

Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

Quarterly EM&A Report

November 2013 to January 2014

Submitted to

Environmental Protection Department

Meinhardt Infrastructure and Environment Limited

**Entrusted Portion of Widening of Tolo
Highway / Fanling Highway between Island
House Interchange and Fanling Stage 2**

Quarterly EM&A Report

(November 2013 to January 2014)

Certified by: Fredrick Leong 

Position: Environmental Team Leader

Date: 13 February 2014



Our ref AFK/TK/jn/bw/T329380/22.05/L-0013
T 2828 5919
E terence.kong@mottmac.com.hk
Your ref

Hyder-Arup-Black & Veatch Joint Venture
c/o Hyder Consulting Limited
47/F Hopewell Centre
183 Queen's Road East
Wanchai, Hong Kong

Dear Sir,

14 February 2014
By Fax (2805 5028) & Post

Attn: Mr. James Penny

EM&A for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works
Environmental Permit No. EP-324/2008/A
Quarterly EM&A Summary Report for November 2013 to January 2014 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09


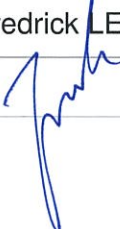

We refer to the Quarterly EM&A Summary Report for November 2013 to January 2014 for the Project received on 11, 12 and 14 February 2014 submitted by ET via email. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in black ink, appearing to read 'Terence Kong'.

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin (Fax: 2714 5198) / Ms. Jackei Yin (Fax: 2761 4864)
CEDD/BCP – Mr. Chris Wong / Mr. Desmond Lam (Fax: 2714 0103)
AECOM – Mr. Alan Lee (Fax: 3922 9797)
Meinhardt Infrastructure and Environment Limited – Mr. Fredrick Leong (Fax: 2540 1580)

Date	Revision	Prepared By	Checked By	Approved By
13 February 2014	0	Ivan TING 	Fredrick LEONG 	Helen COCHRANE 

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EXECUTIVE SUMMARY

This report documents the findings of EM&A works conducted in the quarter between 6 November 2013 and 31 January 2014.

The impact stage EM&A programme for the Project includes air quality, noise and water quality monitoring.

The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.

In the reporting quarter, a total of 22 exceedance events were recorded. Only 1 Limit Level exceedance of Turbidity and 1 Limit Level exceedance of Suspended Solids were concluded to be related to the project. Necessary remedial actions have been taken.

No environmental non-compliance was noted. One environmental complaint, which was concluded as an invalid complaint under this Project after investigations, was received. No environmental related prosecution or notification of summons was received. No changes to the construction works which may affect the EM&A programme are recorded in the reporting quarter.

1 INTRODUCTION AND PROJECT INFORMATION

1.1 Background

1.1.1 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual were approved on 14 July 2000 (Register Number: EIA-043/2000). The Project is governed by an Environmental Permit (EP) (EP-324/2008) which was granted on 23 December 2008. A variation of EP (VEP) was applied and a VEP (EP-324/2008/A) was subsequently granted on 31 January 2012.

1.1.2 Chun Wo Construction & Engineering Co Ltd (Chun Wo) was commissioned by the Civil Engineering and Development Department (CEDD) as the Civil Contractor for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. Meinhardt Infrastructure & Environment Ltd (MIEL) has been appointed by Chun Wo as the Environmental Team (ET) to fulfill the corresponding EM&A requirements pursuant to Environmental Permit No. EP-324/2008/A in accordance with the Updated EM&A Manual (dated October 2013) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. The EM&A programme commenced in 5 November 2013.

1.1.3 **Figure 1** shows the works areas for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2.

1.2 Construction Programme and Activities

1.2.1 The construction programme is presented in **Appendix A**. The major construction activities undertaken in the reporting quarter are summarized below:

- Hoarding and fencing erection, initial survey and base slab demolition;
- Trial Pit excavation
- Site clearance and tree felling;
- Excavation works and base slab demolition;
- Pre-drilling works, Bored pile wall construction and Catch Fan;
- Box culvert extension works – Flow diversion of existing stream, base and wall slab construction;
- Cable detection and trail trenches;
- Erection of site office; and
- Construction of haul road and temporary soil platform for geotechnical works.

1.3 Project Organisation

1.3.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project, together with the general enquiry hotline, are summarised in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2472 7228	2472 0132
		Resident Engineer (Environmental)	Mr. Perry Yam	2674 2273	--
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Terence Kong	2828 5919	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Environmental Officer	Mr. Victor Huang	2638 6115	
		Environmental Officer	Mr. Sam Lam	2638 6147	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580
Enquiry Hotline	General Enquiry	--	Ms Helena Mak	6355 1731	--

1.4 Purpose of the Report

- 1.4.1 This is the Quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period of November 2013 to January 2014.

2 SUMMARY OF EM&A REQUIREMENTS

2.1 Monitoring Requirements

- 2.1.1 In accordance with the Updated EM&A Manual, environmental parameters including Air Quality, Noise and Water quality have been monitored. The specific parameters, monitoring frequency and the respective Action and Limit Levels are given in **Table 2.1** and the locations of the monitoring and control stations are shown in the **Figure 2**.

Table 2.1 Monitoring Parameter

Parameter	Unit	Action Level	Limit Level	Frequency
Air Quality				
1 hour TSP	µg/m ³	292.7	500	Three times every 6 days
24 hour TSP	µg/m ³	170.3	260	Once every 6 days
Construction Noise				
Leq 30min	dB(A)	When one documented valid complaint is received	75	Once every Week
Water Quality				
Depth		--	--	Three occasions per week
Temperature	°C	--	--	Three occasions per week
Salinity	ppt	--	--	Three occasions per week
pH	--	--	--	Three occasions per week
DO	mg/L	6.7	4mg/L or 40% saturation at 15 degree Celsius	Three occasions per week

Parameter	Unit	Action Level	Limit Level	Frequency
DO Saturation	%	--	--	Three occasions per week
Turbidity	NTU	81.9NTU or 120% of upstream control station's Tby of the same day	91.9NTU or 130% of upstream control station's Tby of the same day	Three occasions per week
SS	mg/L	42.6 mg/L or 120% of upstream control station's SS of the same day	46.8 mg/L or 130% of upstream station's SS of the same day and specific sensitive receiver water quality requirements	Three occasions per week

2.2 Environmental Mitigation Measures

2.2.1 Environmental mitigation measures have been recommended in the EM&A Manual and are given in **Appendix C**. The implementation status for the reporting quarter is also given in the Appendix.

3 SUMMARY OF EM&A Monitoring Data

3.1 Monitoring Data

3.1.1 Monitoring has been conducted in accordance to the specification in the EM&A Manual in the reporting quarter. Meteorological data for the reporting quarter has been extracted from Hong Kong Observatory and are given in **Appendix D**. Monitoring Data with graphical presentation for the reporting quarter have been given in **Appendix E**. A summary on the monitoring results has also given in **Table 3.1**.

Table 3.1 Summary of Monitoring Data in the Reporting Quarter

Monitoring Location	Minimum	Maximum	Average
Air Quality			
1 hour Total Suspended Particulate			
SR77	23.7µg/m ³	358.6µg/m ³	199.4µg/m ³
24 hour Total Suspended Particulate			
SR77	83.0µg/m ³	283.0µg/m ³	172.0µg/m ³
Construction Noise			
SR77	57.8dB(A)	73.5dB(A)	66.3dB(A)
Water Quality			
DO			
I5	4.4mg/L	10.1mg/L	8.0mg/L
Baseline Data	6.6mg/L	8.8mg/L	8.0mg/L
30% disturbance due to human activity	4.6mg/L	6.2mg/L	5.6mg/L
Turbidity			
I5	6.3NTU	48.7NTU	22.2NTU
Baseline Data	12.4NTU	91.5NTU	26.1NTU
30% disturbance due to human activity	16.1NTU	118.9NTU	34.0NTU
SS			
I5	2mg/L	31.5mg/Lm	10.5mg/L
Baseline Data	6.5mg/L	46.5mg/L	16.4mg/L
30% disturbance due to human activity	8.5mg/L	60.5mg/L	21.3mg/L

3.1.2 The minimum recorded dissolved oxygen in the reporting quarter is 4.4mg/L which is lower than the 30% disturbance of the minimum value (4.6mg/L). However, respective investigation has been conducted and concluded the exceedance would not be project related.

3.1.3 The other recorded water quality monitoring levels during the reporting quarter were not exceed the 30% disturbance over the baseline level for quarterly average.

3.2 Summary of Monitoring Exceedances

3.2.1 The number of exceedances event recorded in the reporting quarter is summarized in **Table 3.2**.

3.2.2 Investigations for the exceedances events in the reporting quarter have been completed. 1 Limit Level exceedance of Turbidity and 1 Limit Level exceedance of Suspended Solids are concluded to be related to the project. Other exceedances were considered not related to the construction works. The respective investigation reports have been presented in the respective Monthly EM&A Reports.

Table 3.2 Summary of Exceedance Events in the Reporting Quarter

Parameter		Number of Exceedances Events	Number of Project Related Exceedance Events
Air Quality			
1 hour Total Suspended Particulate	Action Level	0	0
	Limit Level	0	0
24 hour Total Suspended Particulate	Action Level	10	0
	Limit Level	3	0
Construction Noise			
Leq 30min	Action Level	0	0
	Limit Level	0	0
Water Quality			
DO	Action Level	2	0
	Limit Level	0	0
Turbidity	Action Level	1	0
	Limit Level	1	1
SS	Action Level	1	0
	Limit Level	2	1

3.2.3 Contractor has been reminded to strengthen the mitigation measures including:

- cover of exposed slopes near the river,
- cover of open stockpile of construction materials,
- adequate watering along the haul road to mitigate the construction dust impact,
- building a river diversion structure at the river channel to protect the river from potential site runoff,
- fill up the leakage and strengthen the river diversion works to avoid future leakage, and

- pay attention on accidental site runoff, including construction of additional protection structure if necessary, to minimize the risk of site runoff.

4 WASTE MANAGEMENT

- 4.1.1 The Contractor has registered as a chemical waste producer of the Project. The C&D materials and waste sorting were carried out on-site. Receptacles were provided for general refuse collection.
- 4.1.2 During the reporting quarter, a total of 2021m³ of excavated material has been generated. 1427m³ of inert C&D materials was disposed of at public fill to Tuen Mun Area 38, while 503m³ of inert C&D materials were reused on site. 220kg of general refuse was disposed of at North East New Territories (NENT) Landfill. 10kg of plastics and no paper/cardboard packaging, plastics and metals were collected by recycling contractor in the reporting quarter. No chemical waste was collected by licensed contractor in the reporting quarter. Details of the waste management data are presented in **Appendix F**.

5 ENVIRONMENTAL NON-CONFORMANCE

- 5.1.1 No environmental non-compliance were recorded in the reporting quarter. One environmental complaint was received in the reporting quarter regarding water quality of Ma Wat River. Investigations have been conducted and the complaint was considered as invalid under this Project. No environmental related prosecution or notification of summons was received in the reporting quarter. The summary for the non-compliance, complaints and prosecutions is provided in **Appendix G**.
- 5.1.2 No changes to the construction works which may affect the EM&A programme are recorded in the reporting quarter.

6 CONCLUSION, COMMENTS AND RECOMMENDATIONS

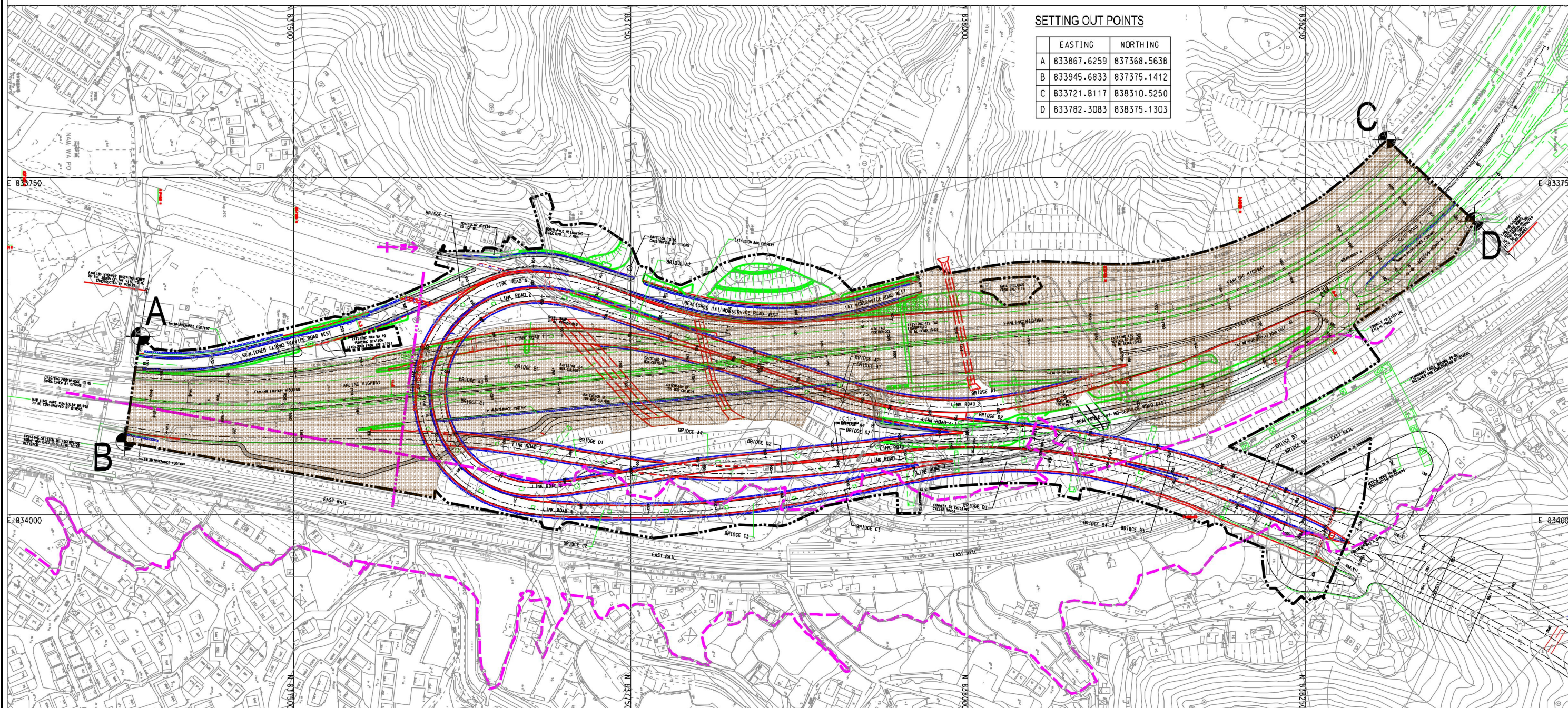
- 6.1.1 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.
- 6.1.2 In the reporting quarter, a total of 22 exceedance events have been recorded. Only 1 Limit Level exceedance of Turbidity and 1 Limit Level exceedance of Suspended Solids were concluded to be related to the project. Necessary remedial actions have been taken.
- 6.1.3 No environmental non-compliances were noted. One environmental complaint, which was concluded as an invalid complaint under this Project after investigations, was received. No environmental related prosecution or notification of summons were received. No changes to the construction works which may affect the EM&A programme are recorded in the reporting quarter.

Figure

Contract No. CV/2012/09
 Liantang / Heung Yuen Wai Boundary Control Point
 Site Formation and Infrastructure Works - Contract 3



俊和建築工程有限公司
 CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.



CV/201209-T-CWC-SK-001g_AD_edit.dgn 22/1/2014 17:10:34

Legend:

 Works Area for Entrusted Portion



Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

Figure 1: Demarcation of Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling – Stage 2

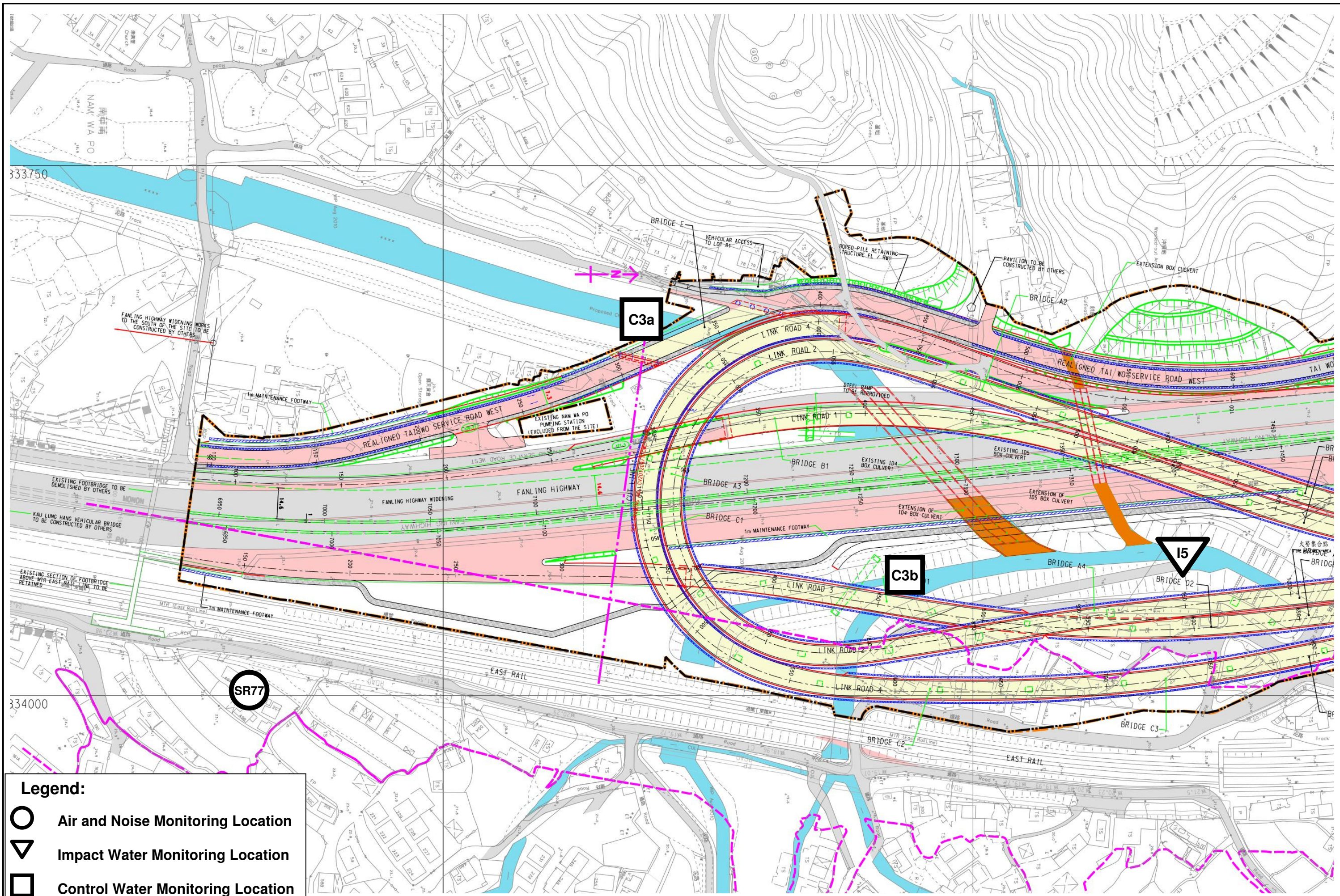
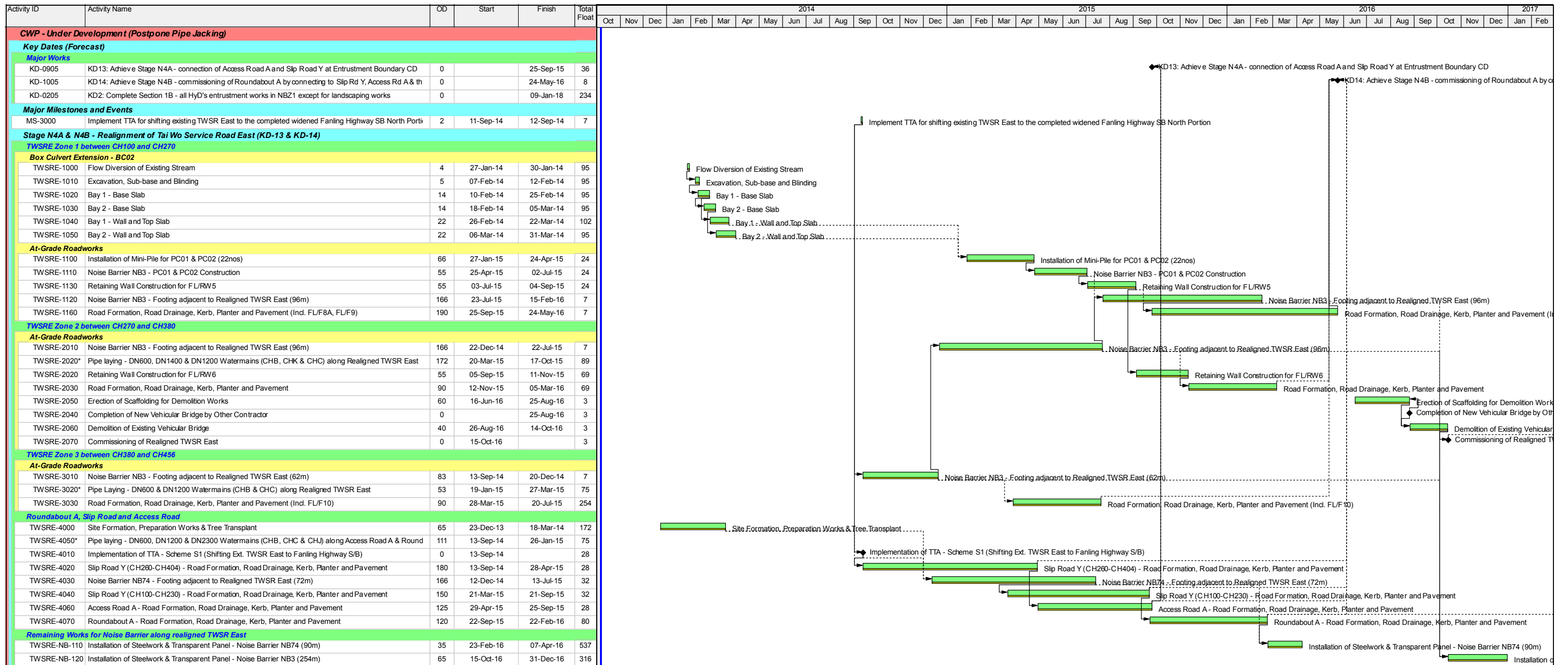


Figure 2: Environmental Monitoring Locations

Appendix A

Construction Programme



- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- Project Baseline Bar

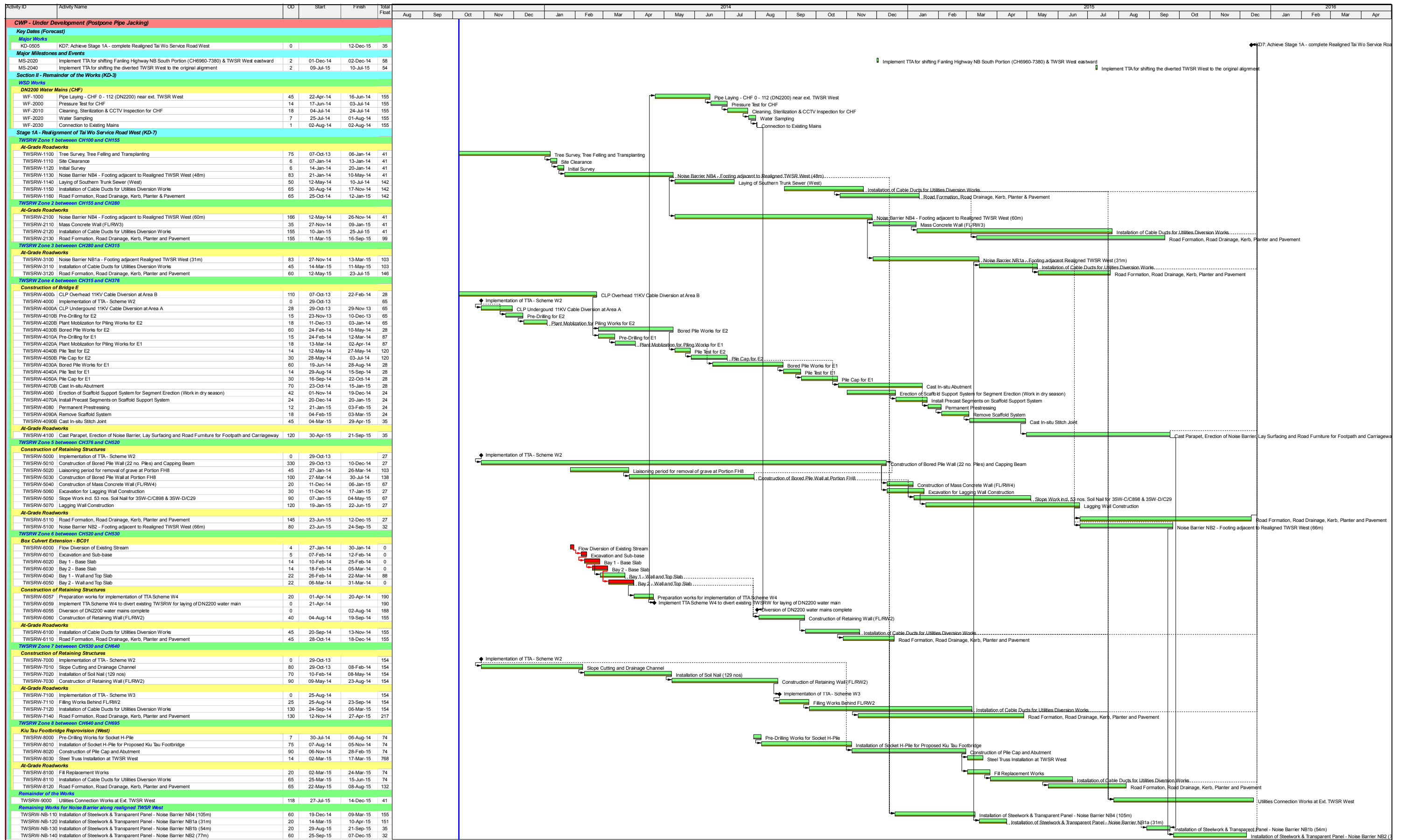
CEDD Contract No. CV/2012/09

Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for TWSRE

CWP004-1 _____ Page 1 of 1 _____ 11-Oct-13

Date	Revision	Checked	Approved
11-Oct-13		SL	



- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- Project Baseline Bar

CEDD Contract No. CV/2012/09

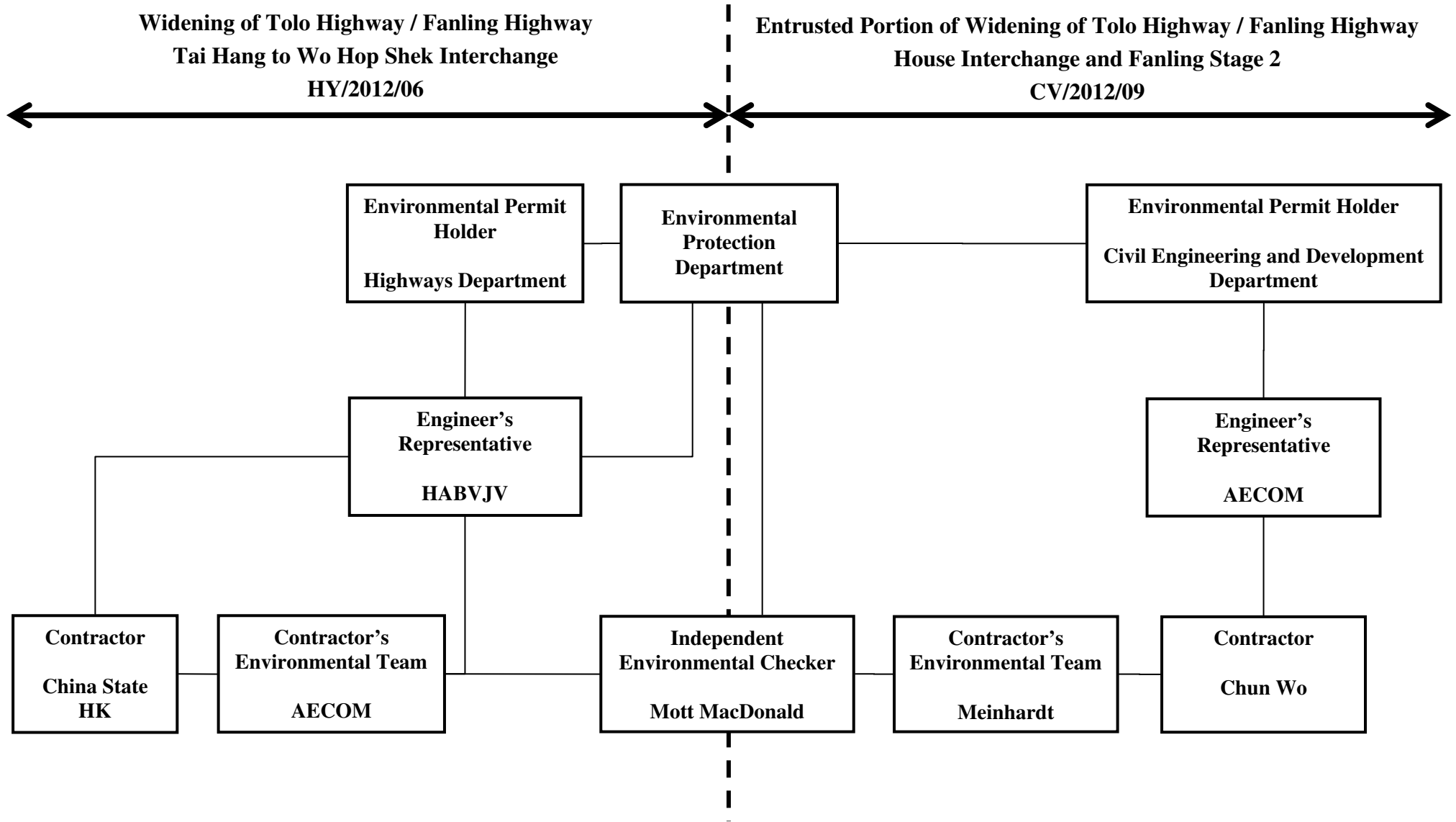
Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for TWSRW

Date	Revision	Checked	Approved
11-Sep-13		SL	

Appendix B

Project Organization Structure



Appendix C Implementation Schedule of Environmental Mitigation Measures (EMIS)

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
Air Quality				
Air Quality during Construction	<ul style="list-style-type: none"> Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading. All stockpiles of excavated materials or spoil of more than 50m³ shall be enclosed, covered or dampened during dry or windy conditions. Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas. All spraying of materials and surfaces shall avoid excessive water usage. Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards. Materials shall be dampened, if necessary, before transportation. Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks. Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads. 	During Construction	Contractor	✓ Obs Rem ✓ ✓ ✓ ✓ Rem
Air Quality during Operation	Not required	N/A	N/A	N/A
Noise				
Noise during Construction	<ul style="list-style-type: none"> Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant. Reduce the number of equipment and their percentage on-time. 	During Construction	Contractor	✓ ✓
Noise during Operation	Not required	N/A	N/A	N/A
Water Quality				
Water Quality during Construction	<u>Road Widening Works, Earthworks and Culvert Extension Works</u> <ul style="list-style-type: none"> Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settleable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required. 	During Construction	Contractor	Obs

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> • Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. • Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls. • Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system. • Open stockpiles should be covered with a tarpaulin cover. • During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded. • Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains. • Fuels should be stored in bunded areas such that spillage can be easily collected. 			✓ Obs Obs ✓ N/A Obs Obs
Water Quality during Operation	Not required	N/A	N/A	N/A
Waste Management				
Waste Management during Construction	<u>General Waste</u> <ul style="list-style-type: none"> • Transport of wastes off site as soon as possible. • Maintenance of accurate waste records. • Minimisation of waste generation for disposal (via reduction/recycling/re-use). • No on-site burning will be permitted. • Use of re-useable metal hoardings/signboards. <u>Vegetation from site clearance</u> <ul style="list-style-type: none"> • Segregation of materials to facilitate disposal. • Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas. 	During Construction During Construction	Contractor Contractor	✓ ✓ ✓ ✓ ✓ ✓ ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<u>Demolition Wastes</u>	During Construction	Contractor	N/A
	<ul style="list-style-type: none"> • Segregation of materials to facilitate disposal. • Appropriate stockpile management. 			N/A
	<u>Excavated Materials</u>	During Construction	Contractor	✓
	<ul style="list-style-type: none"> • Segregation of materials to facilitate disposal / reuse. 			✓
	<ul style="list-style-type: none"> • Appropriate stockpile management. 			✓
	<ul style="list-style-type: none"> • Re-use of excavated material on or off site (where possible). 			✓
	<ul style="list-style-type: none"> • Special handling and disposal procedures in the event that contaminated materials are excavated. 			N/A
	<u>Construction Wastes</u>	During Construction	Contractor	✓
	<ul style="list-style-type: none"> • Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). 			✓
	<ul style="list-style-type: none"> • Appropriate stockpile management. 			✓
<ul style="list-style-type: none"> • Planning to reduce over ordering and waste generation. 			✓	
<ul style="list-style-type: none"> • Recycling and re-use of materials where possible (e.g. metal, wood from formwork) 			✓	
<ul style="list-style-type: none"> • For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal. 			✓	
<u>Bentonite Slurries</u>	During Construction	Contractor	N/A	
<ul style="list-style-type: none"> • Bentonite slurries should be reused as far as possible. 			N/A	
<ul style="list-style-type: none"> • Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94. 			N/A	
<u>Chemical Wastes</u>	During Construction	Contractor	Obs	
<ul style="list-style-type: none"> • Storage within locked, covered and bunded area. 			✓	
<ul style="list-style-type: none"> • The storage area shall not be located adjacent to sensitive receivers e.g. drains. 			✓	

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> • Minimise waste production and recycle oils/solvents where possible. • A spill response procedure shall be in place and absorption material available for minor spillages. • Use appropriate and labelled containers. • Educate site workers on site cleanliness/waste management procedures. • If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. • The chemical wastes shall be collected by a licensed chemical waste collector. <p><u>Municipal Wastes</u></p> <ul style="list-style-type: none"> • Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. • Regular, daily collections are required by an approved waste collector. 	During Construction	Contractor	✓ Obs ✓ ✓ ✓ ✓ Obs ✓
Waste Management during Operation	Not required.	N/A	N/A	N/A
Ecology				
Ecology during Construction	<p><u>Accurate Delineation of Works Area</u></p> <ul style="list-style-type: none"> • Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. • Individual trees which fall within the works areas but which work plans show do not require removal are to be retained and fenced off to maximise protection. <p><u>Dust generation</u></p> <p>There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction:</p> <ul style="list-style-type: none"> • vehicle washing facilities to be provided at every discernible or designated vehicle exit point; 	During Construction	Contractor	✓ ✓ ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> • all temporary site access roads shall be sprayed with water to suppress dust as necessary; • all dusty materials should be sprayed with water immediately prior to any handling; and • all debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area. <p><u>Surface Run-off</u></p> <p>In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include:</p> <ul style="list-style-type: none"> • Bund and cover stock piles to avoid run-off; • Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; • All vehicle maintenance to be undertaken within a bunded area; and • Maximise vegetation retention on-site to maximise absorption (minimise transport). 	During Construction	Contractor	✓ ✓ ✓ Obs Obs N/A ✓
Ecology during Operation	<ul style="list-style-type: none"> • To conduct compensatory ecological planting as specified in the latest landscape plans approved by EPD (Clause 2.6 of the Environmental Permit refers). 	During Construction and operation	Contractor (during construction) / LCS D* (during operation) (Note: * The division of vegetation planting and maintenance responsibilities shall follow the guidelines stipulated in ETWB TCW No. 2/2004.)	N/A
Landscape and Visual				
Landscape and Visual during Construction	<p><u>Preservation of Existing Vegetation</u></p> <ul style="list-style-type: none"> • Trees identified for retention within the project limit would be protected during the works • The tree transplanting and planting works shall be implemented by approved Landscape Contractors 	During Construction	Contractor	Obs ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<p><u>Temporary Works Areas</u></p> <ul style="list-style-type: none"> Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase. <p><u>Hoarding</u></p> <ul style="list-style-type: none"> A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs. <p><u>Top Soils</u></p> <ul style="list-style-type: none"> The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis. <p><u>Protection of Important Landscape Features</u></p> <ul style="list-style-type: none"> Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected. 	During Construction	Contractor	✓
		During Construction	Contractor	✓
		During Construction	Contractor	N/A
		During Construction	Contractor	N/A
Landscape and Visual during Operation	Not required.	N/A	N/A	N/A

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Appendix D

Meteorological Data Extracted from Hong Kong Observatory

Climatological Information Services > Extracts of Climatological Data > Extract of Automatic Weather Station > Station: Sheung Shui Automatic Weather Station, Year: 2013, Month: November

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, November 2013 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Nov 1	1014.2	31.3	25.1	19.8	17.6	94	67	36
Nov 2	1012.1	27.8	25.7	22.5	17.7	80	61	54
Nov 3	1013.4	28.1	25.3	23.5	18.6	80	67	57
Nov 4	1018.0	25.5	22.7	20.4	18.7	95	79	64
Nov 5	1019.3#	24.5	21.9#	20.0	19.4#	96	86#	74
Nov 6	1018.4	27.9	23.8	21.1	20.0	93	80	60
Nov 7	1017.6	29.6	24.2	21.3	19.6	95	76	55
Nov 8	1016.3	30.6	24.8	22.2	19.0	89	71	50
Nov 9	1014.8	29.5	25.8	21.0	19.8	94	71	52
Nov 10	1014.7	27.1	25.9	24.7	22.2	92	80	70
Nov 11	1013.9	25.9	24.9	23.1	20.4	81	76	71
Nov 12	1012.9	23.1	22.0	21.2	20.0	95	89	80
Nov 13	1014.8	21.5	19.1	17.9	16.1	96	83	75
Nov 14	1017.9	24.5	20.2	18.3	15.1	82	73	58
Nov 15	1018.9	27.4	20.7	17.4	13.9	84	66	46
Nov 16	1018.7	27.1	20.6	16.9	13.2	83	63	42
Nov 17	1018.9	26.1	20.9	17.6	10.3	71	51	38
Nov 18	1020.6#	27.0	20.2#	15.9	8.2#	83	49#	20
Nov 19	1021.4	22.4	19.2	15.4	11.7	87	64	38
Nov 20	1019.8#	22.1	19.3#	17.8	13.3#	82	68#	51
Nov 21	1018.7	24.5	20.5	17.2	12.2	83	61	34
Nov 22	1018.8	26.8	21.2	18.1	16.0	94	73	49
Nov 23	1017.3	27.1	22.7	20.3	15.7	78	65	47
Nov 24	1014.4	29.0	22.9	19.0	18.9	98	79	61
Nov 25	1015.6	23.8	18.3	14.3	7.2	83	52	25
Nov 26	1017.2	23.0	17.9	12.1	11.4	88	67	44
Nov 27	1018.6	24.5	19.3	13.9	14.3	90	73	53
Nov 28	1024.4	19.6	15.4	11.3	4.9	92	54	25
Nov 29	1024.9	19.0	14.1	9.2	-3.2	73	34	15
Nov 30	1022.3	22.3	13.6	7.4	4.6	81	59	24
Mean	1017.6#	25.6	21.3#	18.0	14.6#	87	68#	49
Maximum	1024.9#	31.3	25.9#	24.7	22.2#	98	89#	80
Minimum	1012.1#	19.0	13.6#	7.4	-3.2#	71	34#	15

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, November 2013 (Table 2)

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Nov 1	0.0	***	*****
Nov 2	0.0	***	*****
Nov 3	0.0	***	*****
Nov 4	6.0	***	*****
Nov 5	1.0	***	*****
Nov 6	0.0	***	*****
Nov 7	0.0	***	*****
Nov 8	0.0	***	*****
Nov 9	0.0	***	*****
Nov 10	3.5	***	*****
Nov 11	0.0	***	*****
Nov 12	5.0	***	*****
Nov 13	1.5	***	*****
Nov 14	0.0	***	*****
Nov 15	0.0	***	*****
Nov 16	0.0	***	*****
Nov 17	0.0	***	*****
Nov 18	0.0	***	*****
Nov 19	0.0	***	*****
Nov 20	0.0	***	*****
Nov 21	0.0	***	*****
Nov 22	1.0	***	*****
Nov 23	0.0	***	*****
Nov 24	22.5	***	*****
Nov 25	0.0	***	*****
Nov 26	0.0	***	*****
Nov 27	1.0	***	*****
Nov 28	4.5	***	*****
Nov 29	0.0	***	*****
Nov 30	0.0	***	*****
Mean	-----	***	*****
Total	46.0	---	-----
Maximum	22.5	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Climatological Information Services > Extracts of Climatological Data > Extract of Automatic Weather Station > Station: Sheung Shui Automatic Weather Station, Year: 2013, Month: December

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, December 2013 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Dec 1	1022.3	23.9	14.5	8.3	5.4	88	60	22
Dec 2	1020.8	25.5	14.9	8.3	6.1	87	61	20
Dec 3	1019.5	25.5	16.8	11.3	10.4	93	68	41
Dec 4	1018.7	24.3	15.7	10.0	7.7	92	64	26
Dec 5	1018.4	24.2	14.9	8.6	6.3	85	61	27
Dec 6	1017.4	22.8	14.9	9.1	6.4	91	62	22
Dec 7	1017.9	24.1	16.0	10.4	9.8	89	70	39
Dec 8	1015.5	24.0	18.2	12.9	13.1	92	73	53
Dec 9	1014.0	26.2	21.5	16.6	12.9	90	61	35
Dec 10	1014.9	22.9	19.3	16.4	10.7	77	58	44
Dec 11	1017.4	20.9	18.2	15.7	8.3	78	53	38
Dec 12	1017.6	19.3	16.8	14.6	7.4	79	55	45
Dec 13	1018.6	19.8	17.4	14.3	13.0	94	76	58
Dec 14	1019.2	19.4	17.6	15.9	14.1	97	81	69
Dec 15	1017.4	16.1	15.0	14.2	14.4	98	96	93
Dec 16	1016.5	14.3	11.7	10.5	10.8	97	94	84
Dec 17	1017.3	11.8	11.0	10.5	10.1	98	94	83
Dec 18	1020.9	13.4	10.4	8.8	3.3	90	63	47
Dec 19	1022.9	16.6	11.3	8.1	3.2	79	58	41
Dec 20	1023.5	18.3	13.2	9.0	4.2	79	55	40
Dec 21	1024.8	17.0	13.5	11.1	4.1	76	53	43
Dec 22	1024.9	17.7	11.9	8.3	2.9	86	55	37
Dec 23	1023.2	20.1	12.0	6.6	4.4	89	64	31
Dec 24	1023.7	20.2	12.9	8.7	4.4	83	58	36
Dec 25	1022.1	20.0	14.0	10.5	4.6	82	54	37
Dec 26	1021.9	19.4	14.2	10.3	-0.1	56	38	25
Dec 27	1024.4	15.9	12.4	10.1	-3.4	48	33	24
Dec 28	1023.8	15.5	10.4	7.3	-3.7	65	38	25
Dec 29	1023.6	18.3	10.8	6.9	-1.8	85	44	25
Dec 30	1023.0	19.8	10.9	5.0	2.1	91	61	19
Dec 31	1021.7	21.8	12.0	5.8	3.7	88	63	24
Mean	1020.2	20.0	14.3	10.5	6.3	85	62	40
Maximum	1024.9	26.2	21.5	16.6	14.4	98	96	93
Minimum	1014.0	11.8	10.4	5.0	-3.7	48	33	19

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, December 2013 (Table 2)

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Dec 1	0.0	***	*****
Dec 2	0.0	***	*****
Dec 3	0.0	***	*****
Dec 4	0.0	***	*****
Dec 5	0.0	***	*****
Dec 6	0.0	***	*****
Dec 7	0.0	***	*****
Dec 8	0.0	***	*****
Dec 9	0.0	***	*****
Dec 10	0.0	***	*****
Dec 11	0.0	***	*****
Dec 12	0.0	***	*****
Dec 13	1.0	***	*****
Dec 14	4.0	***	*****
Dec 15	40.5	***	*****
Dec 16	47.0	***	*****
Dec 17	43.0	***	*****
Dec 18	0.0	***	*****
Dec 19	0.0	***	*****
Dec 20	0.0	***	*****
Dec 21	0.0	***	*****
Dec 22	0.0	***	*****
Dec 23	0.0	***	*****
Dec 24	0.0	***	*****
Dec 25	0.0	***	*****
Dec 26	0.0	***	*****
Dec 27	0.0	***	*****
Dec 28	0.0	***	*****
Dec 29	0.0	***	*****
Dec 30	0.0	***	*****
Dec 31	0.0	***	*****
Mean	-----	***	*****
Total	135.5	---	-----
Maximum	47.0	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Climatological Information Services > Extracts of Climatological Data > Extract of Automatic Weather Station > Station: Sheung Shui Automatic Weather Station, Year: 2014, Month: January

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, January 2014 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Jan 1	1019.6	22.5	12.8	6.3	4.7	91	63	28
Jan 2	1017.0	22.4	15.2	8.2	10.1	92	73	55
Jan 3	1016.1	25.1	18.3	14.0	13.2	92	74	47
Jan 4	1018.4	23.1	17.3	12.0	7.1	92	54	29
Jan 5	1019.1	20.5	14.7	8.4	6.0	86	59	28
Jan 6	1018.0	21.4	16.6	12.1	8.9	79	61	43
Jan 7	1016.7	20.7	18.6	16.7	14.1	84	75	61
Jan 8	1018.5	23.2	18.6	14.3	14.1	93	76	58
Jan 9	1023.6	16.1	14.4	12.4	6.3	66	58	52
Jan 10	1024.6	17.1	15.2	13.7	9.6	76	69	61
Jan 11	1023.8	22.1	16.8	12.6	11.2	87	71	50
Jan 12	1023.9	22.8	16.4	12.2	10.7	95	71	49
Jan 13	1024.7	15.2	12.3	10.3	5.3	72	63	54
Jan 14	1024.4	17.1	12.2	9.1	4.3	71	59	46
Jan 15	1026.0	20.0	12.6	9.1	3.7	84	56	31
Jan 16	1024.6	20.6	13.4	7.8	7.1	90	68	40
Jan 17	1023.7	21.9	14.5	9.0	8.8	96	72	38
Jan 18	1026.7	22.3	15.5	10.3	1.5	82	40	19
Jan 19	1026.5	19.2	12.3	6.9	6.3	88	69	41
Jan 20	1024.4	22.6	14.9	8.9	2.9	91	52	14
Jan 21	1025.3	18.6	14.1	10.2	-6.2	54	25	14
Jan 22	1025.7	19.7	12.2	7.1	-4.2	74	35	11
Jan 23	1023.4	20.3	11.7	6.1	4.9	93	66	33
Jan 24	1019.0	22.0	15.3	9.3	10.2	92	73	53
Jan 25	1017.9	24.9	18.9	15.6	13.6	85	72	50
Jan 26	1019.6	25.2	18.7	16.3	13.2	91	72	43
Jan 27	1021.1	22.7	17.2	15.0	9.5	77	62	40
Jan 28	1020.5	24.7	17.2	13.3	11.2	87	70	41
Jan 29	1020.0	25.1	16.6	10.5	10.8	95	72	37
Jan 30	1019.5	26.2	17.1	10.9	12.1	95	76	42
Jan 31	1018.4	25.7	18.3	11.5	12.3	95	72	38
Mean	1021.6	21.6	15.5	11.0	7.8	85	64	40
Maximum	1026.7	26.2	18.9	16.7	14.1	96	76	61
Minimum	1016.1	15.2	11.7	6.1	-6.2	54	25	11

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, January 2014 (Table 2)

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Jan 1	0.0	***	*****
Jan 2	0.0	***	*****
Jan 3	0.0	***	*****
Jan 4	0.0	***	*****
Jan 5	0.0	***	*****
Jan 6	0.0	***	*****
Jan 7	0.0	***	*****
Jan 8	0.0	***	*****
Jan 9	0.0	***	*****
Jan 10	0.0	***	*****
Jan 11	0.0	***	*****
Jan 12	0.0	***	*****
Jan 13	0.0	***	*****
Jan 14	0.0	***	*****
Jan 15	0.0	***	*****
Jan 16	0.0	***	*****
Jan 17	0.0	***	*****
Jan 18	0.0	***	*****
Jan 19	0.0	***	*****
Jan 20	0.0	***	*****
Jan 21	0.0	***	*****
Jan 22	0.0	***	*****
Jan 23	0.0	***	*****
Jan 24	0.0	***	*****
Jan 25	0.0	***	*****
Jan 26	0.0	***	*****
Jan 27	0.0	***	*****
Jan 28	0.0	***	*****
Jan 29	0.0	***	*****
Jan 30	0.0	***	*****
Jan 31	0.0	***	*****
Mean	-----	***	*****
Total	0.0	---	-----
Maximum	0.0	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Appendix E Environmental Monitoring Data for Air, Noise and Water Quality

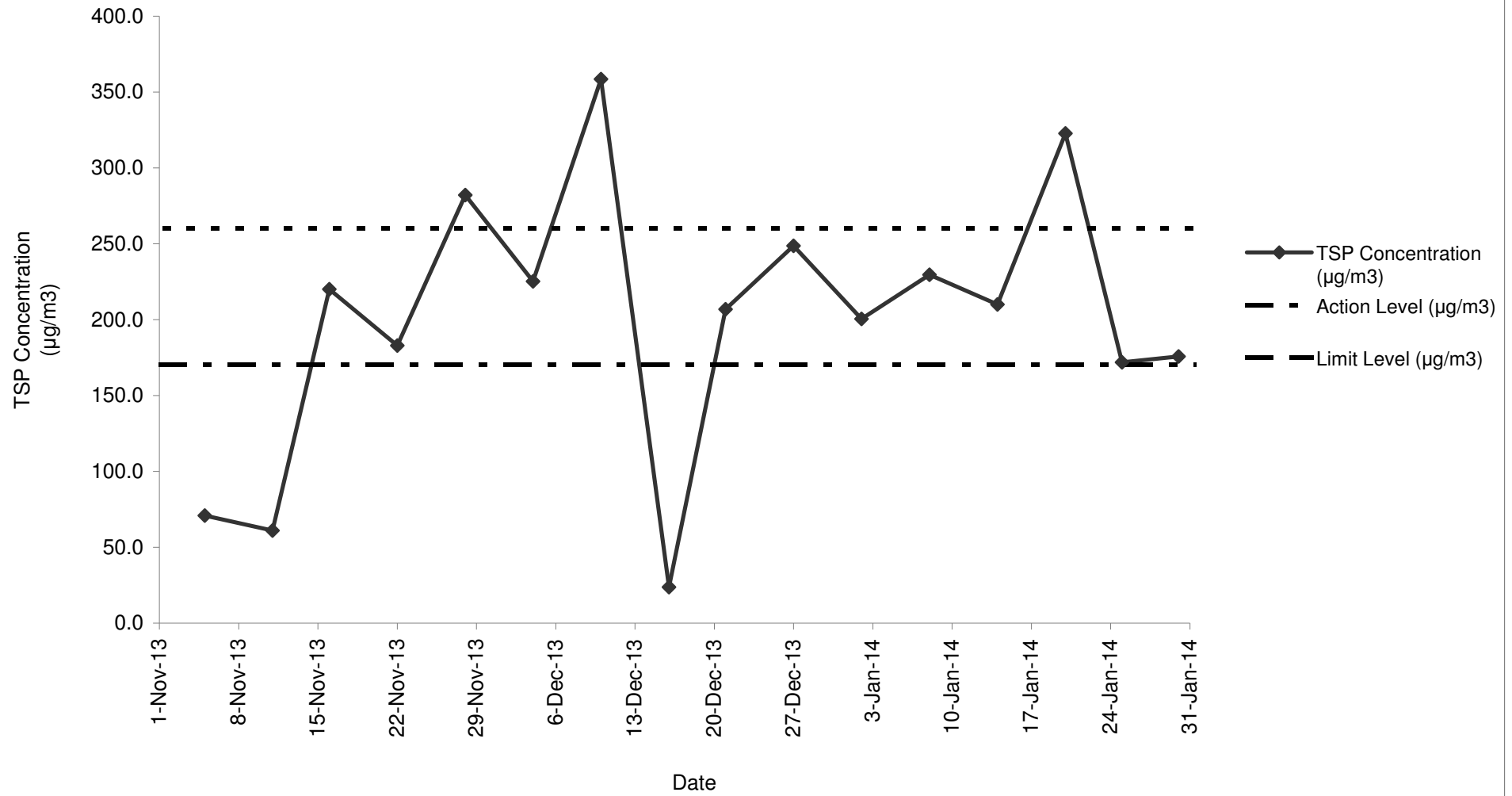
Appendix E
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at station: SR77

Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m ³ /min)			Total Volume (m ³)	TSP Concentration (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Wind speed m/s	Wind direction	
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate							
5-Nov-13	Cloudy	026046	2.7344	2.8817	0.1473	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	70.8	170.3	260.0	<5	N	
11-Nov-13	Cloudy	026047	2.7294	2.8564	0.1270	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	61.1	170.3	260.0	<5	N	
16-Nov-13	Fine	205789	2.7214	3.1790	0.4576	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	220.0	170.3	260.0	<5	N	
22-Nov-13	Fine	205791	2.7471	3.1275	0.3804	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	182.9	170.3	260.0	<5	N	
28-Nov-13	Fine	205792	2.5360	3.1228	0.5868	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	282.2	170.3	260.0	<5	N	
4-Dec-13	Fine	205793	2.7256	3.1940	0.4684	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	225.2	170.3	260.0	<5	N	
10-Dec-13	Fine	205794	2.5920	3.3377	0.7457	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	358.6	170.3	260.0	<5	N	
16-Dec-13	Rainy	205831	2.7374	2.7867	0.0493	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	23.7	170.3	260.0	<5	N	
21-Dec-13	Fine	205832	2.7435	3.1737	0.4302	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	206.9	170.3	260.0	<5	N	
27-Dec-13	Sunny	205833	2.7321	3.2491	0.5170	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	248.6	170.3	260.0	<5	N	
2-Jan-14	Sunny	205834	2.6667	3.0836	0.4169	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	200.5	170.3	260.0	<5	N	
8-Jan-14	Fine	205904	2.8976	3.3749	0.4773	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	229.5	170.3	260.0	<5	N	
14-Jan-14	Fine	205835	2.7456	3.1824	0.4368	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	210.0	170.3	260.0	<5	N	
20-Jan-14	Fine	205836	2.7541	3.4253	0.6712	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	322.8	170.3	260.0	<5	N	
25-Jan-14	Sunny	205837	2.7496	3.1072	0.3576	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	172.0	170.3	260.0	<5	N	
30-Jan-14	Fine	205838	2.7561	3.1216	0.3655	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	175.8	170.3	260.0	<5	N	
Average																199.4					
Min																23.7					
Max																358.6					

Note: No major dust source observed during the monitoring period
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

24-Hour TSP Monitoring Result at Station: SR77 (November 2013 - January 2014)



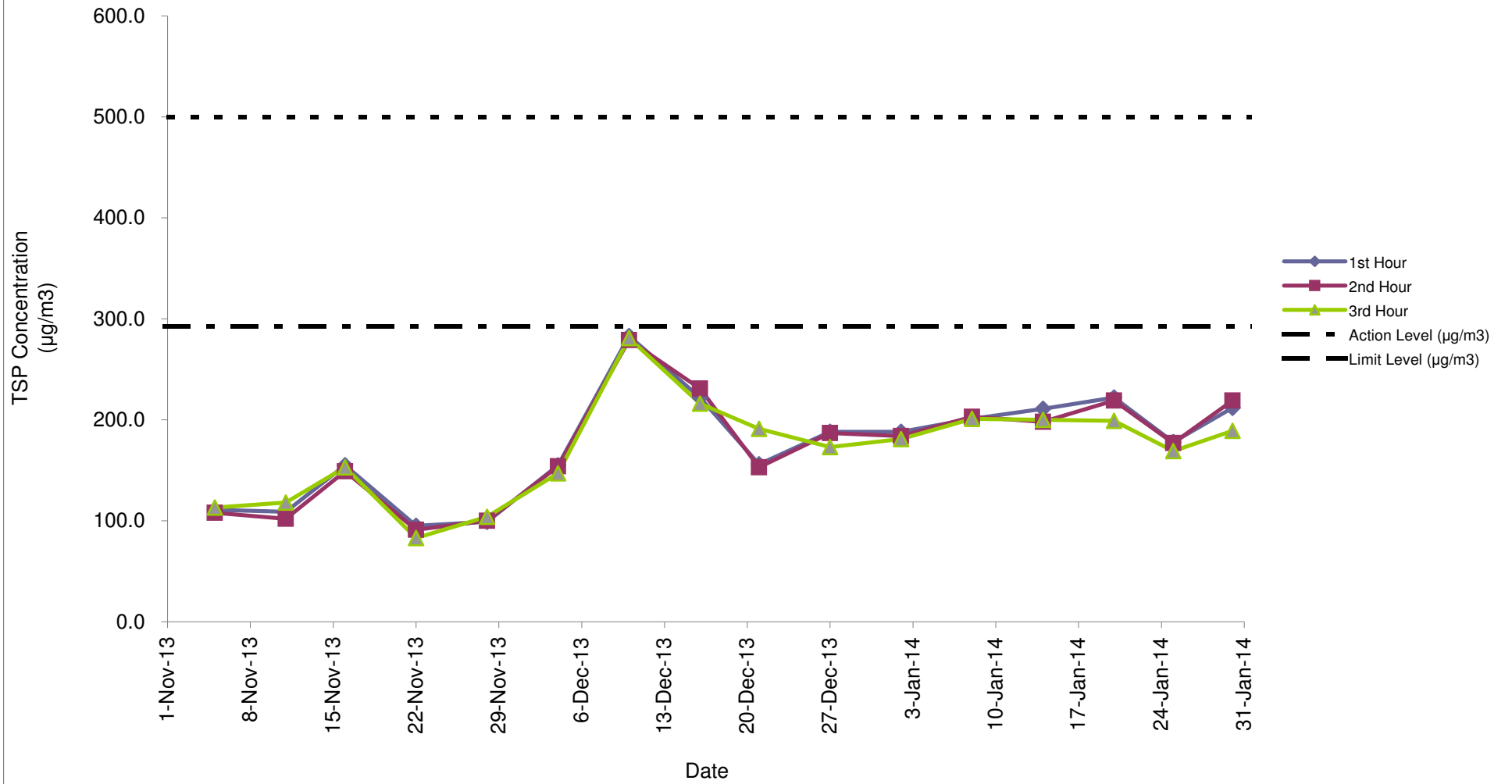
Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at station: SR77

Date	Weather Condition	Time	Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
			1 st Hour	2 nd Hour	3 rd Hour		
5-Nov-13	Cloudy	9:30 - 12:34	111.0	108.0	113.0	292.7	500.0
11-Nov-13	Cloudy	9:00 - 12:04	109.0	102.0	118.0	292.7	500.0
16-Nov-13	Fine	9:00 - 12:04	155.0	149.0	153.0	292.7	500.0
22-Nov-13	Fine	13:30 - 16:34	95.0	91.0	83.0	292.7	500.0
28-Nov-13	Fine	10:00 - 13:04	99.0	100.0	104.0	292.7	500.0
4-Dec-13	Fine	11:00 - 14:04	155.0	154.0	147.0	292.7	500.0
10-Dec-13	Fine	13:00 - 16:04	283.0	279.0	281.0	292.7	500.0
16-Dec-13	Rainy	10:00 - 13:04	222.0	231.0	216.0	292.7	500.0
21-Dec-13	Fine	8:00 - 11:04	156.0	153.0	191.0	292.7	500.0
27-Dec-13	Fine	11:30 - 14:34	188.0	187.0	173.0	292.7	500.0
2-Jan-14	Sunny	9:30 - 12:34	188.0	184.0	181.0	292.7	500.0
8-Jan-14	Fine	9:30 - 12:34	201.0	203.0	201.0	292.7	500.0
14-Jan-14	Fine	13:00 - 16:04	211.0	198.0	200.0	292.7	500.0
20-Jan-14	Fine	13:00 - 16:04	222.0	219.0	199.0	292.7	500.0
25-Jan-14	Sunny	9:00 - 12:04	178.0	177.0	169.0	292.7	500.0
30-Jan-14	Fine	14:00 - 17:04	212.0	219.0	189.0	292.7	500.0
			Average	172.0			
			Min	83.0			
			Max	283.0			

Note: No major dust source observed during the monitoring period

1-Hour TSP Monitoring Result at station: SR77 (November 2013 - January 2014)



Project Name:

Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Noise Monitoring Result at SR77

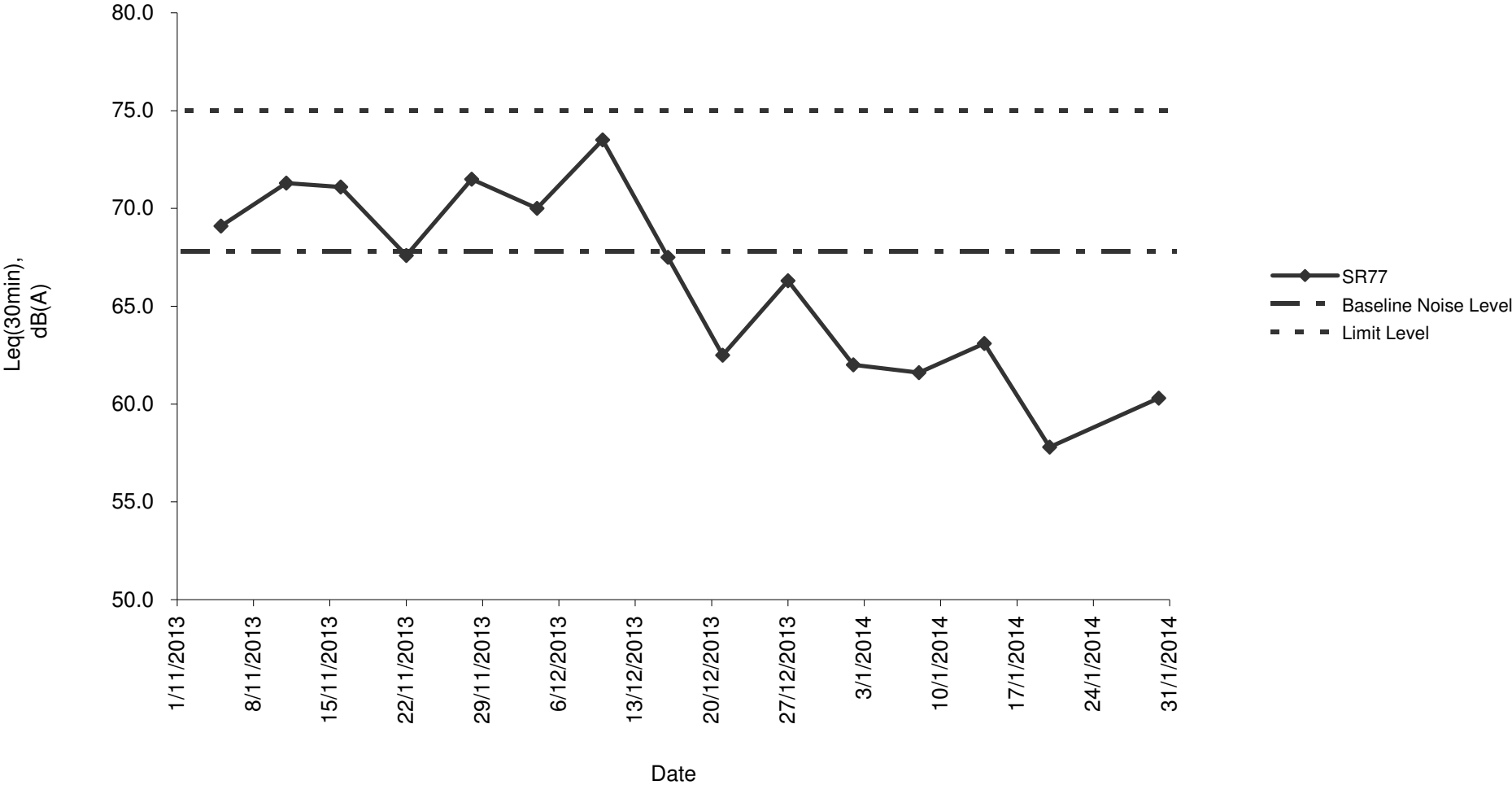
Date	Weather Condition	Start Time	End Time	Measured Noise Level (dB(A))*			Baseline Corrected Level, dB(A)**	Baseline Noise Level (dB(A)), Leq(30min)	Limit Level dB(A)	Exceedance (Y / N)
				L10(30min)	L90(30min)	Leq(30min)				
2013/11/05	Cloudy	9:30	10:00	72.4	61.1	69.1	-	67.8	75.0	N
2013/11/11	Cloudy	10:30	11:00	72.9	62.2	71.3	-	67.8	75.0	N
2013/11/16	Fine	10:00	10:30	73.2	63.1	71.1	-	67.8	75.0	N
2013/11/22	Fine	13:30	14:00	70.5	58.5	67.6	-	67.8	75.0	N
2013/11/28	Fine	10:30	11:00	74.1	77.5	71.5	-	67.8	75.0	N
2013/12/04	Fine	11:30	12:00	75.1	63.0	70.0	-	67.8	75.0	N
2013/12/10	Fine	13:00	13:30	79.6	67.5	73.5	-	67.8	75.0	N
2013/12/16	Rainy	10:00	10:30	71.6	77.1	67.5	-	67.8	75.0	N
2013/12/21	Fine	8:00	8:30	68.6	74.1	62.5	-	67.8	75.0	N
2013/12/27	Sunny	11:30	12:00	70.1	75.4	66.3	-	67.8	75.0	N
2014/01/02	Sunny	9:30	10:00	70.8	72.3	62.0	-	67.8	75.0	N
2014/01/08	Fine	9:30	10:00	71.2	76.1	61.6	-	67.8	75.0	N
2014/01/14	Fine	13:00	13:30	70.4	74.5	63.1	-	67.8	75.0	N
2014/01/20	Fine	13:00	13:30	76.8	72.1	57.8	-	67.8	75.0	N
2014/01/30	Fine	14:00	14:30	70.8	72.9	60.3	-	67.8	75.0	N
						Average	66.3			
						Minimum	57.8			
						Maximum	73.5			

Remarks

* +3dB(A) Façade effect correction included

** Baseline corrected level is only calculated when measured noise level (Leq) > limit level.

**Noise monitoring result: SR77
(November 2013 - January 2014)**



Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3
 Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 5/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:53	<0.5	24.1	24.1	7.6	7.6	7.0	7.0	83.7	83.7	13.6	12.9	0.1	0.1	8	8.5
			24.1		7.6		7.0		83.6		12.1		0.1		9	
C3b	10:41	<0.5	23.7	23.7	8.1	8.1	6.9	6.9	81.2	81.2	35	36.2	0.1	0.1	52	52
			23.7		8.1		6.9		81.2		37.3		0.1		52	
I5	10:24	<0.5	23.5	23.5	7.9	7.9	7.1	7.1	83.8	83.1	9.69	9.9	0.1	0.1	7	6.5
			23.5		7.9		7.0		82.3		10.1		0.1		6	

Date of Monitoring 7/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:53	<0.5	27.4	27.4	7.6	7.6	8.2	8.2	104.3	104.3	15.1	14.6	<0.1	<0.1	17	16.5
			27.4		7.6		8.2		104.2		14.1		<0.1		16	
C3b	10:41	<0.5	25.7	25.7	8	8.0	7.4	7.4	90.6	90.6	29.2	29.0	<0.1	<0.1	37	37.5
			25.7		8		7.4		90.6		28.7		<0.1		32	
I5	10:24	<0.5	26.1	26.1	7.8	7.8	7.7	7.7	95.4	95.4	32.5	31.2	<0.1	<0.1	38	31.5
			26.1		7.8		7.7		95.4		29.8		<0.1		31	

Date of Monitoring 9/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:02	<0.5	27.2	27.2	7.6	7.6	6.4	6.4	80.3	80.2	21.8	22.0	<0.1	<0.1	24	24
			27.2		7.6		6.4		80.1		22.1		<0.1		24	
C3b	10:50	<0.5	25.9	25.9	8	8.0	5.4	5.4	66.3	66.2	38.7	39.9	<0.1	<0.1	27	27
			25.9		8		5.4		66.1		41		<0.1		27	
I5	10:33	<0.5	25.3	25.3	7.7	7.7	6.1	6.1	74.5	74.2	19.5	18.5	<0.1	<0.1	20	21
			25.3		7.7		6.1		73.9		17.5		<0.1		22	

Date of Monitoring 11/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:46	<0.5	24.5	24.5	7.7	7.7	6.2	6.2	74.7	74.6	28.2	26.2	<0.1	<0.1	34	33.5
			24.5		7.7		6.2		74.4		24.2		<0.1		33	
C3b	11:34	<0.5	24.1	24.1	8	8.0	6.8	6.8	81.3	81.4	87.3	88.5	<0.1	<0.1	130	133
			24.1		8		6.8		81.4		89.6		<0.1		136	
I5	11:17	<0.5	24.4	24.4	7.8	7.8	7.0	7.0	84	84.0	17	17.0	<0.1	<0.1	12	13
			24.4		7.8		7.0		83.9		16.9		<0.1		14	

Date of Monitoring 13/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:38	<0.5	21.7	21.7	7.7	7.7	5.7	5.6	65	64.2	17.1	17.5	<0.1	<0.1	18	17.5
			21.7		7.7		5.6		63.3		17.9		<0.1		17	
C3b	11:14	<0.5	20.9	20.9	7.9	7.9	6.9	7.0	77.7	78.7	60.1	60.2	<0.1	<0.1	88	86
			20.9		7.9		7.1		79.7		60.2		<0.1		84	
I5	11:25	<0.5	21.2	21.2	7.8	7.8	7.1	7.1	79.3	79.4	23	22.4	<0.1	<0.1	20	20.5
			21.2		7.8		7.1		79.4		21.8		<0.1		21	

Date of Monitoring 15/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:57	<0.5	25.5	25.5	7.7	7.7	8.2	8.1	99.6	99.6	36.5	36.0	<0.1	<0.1	25	25.5
			25.5		7.7		8.1		99.5		35.5		<0.1		26	
C3b	11:21	<0.5	23.2	23.2	8	8.0	8.0	8.0	93.7	93.7	37.4	38.1	<0.1	<0.1	30	34
			23.2		8		8.0		93.6		38.7		<0.1		38	
I5	11:34	<0.5	23.2	23.3	7.8	7.8	8.1	8.1	94.6	94.5	21	21.0	<0.1	<0.1	11	9.5
			23.3		7.8		8.1		94.3		21		<0.1		8	

Date of Monitoring 18/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	17:39	<0.5	22.5	22.5	7.7	7.7	4.0	4.2	46.2	48.9	7.81	6.9	<0.1	<0.1	10	9.5
			22.5		7.7		4.5		51.6		5.98		<0.1		9	
C3b	18:07	<0.5	21.4	21.4	8	8.0	5.8	5.8	65.6	65.6	31.6	31.4	<0.1	<0.1	32	32
			21.4		8		5.8		65.5		31.1		<0.1		32	
I5	18:19	<0.5	21.3	21.3	7.8	7.8	4.5	4.4	50.2	50.2	26.8	25.4	<0.1	<0.1	18	18
			21.3		7.8		4.4		50.2		23.9		<0.1		18	

Date of Monitoring 20/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	16:09	<0.5	22.1	22.1	7.7	7.7	5.7	5.7	65.3	65.2	14.8	14.0	<0.1	<0.1	10	9
			22.1		7.7		5.7		65		13.2		<0.1		8	
C3b	15:45	<0.5	21.4	21.4	8	8.0	6.5	6.5	73.7	73.4	18.7	18.7	<0.1	<0.1	8	9
			21.4		8		6.5		73		18.6		<0.1		10	
I5	15:15	<0.5	22.2	22.3	7.9	7.9	8.5	8.5	97.7	97.9	13.5	13.5	<0.1	<0.1	6	7
			22.3		7.9		8.5		98		13.4		<0.1		8	

NOTE:
 Data in **Bold** denotes exceedance of respective Action Level
 Data in **Bold Underline** denotes exceedance of respective Limit Level

Date of Monitoring 22/11/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:38	<0.5	25.5	25.5	7.7	7.7	7.4	7.7	90.6	94.0	12.2	12.2	<0.1	<0.1	6	5
			25.5		7.7		8.0		97.3		12.1					
C3b	14:21	<0.5	23.8	23.8	8	8.0	8.1	8.1	95.7	95.8	60.3	59.7	<0.1	<0.1	35	35
			23.8		8		8.1		95.8		59					
I5	14:07	<0.5	24.6	24.6	7.7	7.7	8.7	8.7	104.5	104.4	6.2	6.3	<0.1	<0.1	9	8.5
			24.6		7.7		8.7		104.3		6.32					

Date of Monitoring 25/11/2013

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:32	<0.5	23.2	23.2	7.4	7.4	8.1	8.1	95.1	95.1	25.9	27.4	<0.1	<0.1	9	9.5
			23.2		7.38		8.1		95.1		28.8					
C3b	11:19	<0.5	22.1	22.1	8.32	8.3	8.4	8.3	95.8	95.7	15.5	15.0	<0.1	<0.1	22	22.5
			22.1		8.32		8.3		95.5		14.4					
I5	10:58	<0.5	21.7	21.7	7.45	7.5	8.7	8.7	99	98.8	24	24.3	<0.1	<0.1	18	18.5
			21.7		7.45		8.7		98.6		24.5					

Date of Monitoring 27/11/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:11	<0.5	23.4	23.4	7.8	7.8	8.1	8.1	95.3	95.3	22.1	21.9	<0.1	<0.1	10	11
			23.4		7.8		8.1		95.3		21.6					
C3b	10:26	<0.5	22.7	22.7	8	8.0	8.3	8.3	95.5	95.5	24.3	24.0	<0.1	<0.1	14	14
			22.7		8		8.3		95.5		23.7					
I5	10:45	<0.5	23.2	23.2	7.7	7.7	8.7	8.7	98.7	98.7	20.5	20.1	<0.1	<0.1	8	9
			23.2		7.7		8.7		98.6		19.7					

Date of Monitoring 29/11/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:24	<0.5	21.5	21.5	7.8	7.8	8.9	8.9	100.3	100.4	12.1	12.1	<0.1	<0.1	6	5
			21.5		7.8		8.9		100.4		12					
C3b	14:05	<0.5	20.3	20.3	8	8.0	8.2	8.2	90.9	91.0	27.5	28.0	<0.1	<0.1	15	12.5
			20.3		8		8.2		91.1		28.5					
I5	13:48	<0.5	21.4	21.4	7.6	7.6	9.5	9.5	107.7	107.0	15.8	15.9	<0.1	<0.1	15	12.5
			21.4		7.6		9.4		106.3		15.9					

Date of Monitoring 2/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	15:13	<0.5	22.8	22.8	7.7	7.7	7.5	7.5	86.9	86.7	16.7	16.7	<0.1	<0.1	16	29.5
			22.8		7.7		7.4		86.4		16.6					
C3b	14:47	<0.5	20.4	20.4	8	8.0	7.0	7.0	77.8	77.8	20.8	20.6	<0.1	<0.1	11	11
			20.4		8		7.0		77.8		20.4					
I5	14:34	<0.5	22.9	22.9	7.6	7.6	7.4	7.4	86.9	86.9	21.1	20.6	<0.1	<0.1	14	13.5
			22.9		7.6		7.4		86.8		20.1					

Date of Monitoring 4/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:23	<0.5	22.6	22.6	7.8	7.8	7.3	7.3	88.4	88.4	11.9	12.0	<0.1	<0.1	7	7.5
			22.6		7.8		7.3		88.3		12.1					
C3b	13:04	<0.5	21.4	21.4	8	8.0	7.7	7.7	92.4	92.5	18.1	18.3	<0.1	<0.1	10	9.5
			21.4		8		7.7		92.5		18.4					
I5	12:46	<0.5	21.9	21.9	7.6	7.6	7.9	7.9	95.2	94.9	18.5	18.1	<0.1	<0.1	8	7
			21.9		7.6		7.9		94.6		17.7					

Date of Monitoring 6/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:25	<0.5	22.3	22.3	7.7	7.7	8.0	8.0	95.5	95.5	10.1	10.4	<0.1	<0.1	6	5
			22.3		7.7		8.0		95.5		10.6					
C3b	13:59	<0.5	19.6	19.6	8	8.0	7.9	7.9	92.1	92.2	21.3	20.5	<0.1	<0.1	7	6.5
			19.6		8		7.9		92.2		19.6					
I5	13:45	<0.5	21.3	21.3	7.6	7.6	8.0	8.0	91.7	91.6	20.8	20.1	<0.1	<0.1	8	8.5
			21.3		7.6		8.0		91.5		19.4					

Date of Monitoring 9/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:43	<0.5	24.4	24.4	7.6	7.6	7.5	7.5	90.2	90.2	18	18.2	<0.1	<0.1	10	10
			24.4		7.6		7.5		90.2		18.3					
C3b	14:18	<0.5	22.6	22.6	7.9	7.9	7.7	7.7	88.7	88.7	21.4	21.9	<0.1	<0.1	13	13.5
			22.6		7.9		7.7		88.7		22.4					
I5	14:00	<0.5	25.1	25.1	7.5	7.5	8.7	8.7	105.2	105.2	19.2	19.1	<0.1	<0.1	8	7
			25.1		7.5		8.7		105.1		18.9					

NOTE:

Data in **Bold** denotes exceedance of respective Action LevelData in **Bold Underline** denotes exceedance of respective Limit Level

Date of Monitoring 11/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:41	<0.5	22.1	22.1	8.05	8.0	7.8	7.7	88.6	86.9	26.9	26.6	<0.1	<0.1	20	19.5
			22.1		8.04		7.5		85.2		26.3					
C3b	14:16	<0.5	21.2	21.2	8.16	8.2	8.4	8.4	94.3	94.3	24	24.4	<0.1	<0.1	17	16.5
			21.2		8.15		8.4		94.2		24.8					
I5	14:00	<0.5	22.2	22.2	8.18	8.2	7.6	7.6	87.8	87.3	20.2	19.6	<0.1	<0.1	6	5.5
			22.2		8.18		7.6		86.8		19					

Date of Monitoring 13/12/2013

Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	9:49	<0.5	17.5	17.5	7.7	7.7	9.6	9.6	100.6	100.6	24.2	24.2	<0.1	<0.1	21	21
			17.5		7.7		9.6		100.6		24.1					
C3b	9:17	<0.5	17.3	17.3	8	8.0	9.5	9.5	96.2	96.2	12.9	12.9	<0.1	<0.1	2	2.5
			17.3		8		9.5		96.1		12.8					
I5	9:00	<0.5	17.3	17.3	7.2	7.2	8.8	8.8	99.2	99.2	13	13.0	<0.1	<0.1	2	2
			17.3		7.2		8.8		99.2		13					

Date of Monitoring 16/12/2013

Weather : Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:48	<0.5	15.6	15.6	7.7	7.7	9.4	9.4	94.4	94.4	34.5	36.1	<0.1	<0.1	24	23.5
			15.6		7.7		9.4		94.4		37.7					
C3b	11:01	<0.5	16.2	16.2	8	8.0	9.0	9.0	92.1	92.1	28	27.0	<0.1	<0.1	10	9.5
			16.2		8		9.0		92.1		26					
I5	11:18	<0.5	15.3	15.3	7.3	7.3	9.0	9.0	89.7	89.8	39.9	41.2	<0.1	<0.1	20	19
			15.3		7.3		9.0		89.8		42.4					

Date of Monitoring 18/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:33	<0.5	18.6	18.6	7.7	7.7	8.8	8.8	91.1	91.1	20.5	21.0	<0.1	<0.1	15	14.5
			18.6		7.7		8.8		91.1		21.5					
C3b	13:17	<0.5	16.5	16.5	8.1	8.1	8.6	8.6	93.3	93.3	17.9	18.0	<0.1	<0.1	8	8
			16.5		8.1		8.5		93.3		18					
I5	12:55	<0.5	16.9	16.9	7.5	7.5	8.4	8.6	87.6	87.6	48.6	48.7	<0.1	<0.1	28	28
			16.9		7.5		8.8		87.6		48.7					

Date of Monitoring 20/12/2013

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:35	<0.5	20.4	20.4	7.7	7.7	7.7	7.5	85.2	83.0	30.1	29.8	<0.1	<0.1	30	29.5
			20.4		7.7		7.3		80.7		29.4					
C3b	13:16	<0.5	18.1	18.1	8.1	8.1	8.6	8.6	90.9	90.9	25.7	25.1	<0.1	<0.1	13	12.5
			18.1		8.1		8.6		90.8		24.4					
I5	12:49	<0.5	18.2	18.2	7.5	7.5	8.8	8.6	93.3	91.3	24.1	24.7	<0.1	<0.1	13	13.5
			18.2		7.5		8.4		89.3		25.3					

Date of Monitoring 23/12/2013

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:40	<0.5	18.2	18.2	7.7	7.7	9.5	9.3	96.7	95.0	42.9	43.5	<0.1	<0.1	32	32.5
			18.2		7.7		9.1		93.2		44.1					
C3b	11:21	<0.5	16.6	16.6	8	8.0	9.4	9.5	96.5	97.1	37.4	37.2	<0.1	<0.1	9	9
			16.6		8		9.5		97.7		36.9					
I5	11:03	<0.5	16.3	16.3	7.3	7.3	8.2	8.2	87.2	87.2	36.3	37.1	<0.1	<0.1	13	13.5
			16.3		7.3		8.2		87.1		37.8					

Date of Monitoring 24/12/2013

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:26	<0.5	15.3	15.3	7.6	7.6	8.5	8.4	85.2	84.3	42.8	42.0	<0.1	<0.1	62	60
			15.3		7.6		8.3		83.3		41.1					
C3b	10:07	<0.5	13.8	13.8	8	8.0	8.3	8.4	80.3	80.7	26.2	26.8	<0.1	<0.1	4	3.5
			13.8		8		8.4		81		27.3					
I5	9:51	<0.5	14.3	14.3	7.5	7.5	8.5	8.8	83.3	85.7	23.5	24.0	<0.1	<0.1	6	5.5
			14.3		7.5		9.0		88		24.5					

Date of Monitoring 27/12/2013

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:07	<0.5	15.2	15.2	7.6	7.6	8.5	8.6	84.6	85.0	20.1	20.2	<0.1	<0.1	9	9
			15.2		7.6		8.6		85.3		20.3					
C3b	10:44	<0.5	14	14.0	8	8.0	8.7	8.6	84.7	83.5	21.4	21.4	<0.1	<0.1	14	14
			14		8		8.5		82.2		21.4					
I5	10:30	<0.5	13.8	13.8	7.4	7.4	9.6	9.4	93.2	90.6	28.8	28.8	<0.1	<0.1	9	9
			13.8		7.4		9.1		87.9		28.8					

NOTE:

Data in **Bold** denotes exceedance of respective Action Level
 Data in **Bold Underline** denotes exceedance of respective Limit Level

Date of Monitoring 30/12/2013

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:10	<0.5	16.7	16.7	7.6	7.6	8.2	8.3	84.3	85.1	52.1	52.0	<0.1	<0.1	58	57.5
			16.7		7.6		8.3		85.8		51.8					
C3b	11:30	<0.5	14.4	14.4	8.1	8.1	9.1	9.0	88.9	87.5	26.9	26.6	<0.1	<0.1	16	17
			14.4		8.1		8.8		86		26.3					
I5	11:44	<0.5	15.1	15.1	7.4	7.4	8.3	8.4	82.4	83.1	18.5	18.9	<0.1	<0.1	6	5.5
			15.1		7.4		8.4		83.7		19.3					

Date of Monitoring 2/1/2014

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:59	<0.5	17.2	17.2	7.7	7.7	8.4	8.4	87.7	87.7	18.6	18.9	<0.1	<0.1	17	17.5
			17.2		7.7		8.4		87.7		19.2					
C3b	10:28	<0.5	15.9	15.9	8	8.0	8.5	8.6	86.4	86.8	25.7	25.9	<0.1	<0.1	21	21.5
			15.9		8		8.6		87.2		26.1					
I5	10:44	<0.5	15.9	15.9	7.5	7.5	8.1	8.1	81.8	81.8	31.8	32.5	<0.1	<0.1	9	9
			15.9		7.5		8.1		81.8		33.1					

Date of Monitoring 4/1/2014

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:00	<0.5	16.4	16.4	7.7	7.7	8.5	8.5	86.7	86.7	36.1	36.2	<0.1	<0.1	18	19
			16.4		7.7		8.5		86.7		36.2					
C3b	10:18	<0.5	16.8	16.8	8	8.0	8.8	8.8	90.4	90.4	33.4	34.8	<0.1	<0.1	6	6
			16.8		8		8.8		90.4		36.1					
I5	10:29	<0.5	17.1	17.1	7.5	7.5	7.9	7.9	82.1	82.1	29.2	29.7	<0.1	<0.1	5	5.5
			17.1		7.5		7.9		82.1		30.2					

Date of Monitoring 6/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:51	<0.5	18.7	18.7	7.6	7.6	7.1	7.1	75.8	75.8	26.1	25.6	<0.1	<0.1	22	21
			18.7		7.6		7.1		75.8		25.1					
C3b	12:19	<0.5	18.1	18.1	8.1	8.1	8.2	8.2	86.7	86.7	15.4	15.7	<0.1	<0.1	9	9
			18.1		8.1		8.2		86.7		15.9					
I5	12:33	<0.5	18.6	18.6	7.4	7.4	8.1	8.1	87.1	87.1	16.9	17.0	<0.1	<0.1	8	7.5
			18.6		7.4		8.1		87.1		17.1					

Date of Monitoring 8/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:31	<0.5	20.2	20.2	7.6	7.6	7.9	7.9	86.8	86.8	41.8	41.5	<0.1	<0.1	36	35.5
			20.2		7.6		7.9		86.8		41.2					
C3b	9:55	<0.5	20.4	20.4	8.1	8.1	7.8	7.8	86.3	86.3	41.6	41.4	<0.1	<0.1	9	9.5
			20.4		8.1		7.8		86.3		41.1					
I5	10:13	<0.5	19.5	19.5	7.4	7.4	8.5	8.5	92.5	92.5	33.2	33.5	<0.1	<0.1	7	7
			19.5		7.4		8.5		92.5		33.7					

Date of Monitoring 10/1/2014

Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:33	<0.5	17	17.0	7.7	7.7	7.6	7.6	78.4	78.4	25.5	25.5	<0.1	<0.1	14	14.5
			17		7.7		7.6		78.4		25.5					
C3b	10:05	<0.5	16.6	16.6	8	8.0	8.6	8.6	88.1	88.1	16.8	16.8	<0.1	<0.1	4	4
			16.6		8		8.6		88.1		16.8					
I5	10:16	<0.5	17	17.0	7.5	7.5	8.6	8.6	89	89.0	15.6	15.6	<0.1	<0.1	7	6.5
			17		7.5		8.6		89		15.6					

Date of Monitoring 13/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:00	<0.5	14	14.0	7.1	7.1	10.3	10.3	99.8	99.8	17	17.5	<0.1	<0.1	4	4.5
			14		7.1		10.3		99.7		18					
C3b	10:17	<0.5	14	14.0	7.8	7.8	10.0	10.1	97.3	97.5	18.1	17.6	<0.1	<0.1	5	4.5
			14		7.8		10.1		97.6		17.1					
I5	9:40	<0.5	14.5	14.5	7.4	7.4	10.1	10.1	98.58	98.7	16	16.7	<0.1	<0.1	3	3
			14.5		7.4		10.1		98.8		17.3					

Date of Monitoring 15/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:01	<0.5	20.4	20.4	7.1	7.1	7.5	7.6	82.8	84.2	16.9	17.4	<0.1	<0.1	7	7
			20.4		7.1		7.7		85.6		17.8					
C3b	13:46	<0.5	18.5	18.5	7.8	7.8	8.5	8.6	90.7	91.4	20.8	21.9	<0.1	<0.1	5	5.5
			18.5		7.8		8.6		92		22.9					
I5	13:30	<0.5	20	20.0	7.4	7.4	8.0	7.8	87.5	85.0	21.7	22.1	<0.1	<0.1	10	11
			20		7.4		8.2		82.5		22.5					

NOTE:

Data in **Bold** denotes exceedance of respective Action LevelData in Bold Underline denotes exceedance of respective Limit Level

Date of Monitoring 17/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:03	<0.5	19.5	19.5	7.7	7.7	7.9	7.8	85.6	84.9	25.6	25.4	<0.1	<0.1	9	9.5
			19.5		7.7		7.7		84.1		25.2		<0.1		10	
C3b	13:41	<0.5	19.5	19.5	8	8.0	8.4	8.4	91.1	91.1	21.2	20.8	<0.1	<0.1	4	3.5
			19.5		8		8.4		91.1		20.3		<0.1		3	
I5	13:27	<0.5	18.8	18.8	7.5	7.5	7.6	7.6	81.9	81.9	19	19.3	<0.1	<0.1	7	7
			18.8		7.5		7.6		81.9		19.5		<0.1		7	

Date of Monitoring 20/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:07	<0.5	21	21.0	7.1	7.1	7.5	7.5	84	84.0	22.8	22.7	<0.1	<0.1	9	9
			21		7.1		7.5		84		22.5		<0.1		9	
C3b	13:56	<0.5	19.9	19.9	7.8	7.8	7.3	7.3	80.3	80.3	12.7	12.8	<0.1	<0.1	5	5
			19.9		7.8		7.3		80.3		12.8		<0.1		5	
I5	13:53	<0.5	20.8	20.8	7.4	7.4	7.9	7.9	87.9	87.9	14.1	14.0	<0.1	<0.1	6	6
			20.8		7.4		7.9		87.9		13.8		<0.1		6	

Date of Monitoring 22/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:01	<0.5	19.3	19.3	7.7	7.7	8.7	8.7	94.2	94.2	22.9	22.3	<0.1	<0.1	6	6
			19.3		7.7		8.7		94.2		21.6		<0.1		6	
C3b	13:41	<0.5	18.1	18.1	8	8.0	8.4	8.4	89.4	89.4	23.8	23.5	<0.1	<0.1	6	6.5
			18.1		8		8.4		89.4		23.1		<0.1		7	
I5	13:33	<0.5	19.7	19.7	7.5	7.5	7.9	7.9	86.4	86.4	13.4	13.6	<0.1	<0.1	6	5.5
			19.7		7.5		7.9		86.4		13.7		<0.1		5	

Date of Monitoring 24/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:28	<0.5	21.5	21.5	7.7	7.7	7.2	7.2	81.7	81.7	15.7	15.9	<0.1	<0.1	4	4
			21.5		7.7		7.2		81.7		16		<0.1		4	
C3b	13:49	<0.5	19.8	19.8	8	8.0	8.2	8.2	89.8	89.8	28.8	29.4	<0.1	<0.1	7	6
			19.8		8		8.2		89.8		29.9		<0.1		5	
I5	13:33	<0.5	20.8	20.8	7.5	7.5	8.0	8.0	89	89.0	31	30.4	<0.1	<0.1	10	9.5
			20.8		7.5		8.0		89		29.7		<0.1		9	

Date of Monitoring 27/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:55	<0.5	21.1	21.1	7.7	7.7	7.4	7.4	83.8	83.8	22.1	22.2	<0.1	<0.1	7	6.5
			21.1		7.7		7.4		83.8		22.2		<0.1		6	
C3b	14:31	<0.5	20.9	20.9	8	8.0	7.4	7.4	82.7	82.7	26.1	26.1	<0.1	<0.1	9	9.5
			20.9		8		7.4		82.7		26		<0.1		10	
I5	14:11	<0.5	22.1	22.1	7.5	7.5	7.9	7.9	90.9	90.9	14.2	14.2	<0.1	<0.1	8	8
			22.1		7.5		7.9		90.9		14.1		<0.1		8	

Date of Monitoring 29/1/2014

Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:40	<0.5	23	23.0	7.7	7.7	7.4	7.4	86.3	86.3	24	23.8	<0.1	<0.1	3	3
			23		7.7		7.4		86.3		23.5		<0.1		3	
C3b	14:19	<0.5	21.9	21.9	8	8.0	7.4	7.4	84.4	84.4	22.7	22.7	<0.1	<0.1	4	4
			21.9		8		7.4		84.4		22.6		<0.1		4	
I5	14:32	<0.5	23.1	23.1	7.5	7.5	7.7	7.7	90.2	90.2	22.3	22.7	<0.1	<0.1	4	4.5
			23		7.5		7.7		90.2		23.1		<0.1		5	

Date of Monitoring 30/1/2014

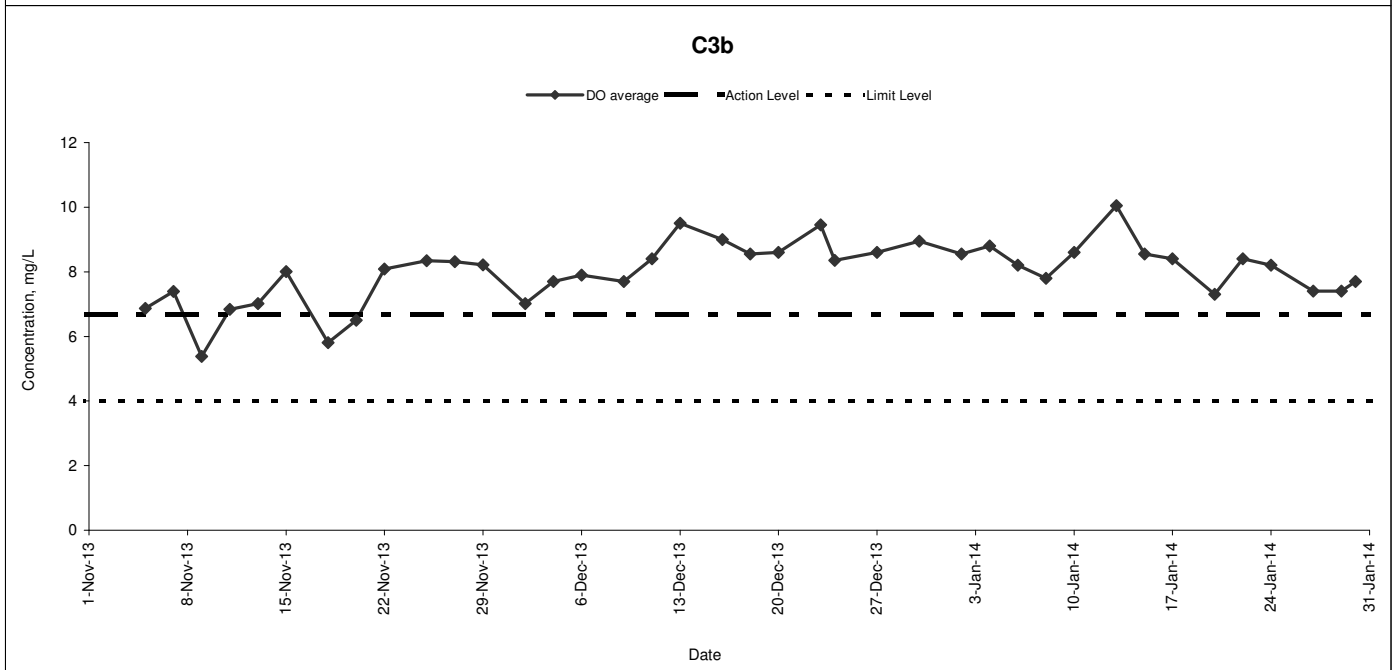
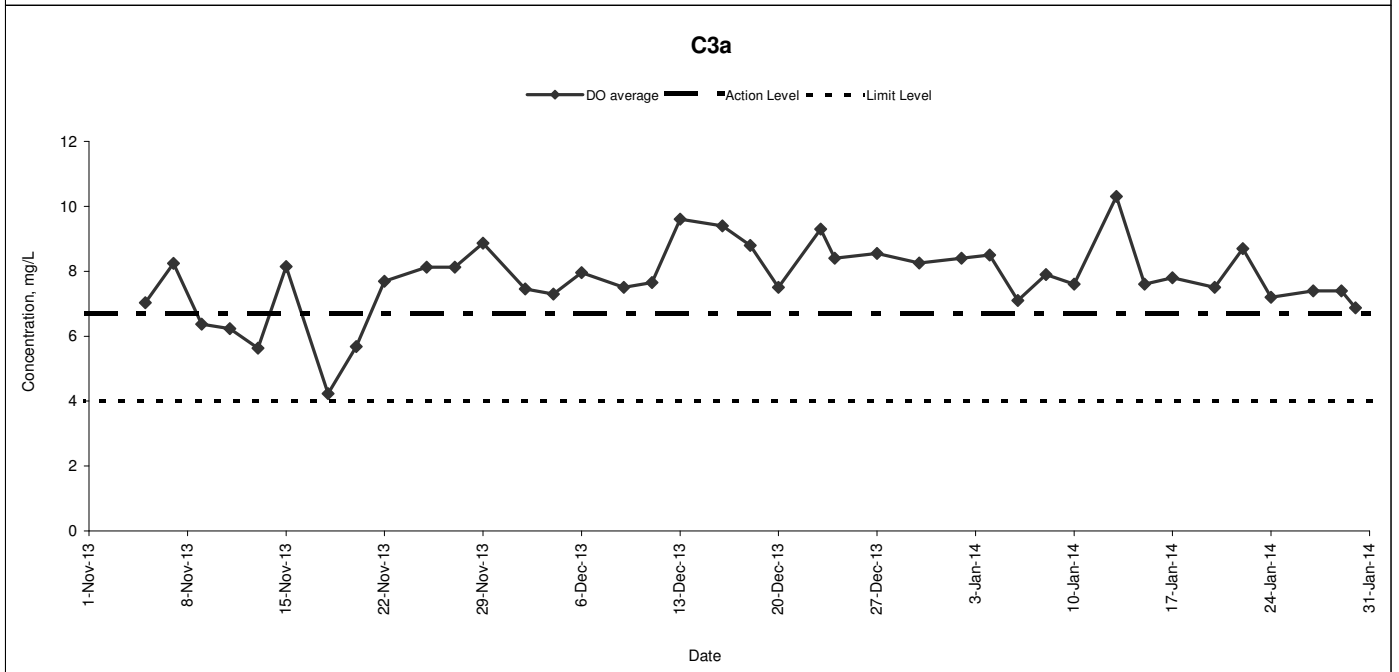
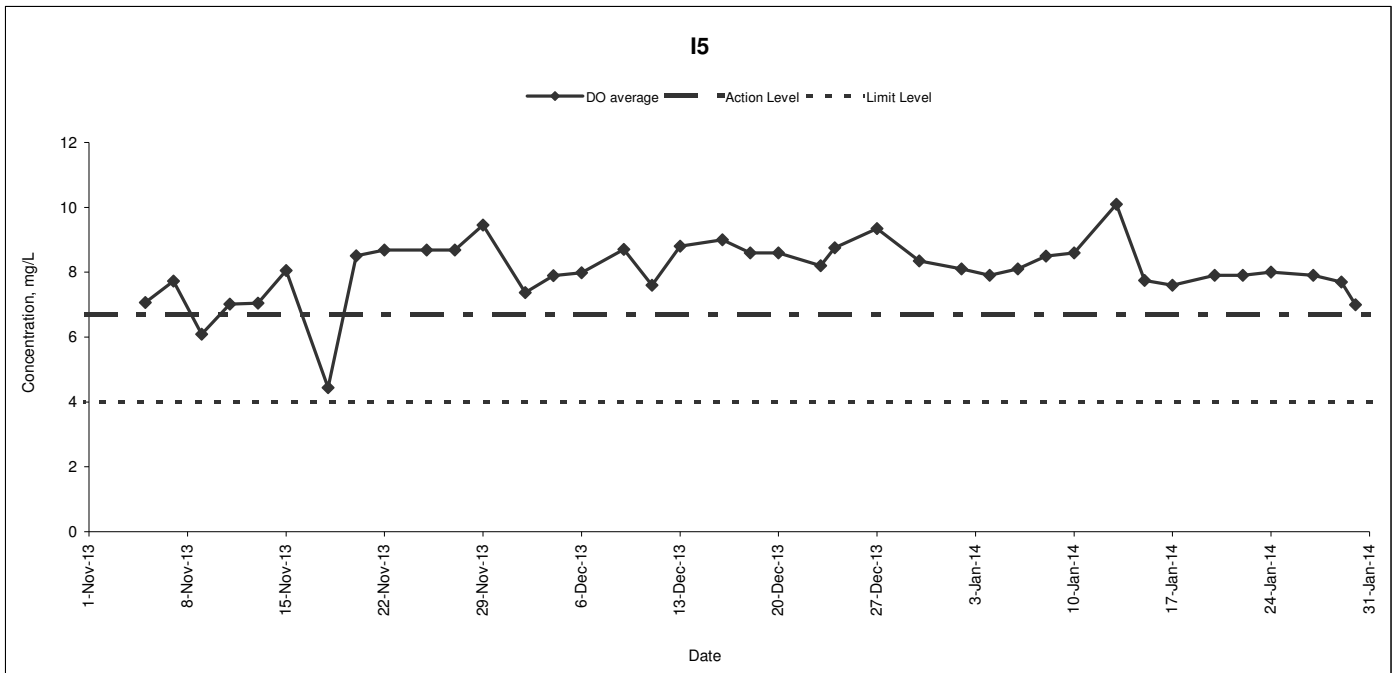
Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:35	<0.5	23.1	23.1	7.7	7.7	6.9	6.9	81.3	81.3	29.9	29.5	<0.1	<0.1	5	5
			23.1		7.7		6.9		81.3		29		<0.1		5	
C3b	14:03	<0.5	22.9	22.9	8	8.0	7.5	7.7	87.9	89.9	22.7	22.8	<0.1	<0.1	5	4.5
			22.9		8		7.9		91.8		22.9		<0.1		4	
I5	14:17	<0.5	23.9	23.9	7.5	7.5	7.0	7.0	82.8	82.8	24.8	24.9	<0.1	<0.1	6	6
			23.9		7.5		7.0		82.8		24.9		<0.1		6	

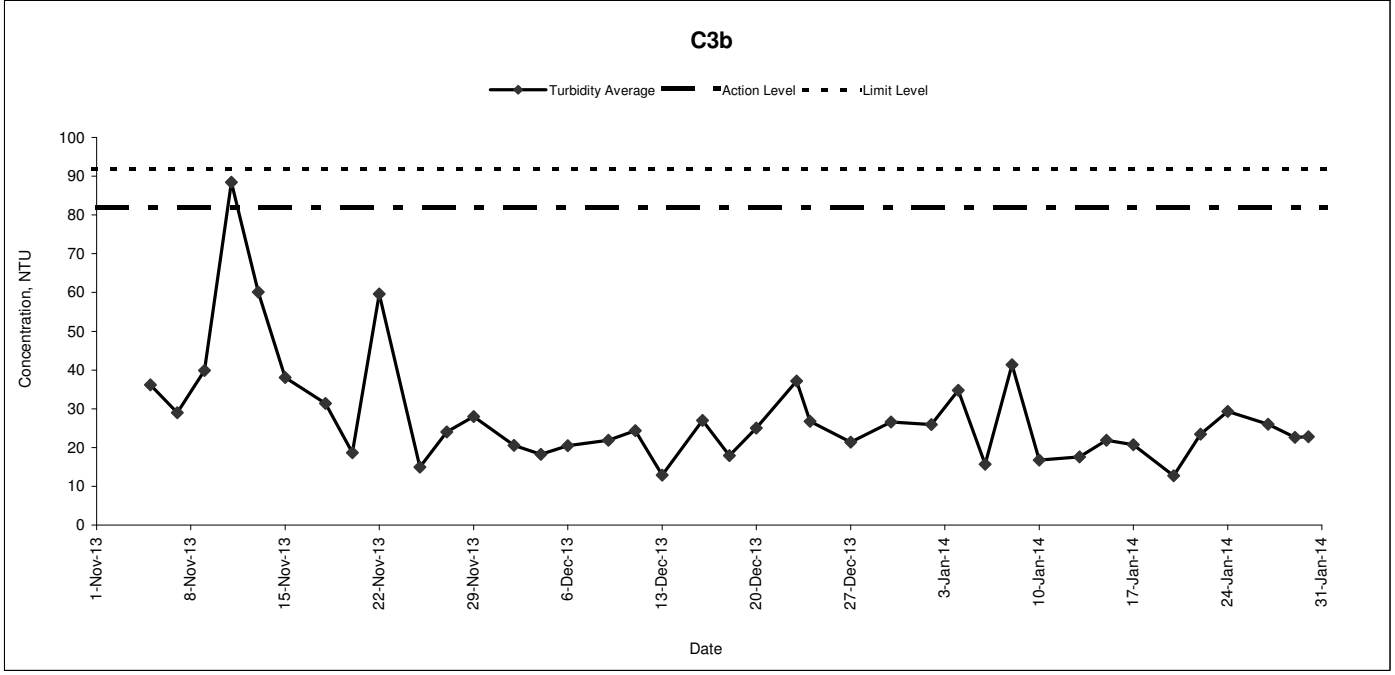
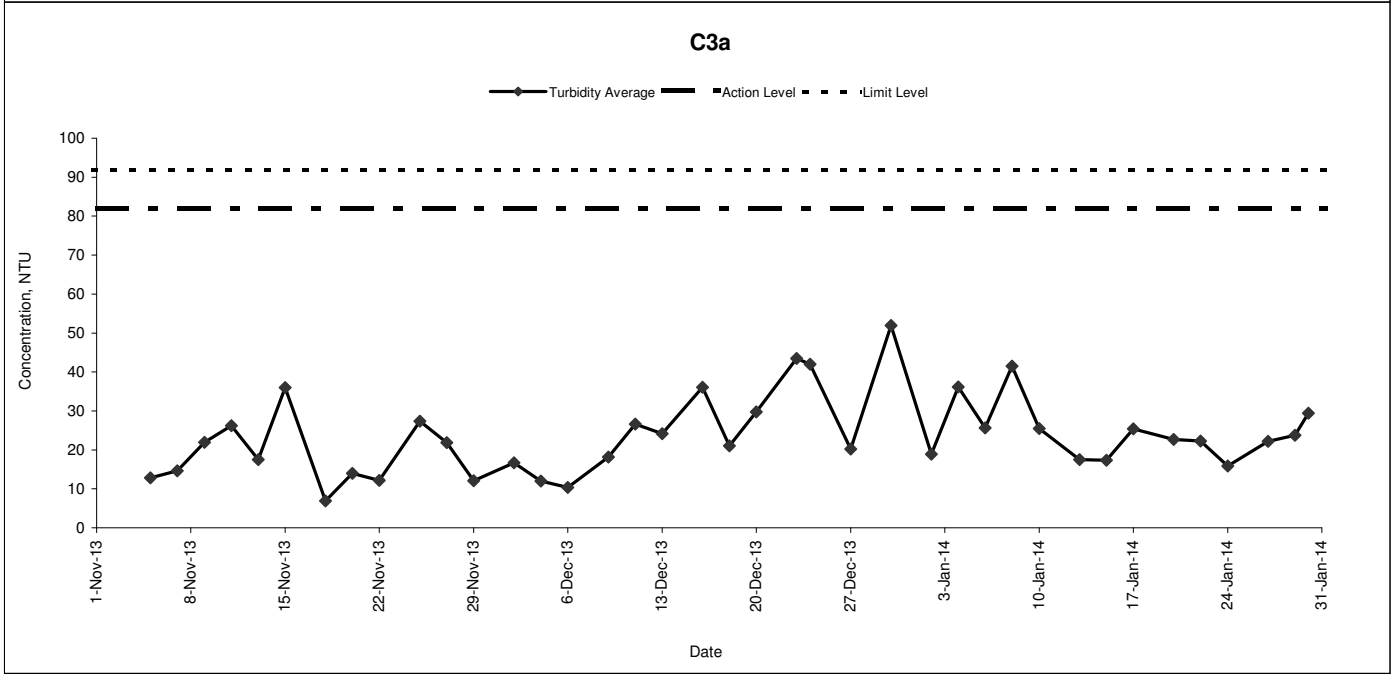
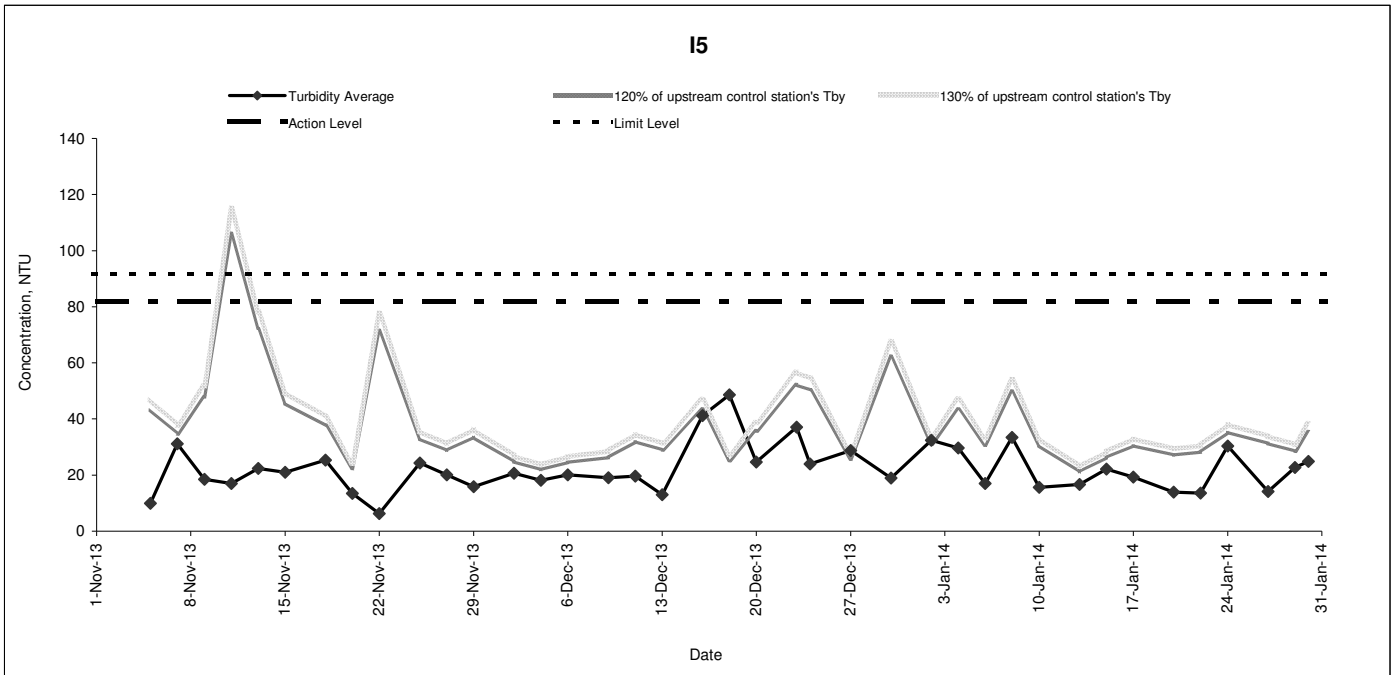
NOTE:

Data in **Bold** denotes exceedance of respective Action LevelData in **Bold Underline** denotes exceedance of respective Limit Level

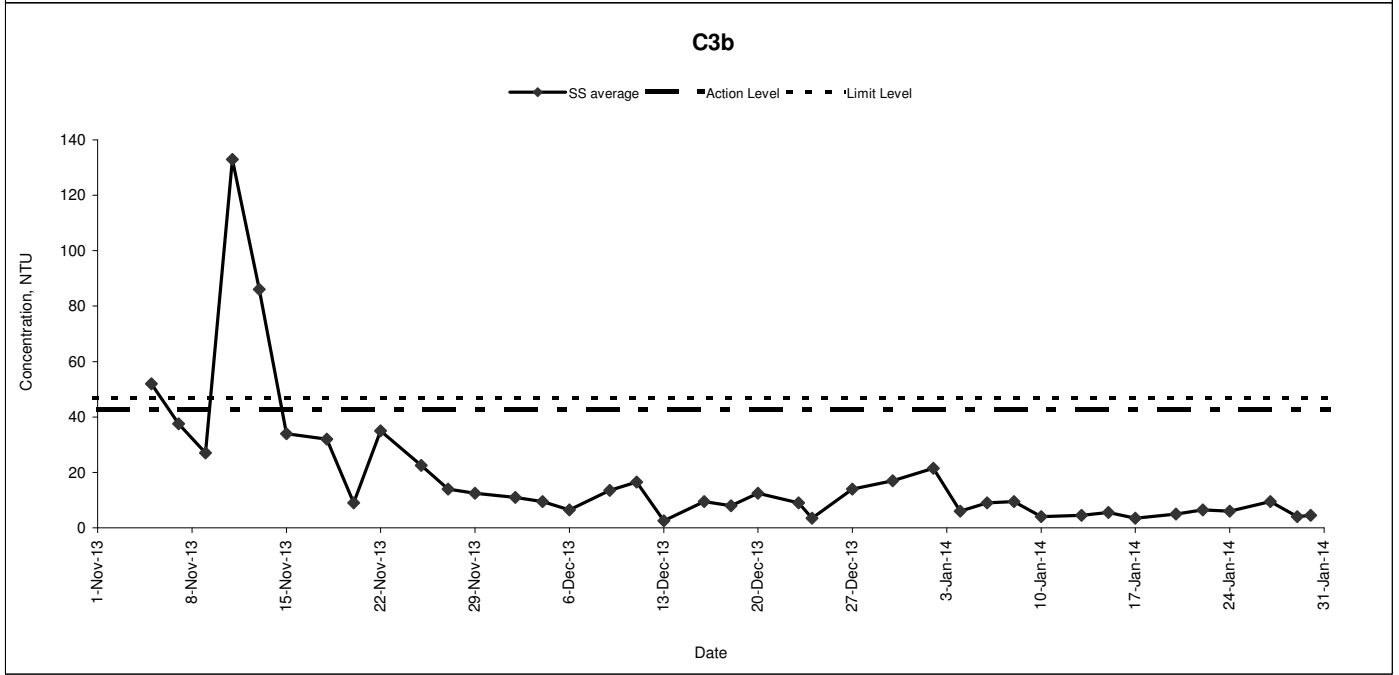
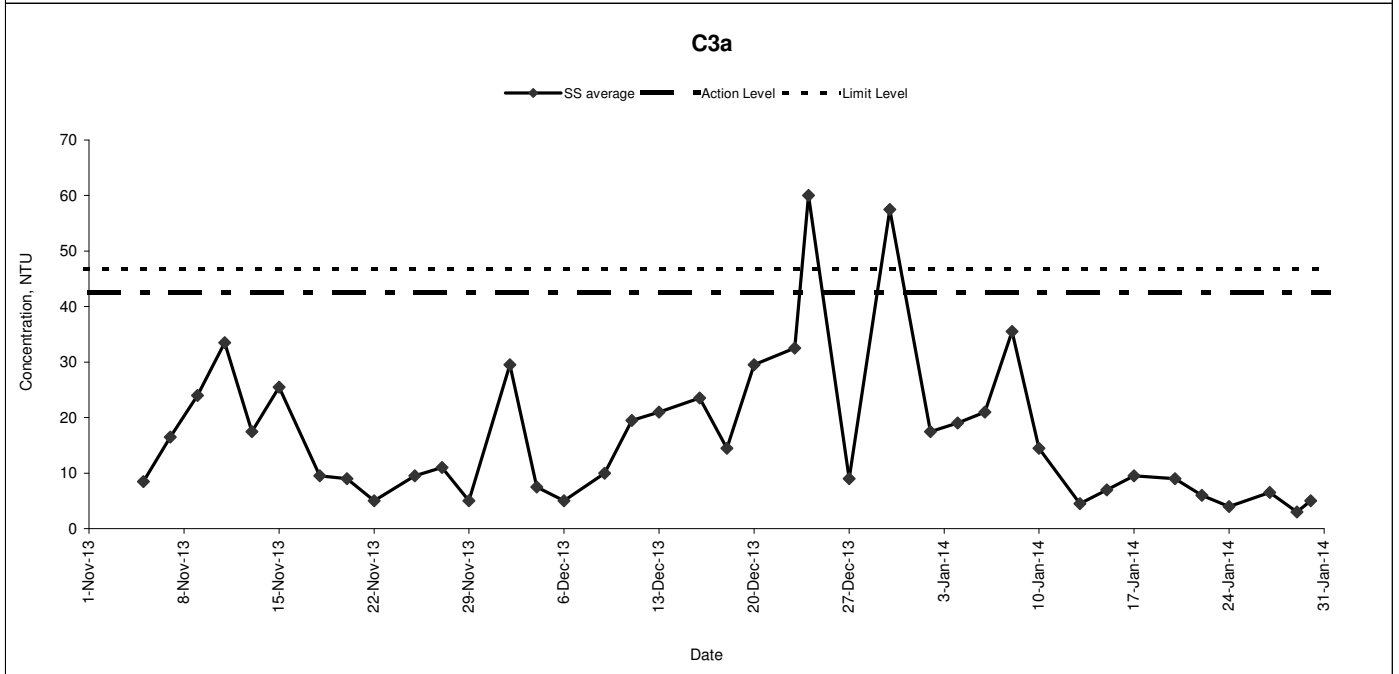
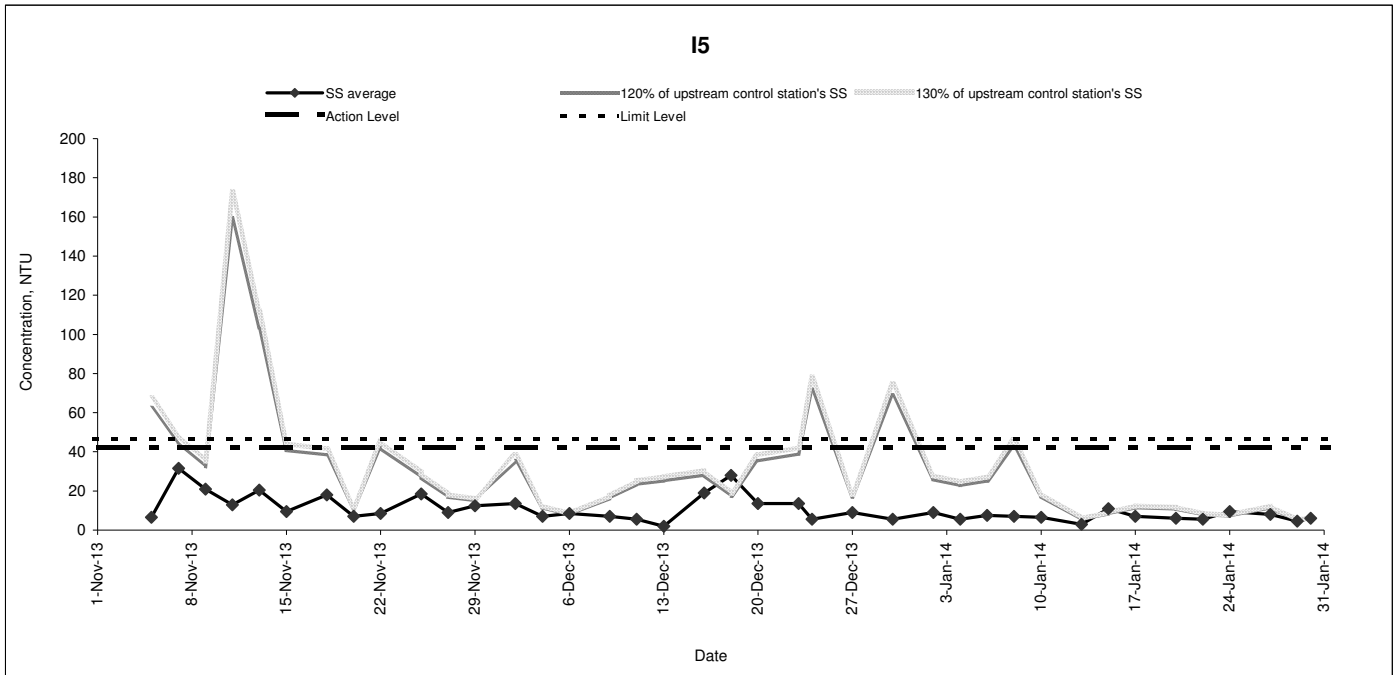
Dissolved Oxygen (November 2013 - January 2014)



Turbidity (November 2013 - January 2014)



Suspended Solid (November 2013 - January 2014)



Appendix F

Waste Flow Table

Appendix J Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Soil	Soil Reused in the Contract	Soil Reused in other Projects	Soil Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging (Note 3)	Plastics	Chemical Waste	General Refuse (Note 2)
Unit	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)
Nov-13	1.351	-	1.351	0.473	-	0.878	-	-	-	-	-	0.055
Dec-13	0.177	0.007	0.170	0.030	-	0.140	0.600	-	-	-	-	0.055
Jan-14	0.493	0.084	0.409	-	-	0.409	0.200	-	-	0.010	-	0.110
Total	2.021	0.091	1.930	0.503	-	1.427	0.800	-	-	0.010	-	0.220

- Note:
1. Assume the density of soil fill is 2 ton/m3.
 2. Assume the density of rock and broken concrete is 2.5 ton/m3.
 3. Assume each truck of C&D wastes is 5m3.
 4. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38.
 5. The slurry and bentonite are disposed at Tseung Kwun O 137.
 6. The non-inert C&D wastes are disposed at NENT.

Appendix G Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
C131126	November 26, 2013	Mr. Tony Hung from WWF	Mat Wat River (works sites for box culvert extension)	Suspected unauthorised discharge of water from a construction site to Ma Wat River, Tai Wo Service Road East, Tai Po	<ol style="list-style-type: none"> 1) It was found that the water leaving the end of the steel pipes was the diverted water from the upstream of the existing box culverts, instead of being discharged from the construction works sites. 2) An EM&A Programme is being undertaken to monitoring the environmental performance of the construction works, and the Contractor has also implemented appropriate mitigation measures to avoid silt-laden runoff discharging from the works sites into the river. 3) The complaint is considered an invalid complaint under this Project. 	Completed

Cumulative Log for Notifications of Summons

Log No.	Date/Location	Subject	Status	Total Received in this reporting month	Total no. Received since project commencement

Cumulative log for Successful Prosecutions

Log No.	Date/Location	Subject	Status	Total Received in this reporting month	Total no. Received since project commencement



**Meinhardt Infrastructure and
Environment Ltd**
邁進基建環保工程顧問有限公司

4/F Wah Ming Centre
421 Queen's Road West
Hong Kong
香港皇后大道西421號華明中心4樓

Tel 電話: +852 2858 0738
Fax 傳真: +852 2540 1580

mail@meinhardt.com.hk
www.meinhardtgroup.com