


Chun Wo – CEC Joint Venture

**Contract No. DC/2009/18
HATS Stage 2A – Upgrading
Works at Stonecutters Island Sewage
Treatment Works –
Effluent Tunnel and Disinfection
Facilities**

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

(Version 1.0)

Certified By 
(Environmental Team Leader)

REMARKS:

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

CINOTECH accepts no responsibility for changes made to this report by third parties

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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
/22.01/L-1140

**Contract No. DC/2009/18 – Upgrading Works at Stonecutters Island Sewage
Treatment Works – Effluent Tunnel and Disinfection Facilities**

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Condition 4.4 – Monthly EM&A Report for December 2016 (no. 61) Version 1.0

13 January 2017

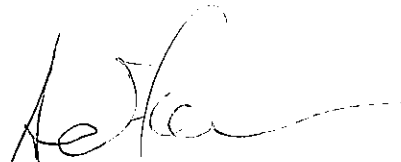
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Dear Sir,

I refer to the revised Monthly EM&A Report for December 2016 (version 1.0) submitted by ET on 13 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
for MOTT MACDONALD HONG KONG LIMITED



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EXECUTIVE SUMMARY

1. This is the 61st monthly Environmental Monitoring Report is prepared by Cinotech Consultants Ltd. for “Harbour Area Treatment Scheme Stage 2A (HATS 2A) - Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection Facilities” (hereinafter called “the Project”) under Environmental Permit (Permit No. EP-322/2008/G).
2. The site activities undertaken in the reporting month included:

Portion 3:

- Construction of surface channel and pavement at Portion 5;
- Construction of chain link fence along site boundary;
- Installation of sliding gate at Portion 12;
- Extension of Chamber 15 Structure Construction at Extension of Chamber 15;
- Construction of Access Shaft and Modification for Chamber Modification & Construction of New Access shafts at Existing Box Culvert;
- Maintain operation of New DCP.

Portion 7:

- Reinstatement of pavement of Gate 6;
- T&C at DOU 4.

Environmental Monitoring Works

3. The environmental monitoring works of the Project were conducted in accordance with the EM&A Manual. The monitoring results were checked and reviewed. 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

Monitoring Location	Parameter	No. of Exceedances		No. of Exceedances Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
NM7	Noise	0	0	0	0	N/A
AM9	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, Waste Water Discharge licenses 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	EM&A Monthly Report for November 2016	Submitted on 22 December 2016	No Comment	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Summary of Complaints and Prosecutions

11. No environmentally related summons, prosecutions and complaints were received for the Project in the reporting month.

Future Key Issues:

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

Portion 3:

- Construction of surface channel and pavement at Portion 5;
- Construction of chain link fence along site boundary;
- Installation of sliding gate at Portion 12;
- Extension of Chamber 15 Structure Construction & Backfilling at Extension of Chamber 15;
- Construction of Access Shaft and Modification for Chamber Modification & Construction of New Access shafts at Existing Box Culvert;
- Construction of End Wall at Chamber 9;
- Maintain operation of New DCP.

Portion 7:

- T&C at DOU 4.

13. In accordance with Section 13.3 of the EM&A Manual, vibration monitoring was conducted during blasting for tunnel and the monitoring data was submitted to the Engineer by the Contractor separately.

14. The environmental concerns in coming months are mainly on construction dust suppression for stockpiles loading and haul roads, oil leakage from equipments without adequate containers and noise generated from the construction works. Also, there are concerns over the efficiency of wastewater treatment on site and the adequacy of the drainage channel and ditches. Other concern includes the adequateness of the wheel washing facilities and its capability to remove silt and dust from vehicles leaving the site.

1 INTRODUCTION

Background

- 1.1 The Project ‘Harbour Area Treatment Scheme Stage 2A(HATS 2A) - Upgrading Works at Stonecutters Island Sewage Treatment Works – Effluent Tunnel and Disinfection Facilities’ is managed by Drainage Services Department (DSD) under Contract No. DC/2009/18. The general location plan of the Project is shown in **Figure 1**.
- 1.2 The Project mainly comprises the following works:-
 - (a) The Construction of an 880m long effluent tunnel at Stonecutters Island; and
 - (b) The Construction of disinfection facilities at Stonecutters Island Sewage Treatment Works (SCISTW).
- 1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The works under the Project and other Contracts at SCISTW under HATS 2A are covered by the same Environmental Permit: (Permit No. EP-322/2008/G) which was issued on 9th May 2014 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.
- 1.4 Chun Wo – CEC Joint Venture (hereafter called the Contractor) was commissioned by the Drainage Services Department (DSD) to undertake the construction works under Contract No. DC/2009/18 “Harbour Area Treatment Scheme Stage 2A (HATS 2A) - Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities”. The date of commencement of the Project is on 30th June 2011.
- 1.5 Cinotech Consultants Limited (Cinotech) was commissioned by Chun Wo – CEC Joint Venture 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 Environmental Permit (EP).
- 1.6 The baseline air quality monitoring was conducted between 30 September 2011 to 14 October 2011 (suspended on 3 October 2011 due to Typhoon Signal No.3 and adverse weather condition) and the baseline noise monitoring was conducted from 26 September 2011 to 12 October 2011(suspended on 28, 29 September 2011 and 3 October 2011 due to adverse weather condition). The baseline monitoring report was submitted to EPD on 11th November 2011.
- 1.7 The impact monitoring phase of EM&A programme of the Project commenced on 6th December 2011.
- 1.8 This is the 61st monthly EM&A report summarizing the EM&A works conducted for the Project in December 2016.

Project Organizations

- 1.9 The contacts of the Project are shown in **Table 1.1** and the organization chart of ET for Contract is shown in **Figure 3**.

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	2371 9407
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Ms. Cecilia Yang	Project Coordinator	2157 3880
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Chun Wo – CEC Joint Venture	Contractor	Mr. W C Lee	Site Agent	3975 6388
		Mr. Shelton Chan	Environmental Officer	3975 6331

Construction Programme

- 1.10 The site activities undertaken in the reporting month included:

Portion 3:

- Construction of surface channel and pavement at Portion 5;
- Construction of chain link fence along site boundary;
- Installation of sliding gate at Portion 12;
- Extension of Chamber 15 Structure Construction at Extension of Chamber 15;
- Construction of Access Shaft and Modification for Chamber Modification & Construction of New Access shafts at Existing Box Culvert;
- Maintain operation of New DCP.

Portion 7:

- Reinstatement of pavement of Gate 6;
- T&C at DOU 4.

Summary of EM&A Requirements

- 1.11 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.

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

1.13 This report presents the monitoring results, observations, locations, equipment, methodology and QA/QC procedures period, for required monitoring parameter namely air quality, noise and audit works conducted for the Project in December 2016.

2 AIR QUALITY

Monitoring Requirements

- 2.1 In accordance with the EM&A Manual, 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works based on the baseline monitoring results.

Monitoring Location

- 2.2 One designated monitoring station, AM9 was selected for impact air quality monitoring for the Project. **Table 2.1** describes the air quality monitoring location, which are also depicted in **Figure 2**.

Table 2.1 Air Quality Monitoring Location

Monitoring Stations	Location of Measurement
AM9	Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)

Monitoring Equipment

- 2.3 **Table 2.2** summarizes the equipment used in the impact air quality monitoring programme. Copies of calibration certificates are attached in **Appendix B**.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make
HVS	Tisch Model no. TE-5170/ Serial no. 2356
Laser Dust Monitor	Sibata Model no. LD-3B/ Serial no.853944, 014750 and 541146
Dust Monitor	Met One Instruments Model no. AEROCET-531/ Serial no. N6734
Handheld Particle Counter	Hal Technology Model no. Hal-HPC300/Serial no. 3020410
Calibrator	Tisch Model TE-5025A/ Serial no. 2896

Monitoring Parameters, Frequency and Duration

- 2.4 **Table 2.3** summarizes the monitoring parameters, monitoring period and frequencies of impact air quality monitoring. The air quality monitoring schedule for the reporting period is shown in **Appendix C**.

Table 2.3 Frequency and Parameters of Impact Air Quality Monitoring

Monitoring Station	Parameter	Period	Frequency
AM9	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 Weather data was recorded during the monitoring period and is shown in **Appendix D**. The air temperature, precipitation and the relative humidity data was obtained and make reference from the Hong Kong Observatory Webpage (Tsing Yi weather station). The general weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff's

observation on the monitoring day.

1-hour TSP Monitoring

Measuring Procedures

2.6 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

2.7 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.

24-hour TSP Monitoring

Instrumentation

2.8 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

2.9 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

- 2.10 Fiberglass 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.
- 2.11 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%.
- 2.12 Wellab Ltd. has a comprehensive quality assurance and quality control programme.

Operating/Analytical Procedures

- 2.13 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 m³/min. and 1.4 m³/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 centered 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 aluminum 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

2.14 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

2.15 **Table 2.4** summarizes the monitoring results at AM9 in reporting month. The details and graphical presentations of the air quality monitoring results at AM9 are shown in **Appendix D**.

Table 2.4 Summary of 1-hour and 24-hour TSP Monitoring Result in 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				
AM9	132.3	44.9-220.5	318	500
24 hours TSP				
AM9	98.1	67.3-114.4	169	260

2.16 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**.

2.17 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**.

2.18 According to field observations during site inspection, the identified dust sources at the monitoring stations were mainly from loading of material, vehicles movement and construction works of this Contract and the road dust from nearby traffic road.

3 NOISE

Monitoring Requirements

- 3.1 One impact noise monitoring stations, namely NM7 was designated in the EM&A Manual for impact monitoring. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 **Table 3.1** gives the location of the monitoring station, which is also shown in **Figure 2**.

Table 3.1 Location of Noise Monitoring Station

Monitoring Station	Location of Measurement
NM7	Open Area near Naval Base Barracks

Monitoring Equipment

- 3.3 Integrating Sound Level Meter was used for noise monitoring. The meter is a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) and also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.2** summarizes the noise monitoring equipment being used. Copies of the calibration certificates for the sound level meter and calibrator are attached in **Appendix B**.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make
Integrating Sound Level Meter	SVANTEK, Model no: SVAN 955 and 957/ Serial no. 12553, 21455, 23853 and 23851
Calibrator	SVANTEK, Model no: SV 30A/ Serial no. 24803 and 24780 Bruel & Kjaer Model no: 4231/ Serial No. 2326353

Monitoring Parameters, Frequency and Duration

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

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NM7	L_{eq} (30 min.) dB(A)	0700-1900 hrs. on weekdays	Once per week
	L_{eq} (5 min.) dB(A)	During restricted hours	

Monitoring Methodology and QA/QC Procedures

- 3.5 Weather data was recorded during the period and is presented in **Appendix D**. Air temperature and relative humidity data was obtained from the Hong Kong Observatory Webpage. General weather conditions (i.e. sunny, cloudy or rainy), which are given in **Appendix D**, were recorded by field observation during equipment checking and estimated according to weather data from the Hong Kong Observatory.

Field Monitoring

- 3.6 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

- 3.7 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

- 3.8 **Table 3.4** summarizes the monitoring results at NM7 in the reporting month. The details and graphical presentations of the noise monitoring results at NM7 are shown in **Appendix E**.

Table 3.4 Summary of Noise Monitoring Results in Reporting Month

For the time period 0700-1900 hrs. on Normal Weekdays			
Monitoring Station	Range, dB(A) L _{eq} (30 min.)	Baseline Level L _{eq} (30 min.)	Limit Level ,dB(A) L _{eq} (30 min.)
NM7	67.5-73.8	65.9	75.0
All days during the evening (1900 to 2300 hours), and general holidays (including Sundays) during the day-time and evening (0700 to 2300 hours)			
Monitoring Station	Range, dB(A) L _{eq} (5 min.)	Baseline Level L _{eq} (5 min.)	Limit Level ,dB(A) L _{eq} (5 min.)
NM7	63.1-64.1	63.4	70.0
All days during 2300 to 0700 hours of the next day			
Monitoring Station	Range, dB(A) L _{eq} (5 min.)	Baseline Level L _{eq} (5 min.)	Limit Level ,dB(A) L _{eq} (5 min.)
NM7	58.1-58.5	59.7	55.0

- 3.9 No Action/Limit Level exceedance was recorded in the reporting month. Summary of exceedance is presented in **Appendix F**.
- 3.10 The major noise sources identified at the designated noise monitoring stations during the day time were the noise generated from trucks movement, concreting work and the traffic noise from the Container Port Road South close to the site boundary of the Project; while the major noise sources identified during the evening time and night time were the Construction works and traffic noise from Container Port Road South and Stonecutters Bridge near to the Project area during restricted hours.

4 LANDSCAPE AND VISUAL MONITORING

Implementation Status of the Landscape and Visual Mitigation Measures

- 4.1 Weekly Landscape and Visual Monitoring was carried out to check the implementation status of the Landscape and Visual Mitigation Measures. Details of the mitigation measures for Construction Phase are provided in Section F of **Appendix J**.
- 4.2 No works for the Landscape and Visual Mitigation Measures for Operation Phase was commenced in the reporting month. No observation or action was made for mitigation measures for Operation Phase Establishment Works Stage. Summary of Establishment Works Stage for Landscape and Visual Mitigation Measures during Operation Phase are provided in **Appendix K**.

Summary of Monthly Observation

- 4.3 No observations was identified during Landscape and Visual Monitoring Audit in the reporting month. The Audit Summary is presented in **Appendix G**.

5 ENVIRONMENTAL AUDIT

Site Audits

- 5.1 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.
- 5.2 Environmental site audits were conducted on 1, 8, 15, 20 and 29 December 2016 for the Project. No non-compliance was observed during the site audits.
- 5.3 Site inspections were undertaken to ensure and check that the implementation and maintenance of mitigation measures for Air Quality, Noise, Water Quality, Waste Management, Landscape and Visual are being properly carried out in the reporting month in accordance to section 14.1 of the EM&A Manual. No non-compliance was observed during the site inspections.

Implementation Status of Environmental Mitigation Measures

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

Table 5.1 Observations of Site Audit

Parameters	Ref. Number	Observations	Follow Up Action
Water Quality	161201-R01	Stagnant wastewater should be cleared at Portion 7.	Stagnant wastewater was cleared at Portion 7.
	161201-R02	Impervious sheet should be provided under the concreting work at Portion 3.	Concreting work was done at Portion 3 and no contamination was found on the area of concreting work.
Air Quality	161208-O02	Haul roads should be sprayed with water regularly.	The haul road is paved.
	161215-O01	NRMM label should be provided for equipment at Chamber 12A.	NRMM label was provided for equipment at Chamber 12A.
	161215-R01	Dusty material at Portion 3 should be water sprayed or covered by impervious sheet and fencing should be provided around the boundary.	Hoarding should be provided at site boundary. This item was remarked as 161220-R01.
	161220-O01	Mud trails should be cleared and vehicle should be washed before leaving the site.	Mud trails still observed near the site entrance. This item was remarked as 161229-O01.
	161220-R01	Hoarding should be provided at site boundary.	Hoarding was not provided at site boundary. This item was remarked as 161229-R01.
	161229-O01	Dusty tracks were observed near the site entrance (Portion 3).	Dusty tracks were not observed near the site entrance (Portion 3).

	161229-R01	Dusty stockpiles in storage near the site boundary should be covered to avoid dust emission (Portion 3).	Dusty stockpiles in storage near the site boundary were sprayed with water (Portion 3).
Waste/ Chemical Management	161208-O01	Accumulated waste at Chamber 10A, 12A should be cleared regularly.	The accumulated waste at Chamber 10A, 12A are cleared.
	161215-O02	Drip tray should be provided to the chemical containers at Portion 3.	The chemical containers were removed at Portion 3.
	161229-R02	Used chemical containers should be stored in chemical waste storage area (Portion 3).	Used chemical containers were removed (Portion 3).
Landscape and Visual	N/A	There was no observation in the reporting period.	N/A
Noise	N/A	There was no observation in the reporting period.	N/A
Permit/ Licenses	N/A	There was no observation in the reporting period.	N/A

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

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

5.7 Status of Environmental Licensing and Permitting

5.8 All permits/licenses obtained for the Contract DC/2009/18 are summarized in **Table 5.2**.

Table 5.2 Summary of Environmental Licensing and Permit Status for Contract DC/2009/18

Permit/ A/C Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00025689-2016	01/11/2016	31/10/2021	Location: Portion 3	Valid
Registered Chemical Waste Producer				
5213-269-C3689-01	8/9/2011	N/A	Site Area under the Project	Valid
Billing Account for Disposal of Construction Waste				
7013233	18/7/2011	N/A	N/A	Valid
Notification of Works Under APCO				
Ref: 332427	15/7/2011	N/A	N/A	N/A
Construction Noise Permit				
GW-RW0421-16	18/8//2016	17/2/2017	Location: Construction site at Stonecutters Island Sewage treatment works (Portion 3)	Valid

Permit/ A/C Number	Valid Period		Details	Status
	From	To		
GW- RW0512-16	12/9/2016	11/3/2017	Location: Construction site at Stonecutters Island Sewage treatment works (Existing Box Culvert)	Valid

Status of Waste Management

- 5.9 The amount of wastes generated by the activities of the Project in the reporting month is shown in **Appendix H**. The inert materials that were reused in other Projects were delivered to HyD Contract No.: HY/2012/08 or Alternative Receiving Ground in Mainland China during the reporting month.

Review of Environmental Monitoring Procedures

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

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Implementation Status of Event Action Plans

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

1-hr TSP

- 5.12 No Action/Limit Level exceedance was recorded.

24-hr TSP

- 5.13 No Action/Limit Level exceedance was recorded.

Construction Noise

- 5.14 No Action/Limit Level exceedance was recorded.

Landscape and Visual

- 5.15 No non-compliance was recorded.

Summary of Complaints and Prosecutions

- 5.16 No environmentally related summons, prosecutions and complaints were received for the Project in the reporting month.

6 FUTURE KEY ISSUES

Key Issues for the Coming Month

6.1 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 getting into the public area during and after rainstorm;
- Oil leakage from equipment and spillage;
- Over flow of wastewater for the wastewater treatment facilities in pre-drill area;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Stockpile should be covered by tarpaulin to reduce dust generation;
- Silty surface runoff generated from the site area during raining; 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

6.2 The tentative environmental monitoring schedule for the next month is shown in **Appendix C**.

Construction Programme for the Next Two Months

6.3 Major site activities for the coming two months include:

Portion 3:

- Construction of surface channel and pavement at Portion 5;
- Construction of chain link fence along site boundary;
- Installation of sliding gate at Portion 12;
- Extension of Chamber 15 Structure Construction & Backfilling at Extension of Chamber 15;
- Construction of Access Shaft and Modification for Chamber Modification & Construction of New Access shafts at Existing Box Culvert;
- Construction of End Wall at Chamber 9;
- Maintain operation of New DCP.

Portion 7:

- T&C at DOU 4.

6.4 The tentative construction program is provided in **Appendix L**.

7 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

- 7.4 All Construction Noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Audit

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

Complaint and Prosecution

- 7.6 No environmentally related summons, prosecutions and complaints were received in the reporting month.

Recommendations for next reporting month

- 7.7 According to the environmental audit performed in the reporting month, 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 the dust generation by adequate water spraying in dry days;
- To cover the stockpile with tarpaulin to reduce dust generation;
- To regularly maintain the machinery and vehicles on site; and
- To follow up any exceedance caused by the construction works.

Noise

- To inspect the noise sources inside the site;
- To follow up any exceedance caused by the construction works;
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers;
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.
- To provide adequate lubricant on mechanical 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; and
- To avoid water from accumulation on site and carry out larviciding against mosquito breeding for stagnant water when mosquito larvae are observed.
- To construct ditches and silt retention pond for wastewater redirection and treatment.

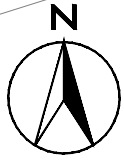
Waste/Chemical Management

- 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 repair the drip tray containing equipment and tools 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 on site.

Landscape and Visual

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

FIGURES



Container Terminal 8
(Modern Terminals Limited)

Stonecutters Island
Sewage Treatment Plant

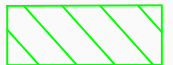
Car Park
(Container Trucks)

NM7
Open Area near Naval Base Barrack

AM9
Work Site Boundary

LEGEND:

DC/2009/18' SITE AREA



AIR QUALITY MONITORING
STATION



NOISE MONITORING STATION



Contract No: DC/2009/18
HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment
Works - Effluent Tunnel and Disinfection Facilities

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.

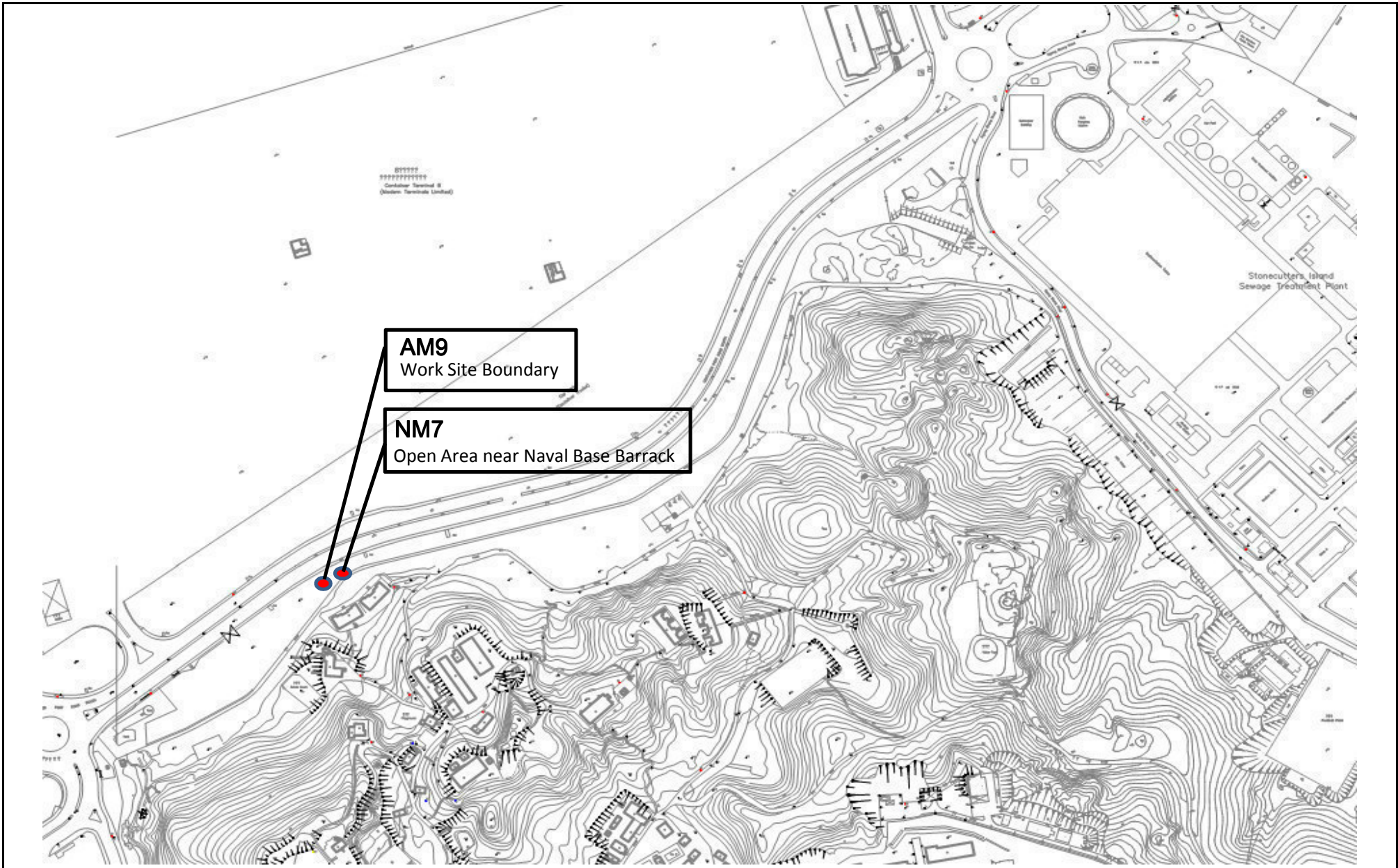
MA11043

FIGURE NO.

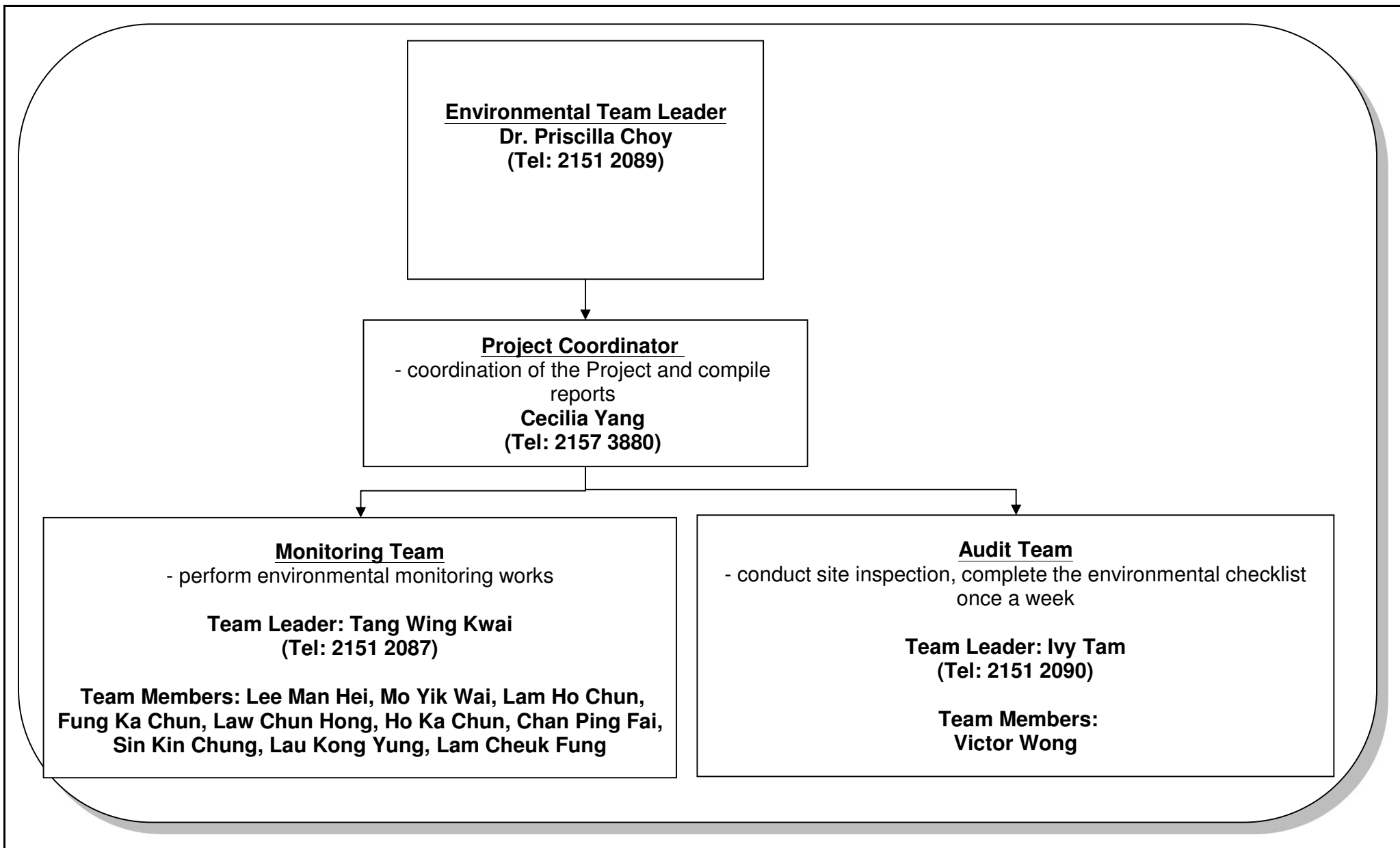
1

REV

-



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



Title	Contract No. DC/2009/18 HATS Stage 2A – Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities ET's Organization Chart	Scale	N.T.S	Project No.	MA11043	CINOTECH
		Date	Jan-15	Figure	3	

**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
AM9	318	169	500	260

Table A-2 Action and Limit Level for Construction Noise

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

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

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0033

Project No. AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)
 Operator: WK
 Date: 13-Oct-16 Next Due Date: 12-Dec-16
 Equipment No.: A-01-63 Serial No. 2356

Ambient Condition			
Temperature, Ta (K)	296.7	Pressure, Pa (mmHg)	765.3

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	58.14	6.9	2.64
2	9.8	3.15	53.51	5.8	2.42
3	7.4	2.74	46.61	4.4	2.11
4	5.1	2.27	38.84	3.1	1.77
5	3.3	1.83	31.41	2.2	1.49

By Linear Regression of Y on X

Slope, mw = 0.0432 Intercept, bw = 0.1127

Correlation coefficient* = 0.9992

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

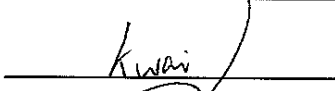
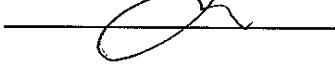
From the TSP Field Calibration Curve, take Qstd = 43 CFM

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.84

Remarks: _____

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

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA11043/63/0034

Project No. AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)
 Operator: WK
 Date: 8-Dec-16 Next Due Date: 7-Feb-17
 Equipment No.: A-01-63 Serial No. 2356

Ambient Condition			
Temperature, Ta (K)	290.7	Pressure, Pa (mmHg)	763.3

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	11.5	3.44	58.40	6.7	2.63
2	9.7	3.16	53.70	5.6	2.40
3	7.3	2.74	46.70	4.3	2.10
4	5.3	2.34	39.92	3.3	1.84
5	3.1	1.79	30.73	2.1	1.47

By Linear Regression of Y on X

Slope, mw = 0.0414 Intercept, bw : 0.1897
 Correlation coefficient* = 0.9994

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

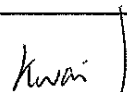

From the TSP Field Calibration Curve, take Qstd = 43 CFM

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

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

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.77

Remarks: _____

Conducted by: wk. Tang Signature:  Date: 8/12/16
 Checked by:  Signature: _____ 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
-------------------------	--------

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/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
-------------------------	--------

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/161028D
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 : Dust Monitor
 Manufacturer : Met One Instruments
 Model No. : AEROCET-531
 Serial No. : N6734
 Flow rate : 0.1 cfm
 Zero Count Test : 0 mg (The result of the 2-minute sample)
 Equipment No. : A-02-13

Test Conditions:

Room Temperature : 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 Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.138
-------------------------	-------

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/161216C
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-02-18

ATTN: Mr. W. K. Tang

Page: 1 of 1

Certificate of Calibration

Item for Calibration:

Description : Handheld Particle Counter
 Manufacturer : Hal Technology
 Model No. : Hal-HPC300
 Serial No. : 3020410
 Flow rate : 0.1 cfm
 Zero Count Test : 0 count per 5 minutes
 Equipment No. : A-26-03

Test Conditions:

Room Temperature : 23 degree Celsius
 Relative Humidity : 64 %

Test Specifications & Methodology:

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

Results:

Correlation Factor (CF)	1.122
-------------------------	-------

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/161128B
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.	: 23851
Microphone No.	: 48532
Equipment No.	: N-08-12

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/160930A
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.	: 24803
Equipment No.	: N-09-03

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/161104/1
Date of Issue:	2016-11-07
Date Received:	2016-11-04
Date Tested:	2016-11-04
Date Completed:	2016-11-07
Next Due Date:	2017-11-06

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	: 21 degree Celsius
Relative Humidity	: 62 %

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**

Contract No. DC/2009/18

**HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities
Impact Air Quality and Noise Monitoring Schedule (December 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 (Daytime, Evening and Night Time)		
11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
			1hr TSP X 3 Noise (Daytime, Evening and Night Time)			
18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec
		1hr TSP X 3 Noise (Daytime, Evening and Night Time)		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 (Daytime, Evening and Night Time)		

Air Quality Monitoring Location:

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

Noise Monitoring Location:

NM7 - Open Area near Naval Base Barrack

Contract No. DC/2009/18

**HATS 2A -Upgrading Works at Stonecutters Island Sewage Treatment Works - Effluent Tunnel and Disinfection Facilities
Tentative Impact Air Quality and Noise Monitoring Schedule (January 2017)**

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

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

Air Quality Monitoring Location:

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

Noise Monitoring Location:

NM7 - Open Area near Naval Base Barrack

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

Appendix D - 1-hour TSP Monitoring Results

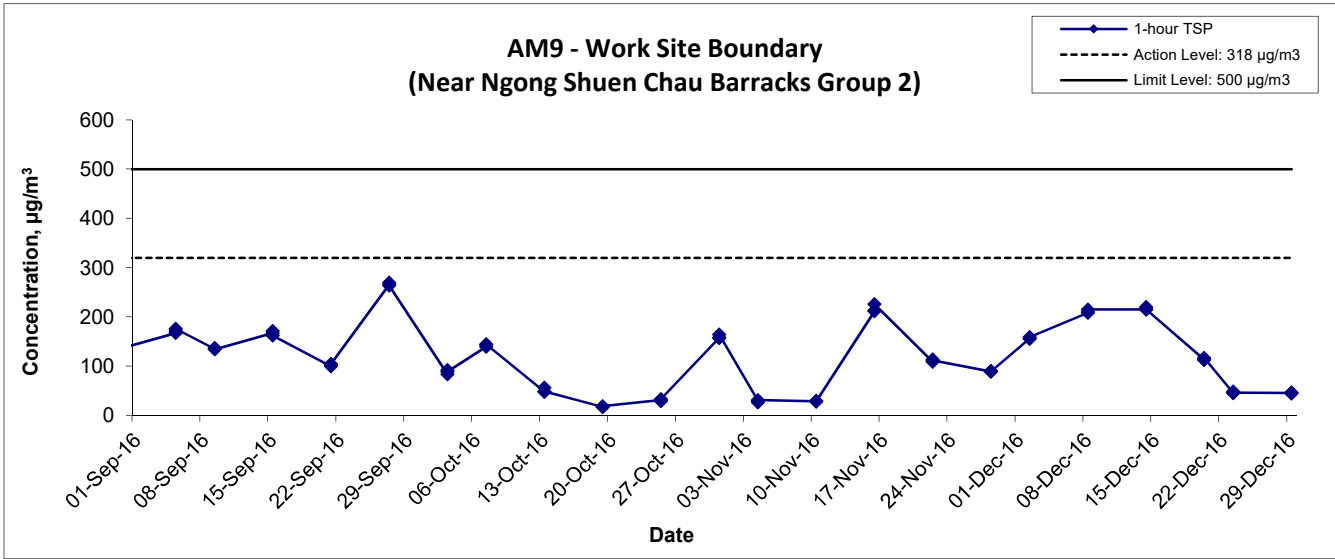
Location AM9 - Work Site Boundary (Near Ngong Shuen Chau Barracks Group 2)			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
2-Dec-16	9:00	Sunny	156.2
2-Dec-16	10:00	Sunny	156.3
2-Dec-16	11:00	Sunny	159.5
8-Dec-16	9:00	Cloudy	208.6
8-Dec-16	10:00	Cloudy	210.9
8-Dec-16	11:00	Cloudy	215.1
14-Dec-16	13:00	Sunny	215.0
14-Dec-16	14:00	Sunny	220.5
14-Dec-16	15:00	Sunny	215.5
20-Dec-16	9:00	Cloudy	113.3
20-Dec-16	9:00	Cloudy	114.0
20-Dec-16	9:00	Cloudy	116.9
23-Dec-16	9:00	Sunny	45.5
23-Dec-16	10:00	Sunny	48.9
23-Dec-16	11:00	Sunny	46.7
29-Dec-16	14:00	Sunny	46.0
29-Dec-16	15:00	Sunny	47.1
29-Dec-16	16:00	Sunny	44.9
Average			132.3
Maximum			220.5
Minimum			44.9

Appendix D - 24-hour TSP Monitoring Results

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

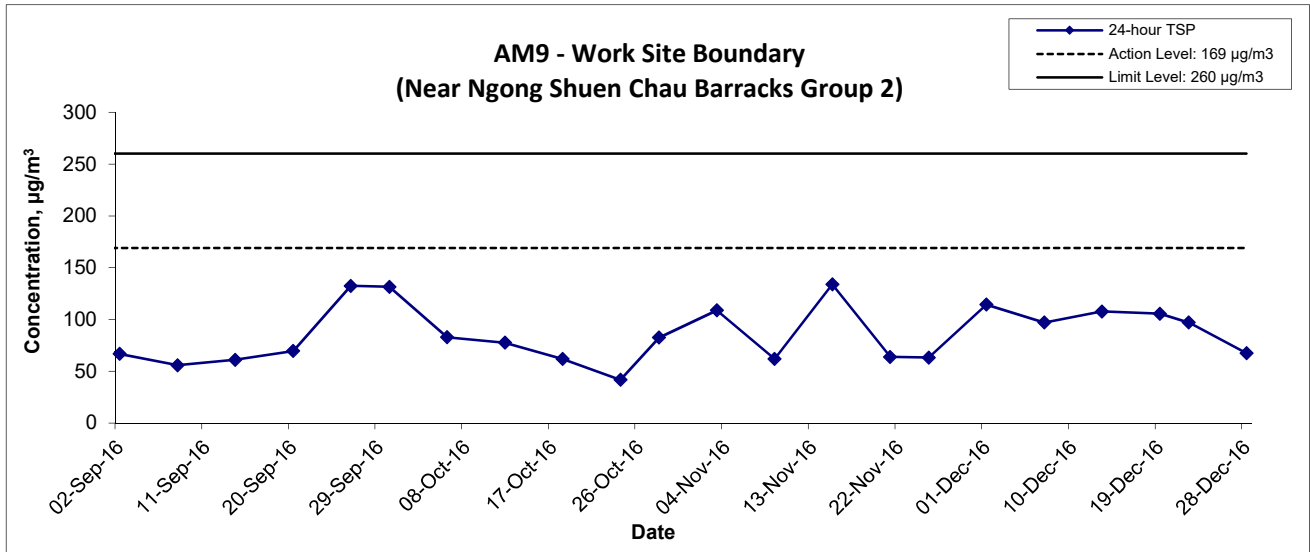
Start Date	Weather Condition	Air Temp. (K)	Filter Weight (g)		Particulate Weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
			Initial	Final		Initial	Final		Initial	Final			
1-Dec-16	Sunny	290.5	3.4869	3.6893	0.2024	6825.6	6849.6	24.0	1.23	1.23	1.23	1769.7	114.4
7-Dec-16	Cloudy	292.6	3.6300	3.8005	0.1705	6849.6	6873.6	24.0	1.22	1.22	1.22	1757.3	97.0
13-Dec-16	Sunny	295.7	3.5646	3.7526	0.1880	6873.6	6897.6	24.0	1.21	1.21	1.21	1746.3	107.7
19-Dec-16	Cloudy	294.2	3.6065	3.7914	0.1849	6897.6	6921.6	24.0	1.22	1.22	1.22	1753.6	105.4
22-Dec-16	Sunny	294.4	3.5518	3.7216	0.1698	6921.6	6945.6	24.0	1.22	1.22	1.22	1751.5	96.9
28-Dec-16	Sunny	284.8	3.6300	3.7505	0.1205	6945.6	6969.6	24.0	1.24	1.24	1.24	1789.5	67.3
												Min	67.3
												Max	114.4
												Average	98.1

1-hr TSP Concentration Levels



Title HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	CINOTECH
	Date Dec 16	Appendix D	

24-hr TSP Concentration Levels



Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA11043	
	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 NM7 - Open Area near Naval Base Barrack					
Date	Time	Weather	Unit: dB (A) (30-min)		
			Measured Noise Level		
			L _{eq}	L ₁₀	L ₉₀
8-Dec-16	9:10	Cloudy	67.5	68.7	65.3
14-Dec-16	13:05	Sunny	69.4	71.5	66.9
20-Dec-16	9:05	Cloudy	69.4	71.0	67.4
29-Dec-16	14:30	Sunny	73.8	74.9	71.2

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

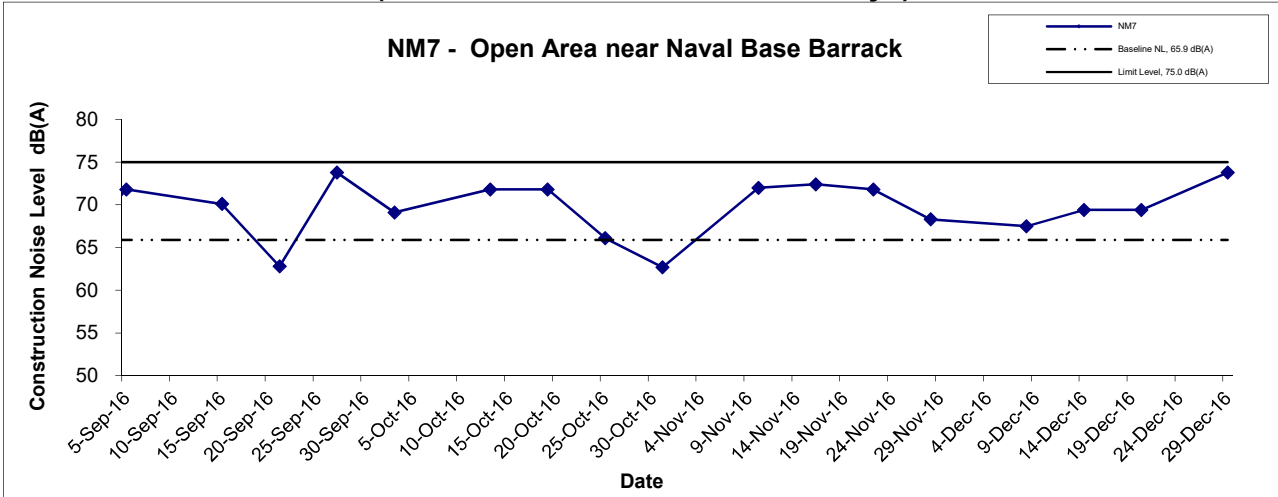
Location NM7 - Open Area near Naval Base Barrack						
Date	Time	Weather	dB (A) (5-min)			
			L _{eq}	L ₁₀	L ₉₀	Average L _{eq}
8-Dec-16	19:00	Fine	63.7	66.2	60.8	63.7
	19:05		64.2	67.1	60.5	
	19:10		63.1	66.0	59.7	
14-Dec-16	19:00	Fine	62.5	65.1	58.8	63.6
	19:05		64.0	66.6	60.8	
	19:10		64.2	66.5	60.5	
20-Dec-16	19:00	Fine	64.7	66.9	60.8	64.1
	19:05		64.5	66.7	61.0	
	19:10		63.1	65.4	59.3	
29-Dec-16	19:00	Fine	62.4	64.6	59.0	63.1
	19:05		63.2	65.7	60.1	
	19:10		63.6	66.0	59.9	

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

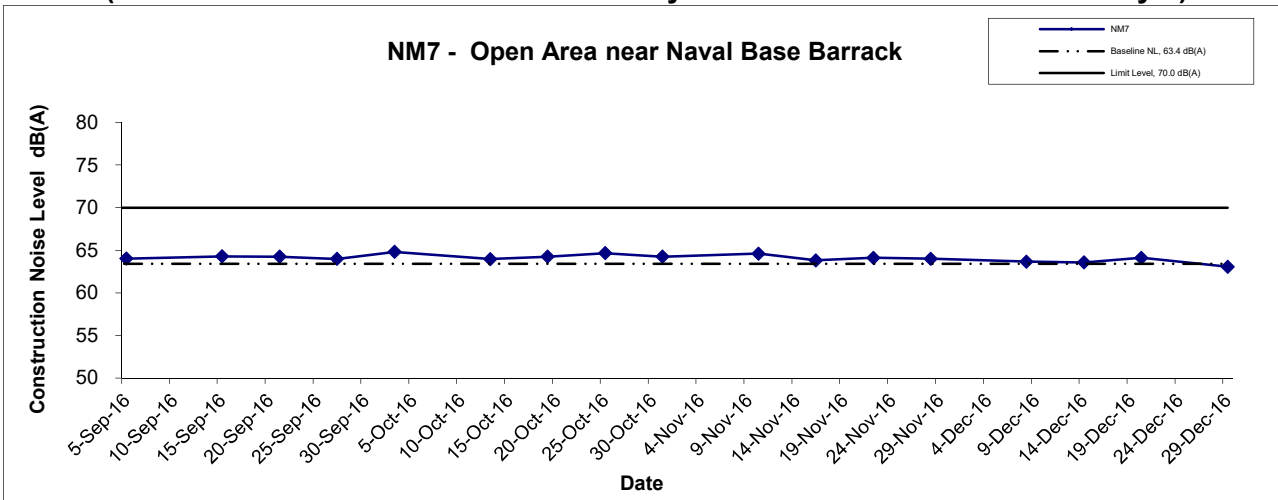
Location NM7 - Open Area near Naval Base Barrack										
Date	Time	Weather	dB (A) (5-min)				Baseline Level	Construction Noise Level		
			L _{eq}	L ₁₀	L ₉₀	Average L _{eq}	L _{eq}	L _{eq}		
8-Dec-16	23:00	Fine	57.6	60.9	55.2	58.1	59.7	58.1 Measured ≤ Baseline		
	23:05		58.1	61.3	55.4					
	23:10		58.7	62.0	56.9					
14-Dec-16	23:00	Fine	57.9	59.9	54.8	58.5		59.7	58.5 Measured ≤ Baseline	
	23:05		58.3	60.2	55.1					
	23:10		59.2	61.5	55.3					
20-Dec-16	23:00	Fine	57.4	59.3	55.6	58.2			59.7	58.2 Measured ≤ Baseline
	23:05		58.4	60.1	55.8					
	23:10		58.8	60.5	55.8					
29-Dec-16	23:00	Fine	57.6	59.7	54.7	58.1	59.7			58.1 Measured ≤ Baseline
	23:05		58.1	60.0	55.3					
	23:10		58.5	60.4	55.4					

Noise Levels

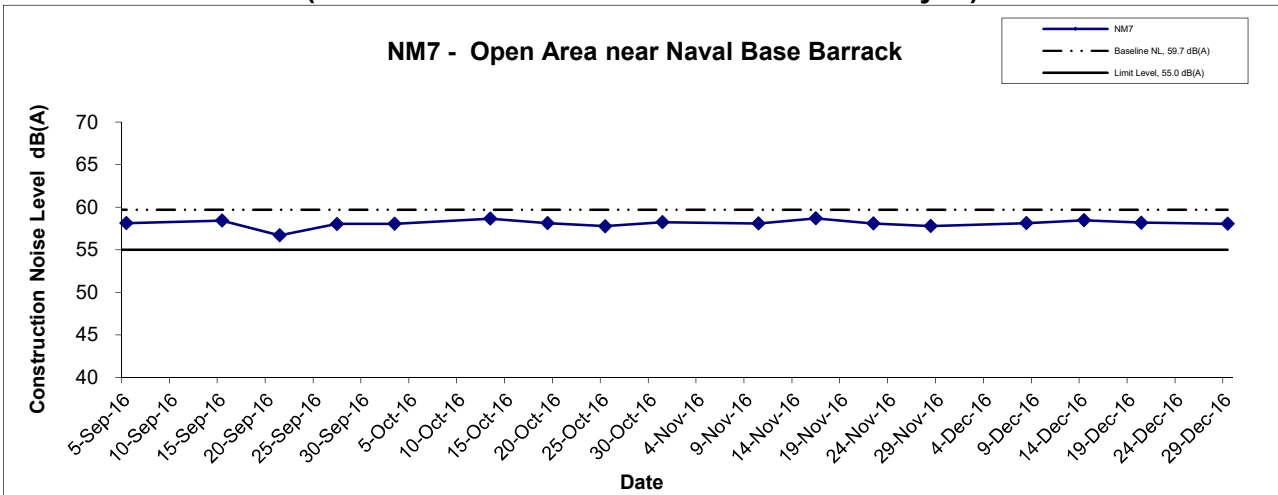
(0700-1900 hrs on Normal Weekdays)



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



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



Title Contract No. DC/2009/18 HATS 2A – Upgrading Works at SCISTW– Effluent Tunnel and Disinfection Facilities Graphical Presentation of Noise Monitoring Result (NM7)	Scale	N.T.S	Project No.	MA11043	CINOTECH
	Date	Dec 16	Appendix	E	

APPENDIX F
SUMMARY OF EXCEEDANCE

APPENDIX F – SUMMARY OF EXCEEDANCE

Reporting Month: December 2016

- a) Exceedance Report for 1-hr TSP (NIL)**
- b) Exceedance Report for 24-hr TSP (NIL)**
- c) Exceedance Report for Construction Noise (NIL)**

APPENDIX G
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161201
Date	1 December 2016 (Thursday)
Time	14:00-15:30

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

Ref. No.	Remarks/Observations	Related Item No.
161201-R01	Part A - Water Quality <ul style="list-style-type: none"> Stagnant wastewater should be cleared at Portion 7. 	A11
161201-R02	<ul style="list-style-type: none"> Impervious sheet should be provided under the concreting work at Portion 3. 	A15
	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"> No environmental deficiency was identified during the site inspection. 	
	Part D - Noise <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part E - Waste / Chemical Management <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Part F - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	
	Others / Remarks <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:161124), item 161124-R03 was found outstanding and remarked as 161201-R01. Review will be needed during next audit section. 	

	Name	Signature	Date
Recorded by	Cecilia Yang	<i>ceci</i>	1 December 2016
Checked by	Dr. Priscilla Choy	<i>WJ</i>	1 December 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161208
Date	8 December 2016 (Thursday)
Time	14:00-15:30

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

Ref. No.	Remarks/Observations	Related Item No.
161208-002	<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"> Haul roads should be sprayed with water regularly. <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C6
161208-001	<p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> Accumulated waste at Chamber 10A, 12A should be cleared regularly. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others / Remarks</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 161201): all environmental deficiencies were observed rectified/improved by the Contractor. 	E1i,ii,iii

	Name	Signature	Date
Recorded by	Cecilia Yang	<i>CY</i>	8 December 2016
Checked by	Dr. Priscilla Choy	<i>PC</i>	8 December 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161215
Date	15 December 2016 (Thursday)
Time	14:00-15:30

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

Ref. No.	Remarks/Observations	Related Item No.
161215-001 161215-R01	<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"> NRMM label should be provided for equipment at Chamber 12A. Dusty material at Portion 3 should be water sprayed or covered by impervious sheet and fencing should be provided around the boundary. <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C19 C6, 9
161215-002	<p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> Drip tray should be provided to the chemical containers at Portion 3. <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others / Remarks</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.: 161208): all environmental deficiencies were observed rectified/improved by the Contractor. 	E7ii

	Name	Signature	Date
Recorded by	Cecilia Yang	<i>Cei</i>	15 December 2016
Checked by	Dr. Priscilla Choy	<i>WJ</i>	15 December 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161220
Date	20 December 2016 (Thursday)
Time	9:30-11:00

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

Ref. No.	Remarks/Observations	Related Item No.
161220-O01	<p>Part A - Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C3, 7
161220-R01	<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"> Mud trails should be cleared and vehicle should be washed before leaving the site. Hoarding should be provided at site boundary. <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 / Remarks</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:161215), item 161215-R01 was found outstanding and remarked as 161220-R01. Review will be needed during next audit section. 	

	Name	Signature	Date
Recorded by	Cecilia Yang	<i>Ceci</i>	20 December 2016
Checked by	Dr. Priscilla Choy	<i>WJ</i>	20 December 2016

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	161229
Date	29 December 2016 (Thursday)
Time	14:00-15:00

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

Ref. No.	Remarks/Observations	Related Item No.
161229-O01 161229-R01	<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"> Dusty tracks were observed near the site entrance (Portion 3). Dusty stockpiles in storage near the site boundary should be covered to avoid dust emission (Portion 3). <p>Part D - Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. 	C3, 7 C6
161229-R02	<p>Part E - Waste / Chemical Management</p> <ul style="list-style-type: none"> Used chemical containers should be stored in chemical waste storage area (Portion 3). <p>Part F - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Others / Remarks</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:161220), items 161220-O01 and 161220-R01 were found outstanding and remarked as 161229-O01 and 161229-R01. Review will be needed during next audit section. 	E 2i

	Name	Signature	Date
Recorded by	Cecilia Yang	<i>Cey</i>	29 December 2016
Checked by	Dr. Priscilla Choy	<i>WJ</i>	29 December 2016

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

Contract No.: DC/2009/18

Harbour Area Treatment Scheme Stage 2A, Upgrading Works at Stonecutters Island Sewage Treatment Works -

Effluent Tunnel and Disinfection Facilities

Monthly Summary Waste Flow Table for 2016(year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes 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 packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	1.181	0	0	0	1.181	0	0	0	0	0	0.022
Feb	0.023	0	0	0	0.023	0	24.500	0	0	1.608	0.010
Mar	0.100	0	0	0	0.100	0	0	0	0	0	0.039
Apr	0.011	0	0	0	0.011	0	38.740	0.057	0	0	0.040
May	0.032	0	0	0	0.032	0	10.810	0	0	0	0.022
Jun	0.608	0	0	0	0.608	0	0	0	0	0	0.008
Sub-total	1.955	0	0	0	1.955	0	74.050	0.057	0	1.608	0.141
Jul	0.020	0	0	0	0.020	0	0	0	0	0	0.016
Aug	0.105	0	0	0	0.105	0	1.800	0	0	0.376	0.007
Sep	0.845	0	0	0	0.845	0	0	0	0	0	0.014
Oct	1.051	0	0	0	1.051	0	0.028	2.260	0.160	0	0.026

Contract No.: DC/2009/18

Harbour Area Treatment Scheme Stage 2A, Upgrading Works at Stonecutters Island Sewage Treatment Works -

Effluent Tunnel and Disinfection Facilities

Nov	0.924	0	0	0	0.924	0	0.140	1.500	0.430	0	0.024
Dec	0.056	0	0	0	0.056	0	0	0	0	0	0.060
Total	4.956	0	0	0	4.956	0	76.018	3.817	0.590	1.984	0.288

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
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 packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
84.405	78	0	60	84.405	0	500.000	0.600	0.180	18.000	3.500

- 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 and waste will be collected by recycler for recycling
 - (4) Use the conversion factor, density of general refuse (1 t/m³), soft inert C&D materials (2 t/m³) and hard rocks or large broken concrete (2.5 t/m³).
 - (5) Use the conversion factor for chemical waste (0.88kg/L)
 - (6) Inert material Reused in other Projects were delivered to Alternative Receiving Ground in Mainland China or HyD Contract No.: HY/2012/08

APPENDIX I
EVENT ACTION PLANS

APPENDIX I – Event / Action Plans

Table I-1 Event / Action Plan For Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of 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
	actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring			
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Table J-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 	<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 	<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

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

**APPENDIX J
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

APPENDIX J IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	Air Quality		
3.74	<p>Skip hoist for material transport should be totally enclosed by impervious sheeting.</p> <p>Vehicle washing facilities should be provided at every vehicle exit point.</p> <p>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.</p> <p>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.</p> <p>Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</p> <p>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.</p> <p>Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</p> <p>Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</p> <p>Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.</p> <p>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.</p> <p>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</p>	All construction sites	<p>^</p> <p>*</p> <p>^</p> <p>*</p> <p>*</p> <p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
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.		^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^
4.67	Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby 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 bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		^
6.379	<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	*

D	Waste Management		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	<p>All waste materials should be segregated into categories covering:</p> <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 aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to 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 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 aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		*
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment 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
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		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		^
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
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
SUMMARY OF ESTABLISHMENT
WORK STAGE FOR LANDSCAPE &
VISUAL MITIGATION MEASURES
DURING OPERATION PHASE**

APPENDIX K - Summary of Establishment Works Stage for Landscape & Visual Mitigation Measures during Operation Phase

Reportion Month: December 2016

Establishment Period - Monthly Landscape & Visual Site Audit

ID No.	Items to be Monitored	Establishment Works Stage		Remarks
		Observation	Recommendation / Action	
OM1	Aesthetic design of the façade of PTW and associated structures to harmonize with the surrounding settings.	N/A	N/A	Not under the scope of the contract
OM2	Shrub & Climbing Plants to soften proposed structures / Roof Greening / Vertical Greening	N/A	N/A	Tentatively in sequence with the site progress of other works & be carried out in stages for availability of site area.
OM3	Buffer Tree and Shrub Plantng to screen proposed associated structures.	N/A	N/A	Tentatively in sequence with the site progress of other works & be carried out in stages for availability of site area.
OM4	Reinstatement of disturbed area.	N/A	N/A	Tentatively in sequence with the site progress of other works & be carried out in stages for availability of site area.

**APPENDIX L
COMPLAINT LOG**

APPENDIX L – COMPLAINT LOG

Reporting Month: December 2016

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

APPENDIX M
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016						2017					
					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
18-59100D10	Cham 15A - Install Chemical Dosing Unit	24-Sep-15 A	02-Oct-15 A	100%												
18-59100D20	Cham 15A - Install Air Ducts at Area 2	26-Sep-15 A	14-Nov-15 A	100%												
18-59160	Cham 15A - Install Odour Ducts	26-Sep-15 A	14-Nov-15 A	100%												
18-59130	Cham 15A - Install Pipes & Valves	26-Sep-15 A	20-Nov-15 A	100%												
6.06.7 - Entry Culvert																
6.06.7.1 - Foundation																
18-59550	Entry Culvert - G.I - Pre-drilling (2 Nos.)	24-Nov-11 A	07-Dec-11 A	100%												
18-59600	Entry Culvert - Pre-Bored H-Pile (6 Nos.@2d/no.)	04-Sep-12 A	19-Sep-12 A	100%												
6.06.7.2 - Temporary Works																
18-59651N	Entry Culvert - Concrete Breaking	25-Feb-13 A	02-Mar-13 A	100%												
18-59650D	Entry Culvert - Sheet Piling (194 sheet piles)	05-Mar-13 A	17-Apr-13 A	100%												
18-59679N	Entry Culvert - Excavation	18-Apr-13 A	06-Aug-13 A	100%												
18-59680N	Existing Drop Shaft - Breaking of Existing D-wall	03-May-13 A	12-Sep-13 A	100%												
18-59660D	Entry Culvert - ELS 1st Layer + Removal of Existing D-wall Panel	06-May-13 A	14-Jun-13 A	100%												
18-59662N	Entry Culvert - Breaking of Underground RC Block	07-Jun-13 A	04-Jul-13 A	100%												
18-59670D	Entry Culvert - ELS 2nd Layer + Removal of Existing D-wall Panel	12-Jul-13 A	25-Sep-13 A	100%												
18-59680D	Entry Culvert - ELS Formation + Blinding	06-Aug-13 A	10-Aug-13 A	100%												
18-59681N	Entry Culvert - ELS Formation + Blinding at C-Clamp Area	11-Sep-13 A	13-Sep-13 A	100%												
18-59682N	Existing Drop Shaft - Coring of Holes for Installation of T25 Post Drill Links	13-Sep-13 A	29-Sep-13 A	100%												
18-59683N	Existing Drop Shaft - Trimming of CJ	18-Sep-13 A	30-Sep-13 A	100%												
6.06.7.3 - Structure																
18-59711N	Entry Culvert - Installation of H-Pile Steel Top Plates	13-Aug-13 A	31-Aug-13 A	100%												
18-59712N	Entry Culvert - Backfilling of Soft Spot Below the Foundation Layer	02-Sep-13 A	17-Sep-13 A	100%												
18-59710D	Entry Culvert - Base Slab + Kicker	18-Sep-13 A	21-Oct-13 A	100%												
18-64295D	Entry Culvert - Wall Construction	15-Oct-13 A	06-Dec-13 A	100%												
18-64296N	Entry Culvert - Removal of Formworks	07-Dec-13 A	19-Dec-13 A	100%												
18-64315	Entry Culvert - Backfill + ELS Removal	21-Dec-13 A	14-Jan-15 A	100%												
18-64340N	Entry Culvert - Construct Remaining Top Slab of New Culvert	27-Jan-14 A	26-Feb-14 A	100%												
18-64350N	Entry Culvert - Connection of Precast Top Slab and Entry Culvert	03-Jun-14 A	12-Jul-14 A	100%												
6.06.7.4 - E&M Works																
18-64304N	Entry Culvert Handover for E&M Works	23-Jun-15 A		100%												
18-64355D	Entry Culvert - TRC Measurement System	03-Jul-15 A	26-Sep-15 A	100%												
18-64335D	Entry Culvert - Install Pipes & Valves	03-Jul-15 A	26-Sep-15 A	100%												
18-64345D	Entry Culvert - Install Power Supply System	05-Jul-15 A	29-Sep-15 A	100%												
18-64360	Entry Culvert - Install Odour Ducts [Remaining Works will be Carried Out During Section 5]	22-Aug-15 A	31-Jan-17	72%												
18-64305D	Entry Culvert - Install Effluent Pumps	25-Aug-15 A	29-Sep-15 A	100%												
18-64365	Entry Culvert - Functional Test for Equipments [Remaining Works will be Carried Out During Section 5]	29-Sep-15 A	01-Mar-17	60%												
6.06.7.5 - Connect to Existing Drop Shaft																
18-59310N	Temp Steel Panel - Trial Installation at Existing Chamber 15	29-Aug-13 A	29-Aug-13 A	100%												
18-59541N	Initial Environmental Water Monitoring	18-Oct-13 A	31-Oct-13 A	100%												
18-59390	Dry Season Onset 2013-2014	01-Nov-13 A		100%												
18-59542N	Impact Environmental Water Monitoring	01-Nov-13 A	27-Feb-14 A	100%												
18-59312N	Temp Water Gate - Installation of Slot Material	04-Nov-13 A	07-Nov-13 A	100%												
18-59311N	Temp Flow Diversion - Coring of Holes at Existing Drop Shaft as Advance Work for Pilot Wall Cutting	24-Nov-13 A	24-Nov-13 A	100%												
18-64337N	Temp Flow Diversion - Stage 1 Pilot Wall Cutting L1-1 for Cantilever Beam Construction	26-Nov-13 A	26-Nov-13 A	100%												
18-64338N	Temp Flow Diversion - Construction of Cantilever Beam	27-Nov-13 A	06-Dec-13 A	100%												
18-64341N	Temp Flow Diversion - Construction of Strengthening Beam	27-Nov-13 A	06-Dec-13 A	100%												
18-64342N	Temp Flow Diversion - Existing DS Top Slab Cutting and Modification Works	07-Dec-13 A	15-Dec-13 A	100%												
18-64336N	Temp Flow Diversion - Installation of Protective Railing	15-Dec-13 A	15-Dec-13 A	100%												
18-64339N	Temp Flow Diversion - Stage 2 Pilot Wall Cutting (L1 to L2 fr +7 to +3.625 mPD)	16-Dec-13 A	24-Dec-13 A	100%												
18-59314N	Temp Water Barrier Platform - Trial Assembly	21-Dec-13 A	26-Dec-13 A	100%												
18-59450D	Temp Flow Diversion - Stage 3 Wall Cutting and Removal (L3 to L5 fr +3.625 to -0.5 mPD)	26-Dec-13 A	16-Jan-14 A	100%												
18-59420D	Temp Flow Diversion - Erection of Temp Water Barrier Platform at Existing Drop Shaft	26-Dec-13 A	26-Dec-13 A	100%												
18-59421N	Temp Steel Panel - Installation at Existing Chamber 15	27-Dec-13 A	27-Dec-13 A	100%												
18-59410	Divert Flow to Northwest Kowloon Outfall	27-Dec-13 A	27-Dec-13 A	100%												
18-59530N	Temp Flow Diversion - Final Touch Up for New Entry Culvert and Existing DS Connection	17-Jan-14 A	26-Feb-14 A	100%												
18-59313N	Temp Water Gate - Installation of Temp Water Gate	22-Feb-14 A	22-Feb-14 A	100%												
18-59500	Divert Flow Back to Existing Drop Shaft	27-Feb-14 A	27-Feb-14 A	100%												
18-59543N	Post Environmental Water Monitoring	28-Feb-14 A	13-Mar-14 A	100%												

Entry Culvert - Install Odour Ducts [Remaining Works will be Ca
Entry Culvert - Functional Test for Equipments



█ Actual Level of Effort █ Remaining Work
█ Primary Baseline █ Critical Remaining Work
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					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
18-59530	Dry Season End 2013-2014		28-Feb-14 A	100%												
18-59532N	Temp Flow Diversion - Dismantle Temporary Water Barrier Platform	18-Apr-14 A	18-Apr-14 A	100%												
18-59533	Existing Outfall Drop Shaft - Installation of FRP Cover	23-Nov-15 A	01-Dec-15 A	100%												
6.06.8 - Dechlorination Plant (DCP)																
6.06.8.1 - DCP - Foundation																
18-59800	DCP - G.I- Pre Drilling (7 Nos.)	08-Dec-11 A	31-Jan-12 A	100%												
18-59810	DCP -Setting Out Pile Points	05-Mar-12 A	13-Mar-12 A	100%												
18-59850	DCP - Pre-Bore H-Piles (20 nos.)	14-Mar-12 A	30-Jun-12 A	100%												
18-59930	DCP - Test Piles	06-Oct-12 A	15-Oct-12 A	100%												
6.06.8.2 - DCP - Structure																
18-60010D	DCP - Excavate Foundation + Blinding	10-Dec-12 A	24-Dec-12 A	100%												
18-60040N	DCP - Mobilization and Breaking of Concrete Surface	10-Dec-12 A	13-Dec-12 A	100%												
18-60050N	DCP - Pile Cap Excavation	14-Dec-12 A	29-Dec-12 A	100%												
18-60070N	DCP - Pile Cap Blinding	24-Dec-12 A	24-Dec-12 A	100%												
18-60051N	DCP - Steel Top Plates for H-Piles	27-Dec-12 A	02-Jan-13 A	100%												
18-60015D	DCP - R.C. Pile Cap (Base Slab)	28-Dec-12 A	19-Jan-13 A	100%												
18-60090N	DCP - Pile Cap Formworks	28-Dec-12 A	02-Jan-13 A	100%												
18-60101N	DCP - Pile Cap Steel Fixing	03-Jan-13 A	18-Jan-13 A	100%												
18-60020D	DCP - R.C. Intermediate Slab	08-Jan-13 A	02-May-13 A	100%												
18-60120N	DCP - Construction of Toe Wall	08-Jan-13 A	18-Jan-13 A	100%												
18-60111N	DCP - Pile Cap Concreting	19-Jan-13 A	19-Jan-13 A	100%												
18-60140N	DCP - Ground Slab, Waterproofing	22-Jan-13 A	22-Jan-13 A	100%												
18-60130N	DCP - Ground Slab, Erection of Permanent Formworks	23-Jan-13 A	02-May-13 A	100%												
18-60025	DCP - R.C. Plinths and Boundary Wall	28-Jan-13 A	04-Mar-13 A	100%												
18-60160N	DCP - Ground Slab Steel Fixing	28-Jan-13 A	02-May-13 A	100%												
18-60141N	DCP - Ground Slab, Installation of UPVC Cable Ducting	26-Feb-13 A	13-Apr-13 A	100%												
18-60142N	DCP - Ground Slab, Installation of UPVC Cast-Iron Pipe	11-Apr-13 A	18-Apr-13 A	100%												
18-60143N	DCP - Ground Slab Cast-Iron Pipe Water Test	19-Apr-13 A	22-Apr-13 A	100%												
18-60170N	DCP - Ground Slab, Concreting	02-May-13 A	02-May-13 A	100%												
18-60171N	DCP - Ground Slab, Removal of Formworks	03-May-13 A	08-May-13 A	100%												
18-60030D	DCP - R.C. Walls/Roof	04-Jul-13 A	04-Oct-13 A	100%												
18-60030N	DCP - R.C. Wall Scaffolding & Formworks Erection	04-Jul-13 A	17-Aug-13 A	100%												
18-60053N	DCP - R.C. Walls Steel Fixing	29-Jul-13 A	10-Aug-13 A	100%												
18-60052N	DCP - R.C. Roof Formworks Erection	12-Aug-13 A	20-Aug-13 A	100%												
18-60055N	DCP - R.C. Roof Steel Fixing	21-Aug-13 A	26-Aug-13 A	100%												
18-60054N	DCP - R.C. Walls/Roof, Cast Concrete	27-Aug-13 A	27-Aug-13 A	100%												
18-60056N	DCP - R.C. Walls/Roof, Concrete Wall and Roof Curing	28-Aug-13 A	12-Sep-13 A	100%												
18-60046N	DCP - R.C. Roof Parapet, Fix Roof Parapet Wall Reinforcement	05-Sep-13 A	13-Sep-13 A	100%												
18-60035D	DCP - R.C. Roof Parapet	05-Sep-13 A	04-Oct-13 A	100%												
18-60045N	DCP - R.C. Roof Parapet, Erection of Formwork	09-Sep-13 A	18-Sep-13 A	100%												
18-60058N	DCP - R.C. Walls/Roof, Removal of Formworks and Falseworks	13-Sep-13 A	04-Oct-13 A	100%												
18-60048N	DCP - R.C. Roof Parapet, Cast Roof Concrete Parapet	19-Sep-13 A	19-Sep-13 A	100%												
18-60049N	DCP - R.C. Roof Parapet, Curing and Removal of Formworks	20-Sep-13 A	04-Oct-13 A	100%												
18-60065N	DCP - Cleaning and Preparation for Finishing and E&M	05-Oct-13 A	02-Nov-13 A	100%												
18-64651N	DCP - 3600x1200 Sump Pit Near Bund Wall	17-Oct-13 A	02-Nov-13 A	100%												
18-60059N	DCP - R.C. Roof Parapet, Waterproofing	01-May-14 A	31-May-14 A	100%												
18-60173N	DCP - Ground Slab, Bund Wall Waterproofing	01-Feb-15 A	20-Apr-15 A	100%												
18-60040D	DCP - Steel Structure & Roof Delivery		19-May-15 A	100%												
18-60042N	DCP - Steel Structure & Roof, Steel Structure Installation	19-May-15 A	20-Jul-15 A	100%												
18-60043N	DCP - Steel Structure & Roof, Installation of FRP Shelter Sheets	21-Jul-15 A	06-Aug-15 A	100%												
6.06.8.3 - DCP - Storage Tank Compound																
6.06.8.3.1 - Finishing Works																
18-60047N	DCP - STC Handover for Finishing Works	19-Jun-14 A		100%												
18-60048D	DCP - STC - Install Storage Tanks	19-Jun-14 A	02-Sep-14 A	100%												
18-60060	DCP - STC - Epoxy Coating & Painting	04-Jul-14 A	14-Jul-14 A	100%												
18-60051	DCP - STC - Metal Works	23-May-15 A	22-Jun-15 A	100%												
18-60056	DCP - STC - FRP Open Mesh Flooring	12-Sep-15 A	09-Jan-16 A	100%												
18-60058	DCP - STC - Synthetic Timber Board Screen	13-Nov-15 A	28-Nov-15 A	100%												
6.06.8.3.2 - E&M Works																



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					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
18-60066N	DCP Storage Tank Compound Handover for E&M Work	15-May-14 A		100%											
18-60075N	DCP - STC - Install Sodium Bisulphate Dosing Pumps	20-May-14 A	20-Jul-15 A	100%											
18-60052D	DCP - STC - Piping Works	27-Jun-14 A	20-Nov-15 A	100%											
18-60054D	DCP - STC - Cable Containment Works	22-Dec-14 A	02-Jul-15 A	100%											
18-60066	DCP - STC - Cabling & Wiring	22-Dec-14 A	15-Jul-15 A	100%											
18-60068D	DCP - STC - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%											
18-60067	DCP - STC - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%											
18-60070D	DCP - STC - Fire Services	03-Feb-15 A	15-Jul-15 A	100%											
18-60074N	DCP - STC - Install Sodium Bisulphate Dosing Units	24-Sep-15 A	10-Oct-15 A	100%											
18-60080	DCP - STC - Functional Test	25-Sep-15 A	29-Sep-15 A	100%											
6.06.8.4 - DCP - Pump Hall															
6.06.8.4.1 - Finishing Works															
18-63555	DCP - PH - Epoxy Coating & Painting	16-Jun-14 A	12-Jul-14 A	100%											
18-63493N	DCP - PH Handover for Finishing Works	15-Jul-14 A		100%											
18-63515	DCP - PH - Door, Shutter and Louvre	03-Nov-14 A	17-Nov-14 A	100%											
18-63495	DCP - PH - FRP Open Mesh Flooring	12-Sep-15 A	09-Jan-16 A	100%											
6.06.8.4.2 - E&M Works															
18-63485D	DCP - PH - Airducts	14-Jul-14 A	29-Apr-15 A	100%											
18-63492D	DCP - PH - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%											
18-63474N	DCP Pump Hall Handover for E&M Works	15-Jul-14 A		100%											
18-63489	DCP - PH - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%											
18-63480D	DCP - PH - Cable Containment	22-Dec-14 A	29-Apr-15 A	100%											
18-63487D	DCP - PH - Cabling & Wiring	22-Dec-14 A	29-Apr-15 A	100%											
18-63488D	DCP - PH - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%											
18-63478D	DCP - PH - Piping Works	05-Jan-15 A	20-Sep-15 A	100%											
18-63476D	DCP - PH - Fume Recovery System	15-Jan-15 A	15-Jul-15 A	100%											
18-63490D	DCP - PH - Fire Services	03-Feb-15 A	10-Aug-15 A	100%											
18-63475D	DCP - PH - Pump & Dehumidifier Install	01-Jun-15 A	15-Jun-15 A	100%											
18-63494D	DCP - PH - Functional Test	21-Sep-15 A	29-Sep-15 A	100%											
6.06.8.5 - DCP - Sensor Store Room															
6.06.8.5.1 - Finishing Works															
18-63624N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%											
18-63635D	DCP - SSR - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%											
18-63625	DCP - SSR - Door & Louvres	03-Nov-14 A	18-Nov-14 A	100%											
6.06.8.5.2 - E&M Works															
18-63574N	DCP Sensor Store Room Handover for E&M Works	15-May-14 A		100%											
18-63585D	DCP - SSR - Airducts	14-Jul-14 A	29-Apr-15 A	100%											
18-63655D	DCP - SSR - Air Grilles	14-Jul-14 A	29-Apr-15 A	100%											
18-63595D	DCP - SSR - Cabling & wiring	22-Dec-14 A	10-Aug-15 A	100%											
18-63575D	DCP - SSR - Cable Containment	22-Dec-14 A	01-Aug-15 A	100%											
18-63645D	DCP - SSR - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%											
18-63491D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%											
18-63658D	DCP - SSR - Functional Test	21-Sep-15 A	22-Sep-15 A	100%											
6.06.8.6 - DCP - Control Room & UPS Room															
6.06.8.6.1 - Finishing Works															
18-63709N	DCP - CR/UPS Handover for Finishing Works	31-Mar-14 A		100%											
18-63720N	DCP - CR/UPS Partition Wall	31-Mar-14 A	11-Apr-14 A	100%											
18-63725D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%											
18-63715	DCP - CR/UPS - Door & Louvre	03-Nov-14 A	18-Nov-14 A	100%											
18-63710	DCP - CR/UPS - Metal Works	01-Jun-15 A	19-Jun-15 A	100%											
6.06.8.6.2 - E&M Works															
18-63604N	DCP Handover for E&M Works at Control Room & UPS Room	15-May-14 A		100%											
18-63615D	DCP - CR/UPS - Airducts	14-Jul-14 A	29-Apr-15 A	100%											
18-63705D	DCP - CR/UPS - Air grilles	14-Jul-14 A	29-Apr-15 A	100%											
18-63605D	DCP - CR/UPS - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%											
18-63685D	DCP - CR/UPS - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%											
18-63695D	DCP - CR/UPS - Electrical Fixtures	22-Dec-14 A	10-Jul-15 A	100%											
18-63495D	DCP - CR/UPS - Fire Services	03-Feb-15 A	15-Jul-15 A	100%											
18-63736	DCP - CR/UPS - Control System Equipment	21-Sep-15 A	20-Nov-15 A	100%											



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					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May							
18-63748	DCP - CR/UPS - Functional Test	23-Sep-15 A	26-Dec-15 A	100%																			
18-63735	DCP - CR/UPS - UPS Equipment	09-Nov-15 A	20-Nov-15 A	100%																			
6.06.8.6.2.3 - Completion of DCS Works																							
18-63760	DCS Pre-inspection Works Before Handover	04-Jan-16 A	09-Jan-17	95%																			
18-63761	DCS Handover Completed Works		09-Jan-17	0%																			
6.06.8.6.2.3 - DCS Training																							
18-63828N	DCS Training - Submission of Training Programme and Material	01-Apr-15 A	15-Apr-15 A	100%																			
18-63838N	DCS Training - Engineer's Review	02-Jul-15 A	10-Jul-15 A	100%																			
18-63848	DCS Training - Re-submission	05-Jan-16 A	19-Apr-16 A	100%																			
18-63858	DCS Training - Engineer's Approval	11-Jan-16 A	07-Jan-17	90%																			
18-63868	Conduct Training to DSD	28-Sep-16 A	14-Jan-17	70%																			
6.06.8.6.2.1 - DCS On-Site Installation																							
18-63758	DCS Equipment On-Site Installation (Including Control Panels, Work Station, and Control Desk)	01-Aug-15 A	27-Jan-16 A	100%																			
18-63768	DCS Equipment Cabling Works	02-Aug-15 A	30-Jan-16 A	100%																			
18-63778	DCS Functional Testing	20-Jan-16 A	27-Jan-16 A	100%																			
18-63759	DCS Commissioning Work	22-Feb-16 A	09-Jan-17	90%																			
6.06.8.6.2.2 - DCS O&M Manual Submission																							
18-63788	DCS O&M Manual Submission	22-Sep-15 A	09-Oct-15 A	100%																			
18-63798	DCS O&M Manual Submission - Engineer's Review and Comment	23-Sep-15 A	18-Aug-16 A	100%																			
18-63808	DCS O&M Manual Submission - Re-submission	08-Dec-15 A	15-Jan-16 A	100%																			
18-63818	DCS O&M Manual Submission - Engineer's Approval	19-Aug-16 A	23-Jan-17	20%																			
6.06.8.7 - DCP - Switch Room																							
6.06.8.7.1 - Finishing Works																							
18-63774N	DCP - CR/UPS Switch Room Handover for Finishing Works	15-Apr-14 A		100%																			
18-63795D	DCP - CR/UPS - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%																			
18-63785	DCP - CR/UPS - Door and Lovre	03-Nov-14 A	18-Nov-14 A	100%																			
18-63775	DCP - SR - Metal Works	01-Jun-15 A	19-Jun-15 A	100%																			
6.06.8.7.2 - E&M Works																							
18-63754N	DCP Switch Room Handover for E&M Works	15-May-14 A		100%																			
18-63765D	DCP - SR - Airducts	14-Jul-14 A	29-Apr-15 A	100%																			
18-63755D	DCP - SR - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%																			
18-63825D	DCP - SR - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%																			
18-63815D	DCP - SR - Cabling and Wiring	22-Dec-14 A	10-Jul-15 A	100%																			
18-63491D20	DCP - SR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																			
18-63805D	DCP - SR - LV Switchboard	29-Jun-15 A	20-Aug-15 A	100%																			
18-63835	DCP - SR - Power on	20-Aug-15 A	20-Aug-15 A	100%																			
6.06.8.8 - DCP - Potable Water Pump House																							
6.06.8.8.1 - Finishing Works																							
18-63944N	DCP - PWP Handover for Finishing Works	15-Apr-14 A		100%																			
18-63955D	DCP - PWP - Epoxy Coating & Painting	15-Apr-14 A	05-Jun-14 A	100%																			
18-63945	DCP - PWP - Door and Louvre	03-Nov-14 A	18-Nov-14 A	100%																			
18-63965	DCP - PWP - ABWF Works	16-Mar-16 A	15-Aug-16 A	100%																			
6.06.8.8.2 - E&M Works																							
18-63865D	DCP - PWP - Cable Containment	22-Dec-14 A	10-Jul-15 A	100%																			
18-63885D	DCP - PWP - Cabling & Wiring	22-Dec-14 A	10-Jul-15 A	100%																			
18-63905D	DCP - PWP - Electrical Fixture	22-Dec-14 A	10-Jul-15 A	100%																			
18-63895D	DCP - PWP - Electrical Control & Instrumentation	22-Dec-14 A	10-Jul-15 A	100%																			
18-63844N	DCP Potable Water Pump House Handover for E&M Works	05-Jan-15 A		100%																			
18-63855D	DCP - PWP - Piping Works	05-Jan-15 A	05-Jul-15 A	100%																			
18-63915D	DCP - PWP - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																			
18-63845D	DCP - PWP - Pump Instal	25-Jul-15 A	02-Aug-15 A	100%																			
18-64415D	DCP - PWP - Functional Test	26-Sep-15 A	20-Nov-15 A	100%																			
6.06.8.9 - DCP - Spare Storage Room/Toilet																							
6.06.8.9.1 - Finishing Works																							
18-63975D	DCP - SSR - Partion Wall & Plaster	31-Mar-14 A	11-Apr-14 A	100%																			
18-63974N	DCP - SSR Handover for Finishing Works	15-Apr-14 A		100%																			
18-64005D	DCP - SSR - Epoxy Coating and Painting	15-Apr-14 A	05-Jun-14 A	100%																			
18-63985	DCP - SSR - Tile Works	28-Jun-14 A	12-Jul-14 A	100%																			
18-63995	DCP - SSR - Doors and Lovres	03-Nov-14 A	17-Nov-14 A	100%																			



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					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May					
6.06.8.9.2 - E&M Works																					
18-64014N	DCP Spare Storage Room/Toilet Handover for E&M Works	15-May-14 A		100%																	
18-63896D	DCP - SSR - MVAC System	22-Dec-14 A	29-Apr-15 A	100%																	
18-64015D	DCP - SSR - Electrical Works	22-Dec-14 A	10-Jul-15 A	100%																	
18-64025D	DCP - SSR - Fire Services	03-Feb-15 A	15-Jul-15 A	100%																	
6.06.8.10 - DCP Statutory Inspection																					
18-60600	WSD Connection	28-Oct-15 A	12-Nov-15 A	100%																	
18-60650	Prep & Sub Form 314 to FSD	13-Nov-15 A	19-Nov-15 A	100%																	
18-60700	Prep & Sub Form 501 to FSD	13-Nov-15 A	19-Nov-15 A	100%																	
18-60750	FSD Inspection	11-Mar-16 A	11-Mar-16 A	100%																	
6.06.8.11 - DCP External Works																					
18-64649N	Ext Works - RS Stage 1, DN 600 Manhole & Drain Pipe	25-Mar-14 A	13-May-14 A	100%																	
18-64650N	Ext Works - Riser Shaft - Stage 1 Before NE Demolition (Main Drainage, Ducting, Pipe Trench)	25-Mar-14 A	02-Jun-14 A	100%																	
18-64647N	Ext Works - RS Stage 1, Draw Pit & Cable Duct	25-Apr-14 A	15-Jul-14 A	100%																	
18-64670N	Ext Works - MH (SW) 01		25-Apr-14 A	100%																	
18-64648N	Ext Works - RS Stage 1, Pipe Trench & DN300 Pipe & DN150 Pipe	14-May-14 A	06-Aug-14 A	100%																	
18-64668N	Ext Works - E3 Cable Draw Pit		07-Jun-14 A	100%																	
18-64667N	Ext Works - MH (FS) 10		12-Jun-14 A	100%																	
18-64666N	Ext Works - E14 Cable Draw Pit		25-Jun-14 A	100%																	
18-64687N	Ext Works - E15 Cable Draw Pit		25-Jun-14 A	100%																	
18-64660N	Ext Works - Riser Shaft - Stage 2 After NE Demolition (Main Drainage, Ducting, Water Supply, Pipe Trench)	27-Jun-14 A	17-Jul-15 A	100%																	
18-64680N	Ext Works - E13 Cable Draw Pit		27-Jun-14 A	100%																	
18-64644	Ext Works - RS Stage 2, Draw Pit and Ducting and Water Mains	10-Jul-14 A	29-Feb-16 A	100%																	
18-64690N	Ext Works - MH (FS) 06		11-Jul-14 A	100%																	
18-64665N	Ext Works - MH (FS) 05		11-Jul-14 A	100%																	
18-64688N	Ext Works - E16 Cable Draw Pit		15-Jul-14 A	100%																	
18-64662N	Ext Works - MH (FS) 03		19-Jul-14 A	100%																	
18-64646N	Ext Works - RS Stage 2, Last Manhole and 1050mm Pipe	04-Oct-14 A	06-Nov-14 A	100%																	
18-64663N	Ext Works - Last Manhole		04-Oct-14 A	100%																	
18-64645N	Ext Works - RS Stage 2, Remaining Pipe Trench	12-Jul-15 A	17-Jul-15 A	100%																	
18-64661	Ext Works - Riser Shaft - Stage 3 Remaining Works	22-Jul-15 A	29-Feb-16 A	100%																	
18-64671	Ext Works - Installation of Access Control System and CCTV System	21-Nov-16 A	17-Jan-17	90%																	
6.06.9 - DOU4 (Variation Order No. 0092)																					
18-60800	DOU4 - Plinth [Part 1]	10-Jul-15 A	03-Aug-15 A	100%																	
18-60100	DOU4 Handover for E&M Works	05-Aug-15 A		100%																	
18-61050	DOU4 - Install Air Extraction Fan	22-Sep-15 A	07-Nov-15 A	100%																	
18-61000	DOU4 - Install Bio Trickling Filters	22-Sep-15 A	14-Dec-15 A	100%																	
18-61100	DOU4 - Install Pumps	05-Oct-15 A	04-Jan-16 A	100%																	
18-66340	DOU4 - MCC Room	15-Oct-15 A	20-Nov-15 A	100%																	
18-61120	DOU4 - Install Pipes & Valves	01-Nov-15 A	25-Feb-16 A	100%																	
18-66360	DOU4 - Pipe Trench	04-Nov-15 A	07-Dec-15 A	100%																	
18-61140	DOU4 - Install Tanks	21-Nov-15 A	08-Jan-16 A	100%																	
18-61220	DOU4 - External Works - Laying Cable Duct	01-Dec-15 A	30-Dec-15 A	100%																	
18-61170	DOU4 - MCC Room - Install BS Electrical	15-Dec-15 A	29-Jan-16 A	100%																	
18-60110	DOU4 - Plinth [Part 2]	19-Dec-15 A	11-Jan-16 A	100%																	
18-61070	DOU4 - Install FRP Air Duct & Accessories	05-Jan-16 A	29-Feb-16 A	100%																	
18-61110	DOU4 - MCC Room - Install MVAC	11-Jan-16 A	20-Feb-16 A	100%																	
18-61310	DOU4 - MCC Room - Install FS System	15-Jan-16 A	29-Feb-16 A	100%																	
18-61160	DOU4 - Install Power Supply System	27-Jan-16 A	17-Feb-16 A	100%																	
18-61260	DOU4 - MCC Room - Install Electrical Field Equipment	15-Feb-16 A	08-Jul-16 A	100%																	
18-61210	DOU4 - External Works - Laying Water Pipe	23-Feb-16 A	07-Jul-16 A	100%																	
18-61180	DOU4 - Install Control Panel	28-Mar-16 A	08-Jul-16 A	100%																	
18-61275	DOU4 - Drain Pipe and Odour Duct Connection to Sed. Tank	25-Apr-16 A	23-Jun-16 A	100%																	
18-61280	DOU4 - MCC Room - UPS System	01-Jun-16 A	06-Oct-16 A	100%																	
18-61290	DOU4 - MCC Room - DCS System	01-Jun-16 A	14-Jul-16 A	100%																	
18-61270	DOU4 - Switch Room in Sed. Tank - Install ATS Panel for Dual Source	01-Jun-16 A	02-Jun-16 A	100%																	
18-61230	DOU4 - External Works - Odour Duct to MPS1	27-Jun-16 A	20-Jan-17	95%																	
18-61250	DOU4 - Install CCTV Remote Monitoring & FS Common Alarm to MPS1	11-Jul-16 A	09-Jan-17	90%																	
18-61200	DOU4 - Functional Test for Equipments	18-Jul-16 A	09-Jan-17	95%																	



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

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Date	Revision	Checked	Approved
28-Nov-16	DWP Rev E Update		
28-Dec-16	DWP Rev E Update		

Activity ID	Activity Name	Start	Finish	Physical % Complete	2016												2017				
					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May					
18-66950	Boring Works to Overcome Unforeseen Obstructions for EOC01 and EOC02	10-Jun-16 A	29-Jun-16 A	100%	Boring Works to Overcome Unforeseen Obstructions for EOC01 and EOC02																
18-66880	Demolition of Portion of Existing Box Culvert	13-Jun-16 A	27-Jun-16 A	100%	Demolition of Portion of Existing Box Culvert																
18-66860	Pre-bore H-Piles (2 Nos@2 day/no.) (EOC09 - EOC10)	28-Jun-16 A	30-Jun-16 A	100%	Pre-bore H-Piles (2 Nos@2 day/no.) (EOC09 - EOC10)																
18-66970	Proof Drilling	15-Jul-16 A	19-Jul-16 A	100%	Proof Drilling																
18-66740	Pile Loading Test	25-Jul-16 A	10-Aug-16 A	100%	Pile Loading Test																
6.07.1.3 - Temporary Works																					
18-62550	Installation of Sheet Piles with Pre-boring Works	12-Aug-16 A	24-Sep-16 A	100%	Installation of Sheet Piles with Pre-boring Works																
18-62600	ELS Excavation & Strutting	26-Sep-16 A	20-Nov-16 A	100%	ELS Excavation & Strutting																
18-66400	Demolition of the Existing Culvert	13-Oct-16 A	11-Nov-16 A	100%	Demolition of the Existing Culvert																
6.07.1.4 - Structure																					
18-66640	Installation of H-Pile Head Plate	16-Nov-16 A	21-Nov-16 A	100%	Installation of H-Pile Head Plate																
18-62650	Extension of Chamber 15 - Base Slab	16-Nov-16 A	01-Dec-16 A	100%	Extension of Chamber 15 - Base Slab																
18-66730	Extension of Chamber 15 - Remove 2nd Layer of Strut	02-Dec-16 A	03-Dec-16 A	100%	Extension of Chamber 15 - Remove 2nd Layer of Strut																
18-66650	Extension of Chamber 15 - Lower Wall Construction	03-Dec-16 A	17-Dec-16 A	100%	Extension of Chamber 15 - Lower Wall Construction																
18-66660	Extension of Chamber 15 - Upper Wall Construction	18-Dec-16 A	31-Dec-16	90%	Extension of Chamber 15 - Upper Wall Construction																
18-66670	Extension of Chamber 15 - Falsework Dismantle	01-Jan-17	14-Jan-17	0%	Extension of Chamber 15 - Falsework Dismantle																
18-66680	Extension of Chamber 15 - ELS Removal + Backfilling	15-Jan-17	17-Jan-17	0%	Extension of Chamber 15 - ELS Removal + Backfilling																
6.07.1.5 - Architectural Includ. Exist. C15																					
18-62700	Extension of Chamber 15 - Install FRP Cover and Handrail	03-Jan-17	19-Jan-17	0%	Extension of Chamber 15 - Install FRP Cover and Handrail																
18-62699	Extension to Chamber 15 - Handover for Finishing Works	03-Jan-17		0%	Extension to Chamber 15 - Handover for Finishing Works																
18-62709	Extension of Chamber 15 - Shanghai Render Panels	05-Jan-17	27-Jan-17	0%	Extension of Chamber 15 - Shanghai Render Panels																
18-62719	Extension of Chamber 15 - Cladding Works	05-Jan-17	27-Jan-17	0%	Extension of Chamber 15 - Cladding Works																
6.07.1.6 - E&M																					
18-62749	Extension of Chamber 15 - Handover for E&M Works	03-Jan-17		0%	Extension of Chamber 15 - Handover for E&M Works																
18-62750	Extension of Chamber 15 - Install Penstocks (2 nos.)	03-Jan-17	16-Jan-17	0%	Extension of Chamber 15 - Install Penstocks (2 nos.)																
18-62760	Extension of Chamber 15 - Install Odour Duct	03-Jan-17	13-Jan-17	0%	Extension of Chamber 15 - Install Odour Duct																
18-62770	Extension of Chamber 15 - DCS/Cabling Works for Penstocks	17-Jan-17	23-Jan-17	0%	Extension of Chamber 15 - DCS/Cabling Works for Penstocks																
18-62800	T&C for Equipments in Section 5	24-Jan-17	30-Jan-17	0%	T&C for Equipments in Section 5																
6.07.2 - Overflow Culvert																					
6.07.2.1 - Temporary Works																					
18-62950	Overflow Culvert - Installation of Sheet Piles with Pre-boring Works	05-Nov-15 A	11-Dec-15 A	100%	Overflow Culvert - Installation of Sheet Piles with Pre-boring Works																
18-63000	Overflow Culvert - ELS Excavation & Strutting	21-Dec-15 A	23-Jan-16 A	100%	Overflow Culvert - ELS Excavation & Strutting																
6.07.2.2 - Foundation																					
18-62850	G.I-Pre-Drilling (3 Nos.)	12-Sep-12 A	18-Sep-12 A	100%	G.I-Pre-Drilling (3 Nos.)																
18-62900	Pre-bore H-Piles (6 Nos.@2day/no.)	19-Sep-12 A	29-Sep-12 A	100%	Pre-bore H-Piles (6 Nos.@2day/no.)																
6.07.2.3 - Structure																					
18-63050	Overflow Culvert - Base Slab Construction	15-Feb-16 A	29-Feb-16 A	100%	Overflow Culvert - Base Slab Construction																
18-63060	Overflow Culvert - Wall & Roof Slab Construction	01-Mar-16 A	21-Mar-16 A	100%	Overflow Culvert - Wall & Roof Slab Construction																
18-63070	Overflow Culvert - ELS Removal + Backfilling	22-Mar-16 A	20-Aug-16 A	100%	Overflow Culvert - ELS Removal + Backfilling																
6.07.2.4 - E&M																					
18-66810	Overflow Culvert - Handover for E&M Works	03-Jan-17		0%	Overflow Culvert - Handover for E&M Works																
18-66820	Overflow Culvert - Install Penstock	03-Jan-17	16-Jan-17	0%	Overflow Culvert - Install Penstock																
18-66870	Overflow Culvert - DCS/Cabling Works for Penstock	17-Jan-17	23-Jan-17	0%	Overflow Culvert - DCS/Cabling Works for Penstock																
6.07.3 - Demolition of Existing Dechlorination Plant																					
18-63130	Liaison with ST2	03-Feb-16 A	23-Feb-16 A	100%	Liaison with ST2																
18-63140	Relocation of Existing ADF PLC from Existing DCP to New DCP	25-Feb-16 A	23-Mar-16 A	100%	Relocation of Existing ADF PLC from Existing DCP to New DCP																
18-63110	De-commissioning of E&M System	08-Apr-16 A	20-Apr-16 A	100%	De-commissioning of E&M System																
18-63120	Inspection with ST2	12-Apr-16 A	20-Apr-16 A	100%	Inspection with ST2																
18-63100	Demolition of Existing Dechlorination Plant	21-Apr-16 A	28-May-16 A	100%	Demolition of Existing Dechlorination Plant																
18-66960	Backfilling of the Area up to Existing Ground Level	07-Jun-16 A	23-Jun-16 A	100%	Backfilling of the Area up to Existing Ground Level																
6.07.4 - External Works																					
18-63150	Installation of Utilities	28-Jun-16 A	13-Feb-17	50%	Installation of Utilities																
18-63210	Pavement	23-Aug-16 A	01-Mar-17	40%	Pavement																
6.07.5 - DOU4 - Chemical Scrubber (Variation Order No. 0092)																					
18-63310	Construction of Plinth	11-Mar-16 A	15-Mar-16 A	100%	Construction of Plinth																
6.07.6 - Landscape Works																					
18-63300	Irrigation System	29-Dec-16	30-Jan-17	0%	Irrigation System																
18-63220	Raingarden and Bioswale	31-Jan-17	06-Mar-17	0%	Raingarden and Bioswale																
18-63200	Landscaping Softwork	14-Feb-17	20-Mar-17	0%	Landscaping Softwork																



- █ Actual Level of Effort
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