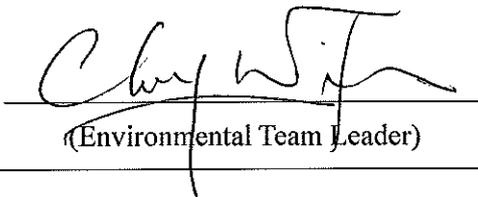


Paul Y. Construction Co., LTD.

Contract No. DC/2008/09
Harbour Area Treatment Scheme
Stage 2A – Construction of Sewage Conveyance
System from Ap Lei Chau to Aberdeen

Environmental Monitoring and Audit
Monthly report (Version 1.2) for

January 2010

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

CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

Introduction

1. This is the 1st monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for Contract No. DC/2008/09 “Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen” (the Project). This report documents the findings of EM&A Works conducted in January, 2010.
2. The major site activities undertaken in the reporting month included:
 - Excavation of mud pit;
 - sheet piling;
 - removal and reinstatement of hoarding; and
 - delivery of HDD plant and equipment

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the Project Specific EM&A Manual and 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.

Air Quality and Noise (Aberdeen PTW)

4. Since Leighton Asia in joint venture with Leonhard Nilsen & Sonner AS (LNS) has been awarded contract for the construction of a sewage conveyance system from Aberdeen to Sai Ying Pun on Hong Kong Island, the air quality monitoring station at Dairy Farm Ice and Cold Storage (CM_AB1) and noise monitoring station at Wah Lai House, Wah Kwai Estate (M8) have been set up by Atkins China Ltd (ACL)(ET for Contract No. DC/2007/24 for HATS 2A) to monitor the air quality and noise in the vicinity of the sensitive receivers. Please refer to monthly environmental monitoring report for Contract No. DC/2007/24 for details on monitoring parameters, frequency and programme, monitoring equipment, monitoring methodology and QA/QC procedures.

5. Summary of the event and action taken in the reporting month is tabulated in **Table I**.

Table I Summary Table for Events Recorded in the Reporting Month

Parameter	No. of Exceedance		No. of Events Due to this Project	Action Taken
	Action Level	Limit Level		
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A

1-hour TSP Monitoring

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

Construction Noise

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

Noise (Ap Lei Chau PTW)

9. No noise impact monitoring was conducted in the reporting month.

Environmental Licenses and Permits

10. Environmental related licenses/permits granted to the Project include the Chemical Waste Producer License, a billing account for Disposal of construction waste, Waste Water Discharge License and Construction Noise Permit. All permits/licenses obtained for the Project are summarized in Table 2.1 in the section 2.

Key Information in the Reporting Month

11. Summary of key information in this 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	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Notifications of any summons & prosecutions	0	---	N/A	N/A	---

Future Key Issues

12. Major site activities for the coming two months will include:
 - Mud pit construction - continue excavation of mud pit, installation of ground beam
 - set up rig;
 - start installation of 52" casing

13. The future environmental concerns will be mainly on surface runoff and ponding water due to rainy weather; and dust and waste generated from the construction works.

1 INTRODUCTION

Background

- 1.1 Paul Y. Construction Company, Limited (the Contractor) was commissioned by Drainage Services Department (DSD) to undertake the construction of “Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen” (hereinafter called the “the Project”) under Contract No. DC/2008/09. The Contractor was further commissioned by DSD to appoint a Monitoring Team and carry out the impact monitoring for the Project.
- 1.2 The sewage conveyance system (SCS) comprises a network of interconnected sewage tunnels and vertical shafts. The vertical shaft collect sewage from the preliminary treatment works in North Point, Wan Chai East, Central, Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau. The preliminary treatment works handle the sewage collected from the catchment areas which comes from around 70% of the population of Hong Kong Island. The collected sewage if conveyed to the Stonecutters Island Sewage Treatment Works via a total of 21km of deep tunnels with depths in general varying from 70m to 160m below sea level.
- 1.3 In the Project, SCS connecting Aberdeen and Ap Lei Chau will be constructed using twin pipes of 1.3km long with 600mm in diameter. The depth of the pipes will be over 80m depth from sea level generally. Site layout plan of the Project is shown in **Figure 1**. The construction was commenced on 17 August 2009. The anticipated date of completion is August 2012.
- 1.4 An Environmental Permit (EP) No. EP-322/2008 was issued on 19 November 2008 for Harbour Area Treatment Scheme (HATS) Stage 2A to Drainage Services Department as the Permit Holder. Later, the further Environmental Permit (EP-322/2008/A) was issued in July 2009 for vary Figure 1d and 1e of the Environmental Permit No. EP 322/2008. Another Environmental Permit (EP-322/2008/B) was issued in November 2009 for vary Figure 1c of the Environmental Permit (EP-322/2008/A).
- 1.5 Cinotech Consultants Limited was commissioned by the Contractor to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. Dr. Priscilla CHOY of Cinotech Consultants Ltd. was appointed as the ET Leader as per the Clause 25.30 of the Particular Specification of the Contract. This is the 1st monthly EM&A report summarizing the EM&A works for the Project in January, 2010.

Project Organizations

- 1.6 Different parties with different levels of involvement in the project organization include:
 - Project Proponent – Drainage Services Department (DSD)
 - Engineer’s Representative (ER) – AECOM
 - Contractor – Paul Y. – Construction Company Limited
 - Environmental Team (ET) – Cinotech Consultants Ltd.
 - Independent Environmental Checker (IEC) – Mott MacDonld Hong Kong Ltd

1.7 The responsibilities of respective parties are detailed in Section 1.25 to 1.33 of the Project Specific EM&A Manual of the Project.

1.8 The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
AECOM	Engineer's Representative	Mr. Edwin SW Tang	SRE	63366813	2603 7883
P.Y. Construction Ltd	Contractor	Mr. Ricky Hon	Environmental Officer	2831 8282 / 63301785	28335604
		Mr. Ben Lam	Assistant Environmental Officer	60841206	
Cinotech	Environmental Team	Dr. Priscilla CHOY	Environmental Team Leader	2151 2089	3107 1388
		Mr. Mark FONG	Project Coordinator	2151 2073	
		Mr. Mark FONG	Audit Team Leader	2151 2073	
		Mr. Henry LEUNG	Monitoring Team Leader	2151 2087	
Mott MacDonld	Independent Environmental Checker	Dr. Anne F Kerr	Independent Environmental Checker	28285793	28271823
		Mr. Joseph PT Chan	Deputy Independent Environmental Checker	28285920	
		Ms. Florence SY Yuen	Deputy Independent Environmental Checker	28285768	

Construction Programme

1.9 The site activities undertaken in the reporting month were:

- Excavation of mud pit;
- sheet piling;
- removal and reinstatement of hoarding; and
- delivery of HDD plant and equipment

Summary of EM&A Requirements

1.10 The EM&A programme requires construction phase air quality and noise monitoring as well as environmental site audits. The EM&A requirements 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 EIA report; and
- Environmental requirements in contract documents.

1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Appendix A

1.12 This report presents the audit works for the Project in the reporting month.

2 ENVIRONMENTAL AUDIT

Site Audits

- 2.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix B**.
- 2.2 Site audits were conducted on 6th, 12th, 22nd and 26th January 2010 by representatives of ET, ER and the Contractor. No joint site audit with the representatives of IEC, ER, the Contractor and the ET was carried out in the reporting month.

Status of Environmental Licensing and Permitting

- 2.3 All permits/licenses obtained for the Project are summarized in **Table 2.1**.

Status of Waste Management

- 2.4 The amount of waste generated by the activities of the Project in reporting month is shown in **Appendix C**.

Implementation Status of Environmental Mitigation Measures

- 2.5 According to the EIA Study Report and the Project Specific EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. A summary of the EMIS is provided in **Appendix A**.

Table 2.1 Summary of Environmental Licensing and Permit Status

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
<i>Billing Account for Disposal of Construction Waste</i>				
7009265	21/08/09	N/A	Disposal of Construction waste	Valid
<i>Chemical Waste Producer</i>				
5213-173-P2973-02	02/11/09	N/A	Disposal of Chemical waste follow EPD instruction	Valid
5213-173-P2973-03	02/11/09	N/A	Disposal of Chemical waste follow EPD instruction	Valid
<i>Water Discharge License</i>				
Ref no: 313058	N/A	N/A	EPD received application on 05/01/2010	Pending
<i>Construction Noise Permit (CNP)</i>				
N/A	N/A	N/A	N/A	Pending

2.6 During the site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 2.2**.

Table 2.2 Observations and Recommendations of Site Audits

Parameters	Date	Observations	Remedial Actions
Water Quality	12-01-10	<u>Reminder</u> Clear the ponding/stand water presented especially after raining	The situation was observed improved/rectified in audit session 100122
Air Quality	06-01-10	<u>Reminder</u> Properly maintain the excavator to prevent dust emission.	The situation was observed improved/rectified in audit session 100112
	12-01-10	<u>Reminder</u> Cover the stockpile at ABD-PTW	The situation was observed improved/rectified in audit session 100122

Table 2.3 Observations and Recommendations of Site Audit Followed up for Previous Month

Parameters	Date	Observations / Recommendations	Remedial Actions
N/A	N/A	N/A	N/A

2.7 No joint site audits with the representatives of IEC, ER, the Contractor and the ET was carried out in the reporting month. The observations and recommendations made by IEC during the audit sessions are summarized in Table 2.4.

Table 2.4 IEC's Observations and Recommendations of Site Audit

N/A	Follow-up (for previous month)	N/A
	Observation(s)	N/A
	Reminder(s)	N/A

Implementation Status of Event Action Plans

2.8 The Event Action Plans for air quality and noise are presented in **Appendix D**.

Aberdeen PTW

1-hr TSP

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

24-hr TSP

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

Construction Noise

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

Ap Lei Chau PTW

- 2.12 No noise impact monitoring was conducted in the reporting month. No Action/Limit Level exceedance was recorded

Summary of Complaint and Prosecution

- 2.13 No environmental related complaint, prosecution or notification of summons was received in the reporting month.
- 2.14 There was no environmental complaint, prosecution or notification of summons received since the Project commencement. The Complaint Log is attached in **Appendix E**.

3 FUTURE KEY ISSUES

Key Issues for the Coming Month

3.1 Key issues to be considered in the coming month include:

- Surface runoff generated from the construction activities;
- Dust emission from loading and unloading excavated materials, excavation works and exposed stockpiles;
- Noise nuisance from operation of equipments/ machineries;
- Maintenance of de-silting facilities and drainage system such as U-channels;
- Formation of ponding water on site due to rain;
- Blockage of U-channel by accumulated silt;
- Mosquito breeding due to the ponding water and stagnant water around the site areas;
- Accumulation of C&D waste and general waste on site; and
- Oil spillage/ leakage from the equipment on site.

Monitoring Schedule for the Next Month

3.2 The environmental monitoring schedules for the reporting month and the tentative environmental monitoring schedule for the next month is shown in **Appendix F**.

Construction Program for the Coming Two Months

3.3 A tentative construction programme is provided in **Appendix G**. The major construction activities in the coming two months will include:

- Mud pit construction - continue excavation of mud pit, installation of ground beam
- set up rig;
- start installation of 52" casing

4 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 4.1 EM&A works were conducted regularly in the reporting month in accordance with the Project Specific EM&A Manual. The results were checked and reviewed.

Aberdeen PTW

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Construction Noise Monitoring

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

Ap Lei Chau PTW

- 4.5 No noise impact monitoring was conducted in the reporting month. No Action/Limit Level exceedance was recorded

Complaint and Prosecution

- 4.6 No environmental prosecutions and complaints were received in the reporting month.

Recommendations

4.7 According to the environmental audit performed in the reporting month, the following recommendations were made:

Water Impact

;

- To avoid accumulation of stagnant water on site;
- To prevent surface runoff getting into public area; and

Dust Impact

- To provide water spraying on dried site areas or materials regularly;
- To remain good site practice on handling excavated or dusty material for dust suppression (e.g. stockpiles of material shall be covered by tarpaulin); and
- To regularly check and maintain the mechanical equipments to avoid black smoke emission.

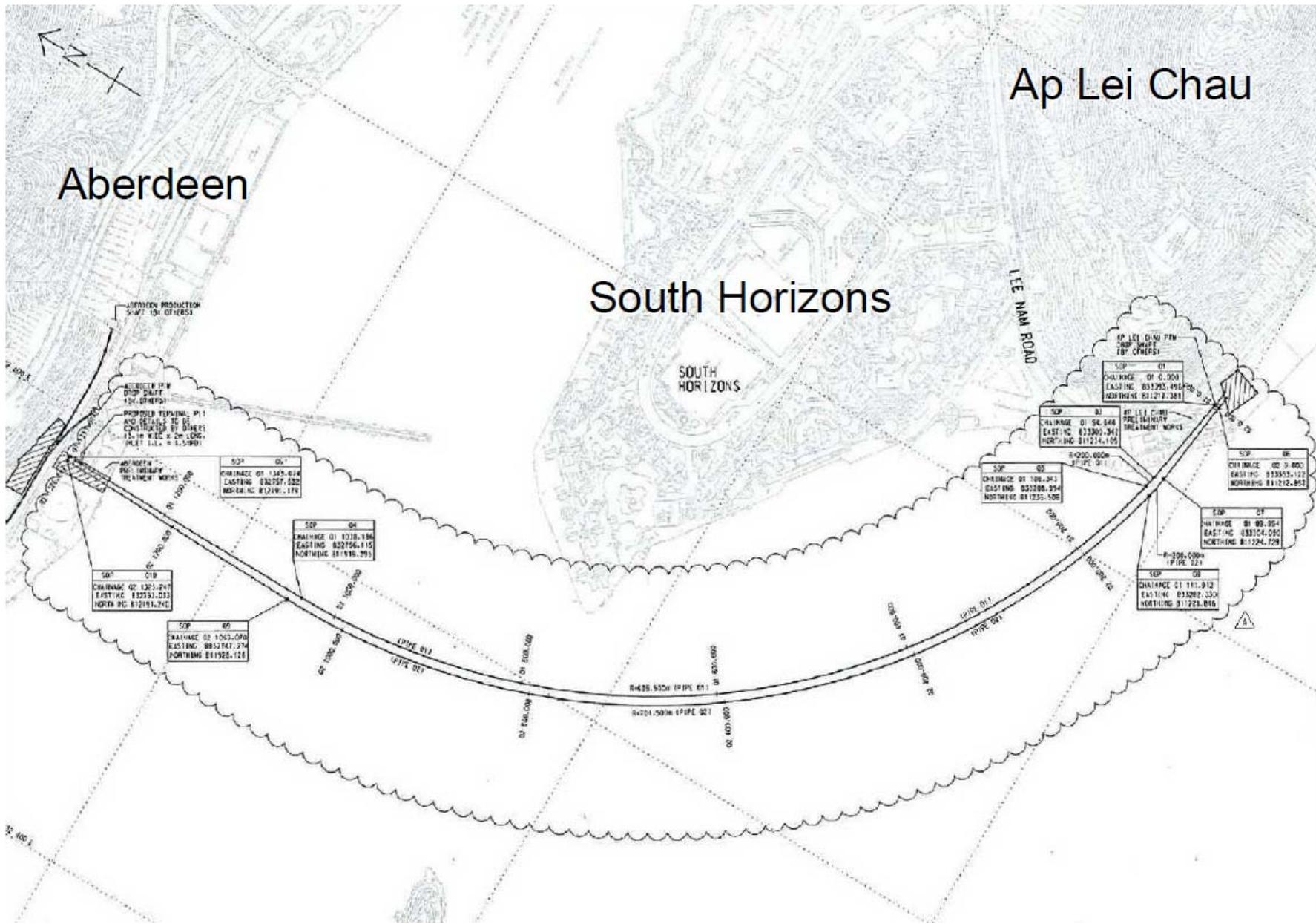
Noise Impact

- To space out noisy equipments and position them as far away as possible from sensitive receivers;
- To provide adequate lubricant on mechanical equipments to reduce frictional noise; and
- To regularly check and maintain the mechanical equipments to avoid abnormal noise nuisance.

Waste / Chemical Management

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

FIGURES

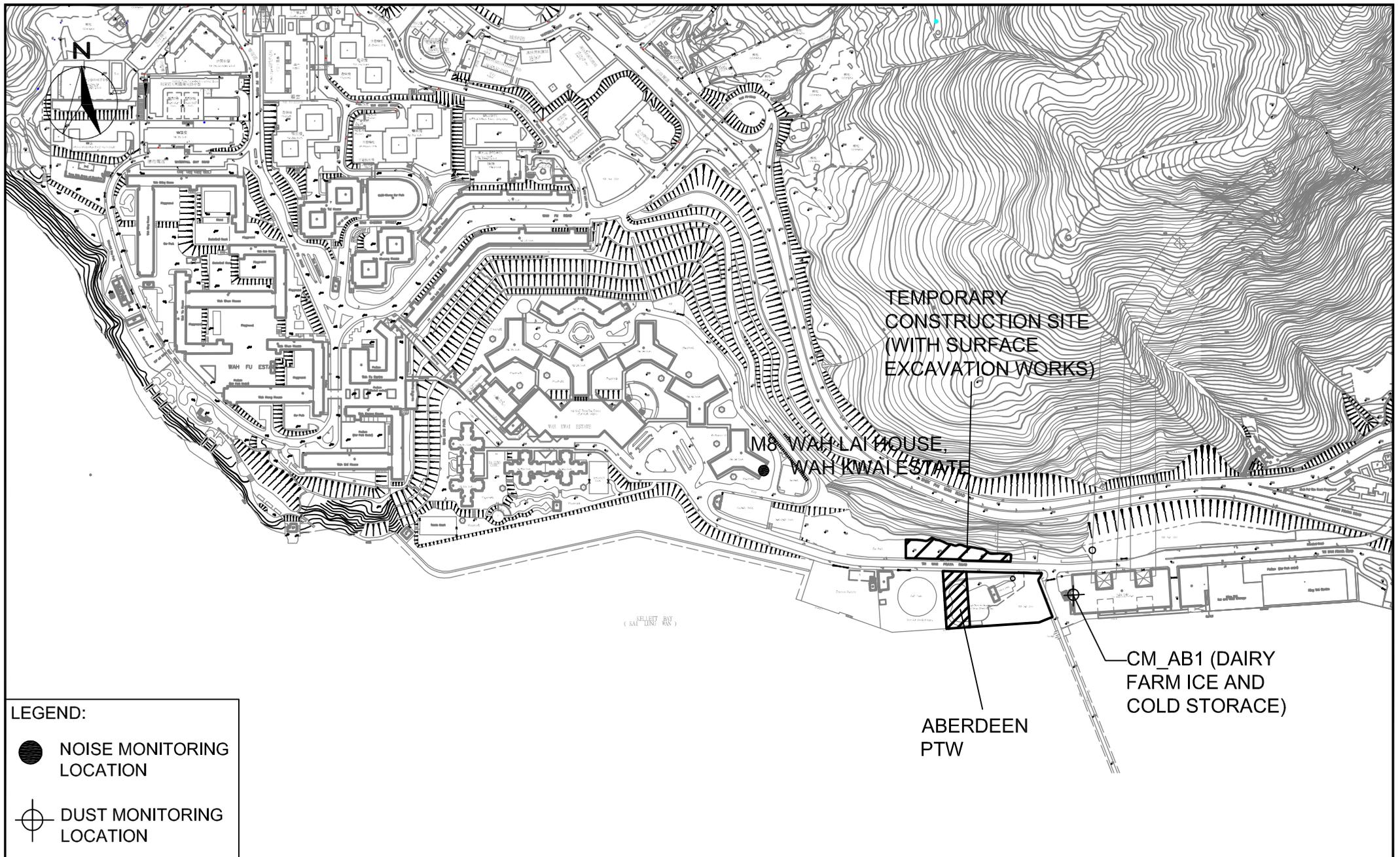


CONTRACT NO. DC/2008/09
 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System
 from Ap Lei Chau to Aberdeen

Site Layout Plan

Scale	Project No.
N.T.S	MA9042
Date	Figure
Jan-10	1





LEGEND:

- NOISE MONITORING LOCATION
- ⊕ DUST MONITORING LOCATION



Contract NO. DC/2008/09-HATS Stage 2A Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen
LOCATIONS OF CONSTRUCTION NOISE AND DUST MONITORING STATIONS - ABERDEEN PTW

SCALE	N.T.S.	DATE	Oct 2009
CHECK	IT	DRAWN	TN
JOB No.	MA 9042	FIGURE NO.	FIG 2
		REV	-

**APPENDIX A
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE**

APPENDIX A– Summary of Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
<i>A Air Quality</i>						
3.64	Watering twice per day within the worksites at North Point PTW, Wan Chai East PTW, Fung Mat Road Site, Sandy Bay PTW, Wah Fu PTW, Aberdeen PTW and SCS worksite at Aberdeen; <ul style="list-style-type: none"> • Watering 4 times per day within worksites at the Central PTW; • Barging points, if any, should be continuous watering throughout the whole unloading process; and • Watering 8 times per day within worksites at the SCS works area at Wan Chai East and North Point, SCISTW and the Disinfection Facilities of SCISTW. 	To reduce dust nuisance	Contractor	Work site / during construction	Construction phase	EIAO-TM & Air Quality Objective
3.74	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts. <ul style="list-style-type: none"> • Skip hoist for material transport should be totally enclosed by impervious sheeting; • Vehicle washing facilities should be provided at every vehicle exit point; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore; • Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; Use of regular watering, with complete coverage, to	To reduce dust nuisance	Contractor	Work site / during construction	Construction phase	EIAO-TM & Air Quality Objective

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	<p>reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather;</p> <ul style="list-style-type: none"> • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines; • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs; • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; • Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit; • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites; and • 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. 					
3.76	<p>Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual.</p> <ul style="list-style-type: none"> • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to 					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	closed containers to minimize odour escape <ul style="list-style-type: none"> • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly 					
3.77	To avoid excessive extraction of the foul air from the drop shafts of the sedimentation tanks and also from the effluent flume structure of SCISTW to deodorization system, the extraction vent(s) of the deodorization system should be located away from the top openings of the drop shafts.	To ensure compliance of the odour criterion stipulated in the EIAO-TM	Engineer	SCISTW	Design Stage	EIAO-TM
3.80	Commissioning tests for all deodorization system should be included in the Design and Construction Contract Document.	To ensure compliance of the odour criterion stipulated in the EIAO-TM	Engineer	All PTW and SCISTW	After completion of construction	EIAO-TM
<i>B Airborne Noise</i>						
4.56–4.61	Construction Phase <ul style="list-style-type: none"> • Use of quiet PME, movable barriers and acoustic mats 	To reduce construction noise impacts	Contractor	All work sites	Construction phase	EIAO-TM
4.67	Good Site Practice: <ul style="list-style-type: none"> • 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 	To reduce construction noise impacts	Contractor	All work sites	Construction phase	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	intermittent use shall be shut down between works periods or shall be throttled down to a minimum. <ul style="list-style-type: none"> 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. 					
4.63	Operation Phase <ul style="list-style-type: none"> Use of acoustic louvers for air supply fans/extraction fans of transfer pumping stations and ventilation fans of deodourization unit at Sandy Bay PTW, Cyberport PTW and Wah Fu PTW. 	To reduce fixed plant noise impact	DSD	Sandy Bay PTW, Cyberport PTW and Wah Fu PTW	Design stage and operation stage	EIAO-TM and NCO
4.64	The maximum allowable sound power level (SWL) of each new transformer at Sandy Bay PTW shall be limited to 89 dB(A).	To reduce fixed plant noise impact	DSD	Sandy Bay PTW	Design stage and operation stage	EIAO-TM and NCO
<i>C Water Quality</i>						
6.349 to 6.375	Construction Phase <i>Construction Site Runoff and General Construction Activities</i> The mitigation measures as outlined in the <i>ProPECC PN 1/94 Construction Site Drainage</i> should be adopted where applicable.	To control water quality impact from construction site runoff and general construction activities	Contractor	All work sites	Construction phase	EIAO-TM, WPCO
6.376	<i>Effluent Discharge</i> 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	To control water quality impact from effluent discharges from construction sites	Contractor	All work sites	Construction phase	EIAO-TM, WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	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	<p><i>Accidental Spillage of Chemicals</i></p> <p>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.</p>	To control water quality impact from accidental chemical spillage	Contractor	All work sites	Construction phase	EIAO-TM, WPCO, WDO
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.	To control water quality impact from accidental chemical spillage	Contractor	All work sites	Construction phase	EIAO-TM, WPCO, WDO
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.</p> <p>General requirements are given as follows:</p> <ul style="list-style-type: none"> • Suitable containers should be used to hold the chemical 	To control water quality impact from accidental chemical spillage	Contractor	All work sites	Construction phase	EIAO-TM, WPCO, WDO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	<p>wastes to avoid leakage or spillage during storage, handling and transport.</p> <ul style="list-style-type: none"> • 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. 	<p>To control water quality impact from construction works in close proximity of storm drains or seafront</p>	Contractor	All work sites	Construction phase	EIAO-TM, WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	<ul style="list-style-type: none"> • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea. 					
6.381	<p>Temporary Sewage Bypass</p> <p>It is recommended that the temporary sewage bypass required for (i) the modification to the existing pumping station at SCISTW and (ii) the interconnection between the existing main pumping station and the new pumping station on Stonecutters Island, if needed, should be scheduled at the same time as far as practicable in order to minimise the temporary discharge duration. It is also recommended that all the modification and interconnection to the existing facilities (including the modification to the existing NWKPS) should be programmed to avoid temporary sewage bypass in wet or bathing season (March to October) to minimize the potential impacts. Relevant government departments including EPD and LCSD should be informed of the planned sewage bypass prior to any discharge. During the sewage bypass period, water quality monitoring should be carried out at the water sensitive receivers to quantify the water quality impacts and to determine when the baseline water quality conditions are restored. Also, a framework of the response procedures has been formulated to minimize the impact of temporary discharges. Details are provided in the standalone EM&A Manual.</p>	To minimise the water quality impact arising from the planned temporary sewage bypass	DSD	SCISTW	Design Stage and Construction Phase	EIAO-TM and WPCO
6.344	<p>Operational Phase</p> <p>Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimize the chance of emergency discharge.</p>	To minimize the water quality impact from emergency discharge	DSD	SCISTW and all the Stage 2 PTWs	Design stage and operation stage	EIAO-TM and WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
6.344	The response procedure and monitoring requirements for emergency discharge as stated in EM&A Manual should be followed.	To minimize water quality impact due to emergency discharge	DSD	SCISTW	Operation stage	EIAO-TM and WPCO
6.345	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	To minimize water quality impact due to emergency discharge	DSD	Stage 2 PTWs	Design stage and operation stage	EIAO-TM and WPCO
6.346	In case of total power outage of the dechlorination plant, the uninterruptible power supply (UPS) system to be provided would switch the power supply of the sodium bisulphite dosing pump to a backup battery almost instantaneously, allowing continuous dosage of sodium bisulphite for at least half an hour so that sufficient time can be provided for shutting down the chlorination plant to avoid the possibility of discharge of chlorinated effluent.	To minimize the discharge of chlorinated effluent under emergency situations	DSD	SCISTW	Design stage and operation stage	EIAO-TM and WPCO
6.347	The model predicted that if Stage 2B is not implemented for HATS in 2021 as scheduled, the nutrient contents (both P and N) in the marine water would ultimately increase to exceed the baseline Stage 1 level when the HATS flow is reaching its design capacity of 2.45M m3/day. It is recommended that the future review study for Stage 2B should review the validity of the model predictions provided in this EIA and confirm the need of enhanced nutrient removal for HATS after 2021.	To minimize the nutrient exceedances after 2021	DSD	SCISTW	Investigation Stage of Stage 2B	EIAO-TM and WPCO
6.348	It should be noted that the mixing zone for TIN predicted for Stage 2B was large with an area of about 30 km2 and the area of exceedance would encroach on the nearby water sensitive receivers (e.g. Ma Wan Fish Culture Zone). This is due to the elevated oxidized nitrogen assumed for the proposed nitrification process at Stage 2B as well as the increased HATS effluent flow assumed for Stage 2B. It is	To minimize the TIN exceedances during Stage 2B	DSD	SCISTW	Investigation Stage of Stage 2B	EIAO-TM and WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	recommended that these water quality issues should be further investigated / assessed under the future EIA for Stage 2B. Further mitigation measures / alternative treatment designs should also be considered under the future EIA for Stage 2B to mitigate / minimize the potential TIN exceedances					
<i>D Human Health and Ecological Risk</i>						
7.47 & 8.66	A monitoring programme would be implemented to protect human health and ecological resources from increased TRC and CBP concentrations in seawater.	To protect human health and ecological resources from exposure to toxic substances from the effluent discharges	DSD	Water body near SCISTW	Operation phase	
<i>E Waste Management</i>						
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 minimise 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.	To minimize wastage of wood	Contractor	Work sites	Construction phase	WBTC No. 19/2001
9.109	All waste materials should be segregated into categories covering <ul style="list-style-type: none"> • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill. 	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste.	Contractor	Work sites	Construction phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
9.113	<p>Recommendations to achieve waste reduction include:-</p> <ul style="list-style-type: none"> • 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; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. 	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste.	Contractor	Work sites	Construction phase	
9.115	<p>Recommendations for good site practices during construction activities include:-</p> <ul style="list-style-type: none"> • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical waste handling procedures • Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors 	To implement good site practice for handling, sorting, reuse and recycling of C&D materials	Contractor	Work sites	Construction phase	Waste Disposal Ordinance (Cap.54) ETWB TCW No.19/2005

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
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	To enhance reuse of bentonite and proper disposal of residual bentonite slurry.	Contractor	Work sites	Construction phase	ProPECC PN 1/94
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.	To collect sewage from site staffs properly.	Contractor	Work sites	Construction phase	
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.	To separate general refuse from C&D material and proper disposal of the refuse	Contractor	Work sites	Construction phase	
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	To facilitate recycling of recyclable materials.	Contractor	Work sites	Construction phase	
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,	To proper handling of chemical waste	Contractor	Work sites	Construction phase	Waste Disposal (Chemical Waste) (General) Regulation

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	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.	To proper disposal of marine deposit according to the contamination level	Contractor	Work sites	Construction phase	ETWB TC(W) No.34/2002
9.148	The sludge tanks should be air-tighten. Rotating brushes or other alternative devises should be installed at the upper frame of the sludge tank washing facilities to provide better cleaning of the surface around the top loading opening of the sludge tanks. Prior to making such provision, the top covers of the sludge transfer tanks should be water cleaned manually after unloading.	To alleviate potential odour emitted from sludge tanks	Operator	SCISTW	Operation Phase	
9.150	Since the air tightness of tankers highly relies on the effectiveness of rubber seals at the loading openings and unloading doors, odour leakage from tankers are commonly resulted from the aging rubber seals. It is recommended to develop a preventive maintenance programme for rubber seals of loading openings and unloading doors of sludge transfer tanks to ensure the tightness of covers and doors. Rubber seals should be regularly replaced within its design life as specified by suppliers.	To control potential odour emitted from sludge tanks	Operator	SCISTW	Operation Phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
<i>G Terrestrial Ecology</i>						
10.92	All the proposed construction activities would be confined to developed area and wasteland of very low ecological value.	To avoid direct impact to any natural habitats identified within the assessment area.	Project proponent	All the works areas, PTWs and SCISTW	Design phase of project	EIAO TM Annex 16
10.93	To implement effective noise mitigation measures as recommended in Section 4.	To minimise noise disturbance impact to the associated wildlife during the construction phase.	Contractor	All the works areas, PTWs and SCISTW	Construction phase	EIAO TM Annex 16
10.94	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, should be implemented.	To minimize indirect dust impact to the nearby vegetation during the construction works.	Contractor	All the works areas, PTWs and SCISTW	Construction phase	EIAO TM Annex 16
10.95	Fences/hoardings should be erected and installed along the boundary of the works areas.	To minimise disturbance impact to the nearby habitats and the associated wildlife.	Contractor	All the works areas, PTWs and SCISTW	Construction phase	EIAO TM Annex 16
10.96	Standard good site practices as suggested in Section 10 should be implemented.	To minimise disturbance impact to the nearby habitats and the associated wildlife.	Contractor	All the works areas, PTWs and SCISTW	Construction phase	EIAO TM Annex 16
10.97	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.	To minimise site runoff of high level of sediment solids and other pollutions from entering the nearby water bodies.	Contractor	All the works areas, PTWs and SCISTW	Construction phase	EIAO TM Annex 16
10.98	Provision of compensatory planting of similar native tree species in no less than 1:1 compensatory ratio in terms of quality and quantity.	To compensate removal of individual trees directly affected by proposed works.	Contractor	All the works areas, PTWs and SCISTW	Post-construction phase	EIAO TM Annex 16 & ETWB TC (Works)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
						No. 3/2006
<i>H Marine Ecology</i>						
11.135	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.	To minimize the potential indirect impacts on water quality	Contractor	All the works area, PTWs and SCISTW	Construction Phase	EIAO-TM
11.136	To avoid/minimize the impact to corals, it is proposed that they are translocated to the eastern end of the existing seawall, which has similar hydrographic parameters and supports healthy growth of the same species and is thus considered as a suitable recipient site (Figure 11.13). Coral translocation should be carried out during the winter season (November-March) in order to avoid disturbance to the transplanted colonies during the spawning period (i.e. July to October).	To reduce adverse impacts on coral colonies recorded in the works area by translocation to an unaffected site.	Sub-contractor	Aberdeen PTW	Pre-construction phase	EIAO-TM
11.137	Dredging works will not be carried out and sheet piles or silt curtains will be used to contain filling material used during demolition/re-construction of the seawall. Water quality modelling predicts that no adverse impact on water quality at the proposed recipient (Figure 11.13) site would occur during construction works. Following this, no construction phase monitoring on translocated coral would be required. However post-translocation monitoring is suggested to be carried out every 3 months for one year. This would be carried out by a marine ecological specialist that is approved by the Director. Translocation plan for corals will be submitted to the Director for approval prior to the commencement of construction works					
11.139	It is recommended that temporary sewage bypass should be programmed to avoid temporary sewage bypass in wet or	To minimize water quality impact resulting from	DSD	SCISTW	Design Stage and	EIAO-TM and WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	bathing season (March to October) in order to minimize the potential impacts. Relevant government departments including EPD and LCSD should be informed of the planned sewage bypass prior to any discharge. During the sewage bypass period, water quality monitoring should be carried out at the water sensitive receivers to quantify the water quality impacts and to determine when the baseline water quality conditions are restored. Also, a framework of the response procedures has been formulated to minimize the impact of temporary discharges. Details are provided in the standalone EM&A Manual.	planned temporary sewage bypass.			Construction Phase	
11.140	Emergency discharges of screened sewage from PTWs would be the consequence of power or equipment failure at SCISTW. Dual power supply would be provided at the SCISTW to minimize the occurrence of power failure. In addition, standby facilities for the main treatment units and standby equipment parts / accessories would also be provided at the SCISTW in order to minimize the chance of emergency discharge. To provide a mechanism to minimise the impact of emergency discharges and facilitate subsequent management of any emergency, an emergency contingency plan has been formulated to clearly state the response procedure in case of total power or equipment failure at SCISTW (details refer to the standalone EM&A Manual). The plant operators of SCISTW should closely communicate with relevant departments including EPD and LCSD during the emergency discharge. An event and action plan and a detailed water quality monitoring programme for the emergency discharge is given in a standalone EM&A Manual.	To minimize water quality impact due to emergency discharge	DSD	SCISTW	Design stage and operation stage	EIAO-TM and WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
<i>I Landscape and Visual</i>						
Table 13.7	<ul style="list-style-type: none"> • Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction. • Trees unavoidably affected by the works should be transplanted where practical. • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting. 	To minimise potential visual intrusion to existing VSRs and compensate the possible loss of greenery from the Project	DSD	All the works areas, PTWs and SCISTW	Construction phase	EIAO-TM Annex 10, 18 ETWB TCW 2/2004 ETWB TCW No.3/2006
Table 13.8	<ul style="list-style-type: none"> • Aesthetic design of the façade of PTW and associated structures to harmonize with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area 	To minimise potential visual intrusion to existing VSRs and compensate the possible loss of greenery from the Project	DSD	All the works areas, PTWs and SCISTW	Operation phase	EIAO-TM Annex 10, 18 ETWB TCW 2/2004 ETWB TCW No.3/200
<i>J Hazard to Life</i>						
14A.198 & 14A.203	<ul style="list-style-type: none"> • Limiting magnitude of ground settlement associated with shafts & tunnels construction, excavation and seawall demolition to 13mm and subject to requirements from relevant authorities. 	To prevent damage to gas facilities with the HKCG Depot.	Contractor	Vibration and ground monitoring along boundary of HKCG Depot and perimeter of the gas holder for the Aberdeen project	Construction Phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
14A.199 & 14A.204	<ul style="list-style-type: none"> Limiting of the vibration levels associated with the blasting programme for the Tunnel P, shafts and other construction works (including demolition & reconstruction of seawall, excavation for seawater pump house at the Aberdeen PTW) at the PTW sites to a peak particle velocity of 5mm/s and subject to requirements from relevant authorities. Moving array of sensors will be used as the tunnel is advanced. 	To prevent any structural damage to HKCG Aberdeen Depot and Ap Lei Chau Shell Depot particularly the LPG compound.	Contractor	Monitoring will be undertaken at ground level.	Construction Phase	
14A.201	<ul style="list-style-type: none"> Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone. 	To ensure allowable limits are not exceeded	Contractor	Exact location will be determined on site by the engineer	Construction Phase	
14A.205	<ul style="list-style-type: none"> Installation of gas leakage detector/alarm system in LPG compound at Ap Lei Chau Site. 	To provide early warning of gas leakage in the LPG facilities	Contractor	Exact location will be determined on site by the contractor with the approval of SHELL.	Construction Phase	
14A.206	<ul style="list-style-type: none"> Establish emergency plan and procedures 	To evacuate construction workers to a safe place during gas leakage in the gas facilities	Contractor	Construction sites for Aberdeen and Ap Lei Chau PTWs	Construction Phase	
14C.64	<p><i>Special Chemical Supply Contract Arrangement</i></p> <ul style="list-style-type: none"> A separate supply contract will be awarded for each of the three chemicals (sodium hypochlorite, sodium 	To minimize the risk due to chemicals-related operation	DSD	SCISTW	Operational phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	<p>bisulphite and ferric chloride solutions).</p> <p>Chemical supplier will be required to provide dedicated transport specifically used for delivering the chemical to be supplied, and the road tankers will need to be registered with SCISTW. In addition, the supply contract for sodium hypochlorite will specify that the delivery barge provided will be dedicated for delivering sodium hypochlorite directly and exclusively from the supplier's production plant to SCISTW during the contract period. The delivery barge will not be allowed to provide other services, such as carrying other chemical or carrying chemicals to other facilities other than SCISTW.</p>	To minimize the risk due to chemicals-related operation	Chemical Supplier	SCISTW	Operational phase	
14C.71-14C.72	<p><i>Dedicated Chemical Delivery Route and Road Signs</i></p> <ul style="list-style-type: none"> • Specific road tanker transport route will be assigned to each chemical. • Provide road signs on service road indicating the route to specific chemical storage area. 	To minimize the risk due to chemicals-related operation	DSD and chemical supplier	SCISTW	Operational phase	
4C.73	<p><i>Security of Chemical Loading Points</i></p> <ul style="list-style-type: none"> • Chemical delivery staff will need to register with SCISTW staff upon entering the site. Loading points for ferric chloride, sodium hypochlorite and sodium bisulphite will be secured by locks and the keys will be kept by SCISTW staff. The chemical unloading operation cannot start without presence of SCISTW staff to open the locks 	To minimize the risk due to chemicals-related operation	DSD and chemical supplier	SCISTW	Operational phase	
14C.77	<p><i>Clear Labelling of Chemicals-related Equipment</i></p>	To minimize the risk due to chemicals-related	Chemical Supplier	SCISTW	Operational phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	<ul style="list-style-type: none"> • Provide clear and sufficient signage / labels to indicate the identity (i.e. for which chemical) of each tank farm and associated equipment including pipelines, loading points and loading hoses. 	operation				
14.C78	<p><i>Ensuring Quality of Chemical Supplier</i></p> <ul style="list-style-type: none"> • Only appoint chemical suppliers with satisfactory quality system. • Request the chemical supplier to employ an independent checker to audit the quality and safety management system of the supplier • The chemical supplied to SCISTW can only be produced in designated chemical production plants and delivered directly from designated locations. This measure will be included in the chemical supply contract 	To minimize the risk due to chemicals-related operation	DSD / chemical supplier	N/A	Operational phase	
14C.79-14C.84	<p><i>Procedural Control of Chemical Unloading Operation</i></p> <ul style="list-style-type: none"> • Develop clear procedural controls for barge / road tanker filling and unloading operation 	To minimize the risk due to chemicals-related operation	DSD	N/A	Operational phase	
	<ul style="list-style-type: none"> • SCISTW staff will be present at the tank area to receive the barge / road tanker, check barge / road tanker labels, check the transport documents carried by the barge crew / road tanker driver, check type, size and colour of coupling and hose coupler, conduct chemical analysis to check the identity of delivered chemical and only then authorize the driver to unload the content. 	To minimize the risk due to chemicals-related operation	DSD and Chemical Supplier	SCISTW	Operational phase	
	<ul style="list-style-type: none"> • Chemical supplier needs to fax or electronically transmit copies of delivery bills-of-lading information and barge crew / road tanker driver identification to SCISTW prior to delivery barge / road tanker arriving on-site. Such 	To minimize the risk due to chemicals-related operation	Chemical Supplier	SCISTW	Operational phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	<p>information will be in compliance with the supplier's independently accredited quality assurance system (to ISO:9000 or equivalent).</p> <ul style="list-style-type: none"> • Conduct chemical analysis to confirm the right chemical is delivered. The analysis needs to be conducted by SCISTW staff or independent checker before the chemical is authorized to be unloaded to the tank farm • If the coupling of hose connected to the barge / road tanker is found to be unmatched with the coupling of loading point of tank farm, chemical unloading operation must not proceed and the situation must be reported to the SCISTW management for follow-up actions • Chain-of-custody documentation system will be used to ensure both the supplier (factory) and SCISTW staffs have checked the chemical identity and the consistency of the chemical analysis result 					
4C.88	<p><i>Special Arrangement of SCISTW Public Event</i> _ Public evens might sometimes be held in SCISTW which allow access of public to the plant facilities. As a precautionary measure, chemical delivery operation will be suspended on days of SCISTW public event. Also, public members visiting the SCISTW will be guided by DSD staff and will not be allowed to visit the area near the chemical storage locations in SCISTW.</p>	To minimize the risk due to chemicals-related operation	DSD	SCISTW	Operational phase	
4C.167	<ul style="list-style-type: none"> • Increase the height to 3.0m of a (12m + 10m =) 22m long section of the bund wall around the northernmost storage tank (which is the tank closest to the hypochlorite pipeline to the west). 	To prevent mixing of ferric chloride and hypochlorite in case of simultaneous failure of storage tank and pipelines	DSD	SCISTW	Design phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
14C.180	<p><i>Mitigation measures during construction protecting the sodium hypochlorite pipelines and ferric chloride tank farm.</i></p> <p><i>General:</i></p> <ul style="list-style-type: none"> • Employ vibration detectors and settlement markers • Develop action plan(s) for situations where vibration or settlement level is found to exceed the set limits • Designated delivery route and off-loading area for delivery trucks • Close supervision and monitoring by safety officers. If there is any construction work within 2m of the pipelines, an immediate inspection to the pipeline section and the impervious membrane wrapping should be conducted to ensure no damage to the integrity of the pipeline and the membrane Report any damage of the disinfection facilities to operators for remedial actions. • Provide indication / signs for sodium hypochlorite and ferric chloride pipelines • Regular checking of chemical delivery pipelines • Provide a physical barrier between the sodium hypochlorite tanks and the ferric chloride tanks during the construction stage before the new above ground structures for HATS Stage 2A are erected <p><i>Other construction activities:</i></p> <ul style="list-style-type: none"> • Excavation running close or parallel to sodium hypochlorite delivery pipelines and associated impervious membrane wrapping under road / pavement shall be avoided as far as possible • Use bore piles instead of percussion piles in order to keep vibration to a minimum • Maximise the distance between piling and delivery pipelines, as well as the associated impervious membrane 	To minimize the risk of damaging the disinfection facilities	Contracto	Construction Site at SCISTW	Construction phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
	wrapping. Monitor vibration resulted from construction works to ensure the velocity and amplitude of vibration limit will not be exceeded <ul style="list-style-type: none"> • Conduct hazard assessment for E&M installation and obtain Hot Work Permit before starting welding / hot works • Check and certify the stability of the construction equipment • Location of any large-scale or high-elevated equipment should be agreed with SCISTW operator before delivery • Confine hot works in designated areas. • Area within the boundaries of chemical storage facilities are subject to hazardous area control • Maximise the distance between the tunnel shaft and delivery pipelines 					
<i>K Cultural Heritage</i>						
Tables 15.8 - 15.11	<ul style="list-style-type: none"> • The construction vibration control limit (ppv of 25mm/s) shall be strictly followed 	To minimize vibration impacts on the identified vibration sensitive historical buildings.	Project Proponent	Identified historical Buildings /structures as mentioned in Tables 15.8, 15.9, 15.10 and 15.11	During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
15.70	<ul style="list-style-type: none"> Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme 	To ensure that acceptable vibration limits for historical buildings are not exceeded	Project Proponent	Identified historical buildings/structures as mentioned in Tables 15.8, 15.9, 15.10 and 15.11	During blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/structures	

**APPENDIX B
SITE AUDIT SUMMARY**

**Contract No. DC/2008/09 – HATS Stage 2A
Construction of Sewage Conveyance System
From Ap Lei Chau to Aberdeen**

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	100106
Date	6 January 2010 (Wednesday)
Time	16:00-17:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	B. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	•	
	G. Reminders	
100106-R01	• Properly maintain the excavator to prevent dust emission.	C16
	H. Others	
	• NIL	

	Name	Signature	Date
Recorded by	Ivy Tam		6 January 2010
Checked by	Dr. Priscilla Choy		6 January 2010

**Contract No. DC/2008/09 – HATS Stage 2A
Construction of Sewage Conveyance System
From Ap Lei Chau to Aberdeen**

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	100112
Date	12 January 2010 (Tuesday)
Time	09:30-11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	B. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Reminders	
100112-R01	• Clear the ponding/stand water presented especially after raining	B8
100112-R02	• Cover the stockpile at ABD-PTW	C6
	H. Others	
100106-R01	• Follow-up on previous audit section (Ref. No.:100106), all environmental deficiencies were improved/rectified by the Contractor.	C16

	Name	Signature	Date
Recorded by	Kin Chan		12 January 2010
Checked by	Dr. Priscilla Choy		12 January 2010

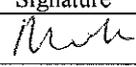
**Contract No. DC/2008/09 – HATS Stage 2A
Construction of Sewage Conveyance System
From Ap Lei Chau to Aberdeen**

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	100122
Date	22 January 2010 (Friday)
Time	10:00-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	B. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Reminders	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
100112-R01 100112-R02	• Follow-up on previous audit section (Ref. No.:100112), all environmental deficiencies were improved/rectified by the Contractor.	B8, C6

	Name	Signature	Date
Recorded by	Mark Fong		25 January 2010
Checked by	Dr. Priscilla Choy		25 January 2010

Contract No. DC/2008/09 – HATS Stage 2A
Construction of Sewage Conveyance System
From Ap Lei Chau to Aberdeen

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	100126
Date	26 January 2010 (Tuesday)
Time	10:00-11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	B. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Noise	
	• No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	E. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Reminders	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	• Follow-up on previous audit section (Ref. No.:100122), all environmental deficiencies were improved/rectified by the Contractor.	

	Name	Signature	Date
Recorded by	Mark Fong		28 January 2010
Checked by	Dr. Priscilla Choy		28 January 2010

**APPENDIX C
SUMMARY OF WASTE GENERATION
IN THE REPORTING MONTH**

Appendix C Waste Flow Table

Contract No.: DC/2008/09

Estimated Volume of Monthly Waste Flow Table for 2009 to 2011

Month	Estimated Quantities of Inert C&D Materials Generated Monthly					Estimated Quantities of C&D Wastes Generated Monthly				
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Broken Concrete	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed in Public Fill	(f) Metals	(g) Paper/cardboard packaging	(h) Plastics	(i) Chemical Waste	(j) Others, e.g. general refuse disposed at Landfill
	ton	ton	ton	ton	ton	ton	ton	ton	ton	ton
Jul	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	2
Dec	193	20	0	0	173	0	0	0	0	2
Sub-total	193	20	0	0	173	0	0	0	0	4
Jan	50	30	0	0	20	0	0	0	0	2
Feb	350	0	0	0	350	0	0	0	0	2
Mar	380	0	0	0	380	0	0	0	1	24
Apr	380	0	0	0	380	0	0	0	0	24
May	410	0	0	0	410	20	0	0	1	24
Jun	200	0	0	0	200	0	0	0	0	24
Jul	230	0	0	0	230	0	0	0	0	24
Aug	230	0	0	0	230	0	0	0	1	24
Sep	230	0	0	0	230	0	0	0	0	24
Oct	170	0	0	0	170	0	0	0	0	24
Nov	90	0	0	0	90	0	0	0	1	24
Dec	240	10	0	0	230	0	0	0	0	24
Sub-total	2960	40	0	0	2920	20	0	0	4	244
Jan	240	10	0	0	230	0	0	0	0	24
Feb	240	10	0	0	230	0	0	0	1	24
Mar	180	10	0	0	170	20	0	0	0	24
Apr	170	0	0	0	170	0	0	10	0	24
May	170	0	0	0	170	0	0	0	1	24
Jun	170	0	0	0	170	20	0	0	0	24
Jul	10	10	0	0	0	0	0	0	0	12
Aug	0	0	0	0	0	0	0	0	0	12
Sub-total	1180	40	0	0	1140	40	0	10	2	168
Total	4333	100	0	0	4233	60	0	10	6	416

APPENDIX D
EVENT/ACTION PLANS

APPENDIX D – Event / Action Plans

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

Table C-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 E
COMPLAINT LOG**

APPENDIX E – COMPLAINT LOG

Reporting Month: January, 2010

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

Remarks: No environmental complaint was received in January 2010.

**APPENDIX F
ENVIRONMENTAL MONITORING
SCHEDULES**

Contract No. DC/2007/24 Harbour Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun
Impact Air and Noise Monitoring Schedule for January 2010

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

Noise Monitoring Station:

M8 (Aberdeen PTW) - The roof of Wah Lai House

Air Monitoring Station:

CM_AB1, The Hong Kong Ice and Cold Storage

Remark: Monitoring for Aberdeen section is provided by DC/2007/24

Contract No. DC/2007/24 Harbour Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun
Tentative Impact Air and Noise Monitoring Schedule for February 2010

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

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

Noise Monitoring Station:

M8 (Aberdeen PTW) - The roof of Wah Lai House

Air Monitoring Station:

CM_AB1, The Hong Kong Ice and Cold Storage

Remark: Monitoring for Aberdeen section is provided by DC/2007/24

APPENDIX G
CONSTRUCTION PROGRAMME

Contract No. DC/2008/09
 Harbour Area Treatment Scheme Stage 2A
 Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen
 Works Programme for Progress Report No. 5

ID	Task Name	Duration	Actual Start	Actual Finish	Start	Finish	Free Slack	% Complete	2010												2011												2012											
									1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	Key Dates	1108 days	Tue 4/8/09	NA	Tue 4/8/09	Wed 15/8/12	0 days	0%																																				
2	Letter of Acceptance	0 days	Tue 4/8/09	Tue 4/8/09	Tue 4/8/09	Tue 4/8/09	0 days	100%																																				
3	Contract Commencement	0 days	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	0 days	100%																																				
4	Section I Completion (comprises all Works not included in other Sections)	0 days	NA	NA	Tue 16/8/11	Tue 16/8/11	0 days	0%																																				
5	Section II Completion (comprises Landscape Works)	0 days	NA	NA	Wed 15/8/12	Wed 15/8/12	0 days	0%																																				
6	Section III Completion (comprises preservation and protection of existing trees in all Portions of the Site)	0 days	NA	NA	Tue 16/8/11	Tue 16/8/11	0 days	0%																																				
7	Site Possession	0 days	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	0 days	100%																																				
8	Site Portion Abd-I	0 days	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	0 days	100%																																				
9	Site Portion AbdPTW-iii	0 days	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	0 days	100%																																				
10	Site Portion ALC-I	0 days	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	0 days	100%																																				
11	Site Portion THK1853	0 days	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	Mon 17/8/09	0 days	100%																																				
12	Submission	478 days	Mon 17/8/09	NA	Mon 17/8/09	Tue 7/12/10	39 days	54%																																				
13	Submission of HDD Method Statement	140 days	Mon 17/8/09	NA	Mon 17/8/09	Sun 3/1/10	0 days	90%																																				
14	Approval of HDD Method Statement	14 days	NA	NA	Mon 4/1/10	Sun 17/1/10	45 days	0%																																				
15	Submission of HDD Profile	140 days	Mon 17/8/09	NA	Mon 17/8/09	Sun 3/1/10	0 days	90%																																				
16	Approval of HDD Profile	14 days	NA	NA	Mon 4/1/10	Sun 17/1/10	45 days	0%																																				
17	Material Submission of HDPE Pipe	30 days	NA	NA	Thu 4/3/10	Fri 2/4/10	0 days	0%																																				
18	Approval of HDPE Pipe	14 days	NA	NA	Sat 3/4/10	Fri 16/4/10	0 days	0%																																				
19	Submission of Design for Construction of Trust Block for Bent Pipe at AbdPTW-iii	45 days	NA	NA	Sun 10/10/10	Tue 23/11/10	0 days	0%																																				
20	Approval of Design for Construction of Trust Block for Bent Pipe at AbdPTW-iii	14 days	NA	NA	Wed 24/11/10	Tue 7/12/10	21 days	0%																																				
21	Submission of Method Statement of Construction of Seawater Intake Pipe	45 days	NA	NA	Sun 10/10/10	Tue 23/11/10	0 days	0%																																				
22	Approval of Method Statement of Construction of Seawater Intake Pipe	14 days	NA	NA	Wed 24/11/10	Tue 7/12/10	21 days	0%																																				
23	Procurement	270 days	NA	NA	Fri 16/4/10	Tue 11/1/11	20 days	0%																																				
24	Order Placement of HDPE Pipe for Q1	0 days	NA	NA	Thu 15/7/10	Thu 15/7/10	0 days	0%																																				
25	Order Placement of HDPE Pipe for Q2	0 days	NA	NA	Fri 16/4/10	Fri 16/4/10	0 days	0%																																				
26	Delivery of HDPE Pipe for Q1	90 days	NA	NA	Fri 16/7/10	Wed 13/10/10	0 days	0%																																				
27	Delivery of HDPE Pipe for Q2	90 days	NA	NA	Sat 17/4/10	Thu 15/7/10	0 days	0%																																				
28	Order Placement of HDPE Pipe (at Trust Blocks area)	90 days	NA	NA	Fri 16/7/10	Wed 13/10/10	0 days	0%																																				
29	Delivery of HDPE Pipe (at Trust Blocks area)	90 days	NA	NA	Thu 14/10/10	Tue 11/1/11	67 days	0%																																				
30	Preliminary Works	189 days	Mon 17/8/09	NA	Mon 17/8/09	Sun 21/2/10	10 days	94%																																				
31	Site Clearance	42 days	Mon 17/8/09	Sun 27/9/09	Mon 17/8/09	Sun 27/9/09	0 days	100%																																				
32	Erection of Hoarding and Fencing	75 days	Fri 18/9/09	Tue 1/12/09	Fri 18/9/09	Tue 1/12/09	0 days	100%																																				
33	Set-up Contractor's Office	30 days	Mon 17/8/09	Tue 15/9/09	Mon 17/8/09	Tue 15/9/09	0 days	100%																																				
34	Set-up Engineer's Office	104 days	Mon 17/8/09	Sat 28/11/09	Mon 17/8/09	Sat 28/11/09	0 days	100%																																				
35	Initial Survey	58 days	Mon 17/8/09	Tue 13/10/09	Mon 17/8/09	Tue 13/10/09	0 days	100%																																				
36	Photographic Survey	85 days	Mon 17/8/09	Mon 9/11/09	Mon 17/8/09	Mon 9/11/09	0 days	100%																																				
37	Tree Survey	34 days	Thu 22/10/09	Tue 2/11/09	Thu 22/10/09	Tue 2/11/09	0 days	100%																																				
38	Obtaining Tree Felling Permit	0 days	Tue 1/9/09	Tue 1/9/09	Tue 1/9/09	Tue 1/9/09	0 days	100%																																				
39	Identification of Utilities and Protection	48 days	Wed 16/9/09	Mon 2/11/09	Wed 16/9/09	Mon 2/11/09	0 days	100%																																				
40	Excavation Permit Application for Instrumentation Installation	50 days	Mon 5/10/09	Mon 23/11/09	Mon 5/10/09	Mon 23/11/09	0 days	100%																																				

Project: DC/2008/09
Date: 2010/01/20

Task		Summary		Rolled Up Progress		Project Summary		Critical activities	
Progress		Rolled Up Task		Split		Group By Summary			
Milestone		Rolled Up Milestone		External Tasks		Deadline			

