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 March 2015

(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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CE/Harbour Area Treatment Scheme
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22 April 2015
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 March 2015 (Issue No. 64) 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 STW 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
Cinotech Consultants Ltd. Dr. Priscilla Choy By email

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ABBREVIATION AND ACRONYM

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

EXECUTIVE SUMMARY

Introduction

1. This is the 64th 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/G and separate ETs were appointed under each contract pursuant to Condition 2.1 of the EP.

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

4. The EM&A programme of Contract DC/2009/19 was commenced on 1 September 2013. Major construction works had been completed on 05 March 2015.

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 March 2015.

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, DC/2009/17, DC/2009/18 and DC/2009/19 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 February 2015	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/G) for the Project was issued on 9th May 2014 by the Environmental Protection Department (hereinafter called EPD) to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.

1.2 The general location plan for the Contracts: DC/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 64th consolidated monthly EM&A report summarizing the EM&A works conducted for the Project at SCISTW in March 2015.

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 3109)	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Y.H. Fung (Tel: 3713 3109)	Ms 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)	Ms. Cherry Mak (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	Mr Ted Tang (Tel: 2370 4311)	Mr Ted Tang (Tel: 2370 4311)
ER's Coordinator	Mr Jason Yu (Tel: 2371 9407)	Mr Jason Yu (Tel: 2371 9407)
Independent Environmental Checker	Dr. Anne Kerr (Tel:2828 5757)	Dr. Anne Kerr (Tel:2828 5757)
Contractor	China State- ATAL Joint Venture	Chun Wo – CEC Joint Venture
Site Agent	Mr. Charles Tse (Tel: 9270 3384)	Mr. W.C. Lee (Tel: 3975 6388)
Environmental Officer	Mr. K.K Tam (Tel: 2370 3010)	Mr. Shelton Chan (Tel: 3975 6331)
Environmental Team	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)	Cinotech Consultant Limited Dr. Priscilla Choy (Tel: 2151 2089)
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	
Senior 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: • BCM inspection for upper riser shaft. Production Shaft (Tunnel L): • Permanent invert and vault lining construction;

	• Riser shaft tunnel permanent lining construction; • BCM inspection for Tunnel L lining.
DC/2009/17	Portion 5: • Fabrication of steel staircase at SST no. 7 was delivered on site and will be installed after piling works. • Painting for external wall of SST nos. 6 & 7 was completed. Portion 6: • The erection of hoarding for demolition works is in progress and expected to complete in early March. • Advanced pre-drilling works for piling works before demolition works at Portion 6 were completed. External Works: • SWAC / PMAC submission and implementation of TTA for the commencement of external works were in progress. • Connection of sludge feed pipes between existing sludge storage tank nos. 3 & 4 at Zone C5 was completed. The installation of jet mixer was in progress. • Defect rectifications for external works were in progress. • Construction of permanent carriageway and chemical unloading facilities at Zone A6 (Stage 3) were completed.
DC/2009/10	• At MPS2, installation of sub-frame of curtain wall and Glass Panel is in progress. • For E&M works, Installation of support for guide pipe inside wet well wall (Hall A Side) is in progress. Installation of pump riser for Hall A side is in progress. The installation of discharge pipe for pump motor No.1~No.4 at Maintenance Area is in progress. The startup test for pump motor No.5,7 and 8 was completed. Installation and welding for DN3000 super duplex pipe (Item 4,9,9A,10) are in progress. • At Portion 3, construction of Rapid Mixing Flocculation Tanks was completed. The construction of Scum Pump Room is in progress and water tightness test of Main Distribution Channel is in progress. • Installation of S.S. covers and sludge scraper at new PSTs were in progress and modification works at existing PST#10,12,34~37 were in progress. • At Main flow culvert, construction of wall and slab up to +3.7mPD for Bay 3 was completed. For long service duct, the construction of RC works for Bay 2 to Bay 4 was completed. • At Portion 8, Steel storage tanks erection for Sodium Hypochlorite Storage Compound is in progress. Temporary bundwall for demolish of existing bundwall was completed. • At Portion 5, the construction of lower manifold is in progress • At Portion 6, the construction of manifold is in progress. • At Odour Duct Bridge, the installation of Pot Bearing (CEPT side) was completed and the construction of RC Beam and Decking is in progress.
DC/2009/18	<u>Portion 3:</u> • Concreting of Tunnel Lining at Riser Shaft Tunnel Extension;

	• Excavation & Lateral Support at Chamber 15A; and • ABWF Works, Steel Works and E&M Equipment Installation at Dechlorination Compound. <u>Portion 7:</u> • Concreting of Tunnel Lining and Back-grouting at Drop Shaft Tunnel Extension; and • Sheet Piling Construction at FDC No. 2.
DC/2009/19	• Major site construction works were completed on 05 March 2015.

Summary of EM&A Requirements

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

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

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

1.12 This report summarized the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely dust, noise levels, and audit works conducted for the Project in March 2015, 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 (S/N. N6733 and N6734)	Sibata Model no. LD-3 and LD-3B (Serial no. 251634, 095050 and 095029)
		Sibata: LD-3 (S/N. 251634), LD-3B (S/N. 095039 and 954253)	
HVS Sampler	GMW GS-2310 (S/N. 1254)	TISCH: Model no. TE-5170 (S/N. 2355 and 3219)	Tisch Model no. TE-5170 (Serial no. 2356)
Calibrator	CM-AIR-43 (S/N. 0438320)	TISCH: Model TE-5025A (S/N. 0993)	Tisch Model TE-5025A (Serial no. 0993); Met One model AEROCET-531 (Serial no. N6734)

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	150	120 - 187	346	500
AM7	103	16 - 240	322	
AM8	93	19 - 237	307	
AM9	148.5	59.3-304.9	318	
24 hours TSP				
AM6	86	81 - 91	196	260
AM7	122	63 - 158	207	
AM8	73	49 - 99	158	
AM9	105.4	84.1-118.7	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 (S/N 00603867)	SVANTEK Model no: SVAN 955 (S/N. 14303), SVAN 957 (S/N. 21455 and 21460)	SVANTEK, Model no: SVAN 955 and 957 (Serial no. 14303. 21455 and 21460)
Calibrator	Rion NC-73 (S/N 10997142)	SVANTEK Model no: SV 30A (S/N. 24803 and 24791)	SVANTEK, Model no: SV 30A (Serial no. 24803and 24791)

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	L_{eq}(30 min.) dB(A)	0700-1900 hrs on weekdays	Once per week

NM7	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	60 - 61	75.0
NM6	62.3 - 67.2	
NM7	63.2 - 69.9	
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	57 - 60	70.0
NM7	64.0 - 64.4	
All days during 2300 to 0700 hrs. of the next day		
NM7	58.5 - 59.3*	55.0

Remark:* Since the construction noise levels recorded during restricted hours from 23:00 to 07:00 of 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	5, 12, 19 and 25 March 2015
DC/2009/10	5, 12, 19 and 26 March 2015
DC/2009/17	4, 11, 19 and 25 March 2015
DC/2009/18	4, 11, 17 and 25 March 2015
DC/2009/19	4 March 2015

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	2,510*(m^3)	270*(kg) and 328*(m^3)	0	0*	0*	0*
DC/2009/10	9(m^3)	964(kg) and 10(m^3)	0	0	0	0
DC/2009/17	17(m^3)	162,260(kg) and 61(ton)	0	0	0	0
DC/2009/18	556(m^3)	159,924(kg) and 473(m^3)	704(kg)	0	0	0
DC/2009/19	43,900(kg)	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	2,510 m^3 of Inert C&D materials were disposed at Chai Wan Barging Point, TKO Area 137 and Tuen Mun Area 38; 270 kg of paper/cardboard packaging was generated.
DC/2009/10	Tuen Mun Area 38 Fill Bank and NENT Landfill; 905 kg of metals, 56 kg of paper/cardboard and 3 kg of plastics were generated during the reporting period.
DC/2009/17	Tuen Mun Area 38 Fill Bank and NENT Landfill; 161,670 kg of metals and 590 kg of paper/cardboard were generated 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; 159,861 kg of metals and 63 kg of paper/cardboard packaging were generated during the reporting period.
DC/2009/19	Tuen Mun Area 38 Fill Bank and WENT landfill; No non-inert C&D waste was generated during 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, road works, 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 zones 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 dust generation by adequate water spraying or covering by tarpaulin during dry days;
- To cover the stockpile with tarpaulin to reduce dust generation;
- To follow up any exceedance caused by the construction works; and
- To implement dust suppression measures on all haul roads, stockpiles, dried/unpaved surfaces and excavation/road breaking works.

Noise

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

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

Water Quality

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

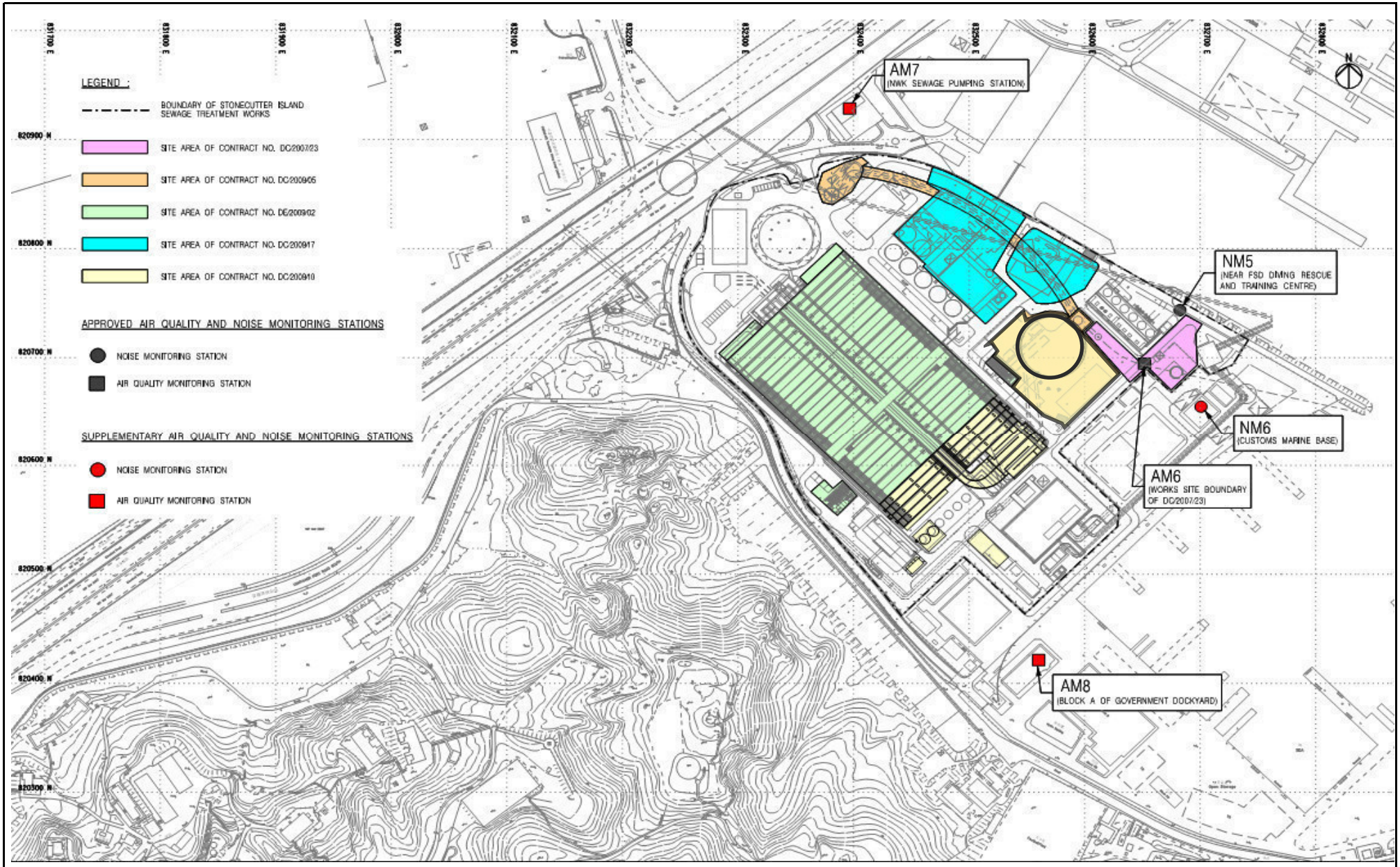
Waste/Chemical Management

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

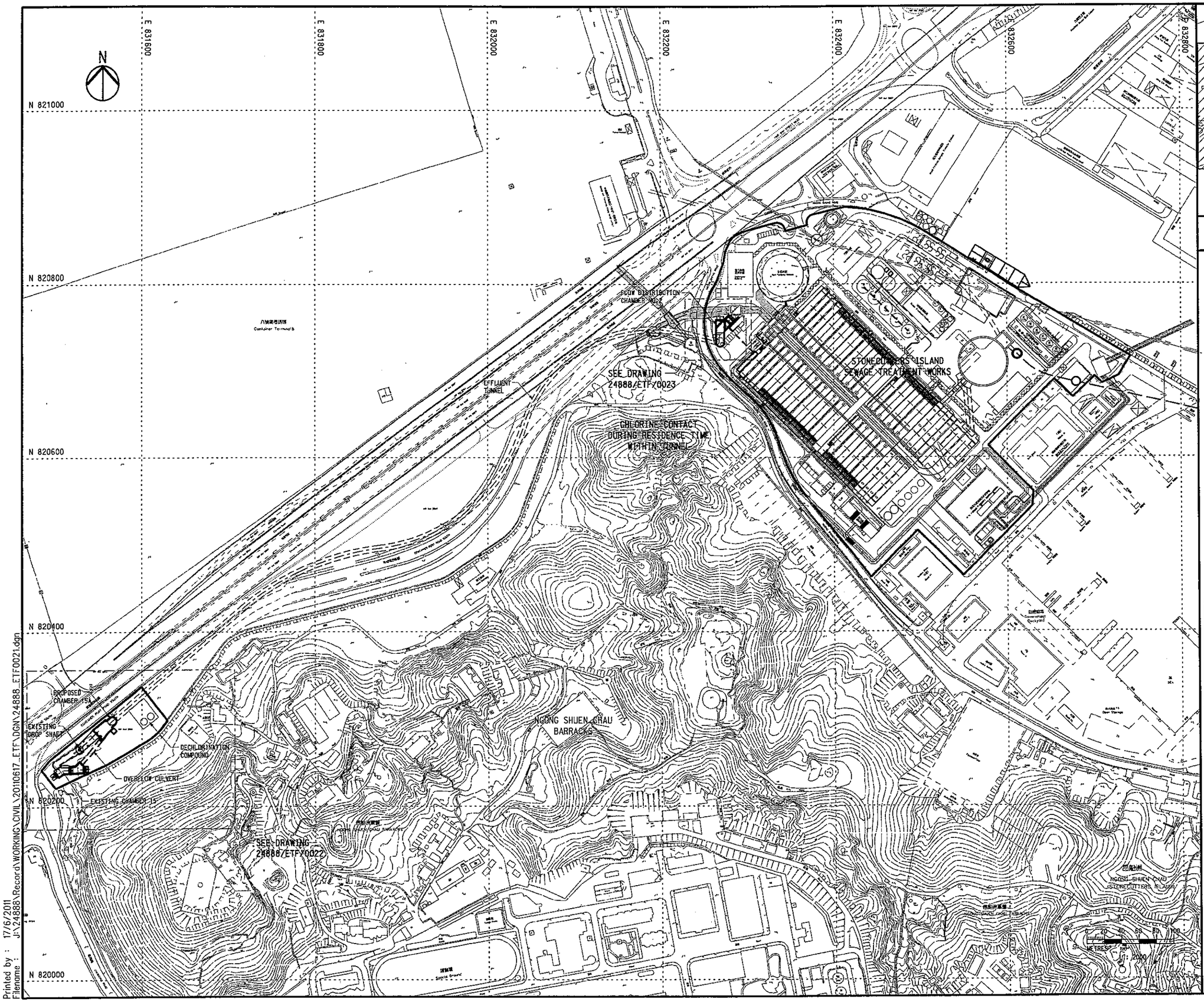
Landscape and Visual

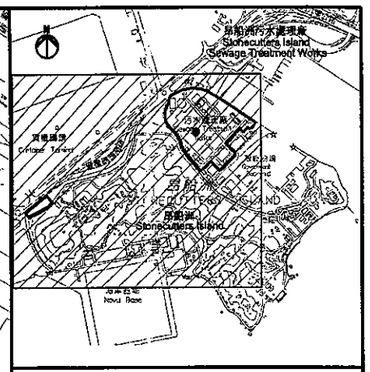
- To erect and maintain the protection fence around the retaining tree; and
- To avoid any heavy materials placed into tree protection zone.

FIGURES



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





KEY PLAN

LEGEND:

BOUNDARY OF SCISTW

ALIGNMENT OF EFFLUENT TUNNEL

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

Consultant

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

Project title

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

Drawing title

GENERAL LAYOUT
(SHEET 1)

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

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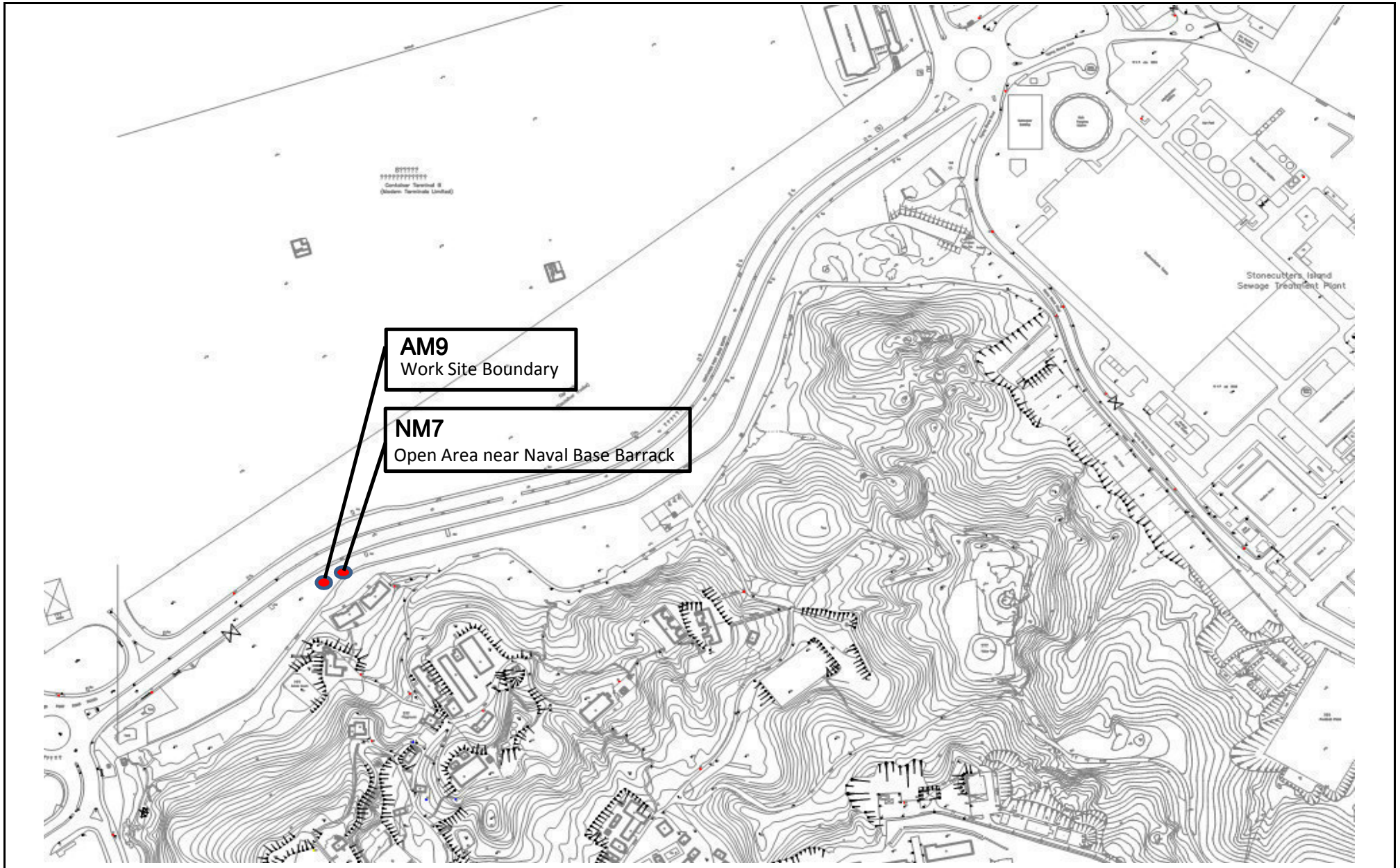

Title	Contract No. DC/2009/18 HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities	Scale N.T.S	Project No. MA11043	CINOTECH
	Locations of Impact Air Quality and Noise Monitoring Stations	Date 12/2011	Figure 3	

APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Appendix A Action and Limit Levels

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

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
AM6	346	196	500	260
AM7	322	207	500	260
AM8	307	158	500	260
AM9	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 : March 2015

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

April 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Apr	02-Apr	03-Apr	04-Apr
				1-hr and 24-hr Monitoring	Public Holiday	Public Holiday
05-Apr	06-Apr	07-Apr	08-Apr	09-Apr	10-Apr	11-Apr
	Public Holiday	Public Holiday	1-hr and 24-hr Monitoring			
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
	1-hr and 24-hr Monitoring			1-hr and 24-hr Monitoring		
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
			1-hr and 24-hr Monitoring			
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
		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: March 2015

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

April 2015

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

DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Impact Air Quality and Noise Monitoring Schedule (March 2015)

.

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

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

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

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 SCISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (April 2015)

.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Apr	2-Apr	**3-Apr**	**4-Apr**
			1hr TSP X 3 Noise (NM6)			
5-Apr	**6-Apr**	**7-Apr**	8-Apr	9-Apr	10-Apr	11-Apr
	24 hr TSP	1hr TSP X 3 Noise (NM6)			24 hr TSP	
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
	1hr TSP X 3 Noise (NM6)			24 hr TSP	1hr TSP X 3	
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
			24 hr TSP	1hr TSP X 3 Noise (NM6)		
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
		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 (March 2015)

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

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

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

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

Contract No. DC/2009/18

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

Tentative Impact Air Quality and Noise Monitoring Schedule (April 2015)

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

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

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

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

APPENDIX C
CALIBRATION CERTIFICATES OF THE ENVIRONMENTAL MONITORING EQUIPMENT

High-Volume TSP Sampler
5-Point Calibration Record9

Location	:	AM6
Calibrated by	:	P.F.Yeung
Date	:	18/01/2015

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1022
Ta(K)	:	287

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.7	3.354	1.616	57	58.44
2	13 holes	8.8	3.041	1.466	52	53.32
3	10 holes	6.5	2.614	1.260	44	45.11
4	7 holes	4.5	2.175	1.048	36	36.91
5	5 holes	2.6	1.653	0.797	25	25.63

Sampler Calibration Relationship

Slope(m):40.044 Intercept(b): -5.664 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan Date: 23/01/2015

High-Volume TSP Sampler
5-Point Calibration Record9

Location	:	AM6
Calibrated by	:	P.F.Yeung
Date	:	18/03/2015

Sampler

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

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1020
Ta(K)	:	289

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.4	3.440	1.658	61	62.16
2	13 holes	9.2	3.091	1.489	55	56.04
3	10 holes	6.4	2.578	1.242	46	46.87
4	7 holes	4.2	2.088	1.006	38	38.72
5	5 holes	2.7	1.674	0.807	30	30.57

Sampler Calibration Relationship

Slope(m):36.838 Intercept(b): 1.173 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan Date: 23/03/2015

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2015 Rootsmeter S/N 0438320 Ta (K) - 292
Operator Tisch Orifice I.D. - 2454 Pa (mm) - 756.92

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	1.4460	3.2	2.00
2	NA	NA	1.00	1.0300	6.4	4.00
3	NA	NA	1.00	0.9180	7.9	5.00
4	NA	NA	1.00	0.8780	8.7	5.50
5	NA	NA	1.00	0.7240	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0121	0.6999	1.4258		0.9958	0.6886	0.8784
1.0078	0.9785	2.0163		0.9916	0.9627	1.2422
1.0057	1.0955	2.2543		0.9895	1.0779	1.3888
1.0047	1.1443	2.3644		0.9885	1.1258	1.4566
0.9994	1.3805	2.8515		0.9833	1.3582	1.7568
Qstd slope (m) =		2.09532		Qa slope (m) =		1.31205
intercept (b) =		-0.03812		intercept (b) =		-0.02349
coefficient (r) =		0.99994		coefficient (r) =		0.99994
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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. : C144558
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1853) Date of Receipt / 收件日期 : 22 July 2014

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00603867
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 : 29 July 2014

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, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 30 July 2014

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

Certificate of Calibration
校正證書

Certificate No. : C144558
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	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

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. : C144558
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	94.7	+1.0 ± 1.6
					8 kHz	92.5	-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	93.6	0.0 ± 1.4
					1 kHz	93.6	Ref.
					2 kHz	93.5	-0.2 ± 1.6
					4 kHz	92.9	-0.8 ± 1.6
					8 kHz	90.6	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

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Certificate of Calibration
校正證書

Certificate No. : C144558
證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 316987

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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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. : C143980
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1497) Date of Receipt / 收件日期 : 23 June 2014

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 : 28 June 2014

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, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 2 July 2014

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. : C143980
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	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

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	0.987	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. MA11007/55/0017

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

Date: 30-Jan-15 Next Due Date: 29-Mar-15

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

Ambient Condition			
Temperature, Ta (K)	287.6	Pressure, Pa (mmHg)	770.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	12.7	3.65	63.17	6.1	2.53
2	10.9	3.38	58.55	5.2	2.34
3	7.7	2.84	49.28	3.7	1.97
4	5.0	2.29	39.80	2.6	1.65
5	2.9	1.74	30.41	1.6	1.30

By Linear Regression of Y on X

Slope , mw = 0.0373 **Intercept, bw :** 0.1571

Correlation coefficient* = 0.9995

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **2.96**

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 30/1/15

Checked by: AT Signature: Date: 30 January 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0018

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

Date: 26-Mar-15 Next Due Date: 25-May-15

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

Ambient Condition			
Temperature, Ta (K)	291.5	Pressure, Pa (mmHg)	771.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc(CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.8	3.64	61.87	6.1	2.52
2	10.7	3.33	56.60	5.1	2.30
3	7.6	2.81	47.76	3.8	1.99
4	5.2	2.32	39.57	2.6	1.64
5	3.3	1.85	31.59	1.7	1.33

By Linear Regression of Y on X

Slope , mw = 0.0391 **Intercept, bw =** 0.0984

Correlation coefficient* = 0.9997

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.05**

Remarks:

Conducted by: W.K. Tang Signature: Y.Kwan Date: 26/3/15

Checked by: [illegible] Signature: [illegible] Date: 26 March 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0016

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

Date: 30-Jan-15 Next Due Date: 29-Mar-15

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

Ambient Condition			
Temperature, Ta (K)	290.2	Pressure, Pa (mmHg)	768.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	3.65	63.08	6.4	2.58
2	10.5	3.30	57.17	5.2	2.32
3	7.6	2.81	48.70	3.7	1.96
4	5.1	2.30	39.97	2.5	1.61
5	3.2	1.82	31.75	1.5	1.25

By Linear Regression of Y on X

Slope , mw = 0.0422 **Intercept, bw =** -0.0881

Correlation coefficient* = 0.9999

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **2.87**

Remarks:

Conducted by: Wk Tang Signature: Kwai Date: 30/1/15

Checked by: [illegible] Signature: Date: 30 January 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0017

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

Date: 26-Mar-15 Next Due Date: 25-May-15

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

Ambient Condition			
Temperature, Ta (K)	292.4	Pressure, Pa (mmHg)	770.3

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc(CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.8	3.64	61.73	6.3	2.55
2	10.7	3.32	56.47	5.1	2.30
3	7.8	2.84	48.27	3.8	1.98
4	5.2	2.32	39.48	2.5	1.61
5	3.3	1.85	31.52	1.6	1.29

By Linear Regression of Y on X

Slope , mw = 0.0415 **Intercept, bw =** -0.0279

Correlation coefficient* = 0.9996

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **2.99**

Remarks:

Conducted by: Wk Tang Signature: Kwai Date: 26/3/15

Checked by: An Signature: Date: 26 March 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0022

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

Operator: WK

Date: 30-Jan-15 Next Due Date: 29-Mar-15

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

Ambient Condition			
Temperature, Ta (K)	287.9	Pressure, Pa (mmHg)	770.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	3.66	63.40	6.6	2.63
2	10.6	3.33	57.73	5.2	2.34
3	7.9	2.88	49.90	3.8	2.00
4	5.2	2.34	40.56	2.4	1.59
5	3.1	1.80	31.42	1.4	1.21

By Linear Regression of Y on X

Slope , mw = 0.0441 **Intercept, bw :** -0.1901

Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **2.77**

Remarks:

Conducted by: WK. Tang Signature: Kwan Date: 30/1/15

Checked by: Hz Signature: Date: 30 January 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0023

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

Operator: WK

Date: 26-Mar-15 Next Due Date: 25-May-15

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

Ambient Condition			
Temperature, Ta (K)	291.8	Pressure, Pa (mmHg)	771.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc(CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	12.6	3.61	61.36	6.7	2.64
2	10.5	3.30	56.05	5.4	2.37
3	7.7	2.83	48.05	3.9	2.01
4	5.3	2.34	39.93	2.6	1.64
5	3.1	1.79	30.62	1.5	1.25

By Linear Regression of Y on X

Slope , mw = 0.0450 **Intercept, bw :** -0.1446

Correlation coefficient* = 0.9997

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.09**

Remarks:

Conducted by: W.K. Tang Signature: Date: 26/3/15

Checked by: Hz Signature: Date: 26 March 2015

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TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	299
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	761.8
Date	27 September 2014	**Equipment No.:**	A-04-04

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis= SQRT[H_2O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

Y axis= SQRT[H_2O(Ta/Pa)]

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

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=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

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PATRICK TSE
Laboratory Manager

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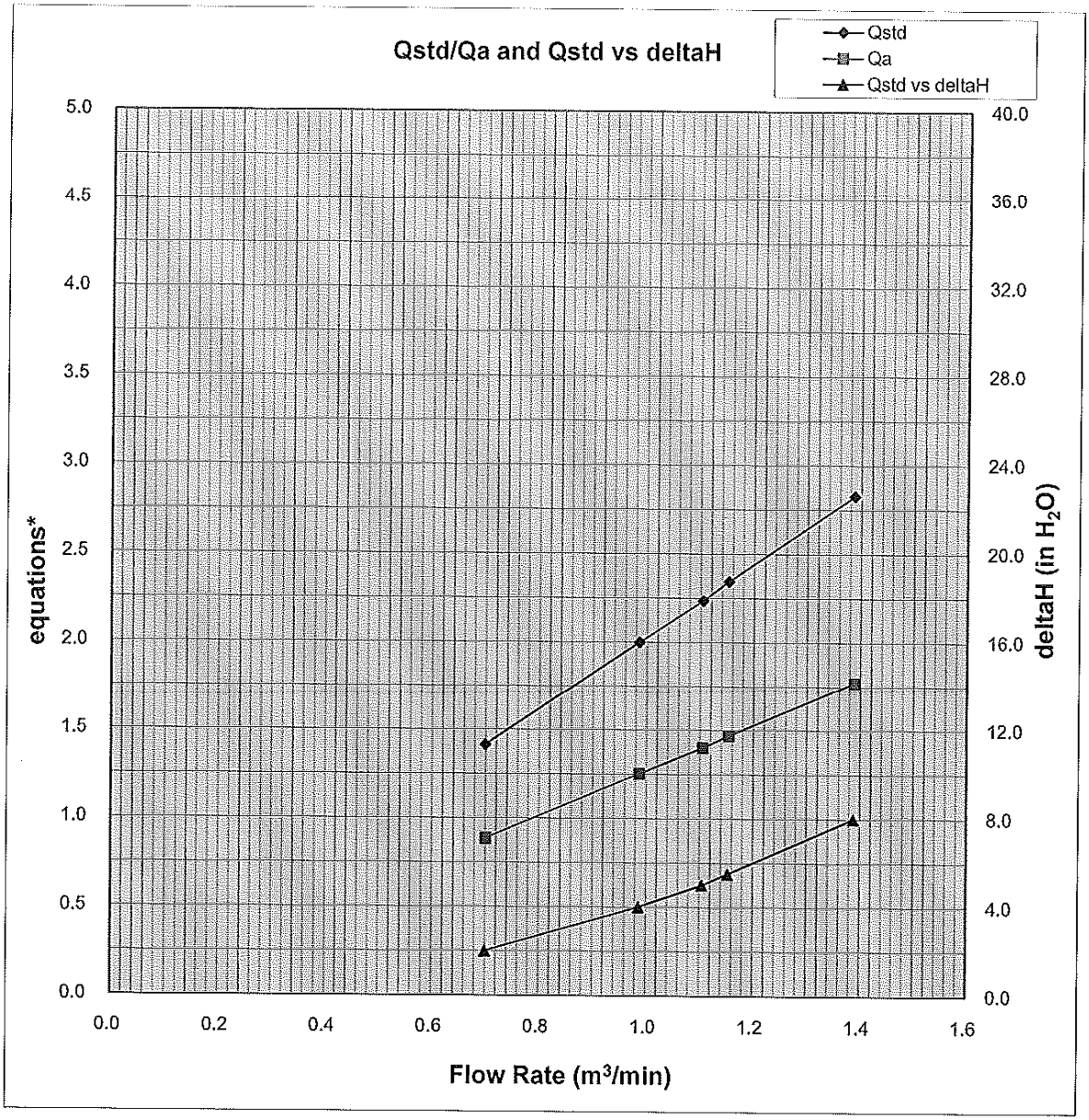
TEST REPORT



Y-axis equations:

Qstd series: SQRT[ΔH(Pa/Pstd)(Tstd/Ta)]

Qa series: SQRT[ΔH(Ta/Pa)]

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

Equipment No A-04-06

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 04, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

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	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233		0.9958	0.6825	0.8799
1.0044	0.9723	2.0129		0.9916	0.9599	1.2443
1.0023	1.0835	2.2505		0.9895	1.0697	1.3912
1.0011	1.1377	2.3603		0.9884	1.1231	1.4591
0.9959	1.3718	2.8467		0.9832	1.3542	1.7598
Qstd slope (m) =		2.09317		Qa slope (m) =		1.31071
intercept (b) =		-0.02195		intercept (b) =		-0.01357
coefficient (r) =		0.99997		coefficient (r) =		0.99997
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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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/150228/1
Date of Issue:	2015-03-02
Date Received:	2015-02-28
Date Tested:	2015-02-28
Date Completed:	2015-03-02
Next Due Date:	2015-05-01
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0032

****

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

Patrick Tse

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/150218/1
Date of Issue:	2015-02-23
Date Received:	2015-02-18
Date Tested:	2015-02-18
Date Completed:	2015-02-23
Next Due Date:	2015-04-22

ATTN: **Mr. WK Tang**

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	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0030

****

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
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ATTN: **Mr. W. K. Tang**

Test Report No.:	C/141231/1
Date of Issue:	2015-03-02
Date Received:	2015-02-27
Date Tested:	2015-02-27
Date Completed:	2015-03-02
Next Due Date:	2015-05-01
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 61%

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

****

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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18 On Lai Street,
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ATTN: **Mr. W. K. Tang**

Test Report No.:	C/141231/2
Date of Issue:	2015-03-02
Date Received:	2015-02-27
Date Tested:	2015-02-27
Date Completed:	2015-03-02
Next Due Date:	2015-05-01
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095050
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 577 CPM
Equipment No.	: A-02-09

Test Conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 61%

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

****

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

Test Report No.:	C/141231/3
Date of Issue:	2015-03-02
Date Received:	2015-02-27
Date Tested:	2015-02-27
Date Completed:	2015-03-02
Next Due Date:	2015-05-01
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	: 23 degree Celsius
Relative Humidity	: 61%

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	0.0031

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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18 On Lai Street,
Shatin, NT, Hong Kong

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

Test Report No.:	C/150213/2
Date of Issue:	2015-02-16
Date Received:	2015-02-13
Date Tested:	2015-02-13
Date Completed:	2015-02-16
Next Due Date:	2015-04-15
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	: 22 degree Celsius
Relative Humidity	: 62%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The 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)	1.044

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Shatin, NT, Hong Kong

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

Test Report No.:	C/141231/4
Date of Issue:	2015-03-02
Date Received:	2015-02-27
Date Tested:	2015-02-27
Date Completed:	2015-03-02
Next Due Date:	2015-05-01
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	: 23 degree Celsius
Relative Humidity	: 61%

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)	1.041

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W. K. Tang**

Test Report No.:	C/N/150103
Date of Issue:	2015-01-05
Date Received:	2015-01-03
Date Tested:	2015-01-03
Date Completed:	2015-01-05
Next Due Date:	2016-01-04
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	: 20 degree Celsius
Relative Humidity	: 54%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/140829/1
Date of Issue:	2014-09-01
Date Received:	2014-08-29
Date Tested:	2014-08-29
Date Completed:	2014-09-01
Next Due Date:	2015-08-31
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 60%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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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/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24

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 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 55%

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

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/141003/1
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
Page:	1 of 1

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

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

Results:

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

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PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Test Report No.:	C/N/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
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	: 22 degree Celsius
Relative Humidity	: 56%

Methodology:

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

Results:

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

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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-Mar-15	14:09	15:09	Cloudy	148	346	500	Construction work in progress	19	<5	GMW GS-2310 (S/N 1254)	5410
	15:11	16:11	Cloudy	141	346	500	Construction work in progress	19	<5	GMW GS-2310 (S/N 1254)	5411
	16:13	17:13	Cloudy	137	346	500	Construction work in progress	19	<5	GMW GS-2310 (S/N 1254)	5412
06-Mar-15	14:06	15:06	Cloudy	187	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	5414
	15:08	16:08	Cloudy	165	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	5415
	16:10	17:10	Cloudy	171	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	5416
12-Mar-15	14:35	15:35	Cloudy	141	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	5418
	15:37	16:37	Cloudy	149	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	5419
	16:39	17:39	Cloudy	159	346	500	Construction work in progress	18	<5	GMW GS-2310 (S/N 1254)	5420
18-Mar-15	14:33	15:33	Cloudy	120	346	500	Construction work in progress	27	<5	GMW GS-2310 (S/N 1254)	5422
	15:35	16:35	Cloudy	135	346	500	Construction work in progress	27	<5	GMW GS-2310 (S/N 1254)	5423
	16:37	17:37	Cloudy	142	346	500	Construction work in progress	27	<5	GMW GS-2310 (S/N 1254)	5424
24-Mar-15	14:00	15:00	Cloudy	130	346	500	Construction work in progress	22	<5	GMW GS-2310 (S/N 1254)	5825
	15:02	16:02	Cloudy	141	346	500	Construction work in progress	22	<5	GMW GS-2310 (S/N 1254)	5826
	16:04	17:04	Cloudy	149	346	500	Construction work in progress	22	<5	GMW GS-2310 (S/N 1254)	5827
30-Mar-15	13:50	14:50	Sunny	153	346	500	Construction work in progress	27	<5	GMW GS-2310 (S/N 1254)	5829
	14:52	15:52	Sunny	169	346	500	Construction work in progress	27	<5	GMW GS-2310 (S/N 1254)	5830
	15:54	16:54	Sunny	157	346	500	Construction work in progress	27	<5	GMW GS-2310 (S/N 1254)	5831
			Min.	**120**							
			Max.	**187**							
			Average	**150**							

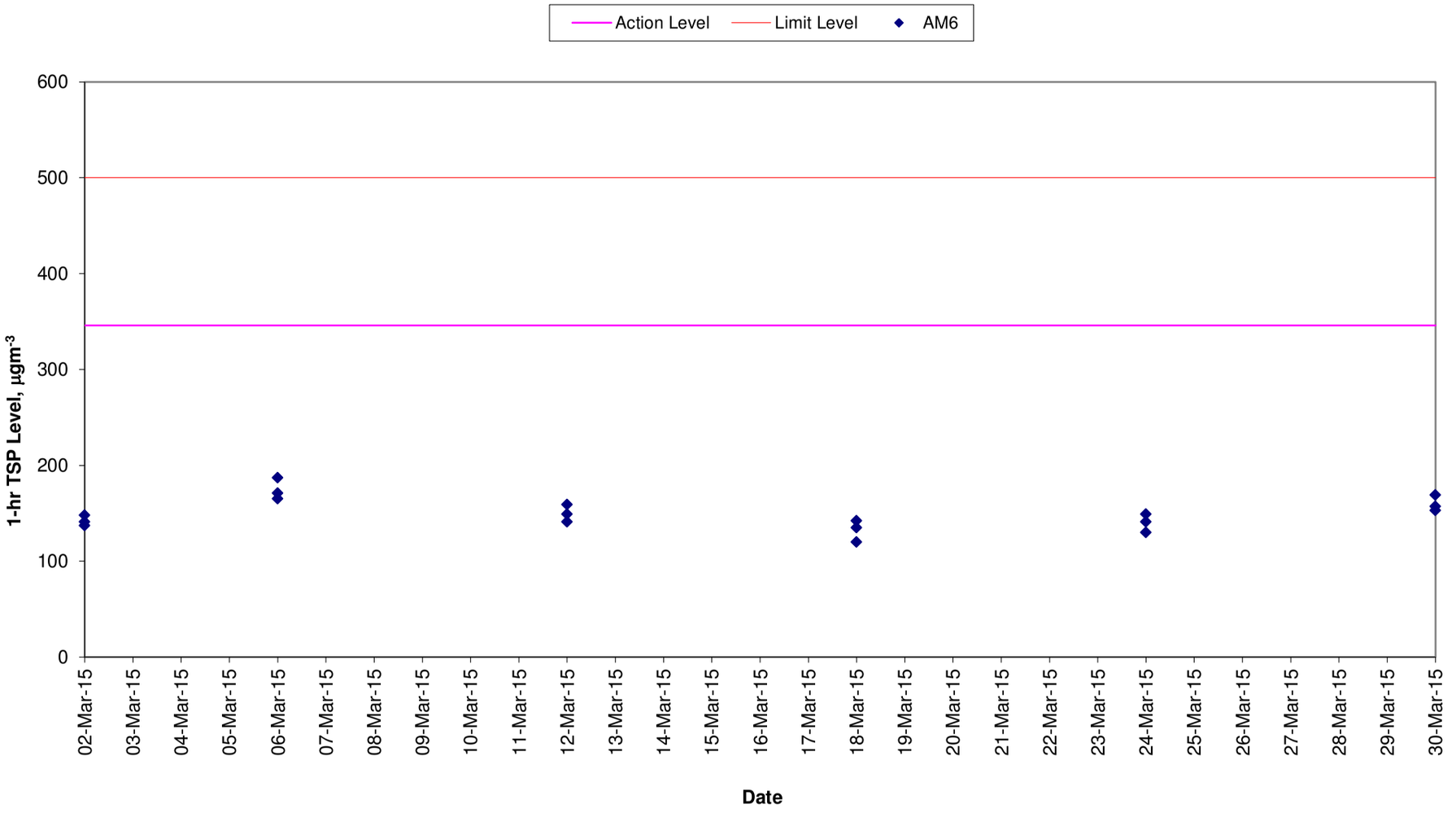
* Wind Speed data is presented in the Meteorological Data table

24-hour TSP Monitoring Results

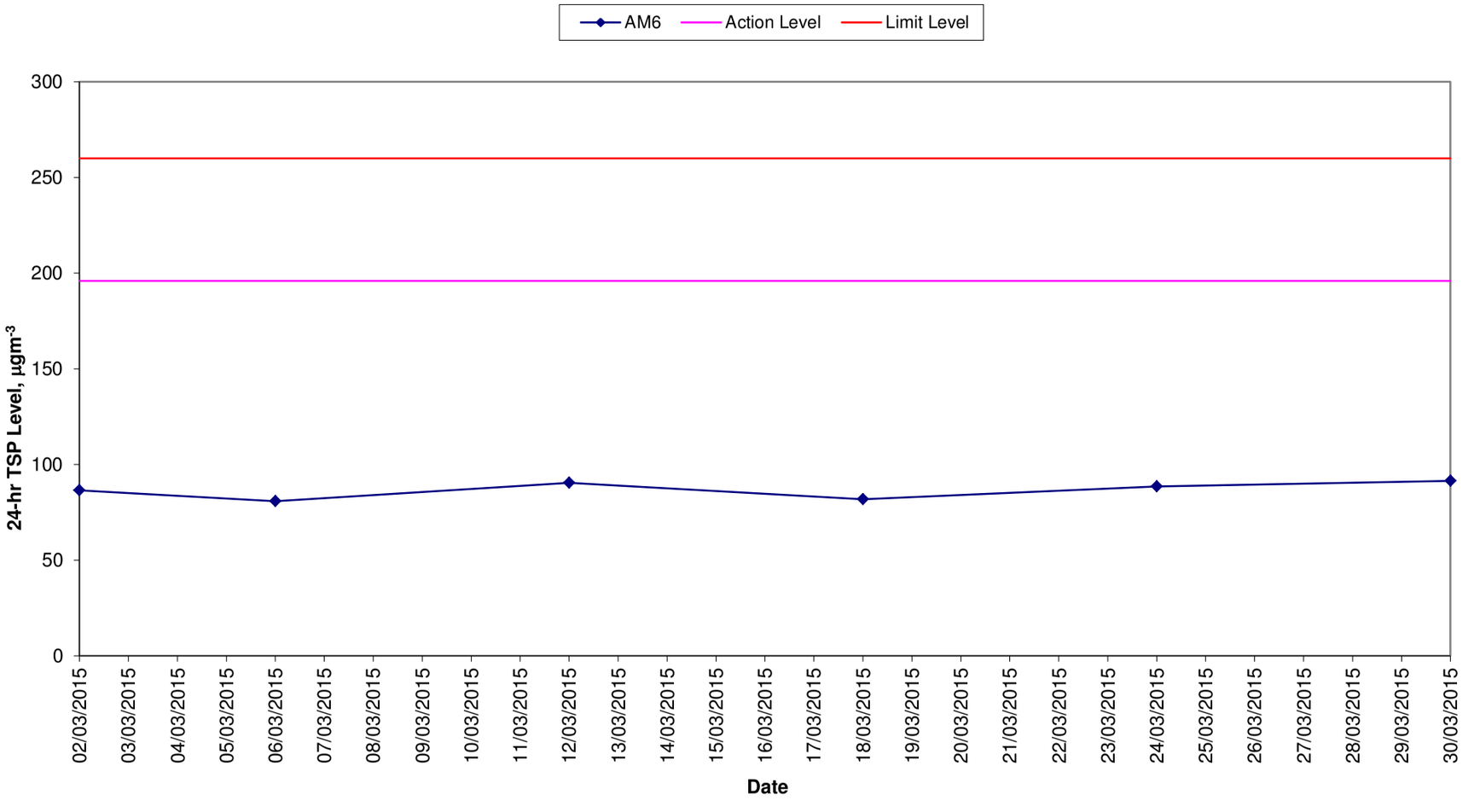
Station AM6

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-Mar-15	17:15	03-Mar-15	17:15	Cloudy	2.8876	3.0421	14787.03	14811.03	24.00	1.24	1.24	1.24	87	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	5413
06-Mar-15	17:12	07-Mar-15	17:12	Cloudy	2.8778	3.0221	14814.03	14838.03	24.00	1.24	1.24	1.24	81	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	5417
12-Mar-15	17:41	13-Mar-15	17:41	Cloudy	2.8882	3.0498	14841.03	14865.03	24.00	1.24	1.24	1.24	91	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	5421
18-Mar-15	17:39	19-Mar-15	17:39	Cloudy	2.8818	3.0256	14868.03	14892.03	24.00	1.22	1.22	1.22	82	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	5425
24-Mar-15	17:06	25-Mar-15	17:06	Cloudy	2.9145	3.0701	14895.03	14919.03	24.00	1.22	1.22	1.22	89	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	5828
30-Mar-15	16:56	31-Mar-15	16:56	Sunny	2.9117	3.0725	14922.03	14946.03	24.00	1.22	1.22	1.22	92	196	260	Construction work in progress	GMW GS 2310 (S/N 1254)	5832
												Min.	**81**					
												Max.	**91**					
												Average	**86**					

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



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



Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration (μg/m^3)
4-Mar-15	13:50	Cloudy	30
4-Mar-15	14:50	Cloudy	17
4-Mar-15	15:50	Cloudy	16
10-Mar-15	13:50	Sunny	93
10-Mar-15	14:50	Sunny	78
10-Mar-15	15:50	Sunny	96
16-Mar-15	13:00	Cloudy	240
16-Mar-15	14:00	Cloudy	221
16-Mar-15	15:00	Cloudy	218
20-Mar-15	14:00	Sunny	39
20-Mar-15	15:00	Sunny	38
20-Mar-15	16:00	Sunny	35
26-Mar-15	13:30	Fine	144
26-Mar-15	14:30	Fine	131
26-Mar-15	15:30	Fine	152
		Average	103
		Maximum	240
		Minimum	16

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration (μg/m3)
4-Mar-15	9:00	Cloudy	22
4-Mar-15	10:00	Cloudy	20
4-Mar-15	11:00	Cloudy	19
10-Mar-15	9:00	Sunny	70
10-Mar-15	10:00	Sunny	66
10-Mar-15	11:00	Sunny	74
16-Mar-15	9:00	Cloudy	237
16-Mar-15	10:00	Cloudy	231
16-Mar-15	11:00	Cloudy	222
20-Mar-15	9:00	Sunny	36
20-Mar-15	10:00	Sunny	36
20-Mar-15	11:00	Sunny	35
26-Mar-15	8:50	Fine	105
26-Mar-15	9:50	Fine	102
26-Mar-15	10:50	Fine	126
		Average	93
		Maximum	237
		Minimum	19

Appendix D - 24-hour TSP Monitoring Results

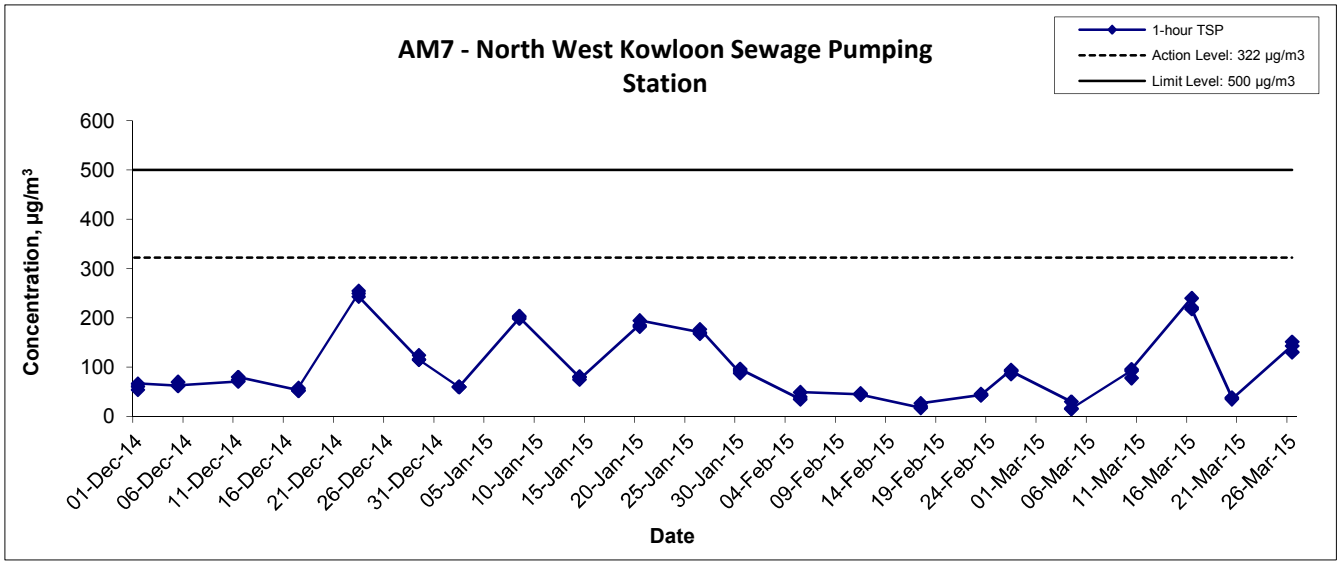
Location AM7 - North West Kowloon Sewage Pumping Station

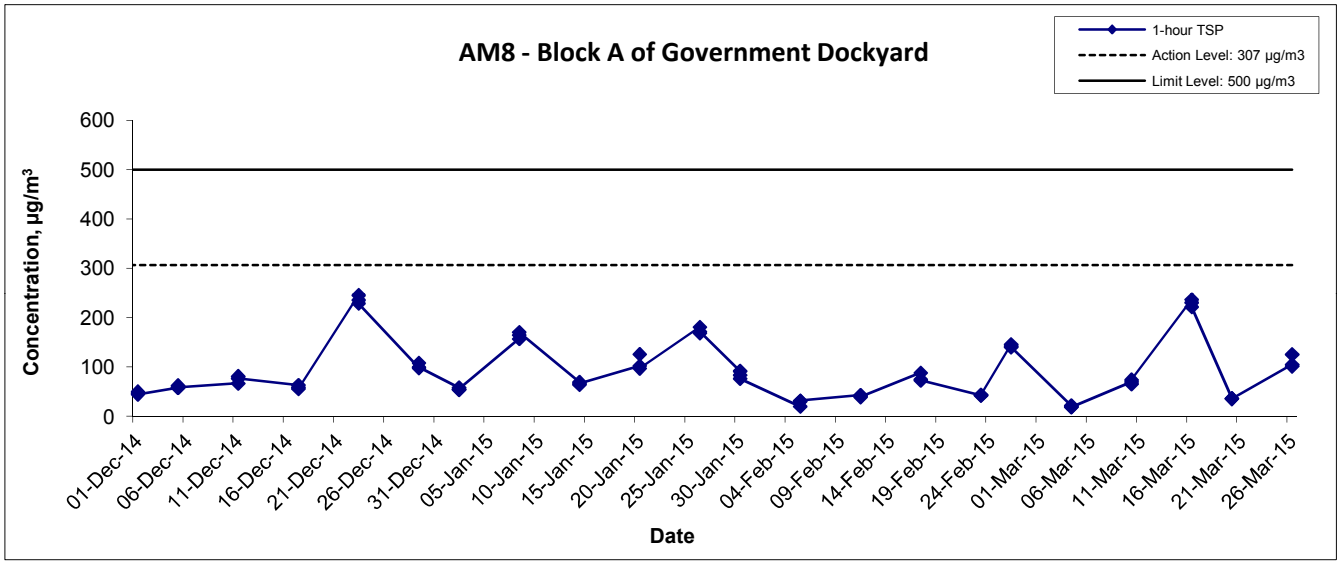
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
2-Mar-15	Cloudy	290.1	3.2652	3.5006	0.2354	31193.3	31217.3	24.0	1.22	1.22	1.22	1755.7	134.1
7-Mar-15	Cloudy	289.5	3.3281	3.5545	0.2264	31217.3	31241.3	24.0	1.22	1.22	1.22	1758.0	128.8
13-Mar-15	Cloudy	289.8	3.2592	3.5367	0.2775	31241.3	31265.3	24.0	1.22	1.22	1.22	1757.0	157.9
19-Mar-15	Cloudy	295.7	3.2407	3.4205	0.1798	31265.3	31289.3	24.0	1.20	1.20	1.20	1731.7	103.8
25-Mar-15	Cloudy	291.3	3.2480	3.4972	0.2492	31289.3	31313.3	24.0	1.22	1.22	1.22	1756.9	141.8
31-Mar-15	Cloudy	296.7	3.2003	3.3101	0.1098	31313.3	31337.3	24.0	1.21	1.21	1.21	1741.8	63.0
												Min	63
												Max	158
												Average	122

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-Mar-15	Cloudy	290.7	3.2038	3.3568	0.1530	4698.0	4722.0	24.0	1.22	1.22	1.22	1758.5	87.0
7-Mar-15	Cloudy	289.8	3.3233	3.4560	0.1327	4722.0	4746.0	24.0	1.22	1.22	1.22	1760.8	75.4
13-Mar-15	Cloudy	289.6	3.2815	3.4081	0.1266	4746.0	4770.0	24.0	1.22	1.22	1.22	1761.3	71.9
19-Mar-15	Cloudy	295.2	3.2600	3.3454	0.0854	4770.0	4794.0	24.0	1.21	1.21	1.21	1740.9	49.1
25-Mar-15	Cloudy	292.0	3.3185	3.4921	0.1736	4794.0	4818.0	24.0	1.22	1.22	1.22	1759.3	98.7
31-Mar-15	Cloudy	296.8	3.2405	3.3330	0.0925	4818.0	4842.0	24.0	1.21	1.21	1.21	1736.1	53.3
												Min	49
												Max	99
												Average	73

1-hr TSP Concentration Levels

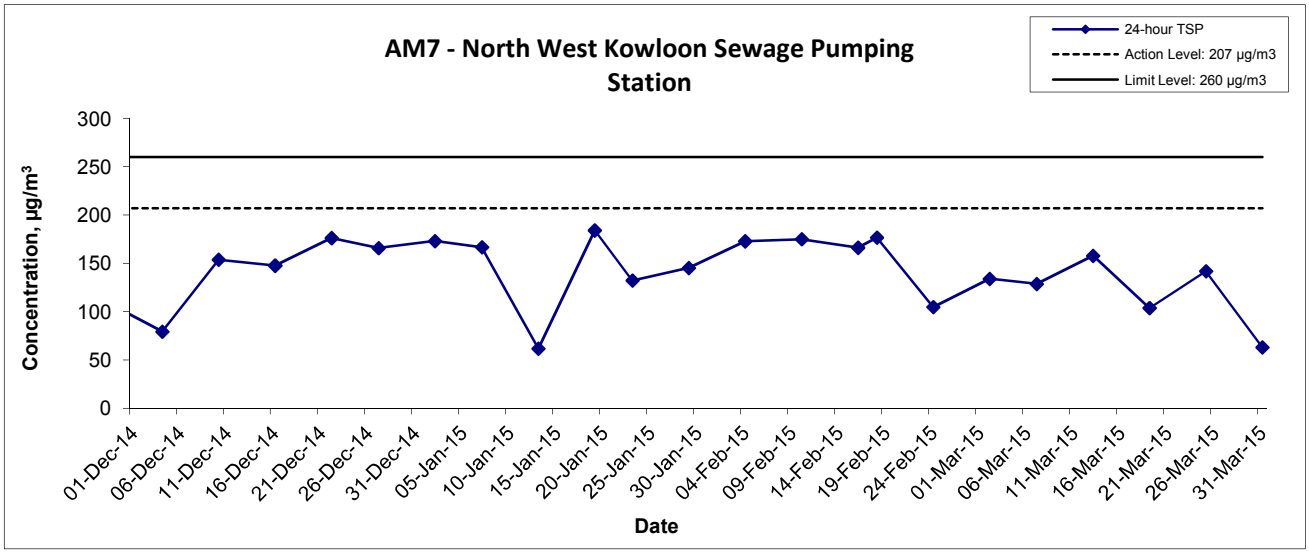


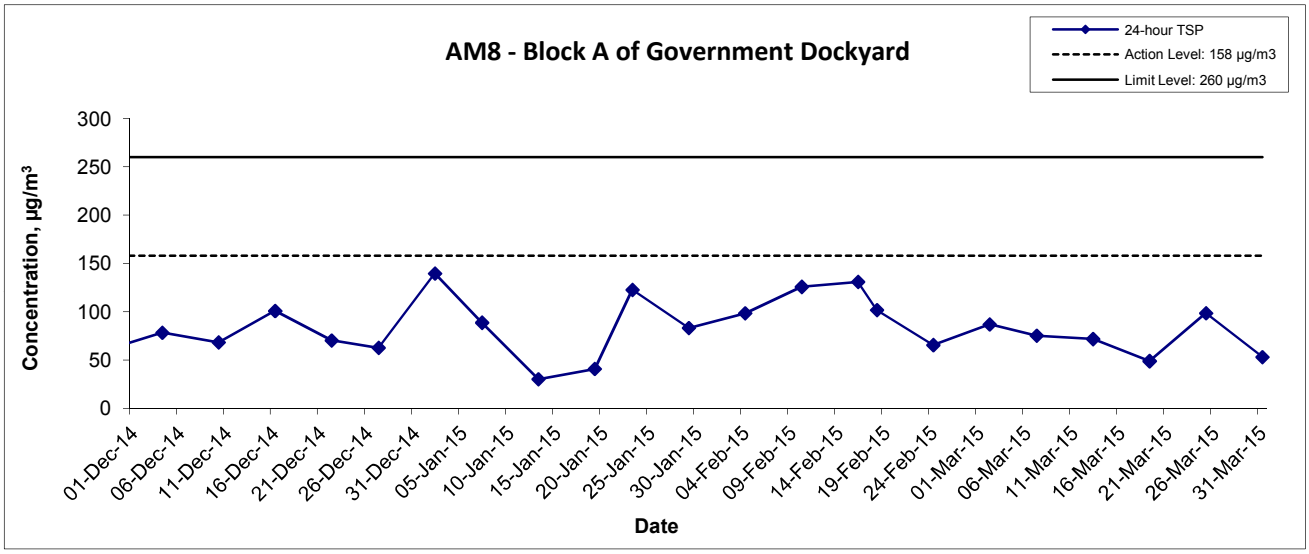


Title		Scale	Project No.
Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 1-hour TSP Monitoring Results		N.T.S	MA11007
		Date Mar 15	Appendix D

CINOTECH

24-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 24-hour TSP Monitoring Results	N.T.S	MA11007
	Date: Mar 15	Appendix: D

CINOTECH

Appendix D - 1-hour TSP Monitoring Results

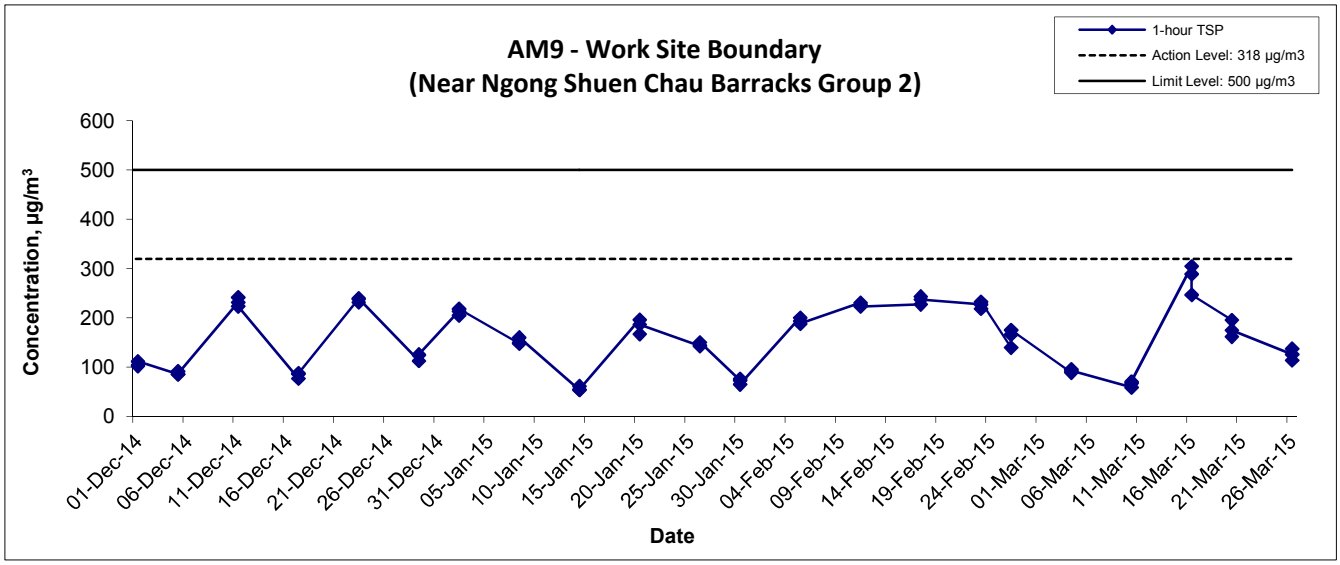
Location AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
4-Mar-15	13:35	Cloudy	89.3
4-Mar-15	14:35	Cloudy	95.7
4-Mar-15	15:35	Cloudy	92.8
10-Mar-15	9:00	Sunny	59.3
10-Mar-15	10:00	Sunny	67.7
10-Mar-15	11:00	Sunny	70.8
16-Mar-15	9:00	Cloudy	304.9
16-Mar-15	10:00	Cloudy	289.1
16-Mar-15	11:00	Cloudy	247.0
20-Mar-15	9:00	Sunny	195.8
20-Mar-15	10:00	Sunny	162.1
20-Mar-15	11:00	Sunny	175.1
26-Mar-15	9:00	Fine	126.2
26-Mar-15	10:00	Fine	137.7
26-Mar-15	11:00	Fine	114.2
		Average	148.5
		Maximum	304.9
		Minimum	59.3

Appendix D - 24-hour TSP Monitoring Results

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

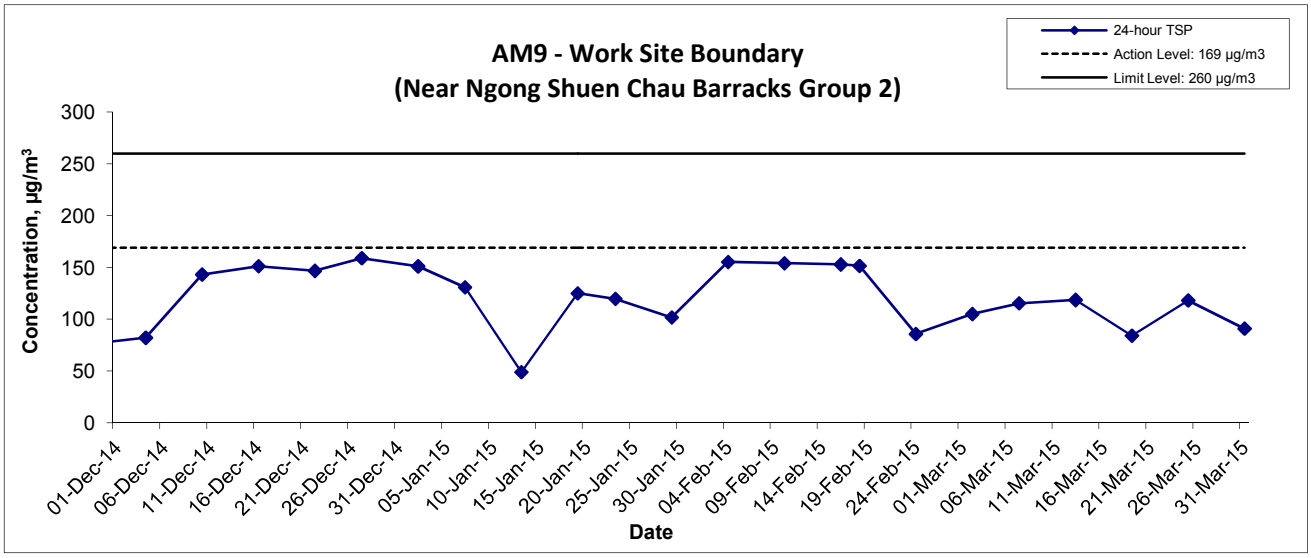
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
			Initial	Final		Initial	Final		Initial	Final			
2-Mar-15	Cloudy	290.7	3.2265	3.4103	0.1838	4065.6	4089.6	24.0	1.21	1.21	1.21	1748.5	105.1
7-Mar-15	Cloudy	289.8	3.3276	3.5297	0.2021	4089.6	4113.6	24.0	1.22	1.22	1.22	1751.3	115.4
13-Mar-15	Cloudy	289.7	3.2316	3.4395	0.2079	4113.6	4137.6	24.0	1.22	1.22	1.22	1751.6	118.7
19-Mar-15	Cloudy	286.0	3.2358	3.3837	0.1479	4137.6	4161.6	24.0	1.22	1.22	1.22	1757.8	84.1
25-Mar-15	Cloudy	291.3	3.2718	3.4788	0.2070	4161.6	4185.6	24.0	1.22	1.22	1.22	1751.5	118.2
31-Mar-15	Cloudy	296.8	3.2608	3.4185	0.1577	4185.6	4209.6	24.0	1.20	1.20	1.20	1733.3	91.0
												Min	84.1
												Max	118.7
												Average	105.4

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: Feb 15	Project No.: MA11043 Appendix: D	CINOTECH

24-hr TSP Concentration Levels



Title: Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Mar 15	Project No.: MA11043 Appendix: D	CINOTECH

APPENDIX E
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Daytime Noise Monitoring Results

Station NM5

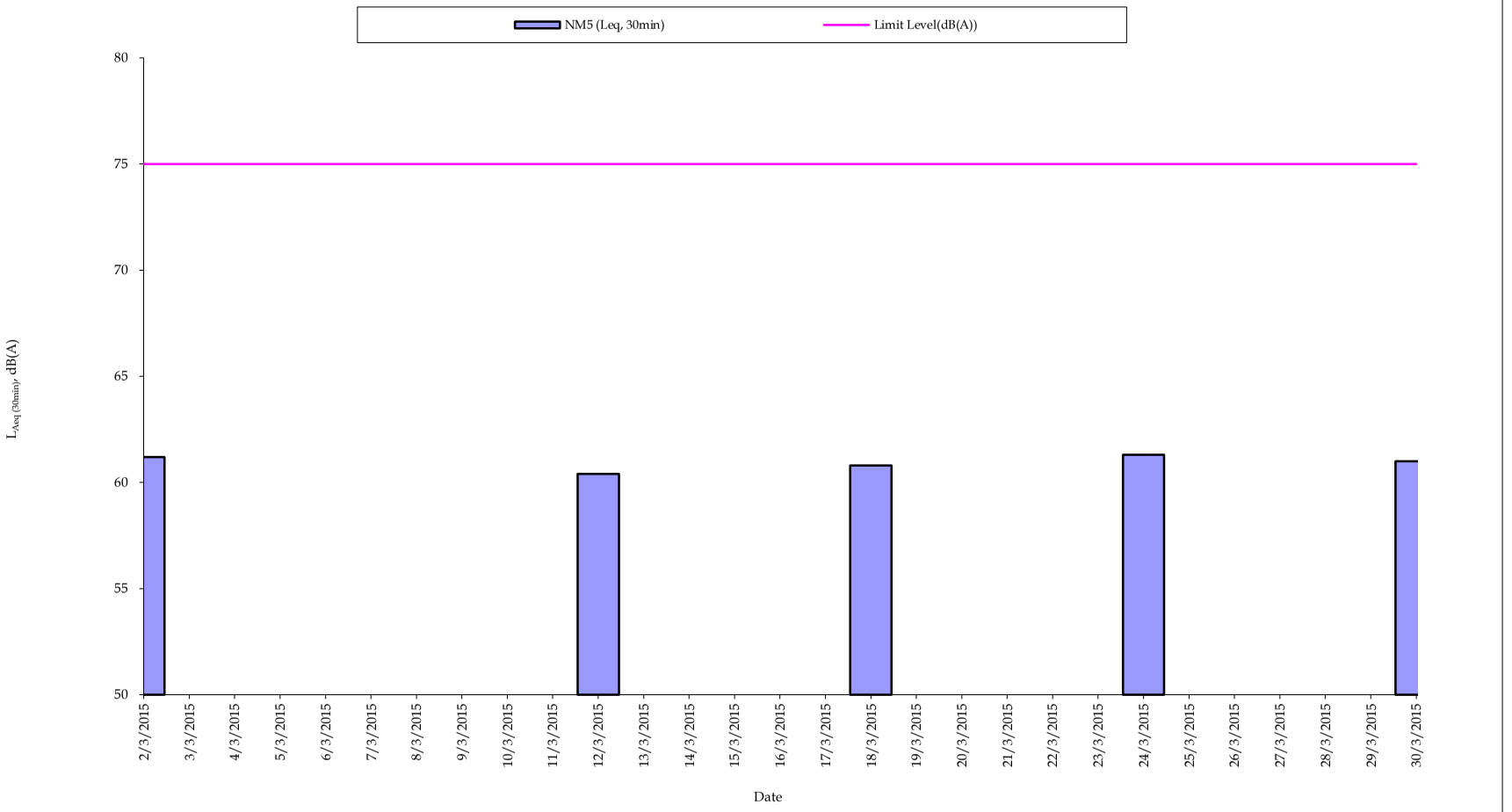
Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
02-Mar-15	16:18	16:48	Cloudy	61	64	58	Concrete lorry mixer, drill rig, welding machine	Traffic Noise	-	19	0.3	RION- NL31 (S/N 00603867)	RION-NL73 (S/N 10997142)
12-Mar-15	16:20	16:50	Cloudy	60	63	57	Concrete lorry mixer, 'Drill rig, welding machine	Traffic Noise	-	18	0.5	RION- NL31 (S/N 00603867)	RION-NL73 (S/N 10997142)
18-Mar-15	15:47	16:17	Cloudy	61	63	57	Concrete lorry mixer, 'Drill rig, welding machine, dump truck	Traffic Noise	-	27	0.5	RION- NL31 (S/N 00603867)	RION-NL73 (S/N 10997142)
24-Mar-15	16:18	16:48	Sunny	61	63	58	Concrete lorry mixer, Drill rig, welding machine	Traffic Noise	-	22	0.4	RION- NL31 (S/N 00603867)	RION-NL73 (S/N 10997142)
30-Mar-15	16:00	16:30	Sunny	61	63	58	Concrete lorry mixer, drill rig, dump truck	Traffic Noise	-	27	0.3	RION- NL31 (S/N 00603867)	RION-NL73 (S/N 10997142)
			Min.	**60**									
			Max.	**61**									

Restricted Hours Noise Monitoring Results

Station NM5

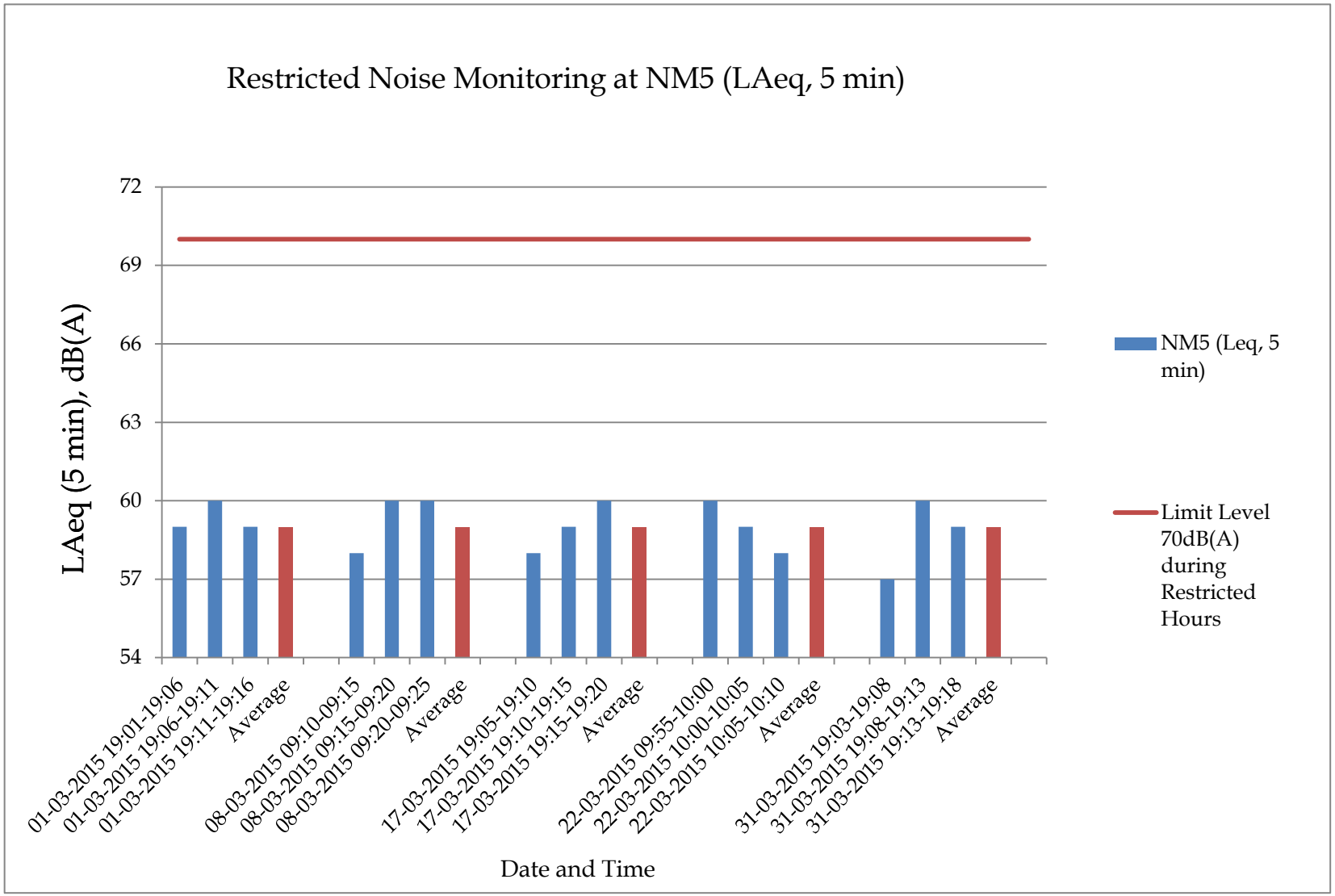
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
01-Mar-15	19:01	19:06	Cloudy	59	61	56	Drill rig	Traffic noise	-	19	0.3	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
	19:06	19:11	Cloudy	60	62	57			-				
	19:11	19:16	Cloudy	59	62	57			-				
	19:01	19:16	Cloudy	59	61	57			-				
08-Mar-15	9:10	9:15	Cloudy	58	60	57	Drill rig	Traffic noise	-	18	0.6	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
	9:15	9:20	Cloudy	60	61	57			-				
	9:20	9:25	Cloudy	60	61	57			-				
	9:10	9:25	Cloudy	59	61	57			-				
17-Mar-15	19:05	19:10	Cloudy	58	59	56	Drill rig	Traffic noise	-	21	0.3	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
	19:10	19:15	Cloudy	59	60	56			-				
	19:15	19:20	Cloudy	60	62	57			-				
	19:05	19:20	Cloudy	59	61	56			-				
22-Mar-15	9:55	10:00	Sunny	60	63	57	Drill rig	Traffic noise	-	27	0.3	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
	10:00	10:05	Sunny	59	62	57			-				
	10:05	10:10	Sunny	58	60	57			-				
	9:55	10:10	Sunny	59	62	57			-				
31-Mar-15	19:03	19:08	Cloudy	57	59	55	Drill rig	Traffic noise	-	24	0.5	RION- NL31 (S/N 00603867)	RION - NC73 (S/N 10997142)
	19:08	19:13	Cloudy	60	61	55			-				
	19:13	19:18	Cloudy	59	61	56			-				
	19:03	19:18	Cloudy	59	60	55			-				
			Min.	**57**									
			Max.	**60**									

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
01-03-2015 19:01-19:06
01-03-2015 19:06-19:11
01-03-2015 19:11-19:16
Average
08-03-2015 09:10-09:15
08-03-2015 09:15-09:20
08-03-2015 09:20-09:25
Average
17-03-2015 19:05-19:10
17-03-2015 19:10-19:15
17-03-2015 19:15-19:20
Average
22-03-2015 09:55-10:00
22-03-2015 10:00-10:05
22-03-2015 10:05-10:10
Average
31-03-2015 19:03-19:08
31-03-2015 19:08-19:13
31-03-2015 19:13-19:18
Average
Date and Time
NM5 (Leq, 5 min)
Limit Level 70dB(A) during Restricted Hours

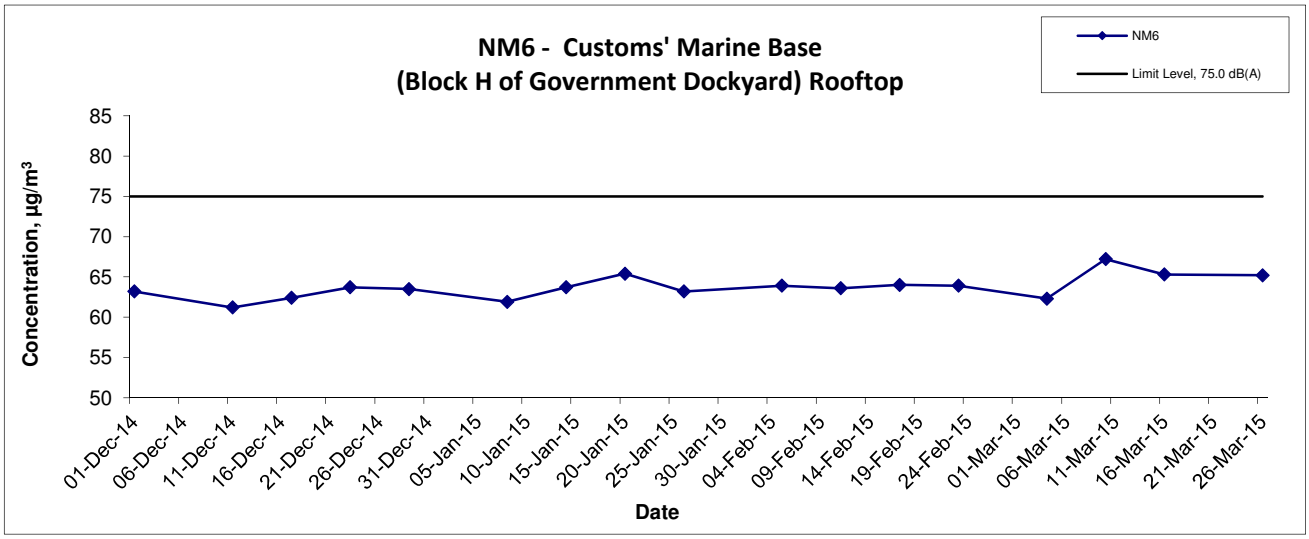
Appendix E - Noise Monitoring Results

(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}
4-Mar-15	17:00	Cloudy	62.3	63.2	61.1
10-Mar-15	10:30	Sunny	67.2	69.4	63.8
16-Mar-15	10:15	Cloudy	65.3	73.4	61.5
26-Mar-15	10:15	Cloudy	65.2	72.8	62.4
		Maximum	67.2		
		Minimum	62.3		

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 Mar 15	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}
4-Mar-15	13:35	Cloudy	66.5	68.4	61.9
10-Mar-15	9:20	Sunny	63.2	65.4	58.7
16-Mar-15	9:05	Cloudy	69.9	71.7	65.2
26-Mar-15	9:20	Cloudy	67.9	71.2	65.1

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

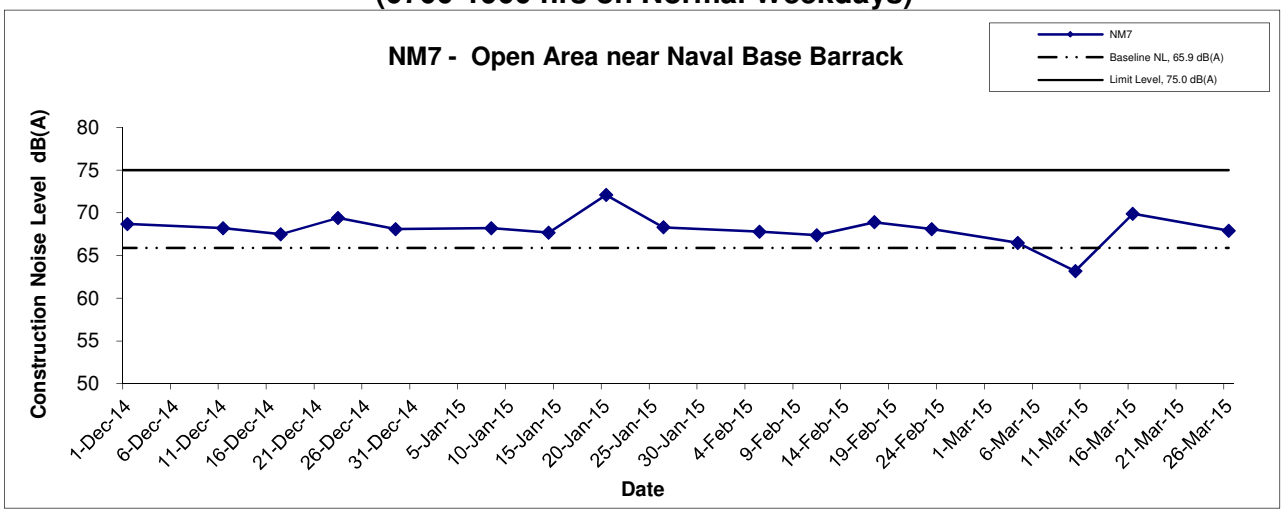
Location NM7 - Open Area near Naval Base Barrack						
Date	Time	Weather	dB (A) (5-min)			
			L_{eq}	L_{10}	L_{90}	Average L_{eq}
4-Mar-15	19:00	Fine	64.7	66.6	61.0	64.4
	19:05		64.9	66.8	61.2	
	19:10		63.4	66.2	60.3	
10-Mar-15	19:00	Fine	64.3	66.4	60.7	64.1
	19:05		63.9	66.2	61.1	
	19:10		64.1	66.5	60.9	
16-Mar-15	19:00	Fine	63.9	66.7	60.6	64.3
	19:05		64.1	67.4	61.5	
	19:10		64.8	67.6	61.9	
26-Mar-15	19:00	Fine	64.2	66.4	59.7	64.0
	19:05		64.2	66.2	60.5	
	19:10		63.7	66.1	60.0	

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

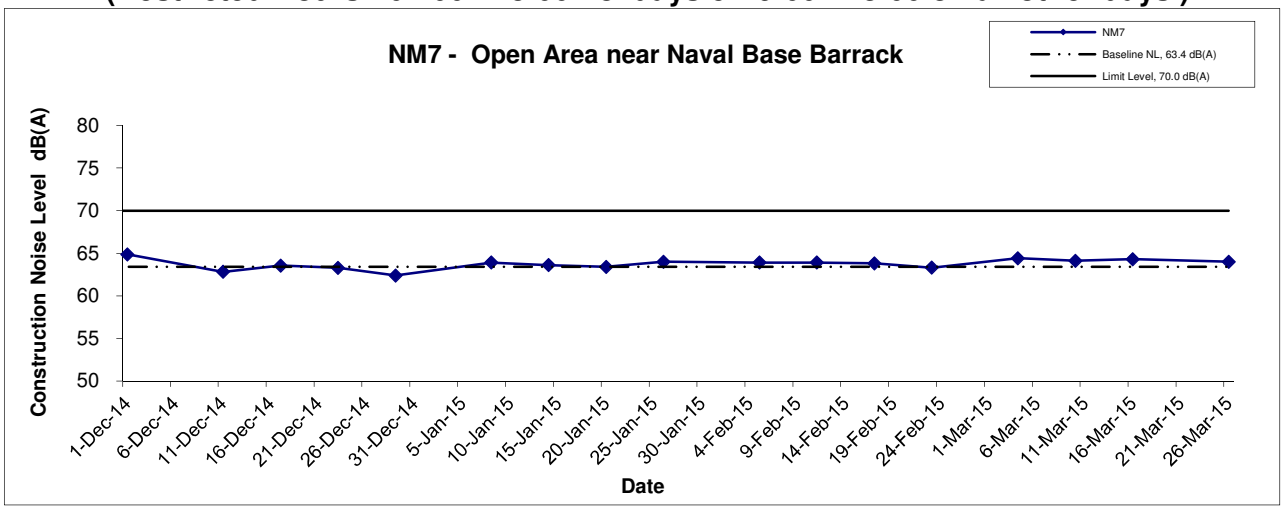
Location NM7 - Open Area near Naval Base Barrack								
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	Average L_{eq}	L_{eq}	L_{eq}
4-Mar-15	23:00	Fine	58.2	60.5	55.9	58.7	59.7	58.7 Measured ≦ Baseline
	23:05		59.3	61.4	56.7			
	23:10		58.6	61.0	56.3			
10-Mar-15	23:00	Fine	59.2	61.6	56.2	59.3		59.3 Measured ≦ Baseline
	23:05		59.8	62.0	56.7			
	23:10		58.8	60.7	56.0			
16-Mar-15	23:00	Fine	58.4	61.0	56.6	58.8		58.8 Measured ≦ Baseline
	23:05		58.9	61.7	55.7			
	23:10		59.0	61.2	55.4			
26-Mar-15	23:00	Fine	58.7	59.6	55.1	58.5		58.5 Measured ≦ Baseline
	23:05		57.6	59.4	55.0			
	23:10		59.1	61.8	56.3			

Noise Levels

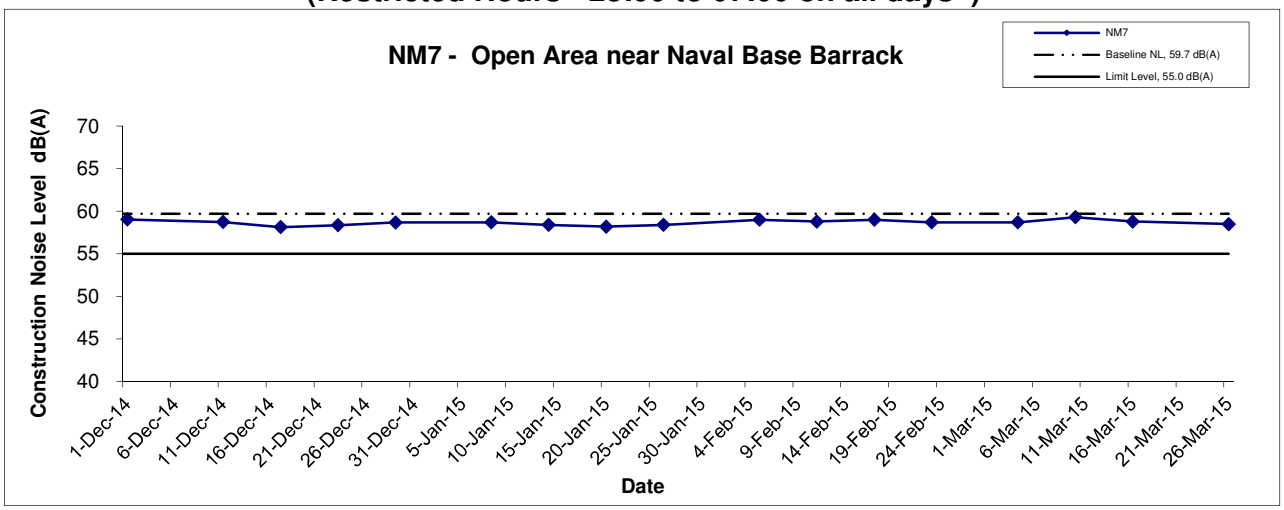
(0700-1900 hrs on Normal Weekdays)



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



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



Title: Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of Noise Monitoring Result (NM7)	Scale: N.T.S Date: Mar 15	Project No.: MA11060 Appendix: E	CINOTECH

APPENDIX F
ENVIRONMENTAL PERMITS AND LICENSES

APPENIDX F – Environmental Permits and Licenses

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

Permit No.	Valid Period		Details	Status
	From	To		
Wastewater Discharge License				
WT00020219-2014	30/10/2014	31/10/2019	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
Chemical Waste Producer Registration				
5213-269-G2449-07	Throughout the Contract	--	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
Construction Noise Permit				
GW-RW0798-14	23/10/2014	22/4/2015	Location: Stonecutters Island Production Shaft and Riser Shaft	Valid
GW-RW0996-14	9/1/2015	8/7/2015	Location: Stonecutters Island Area K-1	Valid

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	23/7/2014	28/2/2017	The application was approved on 23-7-2014.	Valid
WT00015128-2013	28/1/2013	31/1/2018	The application was approved on 28-1-2013.	Valid
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 use of mechanical equipment outside permitted working hours				
GW-RW0958-14	25/12/2014	24/6/2015	Location: Portion 4 and 5	Valid
GW-RW0006-15	1/2/2015	31/7/2015	Location: Portion 3 and 8	Valid
GW-RW0013-15	1/2/2015	31/7/2015	Location: Portion 6	Valid
Renewal of Admission Ticket for Disposal of Special Waste (Grit) at Landfills				
No. 11714	1/10/2014	31/3/2015	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 and 4	Valid
Registered Chemical Waste Producer				
Ref. 321319	25/10/2010	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-RW0807-14	23/10/2014	20/4/2015	Location: Portion 3, 4 and 5	Valid
GW-RW0809-14	23/10/2014	20/4/2015	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				
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-RW0773-14	13/10/2014	12/4/15	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid
GW-RW0050-15	18/2/2015	17/8/2015	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid
GW-RW0082-15	28/2/2015	27/8/2015	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 7)	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***
Environmental Permit	EP-322/2008/G	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)	11943	01 Feb 2015 to 30 Apr 2015	Valid
Admission Ticket (NENT)	11726	01 Nov 2014 to 30 Apr 2015	Valid
Admission Ticket (SENT)	11725	01 Nov 2014 to 31 Mar 2015	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: March 2015

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

Appendix H – Site Audit Summary in the reporting month (DC/2007/23)

Inspection date: 5 March 2015

Follow-up Actions Taken after Previous Site Audit

Stonecutters Island Production Shaft

- The Contractor had provided sufficient drip trays for the chemical containers on the rooftop.
- The Contractor had already removed the general refuse next to the drip tray near the noise enclosure.

Observations and Recommendations

Stonecutters Island Production Shaft

- There was no major observation during site inspection.

Inspection date: 12 March 2015

Follow-up Actions Taken after Previous Site Audit

Nil.

Observations and Recommendations

Stonecutters Island Production Shaft

- There was no major observation during site inspection.

Inspection date: 19 March 2015

Follow-up Actions Taken after Previous Site Audit

Nil.

Observations and Recommendations

Stonecutters Island Production Shaft

- There was no major observation during site inspection.

Inspection date: 25 March 2015

Follow-up Actions Taken after Previous Site Audit

Nil.

Observations and Recommendations

Stonecutters Island Production Shaft

- The Contractor was reminded to remove the oil stain near the chemical storage.
- The Contractor was reminded to provide a plug for the drip tray near the noise enclosure.

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150305
Date	5 March 2015 (Thursday)
Time	14:30-16:00

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

Ref. No.	Remarks/Observations	Related Item No.
150305-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*** • Opened oil and chemical containers should be removed as chemical waste or provide adequate storage (Portion 4, roof top). ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • Follow-up on previous audit sessions (ref: 150226): all environmental deficiency was improved by the Contractor. ***Remark:*** • N/A	E 7i

	Name	Signature	Date
Recorded by	Victor Wong		5 March 2015
Checked by	Dr. Priscilla Choy		5 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150312
Date	12 March 2015 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
150312-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 spillage should be cleared from the surface (Portion 4). ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • - ***Remark:*** • N/A	E 7i

	Name	Signature	Date
Recorded by	Victor Wong		12 March 2015
Checked by	Dr. Priscilla Choy		12 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150319
Date	19 March 2015 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
150319-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*** • C&D waste and general refuse should be removed and sorted regularly (Portion 4, -32 level). ***Part F - Permit / Licenses*** • No environmental deficiency was identified during the site inspection. ***Others*** • - ***Remark:*** • N/A	E 1i

	Name	Signature	Date
Recorded by	Victor Wong		19 March 2015
Checked by	Dr. Priscilla Choy		19 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150326
Date	26 March 2015 (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	
150326-O01	• Drainage ditch should be maintained by clearing the accumulated sediment (Portion 6).	A 1
	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	
150326-O02	• Oil stain is observed on the haul road (Portion 4).	E 7i
150326-O03	• Oil containers should be provided with drip tray (Portion 3).	E 7ii
150326-R04	• General refuse and other waste should be sorted and provided with covered containers (Portion 4 and 6).	E 1iii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• -	
	Remark:	
	• N/A	

	Name	Signature	Date
Recorded by	Victor Wong		26 March 2015
Checked by	Dr. Priscilla Choy		26 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150304
Date	4 March 2015 (Wednesday)
Time	09:30 – 10:30

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

Ref. No.	Remarks/Observations	Related Item No.
150304-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*** • Remaining oil stain on the surface should be cleared as much as possible (Portion 6); precaution should be taken while handling petrol on site. ***Part F - Permit / Licences*** • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit session (ref: 150225), outstanding item of 150225-O01 will be followed up during the next site inspection.	E 7i

	Name	Signature	Date
Recorded by	Victor Wong		4 March 2015
Checked by	Dr. Priscilla Choy		4 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150311
Date	11 March 2015 (Wednesday)
Time	09:30 – 10:45

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***	
150311-O01	• Chemical and oil containers should be provided with drip trays; Used chemical containers should be attached with chemical labels before being removed to chemical waste storage area (Portion 6).	E 7ii
150311-R02	• Oil stain and mud generated on site should be cleared regularly (Portion 6, entrance).	E 7i
	Part F - Permit / Licences • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit session (ref: 150304), outstanding item of 150304-O01 will be followed up during the next site inspection.	

	Name	Signature	Date
Recorded by	Victor Wong		11 March 2015
Checked by	Dr. Priscilla Choy		11 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150319
Date	19 March 2015 (Thursday)
Time	14:00 – 15:00

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality • No environmental deficiency was identified during the site inspection. ***Part B – Landscape and Visual*** • No environmental deficiency was identified during the site inspection. ***Part C - Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part D – Noise*** • No environmental deficiency was identified during the site inspection. ***Part E – Waste / Chemical Management***	
150319-O01 150319-O02	• Oil stain should be cleared with oil absorbent materials (Portion 6). • Oil and chemical containers should be removed or provided with drip trays for storage (Portion 6).	E 7i E 7ii
	Part F - Permit / Licences • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit session (ref: 150311), outstanding items of 150311-O01 and 150311-R02 will be followed up during the next site inspection.	

	Name	Signature	Date
Recorded by	Victor Wong		19 March 2015
Checked by	Dr. Priscilla Choy		19 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150325
Date	25 March 2015 (Wednesday)
Time	09:30 – 10:45

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***	
150325-O01	• Oil or chemical containers should be provided with drip tray or stored in designated area (Portion 5).	E 7ii
150325-R02	• The Contractor has been reminded to clear any located oil spillage and other waste regularly, especially near drainage channels (Portion 6).	E 7i
	Part F - Permit / Licences • No environmental deficiency was identified during the site inspection. ***Remark:*** • Follow-up on previous audit session (ref: 150319), outstanding item of 150319-O01 will be followed up during the next site inspection.	

	Name	Signature	Date
Recorded by	Victor Wong		25 March 2015
Checked by	Dr. Priscilla Choy		25 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150304
Date	04 March 2015 (Wednesday)
Time	14:00-16:15

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
150304-O02	• Muddy water should be cleared and prevent any over-flow of discharge in u-channel. (near entrance and discharge point of Portion 3)	A 1
150304-R01	• Any stand water or oil should be cleared regularly in drip tray (Portion 7)	A 11
150304-R02	• Ensure any flow of muddy discharge from construction work should be de-silted and discharge at discharge point. (Portion 3)	A 5iv
	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	
150304-O01	• Oil containers/ chemical containers should be provided with drip trays. (Portion 3)	E 7ii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 150225): item of 150225-O01 was remarked as 150304-O01; item 150225-O02 was remarked as 150304-O02 and item 150225-R01 was remarked as 150304-R01.	

	Name	Signature	Date
Recorded by	Carrie Leung		05 March 2015
Checked by	Dr. Priscilla Choy		05 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150311
Date	11 March 2015 (Wednesday)
Time	14:00-16:15

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
150311-O02	• Muddy water should be cleared in u-channel. (near entrance and discharge point of Portion 3)	A 1
150311-R02	• Oil/ stand water should be cleared in drip tray (Portion 3 and 7)	A 11
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
150311-O04	• Haul road should be sprayed with water. (Portion 3)	C 5
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
150311-O01	• Drip trays should be provided to all oil containers.(Portion 3)	E 7ii
150311-O03	• Appropriate label should be placed on the oil containers. (Portion 3)	E 2i
150311-R01	• Chemical waste storage should be provided with a lock. (Portion 3)	E 3iii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 150304): item of 150304-O01 was remarked as 150311-O01; item 150304-O02 was remarked as 150311-O02 and item 150204-R01 was remarked as 150311-R02.	

	Name	Signature	Date
Recorded by	Carrie Leung		13 March 2015
Checked by	Dr. Priscilla Choy		13 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150317
Date	17 March 2015 (Tuesday)
Time	14:00-16:15

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
150317-O02	• Muddy water should be cleared in u-channel. (near entrance and discharge point of Portion 3)	A 1
150317-O04	• Wheel washing facilities should be provided and well maintained. (Portion 3)	A 13
150317-R02	• Oil/ stand water should be cleared in drip tray (Portion 3 and 7)	A 11
	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	
150317-O01	• Drip trays should be provided to all oil containers.(Portion 3)	E 7ii
150317-O03	• Chemical waste storage should be well maintained and placed with a label. (Portion 3)	E 3i
150317-R01	• Chemical waste storage should be provided with a lock. (Portion 3)	E 3iii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 150304): item of 150304-O01 was remarked as 150311-O01; item 150304-O02 was remarked as 150311-O02 and item 150204-R01 was remarked as 150311-R02.	

	Name	Signature	Date
Recorded by	Carrie Leung	Carrie	18 March 2015
Checked by	Dr. Priscilla Choy	WF	18 March 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150325
Date	25 March 2015 (Wednesday)
Time	14:00-16:15

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

Ref. No.	Remarks/Observations	Related Item No.
	Part A - Water Quality	
150325-O02	• Muddy water should be cleared in u-channel. (near entrance and discharge point of Portion 3)	A 1
150325-O06	• Discharge should be treated in Aqua Tank before the discharge is free from silt. (Portion 7)	A 5iv
150325-R01	• Oil/ water in drip trays should be cleared. (Portion 3)	A 11
	Part B – Landscape and Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
150325-O04	• Haul road should be sprayed with water. (Portion 3)	C 5
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Waste / Chemical Management	
150325-O01	• Drip trays should be provided to all oil containers.(Portion 3)	E 7ii
150325-O03	• Chemical waste storage should be well-maintained. (Portion 3)	E 3i
150325-O05	• Cement wash water should be cleared regularly to avoid accumulation and flooding/ (Portion 3)	E 4ii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Others / Remarks	
	• Follow-up on previous audit section (Ref. No.: 150317): item of 150317-O01 was remarked as 150325-O01; item 150317-O02 was remarked as 150325-O02, item 150317-O03 was remarked as 150325-O03 and item 150217-R02 was remarked as 150325-R01.	

	Name	Signature	Date
Recorded by	Carrie Leung		27 March 2015
Checked by	Dr. Priscilla Choy		27 March 2015

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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: 04 Mar 2015

Observation and/or Recommended Measures:

No Particular Finding.

Target Date of Completion: N.A.

Signatures:

	Name	Signature
ET's Representative	Bong Yu	
Contractor's Representative	Hong WAN	
SO's Representative	KH CHOI	
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	^	^	^	^	^
	Vehicle washing facilities should be provided at every vehicle exit point.			^	^	*	
	The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.			^	^	^	
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.			N/A	N/A	N/A	
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.			^	^	*	
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.			^	^	^	
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs			^	^	^	
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.			^	^	^	

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.			^	^	^	
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.			^	^	^	
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.			^	^	^	
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites		^	^	^	
B	**Airborne Noise**						
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	^	^	^	^	^
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^	^	^	^	^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^	^	^	^	
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^	^	^	^	
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^	^	^	^	

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.		^	^	^	^	
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^	^	^	^	
C	**Water Quality**						
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	^	#	*	^	^
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^	^	^	#	^

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.		^	*	*	^	^
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		^	^	^	^	^
6.379	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.		<>	#	#	*	^

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	<>	^	^	^	^

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	^	^	^	^	^
9.109	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All construction sites	^	^	^	^	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals;		^	^	^	^	^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.			^	^	^	

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.			^	^	^	
	Any unused chemicals or those with remaining functional capacity shall be recycled.			^	^	^	
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials.			^	^	*	
9.115	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.		^	^	^	^	^
	Training of site personnel in proper waste management and chemical waste handling procedures.			^	^	^	
	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.			^	^	^	
	Provision of sufficient waste disposal points and regular collection of waste.			^	^	^	
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.			^	^	^	
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site	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.		^	^	^	^	^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		<>	^	#	^	^
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^	^	^	^	^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive,		^	^	^	#	^

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	^
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^	^	^	^	^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^	^	^	^	^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		^	N/A	N/A	N/A	^

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.		^	^	^	^	^
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.			^	^	^	
	Trees unavoidably affected by the works should be transplanted where practical.			^	^	^	
	Compensatory tree planting should be provided to compensate for felled trees.			^	^	^	
	Control of night-time lighting.			^	^	^	
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.			N/A	N/A	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	^	^	^	^	^

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: March 2015

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

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

APPENDIX L
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SYJS1845	SYJS: FSD/EMSD Inspections	1	28-Jul-15	29-Jul-15	0%	421	421	-28
Miscellaneous Works								
No Significant Evnt								
SYJS2010	SYJS: Install E&M Services	4	23-Jul-15	28-Jul-15	0%	14	14	-23
SYJS2020	SYJS: Reinstatement & Clear DS Area	8	28-Jul-15	05-Aug-15	0%	16	16	-28
SYJS2025	SYJS:Complete All Works at SYPJS (KD-10)	0		05-Aug-15	0%	414	414	-28
SYJS2030	SYJS: Landscaping & Planting Works	32	05-Aug-15*	06-Sep-15	0%	16	16	-28
SYJS2040	SYJS: Period of Establishment Works	365	07-Sep-15	06-Sep-16	0%	16	16	-28
SYJS2050	SYJS: End of Establishment Period	0		06-Sep-16	0%	16	16	-28
Stonecutters Island STW Production Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
SCPS10010	SCPS: Design D'wall & Submit for ICE	28	12-Aug-09 A	05-Sep-09 A	100%			6
SCPS10015	SCPS: Comments/Rev./ICE Check D'Wall & Submit	12	22-Sep-09 A	23-Oct-09 A	100%			-14
SCPS10020	SCPS: Review D'wall Design & Approve	14	28-Oct-09 A	17-Dec-09 A	100%			-30
SCPS10050	SCPS:Prep.Blasting Assessment Report, ICE&Submit	50	09-Sep-09 A	09-Dec-09 A	100%			-26
SCPS10055	SCPS: Review and Approve BAR Report	77	10-Dec-09 A	20-Jul-11 A	100%			-407
SCPS10060	SCPS: Prepare Blasting Permit Application&Submit	24	10-Nov-10 A	20-Jul-11 A	100%			-185
SCPS10065	SCPS:Review & Approve Blasting PermitApplication	75	24-Nov-10 A	10-Aug-11 A	100%			-140
ELS in Rock to Shaft Bottom Level								
SCPS10200	SCPS: Design ELS to Shaft Bottom Submit for ICE	28	02-Nov-09 A	18-Jan-10 A	100%			-37
SCPS10202	SCPS: Comments/Revision/ICE Check ELS & Submit	21	19-Jan-10 A	09-Sep-10 A	100%			-173
SCPS10204	SCPS: Review ELS Design & Approve	14	10-Sep-10 A	24-Nov-10 A	100%			-48
Temporary Works & Other Design								
SCPS10300	SCPS: Design Headframe @ Shaft	28	28-Nov-09 A	18-Dec-09 A	100%			10
SCPS10302	SCPS: Comments/Revision/ICE Check HeadF & Submit	21	19-Dec-09 A	15-Mar-10 A	100%			-48
SCPS10304	SCPS: Review Headframe Design & Approve	14	17-Mar-10 A	01-Dec-10 A	100%			-202
SCPS10306	SCPS: Design Travelling Gantry for Shaft	28	28-Nov-09 A	28-Dec-09 A	100%			3
SCPS10308	SCPS: Comments/Revision/ICECheck Trav.G & Submit	21	29-Dec-09 A	13-Jul-10 A	100%			-140
SCPS10310	SCPS: Review Trav. Gant. Design & Approve	14	14-Jul-10 A	29-Nov-10 A	100%			-102
SCPS10312	SCPS: Design Noise Enclosure for Shaft	28	28-Nov-09 A	20-Sep-10 A	100%			-217
SCPS10314	SCPS: Comments/Revision/ICENoise Encl. & Submit	21	21-Sep-10 A	24-Nov-10 A	100%			-32
SCPS10316	SCPS: Review Noise Enclosure Design & Approve	14	25-Nov-10 A	26-Jan-11 A	100%			-38
SCPS10318	SCPS: Design AccessStaircase for Shaft	28	28-Nov-09 A	05-Mar-10 A	100%			-51
SCPS10320	SCPS: Comments/Revision/ICEAcc.Stairc.& Submit	21	06-Mar-10 A	24-Nov-10 A	100%			-198
SCPS10322	SCPS: Review Access Staircase Design & Approve	14	25-Nov-10 A	26-Jan-11 A	100%			-38
SCPS10324	SCPS: Design Mucking System for Shaft	28	28-Nov-09 A	05-Mar-10 A	100%			-51
SCPS10326	SCPS: Comments/Revision/ICE Muck System & Submit	21	06-Mar-10 A	24-Nov-10 A	100%			-198
SCPS10328	SCPS: Review Muck System Design & Approve	14	25-Nov-10 A	18-Mar-11 A	100%			-80
SCPS10330	SCPS: Design Temp.Works@ShaftPitBottom for Shaft	28	20-Apr-10 A	10-Dec-10 A	100%			-168
SCPS10332	SCPS: Comments/Revision/ICE TW & Submit	21	20-Jan-11 A	21-Oct-11 A	100%			-206
SCPS10334	SCPS: Review Temp.Works@ShaftPB Design & Approve	14	22-Oct-11 A	03-Feb-12 A	100%			-71
Preliminaries Works								
No Significant Evnt								
SCPS0160	SCPS: Construct Hoarding/Fencing	45	18-Aug-09 A	10-Oct-09 A	100%			0
SCPS0180	SCPS: Provide 2M Access to DG Store	3	01-Sep-09 A	03-Sep-09 A	100%			0
SCPS10070	SCPS: Construct/Install Blast Protection	2	28-Jul-11 A	29-Jul-11 A	100%			0
SCPS10075	SCPS: Site Inspection from Mines	4	28-Jul-11 A	10-Aug-11 A	100%			-8
SCPS10080	SCPS: Issue Blasting Permit	1	11-Aug-11 A	11-Aug-11 A	100%			0
SCPS10090	SCPS: ApplicationforCat7DangerousGoodsLicenseSto	45	12-Mar-10 A	10-May-11 A	100%			-306

Start Date	15-Jul-09
Finish Date	22-Sep-16
Data Date	20-Dec-14
Run Date	05-Jan-15

@Primavera Systems, Inc.

Primary Baseline
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Critical Remaining Work
Baseline Milestone
Milestone

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Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SCPS10092	SCPS: Approval of License	0		12-Jun-11 A	100%			0
SCPS10093	SCPS: Prepare site & Remove Post	7	11-Jun-11 A	18-Jun-11 A	100%			0
SCPS10094	SCPS: Construction of Emulsion Store	12	20-Jun-11 A	06-Jul-11 A	100%			-2
SCPS10095	SCPS: Inspection/Comments by Authorities	5	07-Jul-11 A	12-Jul-11 A	100%			0
SCPS10095A	SCPS: Readjustment/Rectification&Approval Works	14	13-Jul-11 A	10-Aug-11 A	100%			-11
SCPS10096	SCPS: Ready for Use	0	16-Aug-11 A		100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
SCPS0174	SCPS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
SCPS0177	SCPS: EstablishEnv.BaselineReadingsforInst.&Mon.	34	14-Sep-09 A	24-Oct-09 A	100%			0
EBS Works								
SCPS0362	SCPS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	09-Nov-09 A	100%			-7
Markers/UMP's/Others(Same note as Piez.)								
SCPS0391	SCPS: Install GS Markers (17 Nos.)	74	01-Sep-09 A	04-Mar-10 A	100%			-77
SCPS0393	SCPS: JointSurvey&EstablishBaseline Readings GSM	14	05-Mar-10 A	19-Mar-10 A	100%			1
SCPS0395	SCPS: Approval/Consent frm. Bldg./StructureOwner	14	15-Oct-09 A	19-Oct-09 A	100%			10
SCPS0397	SCPS: Install SS Markers (6 Nos.)	74	20-Oct-09 A	23-Oct-09 A	100%			70
SCPS0399	SCPS: JointSurvey&EstablishBaseline Readings SSM	14	27-Oct-09 A	07-Dec-09 A	100%			-22
SCPS0399A	SCPS: Install SS MarkersAddt'l VO9 (14 Nos.)	32	26-Jan-10 A	09-Mar-10 A	100%			-2
SCPS0399C	SCPS: JointSurvey&EstablishBaseline Readings SSM	14	10-Mar-10 A	24-Mar-10 A	100%			1
Piezometers(NearbyPTWorPScovered inthisInstalln)								
SCPS0371	SCPS: Excav.Permit/TTA/TTM ApplicationforBH907PW	24	25-Sep-09 A	24-Oct-09 A	100%			0
SCPS0373	SCPS: Installation Works of BH907 Piezometer	21	27-Oct-09 A	09-Nov-09 A	100%			9
SCPS0375	SCPS: BH907 Piezometer Baseline Establishment	26	10-Nov-09 A	10-Dec-09 A	100%			-1
SCPS0377	SCPS: Excav.Permit/TTA/TTM ApplicationforBH908PW	24	16-Oct-09 A	26-Oct-09 A	100%			16
SCPS0379	SCPS: Installation Works of BH908 Piezometer	21	27-Oct-09 A	09-Nov-09 A	100%			9
SCPS0381	SCPS: BH908 Piezometer Baseline Establishment	26	10-Nov-09 A	08-Dec-09 A	100%			1
SCPS0383	SCPS: Excav.Permit/TTA/TTM ApplicationforBH906PW	24	09-Nov-09 A	22-Dec-09 A	100%			-14
SCPS0385	SCPS: Installation Works of BH906 Piezometer	21	23-Dec-09 A	14-Jan-10 A	100%			3
SCPS0387	SCPS: BH906 Piezometer Baseline Establishment	26	15-Jan-10 A	10-Feb-10 A	100%			3
Electrical & Mechanical Installations								
Power Supply Application								
SCPS0615	SCPS: 11KV Application to CLP	6	28-Aug-09 A	28-Aug-09 A	100%			5
SCPS0628A	SCPS: Clear out D-Wall Construction Equipment	0		30-Jul-10 A	100%			0
SCPS0630	SCPS: Construct Substation Foundation	9	11-Sep-10 A	14-Sep-10 A	100%			6
SCPS0632	SCPS: Construct Substation Building	25	20-Sep-10 A	25-Oct-10 A	100%			-3
SCPS0634	SCPS: Fitting Out Substation Building	9	26-Oct-10 A	04-Nov-10 A	100%			0
SCPS0636	SCPS: Fit Out GCL Switchgear	6	05-Nov-10 A	11-Nov-10 A	100%			0
SCPS0638	SCPS: CLP Fit Substation Switchgear	7	17-Jan-11 A	21-Mar-11 A	100%			-46
SCPS0642	SCPS:CompleteSubcontractProcurement&Dwg.Approved	0		03-Jul-10 A	100%			0
SCPS0643	SCPS: Install Main Earthing	14	20-Jan-11 A	08-Feb-11 A	100%			-1
SCPS0644	SCPS: Install Temporary Cable Containment	42	03-Jul-10 A	27-Jul-10 A	100%			21
SCPS0646	SCPS: Pull In CLP 11KV Cables	4	20-Jan-11 A	24-Jan-11 A	100%			0
SCPS0648	SCPS: Terminate 11KV Cables	4	25-Jan-11 A	28-Jan-11 A	100%			0
SCPS0650	SCPS: CLP 11KV Installation	12	27-Jan-11 A	12-Feb-11 A	100%			-1
SCPS0652	SCPS: Carry Out T&C to 11KV Supply	3	14-Feb-11 A	16-Feb-11 A	100%			0
SCPS0654	SCPS: CLP Handover	2	17-Feb-11 A	18-Feb-11 A	100%			0
SCPS0656	SCPS: Construct Container Substation Footings	7	20-Oct-10 A	27-Oct-10 A	100%			0
SCPS0658	SCPS: Install Container Substations	3	28-Oct-10 A	30-Oct-10 A	100%			0
SCPS0660	SCPS: Install Containment to Substations	4	02-Oct-10 A	04-Nov-10 A	100%			-24

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Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

Monthly Progress Update as of 20Dec2014© Oracle Corporation

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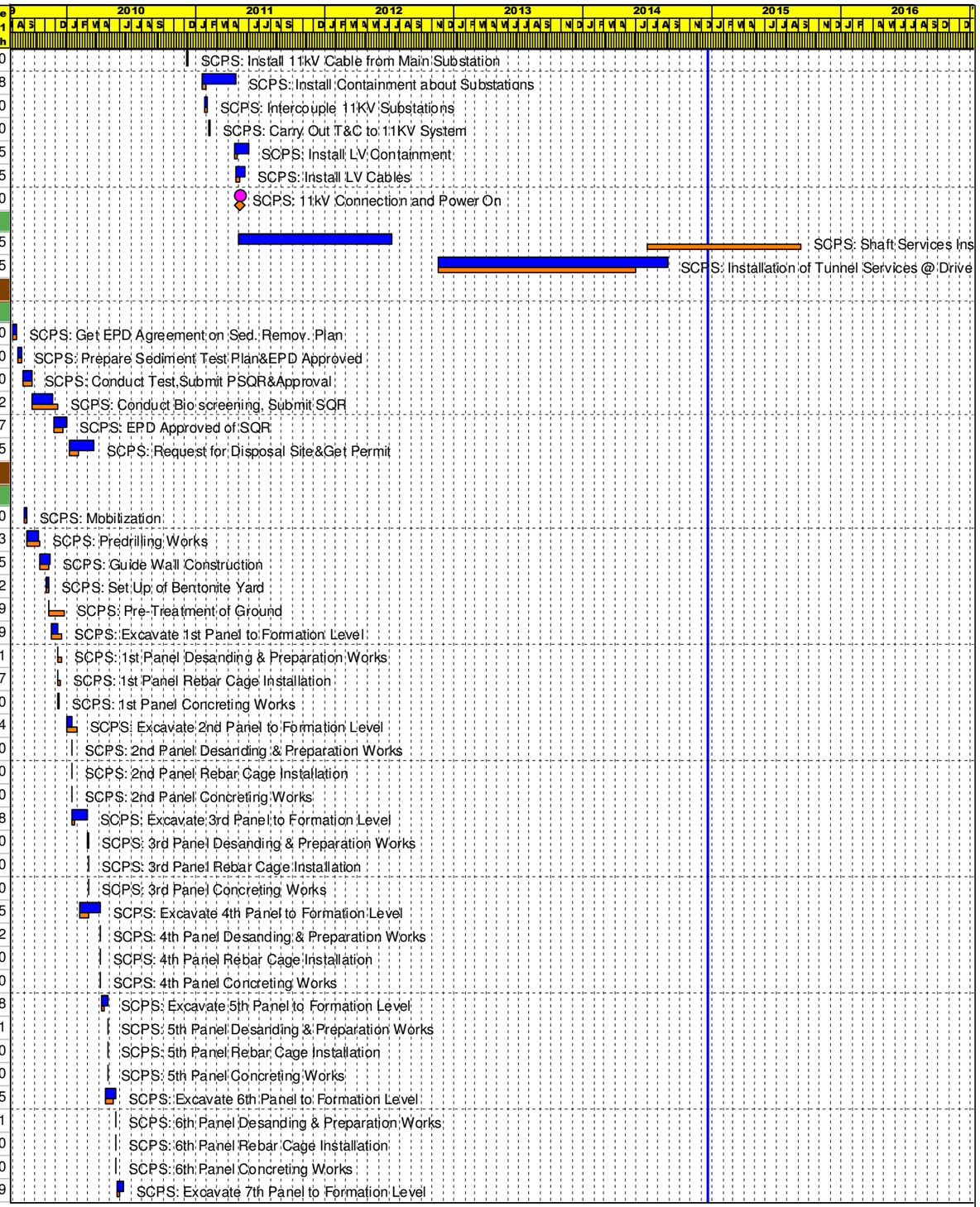
Activity ID	Activity Name	Original Dura...	Start	Finish	Activity % Complete	Total Float	Remaining Float	Variance - BL1 Finish
SCPS0662	SCPS: Install 11kV Cable from Main Substation	4	06-Dec-10 A	09-Dec-10 A	100%			0
SCPS0664	SCPS: Install Containment about Substations	9	20-Jan-11 A	22-Apr-11 A	100%			-68
SCPS0666	SCPS: Intercouple 11KV Substations	5	28-Jan-11 A	02-Feb-11 A	100%			0
SCPS0668	SCPS: Carry Out T&C to 11KV System	2	07-Feb-11 A	08-Feb-11 A	100%			0
SCPS0670	SCPS: Install LV Containment	9	20-Apr-11 A	30-May-11 A	100%			-25
SCPS0672	SCPS: Install LV Cables	9	23-Apr-11 A	21-May-11 A	100%			-15
SCPS0674	SCPS: 11kV Connection and Power On	0		05-May-11 A	100%			0
Unit Installations & Cablings								
SCPS0700	SCPS: Shaft Services Installation	358	03-May-11 A	10-Jul-12 A	100%			945
SCPS0707	SCPS: Installation of Tunnel Services @ Drive1	454	16-Nov-12 A	28-Aug-14 A	100%			-75
Marine Dumping Permit								
No Significant Evnt								
SCPS0320	SCPS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0
SCPS0330	SCPS: Prepare Sediment Test Plan&EPD Approved	12	14-Aug-09 A	27-Aug-09 A	100%			0
SCPS0340	SCPS: Conduct Test,Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
SCPS0350	SCPS: Conduct Bio screening, Submit SQR	60	25-Sep-09 A	23-Nov-09 A	100%			12
SCPS0360	SCPS: EPD Approved of SQR	24	24-Nov-09 A	30-Dec-09 A	100%			-7
SCPS0370	SCPS: Request for Disposal Site&Get Permit	24	07-Jan-10 A	19-Mar-10 A	100%			-35
Diaphragm Wall								
No Significant Evnt								
SCPS0200	SCPS: Mobilization	6	04-Sep-09 A	10-Sep-09 A	100%			0
SCPS0205	SCPS: Predrilling Works	28	11-Sep-09 A	12-Oct-09 A	100%			3
SCPS0207	SCPS: Guide Wall Construction	20	16-Oct-09 A	14-Nov-09 A	100%			-5
SCPS0208	SCPS: Set Up of Bentonite Yard	9	02-Nov-09 A	09-Nov-09 A	100%			2
SCPS0210	SCPS: Pre-Treatment of Ground	40	10-Nov-09 A	10-Nov-09 A	100%			39
SCPS0263	SCPS: Excavate 1st Panel to Formation Level	25	18-Nov-09 A	05-Dec-09 A	100%			9
SCPS0265	SCPS: 1st Panel Desanding & Preparation Works	11	06-Dec-09 A	06-Dec-09 A	100%			11
SCPS0267	SCPS: 1st Panel Rebar Cage Installation	8	07-Dec-09 A	07-Dec-09 A	100%			7
SCPS0269	SCPS: 1st Panel Concreting Works	1	08-Dec-09 A	08-Dec-09 A	100%			0
SCPS0271	SCPS: Excavate 2nd Panel to Formation Level	25	02-Jan-10 A	14-Jan-10 A	100%			14
SCPS0273	SCPS: 2nd Panel Desanding & Preparation Works	1	15-Jan-10 A	15-Jan-10 A	100%			0
SCPS0275	SCPS: 2nd Panel Rebar Cage Installation	1	15-Jan-10 A	15-Jan-10 A	100%			0
SCPS0277	SCPS: 2nd Panel Concreting Works	1	15-Jan-10 A	15-Jan-10 A	100%			0
SCPS0279	SCPS: Excavate 3rd Panel to Formation Level	7	16-Jan-10 A	01-Mar-10 A	100%			-28
SCPS0281	SCPS: 3rd Panel Desanding & Preparation Works	2	02-Mar-10 A	03-Mar-10 A	100%			0
SCPS0283	SCPS: 3rd Panel Rebar Cage Installation	1	04-Mar-10 A	04-Mar-10 A	100%			0
SCPS0285	SCPS: 3rd Panel Concreting Works	1	04-Mar-10 A	04-Mar-10 A	100%			0
SCPS0287	SCPS: Excavate 4th Panel to Formation Level	21	06-Feb-10 A	04-Apr-10 A	100%			-25
SCPS0289	SCPS: 4th Panel Desanding & Preparation Works	2	05-Apr-10 A	05-Apr-10 A	100%			2
SCPS0291	SCPS: 4th Panel Rebar Cage Installation	1	06-Apr-10 A	06-Apr-10 A	100%			0
SCPS0293	SCPS: 4th Panel Concreting Works	1	07-Apr-10 A	07-Apr-10 A	100%			0
SCPS0297	SCPS: Excavate 5th Panel to Formation Level	7	10-Apr-10 A	27-Apr-10 A	100%			-8
SCPS0299	SCPS: 5th Panel Desanding & Preparation Works	2	27-Apr-10 A	27-Apr-10 A	100%			1
SCPS0301	SCPS: 5th Panel Rebar Cage Installation	1	27-Apr-10 A	27-Apr-10 A	100%			0
SCPS0303	SCPS: 5th Panel Concreting Works	1	27-Apr-10 A	27-Apr-10 A	100%			0
SCPS0307	SCPS: Excavate 6th Panel to Formation Level	21	19-Apr-10 A	19-May-10 A	100%			-5
SCPS0309	SCPS: 6th Panel Desanding & Preparation Works	2	20-May-10 A	20-May-10 A	100%			1
SCPS0311	SCPS: 6th Panel Rebar Cage Installation	1	20-May-10 A	20-May-10 A	100%			0
SCPS0313	SCPS: 6th Panel Concreting Works	1	21-May-10 A	21-May-10 A	100%			0
SCPS0317	SCPS: Excavate 7th Panel to Formation Level	7	22-May-10 A	09-Jun-10 A	100%			-9



Start Date	15-Jul-09
Finish Date	22-Sep-16
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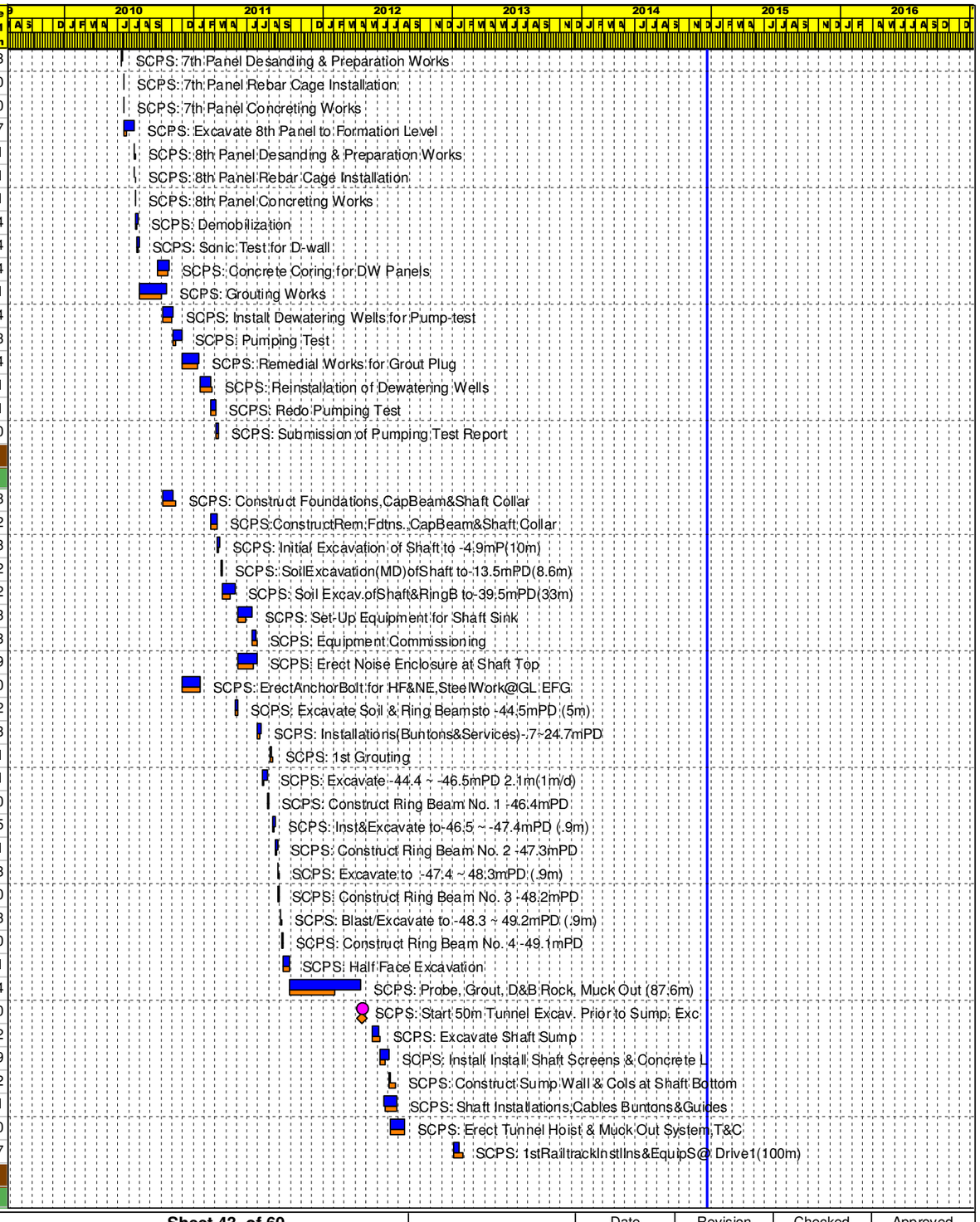
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SCPS0319	SCPS: 7th Panel Desanding & Preparation Works	2	10-Jun-10 A	15-Jun-10 A	100%			-3
SCPS0321	SCPS: 7th Panel Rebar Cage Installation	1	17-Jun-10 A	17-Jun-10 A	100%			0
SCPS0323	SCPS: 7th Panel Concreting Works	1	18-Jun-10 A	18-Jun-10 A	100%			0
SCPS0327	SCPS: Excavate 8th Panel to Formation Level	7	19-Jun-10 A	17-Jul-10 A	100%			-17
SCPS0329	SCPS: 8th Panel Desanding & Preparation Works	2	17-Jul-10 A	17-Jul-10 A	100%			1
SCPS0331	SCPS: 8th Panel Rebar Cage Installation	1	18-Jul-10 A	18-Jul-10 A	100%			1
SCPS0333	SCPS: 8th Panel Concreting Works	1	19-Jul-10 A	19-Jul-10 A	100%			1
SCPS0333A	SCPS: Demobilization	6	19-Jul-10 A	29-Jul-10 A	100%			-4
SCPS0333A1	SCPS: Sonic Test for D-wall	4	23-Jul-10 A	31-Jul-10 A	100%			-4
SCPS0333C	SCPS: Concrete Coring for DW Panels	24	20-Sep-10 A	25-Oct-10 A	100%			-4
SCPS0333E	SCPS: Grouting Works	52	31-Jul-10 A	15-Oct-10 A	100%			-11
SCPS0335	SCPS: Install Dewatering Wells for Pump-test	23	04-Oct-10 A	04-Nov-10 A	100%			-4
SCPS0337	SCPS: Pumping Test	7	05-Nov-10 A	27-Nov-10 A	100%			-13
SCPS0337A	SCPS: Remedial Works for Grout Plug	37	29-Nov-10 A	17-Jan-11 A	100%			-4
SCPS0337C	SCPS: Reinstallation of Dewatering Wells	27	18-Jan-11 A	18-Feb-11 A	100%			1
SCPS0337E	SCPS: Redo Pumping Test	10	19-Feb-11 A	03-Mar-11 A	100%			-1
SCPS0338	SCPS: Submission of Pumping Test Report	6	04-Mar-11 A	10-Mar-11 A	100%			0
Shaft Excavation								
General Works								
SCPS0500	SCPS: Construct Foundations,CapBeam&Shaft Collar	32	06-Oct-10 A	03-Nov-10 A	100%			8
SCPS0500B	SCPS:ConstructRem.Fdtns.,CapBeam&Shaft Collar	17	17-Feb-11 A	06-Mar-11 A	100%			2
SCPS0510	SCPS: Initial Excavation of Shaft to -4.9mP(10m)	5	08-Mar-11 A	16-Mar-11 A	100%			-3
SCPS0512	SCPS: SoilExcavation(MD)ofShaft to-13.5mPD(8.6m)	4	17-Mar-11 A	23-Mar-11 A	100%			-2
SCPS0514	SCPS: Soil Excav.ofShaft&RingB to-39.5mPD(33m)	17	24-Mar-11 A	27-Apr-11 A	100%			-12
SCPS0520	SCPS: Set-Up Equipment for Shaft Sink	22	04-May-11 A	14-Jun-11 A	100%			-13
SCPS0523	SCPS: Equipment Commissioning	12	16-Jun-11 A	25-Jun-11 A	100%			3
SCPS0525	SCPS: Erect Noise Enclosure at Shaft Top	39	04-May-11 A	29-Jun-11 A	100%			-9
SCPS0525B	SCPS: ErectAnchorBolt for HF&NE,SteelWork@GL EFG	42	29-Nov-10 A	18-Jan-11 A	100%			0
SCPS0527	SCPS: Excavate Soil & Ring Beamsto -44.5mPD (5m)	6	28-Apr-11 A	03-May-11 A	100%			2
SCPS0527B	SCPS: Installations(Buntons&Services)-.7~24.7mPD	6	30-Jun-11 A	11-Jul-11 A	100%			-3
SCPS0533	SCPS: 1st Grouting	5	05-Aug-11 A	09-Aug-11 A	100%			1
SCPS0535	SCPS: Excavate -44.4 ~ -46.5mPD 2.1m(1m/d)	4	12-Jul-11 A	28-Jul-11 A	100%			-11
SCPS0537A	SCPS: Construct Ring Beam No. 1 -46.4mPD	4	29-Jul-11 A	02-Aug-11 A	100%			0
SCPS0537C	SCPS: Inst&Excavate to-46.5 ~ -47.4mPD (.9m)	5	10-Aug-11 A	20-Aug-11 A	100%			-5
SCPS0537D	SCPS: Construct Ring Beam No. 2 -47.3mPD	4	20-Aug-11 A	25-Aug-11 A	100%			-1
SCPS0537F	SCPS: Excavate to -47.4 ~ 48.3mPD (.9m)	5	26-Aug-11 A	27-Aug-11 A	100%			3
SCPS0537H	SCPS: Construct Ring Beam No. 3 -48.2mPD	4	27-Aug-11 A	31-Aug-11 A	100%			0
SCPS0537J	SCPS: Blast/Excavate to -48.3 ~ 49.2mPD (.9m)	5	02-Sep-11 A	03-Sep-11 A	100%			3
SCPS0537L	SCPS: Construct Ring Beam No. 4 -49.1mPD	4	05-Sep-11 A	08-Sep-11 A	100%			0
SCPS0537N	SCPS: Half Face Excavation	10	09-Sep-11 A	27-Sep-11 A	100%			-1
SCPS0575	SCPS: Probe, Grout, D&B Rock, Muck Out (87.6m)	101	28-Sep-11 A	17-Apr-12 A	100%			-64
SCPS0575A	SCPS: Start 50m Tunnel Excav. Prior to Sump. Exc	0	18-Apr-12 A		100%			0
SCPS0585	SCPS: Excavate Shaft Sump	21	17-May-12 A	07-Jun-12 A	100%			2
SCPS0589	SCPS: Install Install Shaft Screens & Concrete L	14	08-Jun-12 A	06-Jul-12 A	100%			-9
SCPS0640	SCPS: Construct Sump Wall & Cols at Shaft Bottom	14	07-Jul-12 A	09-Jul-12 A	100%			12
SCPS0651	SCPS: Shaft Installations,Cables Buntons&Guides	30	22-Jun-12 A	27-Jul-12 A	100%			1
SCPS0665	SCPS: Erect Tunnel Hoist & Muck Out System,T&C	35	10-Jul-12 A	18-Aug-12 A	100%			0
SCPS0677	SCPS: 1stRailtrackInstlIns&EquipS@ Drive1(100m)	22	03-Jan-13 A	19-Jan-13 A	100%			7
Shaft Sinking Equipments & Installations								
Shaft Sinking Line Assembly								



Start Date	15-Jul-09
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Primary Baseline
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Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

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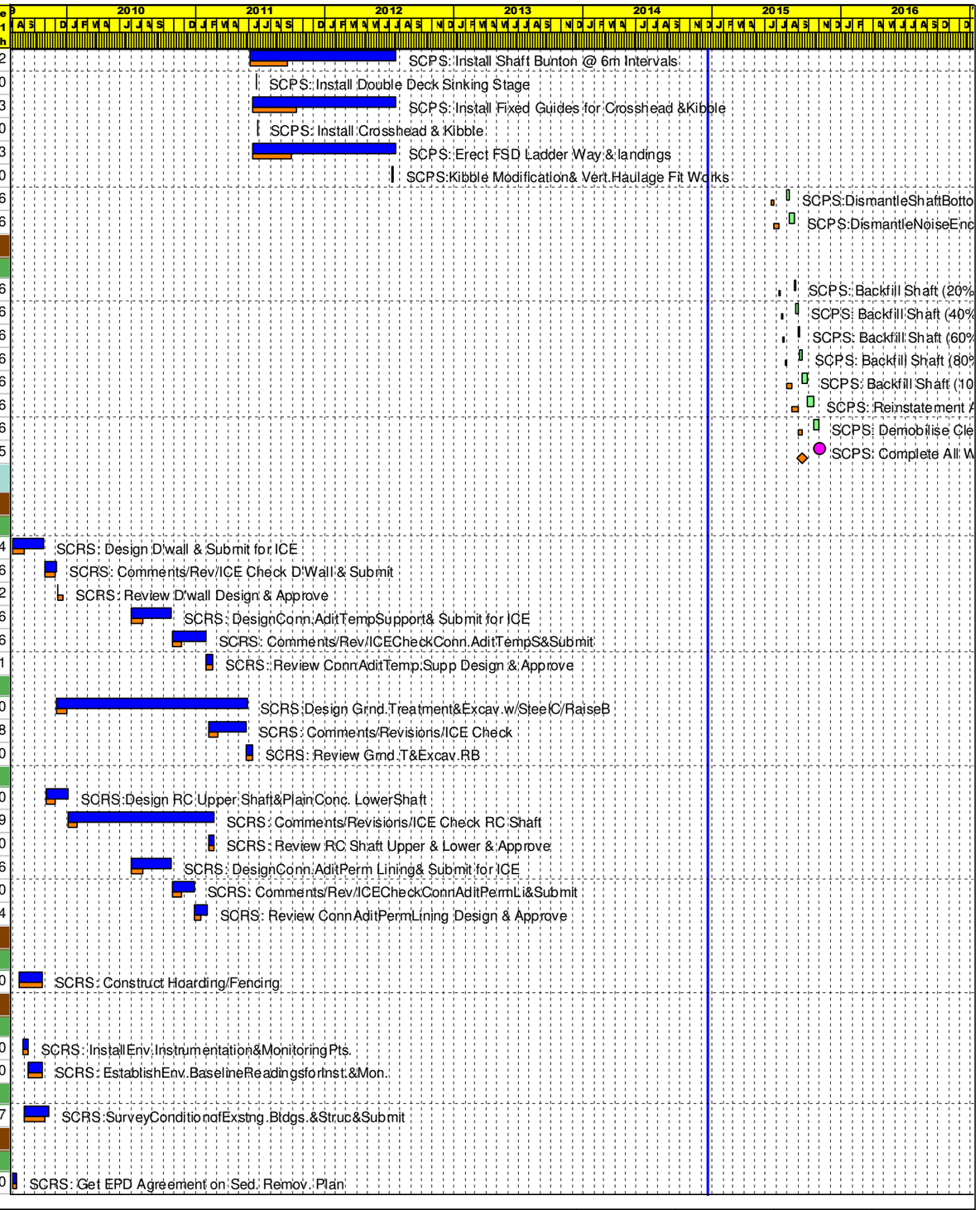
Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SCPS1550	SCPS: Install Shaft Bunton @ 6m Intervals	90	02-Jun-11 A	20-Jul-12 A	100%			-252
SCPS1555	SCPS: Install Double Deck Sinking Stage	4	20-Jun-11 A	23-Jun-11 A	100%			0
SCPS1560	SCPS: Install Fixed Guides for Crosshead &Kibble	104	09-Jun-11 A	20-Jul-12 A	100%			-233
SCPS1565	SCPS: Install Crosshead & Kibble	2	24-Jun-11 A	25-Jun-11 A	100%			0
SCPS1570	SCPS: Erect FSD Ladder Way & landings	92	11-Jun-11 A	20-Jul-12 A	100%			-243
SCPS1575	SCPS:Kibble Modification& Vert.Haulage Fit Works	4	10-Jul-12 A	13-Jul-12 A	100%			0
SCPS1700	SCPS:DismantleShaftBottomInstallations&Equipts.	8	30-Jul-15	08-Aug-15	0%	269	269	-36
SCPS1710	SCPS:DismantleNoiseEnclosure&SSEquipts.	10	08-Aug-15	20-Aug-15	0%	269	269	-36
Backfill, Reinstatement & Landscaping								
No Significant Evnt								
SCPS0910	SCPS: Backfill Shaft (20%)	5	20-Aug-15	26-Aug-15	0%	269	269	-36
SCPS0920	SCPS: Backfill Shaft (40%)	5	26-Aug-15	01-Sep-15	0%	269	269	-36
SCPS0930	SCPS: Backfill Shaft (60%)	5	01-Sep-15	07-Sep-15	0%	269	269	-36
SCPS0940	SCPS: Backfill Shaft (80%)	5	07-Sep-15	12-Sep-15	0%	269	269	-36
SCPS0950	SCPS: Backfill Shaft (100%)	12	12-Sep-15	26-Sep-15	0%	269	269	-36
SCPS0960	SCPS: Reinstatement Around PS Area	14	26-Sep-15	15-Oct-15	0%	269	269	-36
SCPS0970	SCPS: Demobilise Clear Area	12	15-Oct-15	30-Oct-15	0%	269	269	-36
SCPS0975	SCPS: Complete All Works at SCI PS (KD-11)	0		30-Oct-15	0%	329	329	-45
Stonecutters Island STW Riser Shaft								
Design Submissions								
Temporary Wall & ELS to Formation/Rockhead Level								
SCRS10010	SCRS: Design D'wall & Submit for ICE	30	31-Jul-09 A	28-Oct-09 A	100%			-44
SCRS10015	SCRS: Comments/Rev/ICE Check D'Wall & Submit	25	30-Oct-09 A	04-Dec-09 A	100%			-6
SCRS10020	SCRS: Review D'wall Design & Approve	14	05-Dec-09 A	07-Dec-09 A	100%			12
SCRS10050	SCRS: DesignConn.AditTempSupport& Submit for ICE	30	02-Jul-10 A	25-Oct-10 A	100%			-66
SCRS10052	SCRS: Comments/Rev/ICECheckConn.AditTempS&Submit	25	26-Oct-10 A	29-Jan-11 A	100%			-56
SCRS10054	SCRS: Review ConnAditTemp.Supp Design & Approve	14	31-Jan-11 A	18-Feb-11 A	100%			-1
Grnd.Treatment&Excavw/SteelCasing/RaiseBoring								
SCRS10200	SCRS:Design Grnd.Treatment&Excav.w/SteelC/RaiseB	24	03-Dec-09 A	25-May-11 A	100%			-420
SCRS10202	SCRS: Comments/Revisions/ICE Check	21	08-Feb-11 A	24-May-11 A	100%			-68
SCRS10204	SCRS: Review Grnd.T&Excav.RB	14	25-May-11 A	10-Jun-11 A	100%			0
Permanent Works								
SCRS10206	SCRS:Design RC Upper Shaft&PlainConc. LowerShaft	24	02-Nov-09 A	05-Jan-10 A	100%			-30
SCRS10208	SCRS: Comments/Revisions/ICE Check RC Shaft	21	06-Jan-10 A	22-Feb-11 A	100%			-319
SCRS10210	SCRS: Review RC Shaft Upper & Lower & Approve	14	07-Feb-11 A	22-Feb-11 A	100%			0
SCRS10220	SCRS: DesignConn.AditPerm Lining& Submit for ICE	30	02-Jul-10 A	25-Oct-10 A	100%			-66
SCRS10222	SCRS: Comments/Rev/ICECheckConnAditPermLi&Submit	25	26-Oct-10 A	29-Dec-10 A	100%			-30
SCRS10224	SCRS: Review ConnAditPermLining Design & Approve	14	30-Dec-10 A	01-Feb-11 A	100%			-14
Preliminaries Works								
No Significant Evnt								
SCRS0160	SCRS: Construct Hoarding/Fencing	55	18-Aug-09 A	22-Oct-09 A	100%			0
EBS, Env. & Geotechnical Instrumentations								
Environmental								
SCRS0174	SCRS: InstallEnv.Instrumentation&MonitoringPts.	14	28-Aug-09 A	12-Sep-09 A	100%			0
SCRS0177	SCRS: EstablishEnv.BaselineReadingsforInst.&Mon.	34	14-Sep-09 A	24-Oct-09 A	100%			0
EBS Works								
SCRS0362	SCRS:SurveyConditionofExstng.Bldgs.&Struc&Submit	50	01-Sep-09 A	09-Nov-09 A	100%			-7
Marine Dumping Permit								
No Significant Evnt								
SCRS0320	SCRS: Get EPD Agreement on Sed. Remov. Plan	12	31-Jul-09 A	13-Aug-09 A	100%			0



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Primary Baseline
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Harbour Area Treatment Scheme Stage 2A

Contract No. DC/2007/23 - Construction of Sewage Conveyance from North Point to Stonecutters Island Programme

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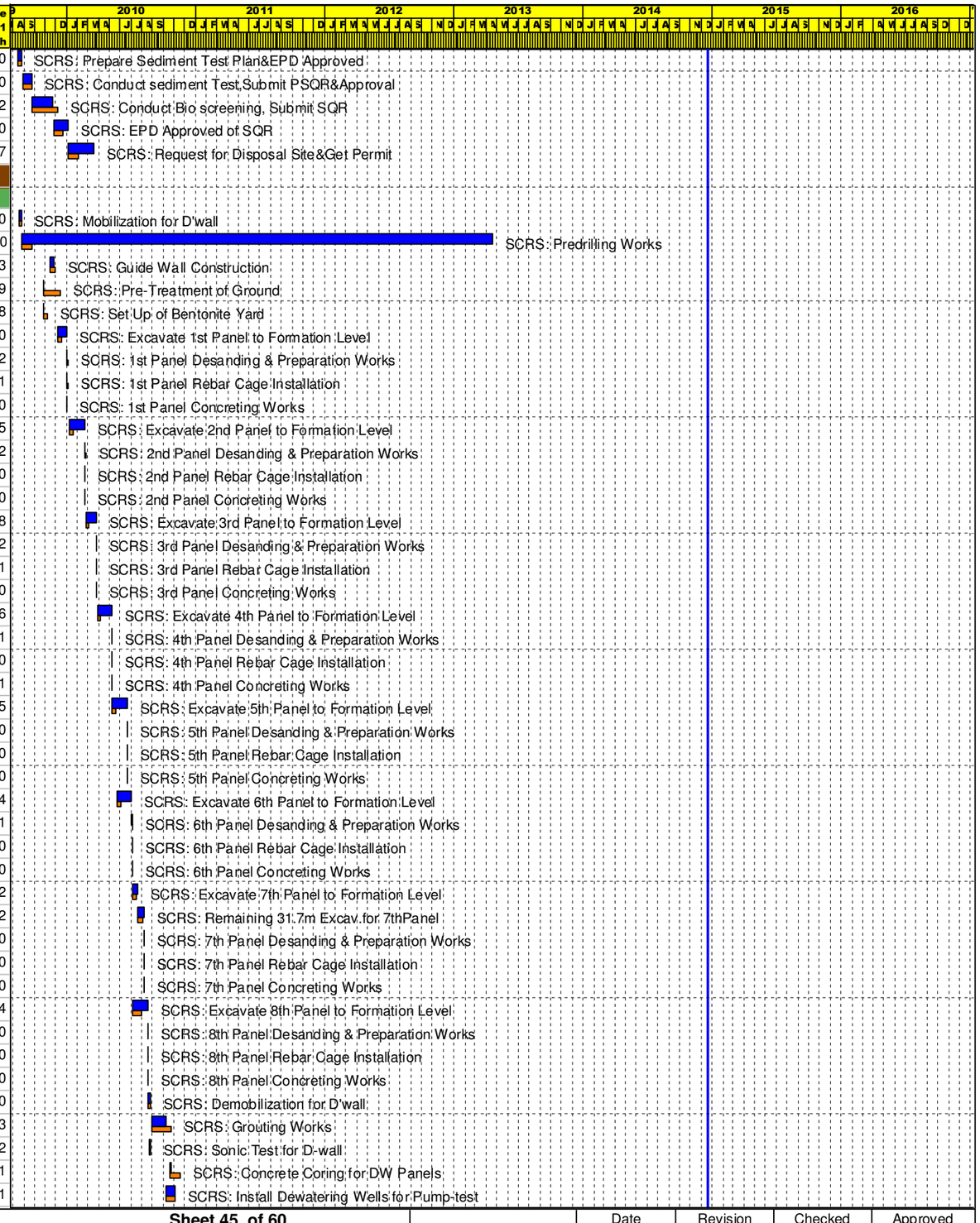
Date	Revision	Checked	Approved

Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SCRS0330	SCRS: Prepare Sediment Test Plan&EPD Approved	12	14-Aug-09 A	27-Aug-09 A	100%			0
SCRS0340	SCRS: Conduct sediment Test,Submit PSQR&Approval	24	28-Aug-09 A	24-Sep-09 A	100%			0
SCRS0350	SCRS: Conduct Bio screening, Submit SQR	60	25-Sep-09 A	23-Nov-09 A	100%			12
SCRS0360	SCRS: EPD Approved of SQR	24	24-Nov-09 A	04-Jan-10 A	100%			-10
SCRS0370	SCRS: Request for Disposal Site&Get Permit	24	05-Jan-10 A	19-Mar-10 A	100%			-37
Diaphragm Wall								
No Significant Evnt								
SCRS0200	SCRS: Mobilization for D'wall	6	18-Aug-09 A	24-Aug-09 A	100%			0
SCRS0205	SCRS: Predrilling Works	28	25-Aug-09 A	20-Apr-13 A	100%			-1070
SCRS0206	SCRS: Guide Wall Construction	12	16-Nov-09 A	25-Nov-09 A	100%			3
SCRS0210	SCRS: Pre-Treatment of Ground	40	28-Oct-09 A	28-Oct-09 A	100%			39
SCRS0230	SCRS: Set Up of Bentonite Yard	9	28-Oct-09 A	28-Oct-09 A	100%			8
SCRS0263	SCRS: Excavate 1st Panel to Formation Level	9	08-Dec-09 A	30-Dec-09 A	100%			-10
SCRS0265	SCRS: 1st Panel Desanding & Preparation Works	3	31-Dec-09 A	31-Dec-09 A	100%			2
SCRS0267	SCRS: 1st Panel Rebar Cage Installation	2	02-Jan-10 A	02-Jan-10 A	100%			1
SCRS0269	SCRS: 1st Panel Concreting Works	1	02-Jan-10 A	02-Jan-10 A	100%			0
SCRS0271	SCRS: Excavate 2nd Panel to Formation Level	8	09-Jan-10 A	19-Feb-10 A	100%			-25
SCRS0273	SCRS: 2nd Panel Desanding & Preparation Works	3	20-Feb-10 A	21-Feb-10 A	100%			2
SCRS0275	SCRS: 2nd Panel Rebar Cage Installation	1	22-Feb-10 A	22-Feb-10 A	100%			0
SCRS0277	SCRS: 2nd Panel Concreting Works	1	22-Feb-10 A	22-Feb-10 A	100%			0
SCRS0279	SCRS: Excavate 3rd Panel to Formation Level	7	24-Feb-10 A	24-Mar-10 A	100%			-18
SCRS0281	SCRS: 3rd Panel Desanding & Preparation Works	3	25-Mar-10 A	25-Mar-10 A	100%			2
SCRS0283	SCRS: 3rd Panel Rebar Cage Installation	2	25-Mar-10 A	25-Mar-10 A	100%			1
SCRS0285	SCRS: 3rd Panel Concreting Works	1	26-Mar-10 A	26-Mar-10 A	100%			0
SCRS0287	SCRS: Excavate 4th Panel to Formation Level	7	29-Mar-10 A	07-May-10 A	100%			-26
SCRS0289	SCRS: 4th Panel Desanding & Preparation Works	2	08-May-10 A	08-May-10 A	100%			1
SCRS0291	SCRS: 4th Panel Rebar Cage Installation	1	08-May-10 A	08-May-10 A	100%			0
SCRS0293	SCRS: 4th Panel Concreting Works	1	10-May-10 A	10-May-10 A	100%			1
SCRS0295	SCRS: Excavate 5th Panel to Formation Level	10	10-May-10 A	20-Jun-10 A	100%			-25
SCRS0297	SCRS: 5th Panel Desanding & Preparation Works	1	21-Jun-10 A	21-Jun-10 A	100%			0
SCRS0299	SCRS: 5th Panel Rebar Cage Installation	1	22-Jun-10 A	22-Jun-10 A	100%			0
SCRS0301	SCRS: 5th Panel Concreting Works	1	22-Jun-10 A	22-Jun-10 A	100%			0
SCRS0303	SCRS: Excavate 6th Panel to Formation Level	10	24-May-10 A	03-Jul-10 A	100%			-24
SCRS0305	SCRS: 6th Panel Desanding & Preparation Works	1	04-Jul-10 A	04-Jul-10 A	100%			1
SCRS0307	SCRS: 6th Panel Rebar Cage Installation	1	05-Jul-10 A	05-Jul-10 A	100%			0
SCRS0309	SCRS: 6th Panel Concreting Works	1	05-Jul-10 A	05-Jul-10 A	100%			0
SCRS0311	SCRS: Excavate 7th Panel to Formation Level	10	06-Jul-10 A	19-Jul-10 A	100%			-2
SCRS0311A	SCRS: Remaining 31.7m Excav.for 7thPanel	15	20-Jul-10 A	07-Aug-10 A	100%			-2
SCRS0313	SCRS: 7th Panel Desanding & Preparation Works	1	07-Aug-10 A	07-Aug-10 A	100%			0
SCRS0315	SCRS: 7th Panel Rebar Cage Installation	1	09-Aug-10 A	09-Aug-10 A	100%			0
SCRS0317	SCRS: 7th Panel Concreting Works	1	09-Aug-10 A	09-Aug-10 A	100%			0
SCRS0319	SCRS: Excavate 8th Panel to Formation Level	24	06-Jul-10 A	18-Aug-10 A	100%			-14
SCRS0321	SCRS: 8th Panel Desanding & Preparation Works	1	18-Aug-10 A	18-Aug-10 A	100%			0
SCRS0323	SCRS: 8th Panel Rebar Cage Installation	1	19-Aug-10 A	19-Aug-10 A	100%			0
SCRS0325	SCRS: 8th Panel Concreting Works	1	19-Aug-10 A	19-Aug-10 A	100%			0
SCRS0327	SCRS: Demobilization for D'wall	6	20-Aug-10 A	26-Aug-10 A	100%			0
SCRS0356	SCRS: Grouting Works	45	29-Aug-10 A	07-Oct-10 A	100%			13
SCRS0373A	SCRS: Sonic Test for D-wall	4	24-Aug-10 A	25-Aug-10 A	100%			2
SCRS0373C	SCRS: Concrete Coring for DW Panels	24	20-Oct-10 A	22-Oct-10 A	100%			21
SCRS0380	SCRS: Install Dewatering Wells for Pump-test	21	08-Oct-10 A	03-Nov-10 A	100%			-1



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Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SCRS0390	SCRS: Pumping Test	7	04-Nov-10 A	26-Nov-10 A	100%			-13
SCRS0392	SCRS: Submission of Pumping Test Report	6	27-Nov-10 A	03-Dec-10 A	100%			0
Shaft Excavation								
Pre-Excavation Grouting								
SCRS0500	SCRS: Mobilisation to site plant & equipment	3	12-Jul-12 A	14-Jul-12 A	100%			0
SCRS0502	SCRS: Drill forDownp.GroutHoles(DP1G1)87m(10m/d)	9	16-Jul-12 A	08-Aug-12 A	100%			-12
SCRS0504	SCRS: Drilling for Downp.GroutHoles(DP1G2)	9	16-Aug-12 A	31-Aug-12 A	100%			-5
SCRS0506	SCRS: Drilling for Downp.GroutHoles(DP1G3)	9	17-Sep-12 A	28-Sep-12 A	100%			-2
SCRS0508	SCRS: Drilling for Downp.GroutHoles(DP1G4)	9	06-Oct-12 A	22-Oct-12 A	100%			-5
SCRS0510	SCRS: Drilling for Downp.GroutHoles(DP1G5)	9	01-Nov-12 A	07-Nov-12 A	100%			3
SCRS0512	SCRS: Drilling for Downp.GroutHoles(DP1G6)	9	13-Nov-12 A	15-Nov-12 A	100%			6
SCRS0514	SCRS: Grouting for Downp.GroutHoles(DP1G1) 7d/h	7	09-Aug-12 A	15-Aug-12 A	100%			1
SCRS0516	SCRS: Grouting for Downp.GroutHoles(DP1G2)	7	01-Sep-12 A	15-Sep-12 A	100%			-6
SCRS0518	SCRS: Grouting for Downp.GroutHoles(DP1G3)	7	28-Sep-12 A	05-Oct-12 A	100%			2
SCRS0520	SCRS: Grouting for Downp.GroutHoles(DP1G4)	7	24-Oct-12 A	31-Oct-12 A	100%			0
SCRS0522	SCRS: Grouting for Downp.GroutHoles(DP1G5)	7	08-Nov-12 A	12-Nov-12 A	100%			3
SCRS0524	SCRS: Grouting for Downp.GroutHoles(DP1G6)	7	16-Nov-12 A	19-Nov-12 A	100%			4
SCRS0526	SCRS: Drilling for Downp.GroutCheckH(DP1CH1)	9	20-Nov-12 A	29-Nov-12 A	100%			0
SCRS0528	SCRS: Drilling for Downp.GroutCheckH(DP1CH2)	9	08-Dec-12 A	18-Dec-12 A	100%			0
SCRS0530	SCRS: Grouting for Downp.GroutCheckH(DP1CH1)	7	30-Nov-12 A	07-Dec-12 A	100%			0
SCRS0532	SCRS: Grouting for Downp.GroutCheckH(DP1CH2)	7	19-Dec-12 A	27-Dec-12 A	100%			0
SCRS0534	SCRS: De-mobilisation to site plant & equipment	2	28-Dec-12 A	29-Dec-12 A	100%			0
No Significant Evnt								
SCRS0400	SCRS: Construct Capping Beam & Shaft Collar	12	21-Dec-10 A	13-Jan-11 A	100%			-7
SCRS0410	SCRS:ExcavateSoil&RingBeams -26.95mPD(32.45m)Ph1	33	14-Jan-11 A	06-Mar-11 A	100%			-9
SCRS0412	SCRS:Remaining Interface Grouting Works (17nos.)	58	12-Apr-12 A	14-Jun-12 A	100%			4
SCRS0413	SCRS:Ph 2 Install Dewatering Wells for Pump Test	8	15-Jun-12 A	03-Jul-12 A	100%			-6
SCRS0414	SCRS:Ph 2 Pumping Test	14	04-Jul-12 A	11-Jul-12 A	100%			7
SCRS0415	SCRS:ExcavateSoil&RingBeams -52.9mPD(25.95m) Ph2	20	31-Dec-12 A	26-Mar-13 A	100%			-50
SCRS0417	SCRS:Ring Beam 1 Construction @ -47mPD	4	27-Mar-13 A	03-Apr-13 A	100%			-1
SCRS0418	SCRS:ExcavateSoil/Rock to -48.0mPD(1m)	6	05-Apr-13 A	11-Apr-13 A	100%			0
SCRS0419	SCRS:Ring Beam 2 Construction @ -48mPD	4	12-Apr-13 A	16-Apr-13 A	100%			0
SCRS0419B	SCRS:ExcavateSoil/Rock to -49.0mPD(1m)	6	17-Apr-13 A	20-Apr-13 A	100%			2
SCRS0420	SCRS: Construct Levelling Pad	3	22-Apr-13 A	24-Apr-13 A	100%			0
Raised Boring								
No Significant Evnt								
SCRS0698	SCRS: Transport Raise Drill	5	25-Apr-13 A	30-Apr-13 A	100%			0
SCRS0700	SCRS: Rig Up Hole 1	2	02-May-13 A	03-May-13 A	100%			0
SCRS0710	SCRS: Pilot Drill 90 mtrs	9	04-May-13 A	14-May-13 A	100%			0
SCRS0720	SCRS: Attach reamer and Collar	3	15-May-13 A	18-May-13 A	100%			0
SCRS0730	SCRS: Ream 90 metres @ 3.7 mtr dia	65	20-May-13 A	05-Aug-13 A	100%			0
SCRS0740	SCRS: Lower Reamer and Remove	4	05-Aug-13 A	09-Aug-13 A	100%			-34
SCRS0750	SCRS: De Rig Raise borer	29	09-Aug-13 A	12-Sep-13 A	100%			-35
Lower Shaft Construction								
No Significant Evnt								
SCRS0835	SCRS: Blinding Layer & Base Slab for LS	8	20-Dec-13 A	02-Jan-14 A	100%			-142
SCRS0840	SCRS: Bank shunt concreting	41	02-Jan-14 A	22-Feb-14 A	100%			-144
SCRS0875	SCRS: Constru Verti-Shft to Tun Invert -136.5mPD	13	24-Feb-14 A	11-Mar-14 A	100%			-168
SCRS0885	SCRS: Install System Form for LS -136.5mPD	11	12-Mar-14 A	25-Mar-14 A	100%			-168
SCRS0935	SCRS: Construct Transition & Vert Shaft -136mPD	15	26-Mar-14 A	14-Apr-14 A	100%			-168

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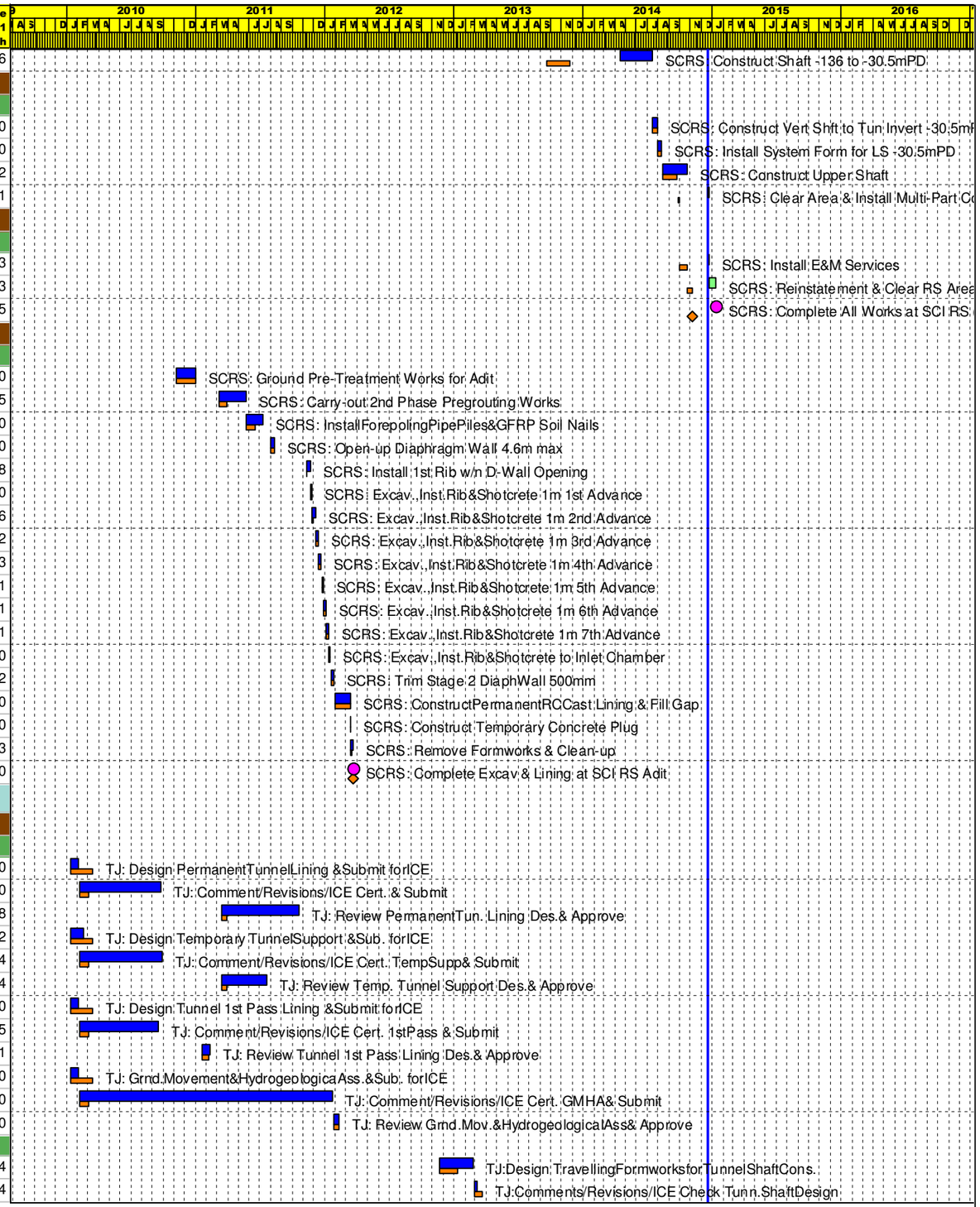
Activity ID	Activity Name	Origina Dura...	Start	Finish	Activity % mplete	Total Float	naining Float	riance - BL1 Finish
SCRS0940	SCRS: Construct Shaft -136 to -30.5mPD	54	15-Apr-14 A	16-Jul-14 A	100%			-186
Upper Shaft Construction								
No Significant Evnt								
SCRS0975	SCRS: Construct Vert Shft to Tun Invert -30.5mPD	12	16-Jul-14 A	29-Jul-14 A	100%			0
SCRS0995	SCRS: Install System Form for LS -30.5mPD	12	30-Jul-14 A	12-Aug-14 A	100%			0
SCRS1045	SCRS: Construct Upper Shaft	47	13-Aug-14 A	21-Oct-14 A	100%			-22
SCRS1065	SCRS: Clear Area & Install Multi-Part Cover	3	20-Dec-14	23-Dec-14	0%	509	509	-71
Miscellaneous Works								
No Significant Evnt								
SCRS2010	SCRS: Install E&M Services	0	24-Dec-14	24-Dec-14	0%	509	509	-53
SCRS2020	SCRS: Reinstatement & Clear RS Area	12	24-Dec-14	09-Jan-15	0%	509	509	-53
SCRS2025	SCRS: Complete All Works at SCI RS (KD-11)	0		09-Jan-15	0%	622	622	-65
Connecting Adit								
No Significant Evnt								
SCRS2030	SCRS: Ground Pre-Treatment Works for Adit	45	07-Nov-10 A	31-Dec-10 A	100%			0
SCRS2100	SCRS: Carry-out 2nd Phase Pregrouting Works	18	08-Mar-11 A	22-May-11 A	100%			-45
SCRS2102	SCRS: InstallForepolingPipePiles&GFRP Soil Nails	21	23-May-11 A	11-Jul-11 A	100%			-20
SCRS2104	SCRS: Open-up Diaphragm Wall 4.6m max	11	02-Aug-11 A	13-Aug-11 A	100%			0
SCRS2108	SCRS: Install 1st Rib w/n D-Wall Opening	1	11-Nov-11 A	21-Nov-11 A	100%			-8
SCRS2108B	SCRS: Excav.,Inst.Rib&Shotcrete 1m 1st Advance	4	22-Nov-11 A	25-Nov-11 A	100%			0
SCRS2108D	SCRS: Excav.,Inst.Rib&Shotcrete 1m 2nd Advance	4	26-Nov-11 A	07-Dec-11 A	100%			-6
SCRS2108F	SCRS: Excav.,Inst.Rib&Shotcrete 1m 3rd Advance	4	08-Dec-11 A	14-Dec-11 A	100%			-2
SCRS2108H	SCRS: Excav.,Inst.Rib&Shotcrete 1m 4th Advance	4	15-Dec-11 A	22-Dec-11 A	100%			-3
SCRS2108J	SCRS: Excav.,Inst.Rib&Shotcrete 1m 5th Advance	4	23-Dec-11 A	29-Dec-11 A	100%			-1
SCRS2108L	SCRS: Excav.,Inst.Rib&Shotcrete 1m 6th Advance	4	30-Dec-11 A	05-Jan-12 A	100%			-1
SCRS2108N	SCRS: Excav.,Inst.Rib&Shotcrete 1m 7th Advance	4	06-Jan-12 A	11-Jan-12 A	100%			-1
SCRS2108P	SCRS: Excav.,Inst.Rib&Shotcrete to Inlet Chamber	5	12-Jan-12 A	17-Jan-12 A	100%			0
SCRS2110	SCRS: Trim Stage 2 DiaphWall 500mm	5	18-Jan-12 A	28-Jan-12 A	100%			-2
SCRS2112	SCRS: ConstructPermanentRCCast Lining & Fill Gap	37	30-Jan-12 A	12-Mar-12 A	100%			0
SCRS2116	SCRS: Construct Temporary Concrete Plug	2	13-Mar-12 A	14-Mar-12 A	100%			0
SCRS2118	SCRS: Remove Formworks & Clean-up	4	15-Mar-12 A	22-Mar-12 A	100%			-3
SCRS2300	SCRS: Complete Excav & Lining at SCI RS Adit	0		23-Mar-12 A	100%			0
Tunnel J - NP to WCE (Length 3202m)								
Design Submissions								
Major Works								
TJ10070	TJ: Design PermanentTunnelLining &Submit forICE	52	11-Jan-10 A	04-Feb-10 A	100%			30
TJ10080	TJ: Comment/Revisions/ICE Cert. & Submit	21	05-Feb-10 A	24-Sep-10 A	100%			-170
TJ10091	TJ: Review PermanentTun. Lining Des.& Approve	14	15-Mar-11 A	20-Oct-11 A	100%			-168
TJ10100	TJ: Design Temporary TunnelSupport &Sub. forICE	52	11-Jan-10 A	17-Feb-10 A	100%			22
TJ10106	TJ: Comment/Revisions/ICE Cert. TempSupp& Submit	21	05-Feb-10 A	29-Sep-10 A	100%			-174
TJ10110	TJ: Review Temp. Tunnel Support Des.& Approve	14	15-Mar-11 A	22-Jul-11 A	100%			-94
TJ10115	TJ: Design Tunnel 1st Pass Lining &Submit forICE	52	11-Jan-10 A	04-Feb-10 A	100%			30
TJ10120	TJ: Comment/Revisions/ICE Cert. 1stPass & Submit	21	05-Feb-10 A	17-Sep-10 A	100%			-165
TJ10125	TJ: Review Tunnel 1st Pass Lining Des.& Approve	14	20-Jan-11 A	08-Feb-11 A	100%			-1
TJ10130	TJ: Grnd.Movement&HydrogeologicaAss.&Sub. forICE	52	11-Jan-10 A	04-Feb-10 A	100%			30
TJ10135	TJ: Comment/Revisions/ICE Cert. GMHA& Submit	21	05-Feb-10 A	21-Jan-12 A	100%			-570
TJ10140	TJ: Review Grnd.Mov.&HydrogeologicalAss& Approve	14	26-Jan-12 A	10-Feb-12 A	100%			0
Related Design								
TJ10150	TJ:Design TravellingFormworksforTunnelShaftCons.	45	20-Nov-12 A	25-Feb-13 A	100%			-34
TJ10155	TJ:Comments/Revisions/ICE Check Tunn.ShaftDesign	21	26-Feb-13 A	05-Mar-13 A	100%			14



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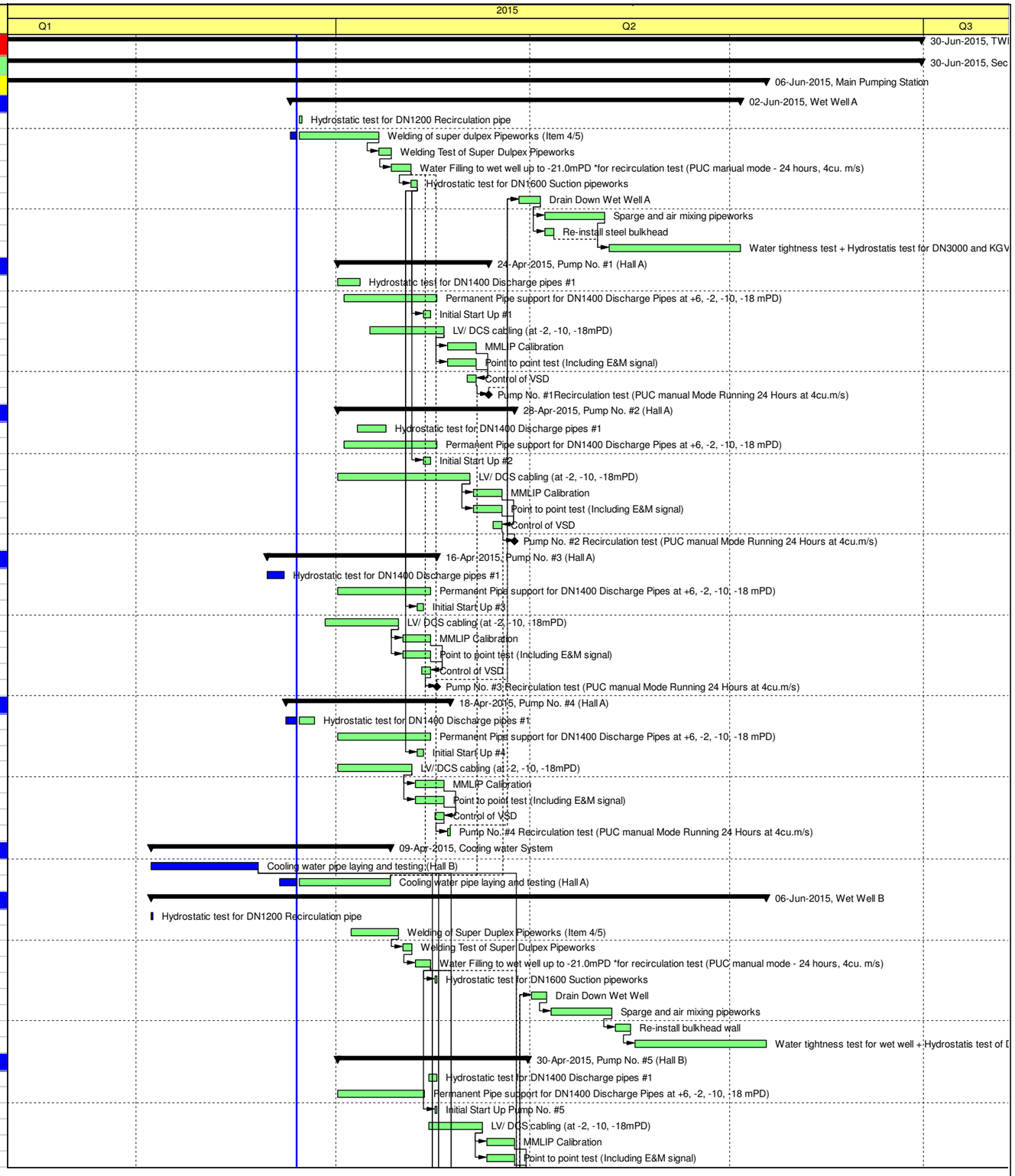
Activity ID	Activity Name	Original Duration	Activity % Complete	Start	Finish
TWP R7B					
Section 3					
Main Pumping Station					
Wet Well A					
A0095	Hydrostatic test for DN1200 Recirculation pipe	1	0%	26-Mar-2015	26-Mar-2015
A1000	Welding of super dulpex Pipeworks (Item 4/5)	15	15%	25-Mar-2015 A	07-Apr-2015
A1020	Welding Test of Super Dulpex Pipeworks	2	0%	07-Apr-2015	09-Apr-2015
A1070	Water Filling to wet well up to -21.0mPD *for recirculation test (PUC manual mode - 24 hours, 4cu. m	3	0%	09-Apr-2015	12-Apr-2015
A1100	Hydrostatic test for DN1600 Suction pipeworks	1	0%	12-Apr-2015	13-Apr-2015
A1770	Drain Down Wet Well A	4	0%	29-Apr-2015	02-May-2015
A1775	Sparge and air mixing pipeworks	10	0%	03-May-2015	12-May-2015
A1790	Re-install steel bulkhead	2	0%	03-May-2015	04-May-2015
A1800	Water tightness test + Hydrostatis test for DN3000 and KGV	21	0%	13-May-2015	02-Jun-2015
Pump No. #1 (Hall A)					
A1040	Hydrostatic test for DN1400 Discharge pipes #1	4	0%	01-Apr-2015*	04-Apr-2015
A1050	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	15	0%	02-Apr-2015*	16-Apr-2015
A1060	Initial Start Up #1	1	0%	14-Apr-2015	15-Apr-2015
A1090	LV/ DCS cabling (at -2, -10, -18mPD)	12	0%	06-Apr-2015*	17-Apr-2015
A1120	MMLIP Calibration	5	0%	18-Apr-2015	22-Apr-2015
A1130	Point to point test (Including E&M signal)	5	0%	18-Apr-2015	22-Apr-2015
A1140	Control of VSD	2	0%	21-Apr-2015	22-Apr-2015
A1150	Pump No. #1Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		24-Apr-2015
Pump No. #2 (Hall A)					
A1160	Hydrostatic test for DN1400 Discharge pipes #1	5	0%	04-Apr-2015*	08-Apr-2015
A1170	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	15	0%	02-Apr-2015*	16-Apr-2015
A1180	Initial Start Up #2	1	0%	14-Apr-2015	15-Apr-2015
A1190	LV/ DCS cabling (at -2, -10, -18mPD)	21	0%	01-Apr-2015*	21-Apr-2015
A1200	MMLIP Calibration	5	0%	22-Apr-2015	26-Apr-2015
A1210	Point to point test (Including E&M signal)	5	0%	22-Apr-2015	26-Apr-2015
A1220	Control of VSD	2	0%	25-Apr-2015	26-Apr-2015
A1230	Pump No. #2 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		28-Apr-2015
Pump No. #3 (Hall A)					
A1240	Hydrostatic test for DN1400 Discharge pipes #1	3	100%	21-Mar-2015 A	24-Mar-2015 A
A1250	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	15	0%	01-Apr-2015*	15-Apr-2015
A1260	Initial Start Up #3	1	0%	13-Apr-2015	14-Apr-2015
A1270	LV/ DCS cabling (at -2, -10, -18mPD)	12	0%	30-Mar-2015*	10-Apr-2015
A1280	MMLIP Calibration	5	0%	11-Apr-2015	15-Apr-2015
A1290	Point to point test (Including E&M signal)	5	0%	11-Apr-2015	15-Apr-2015
A1300	Control of VSD	2	0%	14-Apr-2015	15-Apr-2015
A1310	Pump No. #3 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		16-Apr-2015
Pump No. #4 (Hall A)					
A1320	Hydrostatic test for DN1400 Discharge pipes #1	4	30%	24-Mar-2015 A	28-Mar-2015
A1330	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	15	0%	01-Apr-2015*	15-Apr-2015
A1340	Initial Start Up #4	1	0%	13-Apr-2015	14-Apr-2015
A1350	LV/ DCS cabling (at -2, -10, -18mPD)	12	0%	01-Apr-2015*	12-Apr-2015
A1360	MMLIP Calibration	5	0%	13-Apr-2015	17-Apr-2015
A1370	Point to point test (Including E&M signal)	5	0%	13-Apr-2015	17-Apr-2015
A1380	Control of VSD	2	0%	16-Apr-2015	17-Apr-2015
A1390	Pump No. #4 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	1	0%	18-Apr-2015	18-Apr-2015
Cooling water System					
A1720	Cooling water pipe laying and testing (Hall B)	15	100%	03-Mar-2015 A	20-Mar-2015 A
A1730	Cooling water pipe laying and testing (Hall A)	15	5%	23-Mar-2015 A	09-Apr-2015
Wet Well B					
A1005	Hydrostatic test for DN1200 Recirculation pipe	1	100%	03-Mar-2015 A	03-Mar-2015 A
A1010	Welding of Super Duplex Pipeworks (Item 4/5)	8	0%	03-Apr-2015*	10-Apr-2015
A1030	Welding Test of Super Dulpex Pipeworks	2	0%	11-Apr-2015	12-Apr-2015
A1080	Water Filling to wet well up to -21.0mPD *for recirculation test (PUC manual mode - 24 hours, 4cu. m	3	0%	13-Apr-2015	15-Apr-2015
A1110	Hydrostatic test for DN1600 Suction pipeworks	1	0%	16-Apr-2015	16-Apr-2015
A1550	Drain Down Wet Well	3	0%	01-May-2015	03-May-2015
A1740	Sparge and air mixing pipeworks	10	0%	04-May-2015	13-May-2015
A1750	Re-install bulkhead wall	3	0%	14-May-2015	16-May-2015
A1760	Water tightness test for wet well + Hydrostatis test of DN3000 and KGV	21	0%	17-May-2015	06-Jun-2015
Pump No. #5 (Hall B)					
A1400	Hydrostatic test for DN1400 Discharge pipes #1	2	0%	15-Apr-2015*	16-Apr-2015
A1410	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	14	0%	01-Apr-2015*	14-Apr-2015
A1420	Initial Start Up Pump No. #5	1	0%	16-Apr-2015	16-Apr-2015
A1430	LV/ DCS cabling (at -2, -10, -18mPD)	9	0%	15-Apr-2015*	23-Apr-2015
A1440	MMLIP Calibration	5	0%	24-Apr-2015	28-Apr-2015
A1450	Point to point test (Including E&M signal)	5	0%	24-Apr-2015	28-Apr-2015



Actual Work
Remaining Work
Critical Remaining Work
Milestone
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Contract No. DC/2009/10

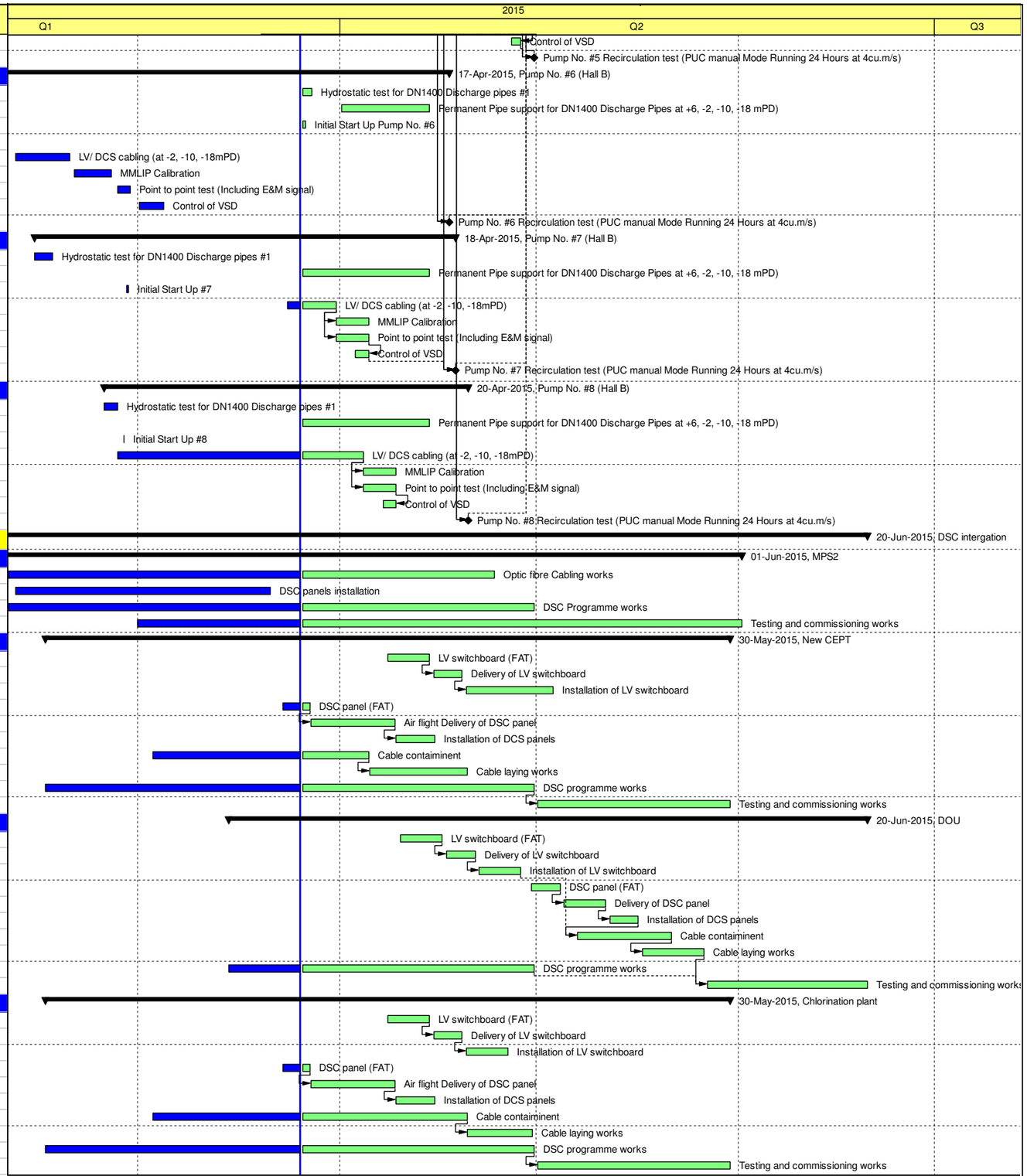
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 7B)

DD: 23 Mar 2015

Date	Revision	Checked	Approved
31-Oct-12	Rev. 1		
31-Jan-2013	Rev. 2		
29-Apr-2013	Rev. 3		
28-Aug-2013	Rev. 4		
01-Apr-2014	Rev. 5		
21-Jul-2014	Rev. 6		
28-Nov-2014	Rev. 7		

Activity ID	Activity Name	Original Duration	Activity % Complete	Start	Finish
A1460	Control of VSD	2	0%	27-Apr-2015	28-Apr-2015
A1470	Pump No. #5 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		30-Apr-2015
Pump No. #6 (Hall B)					
A1480	Hydrostatic test for DN1400 Discharge pipes #1	2	0%	26-Mar-2015	27-Mar-2015
A1490	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	14	0%	01-Apr-2015*	14-Apr-2015
A1495	Initial Start Up Pump No. #6	1	0%	26-Mar-2015	26-Mar-2015
A1500	Initial Start Up #6	1	100%	24-Jan-2015 A	24-Jan-2015 A
A1510	LV/ DCS cabling (at -2, -10, -18mPD)	9	100%	10-Feb-2015 A	18-Feb-2015 A
A1520	MMLIP Calibration	5	100%	19-Feb-2015 A	25-Feb-2015 A
A1530	Point to point test (Including E&M signal)	5	100%	26-Feb-2015 A	28-Feb-2015 A
A1540	Control of VSD	2	100%	01-Mar-2015 A	05-Mar-2015 A
A1780	Pump No. #6 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		17-Apr-2015
Pump No. #7 (Hall B)					
A1560	Hydrostatic test for DN1400 Discharge pipes #1	2	100%	13-Feb-2015 A	16-Feb-2015 A
A1570	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	20	0%	26-Mar-2015	14-Apr-2015
A1580	Initial Start Up #7	1	100%	27-Feb-2015 A	27-Feb-2015 A
A1590	LV/ DCS cabling (at -2, -10, -18mPD)	15	65%	24-Mar-2015 A	31-Mar-2015
A1600	MMLIP Calibration	5	0%	31-Mar-2015	05-Apr-2015
A1610	Point to point test (Including E&M signal)	5	0%	31-Mar-2015	05-Apr-2015
A1620	Control of VSD	2	0%	03-Apr-2015	05-Apr-2015
A1630	Pump No. #7 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		18-Apr-2015
Pump No. #8 (Hall B)					
A1640	Hydrostatic test for DN1400 Discharge pipes #1	3	100%	24-Feb-2015 A	26-Feb-2015 A
A1650	Permanent Pipe support for DN1400 Discharge Pipes at +6, -2, -10, -18 mPD)	20	0%	26-Mar-2015	14-Apr-2015
A1660	Initial Start Up #8	1	100%	27-Feb-2015 A	27-Feb-2015 A
A1670	LV/ DCS cabling (at -2, -10, -18mPD)	15	35%	26-Feb-2015 A	04-Apr-2015
A1680	MMLIP Calibration	5	0%	04-Apr-2015	09-Apr-2015
A1690	Point to point test (Including E&M signal)	5	0%	04-Apr-2015	09-Apr-2015
A1700	Control of VSD	2	0%	07-Apr-2015	09-Apr-2015
A1710	Pump No. #8 Recirculation test (PUC manual Mode Running 24 Hours at 4cu.m/s)	0	0%		20-Apr-2015
DSC intergation					
MPS2					
A1810	Optic fibre Cabling works	60	50%	05-Jan-2015 A	24-Apr-2015
A1820	DSC panels installation	45	100%	10-Feb-2015 A	21-Mar-2015 A
A1830	DSC Programme works	90	60%	10-Dec-2014 A	30-Apr-2015
A1840	Testing and commissioning works	75	10%	01-Mar-2015 A	01-Jun-2015
New CEPT					
A1850	LV switchboard (FAT)	7	0%	08-Apr-2015*	14-Apr-2015
A1860	Delivery of LV switchboard	5	0%	15-Apr-2015	19-Apr-2015
A1870	Installation of LV switchboard	14	0%	20-Apr-2015	03-May-2015
A1880	DSC panel (FAT)	5	70%	23-Mar-2015 A	27-Mar-2015
A1890	Air flight Delivery of DSC panel	13	0%	27-Mar-2015	09-Apr-2015
A1900	Installation of DCS panels	6	0%	09-Apr-2015	15-Apr-2015
A1910	Cable containment	35	70%	03-Mar-2015 A	05-Apr-2015
A1920	Cable laying works	15	0%	05-Apr-2015	20-Apr-2015
A1930	DSC programme works	45	20%	15-Feb-2015 A	30-Apr-2015
A1940	Testing and commissioning works	30	0%	01-May-2015	30-May-2015
DOU					
A1950	LV switchboard (FAT)	7	0%	10-Apr-2015*	16-Apr-2015
A1960	Delivery of LV switchboard	5	0%	17-Apr-2015	21-Apr-2015
A1970	Installation of LV switchboard	7	0%	22-Apr-2015	28-Apr-2015
A1980	DSC panel (FAT)	5	0%	30-Apr-2015*	04-May-2015
A1990	Delivery of DSC panel	7	0%	05-May-2015	11-May-2015
A2000	Installation of DCS panels	5	0%	12-May-2015	16-May-2015
A2010	Cable containment	15	0%	07-May-2015	21-May-2015
A2020	Cable laying works	10	0%	17-May-2015	26-May-2015
A2030	DSC programme works	45	20%	15-Mar-2015 A	30-Apr-2015
A2040	Testing and commissioning works	25	0%	27-May-2015	20-Jun-2015
Chlorination plant					
A2050	LV switchboard (FAT)	7	0%	08-Apr-2015*	14-Apr-2015
A2060	Delivery of LV switchboard	5	0%	15-Apr-2015	19-Apr-2015
A2070	Installation of LV switchboard	7	0%	20-Apr-2015	26-Apr-2015
A2080	DSC panel (FAT)	5	70%	23-Mar-2015 A	27-Mar-2015
A2090	Air flight Delivery of DSC panel	13	0%	27-Mar-2015	09-Apr-2015
A2100	Installation of DCS panels	6	0%	09-Apr-2015	15-Apr-2015
A2110	Cable containment	30	15%	03-Mar-2015 A	20-Apr-2015
A2120	Cable laying works	10	0%	20-Apr-2015	30-Apr-2015
A2130	DSC programme works	45	20%	15-Feb-2015 A	30-Apr-2015
A2140	Testing and commissioning works	30	0%	01-May-2015	30-May-2015



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Contract No. DC/2009/10

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

Target Works Programme (Revision 7B)

DD: 23 Mar 2015

Date	Revision	Checked	Approved
31-Oct-12	Rev. 1		
31-Jan-2013	Rev. 2		
29-Apr-2013	Rev. 3		
28-Aug-2013	Rev. 4		
01-Apr-2014	Rev. 5		
21-Jul-2014	Rev. 6		
28-Nov-2014	Rev. 7		

Activity ID	Activity Name	Original Duration	Activity % Complete	Start	Finish
New CEPT					
A2145	Polymer system	87	0%	26-Mar-2015	20-Jun-2015
A2146	FeCl3 System	97	0%	26-Mar-2015	30-Jun-2015
A2150	Air diffuser system	67	0%	26-Mar-2015	31-May-2015
A2160	Static Mixer	67	0%	26-Mar-2015	31-May-2015
A2170	Sludge Scraper System	87	0%	26-Mar-2015	20-Jun-2015
A2180	Scum pump and pipes	87	0%	26-Mar-2015	20-Jun-2015
A2190	Scum collection system	87	0%	26-Mar-2015	20-Jun-2015
A2200	Protected Water and Process water system	87	0%	26-Mar-2015	20-Jun-2015
A2210	FRP baffles	87	0%	26-Mar-2015	20-Jun-2015
A2220	Gantry Crane	97	0%	26-Mar-2015	30-Jun-2015
A2230	FRP Covers	97	0%	26-Mar-2015	30-Jun-2015
A2240	FRP foul air ducts	97	0%	26-Mar-2015	30-Jun-2015
Sodium Hypochloride Storage Compound					
A2250	1st steel tank with corrcoat lining	90	60%	31-Jan-2015 A	30-Apr-2015
A2260	2nd steel tank with corrcoat lining	120	45%	30-Jan-2015 A	30-May-2015
A2290	NaClO transfer pump and pipeworks installation	69	0%	26-Mar-2015	30-Jun-2015
DOU 3					
A2270	E&M installation of DOU3	77	0%	15-Apr-2015*	30-Jun-2015
A2280	BS for DOU3 control room	77	0%	15-Apr-2015*	30-Jun-2015

Actual Work
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Contract No. DC/2009/10

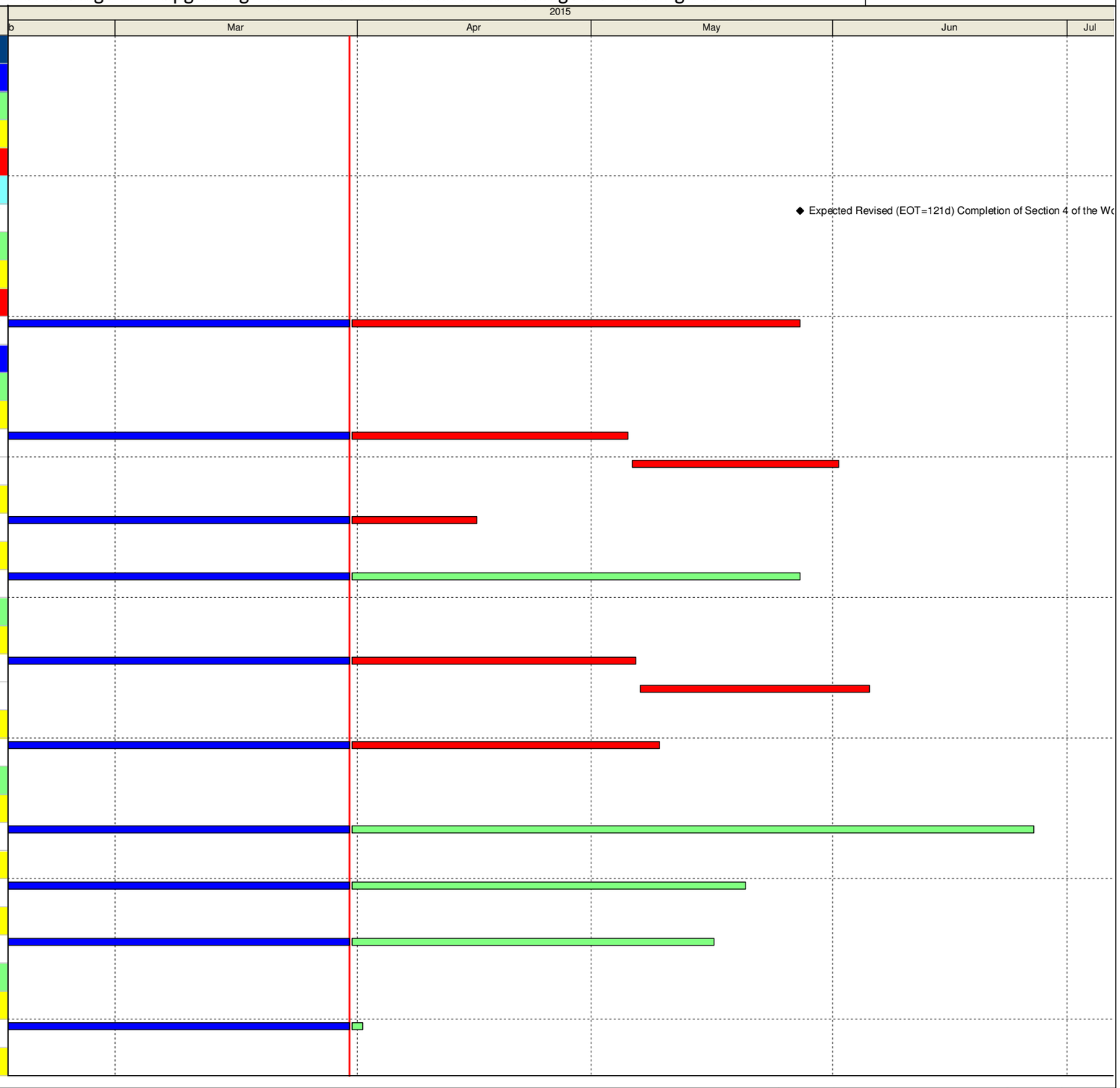
HATS Stage 2A - Upgrading works at StoneCutters Island Sewage Treatement Works

Target Works Programme (Revision 7B)

DD: 23 Mar 2015

Date	Revision	Checked	Approved
31-Oct-12	Rev. 1		
31-Jan-2013	Rev. 2		
29-Apr-2013	Rev. 3		
28-Aug-2013	Rev. 4		
01-Apr-2014	Rev. 5		
21-Jul-2014	Rev. 6		
28-Nov-2014	Rev. 7		

Activity ID	Activity Name	Original Duration	Start	Finish
DC/2009/17 Detailed Works Programme Revision 3B_Updated up to 31-Mar-15				
KEY DATE				
Contract Dates				
Commencement and Completion				
Section 4 of the Works				
Completion				
KD000048	Expected Revised (EOT=121d) Completion of Section 4 of the Works (1737 days)	0		27-May-15*
Completion				
Extension of Time				
Section 4 of the Works				
KD0000372	Section 4 of the Works expected 121 days EOT	121	27-Jan-15 A	27-May-15*
Design of Permanent Works				
DDA8 (Workshop Building)				
Sub-Package - A				
DP033120	DDA: WB - ICE Approve Piling Design	80	01-Oct-14 A	05-May-15
DP033130	DDA: WB - Engineer Comment Piling Design	22	06-May-15	01-Jun-15
Sub-Package - A1				
DP034270	DDA: WB - Submit Sub-structure Design	139	17-Jun-14 A	16-Apr-15
Sub-Package - B				
DP033210	DDA: WB - Submit Structural Design	189	17-Jun-14 A	27-May-15
DDA2 (Southern Sludge Cake Silo)				
Sub-Package - A				
DP34380	DDA: SSCS - ICE Approve Piling Design	80	11-Oct-14 A	06-May-15
DP34390	DDA: SSCS - Engineer Comment Piling Design	25	07-May-15	05-Jun-15
Sub-Package - A1				
DP34430	DDA: SSCS - Submit Sub-structure Design	132	26-Jun-14 A	09-May-15
DDA7 (DOU5 and DGS)				
Sub-Package - A				
DP034120	DDA: DOU5&DGS - ICE Approve Piling Design	110	06-Nov-14 A	26-Jun-15
Sub-Package - A1				
DP034170	DDA: DOU5&DGS - Submit Sub-structure Design	142	17-Jul-14 A	20-May-15
Sub-Package - B				
DP034210	DDA: DOU5&DGS - Submit Structural Design	169	17-Jul-14 A	16-May-15
DDA5 (PWST & Pumping System)				
Sub-Package - A				
DP030110	DDA: PWST&PS - Submit Piling Design	93	28-Jul-14 A	01-Apr-15
Sub-Package - B				



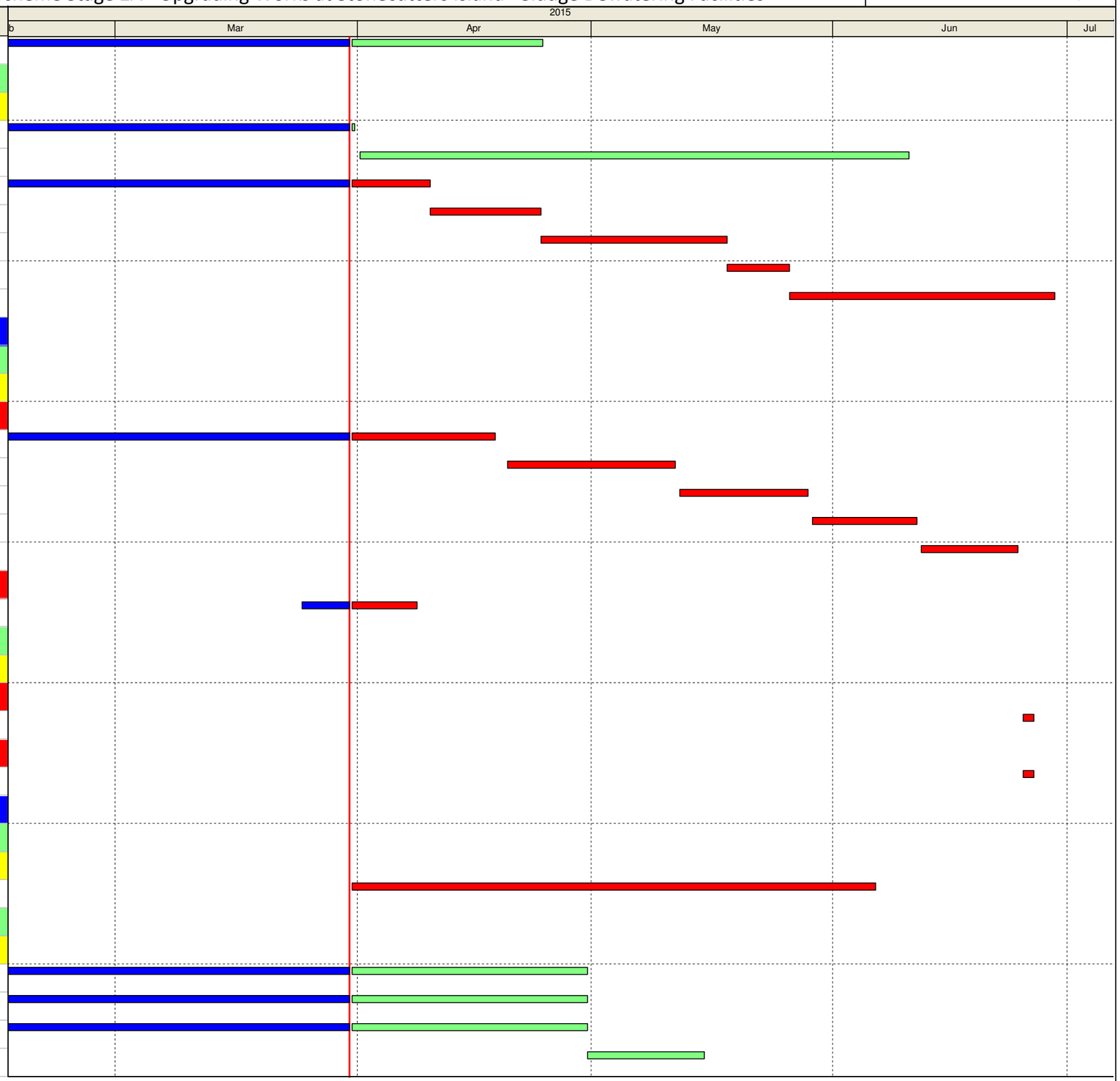
◆ Milestone
Actual Work
Remaining Work
Critical Remaining...

Three Months Rolling Programme - April to June 2015

Date	Revision	Checked	Appro...

C17TGPRev3B-1_150231	Harbour Area Treatment Scheme Stage 2A - Upgrading Works at Stonecutters Island - Sludge Dewatering Facilities	01-Apr-15

Activity ID	Activity Name	Original Duration	Start	Finish
DP030210	DDA: PWST&PS - Submit Structure Design	142	28-Jul-14 A	24-Apr-15
Detailed Design Approval (DDA) Submission				
DDA 35 - Workshop Equipment				
DP008810	DDA: Workshop (E&M) - Designer to Compile DDA	107	05-Apr-13 A	31-Mar-15
DP008815	DDA: Workshop (E&M) - Comment, Review & Approval	56	01-Apr-15	10-Jun-15
DP008820	DDA: Workshop (E&M) - Ist Submission	6	01-Jun-13 A	10-Apr-15
DP008830	DDA: Workshop (E&M) - Engineer Comment	12	10-Apr-15	24-Apr-15
DP008840	DDA: Workshop (E&M) - Designer Response/Revision	19	24-Apr-15	18-May-15
DP008850	DDA: Workshop (E&M) - 2nd Submission & ICE Cert	6	18-May-15	26-May-15
DP008860	DDA: Workshop (E&M) - Engineer Approval	28	26-May-15	29-Jun-15
Section 4 of the Works				
Demolition Works				
Existing Structure				
Demolition of Existing SDB				
S4000100	Extg SDB: Removal of Plant and Equipment	25	11-Feb-15 A	18-Apr-15
S4000220	Extg SDB: Demolish Roof Slab and Wall	18	20-Apr-15	11-May-15
S4000230	Extg SDB: Demolish 1/F Slab and Wall	14	12-May-15	28-May-15
S4000240	Extg SDB: Demolish Ground Floor Slab	12	29-May-15	11-Jun-15
S4000250	Extg SDB: Demolish Pilecap / Daido Pile	10	12-Jun-15	24-Jun-15
Demolition of Existing SCS				
S4000170	Extg SCS: Remove Support Frame to Silos	7	25-Mar-15 A	08-Apr-15
System				
Piping and Ducting				
Sludge Feed Pipe				
S400010510	TTA implementation	2	25-Jun-15	26-Jun-15
Centrate Pipe				
S400012010	TTA implementation	2	25-Jun-15	26-Jun-15
Section 5 of the Works				
Southern Sludge Cake Silo				
Procurement, Manufacture and Delivery				
S5003520	SSCS: Procure Conveyor, Valve, Air Duct & Lifting Appliance	53	31-Mar-15	06-Jun-15
External (Civil) Works				
SDB Area				
S5009810	Barge unloading facilities near sea front	52	29-Sep-14 A	30-Apr-15
S5009812	Concrete pillar box	52	29-Sep-14 A	30-Apr-15
S5009814	Permanent carrigeway	52	29-Sep-14 A	30-Apr-15
S5009818	Cable duct and draw pit P29	12	30-Apr-15	15-May-15

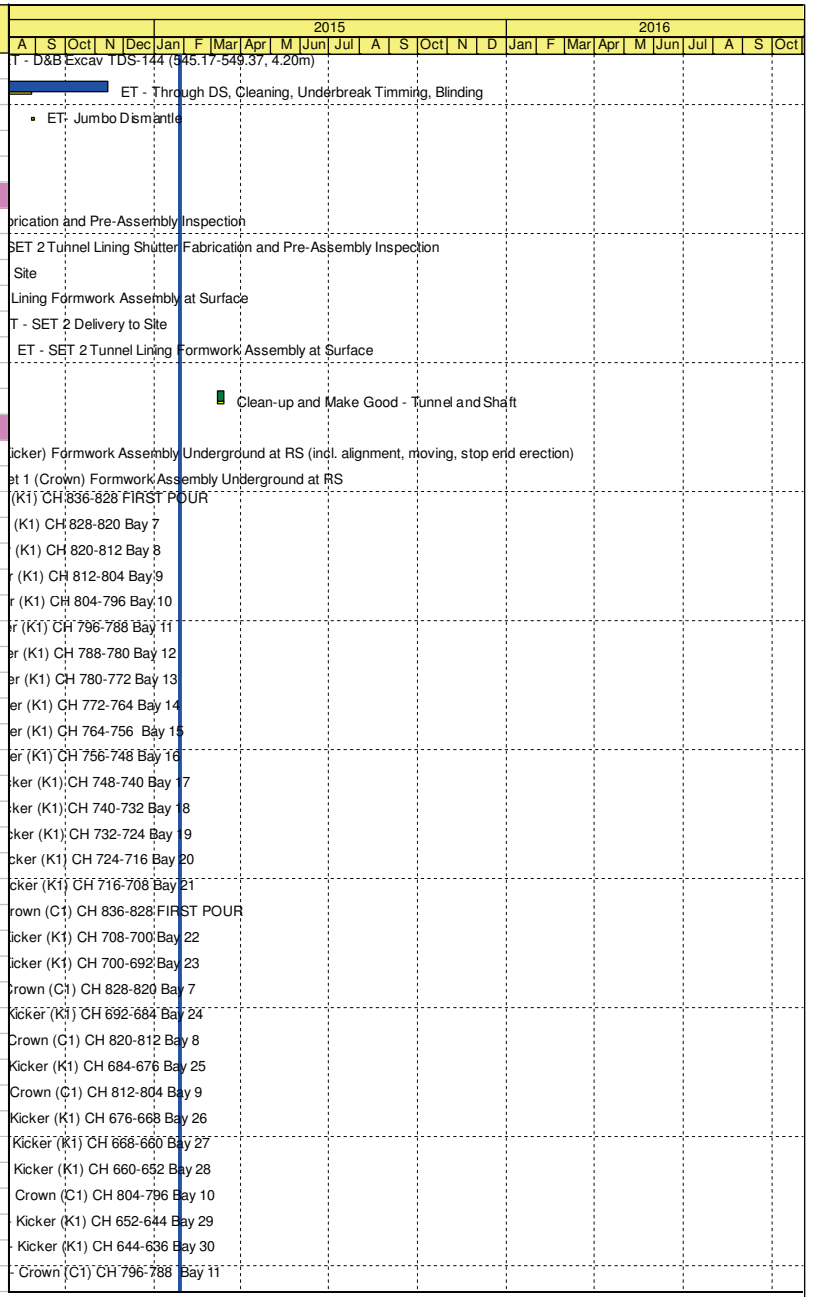


◆ Milestone
Actual Work
Remaining Work
Critical Remaining...

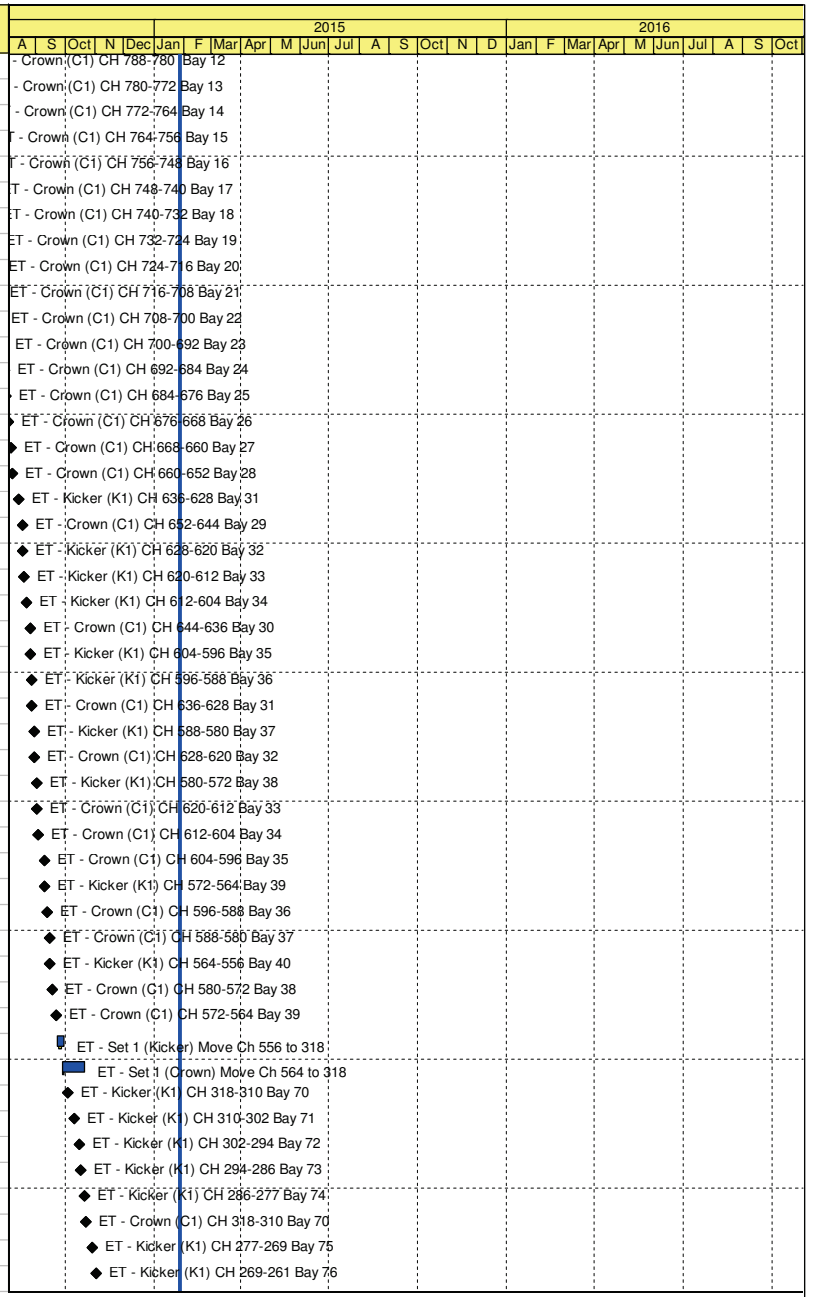
Three Months Rolling Programme - April to June 2015

Date	Revision	Checked	Appro...

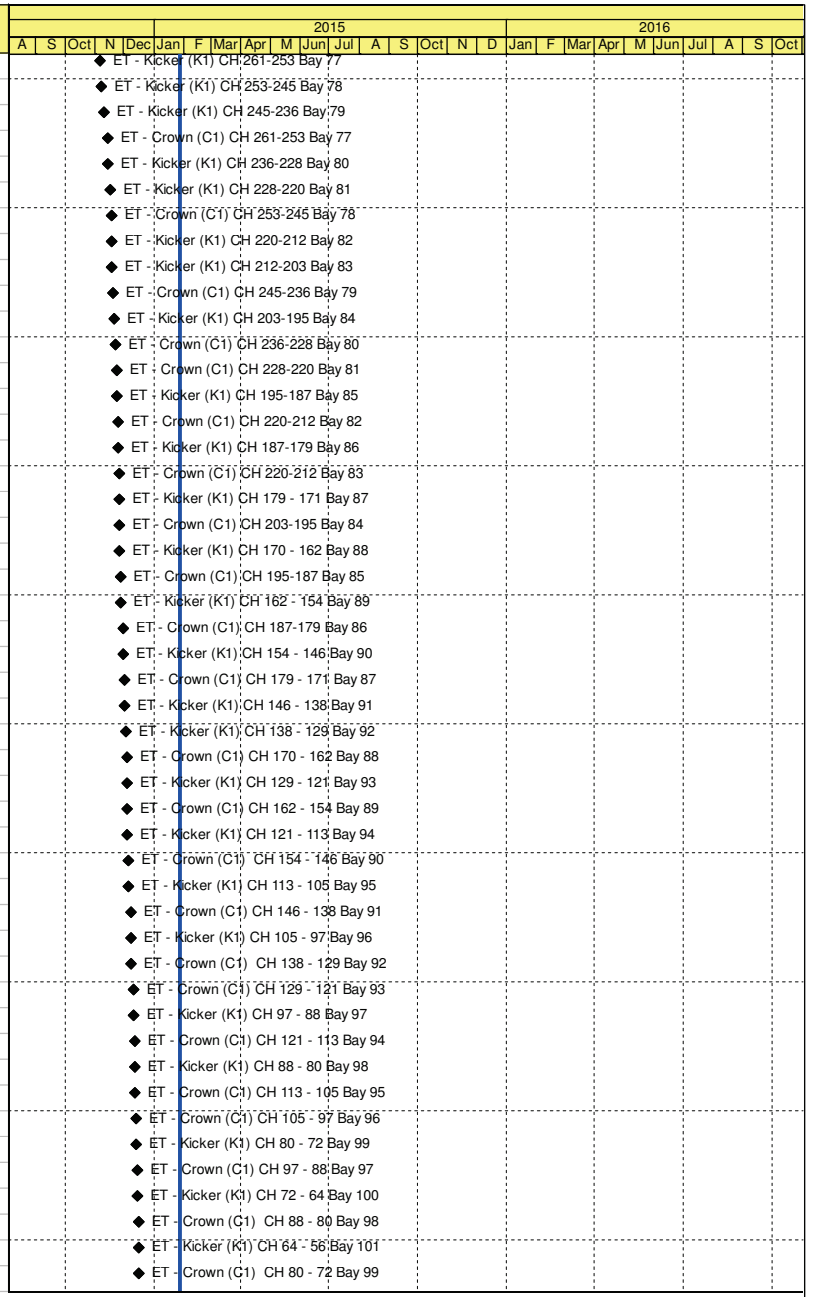
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-55144N	ET - D&B Excav TDS-144 (545.17-549.37, 4.20m)	0		14-Jul-14 A	100%
18-57640N	ET - Through DS, Cleaning, Underbreak Timming, Blinding	35	15-Jul-14 A	15-Nov-14 A	100%
18-57641N	ET- Jumbo Dismantle	4	28-Jul-14 A	01-Aug-14 A	100%
6.06.4.2 - Tunnel Lining Works					
6.06.4.2.1 - Formwork Gantry					
6.06.4.2.1.1 - Tunnel Lining Shutter					
18-57660N	ET - SET 1 Tunnel Lining Shutter Fabrication and Pre-Assembly Inspection	95	05-Aug-13 A	29-Nov-13 A	100%
18-57700N	ET - SET 2 Tunnel Lining Shutter Fabrication and Pre-Assembly Inspection	90	19-Dec-13 A	16-Jun-14 A	100%
18-57661N	ET - SET 1 Delivery to Site	7	14-Feb-14 A	28-Feb-14 A	100%
18-57650D	ET - SET 1 Tunnel Lining Formwork Assembly at Surface	14	10-Mar-14 A	23-Mar-14 A	100%
18-57702N	ET - SET 2 Delivery to Site	7	17-Jun-14 A	24-Jun-14 A	100%
18-57701N	ET - SET 2 Tunnel Lining Formwork Assembly at Surface	7	24-Jun-14 A	23-Jul-14 A	100%
6.06.4.2.2 - Lining					
18-64300N	Clean-up and Make Good - Tunnel and Shaft	7	07-Mar-15	14-Mar-15	0%
6.06.4.2.2.1 - SET 1 Tunnel Lining Shutter					
18-57700D	ET - Set 1 (Kicker) Formwork Assembly Underground at RS (incl. alignment, moving, stop end erection)	9	18-Apr-14 A	01-May-14 A	100%
18-57703N	ET - Set 1 (Crown) Formwork Assembly Underground at RS	21	07-May-14 A	09-Jun-14 A	100%
18-57801N	ET - Kicker (K1) CH 836-828 FIRST POUR	0		07-May-14 A	100%
18-57802N	ET - Kicker (K1) CH 828-820 Bay 7	0		09-May-14 A	100%
18-57803N	ET - Kicker (K1) CH 820-812 Bay 8	0		12-May-14 A	100%
18-57804N	ET - Kicker (K1) CH 812-804 Bay 9	0		14-May-14 A	100%
18-57805N	ET - Kicker (K1) CH 804-796 Bay 10	0		15-May-14 A	100%
18-57806N	ET - Kicker (K1) CH 796-788 Bay 11	0		17-May-14 A	100%
18-57807N	ET - Kicker (K1) CH 788-780 Bay 12	0		19-May-14 A	100%
18-57808N	ET - Kicker (K1) CH 780-772 Bay 13	0		20-May-14 A	100%
18-57809N	ET - Kicker (K1) CH 772-764 Bay 14	0		23-May-14 A	100%
18-57810N	ET - Kicker (K1) CH 764-756 Bay 15	0		24-May-14 A	100%
18-57811N	ET - Kicker (K1) CH 756-748 Bay 16	0		24-May-14 A	100%
18-57812N	ET - Kicker (K1) CH 748-740 Bay 17	0		03-Jun-14 A	100%
18-57813N	ET - Kicker (K1) CH 740-732 Bay 18	0		03-Jun-14 A	100%
18-57814N	ET - Kicker (K1) CH 732-724 Bay 19	0		04-Jun-14 A	100%
18-57815N	ET - Kicker (K1) CH 724-716 Bay 20	0		07-Jun-14 A	100%
18-57816N	ET - Kicker (K1) CH 716-708 Bay 21	0		09-Jun-14 A	100%
18-64601N	ET - Crown (C1) CH 836-828 FIRST POUR	0		10-Jun-14 A	100%
18-57817N	ET - Kicker (K1) CH 708-700 Bay 22	0		12-Jun-14 A	100%
18-57818N	ET - Kicker (K1) CH 700-692 Bay 23	0		13-Jun-14 A	100%
18-64602N	ET - Crown (C1) CH 828-820 Bay 7	0		14-Jun-14 A	100%
18-57819N	ET - Kicker (K1) CH 692-684 Bay 24	0		16-Jun-14 A	100%
18-64603N	ET - Crown (C1) CH 820-812 Bay 8	0		18-Jun-14 A	100%
18-57820N	ET - Kicker (K1) CH 684-676 Bay 25	0		19-Jun-14 A	100%
18-64604N	ET - Crown (C1) CH 812-804 Bay 9	0		20-Jun-14 A	100%
18-57821N	ET - Kicker (K1) CH 676-668 Bay 26	0		21-Jun-14 A	100%
18-57822N	ET - Kicker (K1) CH 668-660 Bay 27	0		23-Jun-14 A	100%
18-57823N	ET - Kicker (K1) CH 660-652 Bay 28	0		24-Jun-14 A	100%
18-64605N	ET - Crown (C1) CH 804-796 Bay 10	0		26-Jun-14 A	100%
18-57824N	ET - Kicker (K1) CH 652-644 Bay 29	0		27-Jun-14 A	100%
18-57825N	ET - Kicker (K1) CH 644-636 Bay 30	0		28-Jun-14 A	100%
18-64606N	ET - Crown (C1) CH 796-788 Bay 11	0		30-Jun-14 A	100%



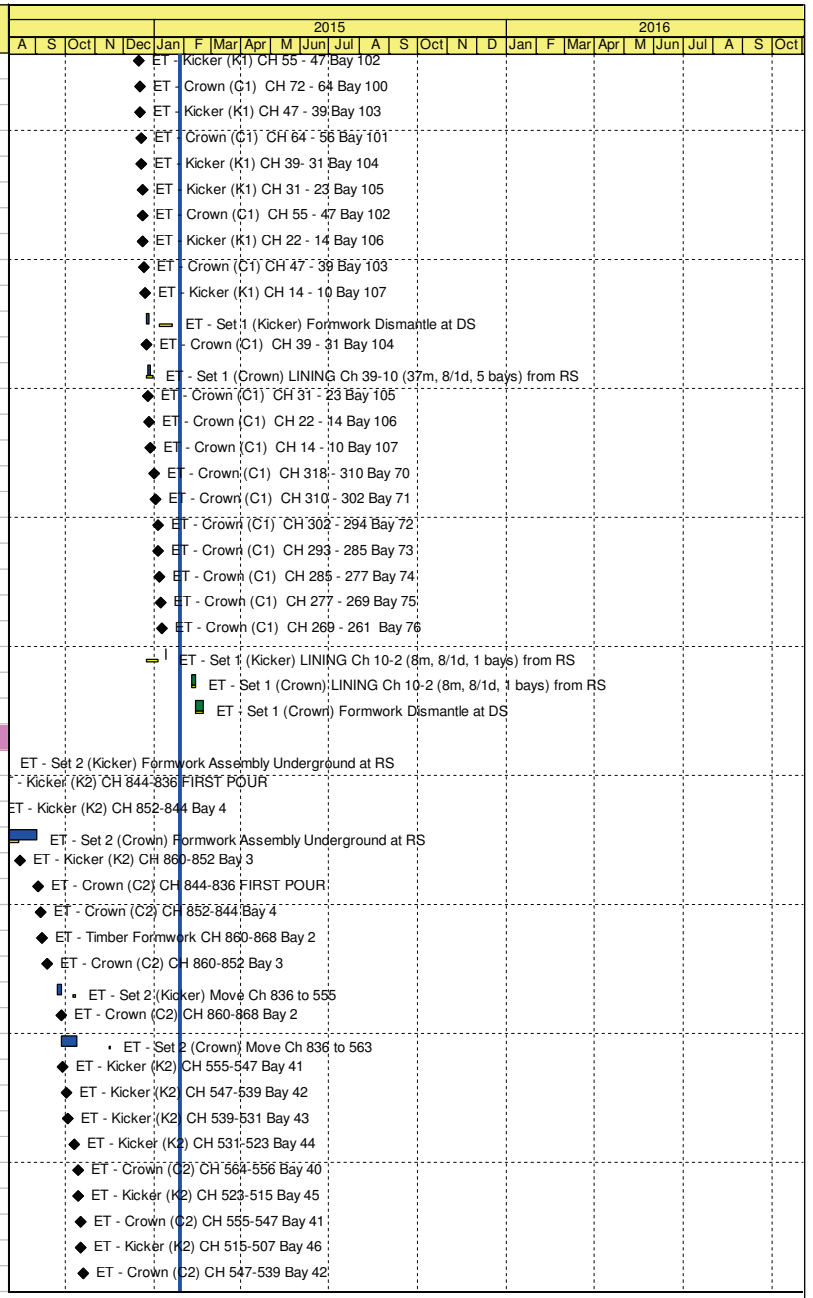
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-64607N	ET - Crown (C1) CH 788-780 Bay 12	0		02-Jul-14 A	100%
18-64608N	ET - Crown (C1) CH 780-772 Bay 13	0		04-Jul-14 A	100%
18-64609N	ET - Crown (C1) CH 772-764 Bay 14	0		05-Jul-14 A	100%
18-64610N	ET - Crown (C1) CH 764-756 Bay 15	0		09-Jul-14 A	100%
18-64611N	ET - Crown (C1) CH 756-748 Bay 16	0		11-Jul-14 A	100%
18-64612N	ET - Crown (C1) CH 748-740 Bay 17	0		14-Jul-14 A	100%
18-64613N	ET - Crown (C1) CH 740-732 Bay 18	0		16-Jul-14 A	100%
18-64614N	ET - Crown (C1) CH 732-724 Bay 19	0		18-Jul-14 A	100%
18-64615N	ET - Crown (C1) CH 724-716 Bay 20	0		21-Jul-14 A	100%
18-64616N	ET - Crown (C1) CH 716-708 Bay 21	0		23-Jul-14 A	100%
18-64617N	ET - Crown (C1) CH 708-700 Bay 22	0		24-Jul-14 A	100%
18-64618N	ET - Crown (C1) CH 700-692 Bay 23	0		28-Jul-14 A	100%
18-64619N	ET - Crown (C1) CH 692-684 Bay 24	0		30-Jul-14 A	100%
18-64620N	ET - Crown (C1) CH 684-676 Bay 25	0		01-Aug-14 A	100%
18-64621N	ET - Crown (C1) CH 676-668 Bay 26	0		04-Aug-14 A	100%
18-64622N	ET - Crown (C1) CH 668-660 Bay 27	0		06-Aug-14 A	100%
18-64623N	ET - Crown (C1) CH 660-652 Bay 28	0		08-Aug-14 A	100%
18-57826N	ET - Kicker (K1) CH 636-628 Bay 31	0		15-Aug-14 A	100%
18-64624N	ET - Crown (C1) CH 652-644 Bay 29	0		19-Aug-14 A	100%
18-57827N	ET - Kicker (K1) CH 628-620 Bay 32	0		19-Aug-14 A	100%
18-57828N	ET - Kicker (K1) CH 620-612 Bay 33	0		20-Aug-14 A	100%
18-57829N	ET - Kicker (K1) CH 612-604 Bay 34	0		22-Aug-14 A	100%
18-64625N	ET - Crown (C1) CH 644-636 Bay 30	0		26-Aug-14 A	100%
18-57830N	ET - Kicker (K1) CH 604-596 Bay 35	0		26-Aug-14 A	100%
18-57831N	ET - Kicker (K1) CH 596-588 Bay 36	0		28-Aug-14 A	100%
18-64626N	ET - Crown (C1) CH 636-628 Bay 31	0		28-Aug-14 A	100%
18-57832N	ET - Kicker (K1) CH 588-580 Bay 37	0		30-Aug-14 A	100%
18-64627N	ET - Crown (C1) CH 628-620 Bay 32	0		30-Aug-14 A	100%
18-57833N	ET - Kicker (K1) CH 580-572 Bay 38	0		02-Sep-14 A	100%
18-64628N	ET - Crown (C1) CH 620-612 Bay 33	0		02-Sep-14 A	100%
18-64629N	ET - Crown (C1) CH 612-604 Bay 34	0		04-Sep-14 A	100%
18-64630N	ET - Crown (C1) CH 604-596 Bay 35	0		10-Sep-14 A	100%
18-57834N	ET - Kicker (K1) CH 572-564 Bay 39	0		10-Sep-14 A	100%
18-64631N	ET - Crown (C1) CH 596-588 Bay 36	0		13-Sep-14 A	100%
18-64632N	ET - Crown (C1) CH 588-580 Bay 37	0		15-Sep-14 A	100%
18-57835N	ET - Kicker (K1) CH 564-556 Bay 40	0		15-Sep-14 A	100%
18-64633N	ET - Crown (C1) CH 580-572 Bay 38	0		18-Sep-14 A	100%
18-64634N	ET - Crown (C1) CH 572-564 Bay 39	0		22-Sep-14 A	100%
18-64598N	ET - Set 1 (Kicker) Move Ch 556 to 318	3	24-Sep-14 A	30-Sep-14 A	100%
18-57793N	ET - Set 1 (Crown) Move Ch 564 to 318	3	28-Sep-14 A	22-Oct-14 A	100%
18-57836N	ET - Kicker (K1) CH 318-310 Bay 70	0		04-Oct-14 A	100%
18-57837N	ET - Kicker (K1) CH 310-302 Bay 71	0		11-Oct-14 A	100%
18-57838N	ET - Kicker (K1) CH 302-294 Bay 72	0		16-Oct-14 A	100%
18-57839N	ET - Kicker (K1) CH 294-286 Bay 73	0		18-Oct-14 A	100%
18-57840N	ET - Kicker (K1) CH 286-277 Bay 74	0		21-Oct-14 A	100%
18-64635N	ET - Crown (C1) CH 318-310 Bay 70	0		23-Oct-14 A	100%
18-57841N	ET - Kicker (K1) CH 277-269 Bay 75	0		30-Oct-14 A	100%
18-57842N	ET - Kicker (K1) CH 269-261 Bay 76	0		03-Nov-14 A	100%



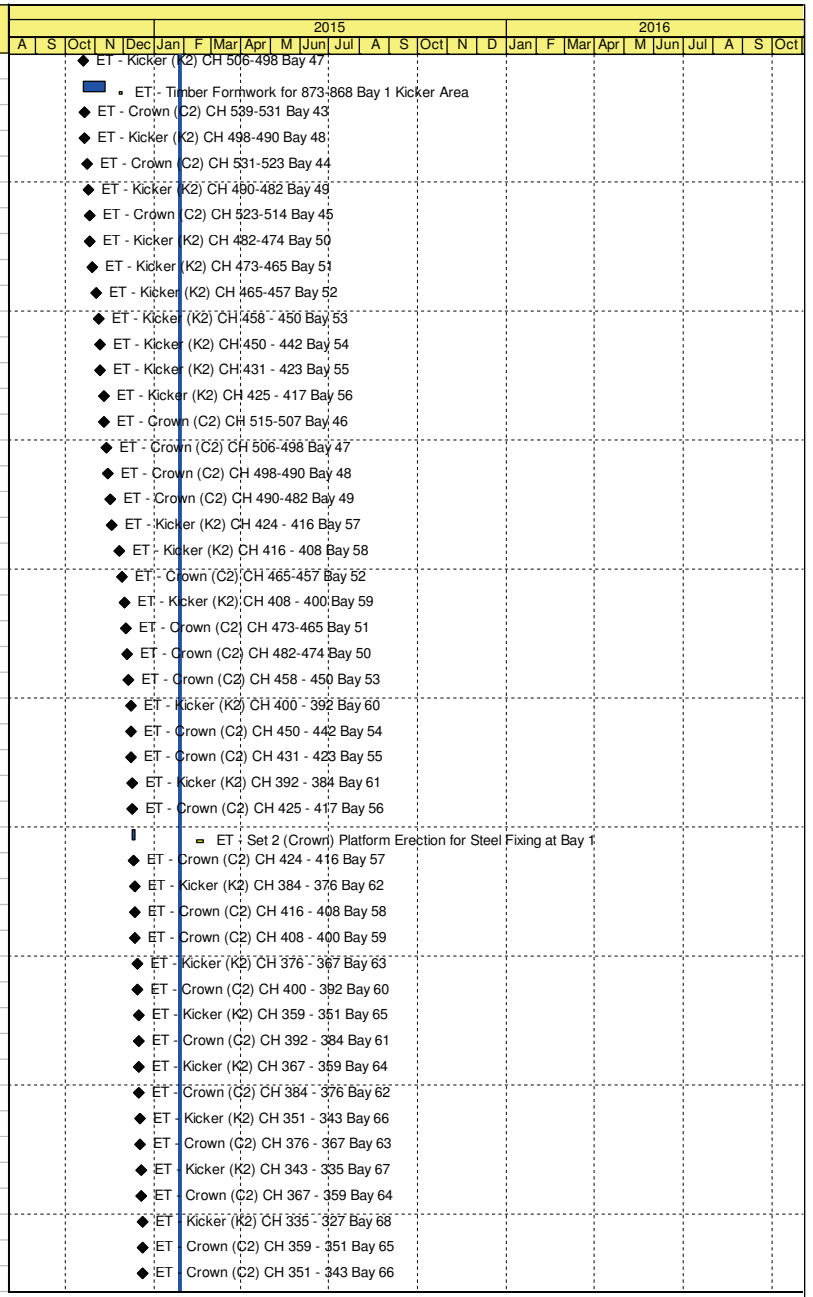
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-57843N	ET - Kicker (K1) CH 261-253 Bay 77	0		06-Nov-14 A	100%
18-57844N	ET - Kicker (K1) CH 253-245 Bay 78	0		08-Nov-14 A	100%
18-57845N	ET - Kicker (K1) CH 245-236 Bay 79	0		11-Nov-14 A	100%
18-64636N	ET - Crown (C1) CH 261-253 Bay 77	0		14-Nov-14 A	100%
18-57846N	ET - Kicker (K1) CH 236-228 Bay 80	0		14-Nov-14 A	100%
18-57847N	ET - Kicker (K1) CH 228-220 Bay 81	0		17-Nov-14 A	100%
18-64637N	ET - Crown (C1) CH 253-245 Bay 78	0		18-Nov-14 A	100%
18-57848N	ET - Kicker (K1) CH 220-212 Bay 82	0		18-Nov-14 A	100%
18-57849N	ET - Kicker (K1) CH 212-203 Bay 83	0		19-Nov-14 A	100%
18-64638N	ET - Crown (C1) CH 245-236 Bay 79	0		20-Nov-14 A	100%
18-57850N	ET - Kicker (K1) CH 203-195 Bay 84	0		21-Nov-14 A	100%
18-64639N	ET - Crown (C1) CH 236-228 Bay 80	0		22-Nov-14 A	100%
18-64640N	ET - Crown (C1) CH 228-220 Bay 81	0		24-Nov-14 A	100%
18-57851N	ET - Kicker (K1) CH 195-187 Bay 85	0		24-Nov-14 A	100%
18-64641N	ET - Crown (C1) CH 220-212 Bay 82	0		25-Nov-14 A	100%
18-57852N	ET - Kicker (K1) CH 187-179 Bay 86	0		25-Nov-14 A	100%
18-64642N	ET - Crown (C1) CH 220-212 Bay 83	0		26-Nov-14 A	100%
18-57853N	ET - Kicker (K1) CH 179 - 171 Bay 87	0		26-Nov-14 A	100%
18-64643N	ET - Crown (C1) CH 203-195 Bay 84	0		27-Nov-14 A	100%
18-57854N	ET - Kicker (K1) CH 170 - 162 Bay 88	0		27-Nov-14 A	100%
18-64654N	ET - Crown (C1) CH 195-187 Bay 85	0		28-Nov-14 A	100%
18-57855N	ET - Kicker (K1) CH 162 - 154 Bay 89	0		28-Nov-14 A	100%
18-64655N	ET - Crown (C1) CH 187-179 Bay 86	0		01-Dec-14 A	100%
18-57856N	ET - Kicker (K1) CH 154 - 146 Bay 90	0		01-Dec-14 A	100%
18-64656N	ET - Crown (C1) CH 179 - 171 Bay 87	0		02-Dec-14 A	100%
18-57857N	ET - Kicker (K1) CH 146 - 138 Bay 91	0		02-Dec-14 A	100%
18-57858N	ET - Kicker (K1) CH 138 - 129 Bay 92	0		03-Dec-14 A	100%
18-64657N	ET - Crown (C1) CH 170 - 162 Bay 88	0		04-Dec-14 A	100%
18-57859N	ET - Kicker (K1) CH 129 - 121 Bay 93	0		04-Dec-14 A	100%
18-64658N	ET - Crown (C1) CH 162 - 154 Bay 89	0		05-Dec-14 A	100%
18-57860N	ET - Kicker (K1) CH 121 - 113 Bay 94	0		05-Dec-14 A	100%
18-64659N	ET - Crown (C1) CH 154 - 146 Bay 90	0		06-Dec-14 A	100%
18-57861N	ET - Kicker (K1) CH 113 - 105 Bay 95	0		06-Dec-14 A	100%
18-646591N	ET - Crown (C1) CH 146 - 138 Bay 91	0		08-Dec-14 A	100%
18-57862N	ET - Kicker (K1) CH 105 - 97 Bay 96	0		08-Dec-14 A	100%
18-646592N	ET - Crown (C1) CH 138 - 129 Bay 92	0		09-Dec-14 A	100%
18-646593N	ET - Crown (C1) CH 129 - 121 Bay 93	0		11-Dec-14 A	100%
18-57863N	ET - Kicker (K1) CH 97 - 88 Bay 97	0		11-Dec-14 A	100%
18-646594N	ET - Crown (C1) CH 121 - 113 Bay 94	0		12-Dec-14 A	100%
18-57864N	ET - Kicker (K1) CH 88 - 80 Bay 98	0		12-Dec-14 A	100%
18-646595N	ET - Crown (C1) CH 113 - 105 Bay 95	0		13-Dec-14 A	100%
18-646596N	ET - Crown (C1) CH 105 - 97 Bay 96	0		14-Dec-14 A	100%
18-57865N	ET - Kicker (K1) CH 80 - 72 Bay 99	0		14-Dec-14 A	100%
18-646597N	ET - Crown (C1) CH 97 - 88 Bay 97	0		15-Dec-14 A	100%
18-57866N	ET - Kicker (K1) CH 72 - 64 Bay 100	0		15-Dec-14 A	100%
18-646598N	ET - Crown (C1) CH 88 - 80 Bay 98	0		16-Dec-14 A	100%
18-57867N	ET - Kicker (K1) CH 64 - 56 Bay 101	0		16-Dec-14 A	100%
18-646599N	ET - Crown (C1) CH 80 - 72 Bay 99	0		17-Dec-14 A	100%



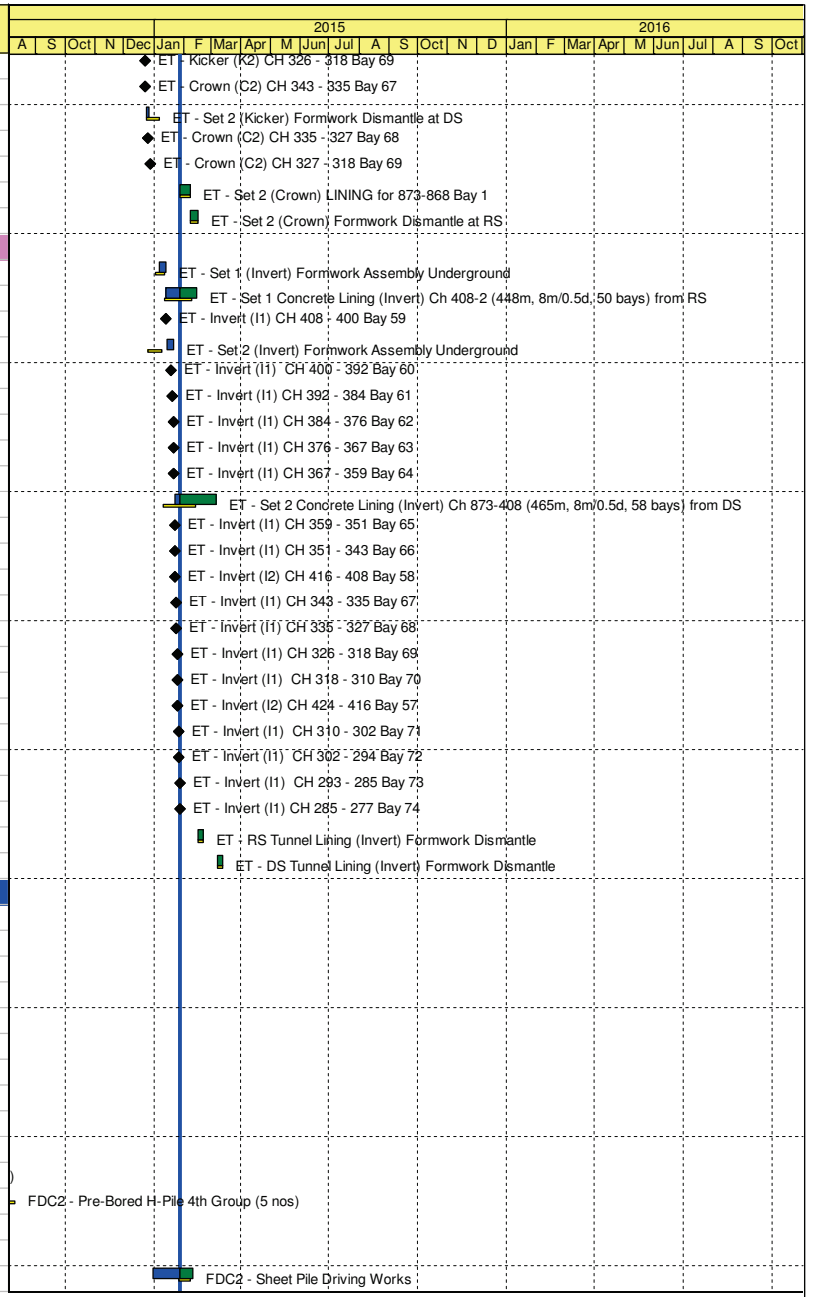
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-57868N	ET - Kicker (K1) CH 55 - 47 Bay 102	0		17-Dec-14 A	100%
18-646600N	ET - Crown (C1) CH 72 - 64 Bay 100	0		18-Dec-14 A	100%
18-57869N	ET - Kicker (K1) CH 47 - 39 Bay 103	0		18-Dec-14 A	100%
18-646601N	ET - Crown (C1) CH 64 - 56 Bay 101	0		19-Dec-14 A	100%
18-57870N	ET - Kicker (K1) CH 39- 31 Bay 104	0		19-Dec-14 A	100%
18-57871N	ET - Kicker (K1) CH 31 - 23 Bay 105	0		20-Dec-14 A	100%
18-646602N	ET - Crown (C1) CH 55 - 47 Bay 102	0		21-Dec-14 A	100%
18-57872N	ET - Kicker (K1) CH 22 - 14 Bay 106	0		21-Dec-14 A	100%
18-646603N	ET - Crown (C1) CH 47 - 39 Bay 103	0		22-Dec-14 A	100%
18-57873N	ET - Kicker (K1) CH 14 - 10 Bay 107	0		23-Dec-14 A	100%
18-57725N	ET - Set 1 (Kicker) Formwork Dismantle at DS	14	24-Dec-14 A	27-Dec-14 A	100%
18-646604N	ET - Crown (C1) CH 39 - 31 Bay 104	0		24-Dec-14 A	100%
18-57791N	ET - Set 1 (Crown) LINING Ch 39-10 (37m, 8/1d, 5 bays) from RS	5	26-Dec-14 A	28-Dec-14 A	100%
18-646605N	ET - Crown (C1) CH 31 - 23 Bay 105	0		26-Dec-14 A	100%
18-646606N	ET - Crown (C1) CH 22 - 14 Bay 106	0		27-Dec-14 A	100%
18-646607N	ET - Crown (C1) CH 14 - 10 Bay 107	0		28-Dec-14 A	100%
18-646608N	ET - Crown (C1) CH 318 - 310 Bay 70	0		02-Jan-15 A	100%
18-646609N	ET - Crown (C1) CH 310 - 302 Bay 71	0		03-Jan-15 A	100%
18-646610N	ET - Crown (C1) CH 302 - 294 Bay 72	0		05-Jan-15 A	100%
18-646611N	ET - Crown (C1) CH 293 - 285 Bay 73	0		06-Jan-15 A	100%
18-646612N	ET - Crown (C1) CH 285 - 277 Bay 74	0		07-Jan-15 A	100%
18-646613N	ET - Crown (C1) CH 277 - 269 Bay 75	0		08-Jan-15 A	100%
18-646614N	ET - Crown (C1) CH 269 - 261 Bay 76	0		09-Jan-15 A	100%
18-64596N	ET - Set 1 (Kicker) LINING Ch 10-2 (8m, 8/1d, 1 bays) from RS	8	14-Jan-15 A	14-Jan-15 A	100%
18-57791N20	ET - Set 1 (Crown) LINING Ch 10-2 (8m, 8/1d, 1 bays) from RS	4	09-Feb-15*	12-Feb-15	0%
18-57789N	ET - Set 1 (Crown) Formwork Dismantle at DS	8	13-Feb-15	20-Feb-15	0%
6.06.4.2.2.2 - SET 2 Tunnel Lining Shutter					
18-57721N	ET - Set 2 (Kicker) Formwork Assembly Underground at RS	10	24-Jun-14 A	08-Jul-14 A	100%
18-57901N	ET - Kicker (K2) CH 844-836 FIRST POUR	0		08-Jul-14 A	100%
18-57902N	ET - Kicker (K2) CH 852-844 Bay 4	0		19-Jul-14 A	100%
18-57794N	ET - Set 2 (Crown) Formwork Assembly Underground at RS	21	24-Jul-14 A	02-Sep-14 A	100%
18-57903N	ET - Kicker (K2) CH 860-852 Bay 3	0		16-Aug-14 A	100%
18-57601N	ET - Crown (C2) CH 844-836 FIRST POUR	0		03-Sep-14 A	100%
18-57602N	ET - Crown (C2) CH 852-844 Bay 4	0		06-Sep-14 A	100%
18-57904N	ET - Timber Formwork CH 860-868 Bay 2	0		08-Sep-14 A	100%
18-57603N	ET - Crown (C2) CH 860-852 Bay 3	0		13-Sep-14 A	100%
18-64597N	ET - Set 2 (Kicker) Move Ch 836 to 555	3	24-Sep-14 A	28-Sep-14 A	100%
18-57604N	ET - Crown (C2) CH 860-868 Bay 2	0		27-Sep-14 A	100%
18-57792N	ET - Set 2 (Crown) Move Ch 836 to 563	3	28-Sep-14 A	14-Oct-14 A	100%
18-57905N	ET - Kicker (K2) CH 555-547 Bay 41	0		29-Sep-14 A	100%
18-57906N	ET - Kicker (K2) CH 547-539 Bay 42	0		03-Oct-14 A	100%
18-57907N	ET - Kicker (K2) CH 539-531 Bay 43	0		04-Oct-14 A	100%
18-57908N	ET - Kicker (K2) CH 531-523 Bay 44	0		11-Oct-14 A	100%
18-57605N	ET - Crown (C2) CH 564-556 Bay 40	0		15-Oct-14 A	100%
18-57909N	ET - Kicker (K2) CH 523-515 Bay 45	0		15-Oct-14 A	100%
18-57606N	ET - Crown (C2) CH 555-547 Bay 41	0		17-Oct-14 A	100%
18-57910N	ET - Kicker (K2) CH 515-507 Bay 46	0		17-Oct-14 A	100%
18-57607N	ET - Crown (C2) CH 547-539 Bay 42	0		20-Oct-14 A	100%



Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-57911N	ET - Kicker (K2) CH 506-498 Bay 47	0		20-Oct-14 A	100%
18-64525N	ET - Timber Formwork for 873-868 Bay 1 Kicker Area	3	20-Oct-14 A	12-Nov-14 A	100%
18-57608N	ET - Crown (C2) CH 539-531 Bay 43	0		22-Oct-14 A	100%
18-57912N	ET - Kicker (K2) CH 498-490 Bay 48	0		22-Oct-14 A	100%
18-57609N	ET - Crown (C2) CH 531-523 Bay 44	0		24-Oct-14 A	100%
18-57913N	ET - Kicker (K2) CH 490-482 Bay 49	0		25-Oct-14 A	100%
18-57610N	ET - Crown (C2) CH 523-514 Bay 45	0		27-Oct-14 A	100%
18-57914N	ET - Kicker (K2) CH 482-474 Bay 50	0		27-Oct-14 A	100%
18-57916N	ET - Kicker (K2) CH 473-465 Bay 51	0		29-Oct-14 A	100%
18-57917N	ET - Kicker (K2) CH 465-457 Bay 52	0		03-Nov-14 A	100%
18-57918N	ET - Kicker (K2) CH 458 - 450 Bay 53	0		05-Nov-14 A	100%
18-57919N	ET - Kicker (K2) CH 450 - 442 Bay 54	0		06-Nov-14 A	100%
18-57920N	ET - Kicker (K2) CH 431 - 423 Bay 55	0		07-Nov-14 A	100%
18-57921N	ET - Kicker (K2) CH 425 - 417 Bay 56	0		10-Nov-14 A	100%
18-57611N	ET - Crown (C2) CH 515-507 Bay 46	0		11-Nov-14 A	100%
18-57612N	ET - Crown (C2) CH 506-498 Bay 47	0		13-Nov-14 A	100%
18-57613N	ET - Crown (C2) CH 498-490 Bay 48	0		15-Nov-14 A	100%
18-57614N	ET - Crown (C2) CH 490-482 Bay 49	0		17-Nov-14 A	100%
18-57922N	ET - Kicker (K2) CH 424 - 416 Bay 57	0		19-Nov-14 A	100%
18-57923N	ET - Kicker (K2) CH 416 - 408 Bay 58	0		26-Nov-14 A	100%
18-57615N	ET - Crown (C2) CH 465-457 Bay 52	0		29-Nov-14 A	100%
18-57924N	ET - Kicker (K2) CH 408 - 400 Bay 59	0		02-Dec-14 A	100%
18-57915N	ET - Crown (C2) CH 473-465 Bay 51	0		03-Dec-14 A	100%
18-57614N10	ET - Crown (C2) CH 482-474 Bay 50	0		04-Dec-14 A	100%
18-57616N	ET - Crown (C2) CH 458 - 450 Bay 53	0		06-Dec-14 A	100%
18-57925N	ET - Kicker (K2) CH 400 - 392 Bay 60	0		08-Dec-14 A	100%
18-57617N	ET - Crown (C2) CH 450 - 442 Bay 54	0		08-Dec-14 A	100%
18-57618N	ET - Crown (C2) CH 431 - 423 Bay 55	0		09-Dec-14 A	100%
18-57926N	ET - Kicker (K2) CH 392 - 384 Bay 61	0		10-Dec-14 A	100%
18-57619N	ET - Crown (C2) CH 425 - 417 Bay 56	0		10-Dec-14 A	100%
18-64136D10	ET - Set 2 (Crown) Platform Erection for Steel Fixing at Bay 1	7	10-Dec-14 A	13-Dec-14 A	100%
18-57620N	ET - Crown (C2) CH 424 - 416 Bay 57	0		11-Dec-14 A	100%
18-57927N	ET - Kicker (K2) CH 384 - 376 Bay 62	0		12-Dec-14 A	100%
18-57621N	ET - Crown (C2) CH 416 - 408 Bay 58	0		12-Dec-14 A	100%
18-57622N	ET - Crown (C2) CH 408 - 400 Bay 59	0		13-Dec-14 A	100%
18-57928N	ET - Kicker (K2) CH 376 - 367 Bay 63	0		15-Dec-14 A	100%
18-57623N	ET - Crown (C2) CH 400 - 392 Bay 60	0		15-Dec-14 A	100%
18-57930N	ET - Kicker (K2) CH 359 - 351 Bay 65	0		16-Dec-14 A	100%
18-57624N	ET - Crown (C2) CH 392 - 384 Bay 61	0		16-Dec-14 A	100%
18-57929N	ET - Kicker (K2) CH 367 - 359 Bay 64	0		17-Dec-14 A	100%
18-57625N	ET - Crown (C2) CH 384 - 376 Bay 62	0		17-Dec-14 A	100%
18-57931N	ET - Kicker (K2) CH 351 - 343 Bay 66	0		18-Dec-14 A	100%
18-57626N	ET - Crown (C2) CH 376 - 367 Bay 63	0		18-Dec-14 A	100%
18-57933N	ET - Kicker (K2) CH 343 - 335 Bay 67	0		19-Dec-14 A	100%
18-57627N	ET - Crown (C2) CH 367 - 359 Bay 64	0		19-Dec-14 A	100%
18-57934N	ET - Kicker (K2) CH 335 - 327 Bay 68	0		20-Dec-14 A	100%
18-57628N	ET - Crown (C2) CH 359 - 351 Bay 65	0		20-Dec-14 A	100%
18-57630N	ET - Crown (C2) CH 351 - 343 Bay 66	0		21-Dec-14 A	100%



Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-57935N	ET - Kicker (K2) CH 326 - 318 Bay 69	0		23-Dec-14 A	100%
18-57631N	ET - Crown (C2) CH 343 - 335 Bay 67	0		23-Dec-14 A	100%
18-57799N	ET - Set 2 (Kicker) Formwork Dismantle at DS	14	24-Dec-14 A	27-Dec-14 A	100%
18-57632N	ET - Crown (C2) CH 335 - 327 Bay 68	0		26-Dec-14 A	100%
18-57633N	ET - Crown (C2) CH 327 - 318 Bay 69	0		29-Dec-14 A	100%
18-64136D	ET - Set 2 (Crown) LINING for 873-868 Bay 1	11	28-Jan-15*	07-Feb-15	0%
18-57705N	ET - Set 2 (Crown) Formwork Dismantle at RS	8	08-Feb-15	15-Feb-15	0%
6.06.4.2.2.3 - Invert Lining					
18-57704N	ET - Set 1 (Invert) Formwork Assembly Underground	10	07-Jan-15 A	13-Jan-15 A	100%
18-64139N	ET - Set 1 Concrete Lining (Invert) Ch 408-2 (448m, 8m/0.5d, 50 bays) from RS	25	14-Jan-15 A	14-Feb-15	36%
18-64140N	ET - Invert (I1) CH 408 - 400 Bay 59	0		14-Jan-15 A	100%
18-57714N	ET - Set 2 (Invert) Formwork Assembly Underground	15	15-Jan-15 A	22-Jan-15 A	100%
18-64141N	ET - Invert (I1) CH 400 - 392 Bay 60	0		19-Jan-15 A	100%
18-64142N	ET - Invert (I1) CH 392 - 384 Bay 61	0		20-Jan-15 A	100%
18-64143N	ET - Invert (I1) CH 384 - 376 Bay 62	0		21-Jan-15 A	100%
18-64144N	ET - Invert (I1) CH 376 - 367 Bay 63	0		22-Jan-15 A	100%
18-64145N	ET - Invert (I1) CH 367 - 359 Bay 64	0		22-Jan-15 A	100%
18-64527N	ET - Set 2 Concrete Lining (Invert) Ch 873-408 (465m, 8m/0.5d, 58 bays) from DS	29	23-Jan-15 A	06-Mar-15	0%
18-64146N	ET - Invert (I1) CH 359 - 351 Bay 65	0		23-Jan-15 A	100%
18-64147N	ET - Invert (I1) CH 351 - 343 Bay 66	0		23-Jan-15 A	100%
18-64240N	ET - Invert (I2) CH 416 - 408 Bay 58	0		23-Jan-15 A	100%
18-64148N	ET - Invert (I1) CH 343 - 335 Bay 67	0		24-Jan-15 A	100%
18-64149N	ET - Invert (I1) CH 335 - 327 Bay 68	0		24-Jan-15 A	100%
18-64150N	ET - Invert (I1) CH 326 - 318 Bay 69	0		26-Jan-15 A	100%
18-64151N	ET - Invert (I1) CH 318 - 310 Bay 70	0		26-Jan-15 A	100%
18-64241N	ET - Invert (I2) CH 424 - 416 Bay 57	0		26-Jan-15 A	100%
18-64152N	ET - Invert (I1) CH 310 - 302 Bay 71	0		27-Jan-15 A	100%
18-64153N	ET - Invert (I1) CH 302 - 294 Bay 72	0		27-Jan-15 A	100%
18-64154N	ET - Invert (I1) CH 293 - 285 Bay 73	0		28-Jan-15 A	100%
18-64155N	ET - Invert (I1) CH 285 - 277 Bay 74	0		28-Jan-15 A	100%
18-57728N	ET - RS Tunnel Lining (Invert) Formwork Dismantle	7	15-Feb-15	21-Feb-15	0%
18-57727N	ET - DS Tunnel Lining (Invert) Formwork Dismantle	7	07-Mar-15	13-Mar-15	0%
6.06.5 - Flow Distribution Chamber No.2					
6.06.5.1 - Demolition Works					
18-57950	FDC2 - Prep & Sub of New Proposed Staircase to Engineer	14	15-Dec-11 A	28-Dec-11 A	100%
18-58000	FDC2 - Approve New Proposed Staircase from Engineer	14	29-Dec-11 A	20-Jan-12 A	100%
18-58050	FDC2 - Construction of New Staircase	24	20-Feb-12 A	10-Apr-12 A	100%
18-58100	FDC2 - Demolition of Staircase	24	19-Jun-12 A	06-Jul-12 A	100%
6.06.5.2 - Foundation					
18-58150	FDC2 - G.I- Pre Drilling (5 Nos.)	30	14-Nov-11 A	30-Dec-11 A	100%
18-58160	FDC2 - Setting Out Pile Points	3	21-Jan-12 A	27-Jan-12 A	100%
18-58210	FDC2 - Pre-Bored H-Pile 1st Group (4 nos)	18	02-Feb-12 A	13-Mar-12 A	100%
18-58220	FDC2 - Pre-Bored H-Pile 2nd Group (4 nos)	12	06-Mar-12 A	17-Jul-12 A	100%
18-58230	FDC2 - Pre-Bored H-Pile 3rd Group (4 nos)	12	13-Jul-12 A	26-Jul-12 A	100%
18-58240	FDC2 - Pre-Bored H-Pile 4th Group (5 nos)	16	27-Jul-12 A	05-Aug-12 A	100%
18-58240D	FDC2 - Pre-Bored H-Pile 4th Group (5 nos)	9	24-Aug-12 A	24-Aug-12 A	100%
6.06.5.3 - Temporary Works					
18-58250	FDC2 - Sheet Pile Driving Works	12	31-Dec-14 A	10-Feb-15	0%



CHUN WO – CEC JOINT VENTURE

Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Updated Detail Works Programme

Data Date: 28-Jan-15

Run Date: 02-Feb-15

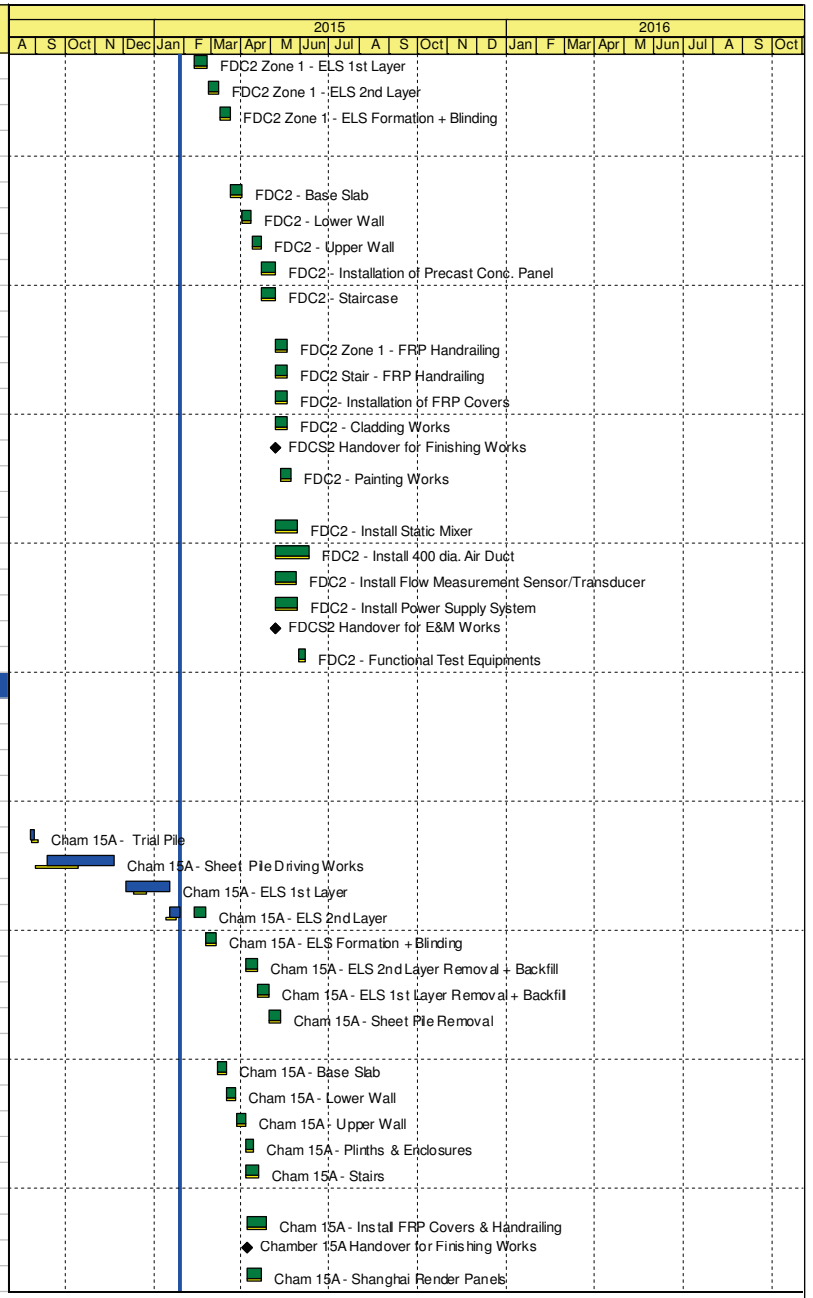
Project ID :C18DWPD150128

Layout : C18150128UDWP

Detail Works Programme

Date	Revision	Checked	Approved
28-Jan-15	DWP Rev D Update		

Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-58260	FDC2 Zone 1 - ELS 1st Layer	10	11-Feb-15	25-Feb-15	0%
18-58270	FDC2 Zone 1 - ELS 2nd Layer	10	26-Feb-15	09-Mar-15	0%
18-58280	FDC2 Zone 1 - ELS Formation + Blinding	10	10-Mar-15	20-Mar-15	0%
6.06.5.4 - Structure					
6.06.5.4.1 - Part 1					
18-58290	FDC2 - Base Slab	10	21-Mar-15	01-Apr-15	0%
18-58310	FDC2 - Lower Wall	8	02-Apr-15	11-Apr-15	0%
18-58320	FDC2 - Upper Wall	8	13-Apr-15	21-Apr-15	0%
18-58450	FDC2 - Installation of Precast Conc. Panel	12	22-Apr-15	06-May-15	0%
18-58440	FDC2 - Staircase	12	22-Apr-15	06-May-15	0%
6.06.5.5 - Finishing Works					
18-58460	FDC2 Zone 1 - FRP Handrailing	10	07-May-15	18-May-15	0%
18-58470	FDC2 Stair - FRP Handrailing	10	07-May-15	18-May-15	0%
18-58500	FDC2- Installation of FRP Covers	10	07-May-15	18-May-15	0%
18-58510	FDC2 - Cladding Works	10	07-May-15	18-May-15	0%
18-58455N	FDCS2 Handover for Finishing Works	0	07-May-15		0%
18-58520	FDC2 - Painting Works	10	12-May-15	22-May-15	0%
6.06.5.6 - E&M Works					
18-58550	FDC2 - Install Static Mixer	20	07-May-15	29-May-15	0%
18-58530	FDC2 - Install 400 dia. Air Duct	30	07-May-15	10-Jun-15	0%
18-58560	FDC2 - Install Flow Measurement Sensor/Transducer	18	07-May-15	27-May-15	0%
18-58540	FDC2 - Install Power Supply System	20	07-May-15	29-May-15	0%
18-58529N	FDCS2 Handover for E&M Works	0	07-May-15		0%
18-58600	FDC2 - Functional Test Equipments	7	30-May-15	06-Jun-15	0%
6.06.6 - Chamber 15A					
6.06.6.1 - Foundation					
18-58650	Cham 15A - G.I - Pre Drilling (4 Nos.)	24	11-Oct-11 A	09-Nov-11 A	100%
18-58700	Cham 15A - Setting Out Pile Points	6	03-Nov-11 A	09-Nov-11 A	100%
18-58800	Cham 15A - H-Piles (15 nos.)	36	30-Mar-12 A	29-May-12 A	100%
6.06.6.2 - Temporary Works					
18-58910	Cham 15A - Trial Pile	7	26-Aug-14 A	30-Aug-14 A	100%
18-58900	Cham 15A - Sheet Pile Driving Works	35	13-Sep-14 A	21-Nov-14 A	100%
18-58950	Cham 15A - ELS 1st Layer	14	03-Dec-14 A	17-Jan-15 A	100%
18-58960	Cham 15A - ELS 2nd Layer	12	18-Jan-15 A	23-Feb-15	0%
18-58980	Cham 15A - ELS Formation + Blinding	12	23-Feb-15	06-Mar-15	0%
18-59000	Cham 15A - ELS 2nd Layer Removal + Backfill	12	06-Apr-15	17-Apr-15	0%
18-59060	Cham 15A - ELS 1st Layer Removal + Backfill	12	18-Apr-15	29-Apr-15	0%
18-58990	Cham 15A - Sheet Pile Removal	12	30-Apr-15	11-May-15	0%
6.06.6.3 - Structure					
18-59010	Cham 15A - Base Slab	10	07-Mar-15	16-Mar-15	0%
18-59020	Cham 15A - Lower Wall	10	17-Mar-15	26-Mar-15	0%
18-59030	Cham 15A - Upper Wall	10	27-Mar-15	05-Apr-15	0%
18-64265	Cham 15A - Plinths & Enclosures	8	06-Apr-15	13-Apr-15	0%
18-64275	Cham 15A - Stairs	14	06-Apr-15	19-Apr-15	0%
6.06.6.4 - Finishing Works					
18-59070	Cham 15A - Install FRP Covers & Handrailing	21	07-Apr-15	27-Apr-15	0%
18-59060N	Chamber 15A Handover for Finishing Works	0	07-Apr-15		0%
18-59080	Cham 15A - Shanghai Render Panels	16	07-Apr-15	22-Apr-15	0%



CHUN WO – CEC JOINT VENTURE

Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Updated Detail Works Programme

Data Date: 28-Jan-15

Run Date: 02-Feb-15

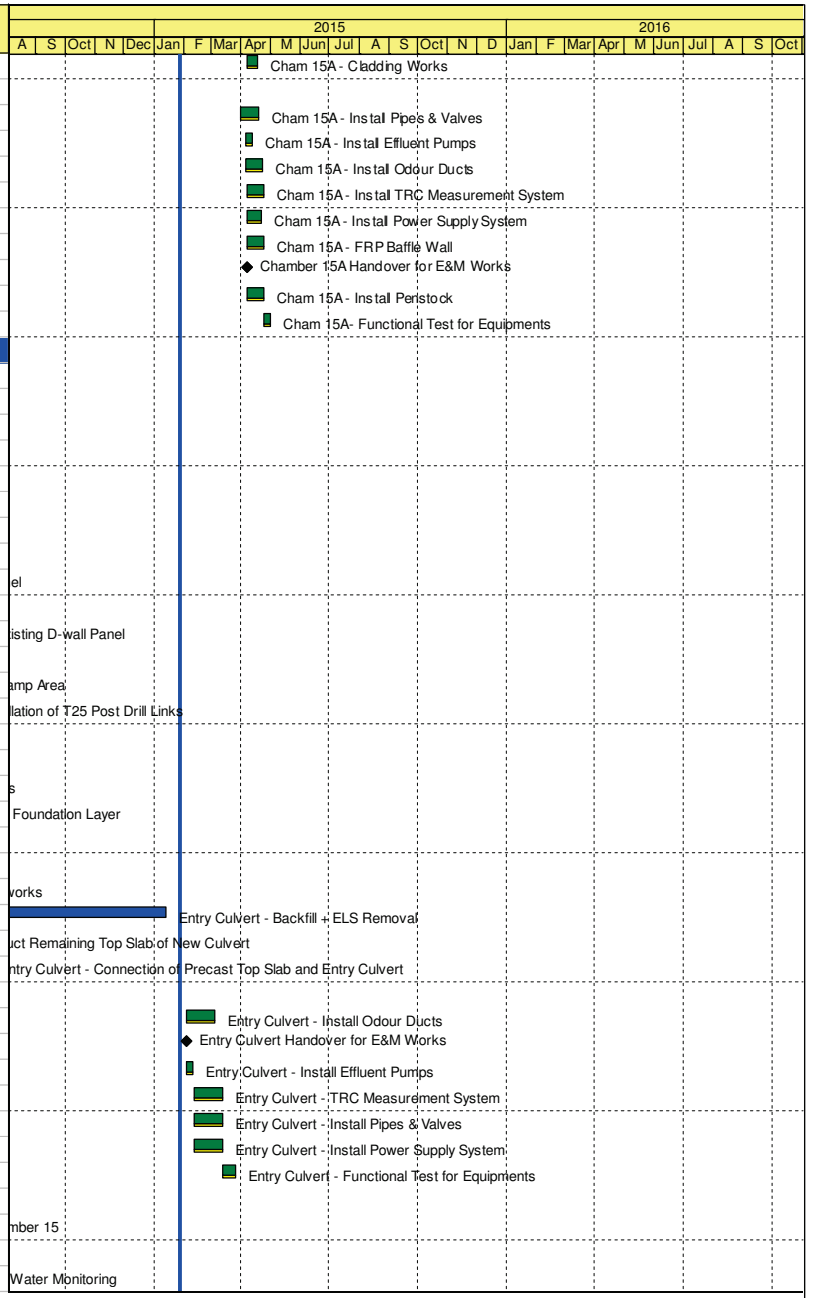
Project ID :C18DWPD150128

Layout : C18150128UDWP

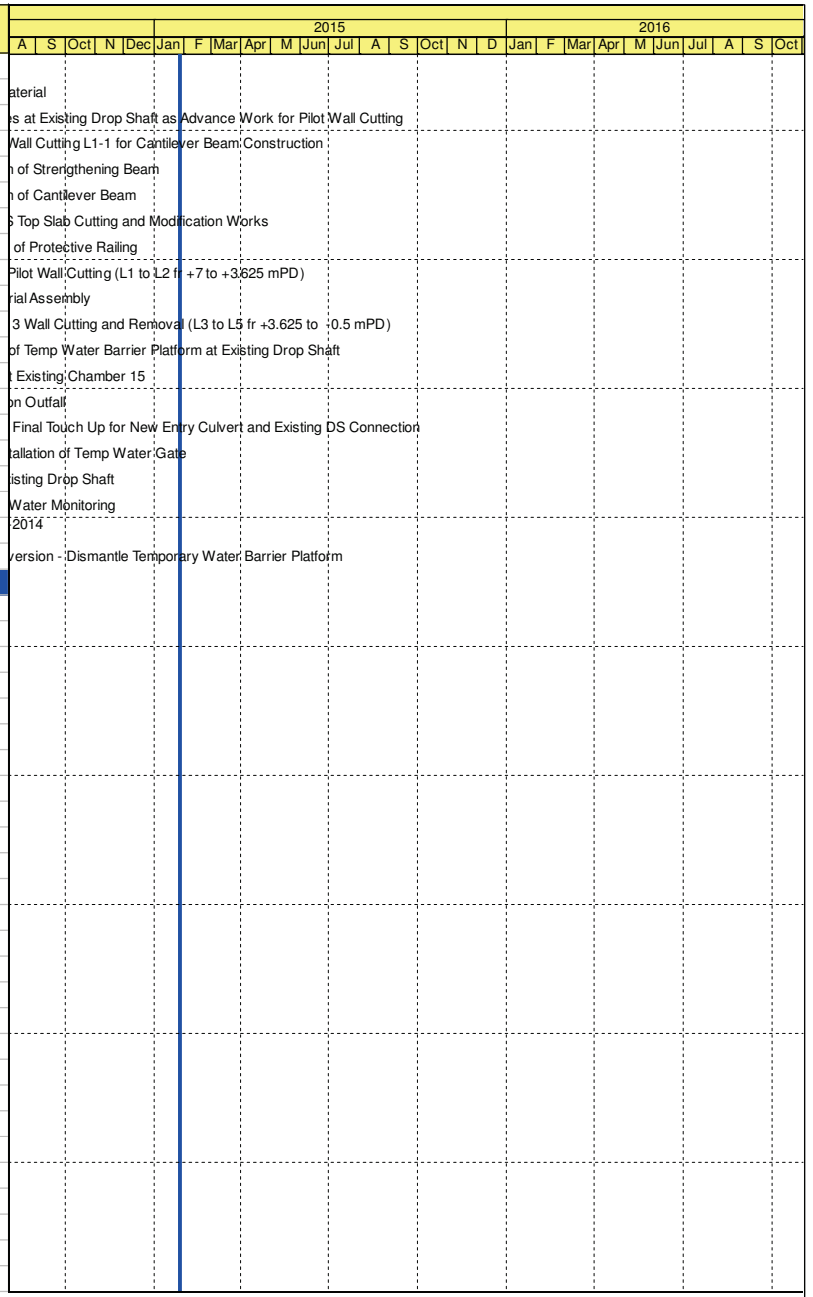
Detail Works Programme

Date	Revision	Checked	Approved
28-Jan-15	DWP Rev D Update		

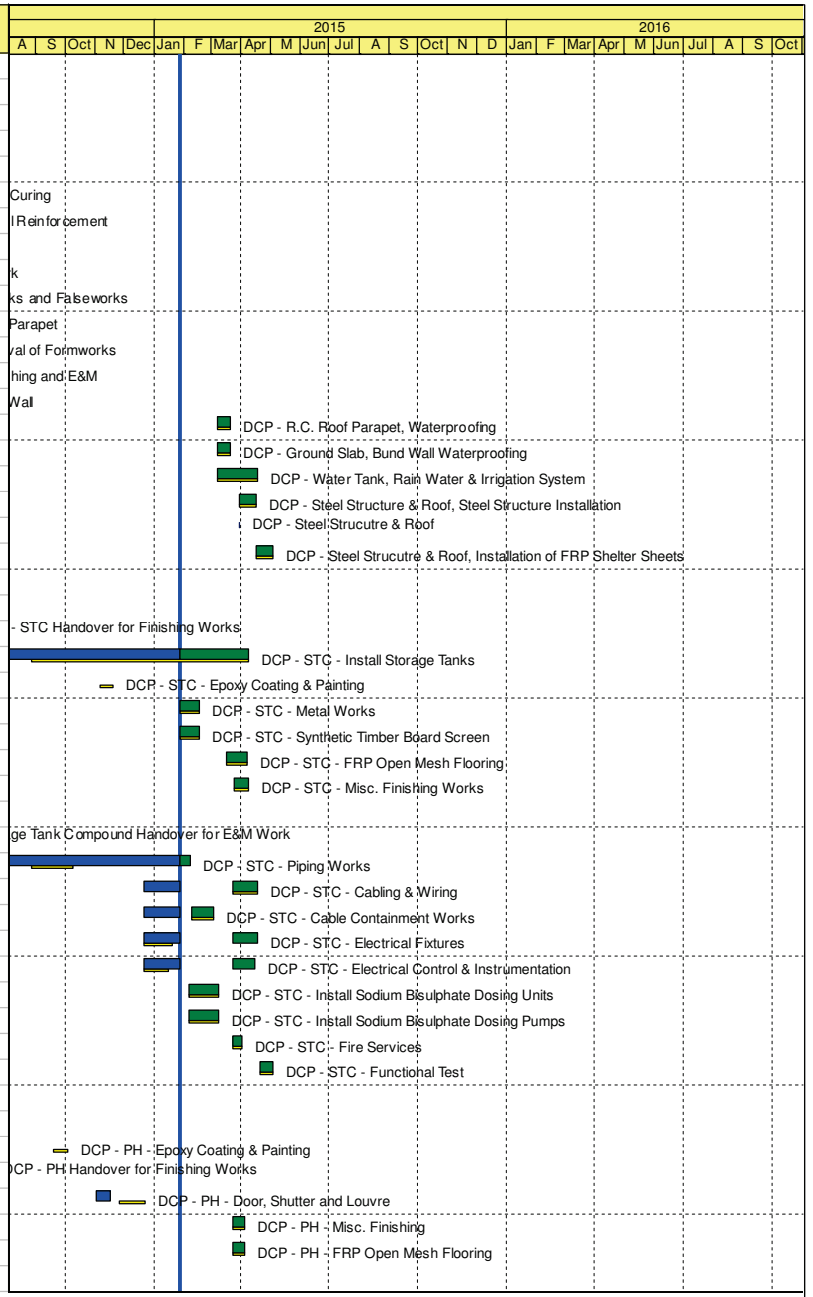
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-59090	Cham 15A - Cladding Works	12	07-Apr-15	18-Apr-15	0%
6.06.6.5 - E&M Works					
18-59130D	Cham 15A - Install Pipes & Valves	20	31-Mar-15	19-Apr-15	0%
18-59120D	Cham 15A - Install Effluent Pumps	7	06-Apr-15	12-Apr-15	0%
18-59160D	Cham 15A - Install Odour Ducts	18	06-Apr-15	23-Apr-15	0%
18-59150D	Cham 15A - Install TRC Measurement System	18	07-Apr-15	24-Apr-15	0%
18-59140D	Cham 15A - Install Power Supply System	15	07-Apr-15	21-Apr-15	0%
18-59110D	Cham 15A - FRP Baffle Wall	18	07-Apr-15	24-Apr-15	0%
18-59099N	Chamber 15A Handover for E&M Works	0	07-Apr-15		0%
18-59100D	Cham 15A - Install Penstock	18	07-Apr-15	24-Apr-15	0%
18-59170D	Cham 15A- Functional Test for Equipments	7	25-Apr-15	01-May-15	0%
6.06.7 - Entry Culvert					
6.06.7.1 - Foundation					
18-59550	Entry Culvert - G.I - Pre-drilling (2 Nos.)	12	24-Nov-11 A	07-Dec-11 A	100%
18-59600	Entry Culvert - Pre-Bored H-Pile (6 Nos.@2d/no.)	37	04-Sep-12 A	19-Sep-12 A	100%
6.06.7.2 - Temporary Works					
18-59651N	Entry Culvert - Concrete Breaking	6	25-Feb-13 A	02-Mar-13 A	100%
18-59650D	Entry Culvert - Sheet Piling (194 sheet piles)	30	05-Mar-13 A	17-Apr-13 A	100%
18-59679N	Entry Culvert - Excavation	91	18-Apr-13 A	06-Aug-13 A	100%
18-59680N	Existing Drop Shaft - Breaking of Existing D-wall	111	03-May-13 A	12-Sep-13 A	100%
18-59660D	Entry Culvert - ELS 1st Layer + Removal of Existing D-wall Panel	33	06-May-13 A	14-Jun-13 A	100%
18-59662N	Entry Culvert - Breaking of Underground RC Block	22	07-Jun-13 A	04-Jul-13 A	100%
18-59670D	Entry Culvert - ELS 2nd Layer + Removal of Existing D-wall Panel	64	12-Jul-13 A	25-Sep-13 A	100%
18-59680D	Entry Culvert - ELS Formation + Blinding	5	06-Aug-13 A	10-Aug-13 A	100%
18-59681N	Entry Culvert - ELS Formation + Blinding at C-Clamp Area	3	11-Sep-13 A	13-Sep-13 A	100%
18-59682N	Existing Drop Shaft - Coring of Holes for Installation of T25 Post Drill Links	14	13-Sep-13 A	29-Sep-13 A	100%
18-59683N	Existing Drop Shaft - Trimming of CJ	10	18-Sep-13 A	30-Sep-13 A	100%
6.06.7.3 - Structure					
18-59711N	Entry Culvert - Installation of H-Pile Steel Top Plates	17	13-Aug-13 A	31-Aug-13 A	100%
18-59712N	Entry Culvert - Backfilling of Soft Spot Below the Foundation Layer	14	02-Sep-13 A	17-Sep-13 A	100%
18-59710D	Entry Culvert - Base Slab + Kicker	26	18-Sep-13 A	21-Oct-13 A	100%
18-64295D	Entry Culvert - Wall Construction	30	15-Oct-13 A	06-Dec-13 A	100%
18-64296N	Entry Culvert - Removal of Formworks	13	07-Dec-13 A	19-Dec-13 A	100%
18-64315	Entry Culvert - Backfill + ELS Removal	60	21-Dec-13 A	14-Jan-15 A	100%
18-64340N	Entry Culvert - Construct Remaining Top Slab of New Culvert	24	27-Jan-14 A	26-Feb-14 A	100%
18-64350N	Entry Culvert - Connection of Precast Top Slab and Entry Culvert	24	03-Jun-14 A	12-Jul-14 A	100%
6.06.7.4 - E&M Works					
18-64360D	Entry Culvert - Install Odour Ducts	30	03-Feb-15	04-Mar-15	0%
18-64304N	Entry Culvert Handover for E&M Works	0	03-Feb-15		0%
18-64305D	Entry Culvert - Install Effluent Pumps	8	03-Feb-15	10-Feb-15	0%
18-64355D	Entry Culvert - TRC Measurement System	30	11-Feb-15	12-Mar-15	0%
18-64335D	Entry Culvert - Install Pipes & Valves	30	11-Feb-15	12-Mar-15	0%
18-64345D	Entry Culvert - Install Power Supply System	30	11-Feb-15	12-Mar-15	0%
18-64365D	Entry Culvert - Functional Test for Equipments	14	13-Mar-15	26-Mar-15	0%
6.06.7.5 - Connect to Existing Drop Shaft					
18-59310N	Temp Steel Panel - Trial Installation at Existing Chamber 15	1	29-Aug-13 A	29-Aug-13 A	100%
18-59541N	Initial Environmental Water Monitoring	14	18-Oct-13 A	31-Oct-13 A	100%
18-59542N	Impact Environmental Water Monitoring	120	01-Nov-13 A	27-Feb-14 A	100%



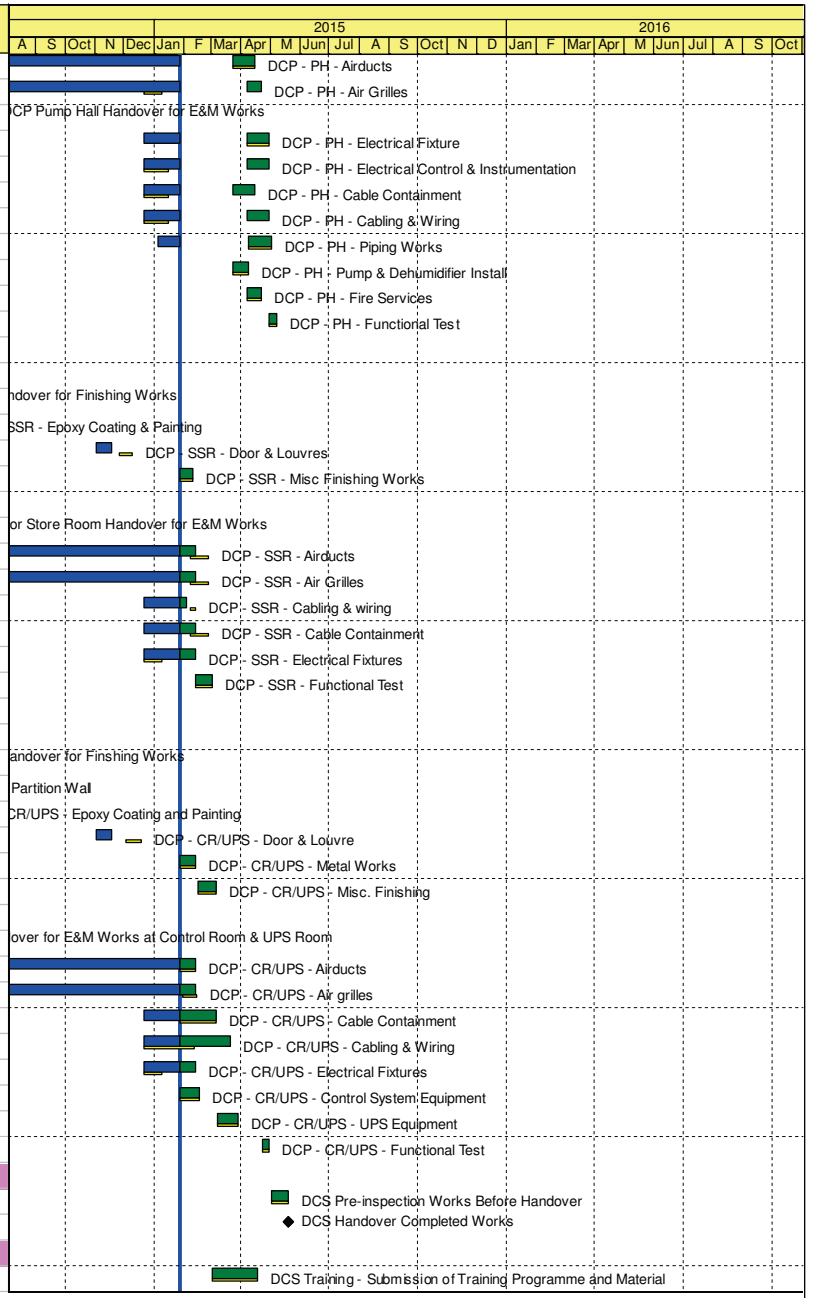
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-59390	Dry Season Onset 2013-2014	0	01-Nov-13 A		100%
18-59312N	Temp Water Gate - Installation of Slot Material	4	04-Nov-13 A	07-Nov-13 A	100%
18-59311N	Temp Flow Diversion - Coring of Holes at Existing Drop Shaft as Advance Work for Pilot Wall Cutting	1	24-Nov-13 A	24-Nov-13 A	100%
18-64337N	Temp Flow Diversion - Stage 1 Pilot Wall Cutting L1-1 for Cantilever Beam Construction	1	26-Nov-13 A	26-Nov-13 A	100%
18-64341N	Temp Flow Diversion - Construction of Strengthening Beam	10	27-Nov-13 A	06-Dec-13 A	100%
18-64338N	Temp Flow Diversion - Construction of Cantilever Beam	10	27-Nov-13 A	06-Dec-13 A	100%
18-64342N	Temp Flow Diversion - Existing DS Top Slab Cutting and Modification Works	9	07-Dec-13 A	15-Dec-13 A	100%
18-64336N	Temp Flow Diversion - Installation of Protective Railing	1	15-Dec-13 A	15-Dec-13 A	100%
18-64339N	Temp Flow Diversion - Stage 2 Pilot Wall Cutting (L1 to L2 fr +7 to +3.625 mPD)	14	16-Dec-13 A	24-Dec-13 A	100%
18-59314N	Temp Water Barrier Platform - Trial Assembly	3	21-Dec-13 A	26-Dec-13 A	100%
18-59450D	Temp Flow Diversion - Stage 3 Wall Cutting and Removal (L3 to L5 fr +3.625 to -0.5 mPD)	21	26-Dec-13 A	16-Jan-14 A	100%
18-59420D	Temp Flow Diversion - Erection of Temp Water Barrier Platform at Existing Drop Shaft	1	26-Dec-13 A	26-Dec-13 A	100%
18-59421N	Temp Steel Panel - Installation at Existing Chamber 15	1	27-Dec-13 A	27-Dec-13 A	100%
18-59410	Divert Flow to Northwest Kowloon Outfall	1	27-Dec-13 A	27-Dec-13 A	100%
18-59530N	Temp Flow Diversion - Final Touch Up for New Entry Culvert and Existing DS Connection	27	17-Jan-14 A	26-Feb-14 A	100%
18-59313N	Temp Water Gate - Installation of Temp Water Gate	1	22-Feb-14 A	22-Feb-14 A	100%
18-59500	Divert Flow Back to Existing Drop Shaft	1	27-Feb-14 A	27-Feb-14 A	100%
18-59543N	Post Environmental Water Monitoring	14	28-Feb-14 A	13-Mar-14 A	100%
18-59530	Dry Season End 2013-2014	0		28-Feb-14 A	100%
18-59532N	Temp Flow Diversion - Dismantle Temporary Water Barrier Platform	1	18-Apr-14 A	18-Apr-14 A	100%
6.06.8 - Dechlorination Plant (DCP)					
6.06.8.1 - DCP - Foundation					
18-59800	DCP - G.I- Pre Drilling (7 Nos.)	20	08-Dec-11 A	31-Jan-12 A	100%
18-59810	DCP -Setting Out Pile Points	4	05-Mar-12 A	13-Mar-12 A	100%
18-59850	DCP - Pre-Bore H-Piles (20 nos.)	44	14-Mar-12 A	30-Jun-12 A	100%
18-59930	DCP - Test Piles	8	06-Oct-12 A	15-Oct-12 A	100%
6.06.8.2 - DCP - Structure					
18-60040N	DCP - Mobilization and Breaking of Concrete Surface	4	10-Dec-12 A	13-Dec-12 A	100%
18-60010D	DCP - Excavate Foundation + Blinding	36	10-Dec-12 A	24-Dec-12 A	100%
18-60050N	DCP - Pile Cap Excavation	8	14-Dec-12 A	29-Dec-12 A	100%
18-60070N	DCP - Pile Cap Blinding	1	24-Dec-12 A	24-Dec-12 A	100%
18-60051N	DCP - Steel Top Plates for H-Piles	15	27-Dec-12 A	02-Jan-13 A	100%
18-60015D	DCP - R.C. Pile Cap (Base Slab)	26	28-Dec-12 A	19-Jan-13 A	100%
18-60090N	DCP - Pile Cap Formworks	3	28-Dec-12 A	02-Jan-13 A	100%
18-60101N	DCP - Pile Cap Steel Fixing	7	03-Jan-13 A	18-Jan-13 A	100%
18-60020D	DCP - R.C. Intermidiate Slab	39	08-Jan-13 A	02-May-13 A	100%
18-60120N	DCP - Construction of Toe Wall	10	08-Jan-13 A	18-Jan-13 A	100%
18-60111N	DCP - Pile Cap Concreting	1	19-Jan-13 A	19-Jan-13 A	100%
18-60140N	DCP - Ground Slab, Waterproofing	1	22-Jan-13 A	22-Jan-13 A	100%
18-60130N	DCP - Ground Slab, Erection of Permanent Formworks	23	23-Jan-13 A	02-May-13 A	100%
18-60160N	DCP - Ground Slab Steel Fixing	21	28-Jan-13 A	02-May-13 A	100%
18-60025	DCP - R.C. Plinths and Boundary Wall	5	28-Jan-13 A	04-Mar-13 A	100%
18-60141N	DCP - Ground Slab, Installation of UPVC Cable Ducting	6	26-Feb-13 A	13-Apr-13 A	100%
18-60142N	DCP - Ground Slab, Installation of UPVC Cast-Iron Pipe	6	11-Apr-13 A	18-Apr-13 A	100%
18-60143N	DCP - Ground Slab Cast-Iron Pipe Water Test	3	19-Apr-13 A	22-Apr-13 A	100%
18-60170N	DCP - Ground Slab, Concreting	1	02-May-13 A	02-May-13 A	100%
18-60171N	DCP - Ground Slab, Removal of Formworks	6	03-May-13 A	08-May-13 A	100%
18-60030D	DCP - R.C. Walls/Roof	55	04-Jul-13 A	04-Oct-13 A	100%



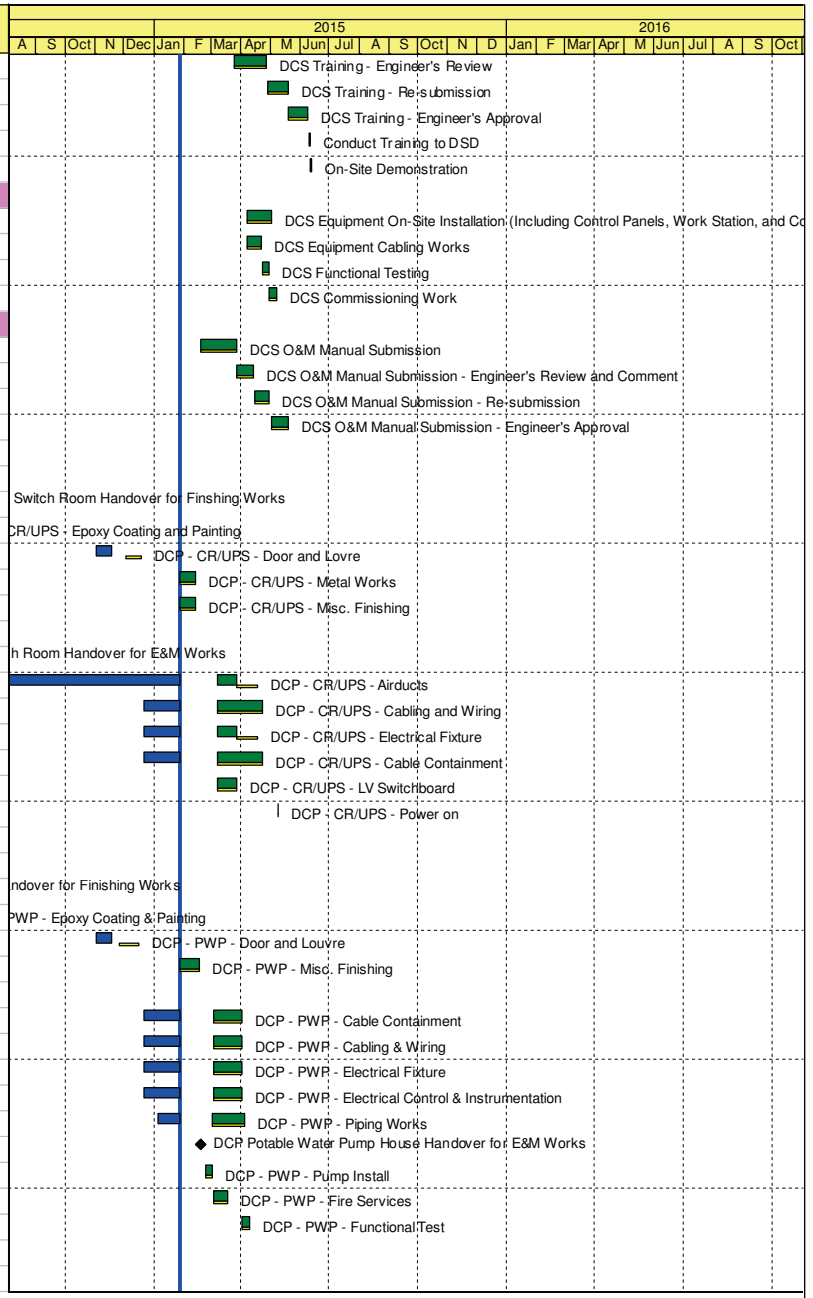
Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-60030N	DCP - R.C. Wall Scaffolding & Formworks Erection	21	04-Jul-13 A	17-Aug-13 A	100%
18-60053N	DCP - R.C. Walls Steel Fixing	12	29-Jul-13 A	10-Aug-13 A	100%
18-60052N	DCP - R.C. Roof Formworks Erection	9	12-Aug-13 A	20-Aug-13 A	100%
18-60055N	DCP - R.C. Roof Steel Fixing	6	21-Aug-13 A	26-Aug-13 A	100%
18-60054N	DCP - R.C. Walls/Roof, Cast Concrete	1	27-Aug-13 A	27-Aug-13 A	100%
18-60056N	DCP - R.C. Walls/Roof, Concrete Wall and Roof Curing	14	28-Aug-13 A	12-Sep-13 A	100%
18-60046N	DCP - R.C. Roof Parapet, Fix Roof Parapet Wall Reinforcement	12	05-Sep-13 A	13-Sep-13 A	100%
18-60035D	DCP - R.C. Roof Parapet	157	05-Sep-13 A	04-Oct-13 A	100%
18-60045N	DCP - R.C. Roof Parapet, Erection of Formwork	12	09-Sep-13 A	18-Sep-13 A	100%
18-60058N	DCP - R.C. Walls/Roof, Removal of Formworks and Falseworks	12	13-Sep-13 A	04-Oct-13 A	100%
18-60048N	DCP - R.C. Roof Parapet, Cast Roof Concrete Parapet	1	19-Sep-13 A	19-Sep-13 A	100%
18-60049N	DCP - R.C. Roof Parapet, Curing and Removal of Formworks	14	20-Sep-13 A	04-Oct-13 A	100%
18-60065N	DCP - Cleaning and Preparation for Finishing and E&M	24	05-Oct-13 A	02-Nov-13 A	100%
18-64651N	DCP - 3600x1200 Sump Pit Near Bund Wall	20	17-Oct-13 A	02-Nov-13 A	100%
18-60059N	DCP - R.C. Roof Parapet, Waterproofing	12	07-Mar-15	20-Mar-15	0%
18-60173N	DCP - Ground Slab, Bund Wall Waterproofing	12	07-Mar-15	20-Mar-15	0%
18-60121N	DCP - Water Tank, Rain Water & Irrigation System	36	07-Mar-15	18-Apr-15	0%
18-60042N	DCP - Steel Structure & Roof, Steel Structure Installation	15	30-Mar-15	16-Apr-15	0%
18-60040D	DCP - Steel Strucutre & Roof	0	30-Mar-15	30-Mar-15	0%
18-60043N	DCP - Steel Strucutre & Roof, Installation of FRP Shelter Sheets	15	16-Apr-15	04-May-15	0%
6.06.8.3 - DCP - Storage Tank Compound					
6.06.8.3.1 - Finishing Works					
18-60047N	DCP - STC Handover for Finishing Works	0	19-Jun-14 A		100%
18-60048D	DCP - STC - Install Storage Tanks	183	19-Jun-14 A	08-Apr-15	68.85%
18-60060	DCP - STC - Epoxy Coating & Painting	12	04-Jul-14 A	14-Jul-14 A	100%
18-60051	DCP - STC - Metal Works	18	28-Jan-15	17-Feb-15	0%
18-60058	DCP - STC - Synthetic Timber Board Screen	18	28-Jan-15	17-Feb-15	0%
18-60056	DCP - STC - FRP Open Mesh Flooring	18	17-Mar-15	07-Apr-15	0%
18-60064	DCP - STC - Misc. Finishing Works	12	25-Mar-15	08-Apr-15	0%
6.06.8.3.2 - E&M Works					
18-60066N	DCP Storage Tank Compound Handover for E&M Work	0	15-May-14 A		100%
18-60052D	DCP - STC - Piping Works	35	27-Jun-14 A	07-Feb-15	71.43%
18-60066	DCP - STC - Cabling & Wiring	23	22-Dec-14 A	18-Apr-15	0%
18-60054D	DCP - STC - Cable Containment Works	17	22-Dec-14 A	03-Mar-15	0%
18-60068D	DCP - STC - Electrical Fixtures	23	22-Dec-14 A	18-Apr-15	0%
18-60067	DCP - STC - Electrical Control & Instrumentation	20	22-Dec-14 A	15-Apr-15	0%
18-60074N	DCP - STC - Install Sodium Bisulphate Dosing Units	24	06-Feb-15	09-Mar-15	0%
18-60075N	DCP - STC - Install Sodium Bisulphate Dosing Pumps	24	06-Feb-15	09-Mar-15	0%
18-60070D	DCP - STC - Fire Services	10	23-Mar-15*	02-Apr-15	0%
18-60080	DCP - STC - Functional Test	12	20-Apr-15	04-May-15	0%
6.06.8.4 - DCP - Pump Hall					
6.06.8.4.1 - Finishing Works					
18-63555	DCP - PH - Epoxy Coating & Painting	12	16-Jun-14 A	12-Jul-14 A	100%
18-63493N	DCP - PH Handover for Finishing Works	0	15-Jul-14 A		100%
18-63515	DCP - PH - Door, Shutter and Louvre	24	03-Nov-14 A	17-Nov-14 A	100%
18-63565	DCP - PH - Misc. Finishing	12	23-Mar-15	04-Apr-15	0%
18-63495	DCP - PH - FRP Open Mesh Flooring	12	23-Mar-15	04-Apr-15	0%
6.06.8.4.2 - E&M Works					



Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-63485D	DCP - PH - Airducts	20	14-Jul-14 A	15-Apr-15	0%
18-63492D	DCP - PH - Air Grilles	14	14-Jul-14 A	22-Apr-15	0%
18-63474N	DCP Pump Hall Handover for E&M Works	0	15-Jul-14 A		100%
18-63489	DCP - PH - Electrical Fixture	20	22-Dec-14 A	29-Apr-15	0%
18-63488D	DCP - PH - Electrical Control & Instrumentation	20	22-Dec-14 A	29-Apr-15	0%
18-63480D	DCP - PH - Cable Containment	20	22-Dec-14 A	15-Apr-15	0%
18-63487D	DCP - PH - Cabling & Wiring	20	22-Dec-14 A	29-Apr-15	0%
18-63478D	DCP - PH - Piping Works	20	05-Jan-15 A	02-May-15	0%
18-63475D	DCP - PH - Pump & Dehumidifier Install	14	23-Mar-15	08-Apr-15	0%
18-63490D	DCP - PH - Fire Services	14	07-Apr-15*	22-Apr-15	0%
18-63494D	DCP - PH - Functional Test	7	30-Apr-15	08-May-15	0%
6.06.8.5 - DCP - Sensor Store Room					
6.06.8.5.1 - Finishing Works					
18-63624N	DCP - SSR Handover for Finishing Works	0	15-Apr-14 A		100%
18-63635D	DCP - SSR - Epoxy Coating & Painting	10	15-Apr-14 A	05-Jun-14 A	100%
18-63625	DCP - SSR - Door & Louvres	12	03-Nov-14 A	18-Nov-14 A	100%
18-63665	DCP - SSR - Misc Finishing Works	12	28-Jan-15*	10-Feb-15	0%
6.06.8.5.2 - E&M Works					
18-63574N	DCP Sensor Store Room Handover for E&M Works	0	15-May-14 A		100%
18-63585D	DCP - SSR - Airducts	14	14-Jul-14 A	12-Feb-15	0%
18-63655D	DCP - SSR - Air Grilles	14	14-Jul-14 A	12-Feb-15	0%
18-63595D	DCP - SSR - Cabling & wiring	6	22-Dec-14 A	03-Feb-15	0%
18-63575D	DCP - SSR - Cable Containment	14	22-Dec-14 A	12-Feb-15	0%
18-63645D	DCP - SSR - Electrical Fixtures	14	22-Dec-14 A	12-Feb-15	0%
18-63658D	DCP - SSR - Functional Test	12	13-Feb-15	02-Mar-15	0%
6.06.8.6 - DCP - Control Room & UPS Room					
6.06.8.6.1 - Finishing Works					
18-63709N	DCP - CR/UPS Handover for Finshing Works	0	31-Mar-14 A		100%
18-63720N	DCP - CR/UPS Partition Wall	12	31-Mar-14 A	11-Apr-14 A	100%
18-63725D	DCP - CR/UPS - Epoxy Coating and Painting	10	15-Apr-14 A	05-Jun-14 A	100%
18-63715	DCP - CR/UPS - Door & Louvre	14	03-Nov-14 A	18-Nov-14 A	100%
18-63710	DCP - CR/UPS - Metal Works	14	28-Jan-15*	12-Feb-15	0%
18-64055	DCP - CR/UPS - Misc. Finishing	14	16-Feb-15*	06-Mar-15	0%
6.06.8.6.2 - E&M Works					
18-63604N	DCP Handover for E&M Works at Control Room & UPS Room	0	15-May-14 A		100%
18-63615D	DCP - CR/UPS - Airducts	14	14-Jul-14 A	12-Feb-15	0%
18-63705D	DCP - CR/UPS - Air grilles	14	14-Jul-14 A	12-Feb-15	0%
18-63605D	DCP - CR/UPS - Cable Containment	30	22-Dec-14 A	06-Mar-15	0%
18-63685D	DCP - CR/UPS - Cabling & Wiring	42	22-Dec-14 A	20-Mar-15	0%
18-63695D	DCP - CR/UPS - Electrical Fixtures	14	22-Dec-14 A	12-Feb-15	0%
18-63745D	DCP - CR/UPS - Control System Equipment	18	28-Jan-15*	17-Feb-15	0%
18-63735D	DCP - CR/UPS - UPS Equipment	19	07-Mar-15	28-Mar-15	0%
18-63748	DCP - CR/UPS - Functional Test	7	23-Apr-15	30-Apr-15	0%
6.06.8.6.2.3 - Completion of DCS Works					
18-63760N	DCS Pre-inspection Works Before Handover	15	02-May-15	19-May-15	0%
18-63761N	DCS Handover Completed Works	0		19-May-15	0%
6.06.8.6.2.3 - DCS Training					
18-63828N	DCS Training - Submission of Training Programme and Material	40	02-Mar-15	17-Apr-15	0%



Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-63838N	DCS Training - Engineer's Review	28	25-Mar-15	27-Apr-15	0%
18-63848N	DCS Training - Re-submission	18	28-Apr-15	19-May-15	0%
18-63858N	DCS Training - Engineer's Approval	18	20-May-15	09-Jun-15	0%
18-63868N	Conduct Training to DSD	2	10-Jun-15	11-Jun-15*	0%
18-63878N	On-Site Demonstration	2	12-Jun-15	13-Jun-15*	0%
6.06.8.6.2.1 - DCS On-Site Installation					
18-63758N	DCS Equipment On-Site Installation (Including Control Panels, Work Station, and Control Desk)	22	07-Apr-15	02-May-15	0%
18-63768N	DCS Equipment Cabling Works	14	07-Apr-15	22-Apr-15	0%
18-63778N	DCS Functional Testing	6	23-Apr-15	29-Apr-15	0%
18-63759N	DCS Commissioning Work	6	30-Apr-15	07-May-15	0%
6.06.8.6.2.2 - DCS O&M Manual Submission					
18-63788N	DCS O&M Manual Submission	30	18-Feb-15	27-Mar-15	0%
18-63798N	DCS O&M Manual Submission - Engineer's Review and Comment	14	28-Mar-15	14-Apr-15	0%
18-63808N	DCS O&M Manual Submission - Re-submission	14	15-Apr-15	30-Apr-15	0%
18-63818N	DCS O&M Manual Submission - Engineer's Approval	15	02-May-15	19-May-15	0%
6.06.8.7 - DCP - Switch Room					
6.06.8.7.1 - Finishing Works					
18-63774N	DCP - CR/UPS Switch Room Handover for Finshing Works	0	15-Apr-14 A		100%
18-63795D	DCP - CR/UPS - Epoxy Coating and Painting	10	15-Apr-14 A	05-Jun-14 A	100%
18-63785	DCP - CR/UPS - Door and Lovre	14	03-Nov-14 A	18-Nov-14 A	100%
18-63775	DCP - CR/UPS - Metal Works	14	28-Jan-15*	12-Feb-15	0%
18-64045	DCP - CR/UPS - Misc. Finishing	14	28-Jan-15*	12-Feb-15	0%
6.06.8.7.2 - E&M Works					
18-63754N	DCP Switch Room Handover for E&M Works	0	15-May-14 A		100%
18-63765D	DCP - CR/UPS - Airducts	18	14-Jul-14 A	27-Mar-15	0%
18-63815D	DCP - CR/UPS - Cabling and Wiring	40	22-Dec-14 A	23-Apr-15	0%
18-63825D	DCP - CR/UPS - Electrical Fixture	18	22-Dec-14 A	27-Mar-15	0%
18-63755D	DCP - CR/UPS - Cable Containment	40	22-Dec-14 A	23-Apr-15	0%
18-63805D	DCP - CR/UPS - LV Switchboard	18	07-Mar-15	27-Mar-15	0%
18-63835	DCP - CR/UPS - Power on	1	09-May-15	09-May-15	0%
6.06.8.8 - DCP - Potable Water Pump House					
6.06.8.8.1 - Finishing Works					
18-63944N	DCP - PWP Handover for Finishing Works	0	15-Apr-14 A		100%
18-63955D	DCP - PWP - Epoxy Coating & Painting	10	15-Apr-14 A	05-Jun-14 A	100%
18-63945	DCP - PWP - Door and Louvre	18	03-Nov-14 A	18-Nov-14 A	100%
18-63965	DCP - PWP - Misc. Finishing	18	28-Jan-15*	17-Feb-15	0%
6.06.8.8.2 - E&M Works					
18-63865D	DCP - PWP - Cable Containment	26	22-Dec-14 A	01-Apr-15	0%
18-63885D	DCP - PWP - Cabling & Wiring	26	22-Dec-14 A	01-Apr-15	0%
18-63905D	DCP - PWP - Electrical Fixture	26	22-Dec-14 A	01-Apr-15	0%
18-63895D	DCP - PWP - Electrical Control & Instrumentation	26	22-Dec-14 A	01-Apr-15	0%
18-63855D	DCP - PWP - Piping Works	30	05-Jan-15 A	04-Apr-15	0%
18-63844N	DCP Potable Water Pump House Handover for E&M Works	0	18-Feb-15		0%
18-63845D	DCP - PWP - Pump Install	7	23-Feb-15	02-Mar-15	0%
18-63915D	DCP - PWP - Fire Services	14	03-Mar-15*	18-Mar-15	0%
18-64415D	DCP - PWP - Functional Test	7	02-Apr-15	10-Apr-15	0%
6.06.8.9 - DCP - Spare Storage Room/Toilet					
6.06.8.9.1 - Finishing Works					



CHUN WO – CEC JOINT VENTURE

Actual Level of Effort | Remaining Work
Primary Baseline | Critical Remaining Work
Actual Work | Milestone

Updated Detail Works Programme

Data Date: 28-Jan-15 **Run Date: 02-Feb-15**

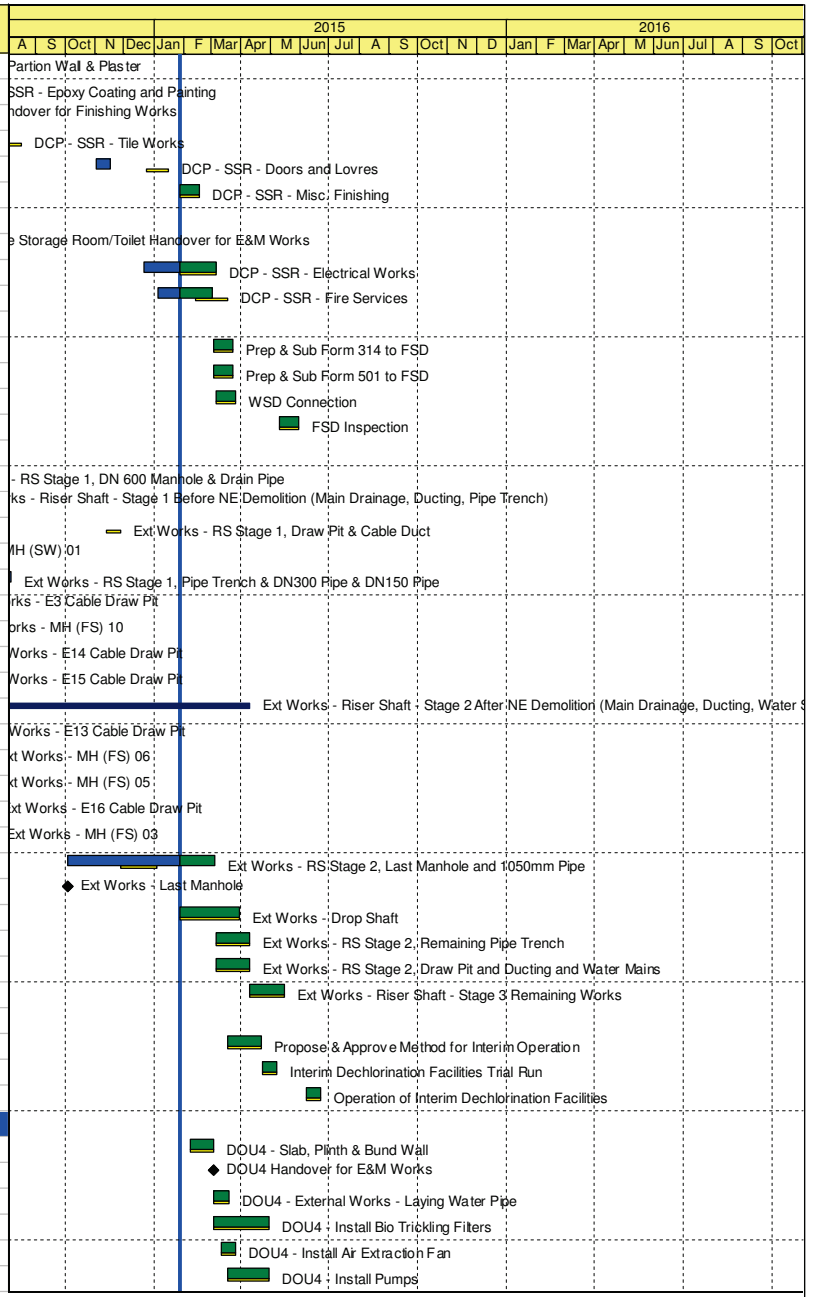
Project ID :C18DWPD150128

Layout : C18150128UDWP

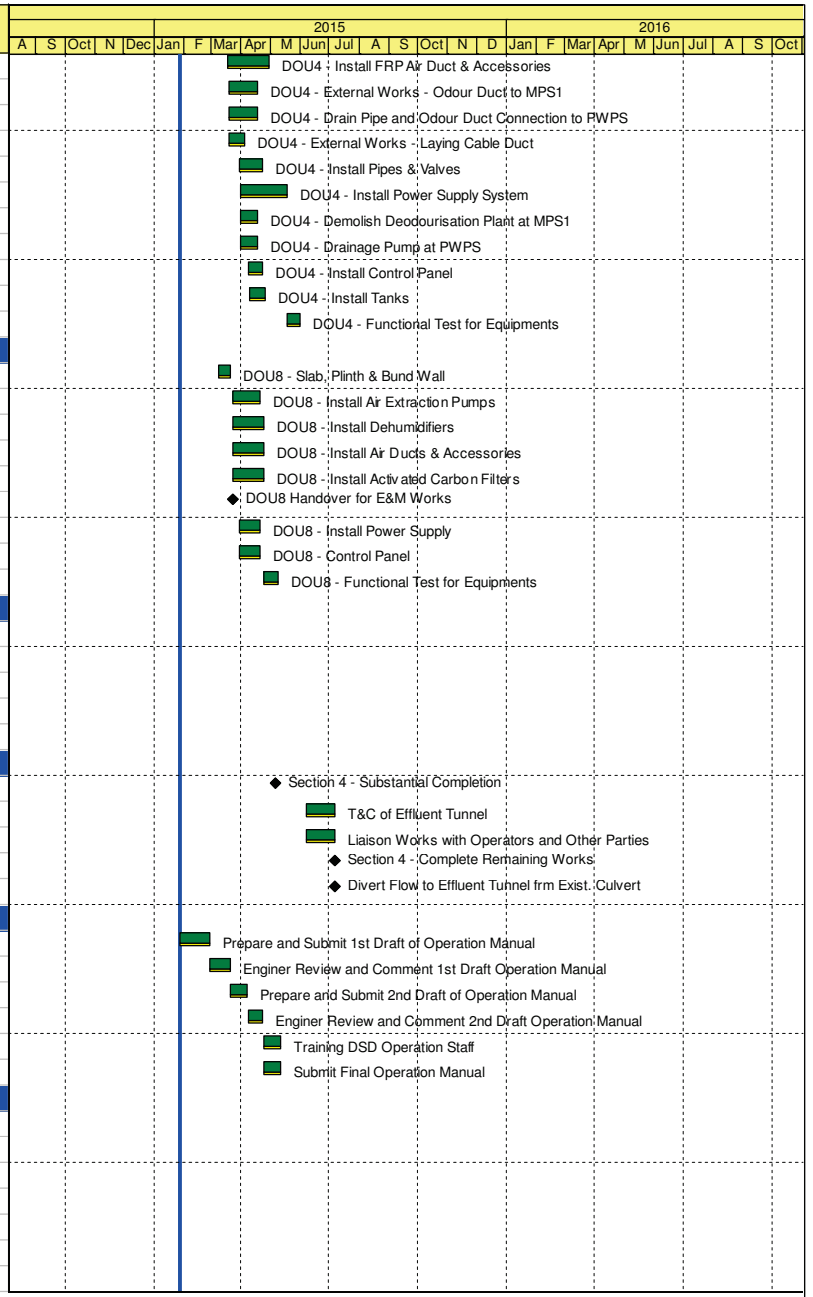
Detail Works Programme

Date	Revision	Checked	Approved
28-Jan-15	DWP Rev D Update		

Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-63975D	DCP - SSR - Partion Wall & Plaster	18	31-Mar-14 A	11-Apr-14 A	100%
18-64005D	DCP - SSR - Epoxy Coating and Painting	10	15-Apr-14 A	05-Jun-14 A	100%
18-63974N	DCP - SSR Handover for Finishing Works	0	15-Apr-14 A		100%
18-63985	DCP - SSR - Tile Works	18	28-Jun-14 A	12-Jul-14 A	100%
18-63995	DCP - SSR - Doors and Lovres	18	03-Nov-14 A	17-Nov-14 A	100%
18-64035	DCP - SSR - Misc. Finishing	18	28-Jan-15*	17-Feb-15	0%
6.06.8.9.2 - E&M Works					
18-64014N	DCP Spare Storage Room/Toilet Handover for E&M Works	0	15-May-14 A		100%
18-64015D	DCP - SSR - Electrical Works	30	22-Dec-14 A	06-Mar-15	0%
18-64025D	DCP - SSR - Fire Services	26	05-Jan-15 A	02-Mar-15	0%
6.06.8.10 - DCP Statutory Inspection					
18-60650	Prep & Sub Form 314 to FSD	18	03-Mar-15	23-Mar-15	0%
18-60700	Prep & Sub Form 501 to FSD	18	03-Mar-15	23-Mar-15	0%
18-60600	WSD Connection	18	06-Mar-15	26-Mar-15	0%
18-60750	FSD Inspection	18	11-May-15	30-May-15	0%
6.06.8.11 - DCP External Works					
18-64649N	Ext Works - RS Stage 1, DN 600 Manhole & Drain Pipe	32	25-Mar-14 A	13-May-14 A	100%
18-64650N	Ext Works - Riser Shaft - Stage 1 Before NE Demolition (Main Drainage, Ducting, Pipe Trench)	48	25-Mar-14 A	02-Jun-14 A	100%
18-64647N	Ext Works - RS Stage 1, Draw Pit & Cable Duct	15	25-Apr-14 A	15-Jul-14 A	100%
18-64670N	Ext Works - MH (SW) 01	0		25-Apr-14 A	100%
18-64648N	Ext Works - RS Stage 1, Pipe Trench & DN300 Pipe & DN150 Pipe	15	14-May-14 A	06-Aug-14 A	100%
18-64668N	Ext Works - E3 Cable Draw Pit	0		07-Jun-14 A	100%
18-64667N	Ext Works - MH (FS) 10	0		12-Jun-14 A	100%
18-64666N	Ext Works - E14 Cable Draw Pit	0		25-Jun-14 A	100%
18-64687N	Ext Works - E15 Cable Draw Pit	0		25-Jun-14 A	100%
18-64660N	Ext Works - Riser Shaft - Stage 2 After NE Demolition (Main Drainage, Ducting, Water Supply, Pipe Trench	139	27-Jun-14 A	09-Apr-15	58.27%
18-64680N	Ext Works - E13 Cable Draw Pit	0		27-Jun-14 A	100%
18-64690N	Ext Works - MH (FS) 06	0		11-Jul-14 A	100%
18-64665N	Ext Works - MH (FS) 05	0		11-Jul-14 A	100%
18-64688N	Ext Works - E16 Cable Draw Pit	0		15-Jul-14 A	100%
18-64662N	Ext Works - MH (FS) 03	0		19-Jul-14 A	100%
18-64646N	Ext Works - RS Stage 2, Last Manhole and 1050mm Pipe	37	04-Oct-14 A	05-Mar-15	0%
18-64663N	Ext Works - Last Manhole	0		04-Oct-14 A	100%
18-64652N	Ext Works - Drop Shaft	50	28-Jan-15	30-Mar-15	0%
18-64645N	Ext Works - RS Stage 2, Remaining Pipe Trench	35	06-Mar-15	09-Apr-15	0%
18-64644N	Ext Works - RS Stage 2, Draw Pit and Ducting and Water Mains	35	06-Mar-15	09-Apr-15	0%
18-64661N	Ext Works - Riser Shaft - Stage 3 Remaining Works	30	10-Apr-15	15-May-15	0%
6.06.8.12 - Interim Dechlorination Facilities					
18-64650D	Propose & Approve Method for Interim Operation	30	18-Mar-15	22-Apr-15	0%
18-64660D	Interim Dechlorination Facilities Trial Run	12	23-Apr-15	07-May-15	0%
18-64670D	Operation of Interim Dechlorination Facilities	12	08-Jun-15	22-Jun-15	0%
6.06.9 - DOU4					
18-60800	DOU4 - Slab, Plinth & Bund Wall	18	07-Feb-15*	03-Mar-15	0%
18-60100N	DOU4 Handover for E&M Works	0	04-Mar-15		0%
18-61210	DOU4 - External Works - Laying Water Pipe	14	04-Mar-15	19-Mar-15	0%
18-61000D	DOU4 - Install Bio Trickling Filters	48	04-Mar-15	29-Apr-15	0%
18-61050D	DOU4 - Install Air Extraction Fan	14	11-Mar-15	26-Mar-15	0%
18-61100D	DOU4 - Install Pumps	36	18-Mar-15	29-Apr-15	0%



Activity ID	Activity Name	Orig Dur	Start	Finish	Duration % Complete
18-61070D	DOU4 - Install FRP Air Duct & Accessories	36	18-Mar-15	29-Apr-15	0%
18-61230	DOU4 - External Works - Odour Duct to MPS1	24	20-Mar-15	17-Apr-15	0%
18-61275	DOU4 - Drain Pipe and Odour Duct Connection to PWPS	24	20-Mar-15	17-Apr-15	0%
18-61220	DOU4 - External Works - Laying Cable Duct	14	20-Mar-15	04-Apr-15	0%
18-61120D	DOU4 - Install Pipes & Valves	21	30-Mar-15	23-Apr-15	0%
18-61160D	DOU4 - Install Power Supply System	40	31-Mar-15	18-May-15	0%
18-61250	DOU4 - Demolish Deodourisation Plant at MPS1	14	01-Apr-15	17-Apr-15	0%
18-61300	DOU4 - Drainage Pump at PWPS	14	01-Apr-15	17-Apr-15	0%
18-61180D	DOU4 - Install Control Panel	14	08-Apr-15	23-Apr-15	0%
18-61140D	DOU4 - Install Tanks	14	10-Apr-15	25-Apr-15	0%
18-61200D	DOU4 - Functional Test for Equipments	12	19-May-15	01-Jun-15	0%
6.06.10 - DOU8					
18-61450	DOU8 - Slab, Plinth & Bund Wall	12	09-Mar-15	21-Mar-15	0%
18-61500D	DOU8 - Install Air Extraction Pumps	24	23-Mar-15	20-Apr-15	0%
18-61550D	DOU8 - Install Dehumidifiers	28	23-Mar-15	24-Apr-15	0%
18-61650D	DOU8 - Install Air Ducts & Accessories	28	23-Mar-15	24-Apr-15	0%
18-61600D	DOU8 - Install Activated Carbon Filters	28	23-Mar-15	24-Apr-15	0%
18-61499N	DOU8 Handover for E&M Works	0	23-Mar-15		0%
18-61700D	DOU8 - Install Power Supply	18	30-Mar-15	20-Apr-15	0%
18-61710D	DOU8 - Control Panel	18	30-Mar-15	20-Apr-15	0%
18-62050D	DOU8 - Functional Test for Equipments	12	25-Apr-15	09-May-15	0%
6.06.11 - Existing Chamber 15					
6.06.11.1 - E&M Works					
18-62149N	Existing Chamber 15 Handover for E&M Works	0	15-Aug-12 A		100%
18-62150D	Installation of Pilot TRC Sensing Facilities	32	15-Aug-12 A	19-Sep-12 A	100%
18-62200D	Functional Test for Pilot TRC Sensing Facilities	7	19-Sep-12 A	25-Sep-12 A	100%
18-62250D	T&C of Pilot TRC Sensing Facilities	181	22-Jan-13 A	26-Sep-13 A	100%
6.06.12 - Testing & Commissioning of Section 4					
18-11001N	Section 4 - Substantial Completion	0		06-May-15	0%
18-62350D	T&C of Effluent Tunnel	24	08-Jun-15	07-Jul-15	0%
18-62375D	Liaison Works with Operators and Other Parties	24	08-Jun-15	07-Jul-15	0%
18-62351N	Section 4 - Complete Remaining Works	0		07-Jul-15	0%
18-62400	Divert Flow to Effluent Tunnel frm Exist. Culvert	0		07-Jul-15	0%
6.06.13 - Operation Manual					
18-64425	Prepare and Submit 1st Draft of Operation Manual	24	28-Jan-15*	27-Feb-15	0%
18-64445	Enginer Review and Comment 1st Draft Operation Manual	18	28-Feb-15	20-Mar-15	0%
18-64455	Prepare and Submit 2nd Draft of Operation Manual	14	21-Mar-15	07-Apr-15	0%
18-64465	Enginer Review and Comment 2nd Draft Operation Manual	14	08-Apr-15	23-Apr-15	0%
18-64485	Training DSD Operation Staff	14	24-Apr-15	11-May-15	0%
18-64475	Submit Final Operation Manual	15	24-Apr-15	12-May-15	0%
6.06.14 - Portion 14					
18-55763N	Cable Detection	1	24-Sep-12 A	24-Sep-12 A	100%
18-55760N	Erection of Chain Link Fence	2	28-Sep-12 A	29-Sep-12 A	100%
18-55759N	Confirmation of Sub-Contractor	0		20-Mar-13 A	100%
18-55764N	Trial Pit	1	03-May-13 A	03-May-13 A	100%
18-55775N	Discussion with WSD on Existing Firemains Protection	0		30-Jul-13 A	100%
18-55765N	Trench Excavation	3	04-Oct-13 A	02-Nov-13 A	100%
18-55761N	Laying of 300mm Pipe	3	04-Nov-13 A	06-Nov-13 A	100%

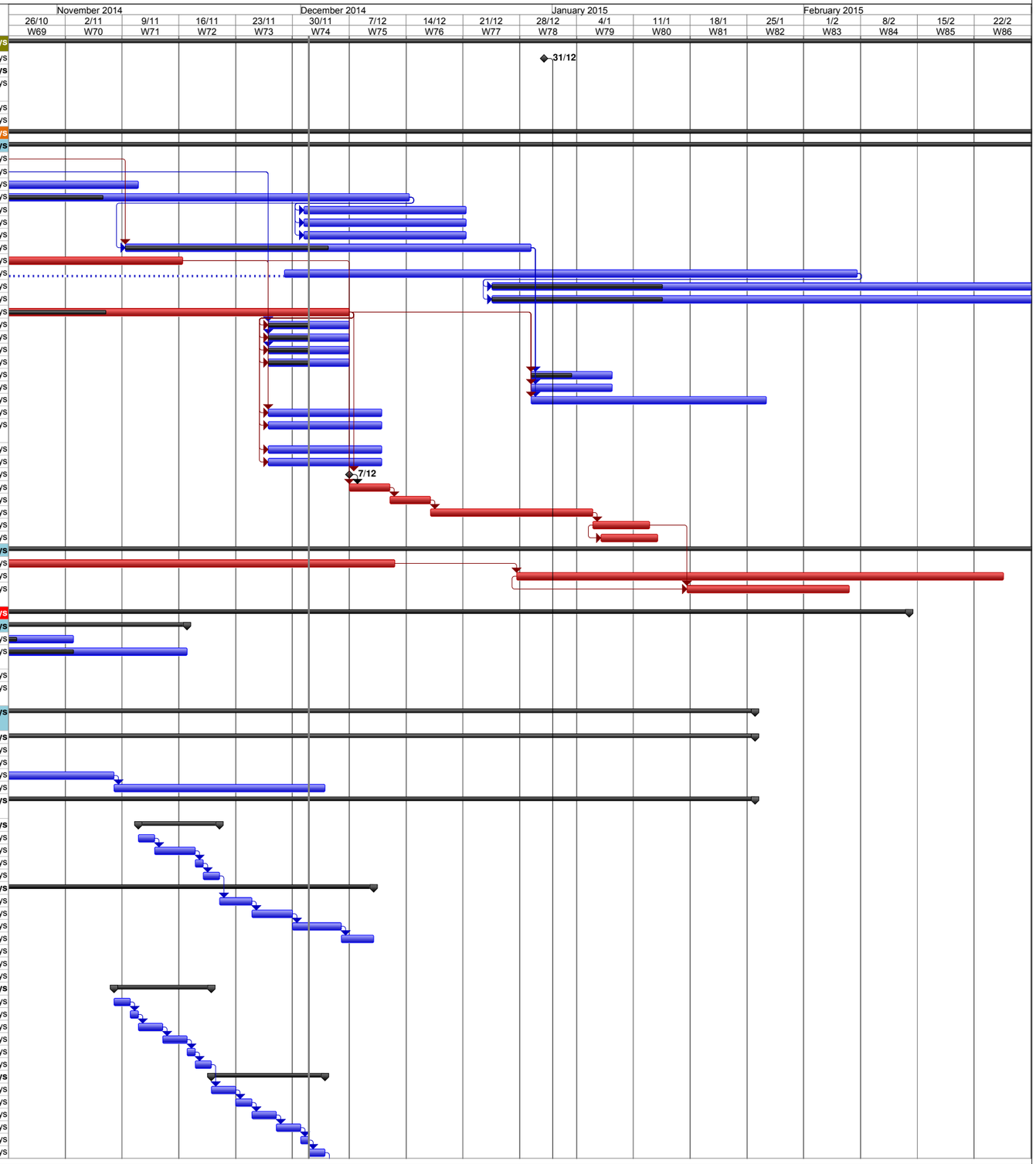


Drainage Services Department
Government of the HKSAR

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

SITA ATAL JV

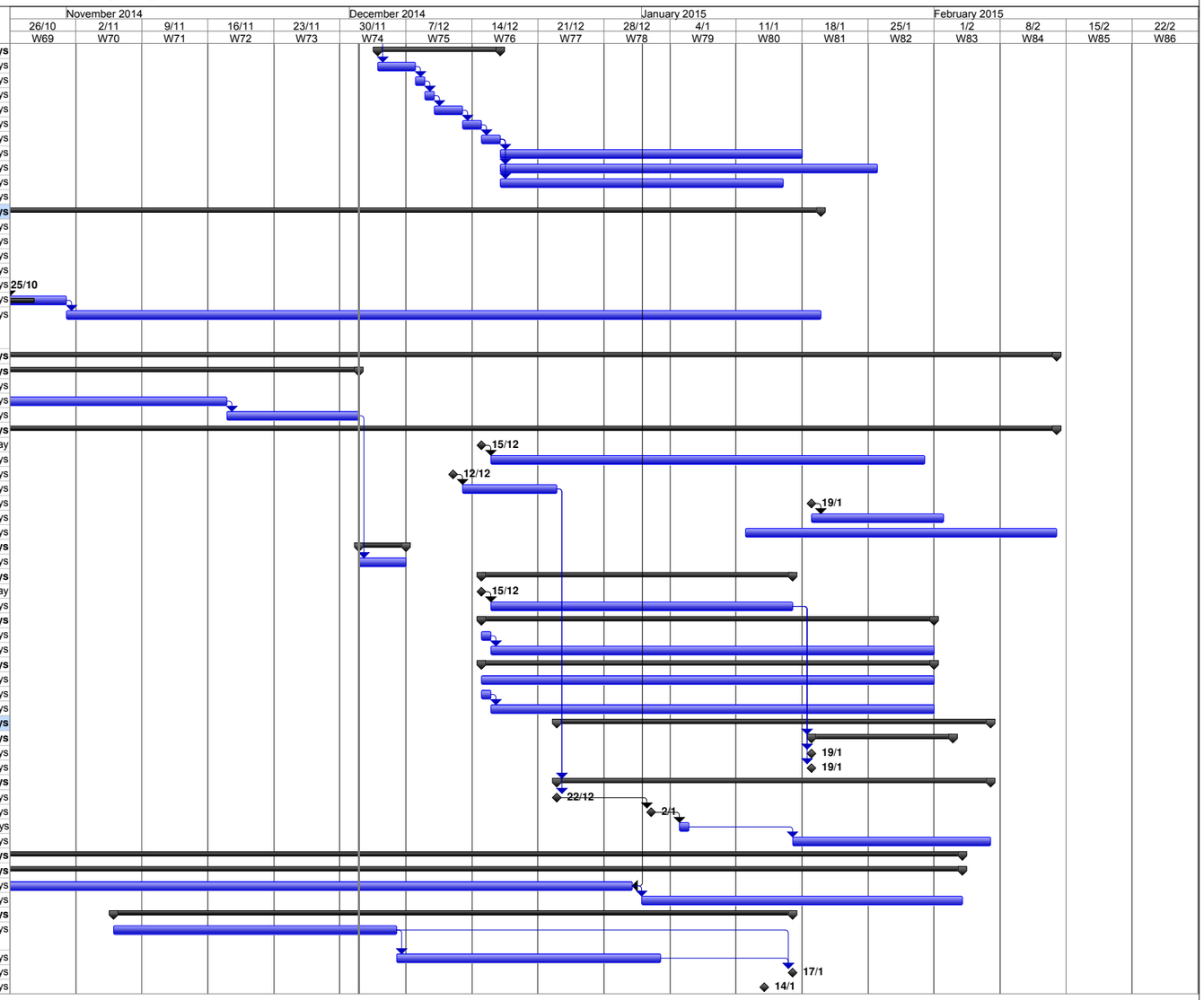
ID	Task Name	Duration	Start	Finish	% Complete	Predecessors	Total Slack	Successors	Free Slack
1	**DETAILED WORKS PROGRAMME**	**950.75 days**	**Fri 28/6/13**	**Wed 3/2/16**	**60%**		**0 days**		**0 days**
8	Section 2 COMPLETION OF INTERIM OPERATION	0 days	Wed 31/12/14	Wed 31/12/14	0%	319,320,321,7F	35 days	9,322FF	0 days
54	**Commissioning Plan**	**42 days**	**Mon 28/7/14**	**Mon 8/9/14**	**15%**		**148 days**		**148 days**
55	Prepare and submit Commissioning Plan to SO and Design Checker	14 days	Mon 28/7/14	Mon 11/8/14	30%	199FS-180 days,2	148 days	56	0 days
56	Design Checker certifies Commissioning Plan	14 days	Mon 11/8/14	Mon 25/8/14	0%	55	148 days	57FS+14 day	0 days
57	SO approves Commissioning Plan	0 days	Mon 8/9/14	Mon 8/9/14	0%	56FS+14 days	148 days	4	148 days
58	**Marine Vessels**	**584.55 days**	**Thu 1/8/13**	**Sun 8/3/15**	**62%**		**332.2 days**		**332.2 days**
79	**Ship Building**	**580.55 days**	**Thu 1/8/13**	**Wed 4/3/15**	**60%**	**18**	**336.2 days**		**336.2 days**
80	**Procurement and delivery of machinery**	185 days	Thu 1/8/13	Thu 31/7/14	98%		0 days	96FS-90 days	0 days
89	**Block Erection (Block 1 to 12)**	120 days	Wed 26/3/14	Wed 8/10/14	70%	88SS	29.25 days	92FS-45 days	0 days
91	Fuel / deep / structural tanks / hydraulic test (LRS)	105 days	Mon 28/7/14	Mon 10/11/14	50%	89SS+28 days	450 days		450 days
92	**Superstructure construction (Block 14 to 20)**	75 days	Tue 30/9/14	Sun 14/12/14	50%	89FS-45 days,8	397.63 days	93FS-13 days	0 days
93	Survey of structural fire protection (HKMD)	20 days	Mon 1/12/14	Sun 21/12/14	0%	92FS-13 days	409.63 days		409.63 days
94	Survey of prevetion of oil pollution installation (HKMD)	20 days	Mon 1/12/14	Sun 21/12/14	0%	92FS-13 days	409.63 days		409.63 days
95	Survey of air pollution requirement (HKMD)	20 days	Mon 1/12/14	Sun 21/12/14	0%	92FS-13 days	409.63 days		409.63 days
96	**Machinery installation**	50 days	Sun 9/11/14	Mon 29/12/14	50%	80FS-90 days,9	372.63 days	106,107,108	0 days
97	**Electrical work**	60 days	Mon 28/7/14	Sun 16/11/14	50%	89FS-20 days	-8.5 days	112,117	0 days
98	**Piping work**	120 days	Tue 27/5/14	Sat 7/2/15	30%	89FS-45 days,8	347.25 days	99FS-45 days	0 days
99	**Furnishing**	70 days	Wed 24/12/14	Wed 4/3/15	30%	98FS-45 days	336.25 days		336.25 days
100	**Outfitting**	70 days	Wed 24/12/14	Wed 4/3/15	30%	98FS-45 days	336.25 days		336.25 days
101	**Exterior Hull Painting**	60 days	Wed 8/10/14	Sun 7/12/14	50%	89	0 days	113FS-10 da	0 days
102	Survey of fore and aft peaks leakage test (LRS)	10 days	Thu 27/11/14	Sun 7/12/14	50%	101FS-10 days,	423.75 days		423.75 days
103	Survey of engine room flooding test (LRS)	10 days	Thu 27/11/14	Sun 7/12/14	50%	101FS-10 days,	423.75 days		423.75 days
104	Survey of hull hose test (LRS)	10 days	Thu 27/11/14	Sun 7/12/14	50%	101FS-10 days,	423.75 days		423.75 days
105	Tightening Test (LRS)	10 days	Thu 27/11/14	Sun 7/12/14	50%	101FS-10 days	423.75 days		423.75 days
106	Survey of sea water inlet valve hydraulic test (LRS)	10 days	Mon 29/12/14	Thu 8/1/15	50%	101FS-10 days,	391.63 days		391.63 days
107	Survey of electrical propulsion & Gensets (LRS)	10 days	Mon 29/12/14	Thu 8/1/15	0%	101FS-10 days,	391.63 days		391.63 days
108	Survey of alarms & safety devices test (HKMD)	29 days	Mon 29/12/14	Tue 27/1/15	0%	101FS-10 days,	372.63 days		372.63 days
112	Survey of electrical fittings / Megger test (LRS)	14 days	Thu 27/11/14	Thu 11/12/14	0%	97,101FS-10 da	419.75 days		419.75 days
113	Verification of principal dimensions and Draft Marks (LRS)	14 days	Thu 27/11/14	Thu 11/12/14	0%	101FS-10 days	419.75 days		419.75 days
114	Survey of tonnage measurement (LRS)	14 days	Thu 27/11/14	Thu 11/12/14	0%	101FS-10 days	419.75 days		419.75 days
115	Survey of Load Line/Freeboard Marks (LRS)	14 days	Thu 27/11/14	Thu 11/12/14	0%	101FS-10 days	419.75 days		419.75 days
116	**Launching**	0 days	Sun 7/12/14	Sun 7/12/14	50%	101	-29.25 days	117	0 days
117	Inclinding Experiment	5 days	Sun 7/12/14	Fri 12/12/14	0%	116,97	-29.25 days	118	0 days
118	Main Switchboard Load Test	5 days	Fri 12/12/14	Wed 17/12/14	0%	117	-29.25 days	119	0 days
119	Dock Trial, Mooring Trial and M&E Machinery T&C	20 days	Wed 17/12/14	Tue 6/1/15	0%	118	-29.25 days	120	0 days
120	**Shipyard trials**	7 days	Tue 6/1/15	Tue 13/1/15	0%	119	-29.25 days	128FS+1 day	0 days
121	Delivery from Shipyard	7 days	Wed 7/1/15	Wed 14/1/15	0%	120SS+1 day	-2.25 days	122	0 days
125	**Gantry Crane**	**574.55 days**	**Wed 7/8/13**	**Wed 4/3/15**	**58%**		**-32.8 days**		**0 days**
126	**Procurement and fabrication**	456 days	Wed 7/8/13	Fri 12/12/14	70%		0 days	127FS+15 da	0 days
127	**Delivery, assembly and trial**	60 days	Sat 27/12/14	Wed 25/2/15	0%	126FS+15 days	-32.8 days	128SS+21 da	0 days
128	**Installation, testing & commissioning, survey and licensing**	20 days	Sat 17/1/15	Fri 6/2/15	0%	127SS+21 days,120FS+1	-32.8 days	130FS+5 days,129FS+	0 days
160	**Improvement Works**	**588.75 days**	**Fri 5/7/13**	**Fri 13/2/15**	**46%**		**355 days**		**355 days**
185	**III - Construction at SCISTW**	**500 days**	**Fri 5/7/13**	**Mon 17/11/14**	**73%**		**443.75 days**		**443.75 days**
194	Replace existing fenders at seawall	14 days	Mon 20/10/14	Mon 3/11/14	50%	193FS-1 wk	457.75 days	195	457.75 days
196	New manhole and sewer for receipt of Marine Vessel foul water	28 days	Mon 20/10/14	Mon 17/11/14	50%	193FS-1 wk	443.75 days		443.75 days
197	Weighbridge Installation (Contractor proposal)	42 days	Fri 5/7/13	Fri 16/8/13	20%		875.15 days	198FS-1 wk	0 days
198	Sludge Unloading Control and Indication System (Contractor proposal)	42 days	Fri 9/8/13	Fri 20/9/13	20%	197FS-1 wk	866.75 days	199,273	866.75 days
200	**IV - Construction at WENT RA**	**174.25 days**	**Mon 4/8/14**	**Mon 26/1/15**	**37%**	**165FS+12 wks,181,184,18**	**373.75 days**		**373.75 days**
204	**CLP Transformer Room**	**174.25 days**	**Mon 4/8/14**	**Mon 26/1/15**	**29%**		**373.75 days**		**373.75 days**
206	Superstructure works	26 days	Sun 7/9/14	Fri 3/10/14	30%		488 days		488 days
207	Concreting	18 days	Sat 4/10/14	Wed 22/10/14	0%	205	427 days	208	0 days
208	Roof Structure	16 days	Wed 22/10/14	Fri 7/11/14	0%	207	427 days	209	0.25 days
209	Builder's Works	26 days	Sat 8/11/14	Thu 4/12/14	0%	208	426.75 days		426.75 days
211	**Maintenance Workshop and Container Washing Facilities**	**174.25 days**	**Mon 4/8/14**	**Mon 26/1/15**	**0%**		**373.75 days**		**373.75 days**
212	**Substructure of Workshop and Pump Room**	**10 days**	**Tue 11/11/14**	**Fri 21/11/14**	**0%**		**420.75 days**		**420.75 days**
213	Erection Formwork	2 days	Tue 11/11/14	Thu 13/11/14	0%		420.75 days	214	0 days
214	Fix Steel	5 days	Thu 13/11/14	Tue 18/11/14	0%	213	420.75 days	215	0 days
215	Concreting	1 day	Tue 18/11/14	Wed 19/11/14	0%	214	420.75 days	216	0 days
216	Demolition of Formwork	2 days	Wed 19/11/14	Fri 21/11/14	0%	215	420.75 days	218	0 days
217	**Superstructure of Workshop and Pump Room**	**127.25 days**	**Mon 4/8/14**	**Wed 10/12/14**	**0%**		**420.75 days**		**420.75 days**
218	Erection Formwork	4 days	Fri 21/11/14	Tue 25/11/14	0%	216	420.75 days	219	0 days
219	Fix Steel for slab and column	5 days	Tue 25/11/14	Sun 30/11/14	0%	218	420.75 days	220	0 days
220	Erection of Falsework	6 days	Sun 30/11/14	Sat 6/12/14	0%	219	420.75 days	221	0 days
221	Fix steel for roof	4 days	Sat 6/12/14	Wed 10/12/14	0%	220	420.75 days		420.75 days
222	Erection of formwork for roof	2 days	Mon 4/8/14	Wed 6/8/14	0%		546 days		546 days
223	Concreting	1 day	Mon 4/8/14	Tue 5/8/14	0%		547 days		547 days
224	Demolition of Formwork	1 day	Mon 4/8/14	Tue 5/8/14	0%		547 days		547 days
225	**Cap of the Pit of Container Washing Facility**	**12 days**	**Sat 8/11/14**	**Thu 20/11/14**	**0%**		**373.75 days**		**373.75 days**
226	Excavation	2 days	Sat 8/11/14	Mon 10/11/14	0%		373.75 days	227	0 days
227	Binding layer	1 day	Mon 10/11/14	Tue 11/11/14	0%	226	373.75 days	228	0 days
228	Erection Formwork	3 days	Tue 11/11/14	Fri 14/11/14	0%	227	373.75 days	229	0 days
229	Fix steel	3 days	Fri 14/11/14	Mon 17/11/14	0%	228	373.75 days	230	0 days
230	Concreting	1 day	Mon 17/11/14	Tue 18/11/14	0%	229	373.75 days	231	0 days
231	Demolition of Formwork	2 days	Tue 18/11/14	Thu 20/11/14	0%	230	373.75 days	233	0 days
232	**Pit of Container Washing Facility**	**14 days**	**Thu 20/11/14**	**Thu 4/12/14**	**0%**		**373.75 days**		**373.75 days**
233	Excavation	3 days	Thu 20/11/14	Sun 23/11/14	0%	231	373.75 days	234	0 days
234	Binding layer	2 days	Sun 23/11/14	Tue 25/11/14	0%	233	373.75 days	235	0 days
235	Erection Formwork	3 days	Tue 25/11/14	Fri 28/11/14	0%	234	373.75 days	236	0 days
236	Fix steel	3 days	Fri 28/11/14	Mon 1/12/14	0%	235	373.75 days	237	0 days
237	Concreting	1 day	Mon 1/12/14	Tue 2/12/14	0%	236	373.75 days	238	0 days
238	Demolition of Formwork	2 days	Tue 2/12/14	Thu 4/12/14	0%	237	373.75 days	240	0 days



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

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

ID	Task Name	Duration	Start	Finish	% Complete	Predecessors	Total Slack	Successors	Free Slack
239	**Container Washing Facility**	**13 days**	**Thu 4/12/14**	**Wed 17/12/14**	**0%**		**373.75 days**		**373.75 days**
240	Backfill	4 days	Thu 4/12/14	Mon 8/12/14	0%	238	373.75 days	241	0 days
241	Formwork	1 day	Mon 8/12/14	Tue 9/12/14	0%	240	373.75 days	242	0 days
242	Falsework	1 day	Tue 9/12/14	Wed 10/12/14	0%	241	373.75 days	243	0 days
243	Fix steel	3 days	Wed 10/12/14	Sat 13/12/14	0%	242	373.75 days	244	0 days
244	Concreting	2 days	Sat 13/12/14	Mon 15/12/14	0%	243	373.75 days	245	0 days
245	Dismantle Formwork	2 days	Mon 15/12/14	Wed 17/12/14	0%	244	373.75 days	246,247,248	0 days
246	Utility Works (E&M, telecommunication)	32 days	Wed 17/12/14	Sun 18/1/15	0%	245	381.75 days		381.75 days
247	ABWF	40 days	Wed 17/12/14	Mon 26/1/15	0%	245	373.75 days		373.75 days
248	Drainage at Workshop	30 days	Wed 17/12/14	Fri 16/1/15	0%	245	383.75 days		383.75 days
249	Phases 1 & 2 Commissioning tests	2 days	Mon 4/8/14	Wed 6/8/14	0%		181 days	4	181 days
250	**V - E&M Works**	**419 days**	**Wed 27/11/13**	**Tue 20/1/15**	**30%**		**379.75 days**		**379.75 days**
253	Prepare DDA Design Submission for E&M works	60 days	Tue 1/7/14	Sat 30/8/14	46%	251	77.75 days	254	0 days
254	Submit DDA documents to Design Checker and SO	0 days	Sat 30/8/14	Sat 30/8/14	90%	253	77.75 days	255FS+28 da	0 days
255	Design Checker certifies Detail Design drawings	0 days	Tue 30/9/14	Tue 30/9/14	90%	254FS+28 days	491.75 days	256	0 days
256	Provide list of certified Design drawings	0 days	Tue 30/9/14	Tue 30/9/14	90%	255	491.75 days		491.75 days
257	SO consents to DDA Design	0 days	Sat 25/10/14	Sat 25/10/14	90%	254FS+56 days	383.25 days	258	0 days
258	Deposit Registered Design with Employer, SO and Design Che	7 days	Sat 25/10/14	Sat 1/11/14	50%	257	379.75 days	259	0 days
259	Construct On-shore power supply for WENT RA, including liaising with EPD and CLP (Contractor Proposal)	80 days	Sat 1/11/14	Tue 20/1/15	0%	258	379.75 days		379.75 days
260	**Electrical Works**	**511.75 days**	**Fri 20/9/13**	**Fri 13/2/15**	**7%**		**355 days**		**355 days**
261	**SCISTW**	**94 days**	**Sat 30/8/14**	**Tue 2/12/14**	**0%**		**77.75 days**		**77.75 days**
262	Install power cabling at SCISTW berthing area	40 days	Sat 30/8/14	Thu 9/10/14	0%	254	77.75 days	263	0 days
263	Installaion of on-shore power supply at SCISTW	40 days	Thu 9/10/14	Tue 18/11/14	0%	262	77.75 days	4,264	0 days
264	Interface connection to DC17	14 days	Tue 18/11/14	Tue 2/12/14	0%	263	423.75 days	275	0 days
265	**Went Landfill**	**511.75 days**	**Fri 20/9/13**	**Fri 13/2/15**	**12%**		**355 days**		**355 days**
266	Electrical services material/equipment delivery on site	0 days	Mon 15/12/14	Mon 15/12/14	0%		369.75 days	267	1 day
267	Electrical services installation	46 days	Tue 16/12/14	Sat 31/1/15	0%	266	368.75 days		368.75 days
268	LV switch board & material delivery on site	0 days	Fri 12/12/14	Fri 12/12/14	0%		379 days	269	0.75 days
269	LV switch board installation	10 days	Fri 12/12/14	Mon 22/12/14	0%	268	378.25 days	293,292	0 days
270	LV switch board delivery on site	0 days	Mon 19/1/15	Mon 19/1/15	0%		366.75 days	271	0 days
271	LV switch board installation	14 days	Mon 19/1/15	Mon 2/2/15	0%	270	366.75 days		366.75 days
272	Electrical services installation at work shop	32.75 days	Mon 12/1/15	Fri 13/2/15	0%		355 days		355 days
274	**Testing of weighbridge**	**5 days**	**Tue 2/12/14**	**Sun 7/12/14**	**0%**	**199**	**423.75 days**		**423.75 days**
275	Testing of On-shore power	5 days	Tue 2/12/14	Sun 7/12/14	0%	264	423.75 days		423.75 days
276	**Fire Service System at Went Landfill**	**32.75 days**	**Mon 15/12/14**	**Fri 16/1/15**	**0%**		**382.25 days**		**382.25 days**
277	Fire service pump/AFA control panel delivery on site	0 days	Mon 15/12/14	Mon 15/12/14	0%		383.25 days	278	1 day
278	Fire service installation	31.75 days	Tue 16/12/14	Fri 16/1/15	0%	277	382.25 days	288,289,287	2.25 days
279	**MVAC System at Went Landfill**	**47.75 days**	**Mon 15/12/14**	**Sat 31/1/15**	**0%**		**368 days**		**368 days**
280	A/C Unit / exhaust air fan delivery on site	0.75 days	Mon 15/12/14	Mon 15/12/14	0%		368.25 days	281	0.25 days
281	MVAC system installation	46.75 days	Tue 16/12/14	Sat 31/1/15	0%	280	368 days		368 days
282	**Plumbing & Drainage System**	**47.75 days**	**Mon 15/12/14**	**Sat 31/1/15**	**0%**		**368 days**		**368 days**
283	Went Landfill	47.75 days	Mon 15/12/14	Sat 31/1/15	0%		368 days		368 days
284	Equipment & material delivery on site	0.75 days	Mon 15/12/14	Mon 15/12/14	0%		368.25 days	285	0.25 days
285	Plumbing & drainage system installation	46.75 days	Tue 16/12/14	Sat 31/1/15	0%	284	368 days		368 days
286	**VI - Statutory Submission**	**46.25 days**	**Mon 22/12/14**	**Sat 7/2/15**	**0%**		**361.75 days**		**361.75 days**
287	**Fire Service System**	**14.75 days**	**Mon 19/1/15**	**Mon 2/2/15**	**0%**	**278**	**366 days**		**366 days**
288	Prep & Sub Form 314 to FSD	0 days	Mon 19/1/15	Mon 19/1/15	0%	278	380 days	290	14 days
289	Prep & Sub Form 501 to FSD	0 days	Mon 19/1/15	Mon 19/1/15	0%	278	380 days	290	14 days
292	**Electrical Services System**	**46.25 days**	**Mon 22/12/14**	**Sat 7/2/15**	**0%**	**269**	**353.75 days**		**353.75 days**
293	Liaison with CLP for transformer room inspection	0 days	Mon 22/12/14	Mon 22/12/14	0%	269	378.25 days	295	10.25 days
295	CLP Inspection for transformer	0 days	Fri 2/1/15	Fri 2/1/15	0%	293	368 days	296	3 days
296	Transformer delivery on site	0.75 days	Mon 5/1/15	Mon 5/1/15	0%	295	365 days	297	11 days
297	Cable installation by CLP	21 days	Fri 16/1/15	Fri 6/2/15	0%	296	354 days	298	0.25 days
311	**Interim Operation Plan**	**549.75 days**	**Sat 3/8/13**	**Tue 3/2/15**	**61%**		**365 days**		**365 days**
318	**Interim Operation**	**459.75 days**	**Fri 1/11/13**	**Tue 3/2/15**	**59%**		**365 days**		**365 days**
322	Perform Interim Opeartion	425 days	Fri 1/11/13	Wed 31/12/14	63%	7,8FF	365.75 days	323	0.75 days
323	Perform Extended Interim Operation	34 days	Wed 31/12/14	Tue 3/2/15	0%	322,4FF	365 days		365 days
324	**Operation Plan**	**72 days**	**Thu 6/11/14**	**Sat 17/1/15**	**0%**		**382.75 days**		**382.75 days**
325	Prepare and submit Operation Plan to SO and Design Checker	30 days	Thu 6/11/14	Sat 6/12/14	0%	9FS-90 days	382.75 days	326,327FS+4 days	0 days
326	Design Checker certifies Operation Plan	28 days	Sat 6/12/14	Sat 3/1/15	0%	325	382.75 days	327FS+14 da	0 days
327	SO consents to Operation Plan	0 days	Sat 17/1/15	Sat 17/1/15	0%	326FS+14 days	382.75 days		382.75 days
328	SO to give notice of commencement of Operation	0 days	Wed 14/1/15	Wed 14/1/15	0%	9FS-3 wks	385.75 days		385.75 days



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