632
CL281	Multifunction Acoustic Calibrator	DC130171
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	93.7	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.988	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.

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High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0010

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

Date: 20-Dec-13 Next Due Date: 19-Feb-14

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

Ambient Condition			
Temperature, Ta (K)	284.4	Pressure, Pa (mmHg)	771.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-05	Slope, mc	0.0592	Intercept, bc	-0.0283
Last Calibration Date:	26-Dec-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	25-Dec-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	12.8	3.69	62.79	7.9	2.90
2	9.9	3.24	55.28	6.4	2.61
3	8.2	2.95	50.35	5.2	2.35
4	5.3	2.37	40.57	3.3	1.87
5	3.0	1.79	30.64	2.0	1.46

By Linear Regression of Y on X

Slope , mw = 0.0457 **Intercept, bw :** 0.0464

Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.81**

Remarks:

Conducted by: Wk. Tang Signature: Kwai Date: 20/12/13

Checked by: [illegible] Signature: Date: 20 December 2013

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0015

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

Operator: WK

Date: 20-Dec-13 Next Due Date: 19-Feb-14

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

Ambient Condition			
Temperature, Ta (K)	295.1	Pressure, Pa (mmHg)	770.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-05	Slope, mc	0.0592	Intercept, bc	-0.0283
Last Calibration Date:	26-Dec-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	25-Dec-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	12.4	3.56	60.67	8.8	3.00
2	9.7	3.15	53.72	6.7	2.62
3	6.8	2.64	45.05	4.5	2.15
4	4.9	2.24	38.32	3.4	1.87
5	3.3	1.84	31.53	2.1	1.47

By Linear Regression of Y on X

Slope , mw = 0.0519 **Intercept, bw =** -0.1611

Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

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

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 20/12/13

Checked by: GV Signature: Date: 20 December 2013

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0009

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

Date: 20-Dec-13 Next Due Date: 19-Feb-14

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

Ambient Condition			
Temperature, Ta (K)	288.9	Pressure, Pa (mmHg)	768.5

Orifice Transfer Standard Information					
Equipment No.:	A-04-05	Slope, mc	0.0592	Intercept, bc	-0.0283
Last Calibration Date:	26-Dec-12	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	25-Dec-13	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.3	3.43	58.47	7.7	2.83
2	8.7	3.01	51.36	6.3	2.56
3	6.7	2.64	45.13	4.8	2.24
4	4.2	2.09	35.83	3.2	1.83
5	2.5	1.61	27.76	1.9	1.41

By Linear Regression of Y on X

Slope , mw = **0.0467** **Intercept, bw :** **0.1340**

Correlation coefficient* = **0.9989**

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.39**

Remarks:

Conducted by: Wk. Tang Signature: Kwai Date: 20/12/13

Checked by: AY Signature: Date: 20 December 2013

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

TEST REPORT

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

ATTN: **Mr. WK Tang**

Test Report No.:	C/131223/1
Date of Issue:	2013-12-23
Date Received:	2013-12-20
Date Tested:	2013-12-20
Date Completed:	2013-12-23
Next Due Date:	2014-02-22
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 954253
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 772 CPM
Equipment No.	: A-02-05

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)	0.0030

****

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

PATRICK TSE
Laboratory Manager

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Rms 816, 1516 & 1701, Technology Park,
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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/131231/3
Date of Issue:	2014-01-02
Date Received:	2013-12-31
Date Tested:	2013-12-31
Date Completed:	2014-01-02
Next Due Date:	2014-03-01

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.	: 014750
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

Test Conditions:

Room Temperature	: 18 degree Celsius
Relative Humidity	: 50%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0033

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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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/131104/3
Date of Issue:	2013-11-05
Date Received:	2013-11-04
Date Tested:	2013-11-04
Date Completed:	2013-11-05
Next Due Date:	2014-01-04

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

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 54%

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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TEST REPORT

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

Test Report No.:	C/140103/3
Date of Issue:	2014-01-06
Date Received:	2014-01-03
Date Tested:	2014-01-03
Date Completed:	2014-01-06
Next Due Date:	2014-03-05

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.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 53%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0033

****

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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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/131206/2
Date of Issue:	2013-12-09
Date Received:	2013-12-06
Date Tested:	2013-12-06
Date Completed:	2013-12-09
Next Due Date:	2014-02-08
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-531
Serial No.	: N6733
Flow rate	:0.1 cfm
Zero Count Test	:0 mg (The result of the 2-minute sample)
Equipment No.	: A-02-12

Test Conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 60%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	1.163

****

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

PATRICK TSE
Laboratory Manager

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

TEST REPORT

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

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

Test Report No.:	C/140103/4
Date of Issue:	2014-01-06
Date Received:	2014-01-03
Date Tested:	2014-01-03
Date Completed:	2014-01-06
Next Due Date:	2014-03-05
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-531
Serial No.	: N6734
Flow rate	:0.1 cfm
Zero Count Test	:0 mg (The result of the 2-minute sample)
Equipment No.	: A-02-13

Test Conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 53%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	1.131

****

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Laboratory Manager

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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/N/140104
Date of Issue:	2014-01-05
Date Received:	2014-01-04
Date Tested:	2014-01-04
Date Completed:	2014-01-05
Next Due Date:	2015-01-04
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperatre	: 19 degree Celsius
Relative Humidity	: 52%

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

Remark: 1)This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

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PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/130824/1
Date of Issue:	2013-08-25
Date Received:	2013-08-24
Date Tested:	2013-08-24
Date Completed:	2013-08-25
Next Due Date:	2014-08-24

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

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 21139
Microphone No.	: 43690
Equipment No.	: N-08-06

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 65%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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PATRICK TSE
Laboratory Manager

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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/N/131004/1
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04
Page:	1 of 1

Item for calibration:

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

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

Methodology:

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

Results:

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/131004/2
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04
Page:	1 of 1

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

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 57%

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
Laboratory Manager

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

1-hour TSP Monitoring Results

Station AM6

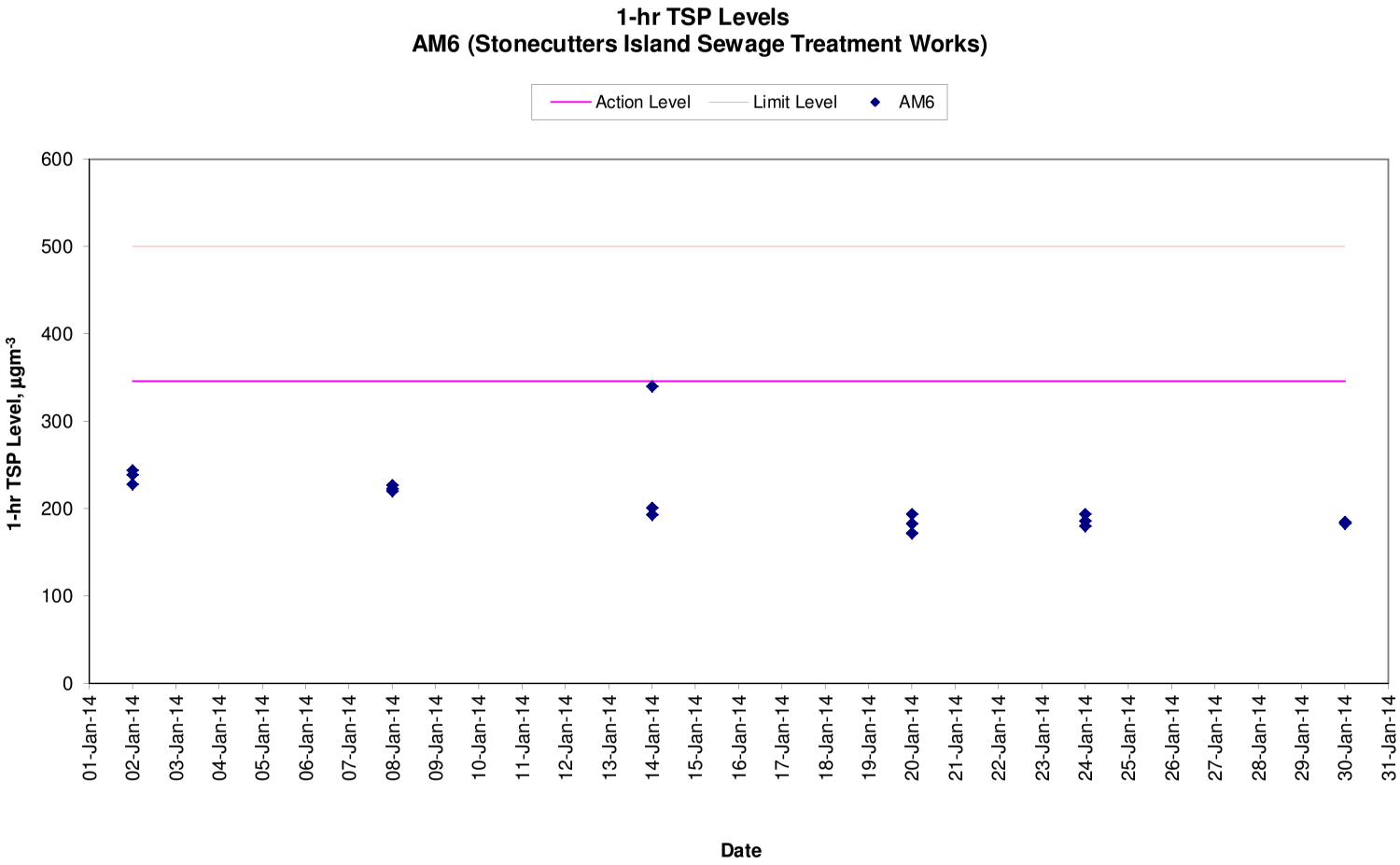
Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (°C)	Wind Speed * (m/s)	Sampler ID	Filter ID
02-Jan-14	8:40	9:40	Sunny	239	346	500	Construction work in progress	20	<5	GMW GS-2310 (S/N 1254)	9173
	9:42	10:42	Sunny	244	346	500	Construction work in progress	20	<5	GMW GS-2310 (S/N 1254)	9174
	10:44	11:44	Sunny	228	346	500	Construction work in progress	20	<5	GMW GS-2310 (S/N 1254)	9175
08-Jan-14	14:35	15:35	Cloudy	227	346	500	Construction work in progress	19	<5	GMW GS-2310 (S/N 1254)	9177
	15:37	16:37	Cloudy	223	346	500	Construction work in progress	19	<5	GMW GS-2310 (S/N 1254)	9178
	16:39	17:39	Cloudy	220	346	500	Construction work in progress	19	<5	GMW GS-2310 (S/N 1254)	9179
14-Jan-14	14:00	15:00	Sunny	193	346	500	Construction work in progress	15	<5	GMW GS-2310 (S/N 1254)	9181
	15:02	16:02	Sunny	201	346	500	Construction work in progress	15	<5	GMW GS-2310 (S/N 1254)	9182
	16:04	17:04	Sunny	340	346	500	Construction work in progress	15	<5	GMW GS-2310 (S/N 1254)	9183
20-Jan-14	12:40	13:40	Sunny	183	346	500	Construction work in progress	14	<5	GMW GS-2310 (S/N 1254)	9185
	13:42	14:42	Sunny	194	346	500	Construction work in progress	14	<5	GMW GS-2310 (S/N 1254)	9186
	14:44	15:44	Sunny	172	346	500	Construction work in progress	14	<5	GMW GS-2310 (S/N 1254)	9187
24-Jan-14	8:50	9:50	Sunny	180	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	9189
	9:52	10:52	Sunny	186	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	9190
	10:54	11:54	Sunny	194	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	9191
30-Jan-14	11:20	12:20	Sunny	185	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	9193
	12:22	13:22	Sunny	184	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	9194
	13:24	14:24	Sunny	183	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	9195
			Min.	**172**							
			Max.	**340**							
			Average	**210**							

* Wind Speed data is presented in the Meteorological Data table

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	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)		ID	ID
02-Jan-14	11:46	03-Jan-14	11:46	Sunny	2.7881	2.9821	12759.03	12783.03	24.00	1.25	1.25	1.25	108	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	9176
08-Jan-14	17:41	09-Jan-14	17:41	Cloudy	2.7912	3.0212	12786.03	12810.03	24.00	1.25	1.25	1.25	128	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	9180
14-Jan-14	17:06	15-Jan-14	17:06	Sunny	2.7934	3.0101	12813.03	12837.03	24.00	1.25	1.25	1.25	120	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	9184
20-Jan-14	15:46	21-Jan-14	15:46	Sunny	2.7865	2.9779	12840.03	12864.03	24.00	1.22	1.22	1.22	109	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	9188
24-Jan-14	11:56	25-Jan-14	11:56	Sunny	2.7911	2.9672	12867.03	12891.03	24.00	1.22	1.22	1.22	100	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	9192
30-Jan-14	14:26	31-Jan-14	14:26	Sunny	2.7821	2.9456	12894.03	12918.03	24.00	1.22	1.22	1.22	93	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	9196
												Min.	**93**					
												Max.	**128**					
												Average	**110**					


1-hr TSP Levels
AM6 (Stonecutters Island Sewage Treatment Works)
Action Level
Limit Level
AM6
1-hr TSP Level, µgm-3
600
500
400
300
200
100
0
01-Jan-14
02-Jan-14
03-Jan-14
04-Jan-14
05-Jan-14
06-Jan-14
07-Jan-14
08-Jan-14
09-Jan-14
10-Jan-14
11-Jan-14
12-Jan-14
13-Jan-14
14-Jan-14
15-Jan-14
16-Jan-14
17-Jan-14
18-Jan-14
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23-Jan-14
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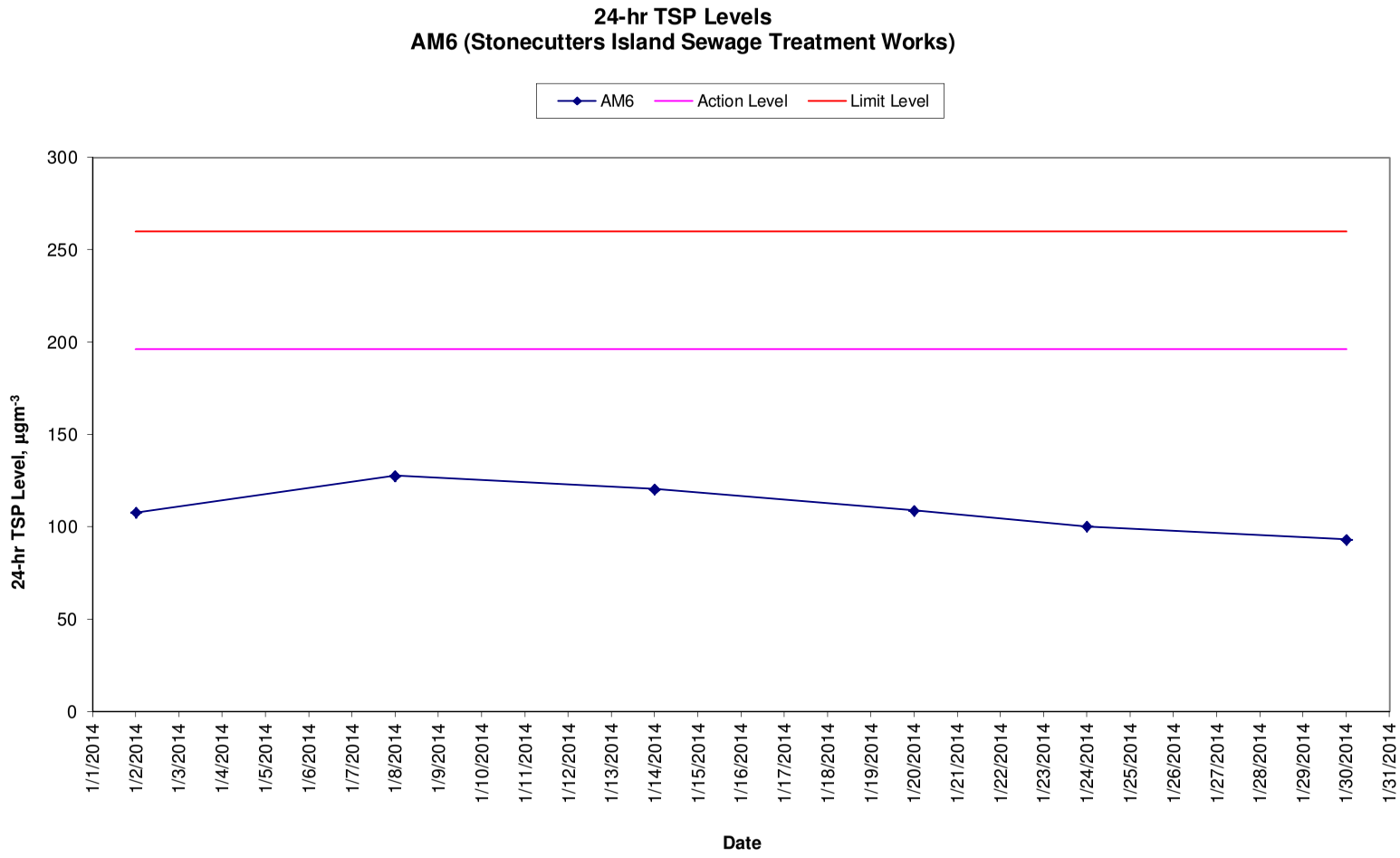
30-Jan-14
31-Jan-14
Date


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
1/1/2014
1/2/2014
1/3/2014
1/4/2014
1/5/2014
1/6/2014
1/7/2014
1/8/2014
1/9/2014
1/10/2014
1/11/2014
1/12/2014
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1/15/2014
1/16/2014
1/17/2014
1/18/2014
1/19/2014
1/20/2014
1/21/2014
1/22/2014
1/23/2014
1/24/2014
1/25/2014
1/26/2014
1/27/2014
1/28/2014
1/29/2014
1/30/2014
1/31/2014
Date

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (μg/m^3)
4-Jan-14	13:30	Cloudy	285
4-Jan-14	14:30	Cloudy	292
4-Jan-14	15:30	Cloudy	298
9-Jan-14	13:30	Cloudy	59
9-Jan-14	14:30	Cloudy	65
9-Jan-14	15:30	Cloudy	63
15-Jan-14	13:10	Sunny	116
15-Jan-14	14:10	Sunny	127
15-Jan-14	15:10	Sunny	134
21-Jan-14	13:35	Sunny	78
21-Jan-14	14:35	Sunny	89
21-Jan-14	15:35	Sunny	104
27-Jan-14	14:35	Sunny	42
27-Jan-14	15:35	Sunny	40
27-Jan-14	16:35	Sunny	40
30-Jan-14	13:40	Sunny	24
30-Jan-14	14:40	Sunny	23
30-Jan-14	15:40	Sunny	25
		Average	106
		Maximum	298
		Minimum	23

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (μg/m3)
3-Jan-14	9:00	Sunny	58
3-Jan-14	10:00	Sunny	52
3-Jan-14	11:00	Sunny	55
9-Jan-14	9:00	Cloudy	56
9-Jan-14	10:00	Cloudy	52
9-Jan-14	11:00	Cloudy	59
15-Jan-14	8:50	Sunny	120
15-Jan-14	9:50	Sunny	129
15-Jan-14	10:50	Sunny	120
21-Jan-14	9:00	Sunny	68
21-Jan-14	10:00	Sunny	69
21-Jan-14	11:00	Sunny	72
27-Jan-14	9:00	Sunny	36
27-Jan-14	10:00	Sunny	36
27-Jan-14	11:00	Sunny	29
30-Jan-14	9:00	Sunny	33
30-Jan-14	10:00	Sunny	36
30-Jan-14	11:00	Sunny	35
		Average	62
		Maximum	129
		Minimum	29

Appendix D - 24-hour TSP Monitoring Results

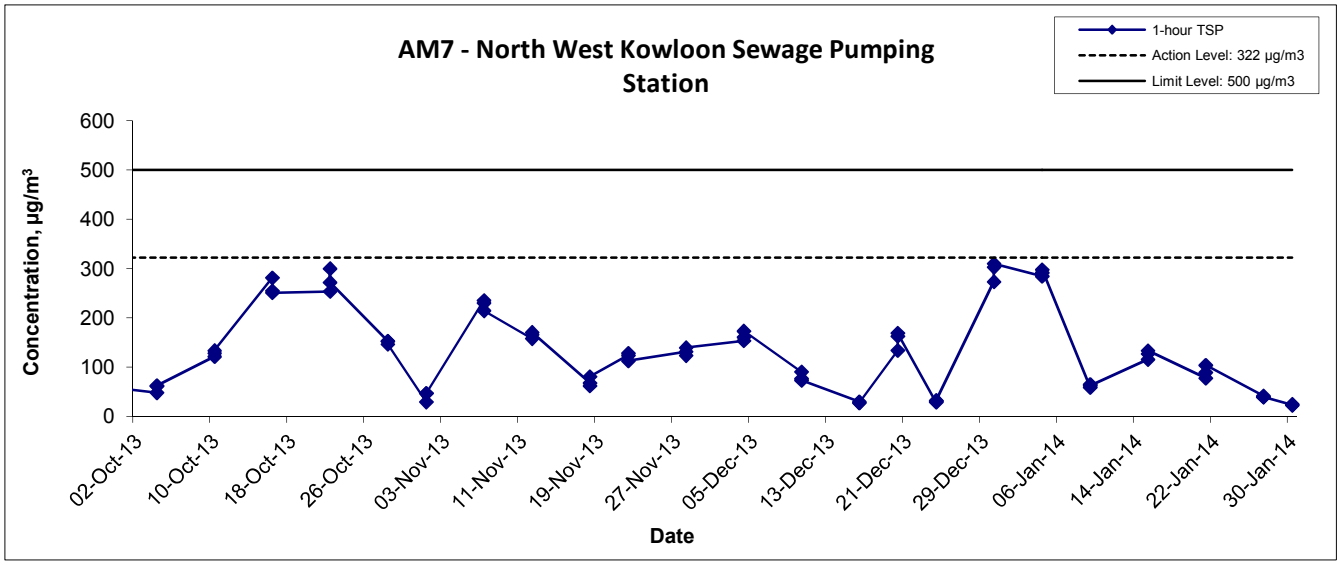
Location AM7 - North West Kowloon Sewage Pumping Station

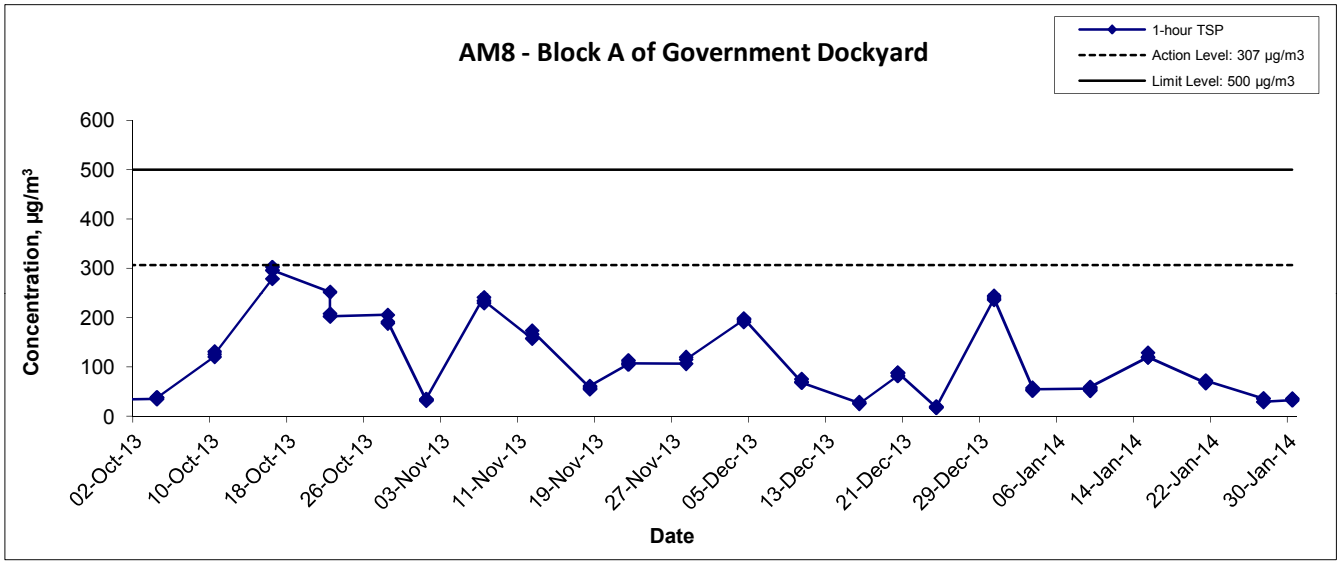
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
2-Jan-14	Sunny	286.1	3.6117	3.8583	0.2466	29345.3	29369.3	24.0	1.21	1.21	1.21	1740.5	141.7
8-Jan-14	Cloudy	291.3	3.7376	4.0146	0.2770	29369.3	29393.3	24.0	1.20	1.20	1.20	1724.5	160.6
14-Jan-14	Cloudy	284.9	3.7010	4.0294	0.3284	29393.3	29417.3	24.0	1.22	1.21	1.22	1749.7	187.7
20-Jan-14	Sunny	287.3	3.8915	4.1146	0.2231	29417.3	29441.3	24.0	1.21	1.21	1.21	1742.9	128.0
24-Jan-14	Sunny	286.9	3.8806	4.1460	0.2654	29441.3	29465.3	24.0	1.21	1.21	1.21	1739.9	152.5
29-Jan-14	Sunny	287.7	3.8654	4.0945	0.2291	29465.3	29489.3	24.0	1.21	1.21	1.21	1738.2	131.8
												Min	128
												Max	188
												Average	150

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			
2-Jan-14	Sunny	286.1	3.6458	3.8421	0.1963	2850.0	2874.0	24.0	1.22	1.22	1.22	1759.4	111.6
8-Jan-14	Cloudy	291.3	3.7311	3.9508	0.2197	2874.0	2898.0	24.0	1.21	1.21	1.21	1742.6	126.1
14-Jan-14	Cloudy	284.9	3.7081	3.8410	0.1329	2898.0	2922.0	24.0	1.23	1.23	1.23	1769.1	75.1
20-Jan-14	Sunny	287.3	3.8834	4.0795	0.1961	2922.0	2946.0	24.0	1.22	1.22	1.22	1761.9	111.3
24-Jan-14	Sunny	286.9	3.8765	3.9864	0.1099	2946.0	2970.0	24.0	1.22	1.22	1.22	1758.8	62.5
29-Jan-14	Sunny	287.7	3.8472	3.9807	0.1335	2970.0	2994.0	24.0	1.22	1.22	1.22	1756.9	76.0
												Min	62
												Max	126
												Average	94

1-hr TSP Concentration Levels

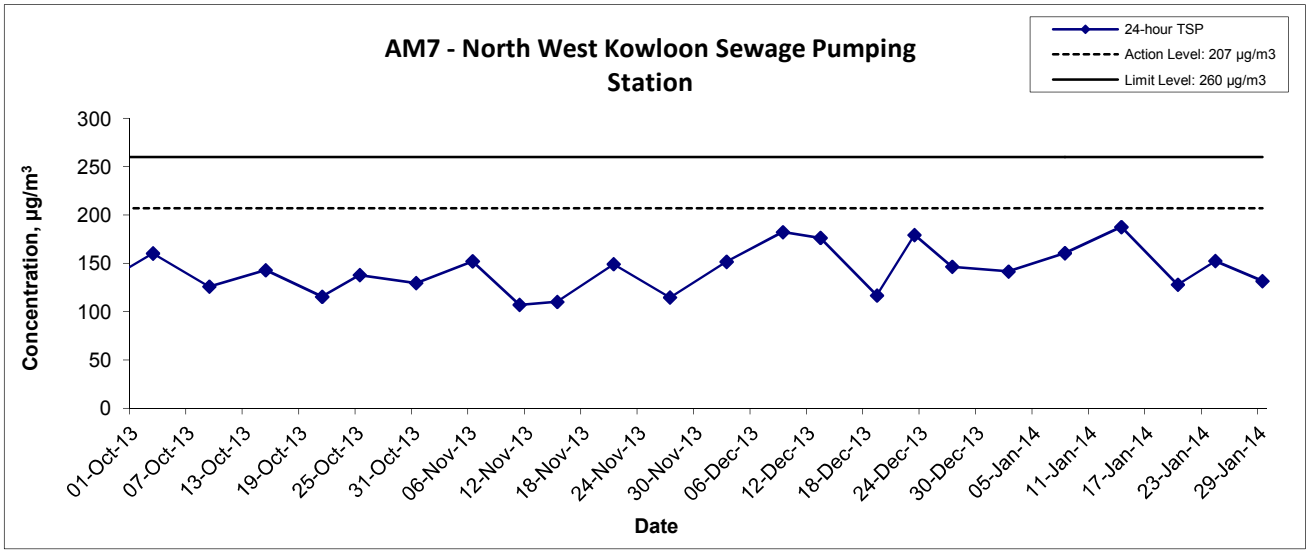


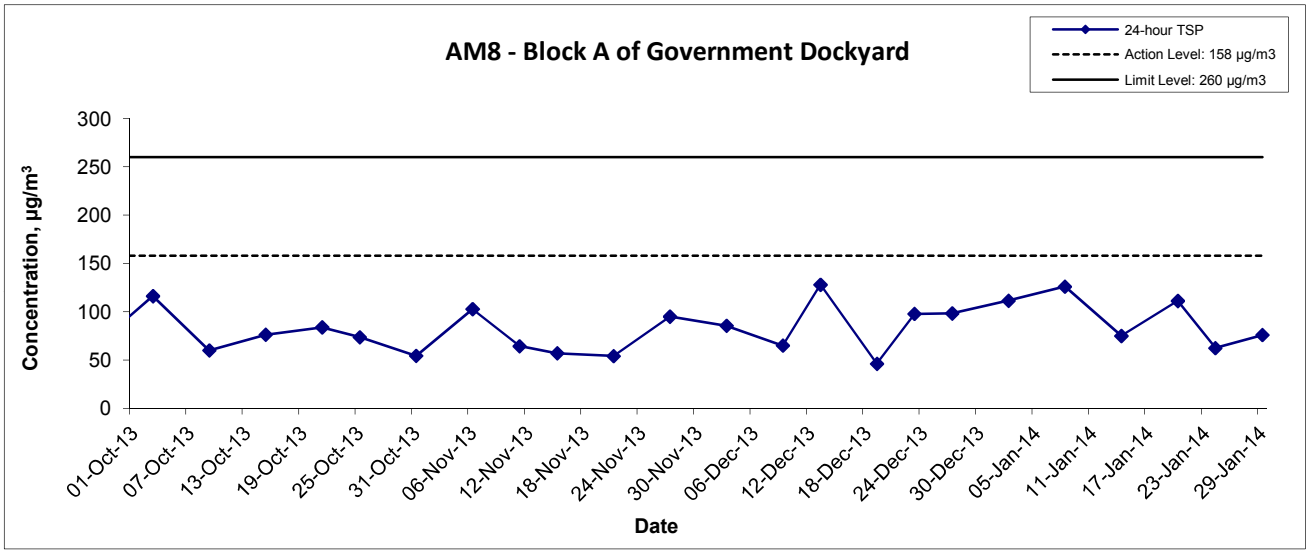


Title		Scale	Project No.
Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results		N.T.S	MA11007
		Date Jan 14	Appendix D

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: Jan 14	Project No.: MA11007 Appendix: D	CINOTECH

Appendix D - 1-hour TSP Monitoring Results

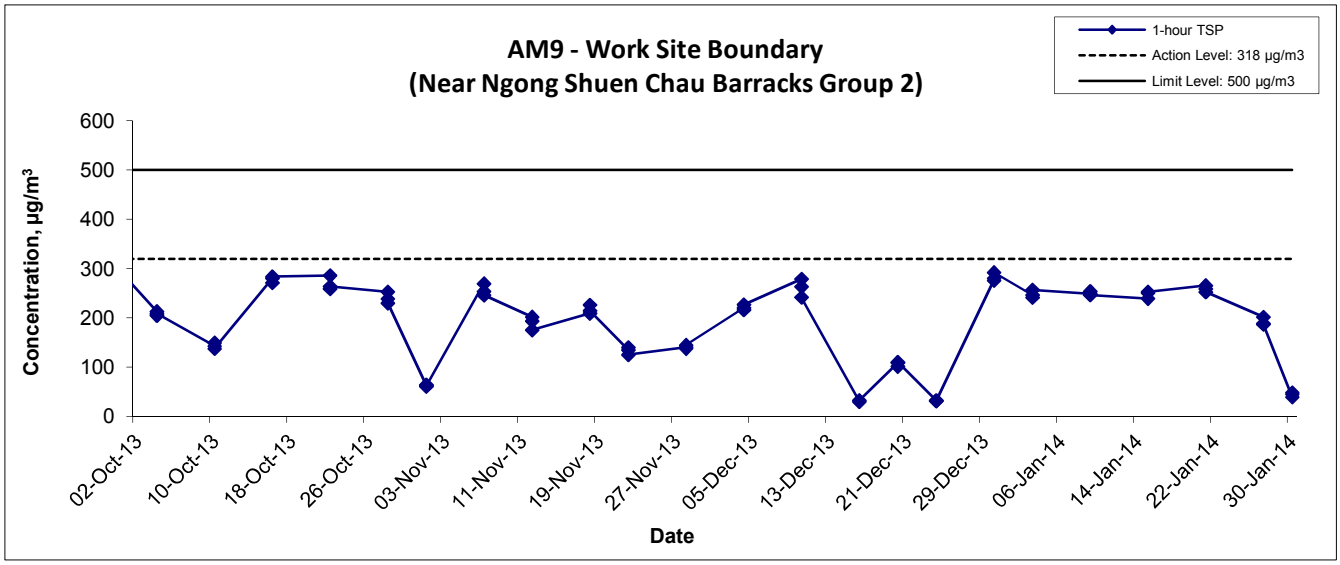
Location AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
3-Jan-14	8:55	Sunny	246.6
3-Jan-14	9:55	Sunny	241.6
3-Jan-14	10:55	Sunny	256.9
9-Jan-14	8:55	Cloudy	249.0
9-Jan-14	9:55	Cloudy	253.9
9-Jan-14	10:55	Cloudy	246.6
15-Jan-14	9:00	Sunny	239.3
15-Jan-14	10:00	Sunny	250.9
15-Jan-14	11:00	Sunny	252.9
21-Jan-14	9:00	Sunny	265.7
21-Jan-14	10:00	Sunny	258.9
21-Jan-14	11:00	Sunny	252.7
27-Jan-14	8:55	Sunny	201.9
27-Jan-14	9:55	Sunny	188.5
27-Jan-14	10:55	Sunny	187.1
30-Jan-14	9:00	Sunny	39.6
30-Jan-14	10:00	Sunny	45.2
30-Jan-14	11:00	Sunny	48.6
		Average	207.0
		Maximum	265.7
		Minimum	39.6

Appendix D - 24-hour TSP Monitoring Results

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

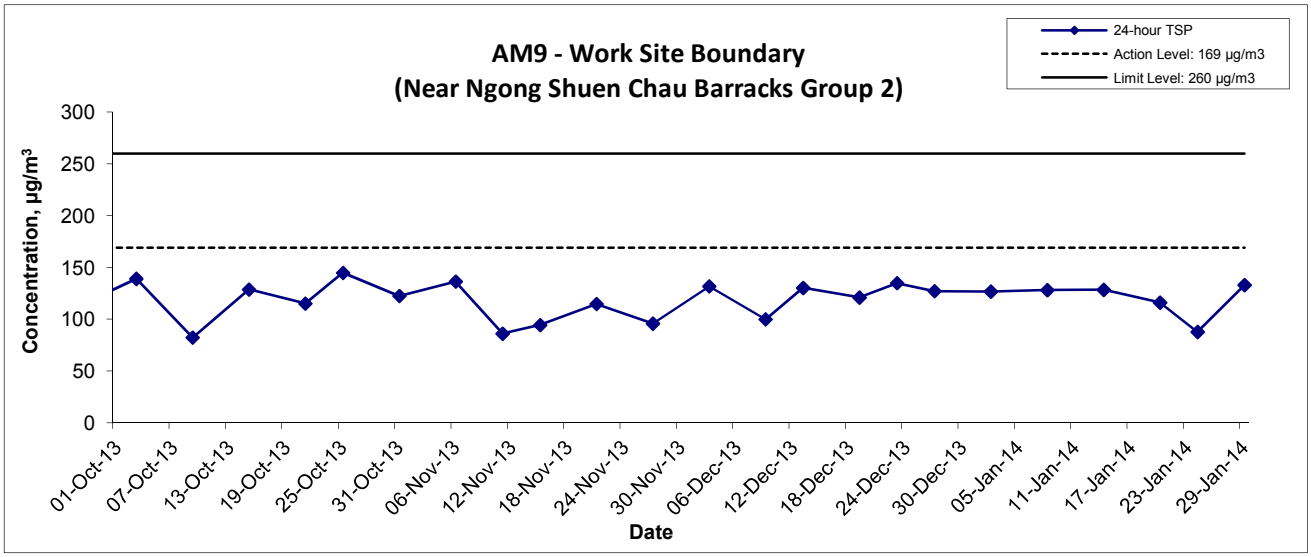
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
2-Jan-14	Sunny	286.1	3.6322	3.8573	0.2251	2217.6	2241.6	24.0	1.23	1.23	1.23	1776.0	126.7
8-Jan-14	Cloudy	291.3	3.7317	3.9574	0.2257	2241.6	2265.6	24.0	1.22	1.22	1.22	1761.2	128.1
14-Jan-14	Cloudy	284.9	3.7360	3.9653	0.2293	2265.6	2289.6	24.0	1.24	1.24	1.24	1784.5	128.5
20-Jan-14	Sunny	287.3	3.8918	4.0982	0.2064	2289.6	2313.6	24.0	1.24	1.23	1.23	1778.2	116.1
24-Jan-14	Sunny	286.9	3.8819	4.0378	0.1559	2313.6	2337.6	24.0	1.23	1.23	1.23	1775.5	87.8
29-Jan-14	Sunny	287.7	3.8651	4.1010	0.2359	2337.6	2361.6	24.0	1.23	1.23	1.23	1773.8	133.0
												Min	87.8
												Max	133.0
												Average	120.0

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: Jan 14	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 Jan 14	Project No. MA11043 Appendix D	CINOTECH

APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Daytime Noise Monitoring Results

Station NM5

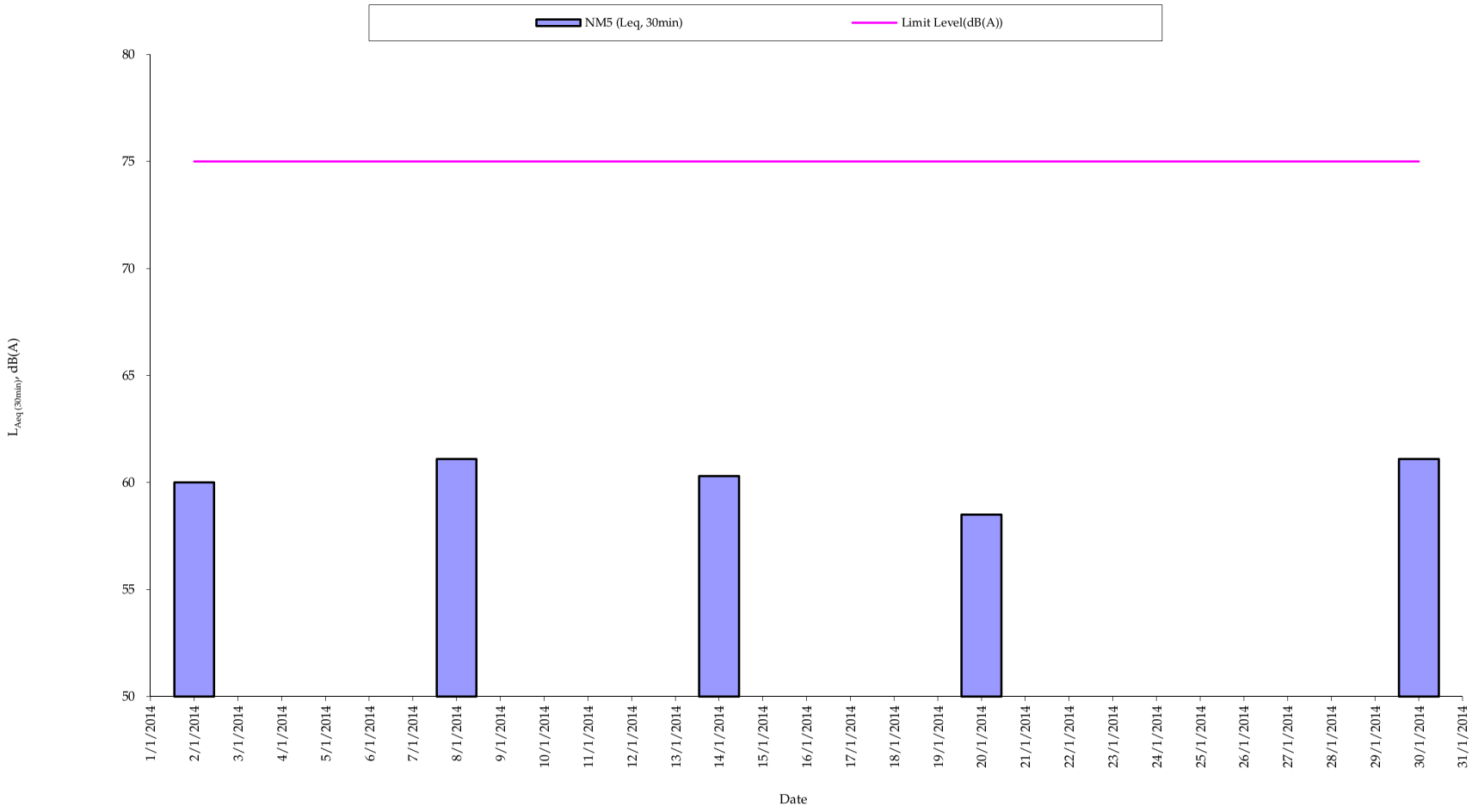
Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
02-Jan-14	10:35	11:05	Sunny	60	63	57	Drill rig, Welding machine, excavator	Traffic Noise	-	20	0.6	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
08-Jan-14	16:22	16:52	Cloudy	61	63	58	Drill rig, Welding machine, excavator, dump truck	Traffic Noise	-	19	0.4	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
14-Jan-14	15:06	15:36	Sunny	60	62	57	Drill rig, execavator, dump truck	Traffic Noise	-	15	0.3	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
20-Jan-14	13:10	13:42	Sunny	59	60	57	Drill rig, Welding machine, excavator, dump truck	Traffic Noise	-	14	0.3	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
30-Jan-14	13:10	13:40	Sunny	61	63	58	Drill rig, Welding machine	Traffic Noise	-	18	0.5	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
			Min.	**59**									
			Max.	**61**									

Restricted Hours Noise Monitoring Results

Station NM5

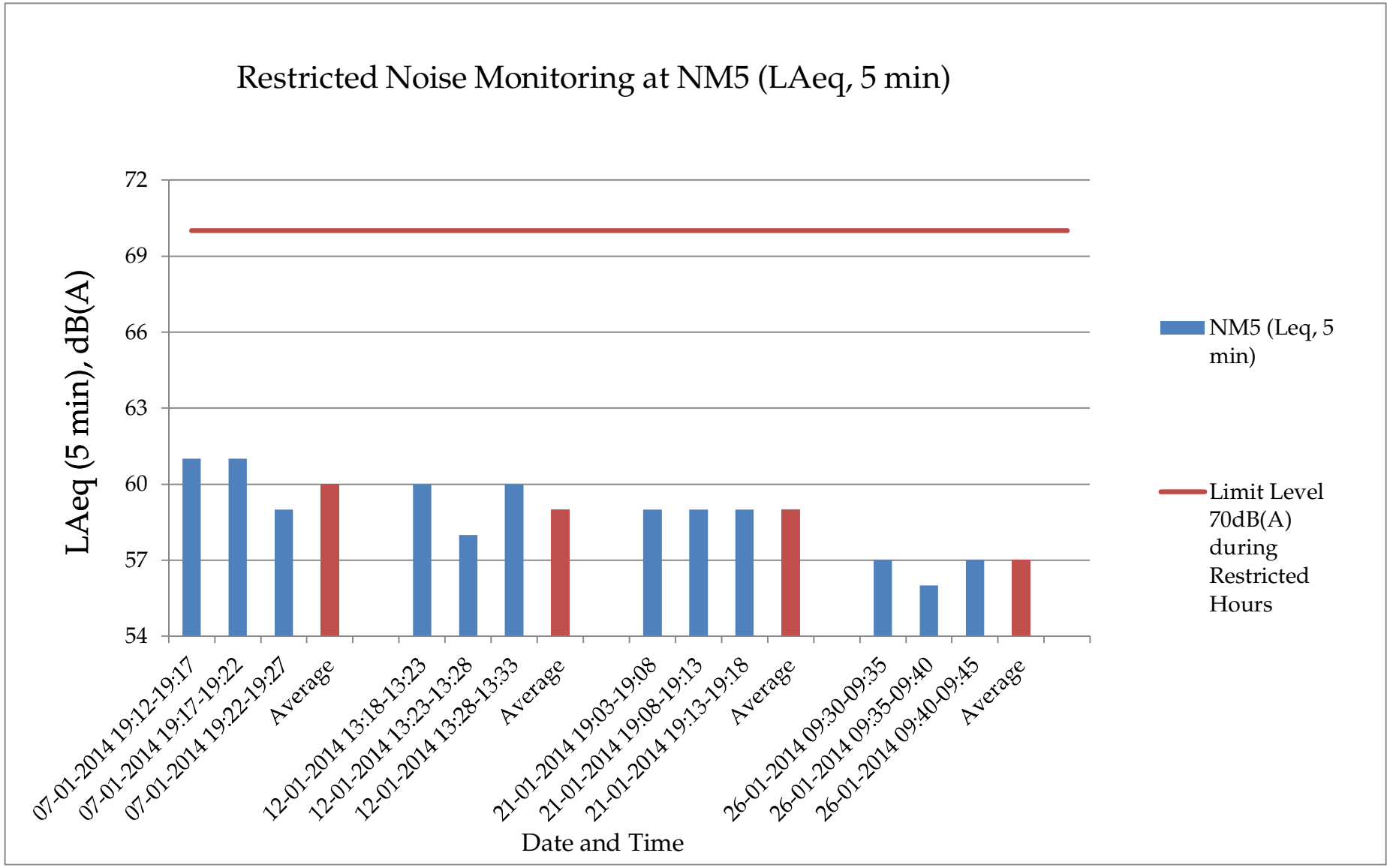
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
07-Jan-14	19:12	19:17	Cloudy	61	63	58	Drill rig	Traffic noise	-	17	0.3	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	19:17	19:22	Cloudy	61	62	57			-				
	19:22	19:27	Cloudy	59	60	56			-				
	19:12	19:27	Cloudy	60	62	57			-				
12-Jan-14	13:18	13:23	Sunny	60	61	56	Drill rig	Traffic noise	-	14	0.5	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	13:23	13:28	Sunny	58	60	56			-				
	13:28	13:33	Sunny	60	62	57			-				
	13:18	13:33	Sunny	59	61	56			-				
21-Jan-14	19:03	19:08	Fine	59	60	57	-	Traffic noise	-	15	0.4	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	19:08	19:13	Fine	59	61	57			-				
	19:13	19:18	Fine	59	61	57			-				
	19:03	19:18	Fine	59	61	57			-				
26-Jan-14	9:30	9:35	Sunny	57	58	56	Drill rig	Traffic noise	-	18	0.4	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
	9:35	9:40	Sunny	56	57	56			-				
	9:40	9:45	Sunny	57	58	56			-				
	9:30	9:45	Sunny	57	58	56			-				
			Min.	**56**									
			Max.	**61**									

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



Remark:

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


Restricted Noise Monitoring at NM5 (LAeq, 5 min)
LAeq (5 min), dB(A)
72
69
66
63
60
57
54
07-01-2014 19:12-19:17
07-01-2014 19:17-19:22
07-01-2014 19:22-19:27
Average
12-01-2014 13:18-13:23
12-01-2014 13:23-13:28
12-01-2014 13:28-13:33
Average
21-01-2014 19:03-19:08
21-01-2014 19:08-19:13
21-01-2014 19:13-19:18
Average
26-01-2014 09:30-09:35
26-01-2014 09:35-09:40
26-01-2014 09:40-09:45
Average
Date and Time
NM5 (Leq, 5 min)
Limit Level 70dB(A) during Restricted Hours

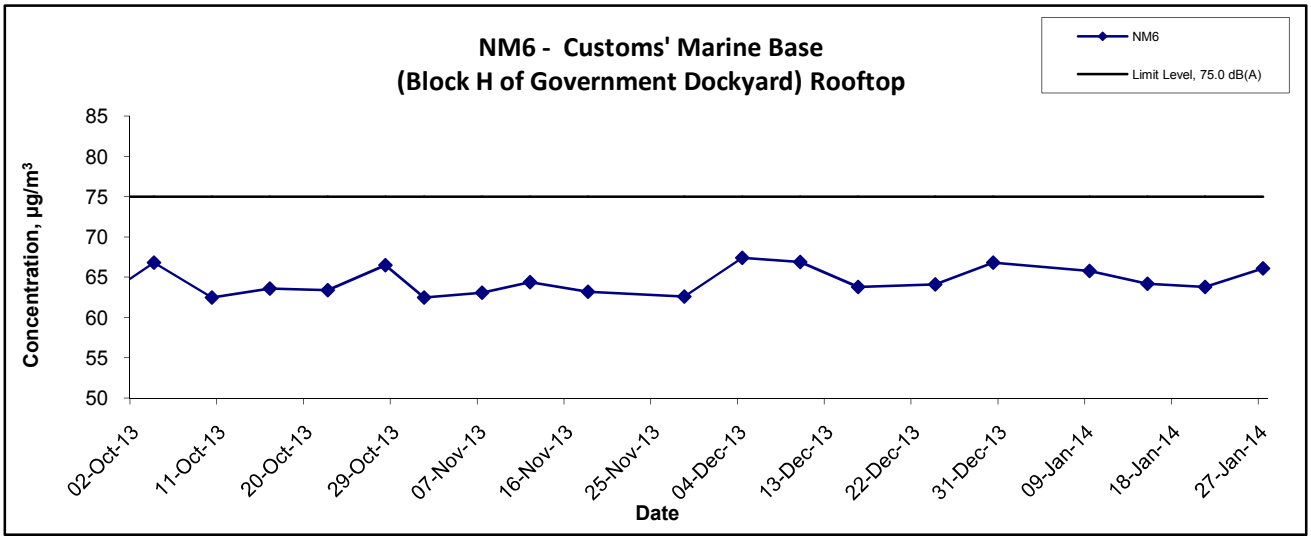
Appendix E - Noise Monitoring Results

(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}
9-Jan-14	11:20	Cloudy	65.8	66.6	61.4
15-Jan-14	11:15	Sunny	64.2	65.5	62.8
21-Jan-14	11:20	Sunny	63.8	64.7	62.0
27-Jan-14	11:05	Sunny	66.1	70.0	62.0

Noise Levels

(0700-1900 hrs on Normal Weekdays)



Title	Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of Noise Monitoring Result	Scale N.T.S Date Jan 14	Project No. MA11007 Appendix E	CINOTECH

Appendix E - Noise Monitoring Results

(0700-1900 hrs on Normal Weekdays)

Location NM7 - Open Area near Naval Base Barrack					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L_{eq}	L_{10}	L_{90}
9-Jan-14	9:00	Cloudy	68.6	70.5	63.4
15-Jan-14	10:00	Sunny	72.4	74.6	67.2
21-Jan-14	9:00	Sunny	67.4	69..6	60.4
27-Jan-14	8:55	Sunny	66.2	68.8	61.3

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

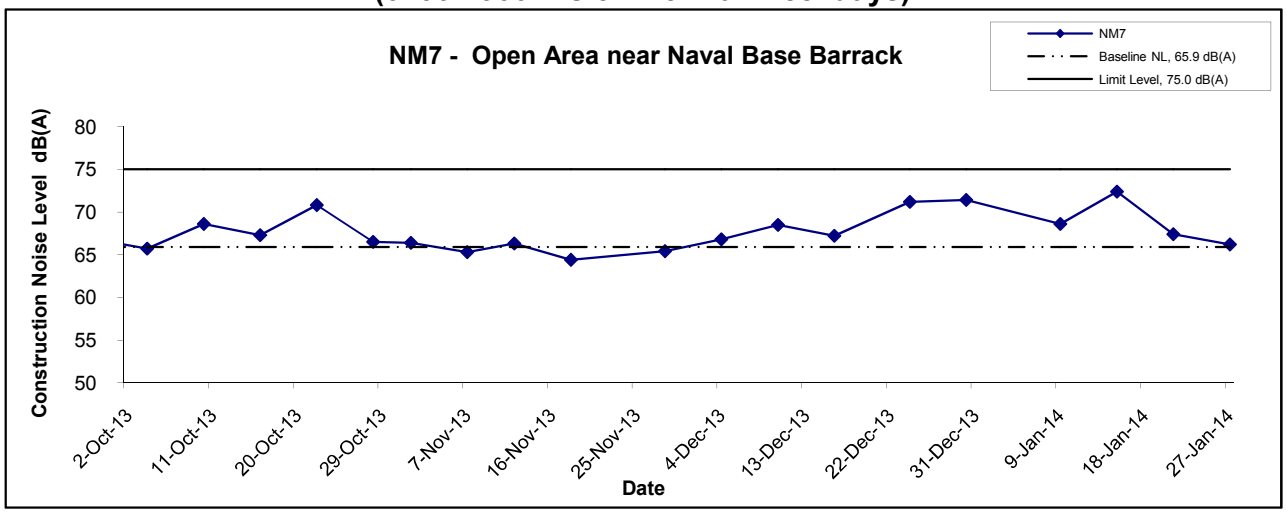
Location NM7 - Open Area near Naval Base Barrack						
Date	Time	Weather	dB (A) (5-min)			
			L_{eq}	L_{10}	L_{90}	Average L_{eq}
9-Jan-14	19:00	Fine	64.2	66.7	60.5	64.6
	19:05		65.2	67.3	61.4	
	19:10		64.3	66.9	60.8	
15-Jan-14	19:00	Fine	62.4	65.1	58.8	63.4
	19:05		63.6	65.7	60.5	
	19:10		64.1	66.1	61.8	
21-Jan-14	19:00	Fine	63.9	66.9	60.3	64.5
	19:05		64.6	67.1	61.2	
	19:10		64.8	67.4	61.4	
27-Jan-14	19:00	Fine	64.8	66.2	61.5	63.7
	19:05		63.2	65.7	60.1	
	19:10		62.8	65.1	60.0	

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

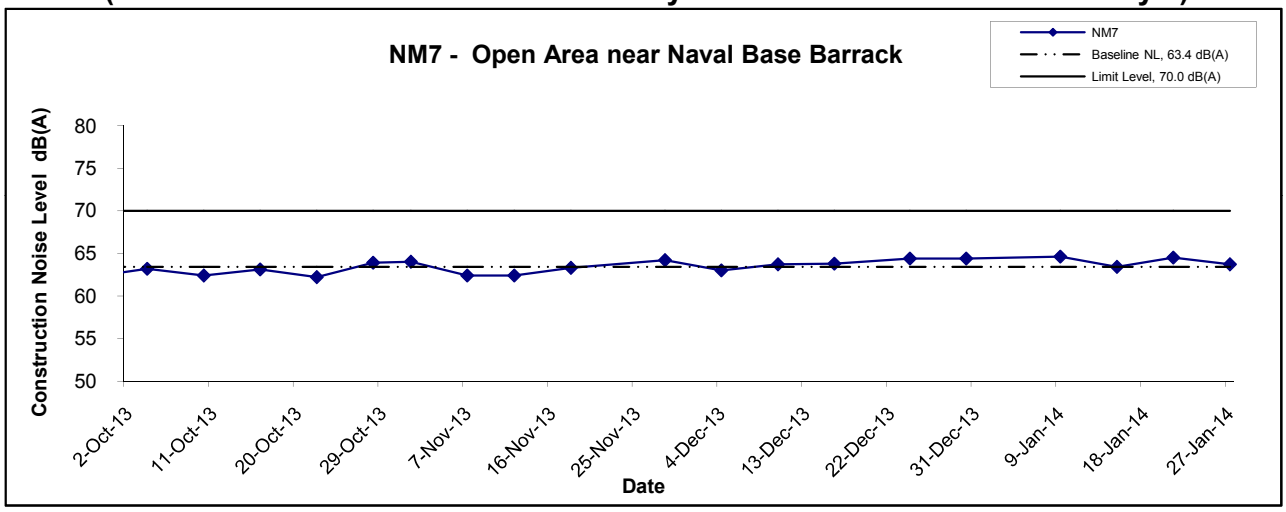
Location NM7 - Open Area near Naval Base Barrack								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
9-Jan-14	23:00	Fine	60.4	62.0	57.8	59.5	59.7	59.5 Measured≦Baseline
	23:05		59.2	61.7	57.2			
	23:10		58.7	60.6	56.8			
15-Jan-14	23:00	Fine	58.6	62.0	56.5	58.9		58.9 Measured≦Baseline
	23:05		58.6	61.4	56.8			
	23:10		59.5	61.7	57.3			
21-Jan-14	23:00	Fine	58.7	61.6	56.4	59.0		59.0 Measured≦Baseline
	23:05		59.0	61.8	57.1			
	23:10		59.3	61.9	57.2			
27-Jan-14	23:00	Fine	58.2	61.3	56.5	58.5		58.5 Measured≦Baseline
	23:05		58.6	61.4	57.0			
	23:10		58.8	61.7	57.2			

Noise Levels

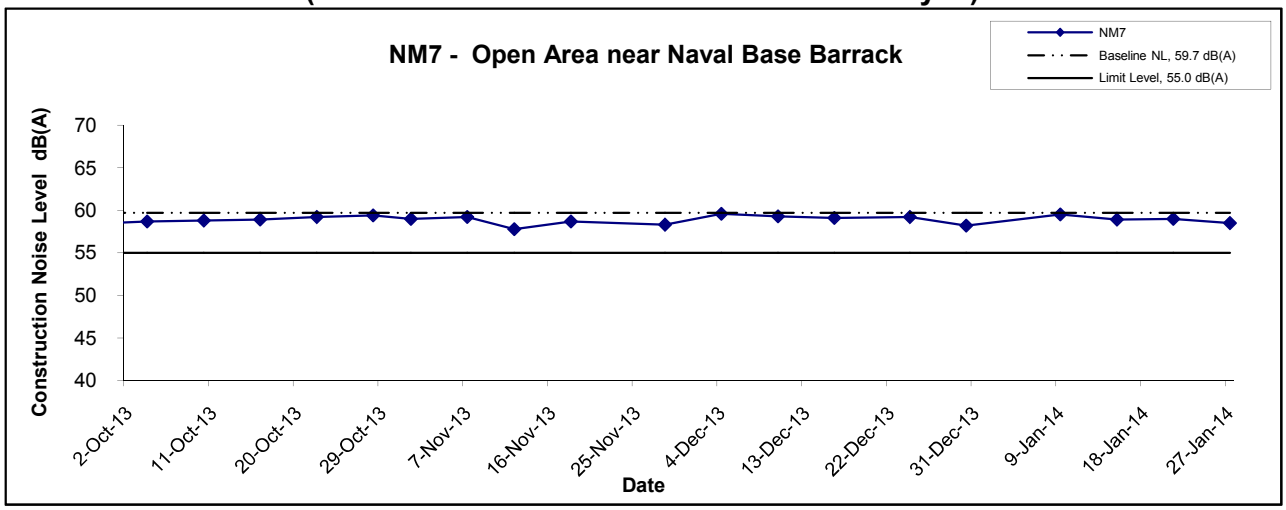
(0700-1900 hrs on Normal Weekdays)



(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 Jan 14	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/ Licences/ Notification	Reference	Validity Period	Remarks
Wastewater Discharge License	Stonecutters Island Production Shaft and Riser Shaft WT00005069-2009	3 November 2010 – 31 October 2014	--
Chemical Waste Producer Registration	Stonecutters Island Production Shaft and Riser Shaft 5213-269-G2449-07	Throughout the Contract	--
Construction Noise Permit (CNP)	Stonecutters Island Production Shaft and Riser Shaft GW-RW0692-13	23 October 2013 – 22 April 2014	
	Stonecutters Island Area K-1 GW-RW0388-13	9 July 2013 – 8 January 2014	--
	Stonecutters Island Area K-1 GW-RW0914-13	9 January 2014 – 8 July 2014	--

Table F.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	28/1/2013	31/1/2018	The application was approved on 28-1-2013.	Valid
Registered Chemical Waste Producer				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
Billing Account for Disposal of Construction Waste				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
Notification of Works Under APCO				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
Construction Noise Permit for Percussive Pilling (driving steel pile)				
PP-RW0009-13	3/5/2013	1/2/2014	Location: Portion 3 and 8.	Valid
Construction Noise Permit for use of mechanical equipment outside permitted working hours				
GW-RW0480-13	1/8/2013	31/1/2014	Location: Portion 3 and 8	Valid

Reference Number	Valid Period		Details	Status
	From	To		
GW-RW0479-13	1/8/2013	31/1/2014	Location: Portion 6	Valid
GW-RW0882-13	25/12/2013	24/6/2014	Location: Portion 4&5	Valid
GW-RW0851-13	25/12/2013	24/6/2014	Location: Portion B	Valid
Renewal of Admission Ticket for Disposal of Special Waste (Grit) at Landfills				
No. 11032	1/12/2013	31/3/2014	N/A	Valid

Table F.3 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	15/09/2010	N/A	N/A	Valid
Notification of Works Under APCO				
Ref:321235	7/09/2010	N/A	--	Valid
Construction Noise Permit				
GW-RW0727-13	22/10/2013	20/4/2014	Location: Portion 3, 4 and 5	Valid
GW-RW0757-13	22/10/2013	20/4/2014	Location: Portion 3, 4 and 5	Valid

Table F.4 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				

Permit/ A/C Number	Valid Period		Details	Status
	From	To		
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-RW0533-13	22/8/2013	21/2/2014	Location: Construction site at Stonecutters Island Sewage treatment works (Portion C2)	Valid
GW-RW0665-13	13/11/2013	12/5/2014	Location: Construction site at Stonecutters Island Sewage treatment works (Barging Point)	Valid
GW-RW0759-13	13/11/2013	12/5/2014	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid
GW-RW0835-13	1/12/2013	31/5/2014	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	Valid
GW-RW0868-13	14/12/2013	13/6/2014	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid
GW-RW0942-13	8/1/2014	7/7/2014	Location: Construction site at Stonecutters Island Sewage treatment works (Portion C2)	Valid

Table F.5 Summary of Environmental Licensing and Permit Status for Contract DC/2009/19

Permits and/or Licences	Reference No.	Valid Period	Status in Reporting Month
Environmental Permit	EP-322/2008/F	N/A	Valid
Waste Disposal Account	Account No.: 7017913	N/A	Valid
Chemical Waste Producer (WENT)	9210-431-S3757-01	N/A	Valid
Admission Ticket (WENT)	10837	01 Nov 2013 to 31 Jan 2014	Valid
Admission Ticket (NENT)	10839	01 Nov 2013 to 30 Apr 2014	Valid
Admission Ticket (SENT)	10838	01 Nov 2013 to 30 Apr 2014	Valid
APCO (Notification only)	N/A	N/A	Notification submitted on 16 Sept 2013

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: January 2014

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

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

c) Exceedance Report for Construction Noise (NIL)

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

APPENDIX H
SITE AUDIT SUMMARY

Inspection date: 2 January 2014

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft
- Two free-standing chemical drums found next to the generator room had been removed.
- Tree leaves in the drainage gullied had been substantially removed. Continuous effort will be paid by the Contractor to remove tree leaves inside the drainage gullies.

Sai Ying Pun Production Shaft
- The free-standing chemical containers found beside the Category 7 DG Store had been removed.

Wan Chai East Production Shaft
- Oil stains on the ground had been removed.

Observations and Recommendations

Stonecutters Island Production Shaft
- The Contractor was reminded to provide free-standing chemical containers located next to the wastewater treatment facility to prevent leakage.

Central Drop Shaft
- A chemical container was observed drip tray near the site entrance. The Contractor was reminded to provide a drip tray for it so as to rule out potential leakage.

North Point Production Shaft
- Chemical drum without drip trap was observed stored next to the noise enclosure. The Contractor was reminded to provide drip trap for the chemical drum.

North Point Drop Shaft
- Demolished dusty material was observed stored without proper cover. The Contractor was reminded to provide tarpaulin sheet to cover the material.

Inspection date: 9 January 2014

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft
- The free-standing chemical containers located next to the wastewater treatment facility had been removed.

Central Drop Shaft
- The free-standing chemical container near the site entrance had been removed.

North Point Production Shaft
- Chemical drum without drip tray observed next to the noise enclosure had been removed.

North Point Drop Shaft
- Demolished dusty material observed without proper cover had been removed.

Observations and Recommendations

Stonecutters Island Production Shaft

- A chain was observed dripping oil in the storage hub next to the workshop. The Contractor was reminded to remove the oil stains and dispose of the oil stains properly as chemical wastes. The Contractor was also reminded to place impervious sheetings on the affected area to avert further leakage onto the ground.
- A chemical drum was observed placed on the rooftop of the workshop. The Contractor was reminded to place the chemical drum on flat surface and provide it with a drip tray to rule out potential leakage.

Inspection date: 16 January 2014

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had disposed of the oil stains properly; and
- The Contractor had removed the chemical drum on the rooftop of the workshop.

Observations and Recommendations

- There was no major observation during the site inspection in all works areas.

Inspection date: 23 January 2014

Follow-up Actions Taken after Previous Site Audit

- There was no major observation during the site inspection in all works areas.

Observations and Recommendations

- Patches of oil stain were observed next to an air compressor in the works area. The oil stains may be possibly attributed to the moving of machines or equipment. The Contractor was reminded to remove and dispose of the oil stains properly as chemical wastes. The Contractor was also reminded to take extra care when traversing the works area with equipment or machines which may be oil-dripping.

Inspection date: 30 January 2014

Follow-up Actions Taken after Previous Site Audit

- Oil stains near the air compressor had been removed.

Observations and Recommendations

Stonecutter Islands Production Shaft

- The Contractor was reminded to remove stagnant water found in the drain in the works area;
- The Contractor was reminded to provide drip trays for a free-standing chemical container next to the noise enclosure; and
- Two chemical waste containers were placed at the fringe of the bund of the chemical waste storage area. The Contractor was reminded to place the chemical waste containers within the bund of the chemical waste storage area.

North Point Production Shaft

- The Contractor was reminded to provide drip trays for free-standing chemical containers in the storage area.

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140102
Date	2 January 2014 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management***	
140102-O01 140102-O02	• Oil stain should be cleared from the surface in Portion 4. • Oil containers should be confined by drip tray in Portion 4.	E 7i E 7ii
	Part F - Permit / Licenses • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 131224): all environmental deficiency was improved by the Contractor. ***Remark:*** • N/A	

	Name	Signature	Date
Recorded by	Victor Wong		2 January 2014
Checked by	Dr. Priscilla Choy		2 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140109
Date	9 January 2014 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual***	
140109-O02	• The stockpile should be placed away from the tree zone to prevent further damage. (Portion 1)	B 1
	Part C - Air Quality • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management***	
140109-O01	• Used chemical containers should be provided with drip tray. (Portion 3)	E 7ii
140109-R03	• General refuse should be regularly cleared on site. (Portion 3)	E 1i
	Part F - Permit / Licenses • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 140102): all environmental deficiency was improved by the Contractor. ***Remark:*** • N/A	

	Name	Signature	Date
Recorded by	Victor Wong		9 January 2014
Checked by	Dr. Priscilla Choy		9 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140116
Date	16 January 2014 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
140116-O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • The stockpile and excavator should be relocated away from the trees area in Portion 1. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Previous audit session (Ref. No. 140109), outstanding item of 140109-O02 will be followed up during the next site inspection. The item was remarked as 140116-O01. ***Remark:*** • N/A	B 1 E 7ii

	Name	Signature	Date
Recorded by	Victor Wong		16 January 2014
Checked by	Dr. Priscilla Choy		16 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140123
Date	23 January 2014 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
140123-O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • General refuse should be regularly cleared in Portion 4. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 140116): all environmental deficiency was improved by the Contractor. ***Remark:*** • N/A	E 1i & E 1iii

	Name	Signature	Date
Recorded by	Victor Wong		23 January 2014
Checked by	Dr. Priscilla Choy		23 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140128
Date	28 January 2014 (Tuesday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
140128-R01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • Construction waste should be sorted and cleared. (-10 and -18 of MPS2) ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 140123): all environmental deficiency was improved by the Contractor. ***Remark:*** • N/A	E 4ii

	Name	Signature	Date
Recorded by	Edmond Put		28 January 2014
Checked by	Dr. Priscilla Choy		28 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140102
Date	2 January 2014 (Thursday)
Time	11:15-11:45

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

Ref. No.	Remarks/Observations	Related Item No.
140102- O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection.. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • Oil containers should be confined by drip tray in Portion 4. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** Follow-up on previous audit sessions (ref: 131224): items 131224-R03was found outstanding. They will be followed up during next site inspection.	E 7ii

	Name	Signature	Date
Recorded by	Victor Wong		2 January 2014
Checked by	Dr. Priscilla Choy		2 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140108
Date	8 January 2014 (Wednesday)
Time	09:00-10:30

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality***	
140108-R02	• The Contractor is reminded to cover the stockpile properly with Tarpaulin for dust suppression. (Portion 5)	C 6
	Part D – Noise • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management***	
140108-O01	• Oil stain should be cleared from surface in Portion 4 and B 13.	E 7i
	Part F - Permit / Licenses • No environmental deficiency was identified during the site inspection. ***Others*** Follow-up on previous audit sessions (ref: 140102): all environmental deficiency was improved by the Contractor.	

	Name	Signature	Date
Recorded by	Victor Wong		8 January 2014
Checked by	Dr. Priscilla Choy		8 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140116
Date	16 January 2014 (Wednesday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
140116-O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • Oil stain should be cleared from the surface in B 13. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** Follow-up on previous audit sessions (ref: 140108): items 140108-O01was found outstanding. They will be followed up during next site inspection.	E 7i

	Name	Signature	Date
Recorded by	Victor Wong		16 January 2014
Checked by	Dr. Priscilla Choy		16 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140123
Date	23 January 2014 (Wednesday)
Time	14:00-15:30

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 140123): all environmental deficiency was improved by the Contractor.	

	Name	Signature	Date
Recorded by	Victor Wong		23 January 2014
Checked by	Dr. Priscilla Choy		23 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140128
Date	28 January 2014 (Tuesday)
Time	14:00-16:00

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

Ref. No.	Remarks/Observations	Related Item No.
140128-O01	***Part A - Water Quality*** • Sewage water should be cleared from the surface in Portion 4. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection.	A 17
140128-O02	***Part C - Air Quality*** • Stockpiles should be covered by impervious material for dust suppression in Portion 5. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection.	C 6
140128-R03	***Part E – Waste / Chemical Management*** • The Contractor is reminded to remove the general refuse regularly in Portion 4. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 140123): all environmental deficiency was improved by the Contractor.	E 1i

	Name	Signature	Date
Recorded by	Victor Wong		28 January 2014
Checked by	Dr. Priscilla Choy		28 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140108
Date	8 January 2014 (Wednesday)
Time	14:00-16:00

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

Ref. No.	Remarks/Observations	Related Item No.
140108-O02	***Part A - Water Quality*** • The Contractor is reminded to continue the rectification of the sediment tanks in Portion 3 and 7 to improve the discharged water's quality. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection ***Part E – Waste / Chemical Management***	A 5iii & A 5iv
140108-O01	• Oil stain should be cleared from the surface in Portion 7. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection ***Others*** • Previous audit session (Ref. No. 131231), outstanding item of 131231-O01 will be followed up during the next site inspection. The item was remarked as 140108-O02. ***Remarks:*** • N/A	E 7i

	Name	Signature	Date
Recorded by	Victor Wong		8 January 2014
Checked by	Dr. Priscilla Choy		8 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140115
Date	15 January 2014 (Wednesday)
Time	09:30-10:15

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

Ref. No.	Remarks/Observations	Related Item No.
140115-O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection ***Part E – Waste / Chemical Management*** • Oil stain near the excavator should be cleared in Portion 3. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection ***Others*** • Follow-up on previous audit sessions (ref: 140108): all environmental deficiency was improved by the Contractor. ***Remarks:*** • N/A	E 7i

	Name	Signature	Date
Recorded by	Victor Wong		15 January 2014
Checked by	Dr. Priscilla Choy		15 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140122
Date	22 January 2014 (Wednesday)
Time	14:00-16:00

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

Ref. No.	Remarks/Observations	Related Item No.
140122-O01	***Part A - Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection ***Part E – Waste / Chemical Management*** • Oil containers should be confined by drip tray to prevent oil spillage in Portion 3. ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection ***Others*** • Follow-up on previous audit sessions (ref: 140115): all environmental deficiency was improved by the Contractor. ***Remarks:*** • N/A	E 7ii

	Name	Signature	Date
Recorded by	Victor Wong		22 January 2014
Checked by	Dr. Priscilla Choy		22 January 2014

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	140129
Date	29 January 2014 (Wednesday)
Time	14:00-16:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
140129-O03	• The discharged water quality in Portion 3 and 7 requires further improvement. The Contractor is reminded to carry out water monitoring every week.	A 5iii & A 5iv
140129-O04	• The sand bag bunding in the Barging Point should be properly maintained and repaired.	A 2
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection	
	Part E – Waste / Chemical Management	
140129-O01	• Oil containers should be confined by drip tray in Portion 3 and 7.	E 7ii
140129-O02	• Oil stain is observed on the floor in Portion 3.	E 7i
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection	
	Others	
	• Previous audit session (Ref. No. 140122), outstanding item of 140122-O01 will be followed up during the next site inspection. The item was remarked as 140129-O01.	
	Remarks:	
	• N/A	

	Name	Signature	Date
Recorded by	Victor Wong		29 January 2014
Checked by	Dr. Priscilla Choy		29 January 2014

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DC/2009/19 Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works –
Sludge Handling and Disposal Facilities

Remarks / Recommendations for Contractor

Date of Site Audit: 03 Jan 2014

Observation and/or Recommended Measures:

1. The Contractor was reminded to provide 3-Colours Recycling Bins for the workshop area of SCISTW.

2. The Contractor was reminded to remove dirty water at existing Cake S&O of SCISTW.

Target Date of Completion: Immediately and Continuously

Signatures:

ET's Representative	
Contractor's Representative	
SO's Representative	
IEC's Representative	

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DC/2009/19 Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works –
Sludge Handling and Disposal Facilities

Remarks / Recommendations for Contractor

Date of Site Audit: 10 Jan 2014

Observation and/or Recommended Measures:

1. The Contractor was reminded to provide 3-Colours Recycling Bins for the Workshop Area of SCL-STW.

2. The Contractor was reminded to enhance House-keeping for the Workshop Area of Nim Bay.

3. The Contractor was reminded to improve Waste Sorting for the Workshop Area of Nim Bay.

4. The Contractor was reminded to put more sand-bags along the Water Front of Nim Bay's Workshop Area.

5. The Contractor was reminded to provide more Drip Trays and ~~Impermeable~~ Impervious Sheets for Chemical Waste Storage at the Workshop Area of Nim Bay.

Target Date of Completion: Immediately & Continuously

Signatures:

ET's Representative	
Contractor's Representative	
SO's Representative	WILLIAM YU (RE)
IEC's Representative	

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DC/2009/19 Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works –
Sludge Handling and Disposal Facilities

Remarks / Recommendations for Contractor

Date of Site Audit: 13 Jan 2014

Observation and/or Recommended Measures:

1. The Contractor was reminded to provide 3-Colours Recycling Bins for the Workshop Area of SCISTW.

Target Date of Completion: Immediately & Continuously

Signatures:

ET's Representative	
Contractor's Representative	
SO's Representative	
IEC's Representative	

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DC/2009/19 Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works –
Sludge Handling and Disposal Facilities

Remarks / Recommendations for Contractor

Date of Site Audit: 24 Jan 2014

Observation and/or Recommended Measures:

1. The Contractor was reminded to control the leakage or spillage of wastewater in the excavation [redacted] (no. 1) at SCISTW.
Sludge Cake S/O

Target Date of Completion: Immediately & Continuously.

Signatures:

ET's Representative	
Contractor's Representative	
SO's Representative	
IEC's Representative	

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DC/2009/19 Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works –
Sludge Handling and Disposal Facilities

Remarks / Recommendations for Contractor

Date of Site Audit: 28 Jan 2014

Observation and/or Recommended Measures:

1. The Contractor was reminded to control spillage and ~~[illegible]~~ leakage of wastewater for Sludge Cake Silo No. 1 at SCI STW.

Target Date of Completion: Immediately & Continuously

Signatures:

ET's Representative	
Contractor's Representative	
SO's Representative	
IEC's Representative	

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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	DC/2009/19
A	**Air Quality**						
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	^	^	^	^	N/A
	Vehicle washing facilities should be provided at every vehicle exit point.			^	^	^	N/A
	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.			^	^	^	N/A
	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	N/A
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.			^	^	^	N/A
	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.			^	^	^	N/A
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs			*	^	^	N/A
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.			^	^	^	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	DC/2009/19
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.			^	^	^	N/A
	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.			^	^	^	N/A
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.			^	^	^	N/A
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		^	^	^	N/A
B	**Airborne Noise**						
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^	^	^	^	N/A
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^	^	^	^	N/A
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^	^	^	^	N/A
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^	^	^	^	N/A
	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.		^	^	^	^	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	DC/2009/19
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.		^	^	^	^	N/A
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^	^	^	^	N/A
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	^	^	^	*	N/A
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.		^	^	^	*	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	DC/2009/19
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.		^	*	^	^	N/A
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.		<>	*	^	^	N/A
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.		<>	^	^	^	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	DC/2009/19
	• Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.						
6.380	Construction Works in Close Proximity of Storm Drains or Seafront To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. Construction activities, which generate large amount of wastewater, should be carried out in a distance • away from the waterfront, where practicable.	All construction sites	^	^	^	#	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	DC/2009/19
	• Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea.						
D	**Waste Management**						
9.107	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	^	^	^	^	N/A
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	^	^	^	^	N/A
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^	^	^	^	N/A
	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.			^	^	^	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	DC/2009/19
	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.			^	^	^	N/A
	Any unused chemicals or those with remaining functional capacity shall be recycled.			^	^	^	N/A
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.			^	^	#	N/A
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.		^	^	^	^	N/A
	Training of site personnel in proper waste management and chemical waste handling procedures.			^	^	^	N/A
	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.			^	^	^	N/A
	Provision of sufficient waste disposal points and regular collection of waste.			*	*	^	N/A
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.			^	^	^	N/A
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	All construction sites	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	DC/2009/19
	Drainage"						
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.		^	^	^	^	N/A
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.		^	^	*	^	N/A
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.		^	^	^	^	N/A
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,		^	^	*	*	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	DC/2009/19
	etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.						
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		^	N/A	N/A	N/A	N/A
E	**Terrestrial Ecology**						
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	^	N/A	N/A	N/A	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.		^	^	^	^	N/A
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^	^	^	^	N/A
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		^	N/A	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	DC/2009/19
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^	^	^	^	N/A
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	^	^	^	^	N/A
	Existing trees to be retained on site should be carefully protected during construction.			^	*	^	N/A
	Trees unavoidably affected by the works should be transplanted where practical.			^	^	^	N/A
	Compensatory tree planting should be provided to compensate for felled trees.			^	^	^	N/A
	Control of night-time lighting.			^	^	^	N/A
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.			N/A	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	^	^	^	^	N/A
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	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	DC/2009/19
I	**Cultural Heritage**						
Tables 15.8 - 15.11	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed.	Identified historical buildings/structures as mentioned in EM&A Manual Tables 15.8, 15.9, 15.10 and 15.11	NA. Vibration monitoring has not been launched during the reporting period	N/A	N/A	^	N/A

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

APPENDIX K
COMPLAINT LOG

APPENDIX K – COMPLAINT LOG

Reporting Month: January 2014

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

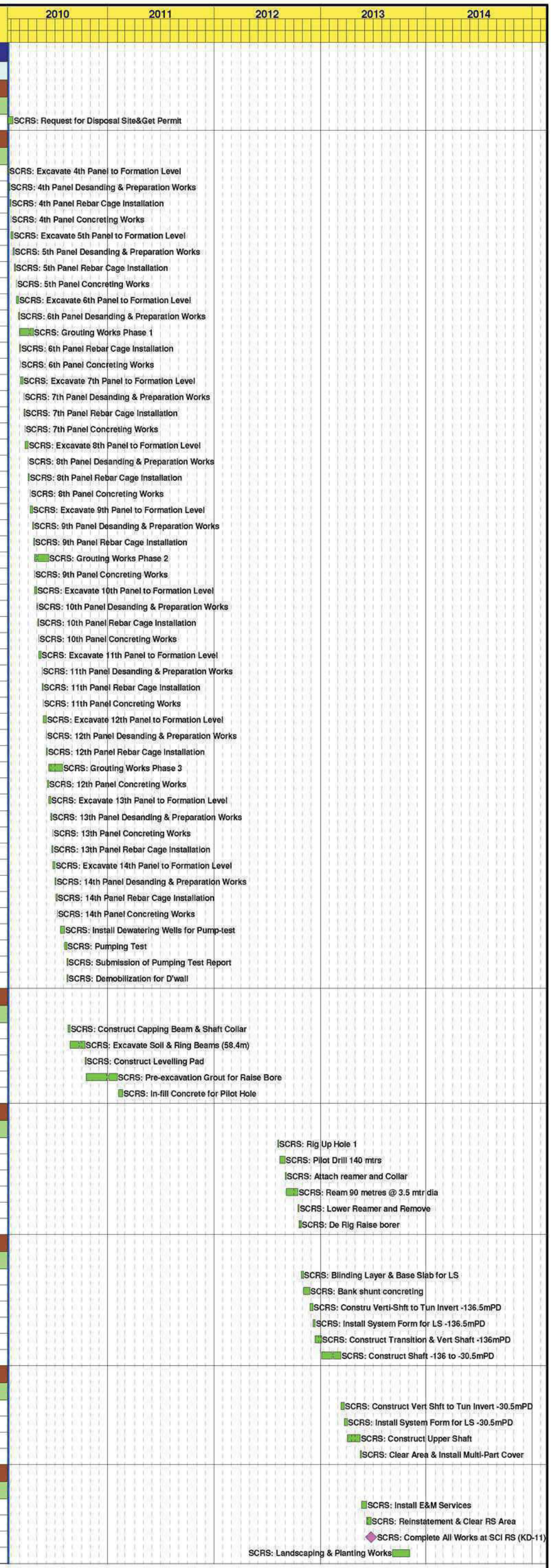
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island
Programme

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

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Early Bar
Progress Bar
Critical Activity

WPU7 Sheet 1 of 2

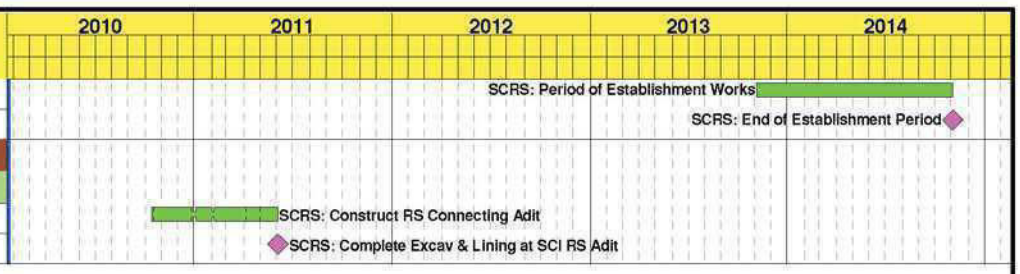
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Annex G8 Construction Programme for the Project

Gammon

Date	Revision	Checked	Approved

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



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

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Early Bar
Progress Bar
Critical Activity

WPU7 Sheet 2 of 2

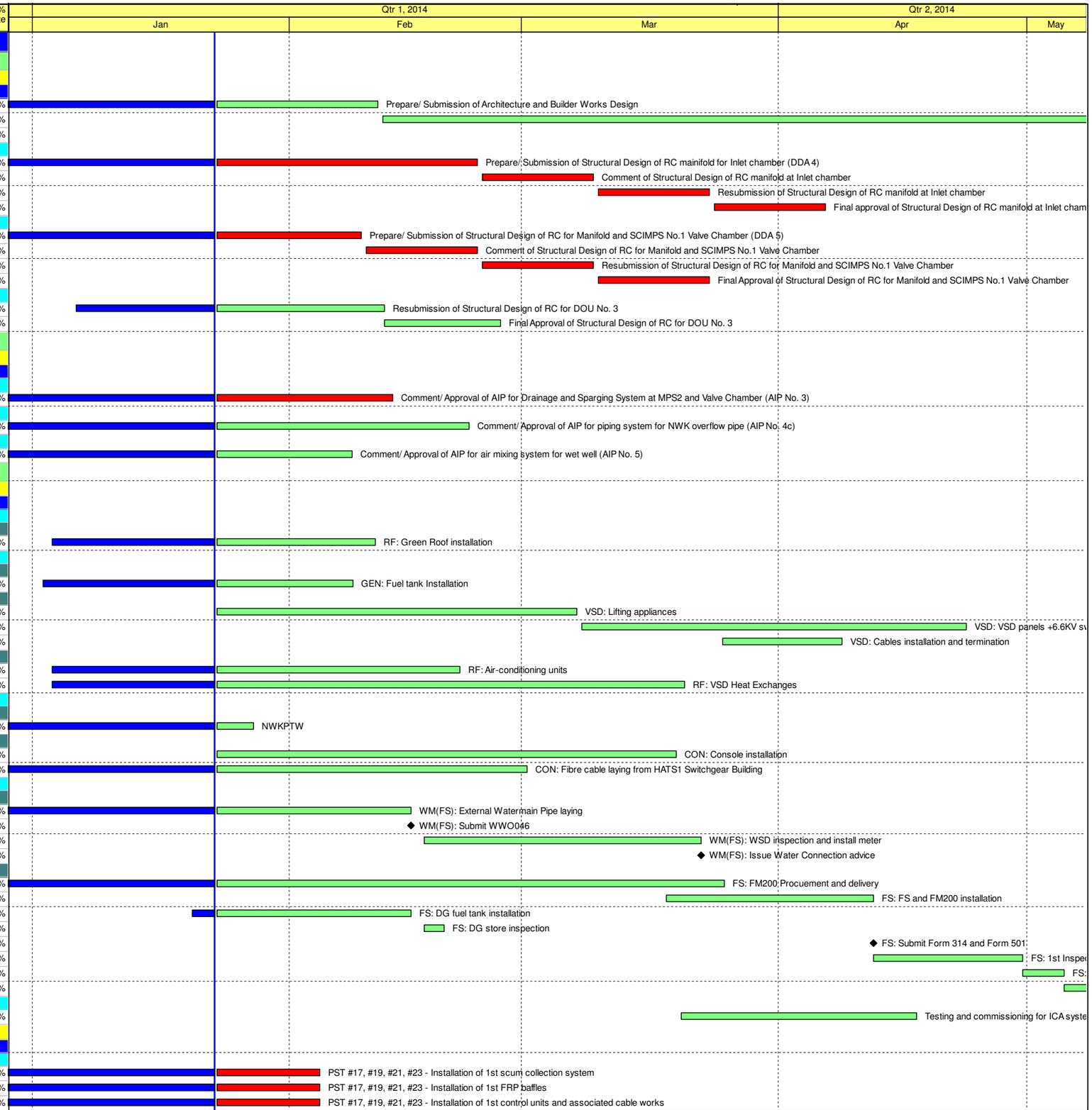
Habour Area Treatment Scheme Stage 2A
Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Annex G8 Construction Programme for the Project

Gammon

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
C10TGP05UTGP (Draft R5)						
Civil and Geotechnical Submission						
Contractor Design, Submission and Approval						
Detailed Design Approval (DDA) Submission for Structural/ Builder Works						
CCD00250	Prepare/ Submission of Architecture and Builder Works Design	180	16-Aug-2013 A	11-Feb-2014	111	88.89%
CCD00260	Comment of Architecture and Builder Works Design	90	12-Feb-2014	12-May-2014	111	0%
CCD00270	Resubmission of Architecture and Builder Works Design	90	13-May-2014	10-Aug-2014	111	0%
DDA4 (SCIMPS2 and Inlet Chamber)						
CCD00165	Prepare/ Submission of Structural Design of RC mainifold for In	160	23-Dec-2012 A	23-Feb-2014	-16	80%
CCD00175	Comment of Structural Design of RC manifold at Inlet chamber	14	24-Feb-2014	09-Mar-2014	-16	0%
CCD00185	Resubmission of Structural Design of RC manifold at Inlet chan	14	10-Mar-2014	23-Mar-2014	-16	0%
CCD00215	Final approval of Structural Design of RC manifold at Inlet cham	14	24-Mar-2014	06-Apr-2014	-16	0%
DDA5 (SCIMPS No. 1 Valve Chamber)						
CCD00131	Prepare/ Submission of Structural Design of RC for Manifold ar	180	01-Dec-2011 A	09-Feb-2014	-55	90%
CCD00132	Comment of Structural Design of RC for Manifold and SCIMPS	14	10-Feb-2014	23-Feb-2014	-55	0%
CCD00133	Resubmission of Structural Design of RC for Manifold and SCII	14	24-Feb-2014	09-Mar-2014	-55	0%
CCD00134	Final Approval of Structural Design of RC for Manifold and SCIN	14	10-Mar-2014	23-Mar-2014	-55	0%
DDA11 (DOU No. 3 and DOU No. 1b)						
CCD00222	Resubmission of Structural Design of RC for DOU No. 3	24	06-Jan-2014 A	12-Feb-2014	174	15%
CCD00223	Final Approval of Structural Design of RC for DOU No. 3	14	12-Feb-2014	26-Feb-2014	174	0%
Electrical & Mechanical Equipment Submission						
Contractor Design, Submission and Approval						
Aproved In-princple (AIP) Submission						
AIP No. 3 - Drainage and Sparging System at Wet Well						
ECD00050	Comment/ Approval of AIP for Drainage and Sparging System a	107	17-Apr-2012 A	13-Feb-2014	0	80%
AIP No. 4 - Piping system for recirculation and centrate flow/ NWK overflow pipe						
ECD00059	Comment/ Approval of AIP for piping system for NWK overflow	309	28-Mar-2012 A	22-Feb-2014	102	90%
AIP No. 5 - Air mixing System for Wet Well						
ECD00055	Comment/ Approval of AIP for air mixing system for wet well (AI	335	31-Mar-2012 A	08-Feb-2014	4	95%
Infrastructure Construction Works						
Works for Section 2						
Portion 4 (Switchgear Building)						
Builder and finishes Works						
Roof Floor						
P405310	RF: Green Roof installation	24	03-Jan-2014 A	11-Feb-2014	195	45%
Electrical and Mechainical Installation						
Ground Floor						
P904035	GEN: Fuel tank Installation	30	02-Jan-2014 A	08-Feb-2014	229	60%
First Floor						
P904110	VSD: Lifting appliances	35	23-Jan-2014	07-Mar-2014	47	0%
P904115	VSD: VSD panels +6.6KV switchboard	36	08-Mar-2014	23-Apr-2014	47	0%
P904116	VSD: Cables installation and termination	12	25-Mar-2014	08-Apr-2014	147	0%
Roof Floor						
P410010	RF: Air-conditioning units	24	03-Jan-2014 A	21-Feb-2014	228	5%
P410020	RF: VSD Heat Exchanges	60	03-Jan-2014 A	20-Mar-2014	92	5%
Instrumentation and Control Automation (ICA) installation						
Ugrading works for Existing DCDAS at HATS Stage 1						
P430170	NWKPTW	180	01-Aug-2013 A	27-Jan-2014	254	97.22%
Hardware Installation at New Switchgear Building						
P420000	CON: Console installation	45	23-Jan-2014	19-Mar-2014	139	0%
P420010	CON: Fibre cable laying from HATS1 Switchgear Building	60	14-May-2013 A	01-Mar-2014	154	50%
Statutory Submission and Inspection						
Water Supply Department (WSD)						
P451020	WM(FS): External Watermain Pipe laying	60	02-Dec-2013 A	15-Feb-2014	155	70%
P451030	WM(FS): Submit WWO046	0		15-Feb-2014	155	0%
P451040	WM(FS): WSD inspection and install meter	30	17-Feb-2014	22-Mar-2014	155	0%
P451050	WM(FS): Issue Water Connection advice	0		22-Mar-2014	155	0%
Fire Service Department (FSD)						
P440035	FS: FM200 Procuement and delivery	100	21-Nov-2013 A	25-Mar-2014	187	50.5%
P440040	FS: FS and FM200 installation	21	18-Mar-2014	12-Apr-2014	187	0%
P440047	FS: DG fuel tank installation	21	20-Jan-2014 A	15-Feb-2014	223	14.29%
P440048	FS: DG store inspection	3	17-Feb-2014	19-Feb-2014	223	0%
P440050	FS: Submit Form 314 and Form 501	0		12-Apr-2014	187	0%
P440060	FS: 1st Inspection	12	12-Apr-2014	30-Apr-2014	187	0%
P440070	FS: Defect rectification	3	30-Apr-2014	05-May-2014	187	0%
P440080	FS: 2nd inspection	12	05-May-2014	20-May-2014	187	0%
Testing and Commissioning						
P400200	Testing and commissioning for ICA system in SGB Control roor	24	20-Mar-2014	17-Apr-2014	139	0%
Works for Section 3						
Portion 1 (Existing CEPT tanks)						
Electrical and Mechanical Installation						
P106170	PST #17, #19, #21, #23 - Installation of 1st scum collection sys	32	04-Nov-2013 A	04-Feb-2014	-32	75%
P106180	PST #17, #19, #21, #23 - Installation of 1st FRP baffles	32	04-Nov-2013 A	04-Feb-2014	-32	75%
P106190	PST #17, #19, #21, #23 - Installation of 1st control units and as	32	04-Nov-2013 A	04-Feb-2014	-32	75%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

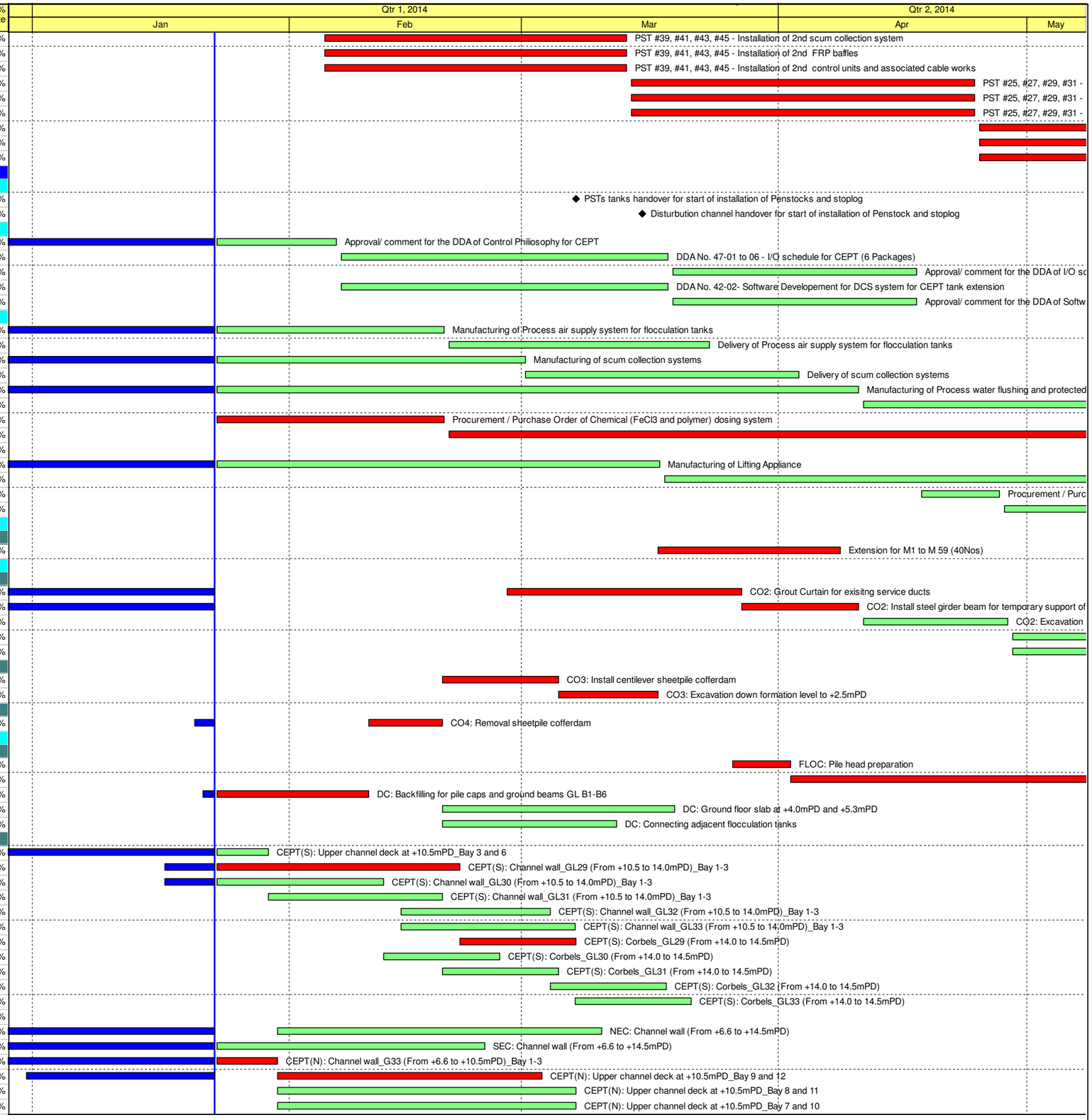
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Jan 2014 to 24 Apr 2014)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P106200	PST #39, #41, #43, #45 - Installation of 2nd scum collection sys	32	05-Feb-2014	13-Mar-2014	-32	0%
P106210	PST #39, #41, #43, #45 - Installation of 2nd FRP baffles	32	05-Feb-2014	13-Mar-2014	-32	0%
P106220	PST #39, #41, #43, #45 - Installation of 2nd control units and a	32	05-Feb-2014	13-Mar-2014	-32	0%
P106230	PST #25, #27, #29, #31 - Installation of 3rd scum collection sys	32	14-Mar-2014	24-Apr-2014	-32	0%
P106240	PST #25, #27, #29, #31 - Installation of 3rd FRP baffles	32	14-Mar-2014	24-Apr-2014	-32	0%
P106250	PST #25, #27, #29, #31 - Installation of 3rd control units and as	32	14-Mar-2014	24-Apr-2014	-32	0%
P106260	PST #33, #35, #37 - Installation of 4th scum collection system	32	25-Apr-2014	04-Jun-2014	-32	0%
P106270	PST #33, #35, #37 - Installation of 4th FRP baffles	32	25-Apr-2014	04-Jun-2014	-32	0%
P106280	PST #33, #35, #37 - Installation of 4th control units and associa	32	25-Apr-2014	04-Jun-2014	-32	0%
Portion 3 (Extension of CEPT Tank)						
Interface between Civil/ ABWF/ E&M works (CEPT tanks)						
CEPT010	PSTs tanks handover for start of installation of Penstocks and s	0		07-Mar-2014	-14	0%
CEPT030	Disturbution channel handover for start of installation of Pensto	0		15-Mar-2014	198	0%
Submission of design of E&M works						
P906020	Approval/ comment for the DDA of Control Philiosophy for CEP	30	22-Nov-2013 A	06-Feb-2014	90	50%
P906030	DDA No. 47-01 to 06 - I/O schedule for CEPT (6 Packages)	40	07-Feb-2014	18-Mar-2014	90	0%
P906040	Approval/ comment for the DDA of I/O schedule for CEPT tank:	30	19-Mar-2014	17-Apr-2014	90	0%
P906050	DDA No. 42-02- Software Developement for DCS system for C	40	07-Feb-2014	18-Mar-2014	90	0%
P906060	Approval/ comment for the DDA of Software Developement for I	30	19-Mar-2014	17-Apr-2014	90	0%
Procurement/ Order/ Manufacturing/ Delivery						
P301690	Manufacturing of Process air supply system for flocculation tan	300	26-Apr-2013 A	19-Feb-2014	165	90.67%
P301700	Delivery of Process air supply system for flocculation tanks	32	20-Feb-2014	23-Mar-2014	165	0%
P301732	Manufacturing of scum collection systems	150	16-Aug-2013 A	01-Mar-2014	68	75%
P301733	Delivery of scum collection systems	33	01-Mar-2014	03-Apr-2014	68	0%
P301750	Manufacturing of Process water flushing and protected water s	120	12-Aug-2013 A	10-Apr-2014	51	35%
P301760	Delivery of Process water flushing and protected water system	36	11-Apr-2014	16-May-2014	51	0%
P301800	Procurement / Purchase Order of Chemical (FeCl3 and polyme	28	23-Jan-2014	19-Feb-2014	-9	0%
P301810	Manufacturing of Chemical (FeCl3 and polymer) dosing system	90	20-Feb-2014	20-May-2014	-9	0%
P301820	Delivery of Chemical (FeCl3 and polymer) dosing system	14	21-May-2014	03-Jun-2014	-9	0%
P301840	Manufacturing of Lifting Appliance	180	12-Apr-2013 A	17-Mar-2014	23	70%
P301850	Delivery of Lifting Appliance	90	18-Mar-2014	15-Jun-2014	23	0%
P906190	Procurement / Purchase Order for DCS hardware and associa	10	18-Apr-2014	27-Apr-2014	90	0%
P906200	Manufacturing of DCS hardware and associated equipment (In	60	28-Apr-2014	26-Jun-2014	90	0%
Foundation Works						
Extension/ trimming of Existing Daido Piles						
P902600	Extension for M1 to M 59 (40Nos)	18	17-Mar-2014	08-Apr-2014	-42	0%
Excavation and Lateral Support for Substructure						
Cofferdam No. 2 (GL34-36, A)						
P904290	CO2: Grout Curtain for exisitng service ducts	45	15-Apr-2013 A	27-Mar-2014	-45	45%
P904300	CO2: Install steel girder beam for temporary support of existing	15	06-Sep-2013 A	10-Apr-2014	-45	25%
P904360	CO2: Excavation down to -1.0mPD	12	11-Apr-2014	28-Apr-2014	10	0%
P904370	CO2: Install 3rd layer of wailing and strut at -1.5mPD	21	29-Apr-2014	24-May-2014	10	0%
P904380	CO2: Steel lagging under existing service ducts	21	29-Apr-2014	24-May-2014	10	0%
Cofferdam No. 3 (GL33-38, B1)						
P322400	CO3: Install centilever sheetpile cofferdam	12	19-Feb-2014	05-Mar-2014	-42	0%
P322430	CO3: Excavation down formation level to +2.5mPD	10	05-Mar-2014	17-Mar-2014	-42	0%
Cofferdam No. 4 (GL33-38, B3-B6)						
P322340	CO4: Removal sheetpile cofferdam	10	20-Jan-2014 A	19-Feb-2014	-42	23%
R.C. Works						
Substructure						
P332521	FLOC: Pile head preparation	6	26-Mar-2014	02-Apr-2014	-42	0%
P332522	FLOC: Pile caps (4 Pours)	42	02-Apr-2014	28-May-2014	-42	0%
P334012	DC: Backfilling for pile caps and ground beams GL B1-B6	14	21-Jan-2014 A	10-Feb-2014	-42	8.93%
P334019	DC: Ground floor slab at +4.0mPD and +5.3mPD	24	19-Feb-2014	19-Mar-2014	17	0%
P334030	DC: Connecting adjacent flocculation tanks	18	19-Feb-2014	12-Mar-2014	23	0%
Superstructure						
P300581	CEPT(S): Upper channel deck at +10.5mPD_Bay 3 and 6	28	23-Dec-2013 A	29-Jan-2014	26	80%
P300587	CEPT(S): Channel wall_GL29 (From +10.5 to 14.0mPD)_Bay 1	24	17-Jan-2014 A	21-Feb-2014	-12	5%
P300590	CEPT(S): Channel wall_GL30 (From +10.5 to 14.0mPD)_Bay 1	15	17-Jan-2014 A	12-Feb-2014	47	5%
P300593	CEPT(S): Channel wall_GL31 (From +10.5 to 14.0mPD)_Bay 1	15	29-Jan-2014	19-Feb-2014	26	0%
P300596	CEPT(S): Channel wall_GL32 (From +10.5 to 14.0mPD)_Bay 1	15	14-Feb-2014	04-Mar-2014	29	0%
P300599	CEPT(S): Channel wall_GL33 (From +10.5 to 14.0mPD)_Bay 1	18	14-Feb-2014	07-Mar-2014	26	0%
P300602	CEPT(S): Corbels_GL29 (From +14.0 to 14.5mPD)	12	21-Feb-2014	07-Mar-2014	-12	0%
P300605	CEPT(S): Corbels_GL30 (From +14.0 to 14.5mPD)	12	12-Feb-2014	26-Feb-2014	47	0%
P300608	CEPT(S): Corbels_GL31 (From +14.0 to 14.5mPD)	12	19-Feb-2014	05-Mar-2014	40	0%
P300611	CEPT(S): Corbels_GL32 (From +14.0 to 14.5mPD)	12	04-Mar-2014	18-Mar-2014	29	0%
P300614	CEPT(S): Corbels_GL33 (From +14.0 to 14.5mPD)	12	07-Mar-2014	21-Mar-2014	26	0%
P300617	CEPT(S): Preloading	45	12-May-2014	26-Jun-2014	-17	0%
P330040	NEC: Channel wall (From +6.6 to +14.5mPD)	55	17-Dec-2013 A	10-Mar-2014	57	45%
P330115	SEC: Channel wall (From +6.6 to +14.5mPD)	55	16-Dec-2013 A	24-Feb-2014	48	55%
P330223	CEPT(N): Channel wall_G33 (From +6.6 to +10.5mPD)_Bay 1-	15	18-Dec-2013 A	30-Jan-2014	-18	55%
P330231	CEPT(N): Upper channel deck at +10.5mPD_Bay 9 and 12	28	31-Dec-2013 A	03-Mar-2014	-18	15%
P330232	CEPT(N): Upper channel deck at +10.5mPD_Bay 8 and 11	28	30-Jan-2014	07-Mar-2014	37	0%
P330233	CEPT(N): Upper channel deck at +10.5mPD_Bay 7 and 10	28	30-Jan-2014	07-Mar-2014	19	0%



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

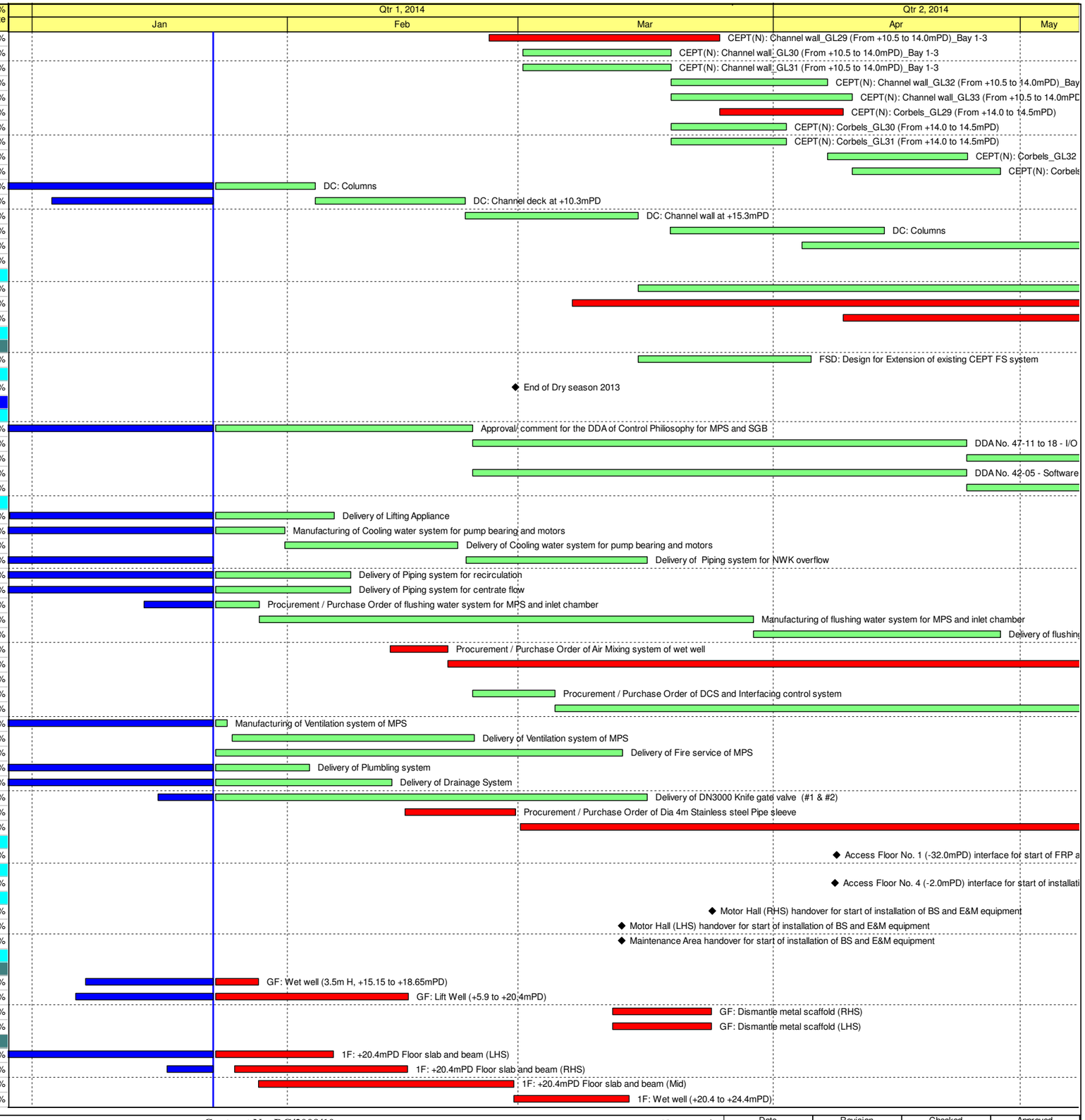
Contract No. DC/2009/10

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

Three Months Rolling Programme (24 Jan 2014 to 24 Apr 2014)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P330239	CEPT(N): Channel wall_GL29 (From +10.5 to 14.0mPD)_Bay 1	24	25-Feb-2014	25-Mar-2014	-18	0%
P330240	CEPT(N): Channel wall_GL30 (From +10.5 to 14.0mPD)_Bay 1	15	01-Mar-2014	19-Mar-2014	37	0%
P330241	CEPT(N): Channel wall_GL31 (From +10.5 to 14.0mPD)_Bay 1	15	01-Mar-2014	19-Mar-2014	19	0%
P330243	CEPT(N): Channel wall_GL32 (From +10.5 to 14.0mPD)_Bay 1	15	19-Mar-2014	07-Apr-2014	22	0%
P330253	CEPT(N): Channel wall_GL33 (From +10.5 to 14.0mPD)_Bay 1	18	19-Mar-2014	10-Apr-2014	19	0%
P330254	CEPT(N): Corbels_GL29 (From +14.0 to 14.5mPD)	12	25-Mar-2014	09-Apr-2014	-18	0%
P330256	CEPT(N): Corbels_GL30 (From +14.0 to 14.5mPD)	12	19-Mar-2014	02-Apr-2014	37	0%
P330257	CEPT(N): Corbels_GL31 (From +14.0 to 14.5mPD)	12	19-Mar-2014	02-Apr-2014	37	0%
P330258	CEPT(N): Corbels_GL32 (From +14.0 to 14.5mPD)	12	07-Apr-2014	24-Apr-2014	22	0%
P330260	CEPT(N): Corbels_GL33 (From +14.0 to 14.5mPD)	12	10-Apr-2014	28-Apr-2014	19	0%
P330290	DC: Columns	18	25-Nov-2013 A	04-Feb-2014	69	60%
P330300	DC: Channel deck at +10.3mPD	30	03-Jan-2014 A	22-Feb-2014	69	45%
P330310	DC: Channel wall at +15.3mPD	18	22-Feb-2014	15-Mar-2014	69	0%
P330320	DC: Columns	21	19-Mar-2014	14-Apr-2014	17	0%
P330330	DC: Channel deck at +10.3mPD	40	04-Apr-2014	28-May-2014	17	0%
P330340	DC: Channel Curve wall at +15.3mPD	40	20-May-2014	08-Jul-2014	17	0%
Electrical and Machainical Installation						
P300500	Installation of penstocks and stoplogs at Distrubution channels	50	15-Mar-2014	20-May-2014	160	0%
P300520	Installation of penstocks at 1st 4 new PSTs (S)	50	07-Mar-2014	12-May-2014	-12	0%
P300530	Installation of penstocks at 2nd 4 new PSTs (N)	50	09-Apr-2014	13-Jun-2014	-18	0%
Statutory Submission and Inspection						
Fire Service Department						
P304000	FSD: Design for Extension of existing CEPT FS system	21	15-Mar-2014	05-Apr-2014	216	0%
Disturbution Channel Connection works						
P904950	End of Dry season 2013	0		28-Feb-2014*	0	0%
Portion 4 (Main Pumping Station)						
Submission of design of E&M works						
P301330	Approval/ comment for the DDA of Control Philiosophy for MPS	90	30-Sep-2013 A	23-Feb-2014	45	65%
P301340	DDA No. 47-11 to 18 - I/O schedule for MPS and SGB	60	23-Feb-2014	24-Apr-2014	1142	0%
P301350	Approval/ comment for the DDA of I/O schedule for MPS and S	45	24-Apr-2014	08-Jun-2014	1142	0%
P301360	DDA No. 42-05 - Software Developement for DCS system for S	60	23-Feb-2014	24-Apr-2014	1142	0%
P301370	Approval/ Comment for the DDA of Software Developement for	45	24-Apr-2014	08-Jun-2014	1142	0%
Procurement/ Order/ Manufacturing/ Delivery						
P302360	Delivery of Lifting Appliance	40	29-Dec-2013 A	06-Feb-2014	50	62.5%
P302380	Manufacturing of Cooling water system for pump bearing and n	60	02-Dec-2013 A	31-Jan-2014	63	85.15%
P302390	Delivery of Cooling water system for pump bearing and motors	21	31-Jan-2014	21-Feb-2014	63	0%
P302423	Delivery of Piping system for NWK overflow	60	16-Dec-2013 A	16-Mar-2014	102	63.33%
P302432	Delivery of Piping system for recirculation	55	16-Dec-2013 A	08-Feb-2014	146	69.09%
P302443	Delivery of Piping system for centrate flow	55	16-Dec-2013 A	08-Feb-2014	132	69.09%
P302444	Procurement / Purchase Order of flushing water system for MF	14	14-Jan-2014 A	28-Jan-2014	107	58.93%
P302445	Manufacturing of flushing water system for MPS and inlet cham	60	28-Jan-2014	29-Mar-2014	107	0%
P302446	Delivery of flushing water system for MPS and inlet chamber	30	29-Mar-2014	28-Apr-2014	107	0%
P302460	Procurement / Purchase Order of Air Mixing system of wet well	7	13-Feb-2014	20-Feb-2014	0	0%
P302470	Manufacturing of Air Mixing system of wet well	90	20-Feb-2014	21-May-2014	0	0%
P302480	Delivery of Air Mixing system of wet well	14	21-May-2014	04-Jun-2014	0	0%
P302520	Procurement / Purchase Order of DCS and Interfacing control	10	23-Feb-2014	05-Mar-2014	45	0%
P302530	Manufacturing for DCS hardware and Interfacing control system	100	05-Mar-2014	13-Jun-2014	45	0%
P302620	Manufacturing of Ventilation system of MPS	90	27-Oct-2013 A	24-Jan-2014	81	97.78%
P302630	Delivery of Ventilation system of MPS	30	25-Jan-2014	23-Feb-2014	81	0%
P302660	Delivery of Fire service of MPS	50	23-Jan-2014	13-Mar-2014	63	0%
P302690	Delivery of Plumbling system	50	16-Dec-2013 A	03-Feb-2014	217	76%
P302720	Delivery of Drainage System	60	16-Dec-2013 A	13-Feb-2014	199	63.33%
P904910	Delivery of DN3000 Knife gate valve (#1 & #2)	60	16-Jan-2014 A	16-Mar-2014	110	11.67%
P906340	Procurement / Purchase Order of Dia 4m Stainless steel Pipe s	14	15-Feb-2014*	28-Feb-2014	-37	0%
P906350	Manufacturing of Dia 4m Stainless steel Pipe sleeve	90	01-Mar-2014	29-May-2014	-37	0%
Interface between Civil/ ABWF/ E&M works (Access Floor No. 1, -32.0mPD)						
MPS0015	Access Floor No. 1 (-32.0mPD) interface for start of FRP acce	0		08-Apr-2014	51	0%
Interface between Civil/ ABWF/ E&M works (Access Floor No. 4, -2.0mPD)						
MPS0040	Access Floor No. 4 (-2.0mPD) interface for start of installation	0		08-Apr-2014	-12	0%
Interface between Civil/ ABWF/ E&M works (G/F level, +5.90mPD)						
MPS0050	Motor Hall (RHS) handover for start of installation of BS and E&	0		24-Mar-2014	4	0%
MPS0060	Motor Hall (LHS) handover for start of installation of BS and E&	0		13-Mar-2014	15	0%
MPS0070	Maintenance Area handover for start of installation of BS and E	0		13-Mar-2014	164	0%
R.C. Works						
Ground floor slab (+5.9mPD)						
P902890	GF: Wet well (3.5m H, +15.15 to +18.65mPD)	18	07-Jan-2014 A	28-Jan-2014	-31	75%
P902910	GF: Lift Well (+5.9 to +20.4mPD)	24	06-Jan-2014 A	15-Feb-2014	-12	25%
P903630	GF: Dismantle metal scaffold (RHS)	10	12-Mar-2014	24-Mar-2014	-9	0%
P903640	GF: Dismantle metal scaffold (LHS)	10	12-Mar-2014	24-Mar-2014	-9	0%
1/f slab (+20.4mPD)						
P902940	1F: +20.4mPD Floor slab and beam (LHS)	18	22-Nov-2013 A	06-Feb-2014	-20	45%
P902950	1F: +20.4mPD Floor slab and beam (RHS)	18	17-Jan-2014 A	15-Feb-2014	-20	17%
P902955	1F: +20.4mPD Floor slab and beam (Mid)	24	28-Jan-2014	28-Feb-2014	-31	0%
P902960	1F: Wet well (+20.4 to +24.4mPD)	12	28-Feb-2014	14-Mar-2014	-31	0%



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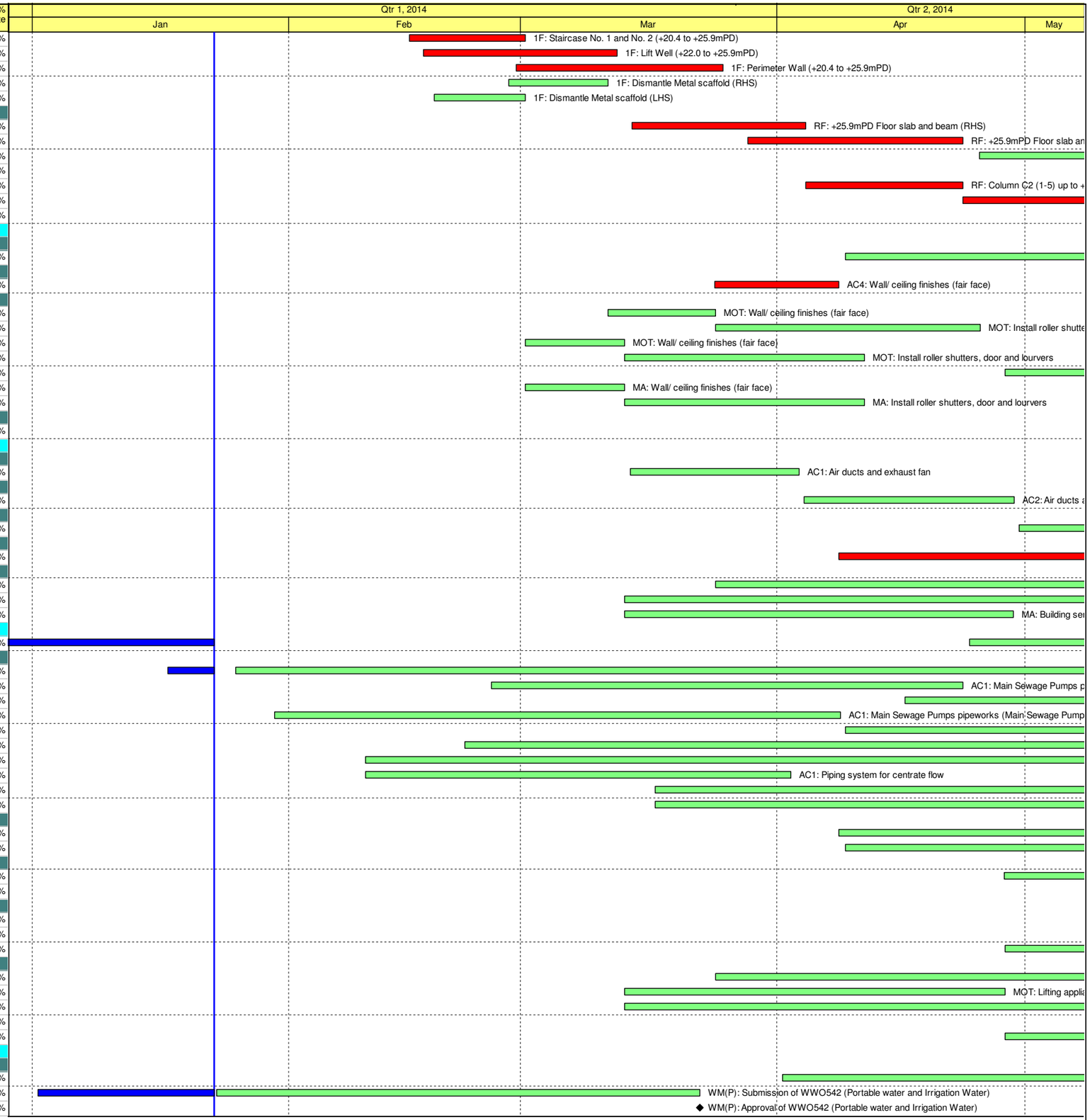
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Three Months Rolling Programme (24 Jan 2014 to 24 Apr 2014)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P903000	1F: Staircase No. 1 and No. 2 (+20.4 to +25.9mPD)	12	15-Feb-2014	01-Mar-2014	-20	0%
P903010	1F: Lift Well (+22.0 to +25.9mPD)	21	17-Feb-2014	12-Mar-2014	-12	0%
P903050	1F: Perimeter Wall (+20.4 to +25.9mPD)	21	28-Feb-2014	25-Mar-2014	-28	0%
P903100	1F: Dismantle Metal scaffold (RHS)	10	27-Feb-2014	11-Mar-2014	4	0%
P903110	1F: Dismantle Metal scaffold (LHS)	10	18-Feb-2014	01-Mar-2014	13	0%
Roof Floor slab (+25.9mPD)						
P902980	RF: +25.9mPD Floor slab and beam (RHS)	18	14-Mar-2014	04-Apr-2014	-31	0%
P902990	RF: +25.9mPD Floor slab and beam (LHS)	18	28-Mar-2014	23-Apr-2014	-31	0%
P902995	RF: Dismantle metal scaffold (RHS)	10	25-Apr-2014	09-May-2014	24	0%
P902996	RF: Dismantle metal scaffold (LHS)	10	12-May-2014	23-May-2014	-31	0%
P903060	RF: Column C2 (1-5) up to +30.5mPD	12	04-Apr-2014	23-Apr-2014	-21	0%
P903070	RF: Column C2 (5-10) up to +30.5mPD	12	23-Apr-2014	09-May-2014	-21	0%
P903080	URF: Floor slab and beam at +30.5mPD	15	09-May-2014	27-May-2014	81	0%
Builder and finishes Works						
Access Floor No. 1 (-32.0mPD)						
P400355	AC1: FRP Access flooring	140	09-Apr-2014	27-Sep-2014	39	0%
Access Floor No. 4 (-2.0mPD)						
P400565	AC4: Wall/ ceiling finishes (fair face)	12	24-Mar-2014	08-Apr-2014	-9	0%
Motor Hall (+5.9mPD)						
P400655	MOT: Wall/ ceiling finishes (fair face)	11	11-Mar-2014	24-Mar-2014	4	0%
P400665	MOT: Install roller shutters, door and lourvers	24	24-Mar-2014	25-Apr-2014	167	0%
P400695	MOT: Wall/ ceiling finishes (fair face)	10	01-Mar-2014	13-Mar-2014	13	0%
P400705	MOT: Install roller shutters, door and lourvers	24	13-Mar-2014	11-Apr-2014	176	0%
P400715	MOT: Heavy duty epoxy floor paints	12	28-Apr-2014	14-May-2014	153	0%
P903940	MA: Wall/ ceiling finishes (fair face)	10	01-Mar-2014	13-Mar-2014	88	0%
P903950	MA: Install roller shutters, door and lourvers	24	13-Mar-2014	11-Apr-2014	176	0%
First Floor (+20.4mPD)						
P400725	CON: Wall plastering/ painting	12	09-May-2014	23-May-2014	24	0%
Building Service Installation						
Access Floor No. 1 (-32.0mPD)						
P400281	AC1: Air ducts and exhaust fan	18	14-Mar-2014	03-Apr-2014	48	0%
Access Floor No. 2 (-19.0mPD)						
P904440	AC2: Air ducts and exhaust fan	18	04-Apr-2014	29-Apr-2014	48	0%
Access Floor No. 3 (-10.0mPD)						
P904480	AC3: Air ducts and exhaust fan	18	30-Apr-2014	22-May-2014	48	0%
Access Floor No. 4 (-2.0mPD)						
P400370	AC4: Building services equipment	36	08-Apr-2014	26-May-2014	-9	0%
Motor Hall (+5.9mPD)						
P400440	MOT: Building services equipment	42	24-Mar-2014	19-May-2014	4	0%
P400450	MOT: Building services equipment	42	13-Mar-2014	08-May-2014	13	0%
P401810	MA: Building services equipment	36	13-Mar-2014	29-Apr-2014	132	0%
Electrical and Machainical Installation						
P400311	Installation of VSD panels and associated cabling works (at sw	120	16-Dec-2013 A	12-Aug-2014	47	24.79%
Access Floor No. 1 (-32.0mPD)						
P903755	AC1: Main Sewage Pump No.1 - 4 (RHS)	150	17-Jan-2014 A	24-Jul-2014	57	5%
P903760	AC1: Main Sewage Pumps pipeworks (Main Sewage Pump Nc	45	25-Feb-2014	23-Apr-2014	57	0%
P903770	AC1: Main Sewage Pumps pipeworks (Main Sewage Pump No	45	16-Apr-2014	14-Jun-2014	57	0%
P903780	AC1: Main Sewage Pumps pipeworks (Main Sewage Pump No	55	30-Jan-2014	08-Apr-2014	20	0%
P903790	AC1: Main Sewage Pumps pipeworks (Main Sewage Pump No	55	09-Apr-2014	18-Jun-2014	20	0%
P904410	AC1: Cooling Water Pipeworks for Pump Bearings	60	22-Feb-2014	09-May-2014	50	0%
P904640	AC1: Piping system for recirculation	90	10-Feb-2014	31-May-2014	117	0%
P904650	AC1: Piping system for centrate flow	45	10-Feb-2014	02-Apr-2014	106	0%
P904652	AC1: Piping system for NWK overflow	85	17-Mar-2014	02-Jul-2014	81	0%
P904662	AC1: DN 3000 Knife Gate Valve (#1 and #2)	90	17-Mar-2014	08-Jul-2014	87	0%
Access Floor No. 2 (-19.0mPD)						
P903830	AC2: Pipeworks and associated cabling works (Main Sewage I	24	08-Apr-2014	12-May-2014	96	0%
P903850	AC2: Pipeworks and associated cabling works (Main Sewage I	24	09-Apr-2014	12-May-2014	75	0%
Access Floor No. 3 (-10.0mPD)						
P903960	AC3: Pipeworks and associated cabling works (Main Sewage I	24	28-Apr-2014	28-May-2014	96	0%
P903980	AC3: Pipeworks and associated cabling works (Main Sewage I	24	13-May-2014	10-Jun-2014	75	0%
Access Floor No. 4 (-2.0mPD)						
P903891	AC4: Pipeworks and associated cabling works (Main Sewage I	24	16-May-2014	14-Jun-2014	96	0%
P904280	AC4: Cooling Water Pumps	45	10-May-2014	03-Jul-2014	50	0%
P904680	AC4: Flushing water system for MPS and Inlet chamber	45	28-Apr-2014	23-Jun-2014	88	0%
Motor Hall (+5.9mPD)						
P903810	MOT: Lifting appliance at Motor Hall (RHS)	35	24-Mar-2014	10-May-2014	4	0%
P903820	MOT: Lifting appliance at Motor Hall (LHS)	35	13-Mar-2014	28-Apr-2014	13	0%
P903890	MA: Lifting appliance at Maintenance Area	80	13-Mar-2014	23-Jun-2014	88	0%
P904770	MOT: Sewage pump motor	120	10-May-2014	03-Oct-2014	4	0%
P904800	MOT: Sewage pump motor	120	28-Apr-2014	20-Sep-2014	13	0%
Statutory Submission and Inspection						
Water Supplier Department (WSD)						
P402500	WM(S): Submission of WWO542 (Toilet Flushing and process	80	01-Apr-2014	20-Jun-2014	0	0%
P402600	WM(P): Submission of WWO542 (Portable water and Irrigation	80	01-Jan-2014 A	22-Mar-2014	194	26.41%
P402605	WM(P): Approval of WWO542 (Portable water and Irrigation W	0		22-Mar-2014	194	0%



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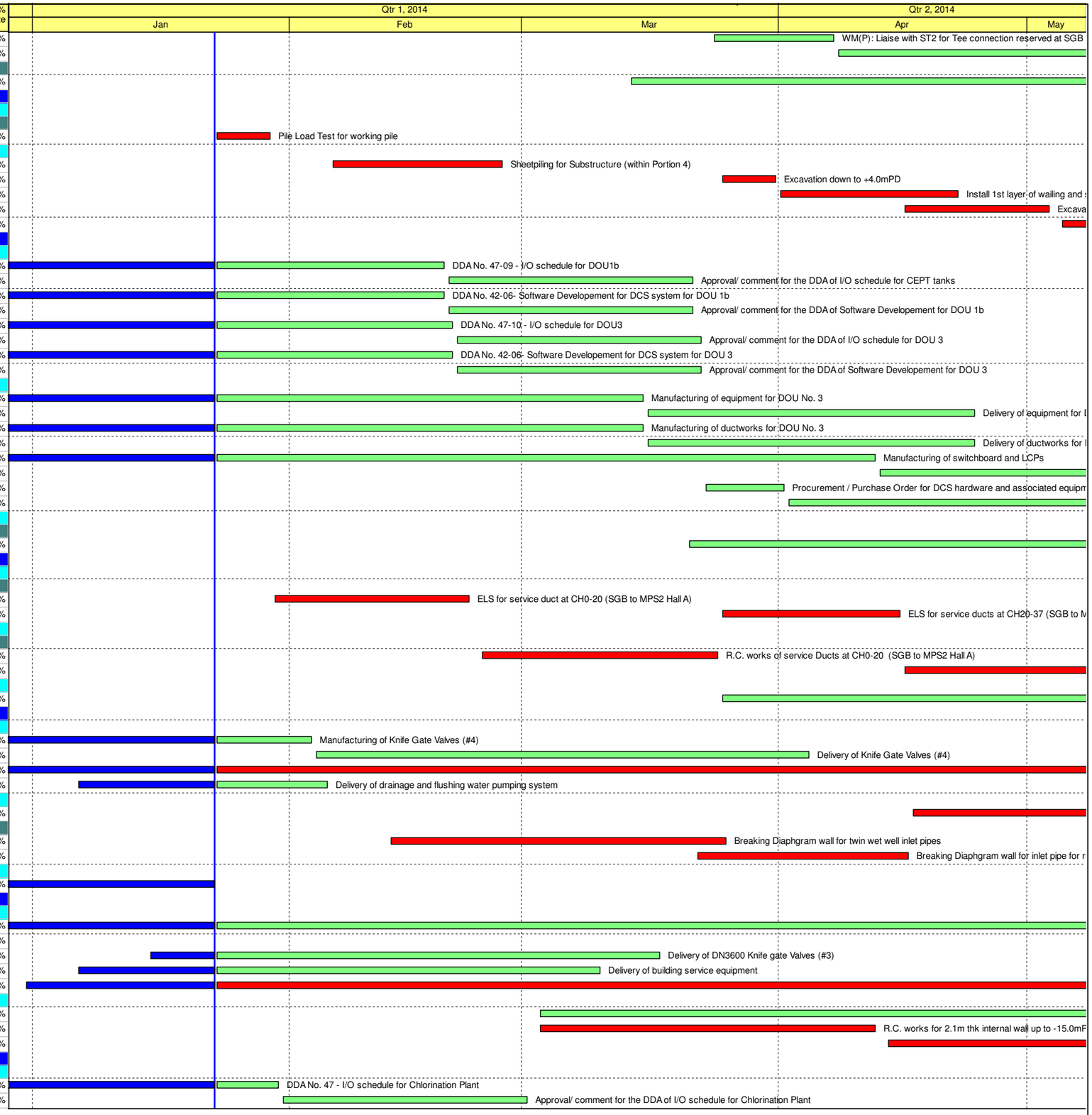
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Three Months Rolling Programme (24 Jan 2014 to 24 Apr 2014)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P402610	WM(P): Liaise with ST2 for Tee connection reserved at SGB w	12	24-Mar-2014	07-Apr-2014	155	0%
P402615	WM(P): External watermain laying	45	08-Apr-2014	05-Jun-2014	155	0%
Fire Service Department (FSD)						
P402710	FS: FS installation	120	14-Mar-2014	09-Aug-2014	84	0%
Portion 4 (Main flow Culvert)						
Foundation Works						
Driven H-Pile						
P903430	Pile Load Test for working pile	6	23-Jan-2014	29-Jan-2014	-45	0%
Excavation and Lateral Support Works for Substructure (Near MPS2)						
P903130	Sheetpiling for Substructure (within Portion 4)	18	06-Feb-2014	26-Feb-2014	-45	0%
P903440	Excavation down to +4.0mPD	6	25-Mar-2014	31-Mar-2014	-45	0%
P903450	Install 1st layer of wailing and strut at +4.5mPD	15	01-Apr-2014	22-Apr-2014	-45	0%
P903460	Excavation down to +1.5mPD	12	16-Apr-2014	03-May-2014	-45	0%
P903470	Install 2nd layer of wailing and strut at +2.0mPD	15	05-May-2014	22-May-2014	-45	0%
Portion 4 (Deodourization Unit No. 3 & 1b and Odour duct bridge)						
Submission of design of E&M works						
P906090	DDA No. 47-09 - I/O schedule for DOU1b	60	22-Dec-2013 A	19-Feb-2014	140	53.33%
P906100	Approval/ comment for the DDA of I/O schedule for CEPT tank:	30	20-Feb-2014	21-Mar-2014	140	0%
P906110	DDA No. 42-06- Software Developement for DCS system for D	60	22-Dec-2013 A	19-Feb-2014	140	53.33%
P906120	Approval/ comment for the DDA of Software Developement for I	30	20-Feb-2014	21-Mar-2014	140	0%
P906150	DDA No. 47-10 - I/O schedule for DOU3	60	23-Dec-2013 A	20-Feb-2014	139	51.67%
P906160	Approval/ comment for the DDA of I/O schedule for DOU 3	30	21-Feb-2014	22-Mar-2014	139	0%
P906170	DDA No. 42-06- Software Developement for DCS system for D	60	23-Dec-2013 A	20-Feb-2014	139	51.67%
P906180	Approval/ comment for the DDA of Software Developement for I	30	21-Feb-2014	22-Mar-2014	139	0%
Procurement/ Order/ Manufacturing/ Delivery						
P403090	Manufacturing of equipment for DOU No. 3	240	19-Jul-2013 A	15-Mar-2014	145	78.33%
P403100	Delivery of equipment for DOU No. 3	40	16-Mar-2014	24-Apr-2014	145	0%
P403120	Manufacturing of ductworks for DOU No. 3	240	19-Jul-2013 A	15-Mar-2014	176	78.33%
P403130	Delivery of ductworks for DOU No. 3	40	16-Mar-2014	24-Apr-2014	176	0%
P403210	Manufacturing of switchboard and LCPs	360	18-Apr-2013 A	12-Apr-2014	158	77.78%
P403220	Delivery of switchboard and LCPs	60	13-Apr-2014	11-Jun-2014	158	0%
P906220	Procurement / Purchase Order for DCS hardware and associa	10	23-Mar-2014	01-Apr-2014	139	0%
P906230	Manufacturing of DCS hardware and associated equipment for	60	02-Apr-2014	31-May-2014	139	0%
Statutory Submission and Inspection						
Fire Service Department (FSD)						
P905190	FS: FS Design for Dry system	45	21-Mar-2014	19-May-2014	3	0%
Portion 4 (Service Ducts)						
Excavation and lateral support for substructure						
Service Duct (Type 1)						
P400550	ELS for service duct at CH0-20 (SGB to MPS2 Hall A)	18	30-Jan-2014	22-Feb-2014	-15	0%
P401270	ELS for service ducts at CH20-37 (SGB to MPS2 Hall B)	18	25-Mar-2014	15-Apr-2014	-15	0%
R.C. Works						
Service Duct (Type 1)						
P400560	R.C. works of service Ducts at CH0-20 (SGB to MPS2 Hall A)	25	24-Feb-2014	24-Mar-2014	-15	0%
P401250	R.C. works of service ducts at CH20-37 (SGB to MPS2 Hall B)	18	16-Apr-2014	12-May-2014	-15	0%
Civil Works						
P400575	Construction of Chemical Pipe Trench (CH119-300)	90	25-Mar-2014	16-Jul-2014	107	0%
Portion 5 (Inlet Chamber)						
Procurement/ Order/ Manufacturing/ Delivery						
P501520	Manufacturing of Knife Gate Valves (#4)	450	11-Nov-2012 A	03-Feb-2014	94	97.33%
P501530	Delivery of Knife Gate Valves (#4)	60	04-Feb-2014	04-Apr-2014	94	0%
P501550	Manufacturing of Super duplex pipework	240	27-Dec-2013 A	14-Aug-2014	-52	15%
P501590	Delivery of drainage and flushing water pumping system	30	06-Jan-2014 A	05-Feb-2014	197	54.33%
R.C. Works						
P400631	R.C. works for Lower Manifold	60	17-Apr-2014	03-Jul-2014	-33	0%
Diaphgram Wall opening						
P400628	Breaking Diaphgram wall for twin wet well inlet pipes	35	13-Feb-2014	25-Mar-2014	-33	0%
P400629	Breaking Diaphgram wall for inlet pipe for riser shaft (interface \	21	22-Mar-2014	16-Apr-2014	-33	0%
Building Service Installation						
P400650	Installation of cables and control system	45	17-Dec-2013 A	10-Dec-2014	-29	0%
Portion 6 (Valve Chamber)						
Procurement/ Order/ Manufacturing/ Delivery						
P501700	Manufacturing of Lifting Appliance	390	12-Mar-2013 A	19-May-2014	80	70%
P501710	Delivery of Lifting Appliance	60	20-May-2014	18-Jul-2014	80	0%
P501740	Delivery of DN3600 Knife gate Valves (#3)	60	15-Jan-2014 A	17-Mar-2014	163	10%
P501830	Delivery of building service equipment	58	06-Jan-2014 A	10-Mar-2014	260	20%
P905730	Manufacturing of Super Duplex Puddle flange pipes	240	31-Dec-2013 A	14-Aug-2014	-1	15%
R.C. Works						
P600010	Installation of waterproofing membrance	150	03-Mar-2014	02-Sep-2014	56	0%
P600020	R.C. works for 2.1m thk internal wall up to -15.0mPD	35	03-Mar-2014	12-Apr-2014	-44	0%
P600090	R.C. works for Base slabs and concrete chamber	35	14-Apr-2014	29-May-2014	-44	0%
Portion 8 (Extension of Sodium Hypochlorite Storage Compound)						
Submission of design of E&M works						
P906270	DDA No. 47 - I/O schedule for Chlorination Plant	40	22-Dec-2013 A	30-Jan-2014	158	80%
P906280	Approval/ comment for the DDA of I/O schedule for Chlorinatior	30	31-Jan-2014	01-Mar-2014	158	0%



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

Three Months Rolling Programme (24 Jan 2014 to 24 Apr 2014)

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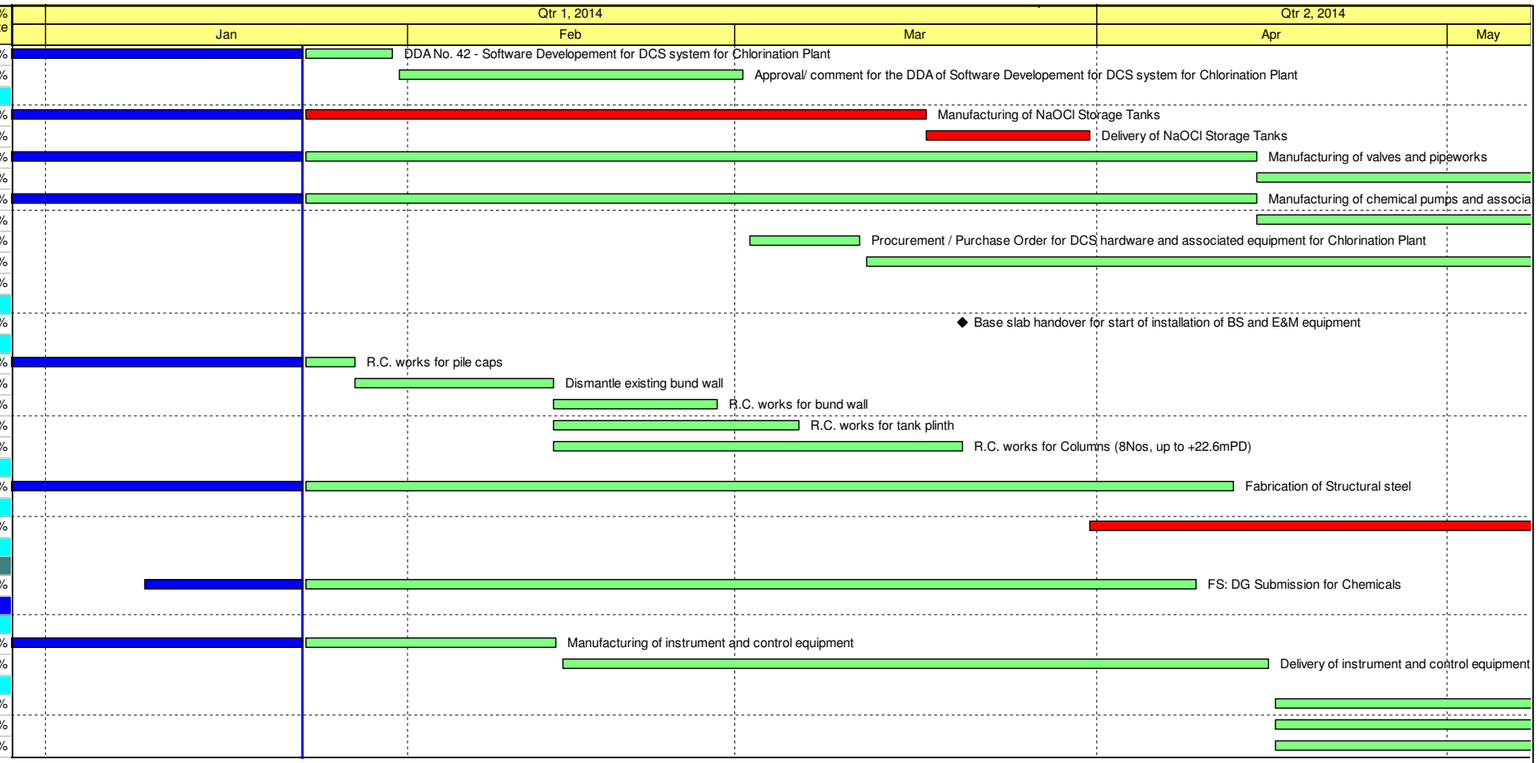
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete
P906290	DDA No. 42 - Software Developement for DCS system for Chlo	40	22-Dec-2013 A	30-Jan-2014	158	80%
P906300	Approval/ comment for the DDA of Software Developement for I	30	31-Jan-2014	01-Mar-2014	158	0%
Procurement/ Order/ Manufacturing/ Delivery						
P801150	Manufacturing of NaOCl Storage Tanks	120	17-Nov-2013 A	17-Mar-2014	0	55.65%
P801160	Delivery of NaOCl Storage Tanks	14	17-Mar-2014	31-Mar-2014	0	0%
P801180	Manufacturing of valves and pipeworks	150	15-Nov-2013 A	14-Apr-2014	105	45.4%
P801190	Delivery of valves and pipeworks	30	14-Apr-2014	14-May-2014	105	0%
P801210	Manufacturing of chemical pumps and associated equipment	150	15-Nov-2013 A	14-Apr-2014	105	45.4%
P801220	Delivery of chemical pumps and associated equipment	30	14-Apr-2014	14-May-2014	105	0%
P906310	Procurement / Purchase Order for DCS hardware and associa	10	02-Mar-2014	11-Mar-2014	158	0%
P906320	Manufacturing of DCS hardware and associated equipment for	60	12-Mar-2014	10-May-2014	158	0%
P906330	Delivery of DCS hardware and associated equipment for Chlori	30	11-May-2014	09-Jun-2014	158	0%
Interface between Civil/ ABWF/ E&M works (NaOCl storage compound)						
NAOCL010	Base slab handover for start of installation of BS and E&M equi	0		20-Mar-2014	11	0%
R.C. Works						
P905470	R.C. works for pile caps	24	14-Dec-2013 A	27-Jan-2014	8	85%
P905475	Dismantle existing bund wall	12	27-Jan-2014	13-Feb-2014	8	0%
P905480	R.C. works for bund wall	12	13-Feb-2014	27-Feb-2014	8	0%
P905485	R.C. works for tank plinth	18	13-Feb-2014	06-Mar-2014	20	0%
P905490	R.C. works for Columns (8Nos, up to +22.6mPD)	30	13-Feb-2014	20-Mar-2014	8	0%
Structural Steel Works						
P800100	Fabrication of Structural steel	120	16-Nov-2013 A	12-Apr-2014	86	45.83%
Electrical and Machainical Installation						
P905500	On site assembling for storage tanks	72	31-Mar-2014	02-Jul-2014	0	0%
Statutory Submission and Inspection						
Fire Sevice Department (FSD)						
P905640	FS: DG Submission for Chemicals	90	09-Jan-2014 A	09-Apr-2014	240	15.12%
Sai Ying Pun Junction Shaft						
Procurement/ Order/ Manufacturing/ Delivery						
P801270	Manufacturing of instrument and control equipment	180	18-Aug-2013 A	13-Feb-2014	91	87.78%
P801280	Delivery of instrument and control equipment	61	14-Feb-2014	15-Apr-2014	91	0%
Electrical and Machainical Installation						
P801290	Installation of instrumentation at Sai Ying Pun Junction	60	16-Apr-2014	02-Jul-2014	101	0%
P801300	Installation of control equipment at Sai Ying Pun Junction	60	16-Apr-2014	02-Jul-2014	101	0%
P801310	Installation of electrical cabling works at Sai Ying Pun Junction	90	16-Apr-2014	06-Aug-2014	71	0%



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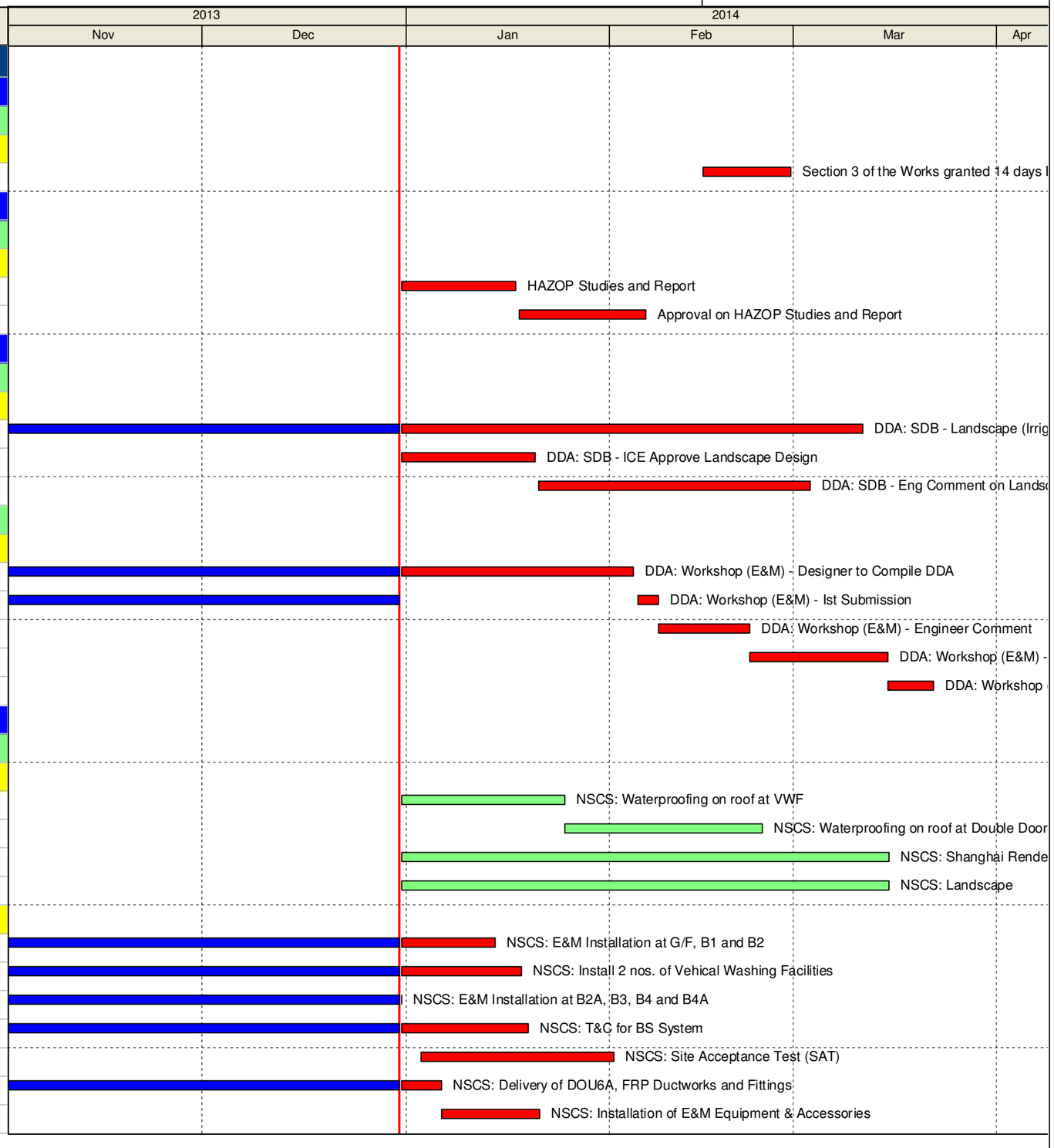
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Three Months Rolling Programme (24 Jan 2014 to 24 Apr 2014)

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish
DC/2009/17 Programme Updated up to 31-Dec-13				
KEY DATE				
Completion				
Extension of Time				
KD000025	Section 3 of the Works granted 14 days EOT	14	15-Feb-14*	28-Feb-14
Preliminaries and General Requirement				
General Requirements				
Initial Works				
PG000410	HAZOP Studies and Report	15	31-Dec-13	17-Jan-14
PG000420	Approval on HAZOP Studies and Report	13	18-Jan-14	06-Feb-14
Design of Permanent Works				
DDA1 (SDB and Associated Structure)				
Sub-Package- F				
DP024190	DDA: SDB - Landscape (Irrigation) Design and Approval	175	26-Nov-12 A	11-Mar-14
DP024210	DDA: SDB - ICE Approve Landscape Design	21	31-Dec-13	20-Jan-14
DP024220	DDA: SDB - Eng Comment on Landscape Design	42	21-Jan-14	03-Mar-14
Detailed Design Approval (DDA) Submission				
DDA 35 - Workshop Equipment				
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	120	05-Apr-13 A	04-Feb-14
DP008820	DDA: Workshop (E&M) - Ist Submission	7	01-Jun-13 A	08-Feb-14
DP008830	DDA: Workshop (E&M) - Engineer Comment	14	08-Feb-14	22-Feb-14
DP008840	DDA: Workshop (E&M) - Designer Response/Revision	21	22-Feb-14	15-Mar-14
DP008850	DDA: Workshop (E&M) - 2nd Submission & ICE Cert	7	15-Mar-14	22-Mar-14
Section 3 of the Works				
Northern Sludge Cake Silo				
Architectural Finishes				
S3000510	NSCS: Waterproofing on roof at VWF	21	31-Dec-13	25-Jan-14
S3000530	NSCS: Waterproofing on roof at Double Door Enclosure	21	25-Jan-14	24-Feb-14
S3000550	NSCS: Shanghai Render	60	31-Dec-13	15-Mar-14
S3000570	NSCS: Landscape	60	31-Dec-13	15-Mar-14
E&M Installation and T&C				
S3000810	NSCS: E&M Installation at G/F, B1 and B2	98	02-Jan-13 A	14-Jan-14
S3000840	NSCS: Install 2 nos. of Vehical Washing Facilities	95	14-Jan-13 A	18-Jan-14
S3000880	NSCS: E&M Installation at B2A, B3, B4 and B4A	75	02-Jan-13 A	31-Dec-13
S3000968	NSCS: T&C for BS System	20	28-Oct-13 A	19-Jan-14
S3000970	NSCS: Site Acceptance Test (SAT)	30	03-Jan-14	01-Feb-14
S3001000	NSCS: Delivery of DOU6A, FRP Ductworks and Fittings	18	25-Mar-13 A	06-Jan-14
S3001010	NSCS: Installation of E&M Equipment & Accessories	15	06-Jan-14	21-Jan-14

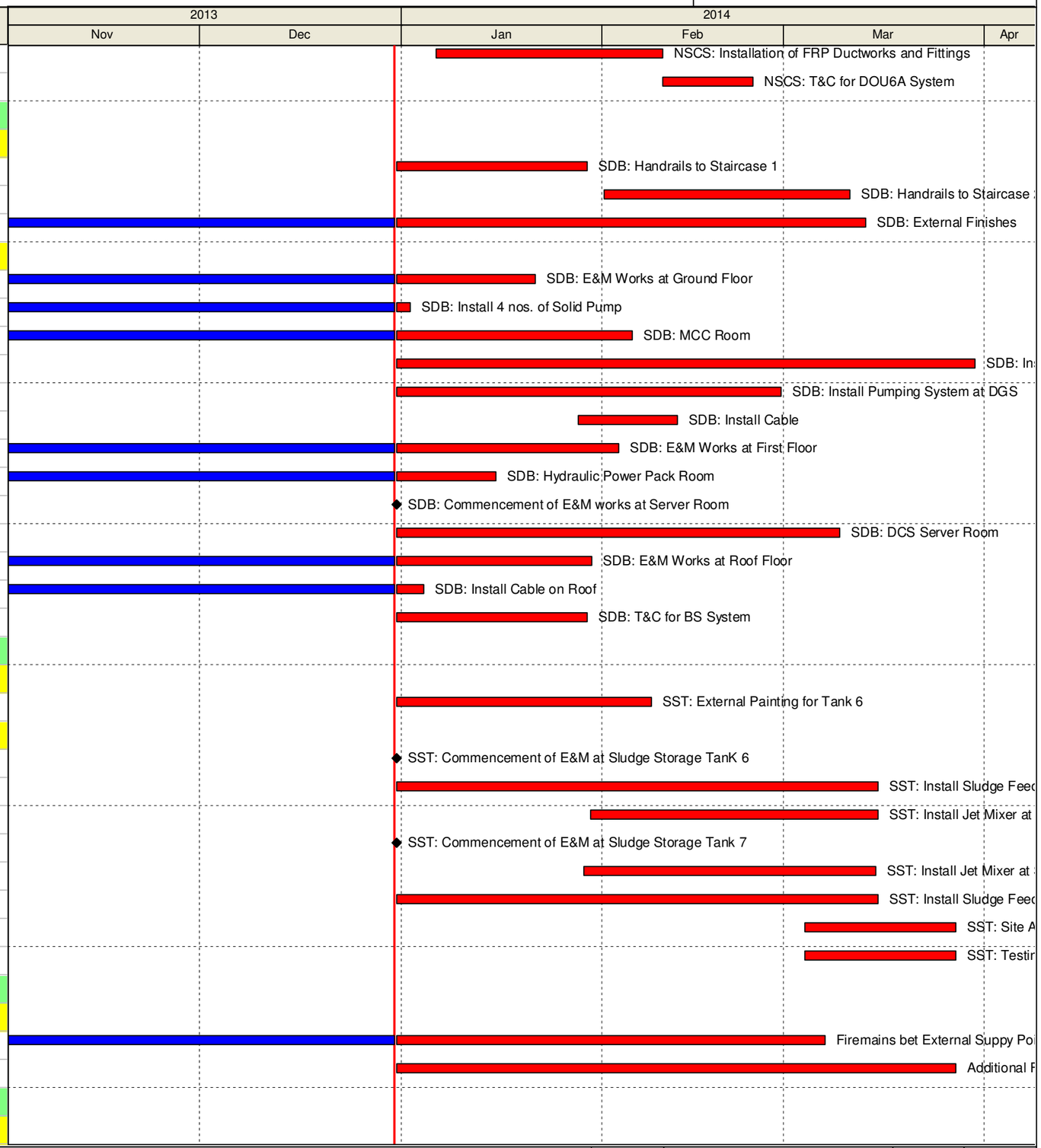


Actual Work ◆ Milestone
Remaining Work
Critical Remaining Work

Three Months Rolling Programme - December 2013 to March 2014

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish
S3001030	NSCS: Installation of FRP Ductworks and Fittings	35	06-Jan-14	10-Feb-14
S3001040	NSCS: T&C for DOU6A System	14	10-Feb-14	24-Feb-14
Sludge Dewatering Building and DOU6				
Architectural Finishes				
S3001492	SDB: Handrails to Staircase 1	25	31-Dec-13	29-Jan-14
S3001494	SDB: Handrails to Staircase 2	30	01-Feb-14	11-Mar-14
S3001515	SDB: External Finishes	145	11-Dec-12 A	13-Mar-14
E&M Installation and T&C				
S3003020	SDB: E&M Works at Ground Floor	220	06-Sep-12 A	21-Jan-14
S3003310	SDB: Install 4 nos. of Solid Pump	45	24-Dec-12 A	02-Jan-14
S3003360	SDB: MCC Room	74	12-Nov-12 A	05-Feb-14
S3003400	SDB: Install Cable in MCC Room	90	31-Dec-13	30-Mar-14
S3003450	SDB: Install Pumping System at DGS	60	31-Dec-13	28-Feb-14
S3003470	SDB: Install Cable	16	28-Jan-14	12-Feb-14
S3003490	SDB: E&M Works at First Floor	175	05-Oct-12 A	03-Feb-14
S3003690	SDB: Hydraulic Power Pack Room	79	14-Jan-13 A	15-Jan-14
S3003730	SDB: Commencement of E&M works at Server Room	0	31-Dec-13	
S3003740	SDB: DCS Server Room	69	31-Dec-13	09-Mar-14
S3003790	SDB: E&M Works at Roof Floor	202	03-Oct-12 A	30-Jan-14
S3003830	SDB: Install Cable on Roof	24	25-Aug-13 A	04-Jan-14
S3003950	SDB: T&C for BS System	30	31-Dec-13	29-Jan-14
Sludge Storage Tank 6 and 7				
Structure				
S3005850	SST: External Painting for Tank 6	30	31-Dec-13	08-Feb-14
E&M Installation and T&C				
S3006670	SST: Commencement of E&M at Sludge Storage TanK 6	0	31-Dec-13	
S3006680	SST: Install Sludge Feed Pipe, Recirculation Pipe and Scum Pipe at Tank 6	75	31-Dec-13	15-Mar-14
S3006685	SST: Install Jet Mixer at Sludge Storage Tank 6	45	30-Jan-14	15-Mar-14
S3006700	SST: Commencement of E&M at Sludge Storage Tank 7	0	31-Dec-13	
S3006710	SST: Install Jet Mixer at Sludge Storage Tank 7	45	29-Jan-14	15-Mar-14
S3006720	SST: Install Sludge Feed Pipe, Recirculation Pipe and Scum Pipe at Tank 7	75	31-Dec-13	15-Mar-14
S3006730	SST: Site Acceptance Test (SAT)	24	04-Mar-14	27-Mar-14
S3006740	SST: Testing and commissioning (Internal T&C)	24	04-Mar-14	27-Mar-14
System				
Pump, Piping and Ducting				
S3009940	Firemains bet External Suppy Point to Zone B1	105	01-Mar-13 A	07-Mar-14
S3009950	Additional Fire Signal Duct bet Admin Bldg - SDB	70	31-Dec-13	27-Mar-14
External (Civil) Works				
Zone A				

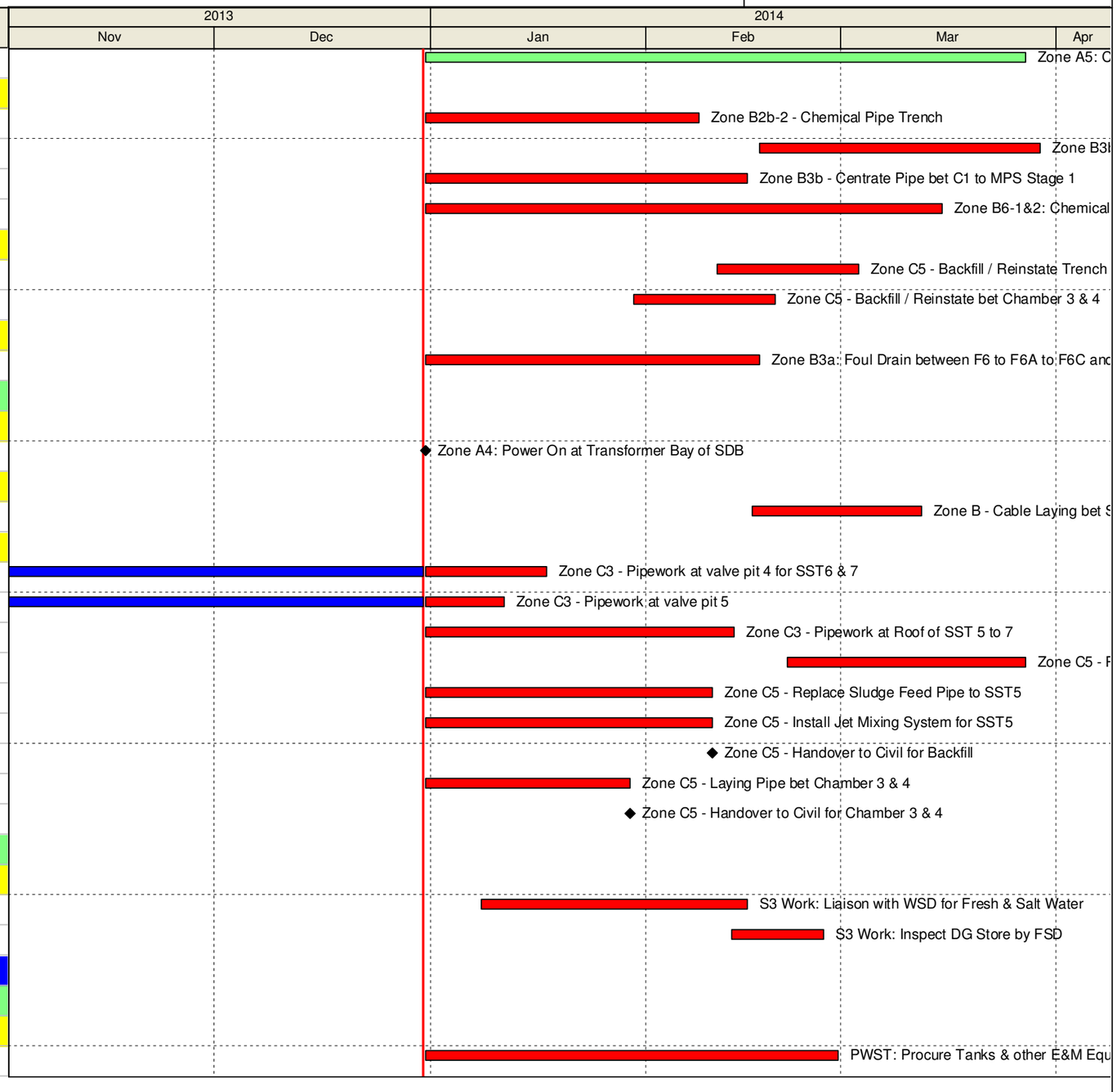


Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

Three Months Rolling Programme - December 2013 to March 2014

Date	Revision	Checked	Approved

Activity ID	Activity Name	Original Duration	Start	Finish
S3008440	Zone A5: Cabe Trough to MPS	70	31-Dec-13	27-Mar-14
Zone B				
S3008585	Zone B2b-2 - Chemical Pipe Trench	30	31-Dec-13	08-Feb-14
S3008670	Zone B3b: Chemical Pipe Trench	36	17-Feb-14	29-Mar-14
S3008690	Zone B3b - Centrate Pipe bet C1 to MPS Stage 1	36	31-Dec-13	15-Feb-14
S3009010	Zone B6-1&2: Chemical Pipe Trench	60	31-Dec-13	15-Mar-14
Zone C				
S3009710	Zone C5 - Backfill / Reinstate Trench to SST5	21	11-Feb-14	03-Mar-14
S3009760	Zone C5 - Backfill / Reinstate bet Chamber 3 & 4	21	30-Jan-14	19-Feb-14
Road and Drain				
S3011400	Zone B3a: Foul Drain between F6 to F6A to F6C and F6D	36	31-Dec-13	17-Feb-14
External (E&M) Works				
Zone A				
S3008438	Zone A4: Power On at Transformer Bay of SDB	0		31-Dec-13
Zone B				
S3008720	Zone B - Cable Laying bet SDB to Extg SST 1 and NSCS	25	16-Feb-14	12-Mar-14
Zone C				
S3009475	Zone C3 - Pipework at valve pit 4 for SST6 & 7	45	07-Mar-13 A	17-Jan-14
S3009478	Zone C3 - Pipework at valve pit 5	30	18-Feb-13 A	11-Jan-14
S3009480	Zone C3 - Pipework at Roof of SST 5 to 7	45	31-Dec-13	13-Feb-14
S3009620	Zone C5 - Pipework at Roof Level of SST 5 to 1	35	21-Feb-14	27-Mar-14
S3009700	Zone C5 - Replace Sludge Feed Pipe to SST5	42	31-Dec-13	10-Feb-14
S3009705	Zone C5 - Install Jet Mixing System for SST5	42	31-Dec-13	10-Feb-14
S3009708	Zone C5 - Handover to Civil for Backfill	0		10-Feb-14
S3009750	Zone C5 - Laying Pipe bet Chamber 3 & 4	30	31-Dec-13	29-Jan-14
S3009755	Zone C5 - Handover to Civil for Chamber 3 & 4	0		29-Jan-14
Statutory Inspection and Training				
E&M Installation and T&C				
S3013095	S3 Work: Liaison with WSD for Fresh & Salt Water	30	08-Jan-14	15-Feb-14
S3013130	S3 Work: Inspect DG Store by FSD	12	13-Feb-14	26-Feb-14
Section 5 of the Works				
Process Water Storage Tank				
Procurement, Manufacture and Delivery				
S5009660	PWST: Procure Tanks & other E&M Equipment / Material	60	31-Dec-13	28-Feb-14



Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

Three Months Rolling Programme - December 2013 to March 2014

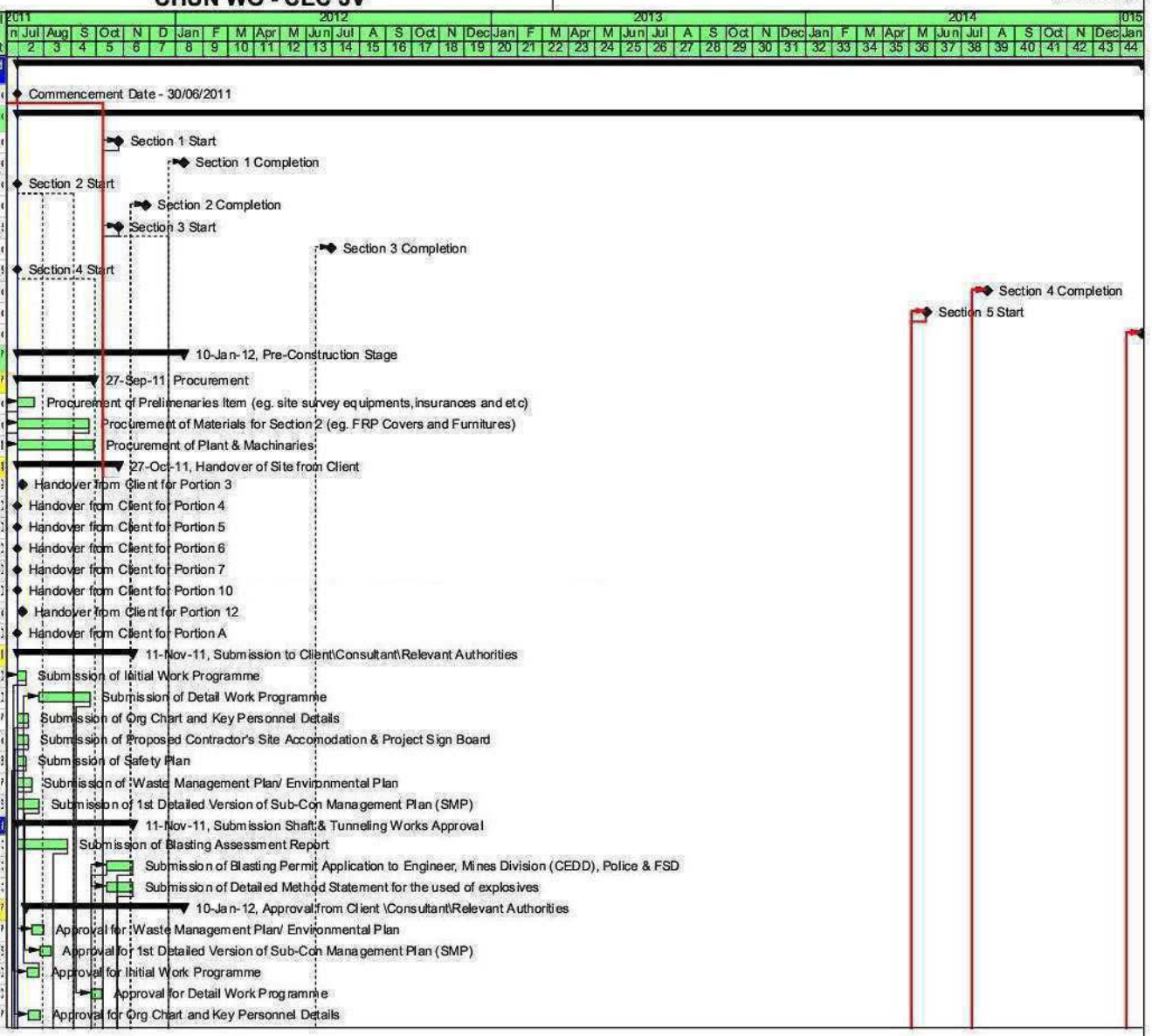
Date	Revision	Checked	Approved

Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

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



Actual Work ◆ Milestone
Remaining Work ▼ Summary
Critical Work

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

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

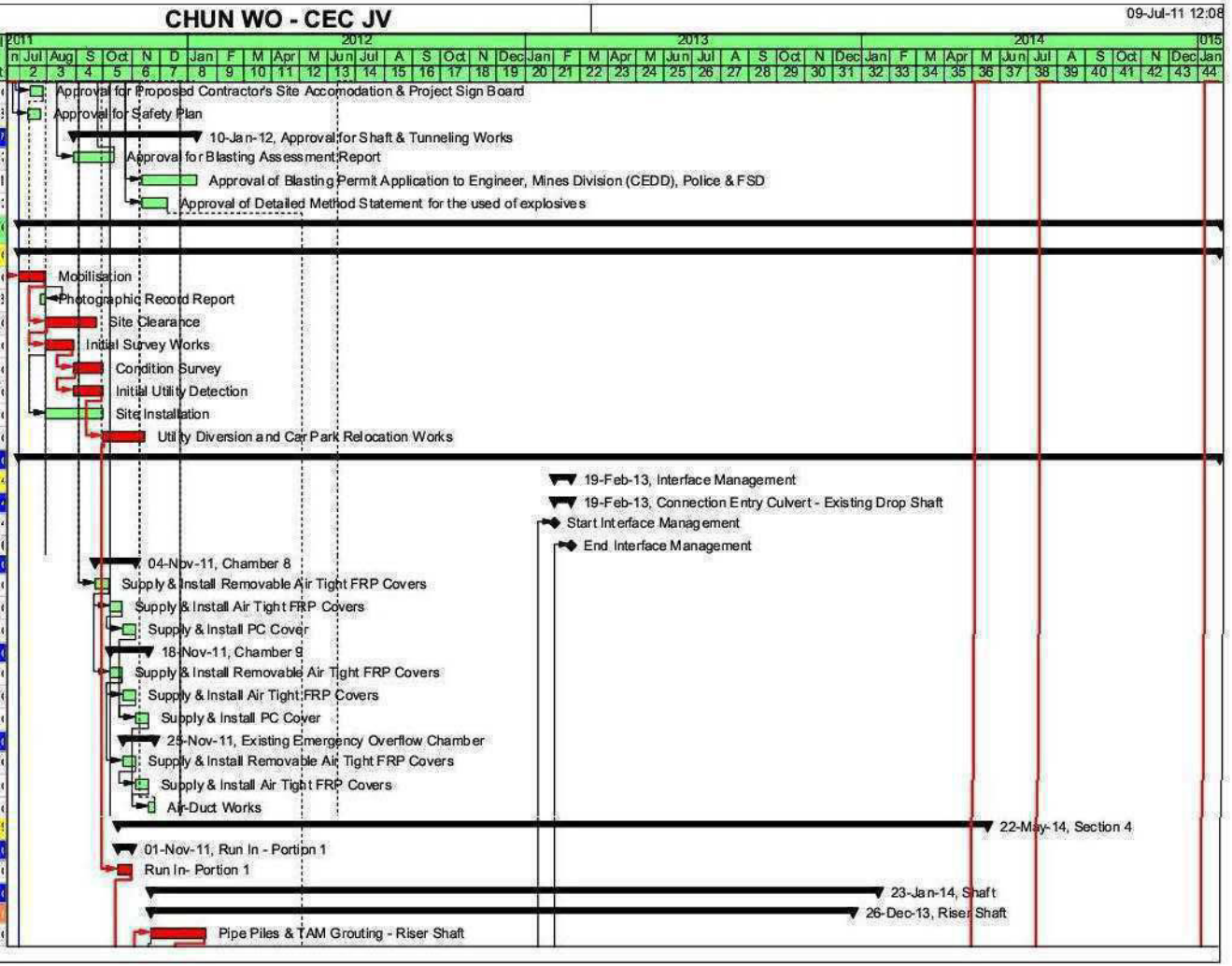
Date	Revision	Checked	Approved
11-Jul-11	Initial Work Programme		

Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

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

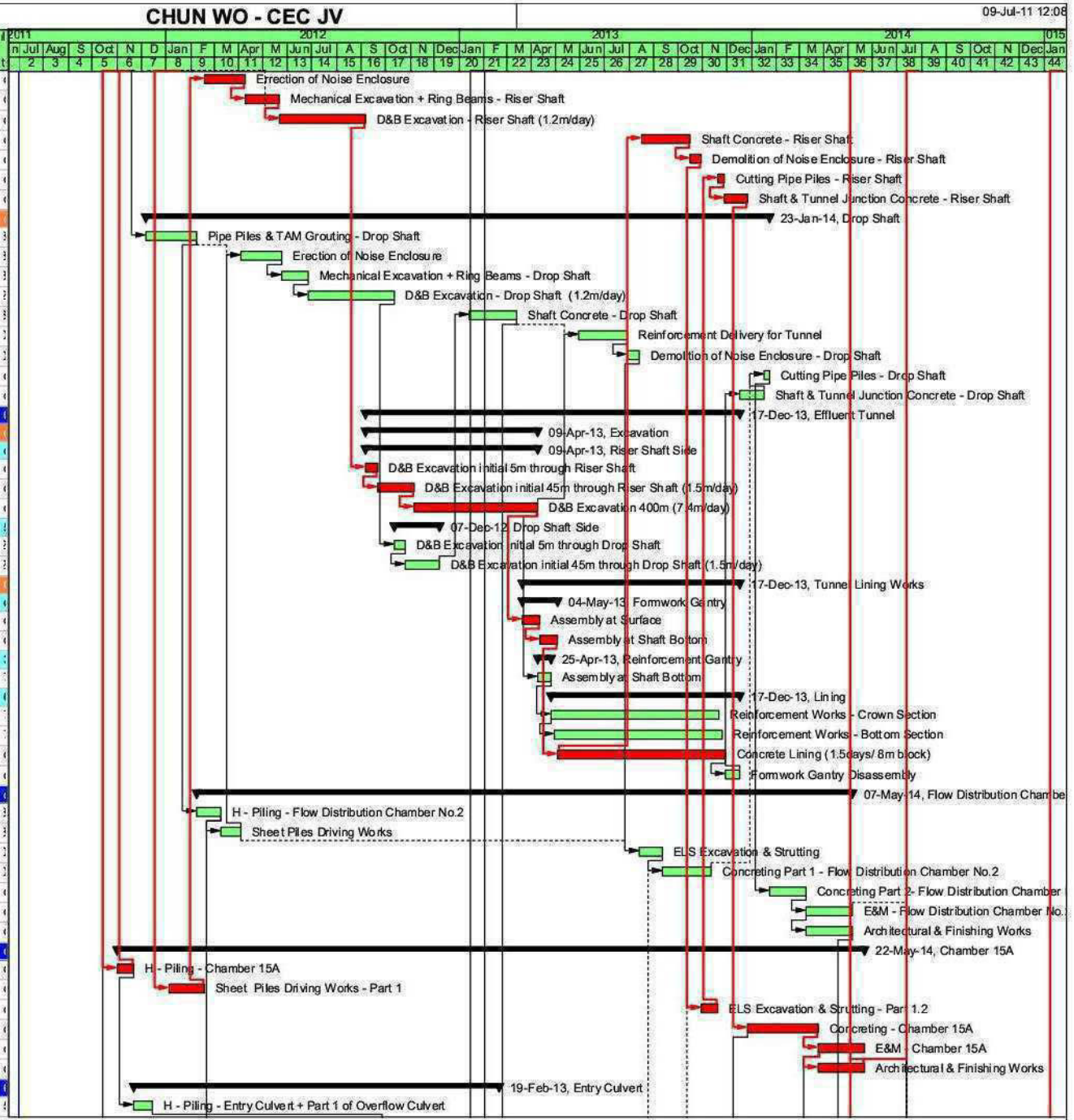


Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

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

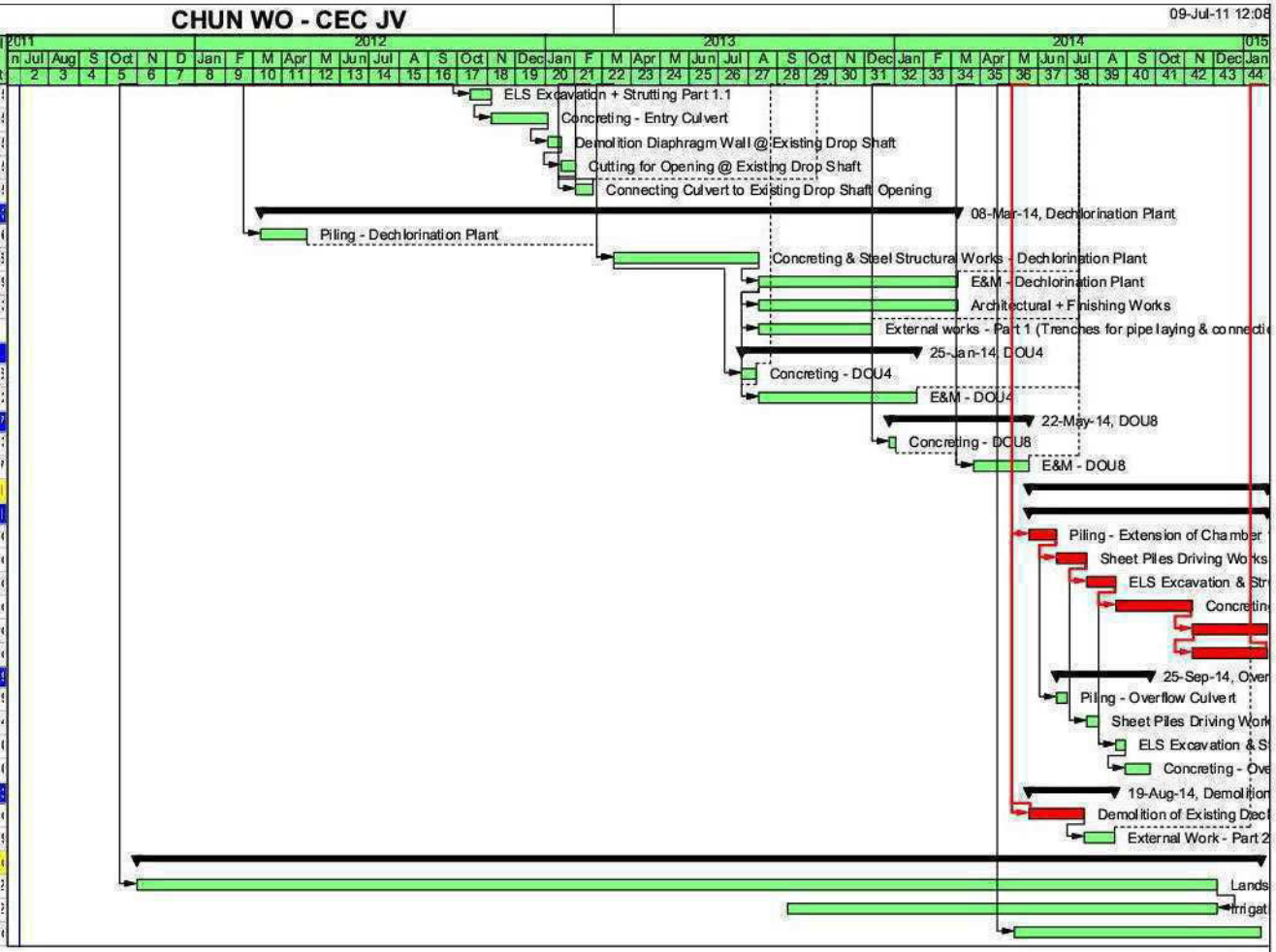


Harbour Area Treatment Scheme Stage 2A - Initial Work Programme

CHUN WO - CEC JV

09-Jul-11 12:08

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

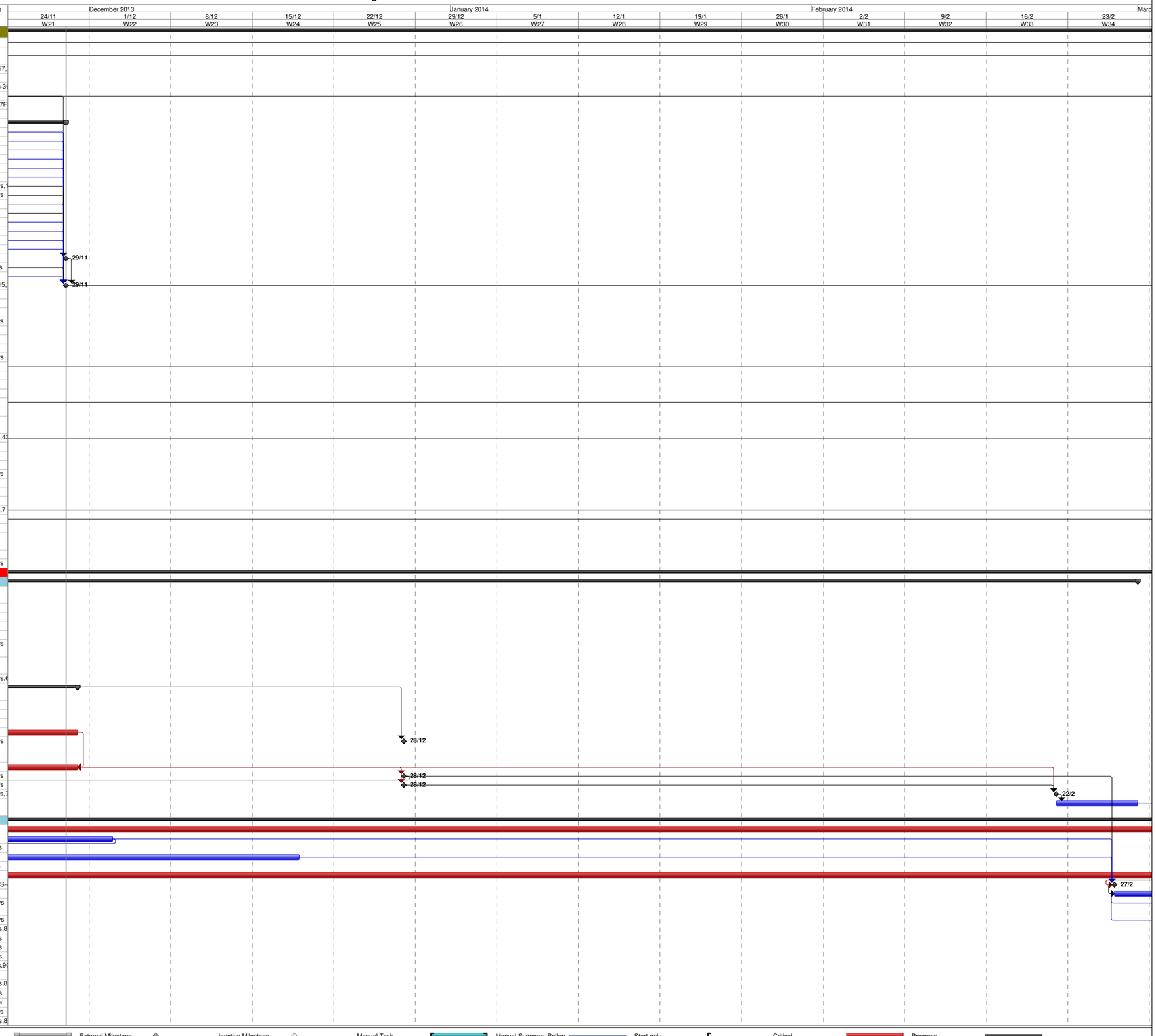


Drainage Services Department
Government of the HKSAR

Contract No DC/2009/19
Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works - Sludge Handling and Disposal Facilities
Detailed Works Programme

SITA ATAL JV

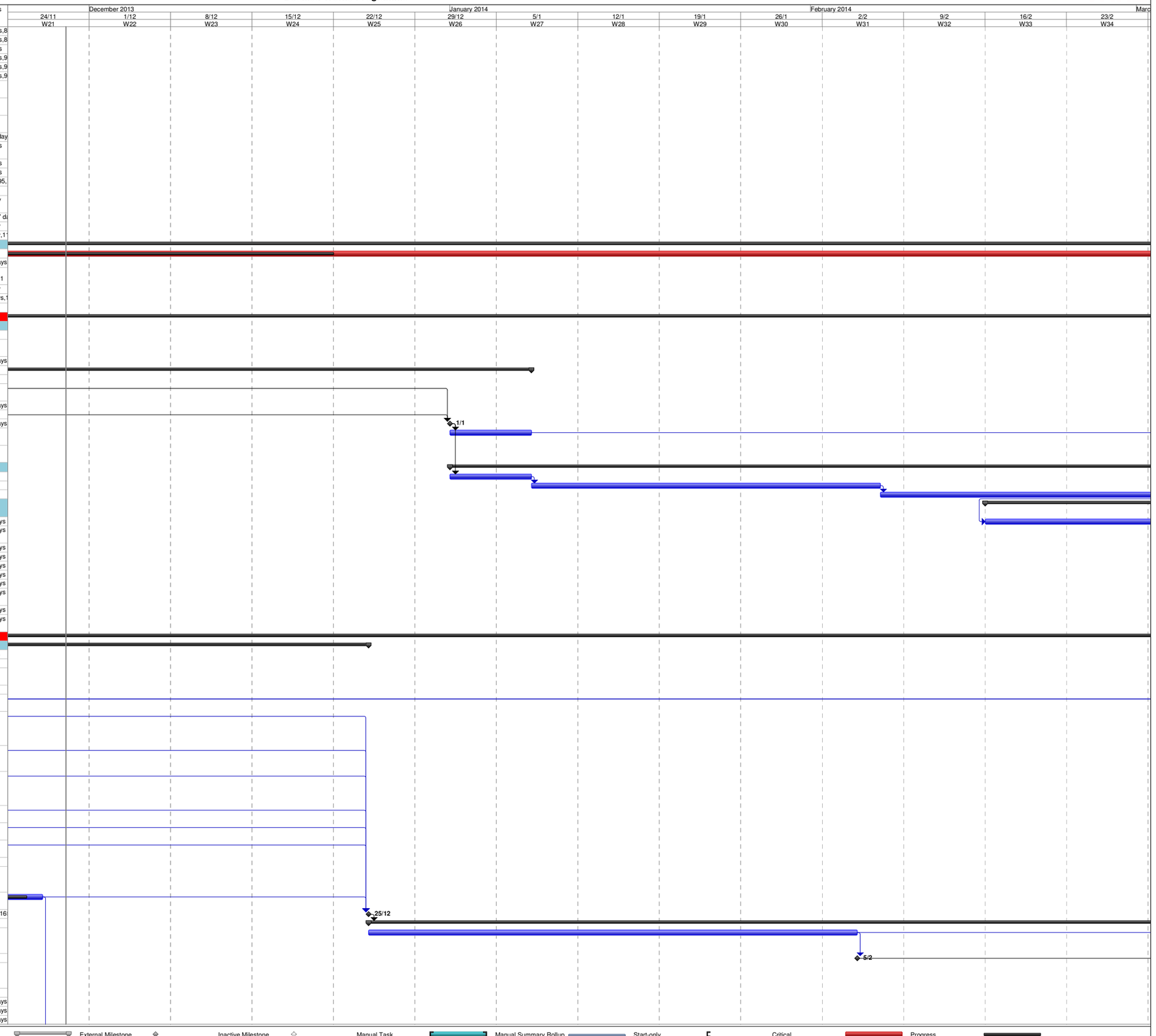
ID	Task Name	Duration	Start	Finish	% Complete	Predecessors
1	**DETAILED WORKS PROGRAMME**	**950.75 days**	**Fri 28/6/13**	**Wed 3/2/16**	23%	
2	LETTER OF ACCEPTANCE	0 days	Fri 28/6/13	Fri 28/6/13	100%	3FS-7 days
3	Section 1 COMMENCEMENT OF DESIGN AND CONSTRUCTION WORKS	0 days	Fri 5/7/13	Fri 5/7/13	100%	
4	Section 1 COMPLETION	0 days	Tue 3/2/15	Tue 3/2/15	0%	28,37,41,44,57,
5	Section 1 COMMENCEMENT OF DEFECT CORRECTION PERIOD	0 days	Wed 4/2/15	Wed 4/2/15	0%	4FS+1 day
6	Section 1 END OF DEFECT CORRECTION PERIOD	0 days	Wed 3/2/16	Wed 3/2/16	0%	216,139,4FS+3(
7	Section 2 COMMENCEMENT OF INTERIM OPERATION	0 days	Fri 1/11/13	Fri 1/11/13	0%	
8	Section 2 COMPLETION OF INTERIM OPERATION	0 days	Wed 31/12/14	Wed 31/12/14	0%	225,226,227,7F
9	Section 3 COMMENCEMENT OF OPERATIONS	0 days	Wed 4/2/15	Wed 4/2/15	0%	4FS+1 day,8
10	Mobilisation	154 days	Fri 28/6/13	Fri 29/11/13	98%	
11	Submit particulars of Management Team to SO	14 days	Fri 28/6/13	Fri 12/7/13	100%	2
12	Appoint Design Team	14 days	Fri 28/6/13	Fri 12/7/13	100%	2
13	Submit Staffing Proposal to SO	14 days	Fri 5/7/13	Fri 19/7/13	100%	3
14	Submit Designer's Warranty to Employer	28 days	Fri 12/7/13	Fri 9/8/13	100%	12
15	Appoint Design Checker	25 days	Fri 28/6/13	Tue 23/7/13	100%	2
16	Submit Design Checker Agreement and Warranty to SO	14 days	Fri 26/7/13	Fri 9/8/13	100%	15
17	SO to approve Designer and Design Checker	0 days	Tue 6/8/13	Tue 6/8/13	100%	12FS+14 days,1
18	SO to notify date for commencement of the Design	0 days	Tue 20/8/13	Tue 20/8/13	100%	17FS+14 days
19	Enter Sub-contract with Proposed Ship Builder	42 days	Fri 28/6/13	Fri 9/8/13	80%	2
20	Notify SO of engagement of Proposed Ship Builder	0 days	Fri 16/8/13	Fri 16/8/13	80%	19FS+7 days
21	Submit Sub-contractor Management Plan to SO	31 days	Fri 28/6/13	Mon 29/7/13	100%	2
22	Obtain Guarantee or provide Deposit to Employer	49 days	Fri 28/6/13	Fri 16/8/13	100%	2
23	Provide details of insurance policies to Employer	78 days	Fri 28/6/13	Sat 14/9/13	99%	2
24	Provide Uniform Design	7 days	Fri 5/7/13	Fri 12/7/13	100%	3
25	Provide Uniform to Workers	0 days	Fri 29/11/13	Fri 29/11/13	100%	7FS+28 days
26	Provide Uniform to ER	0 days	Tue 10/9/13	Tue 10/9/13	80%	24FS+2 mons
27	Book ISO 9001 certification audit	45 days	Fri 5/7/13	Mon 19/8/13	100%	2
28	Completion of Mobilisation	0 days	Fri 29/11/13	Fri 29/11/13	100%	11,12,13,14,15,
29	Programme	101 days	Fri 28/6/13	Mon 7/10/13	100%	
30	Prepare and submit 1st three month rolling programme	25 days	Fri 28/6/13	Tue 23/7/13	100%	2
31	Prepare & submit Contractor's Programme to SO	53 days	Fri 28/6/13	Tue 20/8/13	100%	2
32	SO consents to Contractor's Programme	0 days	Mon 9/9/13	Mon 9/9/13	100%	31FS+14 days
33	Prepare and submit 3 month Rolling Programme	11 days	Wed 14/8/13	Sun 25/8/13	100%	31
34	SO consents to 3-month Rolling Programme	0 days	Mon 9/9/13	Mon 9/9/13	100%	33
35	Prepare and submit Detailed Works Programme	14 days	Mon 9/9/13	Mon 23/9/13	100%	32
36	SO consents to Detailed Works Programme	0 days	Mon 7/10/13	Mon 7/10/13	100%	35FS+14 days
37	Completion of Programme	0 days	Mon 7/10/13	Mon 7/10/13	100%	32,36,34
38	Safety Plan	46 days	Fri 28/6/13	Tue 13/8/13	100%	
39	Prepare and submit draft Safety Plan to SO	14 days	Fri 28/6/13	Fri 12/7/13	100%	2
40	Arrange meeting to discuss draft Safety Plan with SO	0 days	Fri 19/7/13	Fri 19/7/13	100%	39FS+7 days
41	Submit final Safety Plan to SO	0 days	Tue 13/8/13	Tue 13/8/13	100%	2FS+35 days
42	Environmental Management Plan	55 days	Fri 28/6/13	Thu 22/8/13	100%	
43	Prepare and submit draft Environmental Management Plan to SO	21 days	Fri 28/6/13	Fri 19/7/13	100%	2
44	Finalise and submit Environmental Management Plan to SO	0 days	Thu 22/8/13	Thu 22/8/13	100%	2FS+45 days,43
45	Design Plan and Design Criteria	89 days	Fri 28/6/13	Wed 25/9/13	99%	
46	Prepare and submit Design Plan to SO and Design Checker	31 days	Fri 28/6/13	Mon 29/7/13	100%	2
47	Revise and resubmit Design Plan to SO	8 days	Tue 20/8/13	Wed 28/8/13	100%	46
48	SO approves Design Plan	0 days	Wed 25/9/13	Wed 25/9/13	90%	47FS+28 days
49	Prepare and submit E&M design criteria to Design Checker	39 days	Mon 29/7/13	Fri 6/9/13	100%	12,46
50	Prepare and submit Civil design criteria to Design Checker	45 days	Mon 29/7/13	Thu 12/9/13	100%	12,46
51	Possession of the Site	31.25 days	Mon 30/9/13	Fri 1/11/13	100%	
52	Take over Portion P1 (at WENT RA)	0 days	Fri 1/11/13	Fri 1/11/13	100%	3FS+30 days,7
53	Take over Portion P2 (at SCISTW for temporary offices)	0 days	Mon 30/9/13	Mon 30/9/13	100%	
54	**Commissioning Plan**	**42 days**	**Tue 1/7/14**	**Tue 12/8/14**	**0%**	
55	Prepare and submit Commissioning Plan to SO and Design Checker	14 days	Tue 1/7/14	Tue 15/7/14	0%	196FS-180 days,2
56	Design Checker certifies Commissioning Plan	14 days	Tue 15/7/14	Tue 29/7/14	0%	55
57	SO approves Commissioning Plan	0 days	Tue 12/8/14	Tue 12/8/14	0%	56FS+14 days
58	Marine Vessels	551 days	Thu 1/8/13	Tue 3/2/15	15%	
59	Design	212 days	Thu 1/8/13	Sat 1/3/14	67%	
60	Prepare and submit stage 1 documents to Stat Authorities/ Government (Marine Department)	14 days	Thu 1/8/13	Thu 15/8/13	100%	
61	Prepare Vessel General Arrangement	14 days	Thu 1/8/13	Thu 15/8/13	100%	19FS-2 days
62	Prepare Vessel Safety Plan	14 days	Thu 1/8/13	Thu 15/8/13	100%	19FS-2 days
63	Prepare Oil Pollution system	14 days	Thu 1/8/13	Thu 15/8/13	100%	19FS-2 days
64	Submit Stage 1 documents	0 days	Thu 15/8/13	Thu 15/8/13	100%	61,62,63
65	Stage 1 endorsed by Statutory Authorities/ Government Departments	0 days	Thu 12/9/13	Thu 12/9/13	100%	64FS+28 days
66	Prepare and submit AIP documents to SO and Design Checker	28 days	Thu 15/8/13	Thu 12/9/13	100%	60
67	SO consents to detailed Design proceeding (AIP)	0 days	Thu 10/10/13	Thu 10/10/13	100%	66FS+28 days,6
68	**Prepare and submit stage 2 DDA documents to Stat Authorities/ Government (Lloyd's Register)**	**79 days**	**Thu 12/9/13**	**Sat 30/11/13**	**67%**	
69	1st submission to Lloyd's (Hull Structure)	15 days	Thu 12/9/13	Fri 27/9/13	100%	65
70	2nd submission to Lloyd's (Machinery & Piping)	22 days	Mon 23/9/13	Tue 15/10/13	100%	69FS-4 days
71	3rd submission to Lloyd's (Electrical)	16 days	Tue 15/10/13	Thu 31/10/13	80%	70
72	4th submission to Lloyds (Outfitting & others)	30 days	Thu 31/10/13	Sat 30/11/13	20%	71
73	Stage 2 DDA endorsed by Statutory Authorities/ Government Departments (Lloyd's Register and Marine Department)	0 days	Sat 28/12/13	Sat 28/12/13	80%	68FS+28 days
74	Submit DDA documents to Design Checker	38 days	Wed 23/10/13	Sat 30/11/13	20%	67,72FF
75	Design Checker certifies Detail Design drawings	0 days	Sat 28/12/13	Sat 28/12/13	0%	74FS+28 days
76	Provide list of certified Design drawings to SO	0 days	Sat 28/12/13	Sat 28/12/13	0%	74FS+28 days
77	SO consents to certified Design (DDA)	0 days	Sat 22/2/14	Sat 22/2/14	0%	76FS+56 days,7
78	Deposit Registered Design with Employer, SO and Design Checker	7 days	Sat 22/2/14	Sat 1/3/14	0%	77
79	**Ship Building**	547 days	Thu 1/8/13	Fri 30/1/15	9%	18
80	**Procurement and delivery of machinery**	364 days	Thu 1/8/13	Thu 31/7/14	25%	
81	**Procurement and delivery of materials**	105 days	Tue 20/8/13	Tue 3/12/13	80%	60
82	Survey of hull plating material test (LRS)	2 days	Fri 1/11/13	Sun 3/11/13	80%	81FS-32 days
83	**Production design lofting**	70 days	Thu 10/10/13	Thu 19/12/13	50%	67
84	Survey of preparation before welding (LRS)	16 days	Wed 16/10/13	Fri 1/11/13	50%	83SS+6 days
85	**Block construction**	151 days	Fri 15/11/13	Tue 15/4/14	0%	75
86	Keel laid (survey by LRS)	0 days	Thu 27/2/14	Thu 27/2/14	0%	81,83,75,85FS-
87	**Hull construction**	75 days	Thu 27/2/14	Tue 13/5/14	0%	86SS
88	Hull construction survey/hull plating X-ray examination (LRS)	105 days	Thu 27/3/14	Thu 10/7/14	0%	87SS+28 days
89	Fuel / deep / structural tanks / hydraulic test (LRS)	105 days	Thu 27/3/14	Thu 10/7/14	0%	87SS+28 days
90	**Superstructure construction**	75 days	Mon 31/3/14	Sat 14/6/14	0%	87FS-45 days,8
91	Survey of structural fire protection (HKMD)	61 days	Sun 1/6/14	Fri 1/8/14	0%	90FS-13 days
92	Survey of prevetion of oil pollution installation (HKMD)	61 days	Sun 1/6/14	Fri 1/8/14	0%	90FS-13 days
93	Survey of air pollution requirement (HKMD)	61 days	Sun 1/6/14	Fri 1/8/14	0%	90FS-13 days
94	**Machinery installation**	105 days	Sun 1/6/14	Sun 14/9/14	0%	80FS-2 mons,9(
95	**Electrical work**	120 days	Sat 14/6/14	Sun 12/10/14	0%	87,90
96	**Piping work**	165 days	Mon 31/3/14	Fri 12/9/14	0%	87FS-45 days,8
97	**Furnishing**	90 days	Tue 29/7/14	Mon 27/10/14	0%	96FS-45 days
98	**Outfitting**	90 days	Tue 29/7/14	Mon 27/10/14	0%	96FS-45 days
99	**Painting**	135 days	Sun 29/6/14	Tue 11/11/14	0%	90FS+15 days
100	Survey of fore and aft peaks leakage test (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,8



Project: DC/2009/19
Date: 30 Sep 2013

Task | Milestone | Project Summary | External Milestone | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | Critical | Progress
Split | Summary | External Tasks | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only | Critical Split | Deadline

ID	Task Name	Duration	Start	Finish	% Complete	Predecessors
101	Survey of engine room flooding test (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,8
102	Survey of hull hose test (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,8
103	Watertight / weathertight appliances / Hose test (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days
104	Survey of sea water inlet valve hydraulic test (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,9
105	Survey of electrical propulsion & Gensets (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,9
106	Survey of alarms & safety devices test (HKMD)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,9
107	Pumping and piping / Hydraulic test as necessary (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,96
108	Survey of hydraulic test of CO2 & fire-fighting piping (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,96
109	Survey of CO2 piping system & fire-fighting piping (HKMD)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days,96
110	Survey of electrical fittings / Megger test (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	95,99FS-10 day
111	Verification of principal dimensions and Draft Marks (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days
112	Survey of tonnage measurement (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days
113	Survey of Load Line/Freeboard Marks (LRS)	29 days	Sat 1/11/14	Sun 30/11/14	0%	99FS-10 days
114	**Launching**	0 days	Sun 30/11/14	Sun 30/11/14	0%	94,97,98,96,95,
115	**Shipyard trials and delivery**	14 days	Sun 30/11/14	Sun 14/12/14	0%	114
116	Inclining Experiment at shipyard without gantry crane (LRS)	14 days	Mon 1/12/14	Mon 15/12/14	0%	115SS+1 day
117	Survey of general inspection (HKMD)	16 days	Sun 11/1/15	Tue 27/1/15	0%	116,123FS+7 da
118	Survey of Sea Trial (LRS)	6 days	Tue 20/1/15	Mon 26/1/15	0%	124FS+1 day
119	Final Survey of safety equipment, etc (HKMD)	2 days	Wed 28/1/15	Fri 30/1/15	0%	118FS+1 day,1
120	Gantry Crane	541 days	Wed 7/8/13	Fri 30/1/15	25%	
121	**Procurement and fabrication**	456 days	Wed 7/8/13	Thu 6/11/14	30%	
122	**Delivery, assembly and trial**	60 days	Fri 21/11/14	Tue 20/1/15	0%	121FS+15 days
123	**Installation, testing & commissioning, survey and licensing**	20 days	Mon 15/12/14	Sun 4/1/15	0%	122SS+21 days,115FS+1
124	Inclining Experiment at HKG with gantry crane (LRS)	14 days	Mon 5/1/15	Mon 19/1/15	0%	123FS+1 day
125	**Receive licence**	0 days	Fri 30/1/15	Fri 30/1/15	0%	123FS+5 days,1
126	**Phases 1 & 2 Commissioning tests**	4 days	Fri 30/1/15	Tue 3/2/15	0%	125
127	Sludge Containers	604.75 days	Fri 9/8/13	Sun 5/4/15	5%	
128	I - AIP Design Submission	54 days	Fri 9/8/13	Wed 2/10/13	99%	
129	Preparation of Stage 1 AIP documents	26 days	Fri 9/8/13	Wed 4/9/13	100%	
130	Submit Stage 1 AIP Design documents to Design Checker and SO	0 days	Wed 4/9/13	Wed 4/9/13	100%	129
131	SO consents to AIP Design Submission proceeding	0 days	Wed 2/10/13	Wed 2/10/13	20%	130FS+28 days
132	II - DDA Design Submission	98 days	Wed 2/10/13	Wed 8/1/14	0%	131
133	Preparation of Stage 2 DDA documents	7 days	Wed 2/10/13	Wed 9/10/13	0%	131
134	Submit Detailed DDA Design Submission to Design Checker and SO	0 days	Wed 9/10/13	Wed 9/10/13	0%	133
135	Design Checker certifies DDA Detail Design drawings	0 days	Wed 6/11/13	Wed 6/11/13	0%	134FS+28 days
136	Provide list of certified DDA Design drawings to SO	0 days	Wed 6/11/13	Wed 6/11/13	0%	135
137	SO consents to certified Design (DDA)	0 days	Wed 1/1/14	Wed 1/1/14	0%	136FS+56 days
138	Deposit Registered Design with Employer, SO and Design Checker	7 days	Wed 1/1/14	Wed 8/1/14	0%	137
139	Analysis/review and subsequent proposal for the remaining sludge containers	60 days	Wed 4/2/15	Sun 5/4/15	0%	5
140	**III - Manufacturing/ Procurement**	**196 days**	**Wed 1/1/14**	**Wed 16/7/14**	**0%**	
141	Procurement	7 days	Wed 1/1/14	Wed 8/1/14	0%	137
142	Construct a prototype container	30 days	Wed 8/1/14	Fri 7/2/14	0%	141
143	Confirm a prototype container	24 days	Fri 7/2/14	Mon 3/3/14	0%	142
144	**Fabrication and delivery of 1st batch of 100 containers**	**150 days**	**Sun 16/2/14**	**Wed 16/7/14**	**0%**	
145	Material procurement	30 days	Sun 16/2/14	Tue 18/3/14	0%	143FS-15 days
146	Seals Procurement	30 days	Mon 3/3/14	Wed 2/4/14	0%	145FS-15 days
147	Material preparation	20 days	Tue 18/3/14	Mon 7/4/14	0%	146FS-15 days
148	Shot blasting	20 days	Sun 23/3/14	Sat 12/4/14	0%	147FS-15 days
149	Plate cutting	30 days	Fri 28/3/14	Sun 27/4/14	0%	148FS-15 days
150	Structure commenced	45 days	Mon 7/4/14	Thu 22/5/14	0%	149FS-20 days
151	Paint commenced	45 days	Tue 22/4/14	Fri 6/6/14	0%	150FS-30 days
152	Assembly commenced	45 days	Wed 7/5/14	Sat 21/6/14	0%	151FS-30 days
153	Overall inspection	45 days	Thu 22/5/14	Sun 6/7/14	0%	152FS-30 days
154	Phases 1 & 2 Commissioning tests (including leak tests of containers)	20 days	Thu 26/6/14	Wed 16/7/14	0%	153FS-10 days
155	Improvement Works	528 days	Wed 14/8/13	Sat 24/1/15	26%	
156	I - AIP Design Submission	133 days	Wed 14/8/13	Wed 25/12/13	99%	
157	Measure seabed levels at SCISTW	13 days	Wed 14/8/13	Tue 27/8/13	100%	3FS+30 days
158	Measure seabed levels at WENT	2 days	Mon 30/9/13	Wed 2/10/13	0%	157
159	Initial inspection to existing SCISTW facilities and seawall.	8 days	Tue 27/8/13	Wed 4/9/13	100%	157
160	Initial inspection to existing WENT facilities and seawall.	12 days	Wed 4/9/13	Mon 16/9/13	100%	159
161	Prepararation of Stage 1 AIP documents	28 days	Wed 25/9/13	Wed 23/10/13	100%	48,159,160
162	Make submissions for investigation and monitoring on the environmental aspect before commencement of and during Construction Works as stated in the Employer's Requirements – Part B.	28 days	Wed 25/9/13	Wed 23/10/13	100%	48
163	Prepare submission for carrying out temporary traffic diversions for construction work on existing roads within SCISTW.	28 days	Wed 25/9/13	Wed 23/10/13	100%	48
164	Prepare Submission of diversion of existing pipes and flows, modifications to existing facilities, which may or may not be subject to access restrictions and limitations on loading to the existing seawall and other structures.	28 days	Wed 25/9/13	Wed 23/10/13	100%	48
165	Identify Limitations, constraints and restrictions within SCISTW and WENT RA	28 days	Wed 25/9/13	Wed 23/10/13	100%	48
166	Liaison with utilities undertakers, government departments, EPD and WSD	28 days	Wed 25/9/13	Wed 23/10/13	100%	48
167	Interface requirements with other contractors within SCISTW and disposal sites	28 days	Wed 25/9/13	Wed 23/10/13	100%	48
168	Submit Stage 1 AIP documents to Stat Authorities/ Governmer	0 days	Wed 23/10/13	Wed 23/10/13	100%	161
169	Stage 1 endorsed by Statutory Authorities/ Government Departments (including Marine Department, DSD/ST2 and EPD)	0 days	Wed 20/11/13	Wed 20/11/13	100%	168FS+28 days
170	Submit Stage 1 AIP documents to Design Checker and SO	7 days	Wed 20/11/13	Wed 27/11/13	80%	169
171	SO consents to DDA Design Submission proceeding	0 days	Wed 25/12/13	Wed 25/12/13	0%	162,163,164,16
172	**II - DDA Design Submission**	**168 days**	**Wed 25/12/13**	**Wed 11/6/14**	**0%**	**171**
173	Preparation of Stage 2 DDA documents	42 days	Wed 25/12/13	Wed 5/2/14	0%	
174	Submit stage 2 DDA documents to Stat Authorities/ Governme	0 days	Wed 5/2/14	Wed 5/2/14	0%	173
175	Stage 2 endorsed by Statutory Authorities/ Government Departments (including Marine Department, DSD/ST2 and EPD)	0 days	Wed 5/3/14	Wed 5/3/14	0%	174FS+28 days
176	Submit Stage 2 documents to Design Checker and SO	7 days	Wed 5/3/14	Wed 12/3/14	0%	175
177	Design Checker certifies Detail Design drawings	0 days	Wed 9/4/14	Wed 9/4/14	0%	176FS+28 days
178	Provide list of certified Design drawings to SO	0 days	Wed 9/4/14	Wed 9/4/14	0%	176FS+28 days
179	SO consents to certified Design (DDA)	0 days	Wed 4/6/14	Wed 4/6/14	0%	178FS+56 days



ID	Task Name	Duration	Start	Finish	% Complete	Predecessors
180	Deposit Registered Design with Employer, SO and Design Checker	7 days	Wed 4/6/14	Wed 11/6/14	0%	179
181	**III - Construction at SCISTW**	**263 days**	**Wed 9/4/14**	**Sun 28/12/14**	**0%**	
182	Provide welfare facilities on Site	14 days	Wed 11/6/14	Wed 25/6/14	0%	180
183	carry out temporary traffic diversions for construction work on existing roads within SCISTW	14 days	Wed 11/6/14	Wed 25/6/14	0%	180
184	excavation for utility diversions	14 days	Wed 25/6/14	Wed 9/7/14	0%	183
185	diversion of existing pipes and flows, modifications to existing facilities, which may or may not be subject to access restrictions and limitations on loading to the existing seawall and other structures	14 days	Wed 9/7/14	Wed 23/7/14	0%	184
186	Interface requirements with other contractors within SCISTW and disposal sites	14 days	Wed 11/6/14	Wed 25/6/14	0%	180
187	Material Procurement for construction (including fender, railing, cable, pillar box, pipe)	60 days	Wed 9/4/14	Sun 8/6/14	0%	177
188	Repair damage to existing kerbs along seawall	21 days	Wed 23/7/14	Wed 13/8/14	0%	161FS+12 wks,180,183,18
189	Repair damage to existing landings at seafront	28 days	Wed 6/8/14	Wed 3/9/14	0%	188FS-1 wk
190	Replace existing fenders at seawall	28 days	Wed 27/8/14	Wed 24/9/14	0%	189FS-1 wk
191	Upgrade existing bollards at berthing area (if required)	14 days	Wed 24/9/14	Wed 8/10/14	0%	190
192	New manhole and sewer for receipt of Marine Vessel foul water	28 days	Wed 27/8/14	Wed 24/9/14	0%	189FS-1 wk
193	New pedestal at berthing area	28 days	Wed 8/10/14	Wed 5/11/14	0%	192FS-1 wk,191
194	Sludge Leveling System (Contractor proposal)	28 days	Wed 5/11/14	Wed 3/12/14	0%	193
195	Sludge Unloading Control and Indication System (Contractor proposal)	28 days	Wed 26/11/14	Wed 24/12/14	0%	194FS-1 wk
196	Phases 1 & 2 Commissioning tests	4 days	Wed 24/12/14	Sun 28/12/14	0%	195
197	**IV - Construction at WENT RA**	**58 days**	**Wed 25/6/14**	**Fri 22/8/14**	**0%**	**161FS+12 wks,177,180,17**
198	Replace existing security fencing	21 days	Wed 25/6/14	Wed 16/7/14	0%	182
199	Install new railing at berthing area	14 days	Wed 9/7/14	Wed 23/7/14	0%	198FS-1 wk
200	Upgrade existing bollards at berthing area (if required)	14 days	Wed 23/7/14	Wed 6/8/14	0%	199
201	New pedestal at berthing area (Contractor Proposal)	28 days	Wed 23/7/14	Wed 20/8/14	0%	199
202	Phases 1 & 2 Commissioning tests	2 days	Wed 20/8/14	Fri 22/8/14	0%	201
203	**V - E&M Works**	**423 days**	**Wed 27/11/13**	**Sat 24/1/15**	**7%**	
204	Prepare the electrical system analysis	60 days	Wed 27/11/13	Sun 26/1/14	30%	170
205	Submit electrical system analysis to SO	0 days	Sun 26/1/14	Sun 26/1/14	0%	204
206	Prepare DDA Design Submission for E&M works	60 days	Sun 26/1/14	Thu 27/3/14	0%	204
207	Submit DDA documents to Design Checker and SO	0 days	Thu 27/3/14	Thu 27/3/14	0%	206
208	Design Checker certifies Detail Design drawings	0 days	Thu 24/4/14	Thu 24/4/14	0%	207FS+28 days
209	Provide list of certified Design drawings	0 days	Thu 24/4/14	Thu 24/4/14	0%	208
210	SO consents to DDA Design	0 days	Thu 22/5/14	Thu 22/5/14	0%	207FS+56 days
211	Deposit Registered Design with Employer, SO and Design Che	7 days	Thu 22/5/14	Thu 29/5/14	0%	210
212	Construct On-shore power supply for WENT RA, including liaising with EPD and CLP (Contractor Proposal)	40 days	Wed 20/8/14	Mon 29/9/14	0%	211,201
213	Power cabling at SCISTW berthing area	40 days	Wed 5/11/14	Mon 15/12/14	0%	193
214	All other E&M equipment	40 days	Mon 15/12/14	Sat 24/1/15	0%	213
215	**Defect Correction Period**	**364 days**	**Wed 4/2/15**	**Wed 3/2/16**	**0%**	
216	Remedial Works in Defect Correction Period	364 days	Wed 4/2/15	Wed 3/2/16	0%	4,5
217	Interim Operation Plan	80 days	Sat 3/8/13	Tue 22/10/13	100%	
218	Prepare and submit Interim Operation Plan to SO and Design Checker	14 days	Sat 3/8/13	Sat 17/8/13	100%	7FS-90 days
219	Revise and resubmit Interim Operation Plan to SO and Design Checker	12 days	Thu 12/9/13	Tue 24/9/13	100%	218
220	Design Checker certifies Interim Operation Plan	0 days	Tue 8/10/13	Tue 8/10/13	100%	219FS+14 days
221	Submit certified Interim Operation Plan to SO	0 days	Tue 8/10/13	Tue 8/10/13	100%	220,3FS+42 days
222	SO consents to Interim Operation Plan	0 days	Tue 22/10/13	Tue 22/10/13	100%	221FS+14 days
223	SO to give notice of commencement of Interim Operation	0 days	Fri 11/10/13	Fri 11/10/13	100%	7FS-3 wks
224	Interim Operation	463 days	Fri 1/11/13	Sat 7/2/15	0%	
225	Take over 150 - 200 existing sludge containers	0 days	Fri 1/11/13	Fri 1/11/13	100%	7
226	Take over the Container Maintenance Building	0 days	Fri 1/11/13	Fri 1/11/13	70%	7
227	Take over the Vehicle Washing Machine at Northern Sludge Silos (subject to SO instruction)	0 days	Fri 1/11/13	Fri 1/11/13	0%	7
228	Perform Interim Opeartion	425 days	Tue 5/11/13	Sun 4/1/15	0%	7,8FF,222FS+1
229	Perform Extended Interim Operation	34 days	Sun 4/1/15	Sat 7/2/15	0%	228,4FF
230	**Operation Plan**	**72 days**	**Thu 6/11/14**	**Sat 17/1/15**	**0%**	
231	Prepare and submit Operation Plan to SO and Design Checker	30 days	Thu 6/11/14	Sat 6/12/14	0%	9FS-90 days
232	Design Checker certifies Operation Plan	28 days	Sat 6/12/14	Sat 3/1/15	0%	231
233	SO consents to Operation Plan	0 days	Sat 17/1/15	Sat 17/1/15	0%	232FS+14 days
234	SO to give notice of commencement of Operation	0 days	Wed 14/1/15	Wed 14/1/15	0%	9FS-3 wks

Project: DC/2009/19
Date: 30 Sep 2013

Task | Milestone | Project Summary | External Milestone | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | Critical | Progress
Split | Summary | External Tasks | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only | Critical Split | Deadline