


Sun Fook Kong – Biwater Joint Venture

**Contract No. DC/2009/10
HATS Stage 2A – Upgrading
Works at Stonecutters Island Sewage
Treatment Works - Main Pumping
Station, Sedimentation Tanks and
Ancillary Facilities**

**Monthly Environmental
Monitoring and Audit Report
December 2016**

(Version 1.0)

Certified By	 <hr/> <p>(Environmental Team Leader)</p>
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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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**Agreement No. CE 8/2009(EP) Harbour Area Treatment Scheme Stage 2A
Independent Environmental Checker for Construction Phase – Investigation**

Our Reference
GCB/AFK/DC/ro/T261332
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**Contract No. DC/2009/10 – Upgrading Works at Stonecutters Island Sewage
Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary
Facilities**

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Condition 4.4 – Monthly EM&A Report for December 2016 (no. 69) Version 1.0

13 January 2017

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Dear Sir,

I refer to the revised Monthly EM&A Report for December 2016 (version 1.0) submitted by ET on 12 January 2017 via email. In accordance with Condition 4.4 of Environmental Permit No. EP-322/2008/G, I hereby verify the captioned Monthly EM&A Report.

Yours faithfully
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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 Stage 2A	Harbour Area Treatment Scheme Stage 2A
SBJV	Sun Fook Kong - Biwater Joint Venture

EXECUTIVE SUMMARY

Introduction

1. This is the 69th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/10 “HATS Stage 2A – Upgrading Works at Stonecutters Island Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities” (The Project) which documents the key information of EM&A and environmental monitoring works undertaken by other Contracts at the SCISTW under HATS Stage 2A with the same Environmental Permit (Permit No. EP-322/2008/G).
2. The site activities undertaken in the reporting month included:
 - Portion 4 – Main Pumping Station:
Installation of Dura Steel Panel System (43 of 48 were completed)
 - Portion 5 – Inlet Chamber:
Installation of FRP handrailing at Inlet Chamber
 - Main Flow Culvert:
Enhancement work for PVC lining at Main Flow Culvert (B-side) was completed
Main Flow Culvert Cleansing commenced on 6 Jan 17 (A-side)
 - Portion 6 – Existing Riser shaft:
Apply jack force to mobilize the plug by 50-80mm
Confirm detachment of plug from CCTV
Deploy crane for lift steel prop and Plug from Riser Shaft
Close blank flange with ST2 assistance to maintain water level at -17.0mPD and bolt fixing by diver
 - Valve Chamber:
Concreting works of Fan Room of Valve Chamber
 - Portion 7 – Polymer Storage Building:
Construction of G.L. 2-6/A-C up to roof floor (+15.3mPD) and staircase (ST1) up to +10.85mPD
Rebar fixing and formwork erection for Roof floor at G.L. 1-2/A-C
 - External works:
Pouring of Concrete to Catchpit CP18
Steel Fixing Wall of Control Valve Chamber
Installation of DN1200 Overflow Pipe around CH300
Placing of Concrete to Carriageway next to ADF

Environmental Monitoring Works

3. The environmental monitoring works of the Project were conducted by the ETs for Contract DC/2009/10, at the SCISTW under HATS 2A with the same Environmental Permit. The monitoring results were checked and reviewed and the site audits were conducted once per week. The implementation of the Environmental Mitigation Measures, Event Action Plans and Environmental Complaint Handling Procedures were also checked.
4. Summary of the non-compliance of the reporting month is tabulated in **Table I**.

Table I 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/2009/10	AM6a	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	NM5	Noise	0	0	0	0	N/A
	NM6	Noise	0	0	0	0	N/A
	AM7	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A
	AM8	1-hr TSP	0	0	0	0	N/A
		24-hr TSP	0	0	0	0	N/A

1-hour TSP Monitoring

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

Construction Noise

7. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

8. Licenses/Permits granted to the Project include the Environmental Permit (EP); Billing account for Disposal of Construction Waste, Registered as Chemical Waste Producer and Construction Noise Permits.

Environmental Mitigation Implementation Schedule

9. According to the EIA Report Section 3.74, 4.56 and 13.44, air quality, noise and landscape and visual would be the key environmental issues and mitigation measures shall be implemented during the construction phase. Details of the implementation of mitigation measures are provided in the **Appendix J**.

Key Information in the Reporting Month

10. Summary of key information in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Status of submissions under EP	1	Monthly EM&A Report for November 2016	Submitted on 19 December 2016	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

11. No environmental complaint and prosecution was received for the Project in the reporting month.
12. There were no environmental complaint and prosecution received since the commencement of the Project. The Complaint Log is presented in **Appendix K**.

Future Key Issues:

13. Major site activities for the coming two months include:

Section 3 – (MPS2)

- Installation of FRP railing at inlet chamber
- Installation of Durasteel panel of access openings

Section 5 – (Polymer Storage Building)

- Construction of Roof Floor Slab
- Internal and external finishes works

Section 5 – (External works)

- DN1200 NWK overflow pipes
- DN250 watermain replacement in existing service ducts
- External underground drainage works
- Paving block laying at MPS2

Section 5 – (Refurbishment works)

- Tree transplant for new transformer building
- Construction of RC works of Signboard A and B

Section 3 – (MPS 2)

- Tests for Smoke Extraction System and Staircase Pressurization System
- Building services installation at Valve Chamber
- FRP vessel inspection and remedial works for DOU3
- VMS checking and enhancement works
- E&M installation in Inlet Chamber
- DN1200 Knife Gate Valve replacement works in Inlet Chamber

Section 3 – (CEPT Tank, NaOCl Compound, DOU3 and Polymer Storage Building)

- Final foul air removal performance SAT for DOU3
- Smoke test for permanent FRP covers
- Air balancing tests for foul air ducts

- Installation of FRP Staircase in CEPT
 - Installation of 5T Overhead Travelling Crane at G/F, 5T Overhead Travelling Crane at 1/F and 1T Retractable Monorail at 1/F of Polymer Storage Building
 - FMM sensors installations at PSTs (South)
14. The environmental concerns in the coming months are mainly on chemicals and general refuse storage, surface runoff generated during rainstorm and wheel washing; dust control and treatment of wastewater generated from the construction works.

1. INTRODUCTION

Background

- 1.1 The Project ‘HATS Stage 2A - Upgrading works at Stonecutters Island Treatment Works – Main Pumping Station, Sedimentation Tanks and Ancillary Facilities’ under Contract No: DC/2009/10 mainly comprises the construction of a large underground pumping station with an internal diameter of 55 metres and a depth of more than 40 metres, the provision of additional double-tray sedimentation tanks, a new computer control system, the expansion and modification of existing installations of the SCISTW as well as the construction of other ancillary facilities. The general location plan of the Project is shown in **Figure 1**.
- 1.2 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project with Register No. : AEIAR-121/2008. The current works under the Project and other Contracts at SCISTW for HATS 2A are covered by the same Environmental Permit (Permit No. EP-322/2008/G), which 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.
- 1.3 Sun Fook Kong -Biwater Joint Venture (hereafter called the SBJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/10 “HATS 2A –Upgrading works at Stonecutters Island Treatment Works – Main Pumping, Sedimentation Tanks and Ancillary Facilities”. The date of commencement of construction of the Project is 24th February 2011.
- 1.4 Cinotech Consultants Limited was commissioned by SBJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP. The date of commencement of EM&A works is 14th April 2011. The Project cover the environmental monitoring works at monitoring stations AM6a, AM7, AM8, NM5 and NM6.
- 1.5 This is the 69th monthly EM&A report summarizing the EM&A works conducted for the Project in December 2016.

Project Organizations

- 1.6 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 2**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.
Ove Arup & Partners Hong Kong Ltd	Engineer’s Representative	Mr. Ted Tang	Principal Resident Engineer	2370 4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Mr. Victor Wong	Project Coordinator & Audit Team	2151 2078

Party	Role	Name	Position	Phone No.
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Sun Fook Kong - Biwater Joint Venture	Contractor	Mr. Keith Ho	Site Agent	2620 0070
		Mr. Leo Leung	Environmental Officer	2620 0070

Construction Programme

1.7 The site activities undertaken in the reporting month included:

- Portion 4 – Main Pumping Station:
Installation of Dura Steel Panel System (43 of 48 were completed)
- Portion 5 – Inlet Chamber:
Installation of FRP handrailing at Inlet Chamber
- Main Flow Culvert:
Enhancement work for PVC lining at Main Flow Culvert (B-side) was completed
Main Flow Culvert Cleansing commenced on 6 Jan 17 (A-side)
- Portion 6 – Existing Riser shaft:
Apply jack force to mobilize the plug by 50-80mm
Confirm detachment of plug from CCTV
Deploy crane for lift steel prop and Plug from Riser Shaft
Close blank flange with ST2 assistance to maintain water level at -17.0mPD and bolt fixing by diver
- Valve Chamber:
Concreting works of Fan Room of Valve Chamber
- Portion 7 – Polymer Storage Building:
Construction of G.L. 2-6/A-C up to roof floor (+15.3mPD) and staircase (ST1) up to +10.85mPD
Rebar fixing and formwork erection for Roof floor at G.L. 1-2/A-C
- External works:
Pouring of Concrete to Catchpit CP18
Steel Fixing Wall of Control Valve Chamber
Installation of DN1200 Overflow Pipe around CH300
Placing of Concrete to Carriageway next to ADF

Summary of EM&A Requirements

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

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

- 1.9 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 4** of this report.
- 1.10 This report presents the monitoring results, observations, locations, equipment, period, for required monitoring parameter namely air quality, noise and audit works conducted for the Project in November 2016.

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 Three designated monitoring stations, AM6a, AM7 and AM8 were selected for impact dust monitoring for the Project. The previous location of AM6 was inaccessible due to planned construction works and therefore an alternative monitoring station AM6a was proposed and adopted for subsequent impact monitoring starting on 4th January 2016. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Station	Monitored by	Location of Measurement
AM6a	DC/2009/10	Works site boundary
AM7		North West Kowloon Sewage Pumping Station
AM8		Block A of Government Dockyard

Monitoring Equipment

- 2.3 **Table 2.2** summarizes the air quality monitoring equipment and **Appendix B** shows the copies of calibration certificates for the equipment at AM6a, AM7 and AM8.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make
Laser Dust Monitor	Sibata: LD-3B (Serial no. 853944, 014750, 541146 and 095029)
HVS Sampler	TISCH: Model no. TE-5170 (Serial no. 2353, 2355 and 3219)
Calibrator	TISCH: Model TE-5025A (Serial no. 2896)

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 AM6a, AM7 and AM8 are shown in **Appendix C**.

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 procedures for monitoring station AM6a, AM7 and AM8 are presented as follow:

- 2.6 The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's observation on the monitoring day.

TSP Monitoring with Laser Dust Monitor

Measuring Procedures

- 2.7 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:
- Pull up the air sampling inlet cover
 - Change the Mode 0 to BG with once
 - Push Start/Stop switch once
 - Turn the knob to SENSI.ADJ and press it
 - Push Start/Stop switch once
 - Return the knob to the position MEASURE slowly
 - Push the timer set switch to set measuring time
 - Remove the cap and make a measurement

Maintenance/Calibration

- 2.8 The following maintenance/calibration was required for the direct dust meters:
- Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

TSP Monitoring with High Volume Sampler

Instrumentation

- 2.9 High Volume Sampler (HVS) completed with appropriate sampling inlets was employed for air quality monitoring. Each sampler comprised of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

HVS Installation

- 2.10 The following guidelines were adopted during the installation of HVS:
- Sufficient support was provided to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The samplers were more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

- 2.11 Fibre glass filters, which have a collection efficiency of larger than 99% of particles of 0.3 μm in diameter, were used. A HOKLAS accredited laboratory, Wellab Ltd., was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Cinotech's monitoring team.
- 2.12 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than $\pm 5\%$. A convenient working RH was 40%.
- 2.13 Wellab Ltd. has a comprehensive quality assurance and quality control programme.

Operating/Analytical Procedures

- 2.14 Operating/analytical procedures for the air quality monitoring were highlighted as follows:
- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 $\text{m}^3/\text{min.}$ and 1.4 $\text{m}^3/\text{min.}$) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
 - The power supply was checked to ensure the sampler worked properly.
 - On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
 - The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centred with the stamped number upwards, on a supporting screen.
 - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
 - The shelter lid was closed and secured with the aluminium strip.
 - The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
 - After sampling, the filter was removed and sent to the Wellab Ltd. for weighing. The elapsed time was also recorded.
 - Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ± 3 °C; the relative humidity (RH) should be < 50% and not vary by more than $\pm 5\%$. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

- 2.15 The following maintenance/calibration was required for the HVS:
- The high volume motors and their accessories were properly maintained.

Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.

Results and Observations

- 2.16 **Table 2.4** summarizes the monitoring results at AM6a, AM7 and AM8 in the reporting month.

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

Air Quality Monitoring Station	Average $\mu\text{g}/\text{m}^3$	Range $\mu\text{g}/\text{m}^3$	Action Level $\mu\text{g}/\text{m}^3$	Limit Level $\mu\text{g}/\text{m}^3$
1 hour TSP				
AM6a	71	16 -129	346	500
AM7	139	30 - 233	322	
AM8	103	25 -177	307	
24 hours TSP				
AM6a	73	38 – 126	196	260
AM7	124	34 – 156	207	
AM8	82	49 - 133	158	

- 2.17 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 F**.
- 2.18 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 F**.
- 2.19 The details and graphical presentations of the air quality monitoring results at AM6a, AM7 and AM8 are shown in **Appendix D**.
- 2.20 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from loadings of material, vehicles movement and construction works of other Contracts and this Contract in the site.

3. NOISE

Monitoring Requirements

- 3.1 Two noise monitoring stations, namely NM5 and NM6 was designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.
- 3.2 Monitoring station (NM6) serves as an alternative location for FSD Diving Rescue and Diving Training Centre which is regarded as a Noise Sensitive Receiver (NSR) as it is an institution. Monitoring station (NM6) was set up at the proposed location in accordance with the Monitoring Proposal submitted by ET of Contract DC/2009/05, as agreed by the ER and IEC.

Monitoring Locations

- 3.3 Noise monitoring was conducted at two designated monitoring stations as listed in **Table 3.1**.

Table 3.1 Location of Noise Monitoring Stations

Monitoring Station	Monitored By	Location of Measurement
NM5	DC/2009/10	Near FSD Diving Rescue and Training Centre
NM6		Customs' Marine Base (Block H of Government Dockyard Rooftop)

Monitoring Equipment

- 3.4 **Table 3.2** summarizes the noise quality monitoring equipment and **Appendix B** shows the copies of calibration certificates for the equipment used at NM5 and NM6 in the reporting month.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make
Integrating Sound Level Meter	SVANTEK Model no: SVAN 955 (Serial no. 12553), SVAN 957 (Serial no. 21455 and 23853)
Calibrator	SVANTEK Model no: Model no: SV 30A (Serial no. 24791 and 24780); Brüel & Kjær Model no: 4231 (Serial no. 2326353)

Monitoring Parameters, Frequency and Duration

- 3.5 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule of the reporting month for NM5 and NM6 is shown in **Appendix C**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

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

Monitoring Methodology and QA/QC Procedures

3.6 The monitoring methodology and QA/QC procedure at NM5 and NM6 are presented as follow:

3.7 General weather conditions (i.e. sunny, cloudy or rainy) were recorded by field observation during equipment checking and estimated according to weather data from the Hong Kong Observatory.

Field Monitoring

3.8 The monitoring procedures are as follows:

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting : A
 - Time weighting : Fast
 - Measurement time : 30 minutes
- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- Noise monitoring was carried out 30 minutes during on the monitoring days. Monitoring data was recorded and stored automatically within the sound level meter system. At the end of the monitoring period, noise levels in term of L_{eq} , L_{90} and L_{10} were recorded.
- All the monitoring data within the sound level meter system was downloaded through the computer software, and all these data was checked and reviewed within the computer.

Maintenance and Calibration

- 3.9 Maintenance and Calibration procedures were as follows:
- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
 - The sound level meter and calibrator were checked and calibrated at yearly intervals.

Results and Observations

- 3.10 **Table 3.4** summarizes the monitoring results at NM5 and NM6 in the reporting month.

Table 3.4 Summary the Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on weekdays		
Noise Monitoring Station	Range, dB(A) L _{eq} (30 min.)	Limit Level dB(A)
NM5	62.5 – 65.6	75.0
NM6	63.2 – 65.3	75.0

- 3.11 The construction noise monitoring at the designated location was conducted by the ET of Contracts DC/2009/10 as scheduled in the reporting month. The monitoring results and graphical presentations could be referred to **Appendix E**.
- 3.12 1900-2300 hours noise monitoring was not conducted in the reporting month as there were no construction works during the period of restricted hours.
- 3.13 No Action/Limit Level exceedance was recorded in the reporting month. Summary of exceedance is presented in **Appendix F**.
- 3.14 The major noise sources identified at the designated noise monitoring stations were vehicle movement and construction equipment, as well as construction activities from other Contracts in Stonecutters Island STW.

4. ENVIRONMENTAL AUDIT**Site Audits**

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 Environmental site audits were conducted on 1, 8, 14, 22 and 29 December 2016 for the Project. No non-compliance was observed during the site audits.
- 4.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.
- 4.4 The summaries of site audits are attached in **Appendix G**.

Implementation Status of Environmental Mitigation Measures

- 4.5 Details of the implementation of mitigation measures are provided in the **Appendix J**.
- 4.6 During the weekly environmental site inspections in the reporting period, no non-conformance was identified. The observations of the site audit for the Projects are summarized in **Table 4.1**.

Table 4.1 Observations of Site Audit

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	161201-R02	Reminder: AquaSed should be desilted before operation (Portion 7).	The quality of the discharge in the AquaSed has been improved.
	161208-O03	Drainage gully should be covered properly (near Gate 1).	Bunding has been provided at the identified gully.
	161222-O01	pH sensor and chemical dosage of the AquaSed should checked (Portion 7).	The pH level was observed to be within acceptable range.
Air Quality	161208-O01	Water hose should be provided for water spraying on the haul road and during concrete breaking (Portion 4).	Water has been sprayed at dusty area.
	161222-O02	NRMM label should be applied and attached to the identified excavator (Portion 4)	The identified excavator was put out of service until the NRMM is applied.
	161229-O01	Dust control at the Portion 7 should be reviewed and maintained.	Dust control measure by the Contractor was observed.
Waste/ Chemical Management	161201-O01	Oil leakage from the drip tray should be avoided by sealing the drain hole (Portion 7).	The drain hole has been sealed.
	161208-O02	Oil stain should be cleared whenever leakage occurred (Portion 4)	The oil stain has been cleared.
	161208-R04	Reminder: Bunding should be provided for the oil containers and placed at designate area (Portion 4).	The identified container has been removed.
Landscape and Visual	N/A	There was no observation in the reporting month.	N/A

Noise	N/A	There was no observation in the reporting month.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting month.	N/A

Review of Environmental Monitoring Procedures

- 4.7 The monitoring works conducted by Contract DC/2009/10's ET were reviewed at a regular basis to ensure the monitoring procedures were carried out properly.

Status of Environmental Licensing and Permitting

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

Table 4.2 Summary of Environmental Licensing and Permit Status for Contract DC/2009/10

Reference Number	Valid Period		Details	Status
	From	To		
<i>Water Discharge License</i>				
WT00012151-2012	23/7/2014	28/2/2017	The application was approved on 23-7-2014.	Valid
WT00015128-2013	28/1/2013	31/1/2018	The application was approved on 28-1-2013.	Valid
WT00023103-2015	19/1/2016	31/1/2021	The application was approved on 19-1-2016.	Valid
WT00024404-2016	19/5/2016	31/5/2021	The application was approved on 19-5-2016.	Valid
WT00025973-2016	22/11/2016	31/5/2021	The application was approved on 22/11/2016.	Valid
<i>Registered Chemical Waste Producer</i>				
WPN5213-269-3584-01	N/A	N/A	The application was approved on 4-5-2011.	Valid
<i>Billing Account for Disposal of Construction Waste</i>				
CSW01444	16/3/2011	N/A	The application was approved on 16-3-2011.	Valid
<i>Notification of Works Under APCO</i>				
327427	N/A	N/A	Notice form received by EPD on 2-3-2011.	N/A
<i>Construction Noise Permit for use of mechanical equipment outside permitted working hours</i>				
GW-RW0346-16	25/6/2016	24/12/2016	Location: Portion B	Expired
GW-RW0351-16	21/6/2016	20/12/2016	Location: Portion 3 and 8	Expired
GW-RW0349-16	25/6/2016	24/12/2016	Location: Portion 4	Expired
GW-RW0410-16	1/8/2016	31/1/2017	Location: Portion 6	Valid
GW-RW0604-16	26/10/2016	25/4/2017	Location: Portion 3 and 7	Valid

Status of Waste Management

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

Implementation Status of Event Action Plans

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

1-hr TSP

- 4.11 No Action/Limit Level exceedance was recorded.

24-hr TSP

- 4.12 No Action/Limit Level exceedance was recorded.

Construction Noise

- 4.13 No Action/Limit Level exceedance was recorded.

Landscape and Visual

- 4.14 No non-compliance was recorded.

Summary of Complaints and Prosecutions

- 4.15 No environmental complaint and prosecution was received for the Project in the reporting month.
- 4.16 There were no environmental complaint and prosecution received since the commencement of the Project. 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:

- Storage of chemicals/fuel and chemical waste/waste oil on-site;
- Drainage system should be well designed and maintained to prevent flooding and silty water from getting into the public area on rainy days;
- Leakage of oil from equipment;
- Generation of runoff during rainstorm;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Stockpile should be properly covered by tarpaulin to mitigate dust generation; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

Monitoring Schedule for the Next Month

5.2 The tentative environmental monitoring schedules for next months are shown in **Appendix C** of this report.

Construction Program for the Next Month

5.3 The tentative construction program is 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 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Audit

- 6.5 Environmental site audits were conducted as 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 next reporting month

- 6.7 The following recommendations were made for the next report month:

Air Quality

- To prohibit any open burning on site;
- To provide adequate water spray on site;
- To mitigate dust generation by providing adequate water spraying or covering stockpile with tarpaulin during dry days;
- To regularly maintain the machinery and vehicles on site; and
- To follow up any exceedance caused by the construction works.
- Non-Road Mobile Machinery (NRMM) labels must be demonstrated on the registered equipment for inspection.

Noise

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers;
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

- To provide adequate lubricant on mechanical equipments to reduce frictional noise; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

Water Quality

- To identify any discharge of wastewater from the construction site;
- To provide adequate temporary drainage system with adequate capacity;
- To provide adequate wastewater treatment facilities to treat the wastewater generated during construction works and heavy rain;
- To properly cover the stockpile and slope to prevent the generation of surface runoff; and
- To avoid water accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.

Waste/Chemical Management

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

Landscape and Visual

- To erect and maintain the protection fence around the retained trees; and
- To avoid any construction materials being placed inside the tree protection zone.

FIGURES



AM7
North West Kowloon
Sewage Pumping Station

NM5
FSD Diving Rescue and
Training Centre

AM6a
Works Site Boundary

Stonecutters Island
Sewage Treatment Plant

NM6
Customs' Marine Base

AM8
Block A of
Government Dockyard

LEGEND:

DC/2009/10' SITE AREA



AIR QUALITY MONITORING STATION



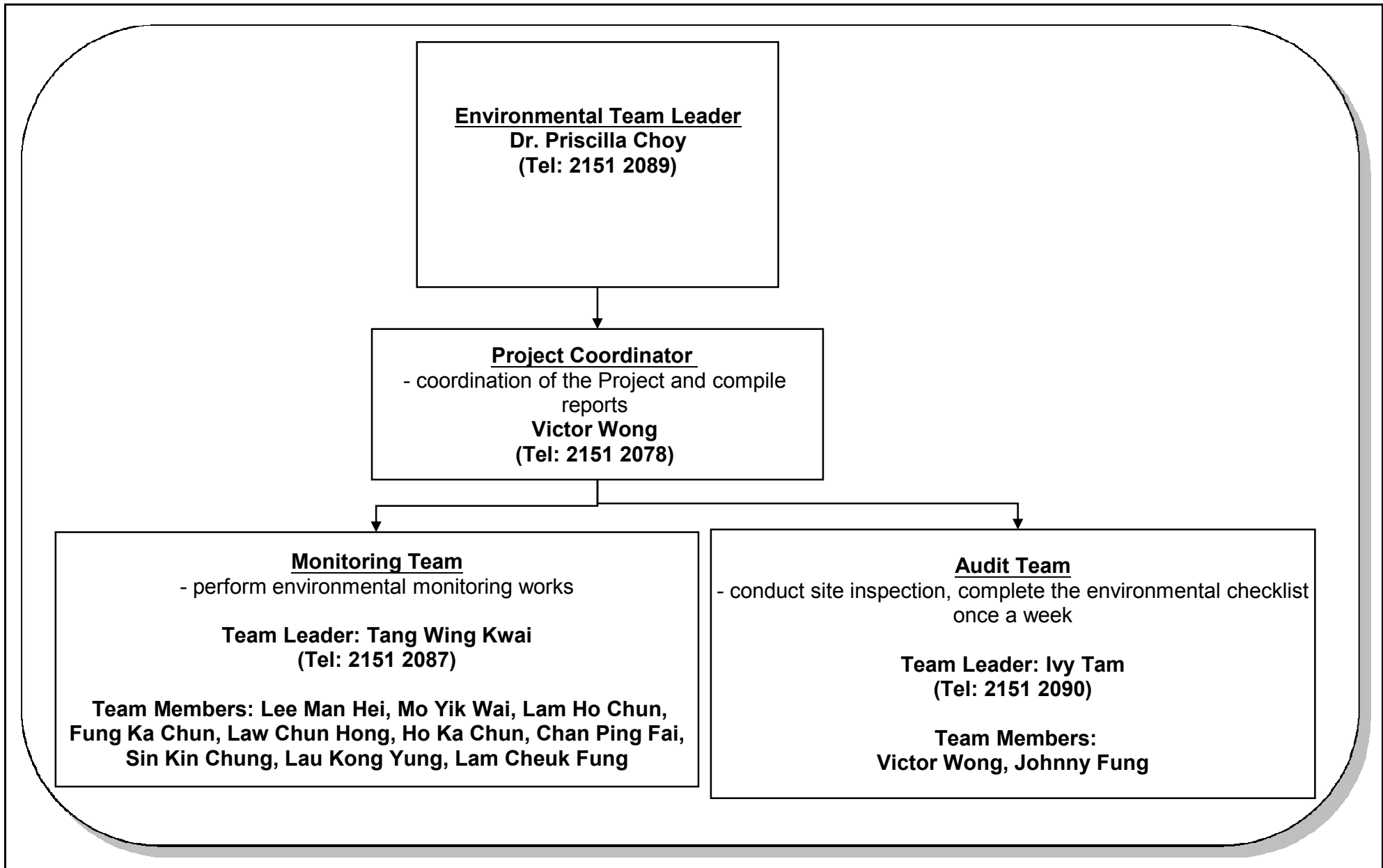
NOISE MONITORING STATION



Contract No: DC/2009/10
HATS 2A - Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary
Facilities at SCISTW

General Location Plan of the Project and Locations of Air
Quality and Noise Monitoring Stations

SCALE	N.T.S	DATE	11/2015	
CHECK	-	DRAWN	VW	
JOB No.	MA11007	FIGURE NO.	1	REV
				-



Title	Contract No. DC/2009/10 HATS Stage 2A – Upgrading Works at SCISTW Main Pumping Station, Sedimentation Tanks and Ancillary Facilities ET's Organization Chart	Scale	Project	CINOTECH
		Version	Figure	
		N.T.S	MA11007	
		v.1	2	

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

Appendix A Action and Limit Levels

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

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

Table A-2 Action and Limit Level for Construction Noise

Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
NM5 NM6	0700-1900 hours on normal weekdays	When one documented complaint is received	75
	Evening Time of normal weekdays and General Holidays: 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⁾

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/57/0007

Project No. AM6 - Works Site Boundary Operator: WK
 Date: 10-Nov-16 Next Due Date: 9-Jan-17
 Equipment No.: A-01-56 Serial No. 2353

Ambient Condition			
Temperature, Ta (K)	293.5	Pressure, Pa (mmHg)	767.4

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			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	3.59	60.96	8.0	2.86
2	10.5	3.28	55.73	6.9	2.66
3	7.8	2.83	48.15	5.2	2.31
4	5.1	2.29	39.09	3.4	1.87
5	3.4	1.87	32.08	2.2	1.50

By Linear Regression of Y on X

Slope, mw = 0.0474 Intercept, bw : 0.0034
 Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.06

Remarks: _____

Conducted by: Wk Tang Signature: [Signature] Date: 10/11/16
 Checked by: [Signature] Signature: [Signature] Date: 10 November 2016

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0028

Station AM7 - North West Kowloon Sewage Pumping Station Operator: WK
 Date: 13-Oct-16 Next Due Date: 12-Dec-16
 Equipment No.: A-01-55 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	296.6	Pressure, Pa (mmHg)	764.5

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			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	11.4	3.39	57.62	6.9	2.64
2	9.7	3.13	53.22	5.8	2.42
3	7.8	2.81	47.81	4.6	2.16
4	5.2	2.29	39.19	3.3	1.83
5	3.3	1.83	31.39	2.2	1.49

By Linear Regression of Y on X

Slope, mw = 0.0433 Intercept, bw = 0.1238

Correlation coefficient* = 0.9988

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

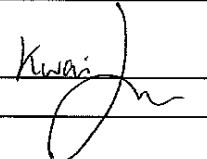
From the TSP Field Calibration Curve, take Qstd = 43 CFM

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.89

Remarks: _____

Conducted by: Wk Tang Signature:  Date: 13/10/16
 Checked by: Ar Signature: _____ Date: 13 October 2016

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/55/0029

Station AM7 - North West Kowloon Sewage Pumping Station Operator: WK
 Date: 8-Dec-16 Next Due Date: 7-Feb-17
 Equipment No.: A-01-55 Serial No. 2355

Ambient Condition			
Temperature, Ta (K)	294.5	Pressure, Pa (mmHg)	763.5

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			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	11.6	3.43	58.28	6.8	2.63
2	9.7	3.14	53.37	5.9	2.45
3	7.6	2.78	47.34	4.7	2.19
4	5.4	2.34	40.04	3.4	1.86
5	3.3	1.83	31.48	2.1	1.46

By Linear Regression of Y on X
 Slope, mw = 0.0439 Intercept, bw = 0.0937
 Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

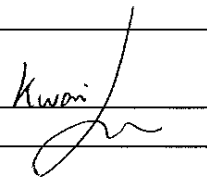
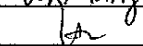
Set Point Calculation

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.86

Remarks: _____

Conducted by: Wk Tang Signature:  Date: 8/12/16
 Checked by:  Signature: _____ Date: 8 December 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0027

Station AM8 - Block A of Government Dockyard Operator: WK
 Date: 13-Oct-16 Next Due Date: 12-Dec-16
 Equipment No.: A-01-68 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	296.2	Pressure, Pa (mmHg)	764

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.8	3.45	58.63	6.7	2.60
2	9.9	3.16	53.77	5.6	2.38
3	7.8	2.81	47.83	4.8	2.20
4	5.3	2.32	39.57	3.3	1.83
5	3.3	1.83	31.40	2.2	1.49

By Linear Regression of Y on X

Slope, mw = 0.0405 Intercept, bw : 0.2262
 Correlation coefficient* = 0.9986

*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 x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 3.84

Remarks: _____

Conducted by: Wk Tang Signature: Kwai Date: 13/10/16
 Checked by: LA Signature: _____ Date: 13 October 2016

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11007/68/0028

Station AM8 - Block A of Government Dockyard Operator: WK
 Date: 8-Dec-16 Next Due Date: 7-Feb-17
 Equipment No.: A-01-68 Serial No. 3219

Ambient Condition			
Temperature, Ta (K)	295.2	Pressure, Pa (mmHg)	762.7

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.5	3.41	57.94	6.9	2.64
2	9.7	3.13	53.28	5.7	2.40
3	7.9	2.83	48.17	4.8	2.21
4	5.4	2.34	39.97	3.3	1.83
5	3.2	1.80	30.96	2.1	1.46

By Linear Regression of Y on X

Slope, mw = 0.0437 Intercept, bw = 0.0959
 Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

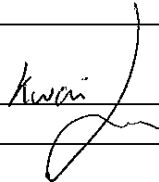
From the TSP Field Calibration Curve, take Qstd = 43 CFM

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 x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 3.85

Remarks: _____

Conducted by: Wk. Tang Signature: 
 Checked by: LA Signature: _____

Date: 8/12/16
 Date: 8 December 2016



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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 04, 2016 Rootmeter S/N 0438320 Ta (K) - 295
 Operator Tisch Orifice I.D. - 2896 Pa (mm) - 755.65

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	1.4340	3.2	2.00
2	NA	NA	1.00	1.0250	6.4	4.00
3	NA	NA	1.00	0.9150	7.9	5.00
4	NA	NA	1.00	0.8770	8.7	5.50
5	NA	NA	1.00	0.7210	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0001	0.6974	1.4173	0.9957	0.6944	0.8836
0.9959	0.9716	2.0044	0.9915	0.9674	1.2496
0.9938	1.0861	2.2410	0.9894	1.0814	1.3971
0.9928	1.1320	2.3503	0.9885	1.1271	1.4653
0.9875	1.3696	2.8346	0.9831	1.3636	1.7672
Qstd slope (m) = 2.11176			Qa slope (m) = 1.32235		
intercept (b) = -0.05079			intercept (b) = -0.03166		
coefficient (r) = 0.99982			coefficient (r) = 0.99982		
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 }

TEST REPORT

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

Test Report No.:	C/A/161104A
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 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)	0.0034
-------------------------	--------

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/A/161104B
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 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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For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/A/161104C
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-01-06

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 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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For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/161028C
Date of Issue:	2016-10-31
Date Received:	2016-10-28
Date Tested:	2016-10-28
Date Completed:	2016-10-31
Next Due Date:	2016-12-30

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

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

Test Conditions:

Room Temperature	: 21 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)	0.0038
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PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160917B
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 955
Serial No. : 12553
Microphone No. : 35222
Equipment No. : N-08-02

Test conditions:

Room Temperature : 24 degree Celsius
Relative Humidity : 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160826A
Date of Issue:	2016-08-29
Date Received:	2016-08-26
Date Tested:	2016-08-26
Date Completed:	2016-08-29
Next Due Date:	2017-08-28

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.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/161128
Date of Issue:	2016-11-30
Date Received:	2016-11-28
Date Tested:	2016-11-28
Date Completed:	2016-11-30
Next Due Date:	2017-11-29

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.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 66%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160930B
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/160930C
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperature	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

Test Report No.:	C/N/151106/1
Date of Issue:	2015-11-07
Date Received:	2015-11-06
Date Tested:	2015-11-06
Date Completed:	2015-11-07
Next Due Date:	2016-11-06

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Equipment No.	: N-02-01

Test conditions:

Room Temperature	: 23 degree Celsius
Relative Humidity	: 56 %

Methodology:

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

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

**APPENDIX C
ENVIRONMENTAL MONITORING
SCHEDULES**

**DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Impact Air Quality and Noise Monitoring Schedule (December 2016)**

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

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

Air Quality Monitoring Station

AM7 - West Kowloon No.2 Sewage Pumping Station
AM8 - Block A of Government Dockyard
AM6a - Works Site Boundary

Noise Monitoring Station

NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

**DC/2009/10 HATS 2A Upgrading Main Pumping Station, Sedimentation Tanks and Ancillary Facilities at SCISTW
Tentative Impact Air Quality and Noise Monitoring Schedule (January 2017)**

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

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
AM6a - Works Site Boundary

Noise Monitoring Station

NM6 - Customs' Marine Base (Block H of Government Dockyard) Rooftop
NM5 - FSD Diving Training Centre

**APPENDIX D
1-HOUR AND 24-HOUR TSP
MONITORING RESULTS AND
GRAPHICAL PRESENTATION**

Appendix D - 1-hour TSP Monitoring Results

Location AM6a - Works Site Boundary

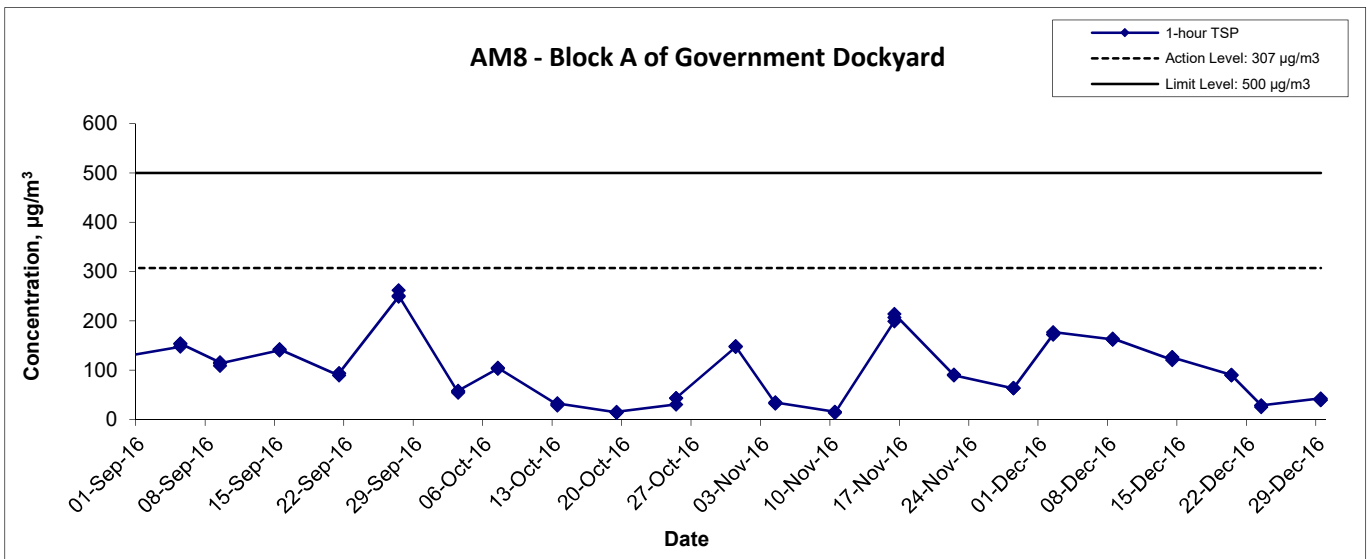
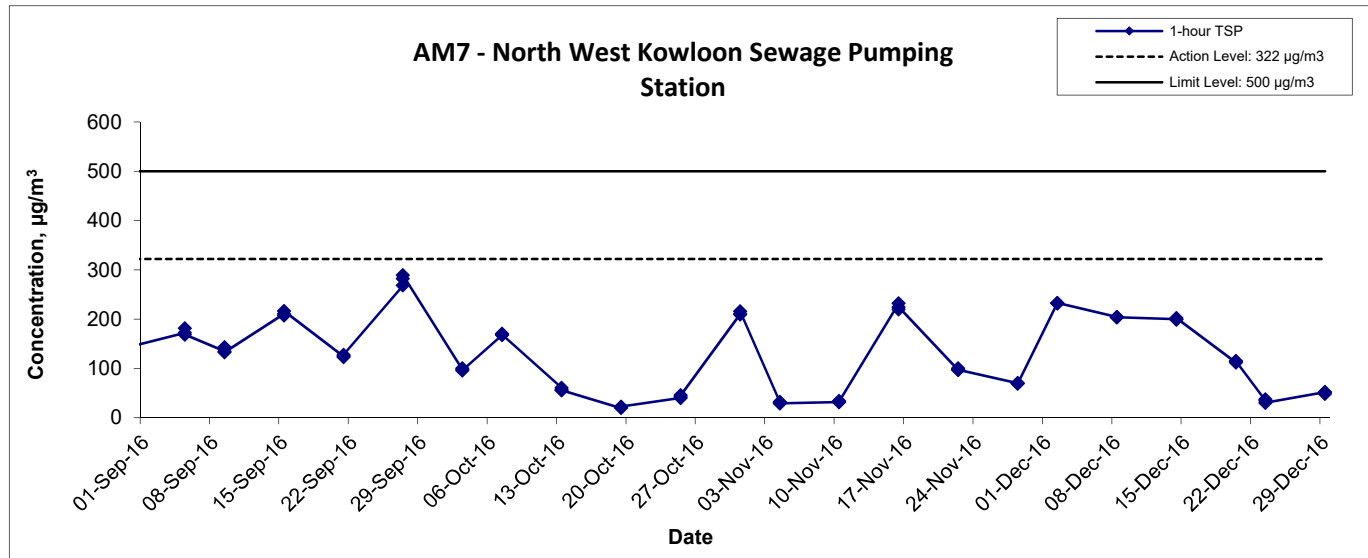
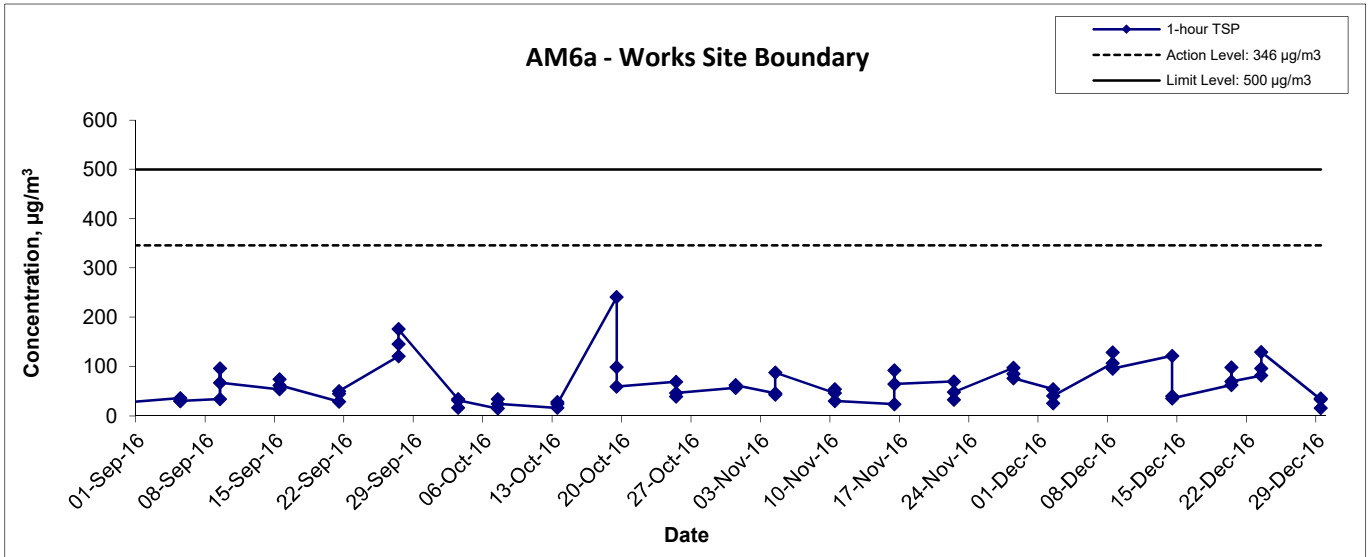
Start Date	Start Time	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)	Filter ID no.
				Initial	Final		Initial	Final		Initial	Final				
2-Dec-16	10:00	Sunny	290.5	3.5885	3.5925	0.0040	4680.6	4681.6	1.0	1.23	1.23	1.23	73.8	54.2	161201/016
2-Dec-16	11:00	Sunny	290.7	3.5766	3.5785	0.0019	4681.6	4682.6	1.0	1.23	1.23	1.23	73.8	25.7	161201/017
2-Dec-16	13:00	Sunny	292.6	3.5892	3.5922	0.0030	4682.6	4683.6	1.0	1.23	1.23	1.23	73.5	40.8	161201/018
8-Dec-16	13:00	Cloudy	294.3	3.6129	3.6207	0.0078	4707.6	4708.6	1.0	1.22	1.22	1.22	73.0	106.8	161201/066
8-Dec-16	14:00	Cloudy	294.5	3.5646	3.5740	0.0094	4708.6	4709.6	1.0	1.22	1.22	1.22	73.0	128.7	161201/067
8-Dec-16	15:00	Cloudy	294.7	3.6026	3.6096	0.0070	4709.6	4710.6	1.0	1.22	1.22	1.22	73.0	95.9	161201/068
14-Dec-16	10:00	Sunny	293.6	3.5825	3.5914	0.0089	4734.6	4735.6	1.0	1.22	1.22	1.22	73.2	121.5	161203/043
14-Dec-16	11:00	Sunny	293.8	3.5639	3.5668	0.0029	4735.6	4736.6	1.0	1.22	1.22	1.22	73.2	39.6	161203/044
14-Dec-16	13:00	Sunny	294.5	3.5872	3.5898	0.0026	4736.6	4737.6	1.0	1.22	1.22	1.22	73.1	35.6	161203/045
20-Dec-16	10:00	Cloudy	293.5	3.6182	3.6228	0.0046	4761.6	4762.6	1.0	1.22	1.22	1.22	73.3	62.8	161204/001
20-Dec-16	11:00	Cloudy	293.7	3.6008	3.6080	0.0072	4762.6	4763.6	1.0	1.22	1.22	1.22	73.3	98.3	161204/002
20-Dec-16	13:00	Cloudy	294.8	3.5757	3.5808	0.0051	4763.6	4764.6	1.0	1.22	1.22	1.22	73.1	69.8	161204/003
23-Dec-16	10:00	Sunny	284.3	3.5854	3.5915	0.0061	4788.6	4789.6	1.0	1.24	1.24	1.24	74.6	81.7	161203/096
23-Dec-16	11:00	Sunny	284.5	3.5905	3.5977	0.0072	4789.6	4790.6	1.0	1.24	1.24	1.24	74.6	96.5	161203/097
23-Dec-16	13:00	Sunny	287.1	3.5862	3.5958	0.0096	4790.6	4791.6	1.0	1.24	1.24	1.24	74.2	129.3	161203/098
29-Dec-16	10:00	Sunny	286.6	3.5909	3.5934	0.0025	4815.6	4816.6	1.0	1.24	1.24	1.24	74.4	33.6	161204/082
29-Dec-16	11:00	Sunny	286.8	3.5779	3.5791	0.0012	4816.6	4817.6	1.0	1.24	1.24	1.24	74.3	16.1	161204/083
29-Dec-16	13:00	Sunny	289.5	3.5939	3.5965	0.0026	4817.6	4818.6	1.0	1.23	1.23	1.23	74.0	35.2	161204/084
													Min	16	
													Max	129	
													Average	71	

Appendix D - 1-hour TSP Monitoring Results

Location AM7 - North West Kowloon Sewage Pumping Station			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Dec-16	14:00	Sunny	232
2-Dec-16	15:00	Sunny	232
2-Dec-16	16:00	Sunny	233
8-Dec-16	14:00	Cloudy	204
8-Dec-16	15:00	Cloudy	204
8-Dec-16	16:00	Cloudy	203
14-Dec-16	14:00	Sunny	200
14-Dec-16	15:00	Sunny	199
14-Dec-16	16:00	Sunny	203
20-Dec-16	14:00	Cloudy	112
20-Dec-16	15:00	Cloudy	114
20-Dec-16	16:00	Cloudy	115
23-Dec-16	14:00	Sunny	35
23-Dec-16	15:00	Sunny	37
23-Dec-16	16:00	Sunny	30
29-Dec-16	14:00	Sunny	51
29-Dec-16	15:00	Sunny	53
29-Dec-16	16:00	Sunny	48
		Minimum	30
		Maximum	233
		Average	139

Location AM8 - Block A of Government Dockyard			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Dec-16	9:00	Sunny	172
2-Dec-16	10:00	Sunny	172
2-Dec-16	11:00	Sunny	177
8-Dec-16	9:00	Cloudy	162
8-Dec-16	10:00	Cloudy	162
8-Dec-16	11:00	Cloudy	164
14-Dec-16	9:00	Cloudy	121
14-Dec-16	10:00	Cloudy	126
14-Dec-16	11:00	Cloudy	126
20-Dec-16	9:00	Cloudy	90
20-Dec-16	10:00	Cloudy	90
20-Dec-16	11:00	Cloudy	89
23-Dec-16	9:00	Sunny	28
23-Dec-16	10:00	Sunny	25
23-Dec-16	11:00	Sunny	28
29-Dec-16	9:00	Sunny	42
29-Dec-16	10:00	Sunny	39
29-Dec-16	11:00	Sunny	39
		Minimum	25
		Maximum	177
		Average	103

1-hr TSP Concentration Levels



Title Contract No. DC/2009/10
HATS 2A – Upgrading Works at SCISTW–
Main Pumping Station, Sedimentation Tanks and Ancillary
Graphical Presentation of 1-hour TSP Monitoring Results

Scale N.T.S
Date Dec 16

Project No. MA11007
Appendix D



Appendix D - 24-hour TSP Monitoring Results

Location AM6a - Works Site Boundary

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. (µg/m ³)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
1-Dec-16	Sunny	289.5	3.5077	3.7311	0.2234	4656.6	4680.6	24.0	1.23	1.23	1.23	1775.1	125.9	161201/006
7-Dec-16	Cloudy	291.4	3.6066	3.8082	0.2016	4683.6	4707.6	24.0	1.23	1.23	1.23	1766.4	114.1	161201/015
13-Dec-16	Sunny	295.2	3.5695	3.6473	0.0778	4710.6	4734.6	24.0	1.22	1.22	1.22	1752.6	44.4	161201/065
19-Dec-16	Cloudy	294.8	3.5531	3.6644	0.1113	4737.6	4761.6	24.0	1.22	1.22	1.22	1754.0	63.5	161203/042
22-Dec-16	Sunny	295.3	3.5843	3.6516	0.0673	4764.6	4788.6	24.0	1.22	1.22	1.22	1753.0	38.4	161204/004
28-Dec-16	Sunny	283.7	3.5907	3.6877	0.0970	4791.6	4815.6	24.0	1.25	1.25	1.25	1793.4	54.1	161204/025
												Min	38	
												Max	126	
												Average	73	

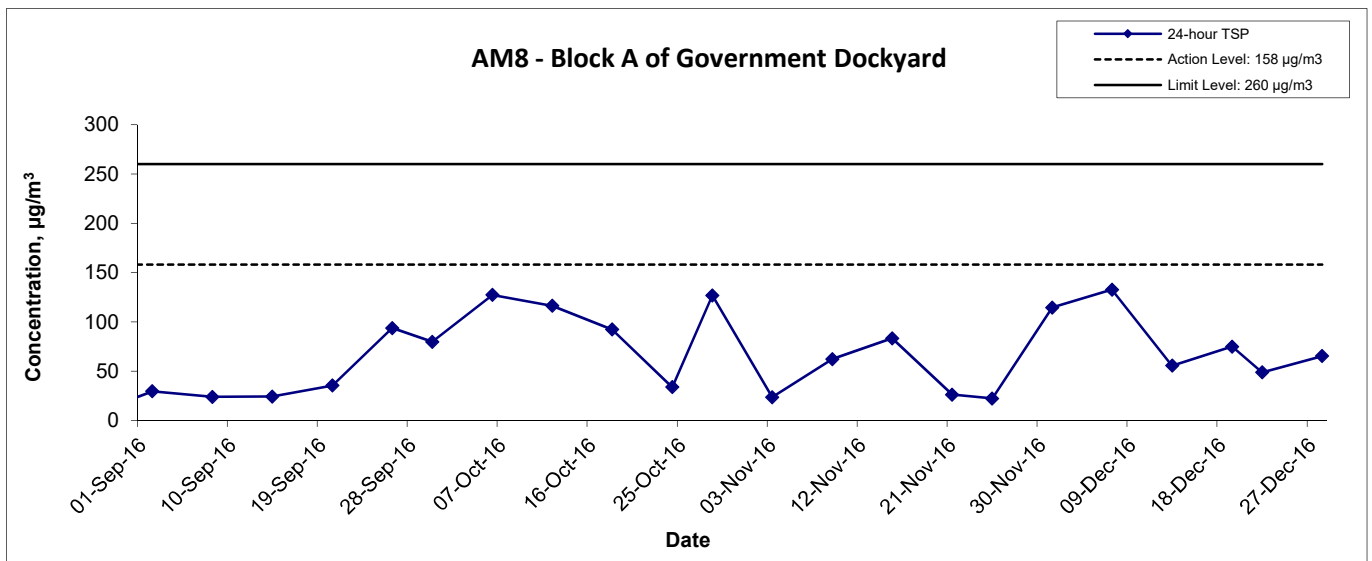
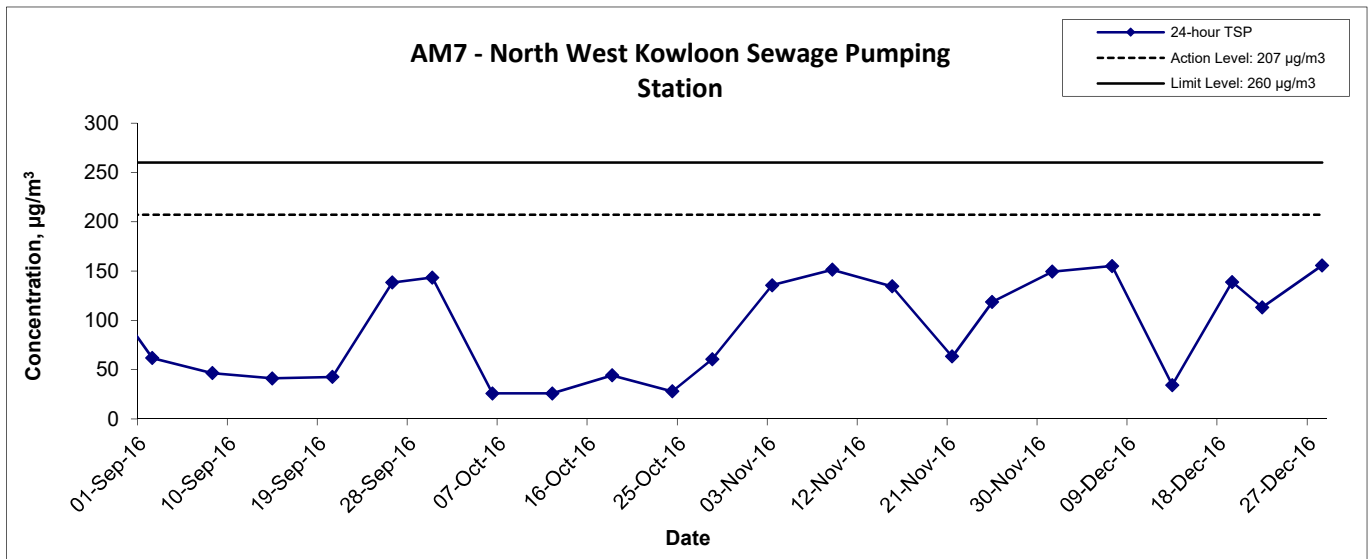
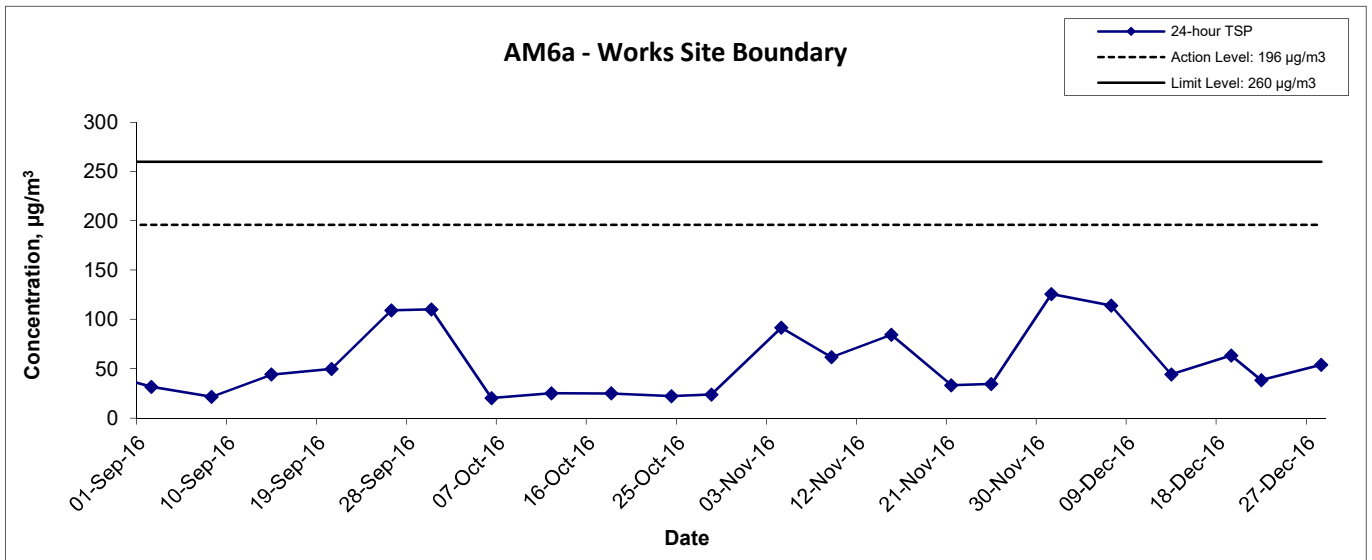
Location AM7 - North West Kowloon Sewage Pumping Station

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. (µg/m ³)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
1-Dec-16	Sunny	289.1	3.5260	3.7923	0.2663	33953.3	33977.3	24.0	1.24	1.24	1.24	1783.5	149.3	161201/008
7-Dec-16	Cloudy	290.3	3.5853	3.8605	0.2752	33977.3	34001.3	24.0	1.23	1.23	1.23	1776.6	154.9	161201/019
13-Dec-16	Sunny	294.9	3.5872	3.6473	0.0601	34001.3	34025.3	24.0	1.22	1.22	1.22	1761.5	34.1	161201/069
19-Dec-16	Cloudy	295.2	3.6074	3.8520	0.2446	34025.3	34049.3	24.0	1.22	1.22	1.22	1763.3	138.7	161203/046
22-Dec-16	Sunny	294.5	3.5594	3.7590	0.1996	34049.3	34073.3	24.0	1.23	1.23	1.23	1764.5	113.1	161204/006
28-Dec-16	Sunny	284.3	3.5998	3.8807	0.2809	34073.3	34097.3	24.0	1.25	1.25	1.25	1804.0	155.7	161204/026
												Min	34	
												Max	156	
												Average	124	

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. (µg/m ³)	Filter ID no.
			Initial	Final		Initial	Final		Initial	Final				
1-Dec-16	Sunny	290.4	3.4867	3.6899	0.2032	7458.0	7482.0	24.0	1.23	1.23	1.23	1773.7	114.6	161201/007
7-Dec-16	Cloudy	290.8	3.5754	3.8099	0.2345	7482.0	7506.0	24.0	1.23	1.23	1.23	1769.0	132.6	161201/020
13-Dec-16	Sunny	295.6	3.5409	3.6389	0.0980	7506.0	7530.0	24.0	1.23	1.23	1.23	1764.9	55.5	161201/070
19-Dec-16	Cloudy	296.6	3.5975	3.7298	0.1323	7530.0	7554.0	24.0	1.23	1.23	1.23	1765.5	74.9	161203/047
22-Dec-16	Sunny	294.8	3.6347	3.7208	0.0861	7554.0	7578.0	24.0	1.23	1.23	1.23	1769.1	48.7	161204/007
28-Dec-16	Sunny	284.2	3.6088	3.7269	0.1181	7578.0	7602.0	24.0	1.26	1.26	1.26	1809.6	65.3	161203/100
												Min	49	
												Max	133	
												Average	82	

24-hr TSP Concentration Levels



Title Contract No. DC/2009/10 HATS 2A – Upgrading Works at SCISTW– Main Pumping Station, Sedimentation Tanks and Ancillary Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11007	
	Date Dec 16	Appendix D	

**APPENDIX E
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix E - Noise Monitoring Results

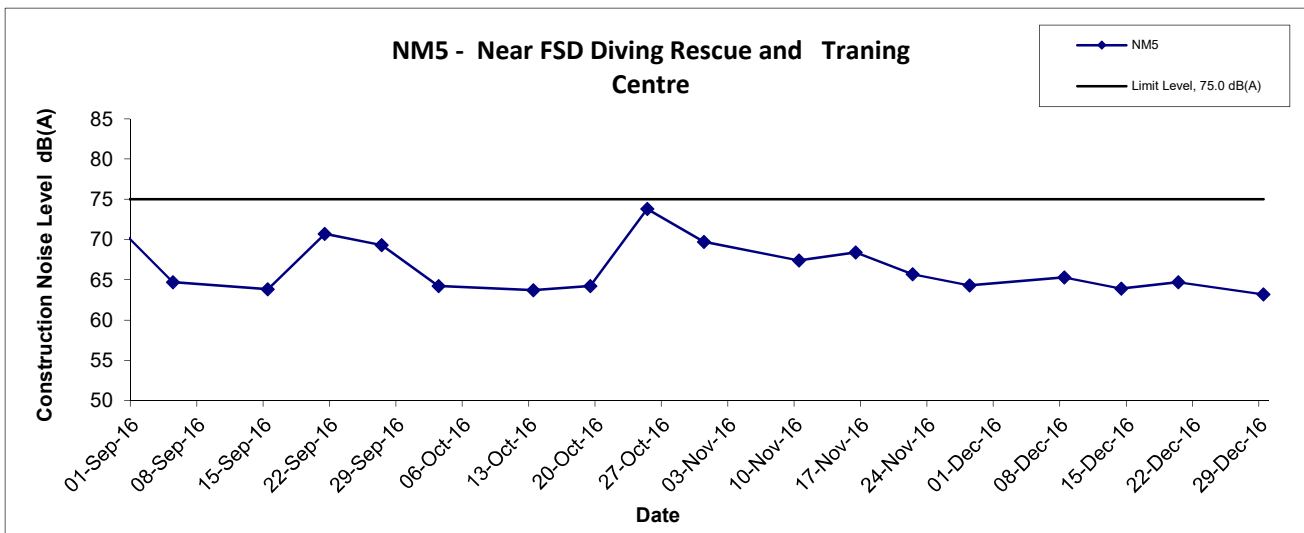
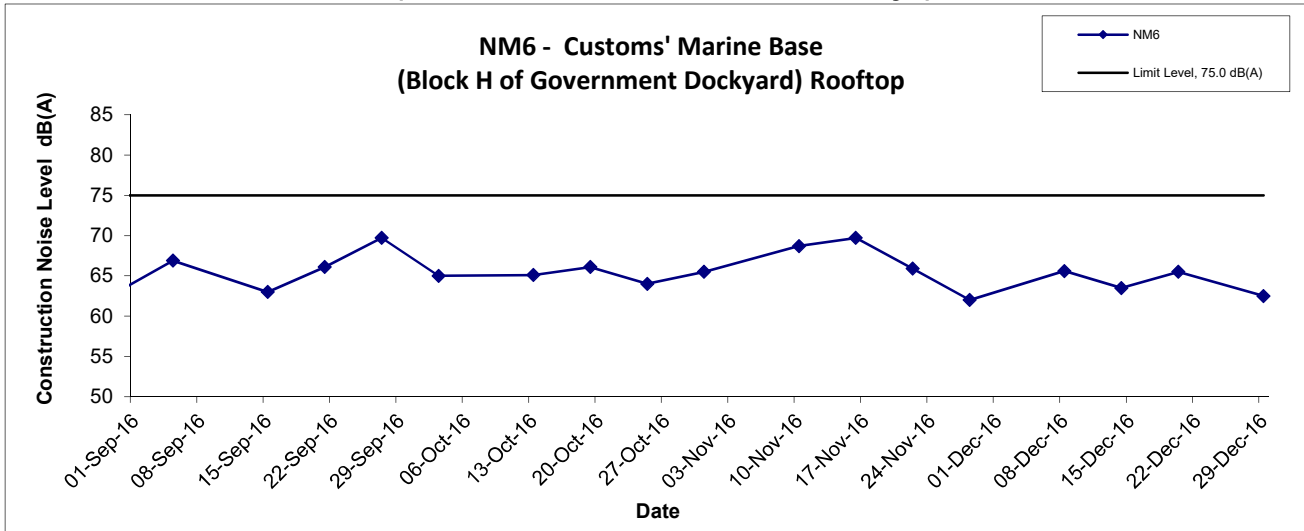
(0700-1900 hrs on Normal Weekdays)

Location NM5 - Near FSD Diving Rescue and Training Centre					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L _{eq}	L ₁₀	L ₉₀
8-Dec-16	13:10	Cloudy	65.6	66.9	61.2
14-Dec-16	10:30	Sunny	63.5	65.2	60.9
20-Dec-16	10:30	Cloudy	65.5	67.6	60.1
29-Dec-16	10:15	Sunny	62.5	63.8	58.9
Maximum			65.6		
Minimum			62.5		

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
8-Dec-16	10:30	Cloudy	65.3	66.7	61.3
14-Dec-16	9:30	Sunny	63.9	65.6	61.2
20-Dec-16	11:30	Cloudy	64.7	66.8	61.7
29-Dec-16	13:30	Sunny	63.2	64.9	60.9
Maximum			65.3		
Minimum			63.2		

Noise Levels

(0700-1900 hrs on Normal Weekdays)



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

APPENDIX F
SUMMARY OF EXCEEDANCE

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 actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for one sample	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
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	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	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;	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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	<p>implemented;</p> <p>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring</p>	<p>advise the ER accordingly;</p> <p>5. Supervise the implementation of remedial measures.</p>	<p>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.</p>	<p>control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</p>

Table I-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated

**APPENDIX G
SITE AUDIT SUMMARY**

Contract No: DC/2009/10

HATS 2A Upgrading Main Pumping Station,

Sedimentation Tanks and Ancillary Facilities at SCISTW

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161201
Date	1 December 2016 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
161201-R02	<p>Part A - Water Quality</p> <ul style="list-style-type: none">• AquaSed should be desilted before operation (Portion 7).	A 5iv
	<p>Part B - Landscape and Visual</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection.	
	<p>Part C - Air Quality</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection.	
	<p>Part D - Noise</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection.	
161201-O01	<p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none">• Oil leakage from the drip tray should be avoided by sealing the drain hole (Portion 7).	E 7i & E 7ii
	<p>Part F - Permit / Licenses</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection.	
	<p>Others</p> <ul style="list-style-type: none">• -	
	<p>Remark:</p> <ul style="list-style-type: none">• -	

	Name	Signature	Date
Recorded by	Victor Wong		1 December 2016
Checked by	Dr. Priscilla Choy		1 December 2016

Contract No: DC/2009/10

HATS 2A Upgrading Main Pumping Station,

Sedimentation Tanks and Ancillary Facilities at SCISTW

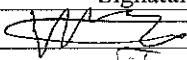

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161208
Date	8 December 2016 (Thursday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
161208-O03	Part A - Water Quality <ul style="list-style-type: none">• Drainage gully should be covered properly (near Gate 1).	A 1
161208-O01	Part B - Landscape and Visual <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. Part C - Air Quality <ul style="list-style-type: none">• Water hose should be provided for water spraying on the haul road and during concrete breaking (Portion 4). Part D - Noise <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection.	C 3
161208-O02 161208-R04	Part E - Waste / Chemical Management <ul style="list-style-type: none">• Oil stain should be cleared whenever leakage occurred (Portion 4)• Bunding should be provided for the oil containers and placed at designate area (Portion 4). Part F - Permit / Licenses <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. Others <ul style="list-style-type: none">• - Remark: <ul style="list-style-type: none">• -	E 7i E 7ii

	Name	Signature	Date
Recorded by	Victor Wong		8 December 2016
Checked by	Dr. Priscilla Choy		8 December 2016

Contract No: DC/2009/10

**HATS 2A Upgrading Main Pumping Station,
Sedimentation Tanks and Ancillary Facilities at SCISTW**

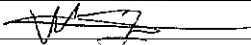

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161214
Date	14 December 2016 (Wednesday)
Time	09:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
	<p>Part A - Water Quality</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. <p>Part B - Landscape and Visual</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. <p>Part C - Air Quality</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. <p>Part D - Noise</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. <p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none">• No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none">• - <p>Remark:</p> <ul style="list-style-type: none">• -	

	Name	Signature	Date
Recorded by	Victor Wong		14 December 2016
Checked by	Dr. Priscilla Choy		14 December 2016

Contract No: DC/2009/10

HATS 2A Upgrading Main Pumping Station,

Sedimentation Tanks and Ancillary Facilities at SCISTW

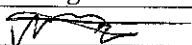

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161222
Date	22 December 2016 (Thursday)
Time	09:30-11:30

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

Ref. No.	Remarks/Observations	Related Item No.
161222-O02	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> pH sensor and chemical dosage of the AquaSed should checked (Portion 7). 	A 1
161222-O01	<p>Part B - Landscape and Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C - Air Quality</p> <ul style="list-style-type: none"> NRMM label should be applied and attached to the identified excavator (Portion 4). <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none"> - <p>Remark:</p> <ul style="list-style-type: none"> - 	C 19

	Name	Signature	Date
Recorded by	Victor Wong		22 December 2016
Checked by	Dr. Priscilla Choy		22 December 2016

Contract No: DC/2009/10

**HATS 2A Upgrading Main Pumping Station,
Sedimentation Tanks and Ancillary Facilities at SCISTW**

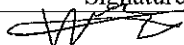
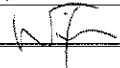
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161229
Date	29 December 2016 (Thursday)
Time	09:30-11:30

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

Ref. No.	Remarks/Observations	Related Item No.
161229-001	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part B - Landscape and Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C - Air Quality</p> <ul style="list-style-type: none"> Dust control at the Portion 7 should be reviewed and maintained. <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others</p> <ul style="list-style-type: none"> - <p>Remark:</p> <ul style="list-style-type: none"> - 	C 3

	Name	Signature	Date
Recorded by	Victor Wong		29 December 2016
Checked by	Dr. Priscilla Choy		29 December 2016

**APPENDIX H
SUMMARY OF AMOUNT OF WASTE
GENERATED**

Name of Department: DSD

Contract No. : DC/2009/10

Monthly Summary Waste Flow Table for 2016 (year)

Month	Actual Quantities of inert C&D Materials Generated Monthly						Actual Quantities of C&D Materials Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard	Plastics (see Note 3)	Chemical Waste	Other, e.g. general refuse
	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000m ³)	(In '000kg)	(In '000kg)	(In '000kg)	(In '000kg)	(In '000m ³)
Jan	0.861	0.861	0	0	0.861	0	0.000	0.030	0.810	0	0.027
Feb	0.606	0.606	0	0	0.606	0	0.000	0.000	0.622	0	0.013
Mar	0.622	0.622	0	0	0.622	0	0.000	0.000	0.000	0	0.009
Apr	0.323	0.323	0	0	0.323	0	0.000	0.063	0.000	0	0.007
May	0.234	0.234	0	0	0.234	0	0.000	0.000	0.000	0	0.011
June	0.328	0.328	0	0	0.328	0	0.000	0.175	0.000	0	0.007
Sub-total	2.974	2.974	0.000	0.000	2.974	0.000	0.000	0.268	1.432	0.000	0.074
July	0.446	0.446	0	0	0.446	0	7.760	0.000	0.000	0	0.019
Aug	0.293	0.293	0	0	0.293	0	13.440	0.330	0.000	0	0.023
Sep	0.086	0.086	0	0	0.086	0	27.120	0.000	0.000	0	0.009
Oct	0.045	0.045	0	0	0.045	0	0.000	0.000	0.000	0	0.009
Nov	0.494	0.494	0	0	0.494	0	0.000	1.813	0.000	0	0.025
Dec	0.933	0.933	0	0	0.933	0	0.000	0.000	0.000	0	0.051
Total	5.271	5.271	0	0	5.271	0	48.320	2.411	1.432	0	0.210
Total throughout project year	52.269	52.269	0.000	0.000	52.269	0.000	372.871	7.748	3.314	1.347	1.762

- Notes:
- (1) The performance targets are given in PS Clause 25.41(14).
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
 - (4) The conversion factor for tonne to m³ for inert C&D materials is 1.9 tonne/m³.
 - (5) The conversion factor for tonne to m³ for general refuse is 1.8 tonne/m³.

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 actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1. Exceedance for one sample	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
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	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	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;	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

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	<p>implemented;</p> <p>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring</p>	<p>advise the ER accordingly;</p> <p>5. Supervise the implementation of remedial measures.</p>	<p>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.</p>	<p>control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</p>

Table I-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> 1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	<ol style="list-style-type: none"> 1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated

**APPENDIX 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 Status
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
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		*
	Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.		^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		^
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	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	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status	
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.		^	
4.67	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. 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.			*
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)		^	

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	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 bounded 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	<p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 		^
6.380	<p>Construction Works in Close Proximity of Storm Drains or Seafront:</p> <p>To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable.</p> <ul style="list-style-type: none"> • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea. 	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
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 waste 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: <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	All construction sites	^
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals.		^
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.		^
	Encourage collection of aluminum cans, PET bottles and paper by providing separate labeled 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 minimize 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.		^
9.115	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		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	interceptors.		
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All construction sites	^
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		^
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminum cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		*
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment 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

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	Terrestrial Ecology		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	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
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		All construction sites
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	^	
	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.	All construction sites	N/A
G	Marine Ecology		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	^
H	Hazard to Life		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

Remarks:	^ Compliance of mitigation measure;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.
	X Non-compliance of mitigation measure;
	● Non-compliance but rectified by the contractor;

**APPENDIX K
COMPLAINT LOG**

APPENDIX K – COMPLAINT LOG**Reporting Month: December 2016**

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

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

APPENDIX L
CONSTRUCTION PROGRAMME

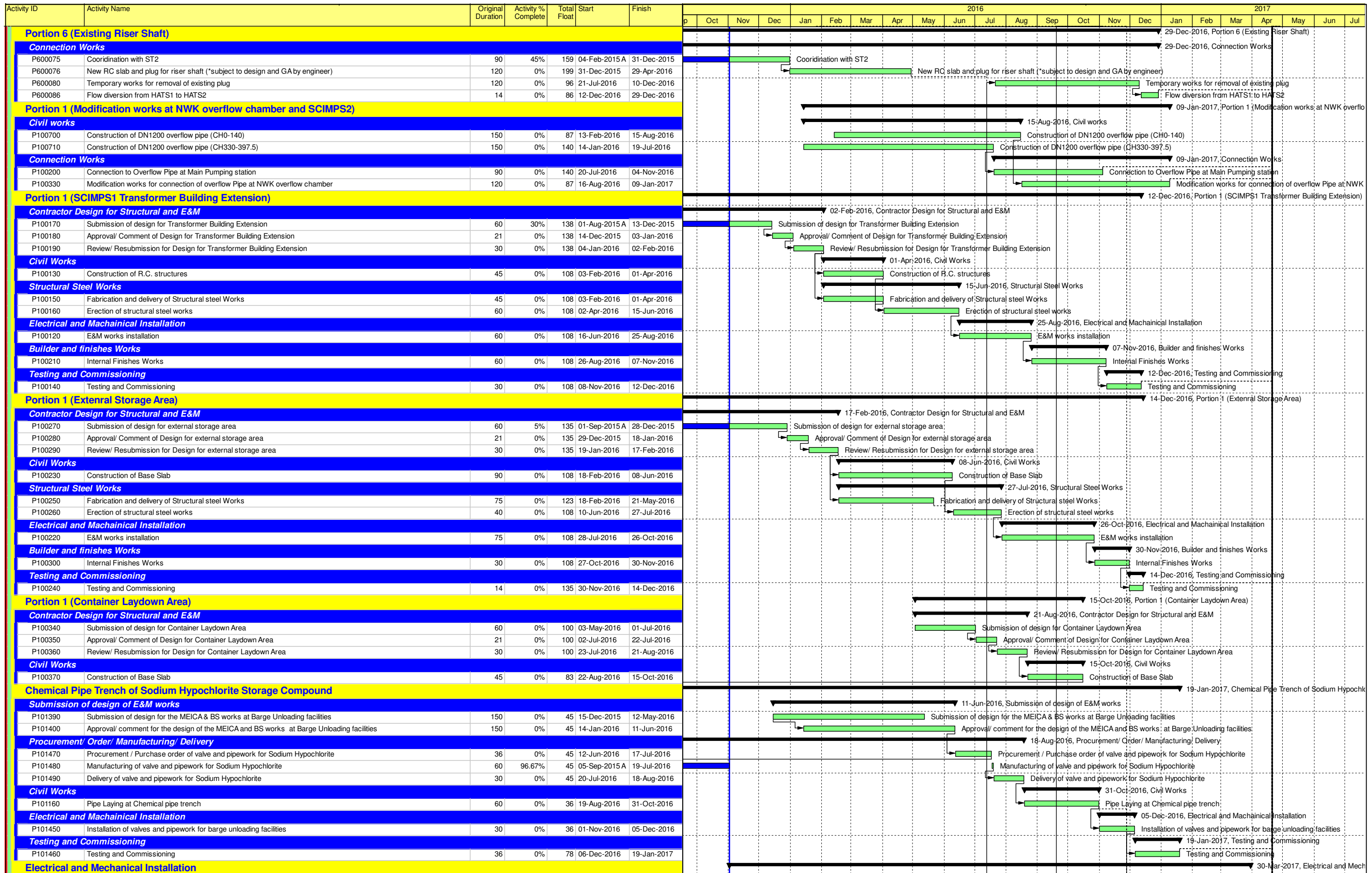
Activity ID	Activity Name	Original Duration	Activity % Complete	Total Float	Start	Finish	2016												2017										
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul				
TWP R9 (Completion for Section 3, 4 and 5)							29-Apr-2017, TWP R9																						
Section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

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

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

Sheet 1 of 5
 DD: 6 Nov 2015

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



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

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

Sheet 4 of 5
 DD: 6 Nov 2015

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

