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
Quarterly Report No.17
January 2014 to March 2014
(Version 1.0)

Certified By _____
(Environmental Team Leader)

REMARKS:

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

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

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CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
2A Pokfulam Road, Hong Kong

20 May 2014
By Post

Attn: Mr. Danny Tang

Dear Sir,

Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation

Contract No. DC/2008/09
Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen
Submission of 17th Quarterly EM&A Report for January to March 2014 (Version 1.0)

We refer to the revised Quarterly EM&A Report for January to March 2014 (Version 1.0) received on 19 May 2014 via email. We confirm we have no further comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c.	AECOM	Mr. Edwin Tang	By email
	Paul Y.	Mr. Andrew Hui	By email
	Cinotech	Dr. Priscilla Choy	By email

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EXECUTIVE SUMMARY

Introduction

1. This is the 17th Quarterly 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 the period from January 2014 to March 2014.

2. The major site activities undertaken in the reporting quarter included:

January 2014
- Retrieval of the stuck junk basket and dummy pipe in tunnel Q1 at Abd-i and ALC-i;
- Hole swabbing of tunnel Q1;
- PU grout injection at Exit Pit at ALC-i & Tie-in pit at AbdPTW-iii; and
- Construction of Tie-in Pit at Abd-PTW-iii.

February 2014
- Hole swabbing of tunnel Q1;
- Pullback of HDPE pipes of tunnel Q1 at ALC-i and Abd-i;
- Rock excavation for riser pipe installation on Pipe Q1 and Q2;
- Pre-installation testing of riser pipe installation at ALC-i; and
- Lower decking at ALC-PTW and AbdPTW.

March 2014
- Pullback of HDPE pipes of tunnel Q1 at ALC-i and Abd-i;
- Rock excavation for riser pipe installation at AbdPTW-iii;
- Pre-installation testing of riser pipe installation at ALC-i.

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.

4. Summary of the event and action taken in the reporting quarter is tabulated in **Table I**.

Table I Summary Table for Events Recorded in the Reporting Quarter

Parameter	No. of Exceedance	No. of Events	Action Taken

	Action Level	Limit Level	Due to this Project	
1-hr TSP	0	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	2	0	N/A

Air Quality and Noise (Aberdeen PTW)

5. 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_AB1a) 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 equipments, monitoring methodology and QA/QC procedures.

1-hour TSP Monitoring

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

24-hour TSP Monitoring

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

Noise (Aberdeen PTW)

8. Noise monitoring was conducted at M8 – Wah Lai House, Wah Kwai Estate in the reporting quarter accordance with the Project Specific EM&A Manual. Since the construction works was noticed to commence in the restricted hour (1900-0700) from 19th February 2014 and completed before 6th March 2014, the additional noise monitoring at M8 in the restricted hour (1900-0700) would be produced by Cinotech Consultants Ltd.

Construction Noise

9. All construction noise monitoring was conducted as scheduled in the reporting quarter. Two Limit Level exceedances in the restricted hour were recorded on 21st February 2014 & 28th February 2014. The exceedances in the restricted hour were considered to be non-project related, please refer to Appendix K for the details.

Noise (Ap Lei Chau PTW)

10. Noise monitoring was conducted at M9 – Mei Chun Court, South Horizons in the reporting quarter accordance with the Project Specific EM&A Manual. Since the construction works was noticed to commence in the restricted hour (1900-0700) from 19th February 2014 and completed before 6th March 2014, the additional noise monitoring at M8 in the restricted hour (1900-0700) would be produced by Cinotech Consultants Ltd.

Construction Noise

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

Environmental Complaint and Prosecution

11. No environmental complaint, prosecution or notification of summons was received in this reporting quarter.

Environmental Licenses and Permits

12. 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 (CNP). Three Construction Noise Permits (GW-RS0088-14, GW-RS0090-14 and GW-RS0235-14) were granted in the reporting quarter. All permits/licenses obtained for the Project are summarized in **Appendix F.**

Key Information in the Reporting Quarter

13. Summary of key information in this reporting quarter is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Quarter

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

14. Major site activities for the coming two months will include:

- Demobilization of HDD plants at Abd-i and ALC-i;
- Reinstate the drop kerb at Lee Nam Road;
- Demobilization of construction material at THK1853; and
- Rock excavation and riser pipe installation at AbdPTW-iii.

15. The future environmental concerns will be mainly on surface runoff and ponding water due to the construction activities and rainy weather; and dust generated from loading and unloading demolished/ installed materials, demolition/ installation works and exposed stockpiles; and accumulation of C&D waste and general waste and accumulated materials to be recycled on-site; and oil spillage/ leakage from the equipment on site; noise nuisance from operation of equipments/ machineries.

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 is 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 May 2014.

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 Environmental Permit (EP-322/2008/A) was issued in July 2009 for varying 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 varying Figure 1c of the Environmental Permit (EP-322/2008/A). After, the Environmental Permit (EP-322/2008/C) was issued in May 2010 for varying condition 3.13 of Part C, and varying Figure 1b and 5 of the Environmental Permit No. EP-322/2008/B. Next, the Environmental Permit (EP-322/2008/D) was issued in July 2010 for varying Figure 1d, adding conditions 3.14 and 3.15 in Part C and adding Figure 6 to show details of the production/drop shaft of Environmental Permit No. EP 322/2008/C. And then, the updated Environmental Permit (EP-322/2008/E) was issued in November 2010 for deleting Figure 2 of the Environmental Permit No. EP-322/2008/D, adding Figures 2a and 2b, and varying Condition 3.5 in Part C. Afterward Environmental Permit (EP-322/2008/F) was issued in October 2012 for varying Condition 3.13 in Part C of the Environmental Permit No. EP-322/2008/E and varying Figure 5.

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 17th quarterly EM&A report summarizing the EM&A works conducted for the Project in the period from January 2014 to March 2014.

2 PROJECT ORGANIZATIONS

Project Organization and Contacts of Key Management

2.1 Different parties with different levels of involvement in the Project organization include:

- Permit Holder- Drainage Services Department (DSD)
- Engineer's Representative (ER) – AECOM
- Contractor - P.Y. Construction Ltd (PY)
- Environmental Team (ET) - Cinotech Consultants Ltd. (Cinotech)
- Independent Environmental Checker (IEC) - Mott MacDonald Hong Kong Ltd (MM)

2.2 The key contacts of the Project are shown in **Appendix A**.

Construction Programme

2.3 The construction programme is presented in **Appendix B**. The site activities undertaken in the reporting quarter were:

January 2014
- Retrieval of the stuck junk basket and dummy pipe in tunnel Q1 at Abd-i and ALC-i;
- Hole swabbing of tunnel Q1;
- PU grout injection at Exit Pit at ALC-i & Tie-in pit at AbdPTW-iii; and
- Construction of Tie-in Pit at Abd-PTW-iii.

February 2014
- Hole swabbing of tunnel Q1;
- Pullback of HDPE pipes of tunnel Q1 at ALC-i and Abd-i;
- Rock excavation for riser pipe installation on Pipe Q1 and Q2;
- Pre-installation testing of riser pipe installation at ALC-i; and
- Lower decking at ALC-PTW and AbdPTW.

March 2014
- Pullback of HDPE pipes of tunnel Q1 at ALC-i and Abd-i;
- Rock excavation for riser pipe installation at AbdPTW-iii;
- Pre-installation testing of riser pipe installation at ALC-i.

3 SUMMARY OF EM&A REQUIREMENTS

3.1 The EM&A Manual designated location for ET to monitor environmental impacts in term of air quality and noise due to the Project in the construction phase. The Project areas and monitoring locations are depicted in **Figure 2 and Figure 3**. **Appendix C** gives details of monitoring requirements.

3.2 Noise monitoring was conducted in accordance with the Project Specific EM&A Manual. **Appendix K** shows the established Action and Limit Levels for the environmental monitoring works.

3.3 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_AB1a)** 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.

3.4 The monitoring 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.

4 MONITORING RESULTS

Weather Conditions

4.1 The weather conditions during monitoring sessions were mainly sunny or cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

Noise (Aberdeen PTW)

4.2 Noise monitoring was conducted at M8 – Wah Lai House, Wah Kwai Estate in the reporting quarter accordance with the Project Specific EM&A Manual. Since the construction works was noticed to commence in the restricted hour (1900-0700) from 19th February 2014 and completed before 6th March 2014, the additional noise monitoring at M8 in the restricted hour (1900-0700) would be produced by Cinotech Consultants Ltd.

4.3 Two Limit Level exceedances in the restricted hour were recorded on 21st February 2014 & 28th February 2014. The exceedances in the restricted hour were considered to be non-project related, please refer to Appendix K of the DC/2008/09 October 2013 monthly EM&A report for the details.

Noise (Ap Lei Chau PTW)

4.4 All noise monitoring at station M9 were conducted as scheduled in the reporting quarter.

4.5 No Action/Limit Level exceedance was recorded during the day-time and evening-time in the reporting quarter.

4.6 The monitoring data of construction noise Levels were attached in the appendices of the Monthly Reports for January 2014 to March 2014. The graphical presentations of the noise monitoring results for the reporting quarter are shown in **Appendix J.**

5 ENVIRONMENTAL AUDIT

Implementation Status of Environmental Mitigation Measures

5.1 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Appendix E.**

Site Audit Summary

5.2 During the site inspections in the reporting quarter, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 5.1**.

Table 5.1 ET's Observations and Recommendations of Site Audits

Parameters	Date	Observations	Follow-up
Water Quality	07/01/14	Reminder: Properly clear the oil stained water near the sump pit at ALC-i.	The situation was observed improved/rectified in audit session 140114.
	14/01/14	Reminder: Properly clear the stagnant water and oil stained water in the drip tray at ALC-i.	The situation was observed improved/rectified in audit session 140121.
	21/01/14	Observation: The desilting facility should be provided for water overflow from the sediment tank at AbdPTW-iii.	The situation was observed improved/rectified in audit session 140127.
	11/02/14	Reminder: Properly clear the slurry water in the sediment tank regularly at AbdPTW-iii.	The situation was observed improved/rectified in audit session 140218.
	11/02/14	Reminder: Properly clear the stagnant water in the drip tray at ALC-i.	The situation was observed improved/rectified in audit session 140218.
	18/02/14	Reminder: Properly clear the oil stained water near the sump pit at ALC-i.	The situation was observed improved/rectified in audit session 140226.
	18/03/14	Reminder: The Contractor was reminded to provide the bunding to divert or prevent the wastewater discharging out of the site area at Abd-i.	The situation was observed improved/rectified in audit session 140326.
Air Quality	07/01/14	Reminder: The dusty material should be covered by impervious material to prevent the dust emission at Abd-i and ALC-i.	The situation was observed improved/rectified in audit session 140114.
	21/01/14	Reminder: Properly dispose the empty bentonite bags and dusty materials at ALC-i.	The situation was observed improved/rectified in audit session 140127.

Parameters	Date	Observations	Follow-up
	04/02/14	Reminder: The dusty materials should be covered by impervious materials or sprayed with water regularly to prevent the dust emission at AbdPTW-iii and ALC-i.	The situation was observed improved/rectified in audit session 140211.
	26/02/14	Reminder: The dusty material should be covered by impervious material or sprayed with water at AbdPTW-iii.	The situation was observed improved/rectified in audit session 140304.
	04/03/14	Reminder: The dusty material should be covered by impervious material to prevent the dust emission at AbdPTW-iii.	The situation was observed improved/rectified in audit session 140311.
Landscape and Visual	--	--	--
Waste / Chemical Management	31/12/13	Reminder: Properly clear the general refuse in the site area at THK1853.	The situation was observed improved/rectified in audit session 140114.
	07/01/14	Reminder: Properly clear the oil stained water near the sump pit at ALC-i.	The situation was observed improved/rectified in audit session 140114.
	07/01/14	Reminder: The drip tray should be provided for the chemical containers and the oil drum at ALC-i.	The situation was observed improved/rectified in audit session 140121.
	14/01/14	Reminder: Properly clear the stagnant water and oil stained water in the drip tray at ALC-i.	The situation was observed improved/rectified in audit session 140121.
	14/01/14	Reminder: The drip tray should be provided for the oil drum at ALC-i.	The situation was observed improved/rectified in audit session 140121.
	21/01/14	Reminder: Properly place and store the oil pump and chemical containers at ALC-i.	The situation was observed improved/rectified in audit session 140127.
	21/01/14	Reminder: Properly clear the oil stain at ALC-i.	The situation was observed improved/rectified in audit session 140211.
	21/01/14	Reminder: Properly dispose the empty bentonite bags and dusty materials at ALC-i.	The situation was observed improved/rectified in audit session 140127.
	27/01/14	Reminder: Clear the oil stain on the ground at Portion ALC-i.	The situation was observed improved/rectified in audit session 140211.
	04/02/14	Reminder: The drip tray should be provided for the chemical container at ALC-i.	The situation was observed improved/rectified in audit session 140211.

Parameters	Date	Observations	Follow-up
	04/02/14	Reminder: The oil stain on the paved area should be cleared properly at ALC-i.	The situation was observed improved/rectified in audit session 140211.
	18/02/14	Reminder: The Contractor was reminded to keep the drip tray in a good condition at ALC-i.	The situation was observed improved/rectified in audit session 140226.
	18/02/14	Reminder: Properly clear the oil stained water near the sump pit at ALC-i.	The situation was observed improved/rectified in audit session 140226.
	26/02/14	Reminder: The chemical containers should be provided with chemical labels at ALC-i.	The situation was observed improved/rectified in audit session 140304.
	04/03/14	Reminder: Properly clear the light tube at ALC-i.	The situation was observed improved/rectified in audit session 140311.
	04/03/14	Reminder: The chemical container should be stored in the drip tray at ALC-i.	The situation was observed improved/rectified in audit session 140311.
	11/03/14	Reminder: The chemical containers should be provided with the drip tray at ALC-i.	The situation was observed improved/rectified in audit session 140318.
	26/03/14	Reminder: Properly clear the oil stain at Abd-i.	The situation was observed improved/rectified in audit session 140401.
Permits/ Licenses	--	--	--

Status of Environmental Licensing and Permitting

5.3 All permits/licenses obtained for the Project are summarized in **Appendix F**.

Status of Waste Management

5.4 In this reporting period, inert Construction and Demolition (C&D) waste was the main C&D wastes disposed in Public Fill and 0 ton of chemical waste was generated. The amount of wastes generated by the activities of the Project updated to March 2014 was attached in **Appendix G**.

Implementation Status of Event/ Action Plans

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

Aberdeen PTW

1-hr TSP

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

24-hr TSP

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

Construction Noise

5.8 All construction noise monitoring was conducted as scheduled in the reporting month. Two Limit Level exceedances in the restricted hour at M8 were recorded on 21st February 2014 & 28th February 2014. The exceedances in the restricted hour at M8 were considered to be non-project related, please refer to Appendix K of the DC/2008/09 February 2014 monthly EM&A report for the details.

Ap Lei Chau PTW

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

6 NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

Summary of Exceedances

6.1 Environmental monitoring works were performed in the reporting quarter. A summary of exceedance is attached in **Appendix I.**

6.2 No Action/ Limit Level exceedance was recorded for 1-hour TSP, 24-hour TSP of air quality and two Limit Level exceedances were recorded for Noise monitoring in the reporting quarter.

Review of the Reason for and the Implication of Non-compliance

6.3 There is no non-compliance from the site audit in the reporting quarter. The observation and recommendations made in each individual site audit session were presented in the **Table 4.1.**

Summary of action taken in the event of and follow-up on non-compliance

6.4 There was no particular action taken since no non-compliance was observed from site audits in the reporting quarter.

Environmental Complaints

6.5 No environmental complaint was received in the reporting quarter. The updated Complaint Log is attached in **Appendix H**.

Notification of Summons and Successful Prosecutions

6.6 No environmental prosecution was recorded in the reporting quarter.

7 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

Construction Program for the Coming Two Months

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

- Demobilization of HDD plants at Abd-i and ALC-i;
- Reinstate the drop kerb at Lee Nam Road;
- Demobilization of construction material at THK1853; and
- Rock excavation and riser pipe installation at AbdPTW-iii.

Key Issues for the Coming Months

7.2 Key issues to be considered in the coming months include:

- Surface runoff generated from the construction activities;
- Silty surface runoff generated from the site area during raining; and
- Dust emission from loading and unloading demolished/ installed materials, demolition/ installation works and exposed stockpiles;
- Dust generation should be mitigated by adequate water spraying;
- Noise nuisance from operation of equipments/ machineries;
- Formation of stagnant water on site due to rain;
- Mosquito breeding due to the stagnant water around the site areas;
- Accumulation of C&D waste and general waste on site;
- Accumulated materials to be recycled on-site; and
- Oil spillage/ leakage from the equipment on site.

Recommendations

7.3 According to the environmental audits performed in the reporting quarter, the following recommendations were made:

Water Quality

- To avoid accumulation of ponding/ stagnant/ oil stained water in the site area;
- To avoid any discharge or accidental spillage of water or material directly from the equipment/plant; and
- To avoid any discharge of wastewater by-pass/ without the desilting facilities from the construction site.

Air Quality

- To remain good site practice on handling excavated or dusty material for dust suppression (e.g. stockpiles of material shall be covered by tarpaulin).

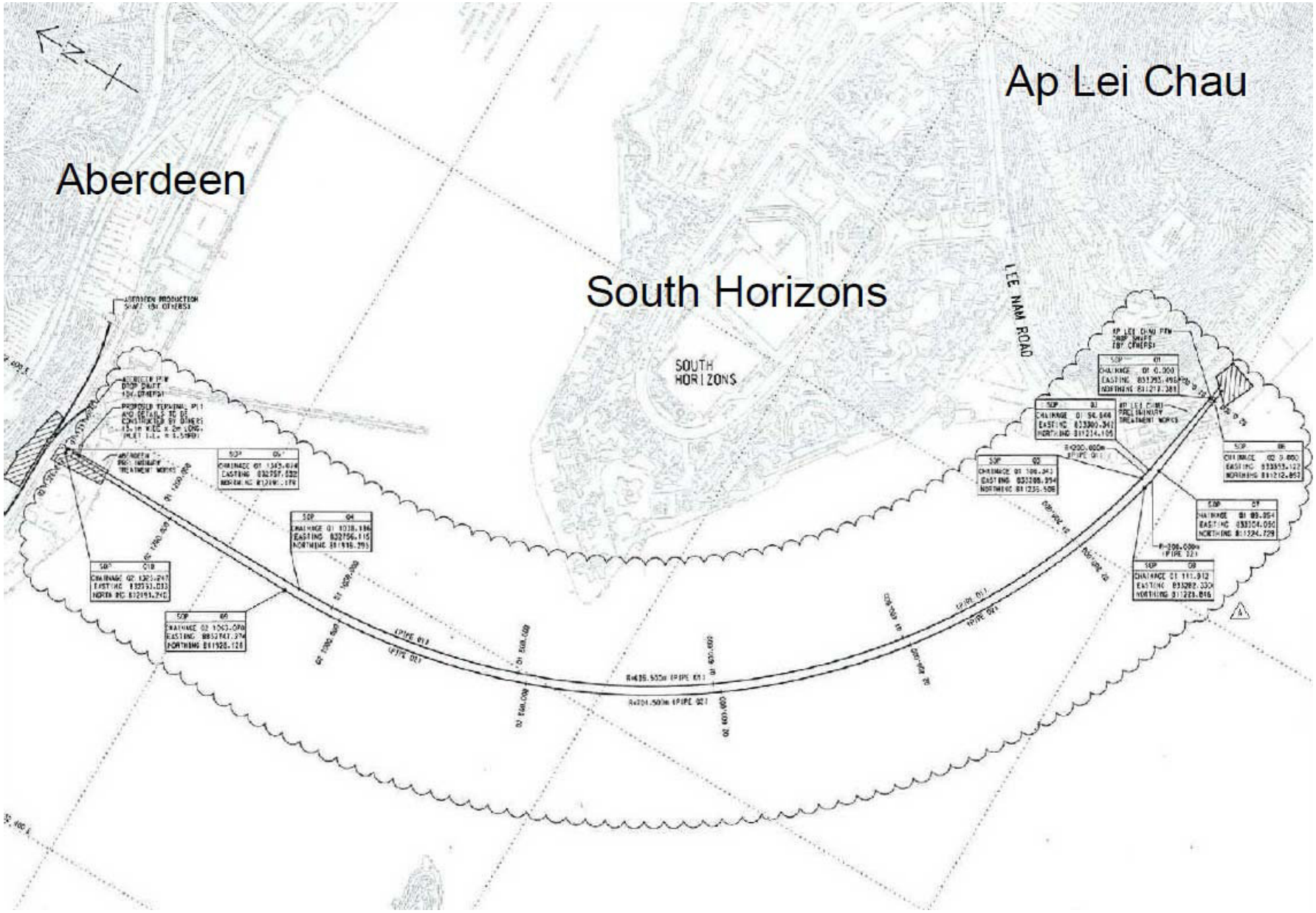
Waste / Chemical Management

- To check for any accumulation of wasted materials or rubbish on site;
- To provide proper and sufficient storage area or drip trays for oil containers on site;
- To properly clear the oil stain and the light tube as chemical waste; and
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment.

Complaints and Prosecutions

7.4 No environmental prosecutions and complaints were received in the reporting quarter.

FIGURES

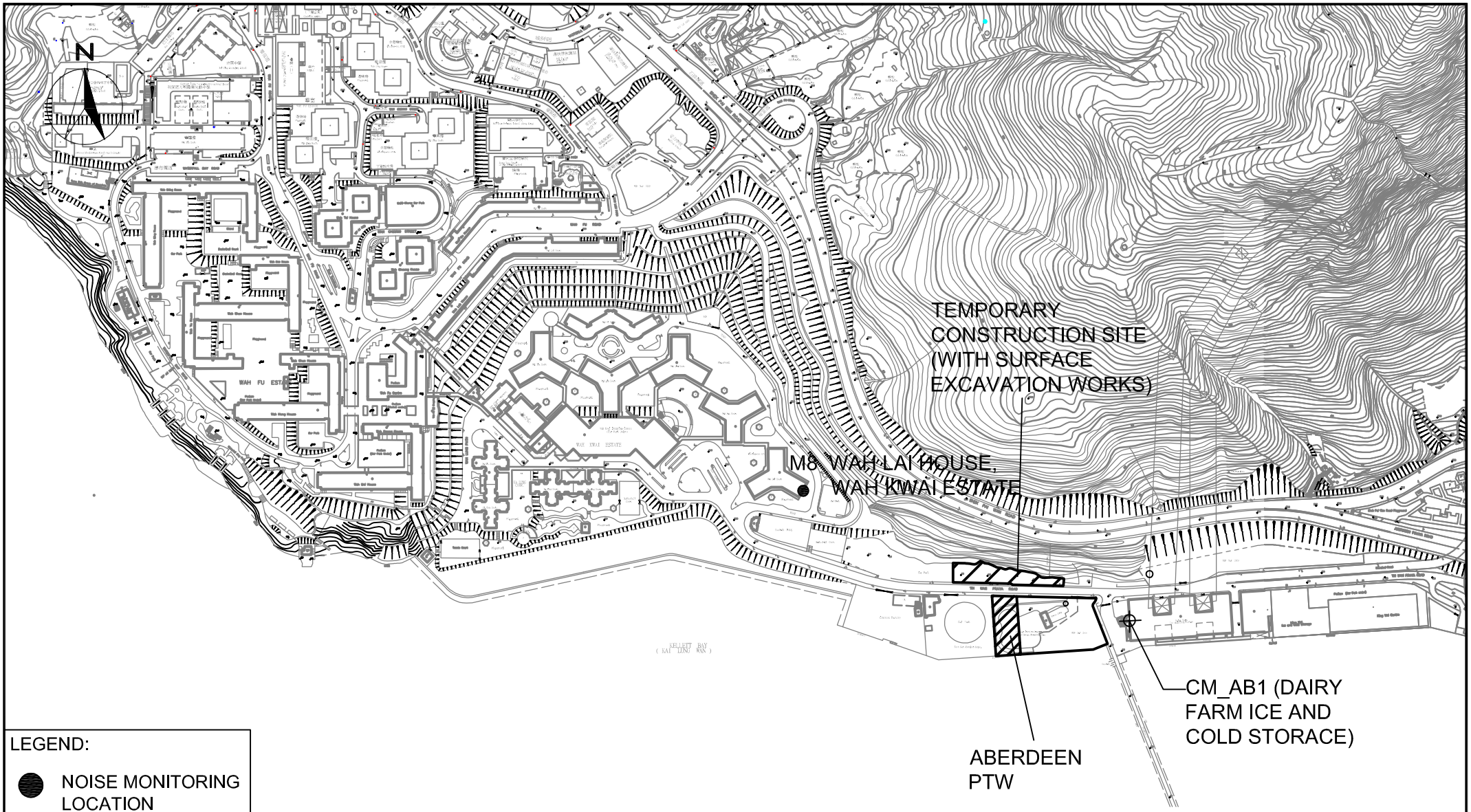


CONTRACT NO. DC/2008/09
Harbour Area Treament Scheme Stage 2A Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen

Site Layout Plan

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

CINOTECH

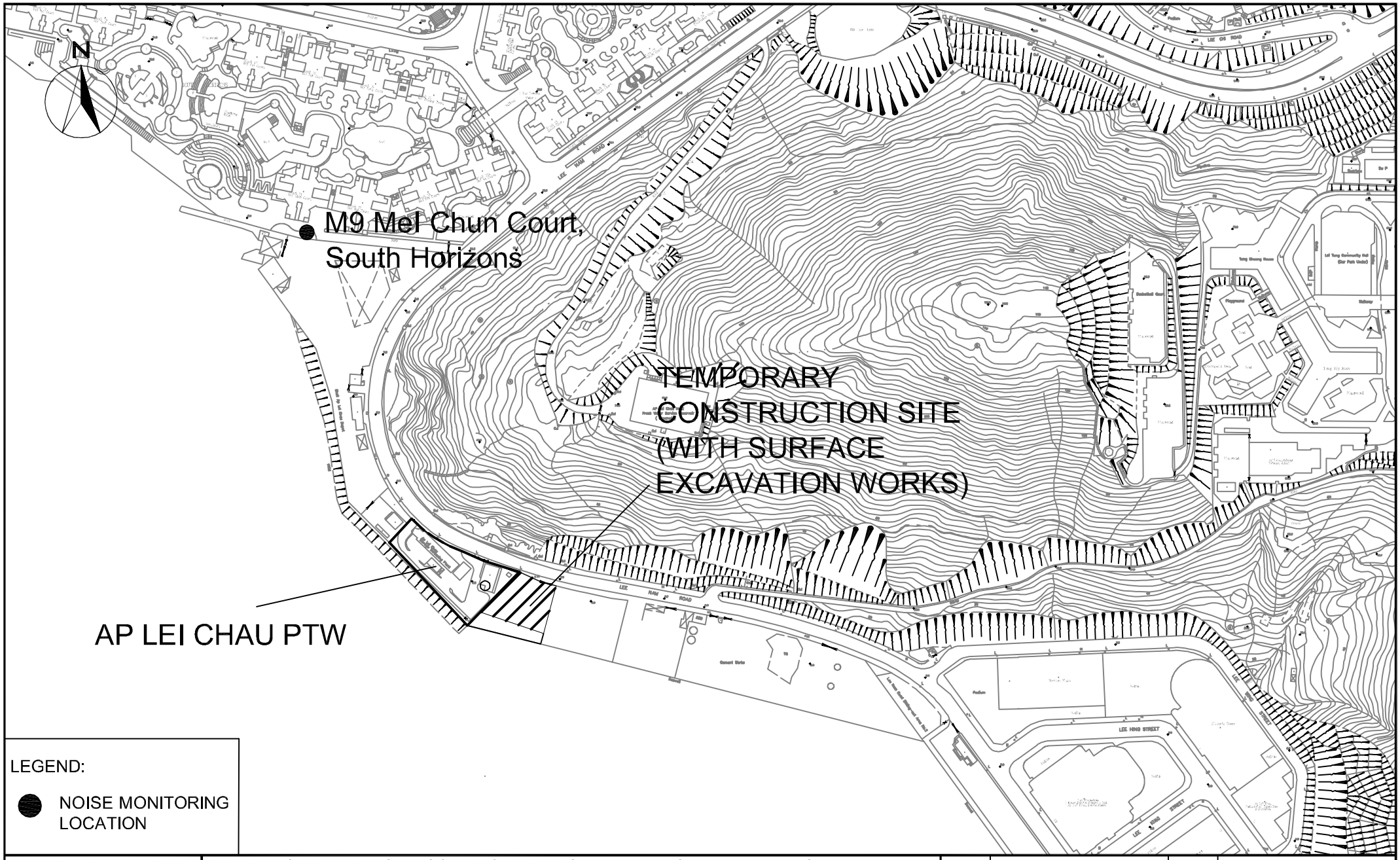


CINOTECH
Cinotech Consultants Limited

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 -

F:/Projects_Drawings\MA9042



LEGEND:

● NOISE MONITORING LOCATION

CINOTECH
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Contract NO. DC/2008/09-HATS stage 2A Construction of sewage Conveyance System from Ap Lei Chau to Aberdeen
LOCATIONS OF CONSTRUCTION NOISE MONITORING STATIONS - AP LEI CHAU PTW

SCALE	N.T.S.	DATE	FEB 2010
CHECK	IT	DRAWN	MF
JOB No.	MA9042	FIGURE NO.	FIG 3
		REV	-

F:\Projects_Drawings\MA9042

APPENDIX A
Contact Details of the Project Organisation

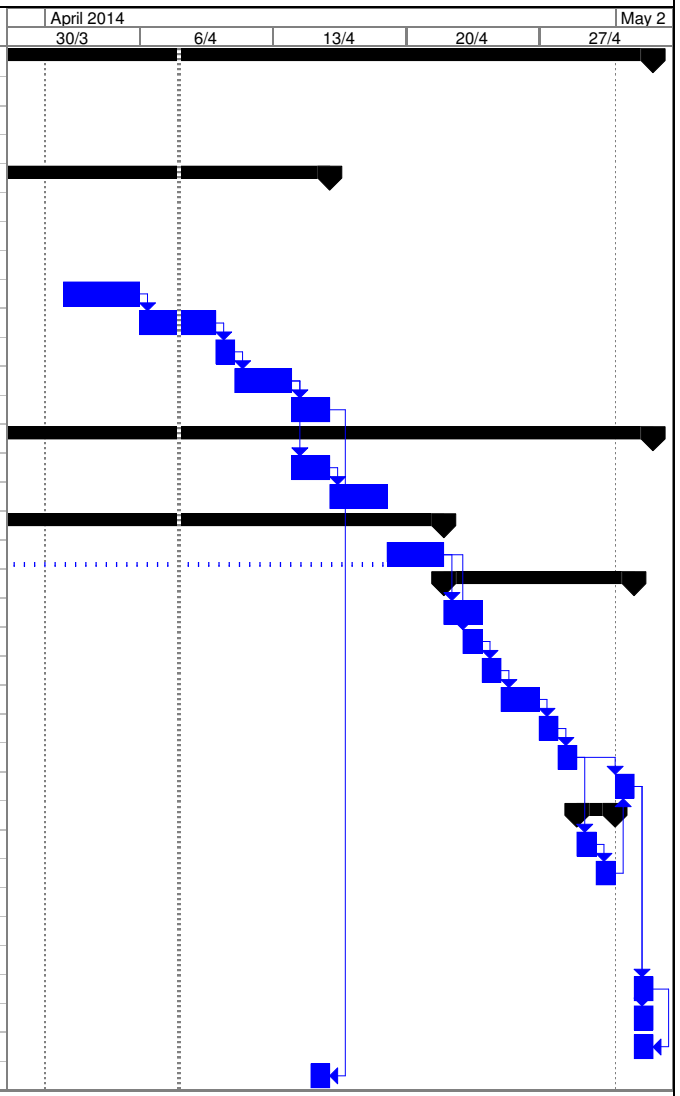
Appendix A - Contact Details of the Project Organisation

Party	Role	Name	Position	Phone No.	Fax No.
DSD	Project Proponent	Mr. K.W. Mo	Engineer	9253 3975	N/A
AECOM	Engineer's Representative	Mr. Edwin SW Tang	Senior Resident Engineer	6336 6813	2603 7883
P.Y. Construction Ltd	Contractor	Mr. Alan Wong	Environmental Officer	6900 1682	2833 5604
		Ms. Emily Law	Assistant Environmental Officer	9134 8190	
Cinotech	Environmental Team	Dr. Priscilla CHOY	Environmental Team Leader	2151 2089	3107 1388
		Ms. Janet Wai	Project Coordinator and Audit Team Leader	2151 2078	
		Mr. Henry LEUNG	Monitoring Team Leader	2151 2087	
Mott MacDonald Hong Kong Ltd	Independent Environmental Checker	Dr. Anne F Kerr	Independent Environmental Checker	2828 5793	2827 1823

APPENDIX B
Construction Programme

Contract No. DC/2008/09
Habour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen
Remaining Works Programme (Anticipated on 3 April 2014)

ID	% Complete	Task Name	Duration	Start	Finish
1	45%	**Works of Section 1**	**85 days**	**Fri 7/2/14**	**Fri 2/5/14**
2					
3	**100%**	**HDD Operations for Tunnel Q1**	**13 days**	**Tue 18/2/14**	**Sun 2/3/14**
4	100%	Pipe pulling (24hrs operation)	13 days	Tue 18/2/14	Sun 2/3/14
5	**0%**	**Construction in Open Pit at ALC**	**37 days**	**Mon 10/3/14**	**Tue 15/4/14**
6	0%	Remove sand bags	7 days	Mon 10/3/14	Sun 16/3/14
7	0%	Disposal surplus bentonite	10 days	Mon 17/3/14	Wed 26/3/14
8	0%	Remove 44" steel casing collar	2 days	Thu 27/3/14	Fri 28/3/14
9	0%	Strengthening ELS	4 days	Wed 2/4/14	Sat 5/4/14
10	0%	Cutting steel casing	4 days	Sun 6/4/14	Wed 9/4/14
11	0%	Install Holding Pipe	1 day	Thu 10/4/14	Thu 10/4/14
12	0%	Cement Bentonite Grout	3 days	Fri 11/4/14	Sun 13/4/14
13	0%	Reinstatement for the decking	2 days	Mon 14/4/14	Tue 15/4/14
14	**56%**	**Construction in Tie-in Pit at Abd PTW-iii**	**85 days**	**Fri 7/2/14**	**Fri 2/5/14**
15	0%	Annulus grouting from Entry Pit	2 days	Mon 14/4/14	Tue 15/4/14
16	0%	Water tightness in bottom Tie-in Pit	3 days	Wed 16/4/14	Fri 18/4/14
17	**70%**	**Further Excavation down to HDPE pipes**	**74 days**	**Fri 7/2/14**	**Mon 21/4/14**
18	70%	- Tunnel Q1 & 2	44 days	Fri 7/2/14	Mon 21/4/14
19	**0%**	**Installation of HDPE bent pipes**	**10 days**	**Tue 22/4/14**	**Thu 1/5/14**
20	0%	- Modification of decking	2 days	Tue 22/4/14	Wed 23/4/14
21	0%	- Mobilization of mobile crane & Remove of Gantry Crane	1 day	Wed 23/4/14	Wed 23/4/14
22	0%	- Cut HDPE Pipes, Re-round the cut end	1 day	Thu 24/4/14	Thu 24/4/14
23	0%	- Install PE bends	2 days	Fri 25/4/14	Sat 26/4/14
24	0%	- Install scafolding and supports	1 day	Sun 27/4/14	Sun 27/4/14
25	0%	- Install Q1 Horizontal bends	1 day	Mon 28/4/14	Mon 28/4/14
26	0%	- Install remaining riser pipes	1 day	Thu 1/5/14	Thu 1/5/14
27	**0%**	**Construction of thrust blcoks**	**2 days**	**Tue 29/4/14**	**Wed 30/4/14**
28	0%	Fixing Reinforcement	1 day	Tue 29/4/14	Tue 29/4/14
29	0%	Concreting	1 day	Wed 30/4/14	Wed 30/4/14
30	**100%**	**Post-installation pressure test for Q1**	**8 days**	**Mon 3/3/14**	**Mon 10/3/14**
31	100%	- Installation of the blank flange and the extended pipe	4 days	Mon 3/3/14	Thu 6/3/14
32	100%	- Pressure testing	4 days	Fri 7/3/14	Mon 10/3/14
33	0%	**Backfill for vertical access shaft by lean concrete**	**1 day**	**Fri 2/5/14**	**Fri 2/5/14**
34	**0%**	**Grouting Abandon Pipes with Foam Concrete at Aberdeen Site**	**1 day**	**Fri 2/5/14**	**Fri 2/5/14**
35	**0%**	**Handover of Aberdeen PTW Remaining Site**	**1 day**	**Fri 2/5/14**	**Fri 2/5/14**
36	**0%**	**Handover of Ap Lei Chau PTW Remaining Site**	**1 day**	**Tue 15/4/14**	**Tue 15/4/14**



Project: Anticipated Programme for Remaining Work

Task | Progress | Summary | External Tasks | Deadline

Split | Milestone | Project Summary | External Milestone

APPENDIX C
Monitoring Requirements

APPENDIX C – Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location of Measurement
Air Quality	1-hour TSP	3 times / 6-day	• CM_AB1a(Dairy Farm Ice and Cold Storage)[1]
	24-hour TSP	Once / 6-day	
Noise	L_{eq}(30 min.) (0700-1900 hrs. on normal weekdays)	Once / week	• M8 (Aberdeen PTW)[1] The roof of Wah Lai House, Wah Kwai Estate • M9 (Ap Lei Chau PTW)[2] The Podium of Mei Chun Court, South Horizons
	L_{eq}(5 min.) (1900 to 2300)	Once / week (include 3 consecutive 5-min measurements)	
	L_{eq}(5 min.) (2300 to 0700 of next day)		
	L_{eq}(5 min.) (0700 to 1900 on holidays)		

(1) – 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_AB1a)** 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.

(2) – Noise monitoring will only be conducted by Cinotech Consultants Ltd when construction work is carried out.

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 failurein writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate

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

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

Table D-2 Event / Action Plan For Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by

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

APPENDIX E
Summary of Environmental Mitigation Implementation Schedule (EMIS)

APPENDIX E– 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?	Implementation Status
A Air Quality							
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; • 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. • Skip hoist for material transport should be totally enclosed by impervious sheeting; • Vehicle washing facilities should	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?	Implementation Status
	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 reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines; • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs; • Tarpaulin covering of all dusty						

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?	Implementation Status
	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	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. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer	To ensure compliance of the odour criterion stipulated in the EIAO-TM.	Plant Operator	All PTWs and SCISTW	Operation phase	EIAO-TM	N/A

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?	Implementation Status
	systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimize odour escape • 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	N/A
3.80	Commissioning tests for all deodorization system should be included in the Design and	To ensure compliance of the odour criterion stipulated in the	Engineer	All PTW and SCISTW	After completion of construction	EIAO-TM	N/A

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?	Implementation Status
	Construction Contract Document.	EIAO-TM					
B Airborne Noise							
4.56–4.61	Construction Phase • 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: • 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. • 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.	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?	Implementation Status
4.63	Operation Phase • 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	N/A
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	N/A
C Water Quality							
6.349 to 6.375	Construction Phase *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.	To control water quality impact from construction site runoff and general construction activities	Contractor	All work sites	Construction phase	EIAO-TM, WPCO	*
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	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?	Implementation Status
	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) Regulation should be observed and complied with for control of chemical wastes.	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	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?	Implementation Status
	these discharges.						
6.379	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	To control water quality impact from accidental chemical spillage	Contractor	All work sites	Construction phase	EIAO-TM, WPCO, WDO	*
6.380	Construction Works in Close Proximity of Storm Drains or Seafront To minimize the potential water quality impacts from the construction works located at or near any watercourse, the	To control water quality impact from construction works in close proximity of storm drains or seafront	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?	Implementation Status
	practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be						

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?	Implementation Status
	erected in order to prevent soil/mud from slipping into the storm culvert or sea.						
6.381	Temporary Sewage Bypass 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	To minimise the water quality impact arising from the planned temporary sewage bypass	DSD	SCISTW	Design Stage and Construction Phase	EIAO-TM and WPCO	N/A

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?	Implementation Status
	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.						
6.344	Operational Phase 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.	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	N/A
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	N/A
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	N/A
6.346	In case of total power outage of the dechlorination plant, the uninterruptible power supply (UPS)	To minimize the discharge of chlorinated effluent under emergency	DSD	SCISTW	Design stage and operation stage	EIAO-TM and WPCO	N/A

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?	Implementation Status
	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.	situations					
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	N/A
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	To minimize the TIN exceedances during Stage 2B	DSD	SCISTW	Investigation Stage of Stage 2B	EIAO-TM and WPCO	N/A

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?	Implementation Status
	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 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						
D Human Health and Ecological Risk							
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		N/A
E 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 minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amountof timber used on construction sites.	To minimize wastage of wood	Contractor	Work sites	Construction phase	WBTC No. 19/2001	√

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?	Implementation Status
	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.						
9.109	All waste materials should be segregated into categories covering • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste.	Contractor	Work sites	Construction phase		*
9.113	Recommendations to achieve waste reduction include:- • 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	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?	Implementation Status
	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 cpacity shall be recycled; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.						
9.115	Recommendations for good site practices during construction activities include:- • 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	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?	Implementation Status
	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	To enhance reuse of bentonite and proper disposal of residual bentonite slurry.	Contractor	Work sites	Construction phase	ProPECC PN 1/94	N/A
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	To facilitate recycling of recyclable materials.	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?	Implementation Status
	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.	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?	Implementation Status
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		N/A
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	To control potential odour emitted from sludge tanks	Operator	SCISTW	Operation Phase		N/A

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?	Implementation Status
	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.						
G Terrestrial Ecology							
10.93	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	√
10.94	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	√
10.95	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, 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	*
10.96	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	√
10.97	Standard good site practices as suggested in Section 10 should be	To minimise disturbance impact to the nearby	Contractor	All the works areas,	Construction phase	EIAO TM Annex 16	√

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?	Implementation Status
	implemented.	habitats and the associated wildlife.		PTWs and SCISTW			
10.98	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	√
10.99	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) No. 3/2006	√
H 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.	To minimize the potential indirect impacts on water quality	Contractor	All the works area, PTWs and SCISTW	Construction Phase	EIAO-TM	√
11.138	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	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	√

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?	Implementation Status
	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).						
11.139	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						
11.141	It is recommended that temporary sewage bypass should be	To minimize water quality impact resulting	DSD	SCISTW	Design Stage and	EIAO-TM and WPCO	N/A

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?	Implementation Status
	programmed to avoid temporary sewage bypass in wet or 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.	from planned temporary sewage bypass.			Construction Phase		
11.142	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	To minimize water quality impact due to emergency discharge	DSD	SCISTW	Design stage and operation stage	EIAO-TM and WPCO	N/A

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?	Implementation Status
	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.						
I 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. • 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.	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	√

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?	Implementation Status
	• Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting.						
Table 13.8	• 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	N/A
J Hazard to Life							
14A.198 & 14A.203	• 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		√
14A.199 & 14A.204	• Limiting of the vibration levels associated with the blasting programme for the Tunnel P, shafts and other construction works	To prevent any structural damage to HKCG Aberdeen Depot and Ap Lei Chau Shell Depot	Contractor	Monitoring will be undertaken at ground level.	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?	Implementation Status
	(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.	particularly the LPG compound.					
14A.201	• 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	• 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	• 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		√

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?	Implementation Status
14C.64	*Special Chemical Supply Contract Arrangement* • A separate supply contract will be awarded for each of the three chemicals (sodium hypochlorite, sodium bisulphite and ferric chloride solutions). 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.	To minimize the risk due to chemicals-related operation To minimize the risk due to chemicals-related operation	DSD Chemical Supplier	SCISTW SCISTW	Operational phase Operational phase		N/A
14C.71-14C.72	*Dedicated Chemical Delivery Route and Road Signs* • Specific road tanker transport	To minimize the risk due to chemicals-related operation	DSD and chemical supplier	SCISTW	Operational phase		N/A

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?	Implementation Status
	route will be assigned to each chemical. • Provide road signs on service road indicating the route to specific chemical storage area.						
14C.73	*Security of Chemical Loading Points* • 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		N/A
14C.77	*Clear Labelling of Chemicals-related Equipment* • 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.	To minimize the risk due to chemicals-related operation	Chemical Supplier	SCISTW	Operational phase		N/A
14.C78	*Ensuring Quality of Chemical Supplier* • Only appoint chemical suppliers with satisfactory quality system.	To minimize the risk due to chemicals-related operation	DSD / chemical supplier	N/A	Operational phase		N/A

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?	Implementation Status
	• 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						
14C.79-14C.84	*Procedural Control of Chemical Unloading Operation* • 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		N/A
	• 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		N/A
	• Chemical supplier needs to fax or electronically transmit copies of	To minimize the risk due to chemicals-related	Chemical Supplier	SCISTW	Operational phase		N/A

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?	Implementation Status
	delivery bills-of-lading information and barge • crew / road tanker driver identification to SCISTW prior to delivery barge / road tanker arriving on-site. Such information will be in compliance with the supplier's independently accredited quality assurance system (to ISO:9000 or equivalent).	operation					
	• 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	To minimize the risk due to chemicals-related operation	DSD or Independent Checker	SCISTW	Operational phase		N/A
	• 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	To minimize the risk due to chemicals-related operation	DSD and Chemical Supplier	SCISTW	Operational phase		N/A
	• 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	To minimize the risk due to chemicals-related operation	DSD and Chemical Supplier	Chemical Supply Factory and SCISTW	Operational phase		N/A

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?	Implementation Status
14C.88	*Special Arrangement of SCISTW Public Event* 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.	To minimize the risk due to chemicals-related operation	DSD	SCISTW	Operational phase		N/A
14C.167	• 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		N/A
14C.180	*Mitigation measures during construction protecting the sodium hypochlorite pipelines and ferric chloride tank farm.* *General:* • Employ vibration detectors and settlement markers • Develop action plan(s) for situations where vibration or settlement level is found to exceed the set limits	To minimize the risk of damaging the disinfection facilities	Contractor	Construction Site at SCISTW	Construction phase		N/A

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?	Implementation Status
	• 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 *Other construction activities:* • 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						

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?	Implementation Status
	• 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 wrapping. Monitor vibration resulted from construction works to ensure the velocity and amplitude of vibration limit will not be exceeded • 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						
K Cultural Heritage							
Tables 15.8 - 15.11	• The construction vibration control limit (ppv of 25mm/s) shall be strictly followed	To minimize vibration impacts on the identified vibration sensitive	Project Proponent	Identified historical Buildings	During blasting for tunnel, shafts, effluent		N/A

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?	Implementation Status
		historical buildings.		/structures as mentioned in Tables 15.8, 15.9, 15.10 and 15.11	conveyance system and disinfection facilities in the vicinity of the buildings/ structures		
15.70	• 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		N/A

Remarks

√ Compliance of mitigation measure;

* 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;

N/A Not Applicable

APPENDIX F
Summary of Environmental Licences and Permits

Appendix F - Summary of Environmental Licensing and Permit Status

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
Billing Account for Disposal of Construction Waste				
7009265	21/08/09	N/A	Disposal of Construction waste	Valid
Chemical Waste Producer				
5213-173-P2973-02	02/11/10	N/A	Disposal of Chemical waste in accordance with EPD's instructions	Valid
5213-173-P2973-03	02/11/10	N/A	Disposal of Chemical waste in accordance with EPD's instructions	Valid
5113-174-P2781-19	21/09/09	N/A	Disposal of Chemical waste in accordance with EPD's instructions	Valid
Wastewater Discharge License				
WT00005967-2010	03/02/10	28/02/15	Permit issued on 03/02/10	Valid
WT00007236-2010	16/08/10	31/08/15	Permit issued on 16/08/10	Valid
WT00007486-2010	09/09/10	30/09/15	Permit issued on 09/09/10	Valid
Construction Noise Permit (CNP)				
GW-RS1129-11	20/12/11	19/06/12	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* Any day not being a general holiday between 0000 – 0700 hours and 1900 – 2400 hours. General Holidays (including Sundays) between 0000 – 2400 hours.	Superseded on 16/01/2012
GW-RS0811-11	15/09/11	14/03/12	*Location:* Site area of opposite to sewage screening plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* Any day not being a general holiday between 0000 – 0700 hours and 1900 – 2400 hours. General Holidays (including Sundays) between 0000 – 2400 hours.	Superseded on 20/01/2012
GW-RS0026-12	16/01/12	12/07/12	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* Any day not being a general holiday between 0000 – 0700 hours and 1900 – 2400 hours. General Holidays (including Sundays) between 0000 – 2400 hours.	Superseded on 02/03/2012

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
GW-RS0232-12	02/03/12	13/08/12	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 01/08/2012
GW-RS0774-12	01/08/12	30/11/12	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 18/09/2012
GW-RS0694-12	20/07/12	19/12/12	*Location:* Site area opposite to sewage screening plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 20/12/12
GW-RS0797-12	01/08/12	20/12/12	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 20/12/12
GW-RS0955-12	18/09/12	17/01/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 16/01/13

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
GW-RS0964-12	18/09/12	17/01/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 16/01/13
GW-RS1080-12	29/10/12	28/04/13	*Location:* Site area near Ap Lei Chau Waterfront Promenade, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 29/04/13
GW-RS1266-12	20/12/12	18/6/13	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 25/04/13
GW-RS0032-13	18/01/13	17/05/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 11/04/13
GW-RS0033-13	17/01/13	17/05/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 11/04/13

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
GW-RS0329-13	29/04/13	27/10/13	*Location:* Site area near Ap Lei Chau Waterfront Promenade, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 28/10/13
GW-RS0388-13	11/04/13	10/08/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 28/06/13
GW-RS0448-13	25/04/13	23/10/13	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 23/08/13
GW-RS0511-13	10/05/13	10/09/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 02/07/13
GW-RS0676-13	21/06/13	13/12/13	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 22/08/13

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
GW-RS0720-13	28/06/13	27/10/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 27/08/13
GW-RS0728-13	02/07/13	01/11/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 01/11/13
GW-RS0947-13	22/08/13	18/02/14	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 18/02/14
GW-RS0955-13	23/08/13	18/02/14	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 19/02/14
GW-RS0962-13	27/08/13	26/12/13	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 29/11/13

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
GW-RS1131-13	01/11/13	30/04/14	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid
GW-RS1133-13	28/10/13	27/04/14	*Location:* Site area near Ap Lei Chau Waterfront Promenade, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid
GW-RS1331-13	29/11/13	28/03/14	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Superseded on 29/03/14
GW-RS1467-13	20/12/13	16/06/14	*Location:* Aberdeen Primary Sewage Treatment Plant, Tin Wan Praya Road, Aberdeen, Hong Kong. *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid
GW-RS0088-14	19/02/14	18/08/14	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid

Permit / License /Account No.	Valid Period		Details	Status
	From	To		
GW-RS0090-14	18/02/14	17/08/14	*Location:* Site area opposite to Sewage Screening Plant, Tin Wan Praya Road, Tin Wan, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid
GW-RS0235-14	29/03/14	28/07/14	*Location:* Site area near Sewage Treatment Plant, 50 Lee Nam Road, Ap Lei Chau, Hong Kong (DSD Contract No. DC/2008/09) *Days and hours for the use of Powered mechanical equipment:* 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday.	Valid

APPENDIX G
Waste Flow Table

Contract No.: **DC/2008/09**

Estimated Volume of Monthly Waste Flow Table for 2009 to 2014

March 2014

Month	Estimated Quantities of Inert C&D Materials Generated Monthly					Actual 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) Disposed in TKOFB	(g) Disposed in CWBP	(h) Metals	(i) Paper/cardboard packaging	(j) Plastics	(k) Chemical Waste	(l) Others, e.g. general refuse disposed at Landfill
	ton	ton	ton	ton	ton	ton	ton	ton	ton	ton	ton	ton
Jul-09	0	0	0	0	0	-	-	0	0	0	0	0
Aug-09	0	0	0	0	0	-	-	0	0	0	0	0
Sep-09	0	0	0	0	0	-	-	0	0	0	0	0
Oct-09	0	0	0	0	0	-	-	0	0	0	0	0
Nov-09	0	0	0	0	0	-	-	0	0	0	0	2
Dec-09	193	0	0	0	193	-	-	0	0	0	0	2
Sub-total	193	0	0	0	193	-	-	0	0	0	0	4
Jan-10	50	0	0	0	50	-	-	0	0	0	0	2
Feb-10	457	0	0	0	457	-	-	0	0	0	0	2
Mar-10	16	0	0	0	16	-	-	0	0	0	0	2
Apr-10	5	0	0	0	5	-	-	0	0	0	0	2
May-10	0	0	0	0	0	-	-	0	0	0	0	2
Jun-10	54	0	0	0	54	-	-	0	0	0	0	2
Jul-10	110	0	0	0	110	-	-	0	0	0	0	2
Aug-10	302	0	0	0	302	-	-	0	0	0	0	2
Sep-10	182	0	0	0	182	-	-	0	0	0	0	2
Oct-10	221	0	0	0	221	-	-	0	0	0	0.85	6
Nov-10	223	0	0	0	223	-	-	0	0	0	0.51	2
Dec-10	1195	0	0	0	1195	-	-	0	0	0	0	4
Sub-total	2815	0	0	0	2815	-	-	0	0	0	1.36	30
Jan-11	1003	0	0	0	1003	-	-	0	0	0	0	2
Feb-11	289	0	0	0	289	-	-	0	0	0	0	2
Mar-11	507	0	0	0	507	-	-	0	0	0	0	2
Apr-11	411	0	0	0	411	-	-	0	0	0	0	4
May-11	465	0	0	0	465	-	-	0	0	0	0	2
Jun-11	772	0	0	0	772	-	-	0	0	0	0	2
Jul-11	612	0	0	0	612	-	-	0	0	0	0.85	2
Aug-11	383	0	0	0	383	-	-	0	0	0	0	2
Sep-11	296	0	0	0	296	-	-	0	0	0	0	3
Oct-11	1059	0	0	0	1059	-	-	0	0	0	0	3
Nov-11	866	0	0	0	866	-	-	0	0	0	0	3
Dec-11	436	0	0	0	436	-	-	0	0	0	0	2
Sub-total	7099	0	0	0	7099	-	-	0	0	0	0.85	29
Jan-12	533	0	0	0	533	-	-	0	0	0	0	2
Feb-12	759	0	0	0	759	-	-	0	0	0	0.36	2
Mar-12	542	0	0	0	542	-	-	0	0	0	0	2
Apr-12	486	0	0	0	486	-	-	0	0	0	0	2
May-12	575	0	0	0	575	-	-	0	0	0	0	2
Jun-12	295	0	0	0	295	-	-	0	0	0	0	1
Jul-12	595	0	0	0	595	-	-	0	0	0	1	2
Aug-12	400	0	0	0	400	-	-	0	0	0	0	3
Sep-12	1074	0	0	0	1074	-	-	0	0	0	0	3
Oct-12	970	0	0	0	970	533	437	0	0	0	0.36	3
Nov-12	670	0	0	0	670	156	514	0	0	0	0	3
Dec-12	343	0	0	0	343	56	287	0	0	0	0	2
Sub-total	7242	0	0	0	7242	745	1238	0	0	0	1.72	27
Jan-13	275	0	0	0	275	79	196	0	0	0	0	6
Feb-13	93	0	0	0	93	75	18	0	0	0	0	2
Mar-13	470	0	0	0	470	268	202	0	0	0	0	3
Apr-13	541	0	0	0	541	419	122	0	0	0	0	2
May-13	622	0	0	0	622	490	131	0	0	0	0	3
Jun-13	17	0	0	0	17	0	17	0	0	0	0	2
Jul-13	567	0	0	0	567	200	367	0	0	0	0	2
Aug-13	172	0	0	0	172	44	128	0	0	0	0	3
Sep-13	129	0	0	0	129	43	85	0	0	0	0	5
Oct-13	788	0	0	0	788	745	43	0	0	0	0.36	3
Nov-13	159	0	0	0	159	159	-	0	0	0	0	3
Dec-13	184	0	0	0	184	105	79	0	0	0	0	5
Sub-total	4017	0	0	0	4017	2627	1388	0	0	0	0.36	39
Jan-14	112	0	0	0	112	53	59	0	0	0	0	9
Feb-14	583	0	0	0	583	366	217	0	0	0	0	13
Mar-14	1330	0	0	0	1330	917	413	0	0	0	0	22
Apr-14	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total	2025	0	0	0	2025	1336	689	0	0	0	0	44
Total	23391	0	0	0	23391	4708	3315	0	0	0	4.29	173

Remark:

(1) The updated actual amount of non-inert C&D waste disposed in the reporting month is the same as the estimated quantities generated monthly.

APPENDIX H
Complaint Log

APPENDIX H – COMPLAINT LOG

Reporting Period: January 2014 to March 2014

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

Remarks: No environmental complaint was received from January 2014 to March 2014.

APPENDIX I
Summary of Exceedance

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

APPENDIX I – Summary of Exceedance

(A) Exceedance Report for 1-hr TSP
(NIL in the reporting quarter)

(B) Exceedance Report for 24-hr TSP
(NIL in the reporting quarter)

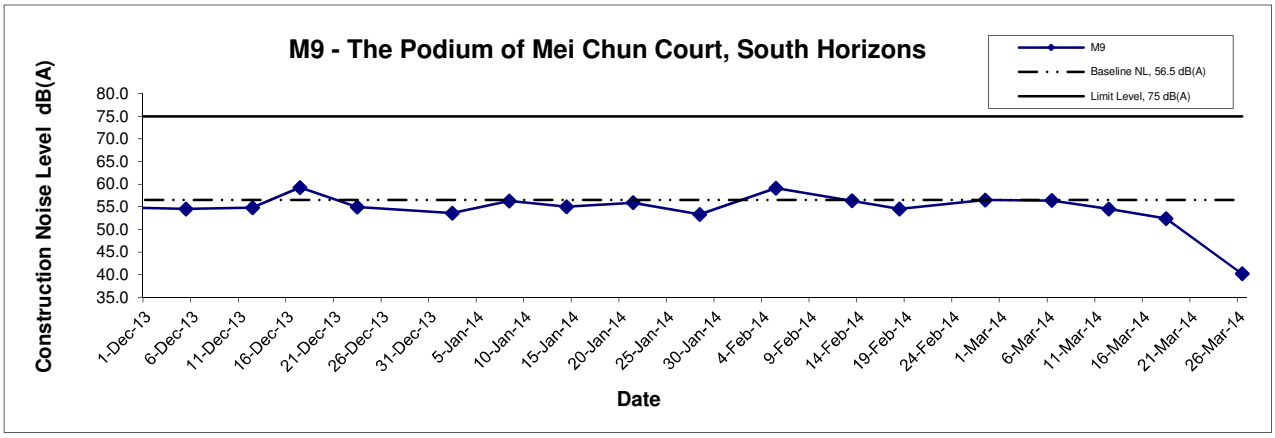
(C) Exceedance Report for Construction Noise

(2 in the reporting quarter)

APPENDIX J
Graphical Presentation of Noise Monitoring Results

Noise Levels

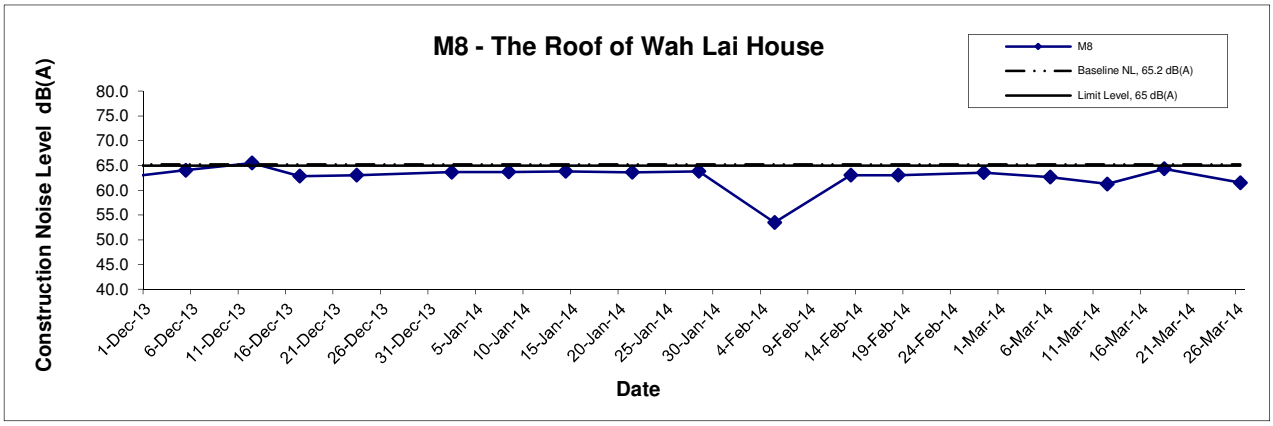
(Daytime Noise - 0700 to 1900 hrs on normal weekdays)

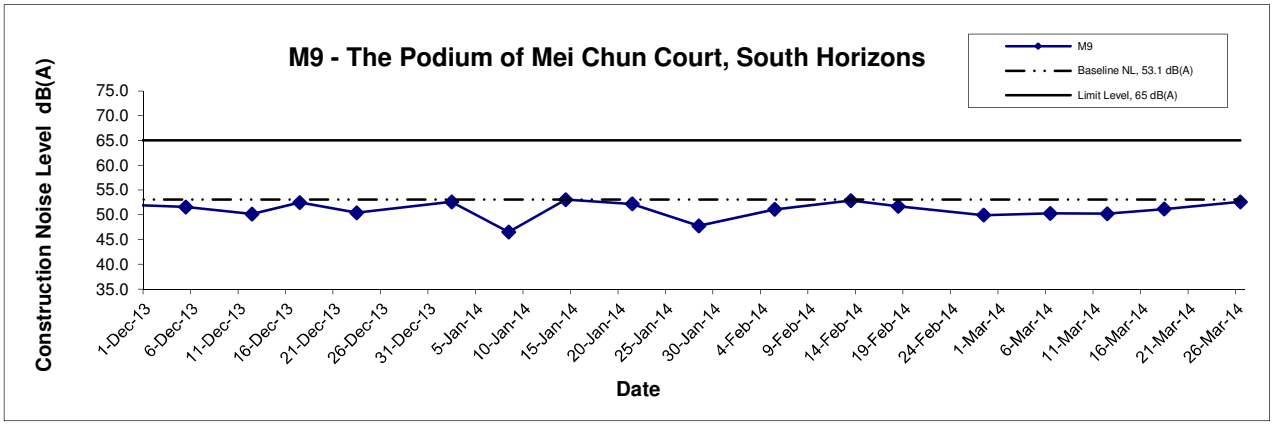


Title	Contract No. DC/2008/09 Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Mar 14	Project No. MA9042 Appendix J	CINOTECH

Noise Levels

(Restricted hours- 19:00 to 23:00 on normal weekdays & 07:00 to 23:00 on holidays)

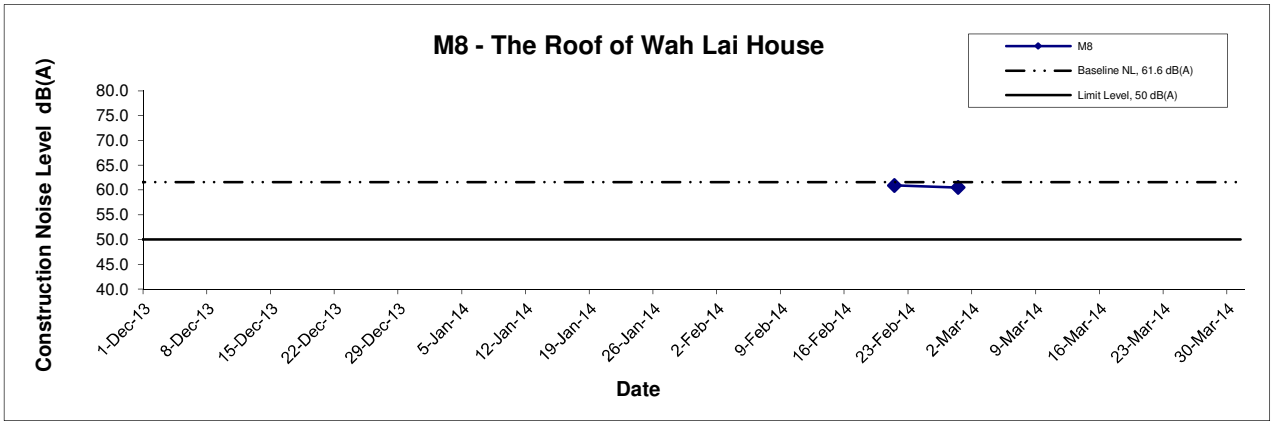


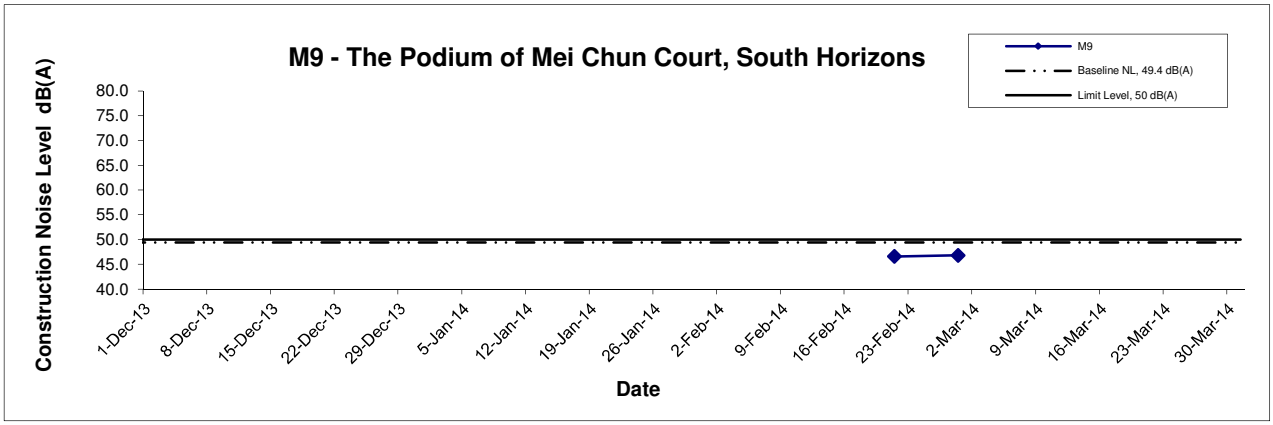


Title	Contract No. DC/2008/09 Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen	Scale	N.T.S	Project No. MA9042
	Graphical Presentation of Construction Noise Monitoring Results	Date	Mar 14	Appendix J

Noise Levels

(Night-time - 23:00 to 07:00 on all days)





Title	Contract No. DC/2008/09 Harbour Area Treatment Scheme Stage 2A – Construction of Sewage Conveyance System from Ap Lei Chau to Aberdeen Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S Date Mar 14	Project No. MA9042 Appendix J	CINOTECH

APPENDIX K
Action and Limit Levels

Action and Limit Levels

APPENDIX K Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *
All days during the evening (1900 to 2300 hrs), and general holidays (including Sundays) during the day-time and evening (0700 to 2300 hrs)		65 dB(A) **
All days during the night-time (2300 to 0700 hrs)		50 dB(A) **

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

* 70 dB (A) and 65 dB (A) for schools during normal teaching periods and school examination periods, respectively.

** Based on the Area Sensitivity Ratings (ASRs) 'B' for Ap Lei Chau PTW.