

PROJECT No.: TCS/00408/08

**DSD CONTRACT NO. DC/2007/17  
DRAINAGE IMPROVEMENT WORKS IN CHEUNG PO,  
MA ON KONG, YUEN KONG SAN TSUEN AND TIN SAM  
TSUEN OF YUEN LONG DISTRICT AND SEWERAGE AT  
TSENG TAU CHUNG TSUEN, TUEN MUN**

**FIRST QUARTERLY EM&A SUMMARY REPORT –  
KT14A  
OCTOBER – DECEMBER 2008**

PREPARED FOR  
**CHINA ROAD & BRIDGE CORPORATION**

**Quality Index**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b> (Environmental Consultant)	<b>Certified by</b> (Environmental Team Leader)
13 January 2009	TCS00408/08/600/R0616r2	Nicola Hon	FN Wong

<b>Rev.</b>	<b>Date</b>	<b>Prepared by:</b>	<b>Certified by:</b>	<b>Description</b>
1	6 January 2009	Ben Tam	FN Wong	First submission
2	13 January 2009	Nicola Hon	FN Wong	Response to IEC's comments that received on 12 Jan 09

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Executive Summary

- ES01 This is the first quarterly EM&A summary report for KT14A, covering the construction period from 2 October to 25 December 2008.
- ES02 Monitoring results of the Reporting Period demonstrated no exceedances of environmental quality criteria of construction noise.
- ES03 For air quality, there was one (1) exceedance of environmental quality criteria (A/L/Levels) as shown below:

Location	Exceedance (Date Recorded)	1-Hour TSP	24-Hour TSP	Total
A8(a)	Action Level (27 November 2008)	0	1	1
	Limit Level (-)	0	0	0

The exceedance is concluded not related to the works under the Project but due to a hill fire on the day of exceedance. No remedial action was recommended.

- ES04 A total of 60 exceedances of water quality A/L levels, namely 22 exceedances of Action levels and 38 exceedances of Limit levels, were recorded during the Reporting Period as shown below:

location	Exceedance	DO	Turbidity	pH	SS	NH <sub>4</sub> +N	Zn	Total
W8B (October 2008)	Action Level	6	0	0	0	0	2	8
	Limit Level	5	7	0	8	0	3	23
W8B (November 2008)	Action Level	6	0	0	0	0	0	6
	Limit Level	0	1	0	5	0	1	7
W8B (December 2008)	Action Level	6	0	0	1	1	0	8
	Limit Level	0	3	0	4	0	1	8
Total	Action Level	18	0	0	1	1	2	22
	Limit Level	5	11	0	17	0	5	38
Total (60)		23	11	0	18	1	7	60
Compliance (%) (Number of monitoring occasions per parameter per location = 37)	Action Level	51.4	100	100	97.3	97.3	94.6	82.9
	Limit Level	40.6	70.3	100	54.0	100	86.5	73.0

Investigation concluded that all of the exceedances are not related to the works under the Project. No corrective actions were recommended.

- ES05 The impact EM&A program was undertaken in accordance with the EM&A manuals. A summary of the monitoring activities in this quarter is listed below:

Environmental Aspect	KT14A
• 1-Hr TSP Monitoring	14 Events
• 24-Hr TSP Monitoring	14 Events
• Noise Monitoring	14 Events
• Water Quality Monitoring	37 Monitoring Days
• Site Inspection Audit	13 occasions

- ES06 It is noted that abnormally high frequency of exceedance of the existing water quality criteria has occurred since the commencement of the water quality monitoring at W8B of KT14A. Particular attention has been paid to the water quality exceedances during 26 August to 2 October 2008, when no construction activities were commenced. This implies that the exceedances are not related to the works under the Project but due to changes of the ambient conditions and up-stream control station.

A proposal on the revision of the A/L levels has been submitted for agreement of the ER and IEC

prior to seek formal approval from EPD. Percentile approach as recommended in the EM&A Manual is applied to the baseline monitoring data with replenishment of the most recent monitoring data obtained under zero construction impacts. The recommended A/L levels are summarized in **Table 3-3-2**.

Parameter	Monitoring Location	Type of Station	Action Level	Limit Level
DO* (mg/L)	W8A	Impact Monitoring Station	2.22	1.80
	W8B	Impact Monitoring Station	4.06	4.04
Turbidity (NTU)	W8A	Impact Monitoring Station	36.5	39.6
	W8B	Impact Monitoring Station	18.6	52.0
pH+	W8A	Impact Monitoring Station	6.5 – 8.5	6.0 – 9.0
	W8B	Impact Monitoring Station	6.5 – 8.5	6.0 – 9.0
SS (mg/L)	W8A	Impact Monitoring Station	70	95
	W8B	Impact Monitoring Station	29	39
Ammonia (mg/L)	W8A	Impact Monitoring Station	40.8	43.7
	W8B	Impact Monitoring Station	3.46	4.44
Zinc (µg/L)	W8A	Impact Monitoring Station	136	166
	W8B	Impact Monitoring Station	54	63

\* A/L levels of DO are respectively set at 5%-ile and 1%-ile of baseline level

+ A/L levels of pH are respectively set at outside the ranges of 6.5 - 8.5 and 6 – 9 as generally used for environmental water quality standards.

# Zn obtained at W8A on 18 March (458 ug/L) and 2 September 2008 (228 ug/L), as well as Turbidity, SS and Zn obtained at W8B on 2 September 2008 (161.5 NTU, 473 mg/L and 492 ug/L respectively) and SS and Zn obtained at W8B on 24 September 2008 (492 mg/L and 107 ug/L respectively) are considered as outliers and excluded from A/L level calculation

- ES07 No documented complaints, notifications of summons and successful prosecutions were received during the Reporting Period. No adverse environmental impacts were observed during the weekly site inspection and environmental audit of the Reporting Period, indicating the implemented mitigation measures for air quality, construction noise and ecology were effective. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.
- ES08 As dry season has approached, construction dust will become a key environmental issue. Construction dust suppression measures should be fully implemented. The implemented construction dust mitigation measures should also be maintained and improved, as necessary, during dusty works including vehicle movement on dry and windy days.
- ES09 On the other hand, water quality mitigation measures to avoid ingress of turbidity and other water quality pollutants via site surface water runoff into the river within KT14A should be properly maintained or improved, as appropriate.
- ES10 In addition, special attention should also be paid to construction noise and other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the EIA and summarized in Mitigation Measure Implementation Schedule should be fully implemented.

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## 1 INTRODUCTION

### 1.1 BASIC PROJECT BACKGROUND

CRBC has been awarded the DSD Contract No. DC/2007/17 (hereinafter “the Project”). The works to be executed under the Project are located in Kam Tin, Pat Heung and Tuen Mun, New Territories. The location plan of the Project is shown in **Appendix A**.

The Project involves construction of five drainage channels, namely KT12, KT13 (under Environmental Permit No. EP263/2007), KT14A (under Environmental Permit No. EP231/2005A), KT14B and KT14C in Kam Tin and Pat Heung and the sewerage works at Tseng Tau Chung Tsuen in Tuen Mun. For ease of reporting, the EM&A report under the Project is split to the following three stand-alone parts:

1. EM&A Report - KT13 (under EP No. EP263/2007);
2. EM&A Report - KT14A (under EP No. EP231/2005A); and
3. EM&A Report - KT12, KT14B and KT14C (Non-Designated works under no Environmental Permit)

This report is the part of the EM&A report for KT14A under EP No. EP231/2005A, and this is the first Quarterly EM&A Summary Report (hereinafter “this Report”), covering the first quarter from 2 October to 25 December 2008 (hereinafter “the Reporting Period”).

### 1.2 REPORT STRUCTURE

This Report is structured as follows:

- |                  |  |
|------------------|--|
| <b>Section 1</b> | Introduction   |
| <b>Section 2</b> | Summary of Impact Environmental Monitoring and Audit Requirements                |
| <b>Section 3</b> | Monitoring Results and Breaches of Environmental Quality Criteria                |
| <b>Section 4</b> | Non-compliance, Complaints, Notifications of Summons and Successful Prosecutions |
| <b>Section 5</b> | Conclusion   |

### 1.3 PROJECT ORGANISATION AND CONSTRUCTION PROGRESS

#### 1.3.1 ENVIRONMENTAL MANAGEMENT ORGANIZATION

Management structure and key personnel contact names and telephone numbers of the environmental management organization, where DSD is the Project Proponent; CRBC is the main Contractor of the Project; EPD and AFCD are the supervisory departments for environmental protection of the Project; BVHKL is the Engineer’s Representative of DSD (hereinafter ‘the ER’); ARUP is the Independent Environmental Checker (hereinafter ‘the IEC’) and Action-United Environmental Services and Consulting (hereinafter ‘AUES’) is the environmental team (hereinafter ‘the ET’), are presented in **Appendix B**.

#### 1.3.2 WORKS UNDERTAKEN DURING THE QUARTER REPORTING PERIOD

Major construction activities implemented during the Reporting Period are presented in **Appendix C** and summarized as follows:

##### **2 to 25 October 2008**

- (a) Underground utility investigation;
- (b) Hoarding erection
- (c) Site clearance
- (d) Structural condition survey
- (e) Sheet Piling work at CH 0 – CH 56

**26 October to 25 November 2008**

- (f) Preparation Works includes:
- Underground utility investigation
  - Site clearance
  - Structural condition survey
  - Tree Survey / Tree protection
  - Hoarding erection
- (g) Sheet Piling work at CH 0 – CH 56
- (h) Channel Excavation
- (i) Environmental Monitoring at all the channels

**26 November to 25 December 2008**

- (j) Preparation Works includes:
- Underground utility investigation
  - Site clearance
  - Structural condition survey
  - Tree Survey / Tree protection
  - Hoarding erection
- (k) Channel Excavation
- (l) Construction of rectangular channel
- (m) Environmental Monitoring at all the channels

**1.3.3 ENVIRONMENTAL LICENSING STATUS**

The environmental licensing status in the quarter reporting period is summarized in **Table 2-1**.

Table 1 Status of Environmental Licenses and Permits

Item	License / Permit Description	Status
1	Air Pollution Control (Construction Dust)	Notified EPD on 14-Feb-08
2	Water Pollution Control (Discharge License) License No. 1U461/1	Valid
3	Chemical Waste Producer Registration WPN: 5611-531-C3124-28	Registration on 2-May-08
4	Construction Waste Disposal Billing Account Number 7006524	Valid on 9 Jan 2008

## 2 SUMMARY OF IMPACT ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

### 2.1 MONITORING PARAMETERS

Monitoring parameters are summarized below.

Table 2-1 Summary of Monitoring Parameters

Environmental Aspect	Monitoring Parameters	
Air Quality	(a) 1-Hour Total Suspended Particulate (hereinafter '1-Hr TSP'); and (b) 24-Hour Total Suspended Particulate (hereinafter '24-Hr TSP').	
Construction Noise	(a) A-weighted equivalent continuous sound pressure level (30min) (hereinafter 'Leq(30min)') during the normal working hours; and (b) A-weighted equivalent continuous sound pressure level (5min) (hereinafter 'Leq(5min)') for construction work during the restricted hours.	
Water Quality	(a) In Situ Measurement	temperature, Dissolved Oxygen (hereinafter 'DO'), pH & Turbidity
	(b) Laboratory Analysis	Suspended Solids (hereinafter 'SS'), Ammonia Nitrogen (hereinafter 'NH <sub>3</sub> -N') and Zinc (hereinafter 'Zn')

### 2.2 MONITORING LOCATIONS

Monitoring locations are summarized in *Table 2-2* and shown in *Appendix A*.

Table 2-2 Summary of Monitoring Locations

Env. Aspect	Monitoring Location ID	Identified Address / Co-ordinates
Air	A8(a)	Entrance of Strong Sing Garden
Noise	N8	Ground floor of Strong Sing Garden H502
Water	W8A	E825274 / N831712
	W8B	E825143 / N831786

### 2.3 MONITORING FREQUENCY

The impact monitoring frequency and duration for air quality, construction noise, water quality, ecology and other parameters are summarized below.

#### 2.3.1 Air Quality

**Frequency:** Once every 6 days for 24-Hr TSP and three times every 6 days for 1-Hr TSP, when the highest construction dust impacts are anticipated.

**Duration:** Throughout the construction period

#### 2.3.2 Construction Noise

**Frequency:** Measurement of Leq 30min: Once a week during 0700-1900 on normal weekdays for Leq30min

If the construction work is undertake at restrict hour, the frequency of noise monitoring will be conducted in accordance with the requirements under the related Construction Noise Permit issued by EPD as follows:

- 3 consecutive Leq5min at restrict hour from 1700 – 2300;
- 3 consecutive Leq5min for restrict hour from 2300 – 0700 next day;
- 3 consecutive Leq5min for Sunday or public holiday from 0700 – 1900;

**Duration:** Throughout the construction period

#### 2.3.3 Water Quality

**Frequency:** Three times a week with at least 36 hour intervals between any two consecutive monitoring events

**Depths:** As the water columns in the stream water within KT14A is generally less than 3 m, measurement is performed at the mid-depths of the monitoring locations. In case the water columns are deeper than 6 m, measurement shall be carried out at three water depths, namely, 1 m below water surface, mid-depth, and 1 m above river bed. If the water depths are between 3 to 6 m, the mid-depth measurement is omitted.

**Duration:** Throughout the construction period.

### 2.4 ENVIRONMENTAL QUALITY CRITERIA



The Environmental Quality Criteria i.e. Action and Limit levels (herein after 'A/L levels') are summarized as follows:

Table 2-4-1 Summary of Air Quality Monitoring Results at KT14A-A8(a)

Monitoring Location ID	Action Level ( $\mu\text{g}/\text{m}^3$ )		Limit Level ( $\mu\text{g}/\text{m}^3$ )	
	1-Hr TSP	24-Hr TSP	1-Hr TSP	24-Hr TSP
KT14A - A8(a)	310	144	500	260

Table 2-4-2 Action and Limit Levels of Construction Noise Monitoring

Time Period	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hrs on normal weekdays	When one documented complaint is received	75* dB(A)

Note: \* Reduces to 70dB(A) for schools and 65dB(A) during the school examination periods.

Table 2-4-3 Water Quality Action and Limit Levels

Parameter	Monitoring Location	Type of Station	Action Level	Limit Level
DO (mg/L)	W8A	Control	NA	NA
	W8B	Impact	6.378	4.00
Turbidity (NTU)	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day
pH	W8A	Control	NA	NA
	W8B	Impact	9.2 (95%-ile of baseline results)	9.3 (99%-ile of baseline results)
SS (mg/L)	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day
Ammonia ( $\mu\text{g}/\text{L}$ )	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day
Zinc ( $\mu\text{g}/\text{L}$ )	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day

## 2.5 ENVIRONMENTAL MITIGATION MEASURES

CRBC has committed to implement environmental protection and pollution control and mitigation measures as recommended in the PP, EP and the EM&A Manual. Continuous up-dating of the Mitigation Measures Implementation Schedules attached in the EM&A Manual is required under the PS. The updated Environmental Mitigation Measures Schedule is enclosed in **Appendix D**. The implemented mitigation measures include:

- (a) Watering of exposed dry and dusty surface, including stock piles of dusty materials;
- (b) Covering of the loose soil to minimize water quality impacts;
- (c) Hard pavement of haul road leading to public roads;
- (d) Wheel washing facility at to avoid construction dust impacts on the public roads; and
- (e) Construction of noise barriers.
- (f) During construction works nearly the seasonal wetland, mitigation measures of Ecology will be followed in accordance with EM&A Manual Annex A ECO.1 and ECO.3;



### 3 MONITORING RESULTS AND BREACHES OF ENVIRONMENTAL QUALITY CRITERIA

#### 3.1 AIR QUALITY

In this quarter reporting period, total 14 sampling days for of 1-hr TSP was conducted at the designated location KT14A-A8(a) and also with 14 sampling days for 24-hr TSP of 1-hr TSP were carried out at the identified location A8(a) at KT14A due to the construction works were commenced on the reporting period. There was 1 exceedance in 24-hr TSP measurements was recorded at A8(a) during the quarter reporting period. The summary of Air Quality of 1-hr and 24-hr TSP are presented in **Table 3-1-1 and 3-1-2**.

Table 3-1-1 Summaries of Air Quality of 1-hr and 24-hr TSP in the Quarter Reporting period

Channel	Station	1-Hour TSP			24-Hour TSP		
		Max	Min	Mean	Max	Min	Mean
KT14A	A8(a)	238	89	146	164	22	49
Recorded in the date		16 Dec 08	10 Dec 08	14 events	31 Oct 08	27 Nov 08	14 events

Monitoring results are presented in graphic plots in **Appendix E**. Breaches of air quality A/L levels during the Reporting Period are summarized in **Table 3-1**.

Table 3-1-2 Summaries of Breaches of Air Quality A/L Levels

Location	Exceedance (Date Recorded)	1-Hour TSP	24-Hour TSP	Total
A8(a)	Action Level (27 November 2008)	0	1	1
	Limit Level (-)	0	0	0

As shown in **Table 3-2** and **Appendix E**, the 1-HR TSP and 24-Hr TSP of the Reporting Period fluctuated in general below the Action levels of 310 and 144 respectively, except one (1) exceedance of 24-Hour TSP Action level recorded on 27 November 2008, when a hill-fire occurred. The hill fire is considered to be the source of the exceedance.

The notification of exceedance of environmental quality criteria (hereinafter 'the NOE') and the associated investigation report have been issued upon confirmation of the results and construction information, although the ER and IEC's agreement for closure of the NOE is still pending.

#### 3.2 CONSTRUCTION NOISE

Monitoring results are presented in graphic plots in **Appendix E**. Breaches of construction noise A/L levels during the Reporting Period are summarized in **Table 3-2**.

Table 3-2 Summaries of Breaches of Construction Noise A/L Levels

Channel	Station	Leq30min		Action Level in dB(A)	Limit Level in dB(A)
		Max	Min		
KT14	N8	68.5	51.5	When one documented complaint is received	75* dB(A)
Recorded in the date		5 Nov 08	24 Oct 08		

As shown in **Tables 3-2** and **Appendix E**, all the construction noise results fluctuated below the Limit level. Neither exceedance of Limit levels nor documented construction complaint was recorded during the Reporting Period. Neither NOE of construction noise nor corrective action was therefore required.

#### 3.3 WATER QUALITY

Monitoring results are presented in graphic plots in **Appendix E**. Breaches of water quality A/L levels during the Reporting Period are summarized in **Table 3-3**, taken into account that W8A is set as the up-stream control station for W8B.

Table 3-3-1 Summaries of Breaches of the Existing Water Quality A/L Levels at W8B

location	Exceedance	DO	Turbidity	pH	SS	NH <sub>4</sub> +N	Zn	Total
W8B (October 2008)	Action Level	6	0	0	0	0	2	8
	Limit Level	5	7	0	8	0	3	23
W8B (November 2008)	Action Level	6	0	0	0	0	0	6
	Limit Level	0	1	0	5	0	1	7
W8B (December 2008)	Action Level	6	0	0	1	1	0	8
	Limit Level	0	3	0	4	0	1	8
Total	Action Level	18	0	0	1	1	2	22
	Limit Level	5	11	0	17	0	5	38
Total (60)		23	11	0	18	1	7	60
Compliance (%) (Number of monitoring occasions per parameter per location = 37)	Action Level	51.4	100	100	97.3	97.3	94.6	82.9
	Limit Level	40.6	70.3	100	54.0	100	86.5	73.0

As shown in **Tables 3-3** and **Appendix E**, a total of 60 exceedances of water quality A/L levels, namely 22 exceedances of Action levels and 38 exceedances of Limit levels, were recorded during the Reporting Period.

The NOE and the associated investigation report have been issued upon confirmation of the results and construction information. Investigation concluded that all of the exceedances are not related to the works under the Project. No corrective actions were recommended.

It is noted that abnormally high frequency of exceedance of the existing water quality criteria has occurred since the commencement of the water quality monitoring at W8B of KT14A. Particular attention has been paid to the water quality exceedances during 26 August to 2 October 2008, when no construction activities were commenced. This implies that the exceedances are not related to the works under the Project but due to changes of the ambient conditions and up-stream control station.

A proposal on the revision of the A/L levels has been submitted for agreement of the ER and IEC prior to seek formal approval from EPD. Percentile approach as recommended in the EM&A Manual is applied to the baseline monitoring data with replenishment of the most recent monitoring data obtained under zero construction impacts. The recommended A/L levels are summarized in **Table 3-3-2**.

Table 3-3-2 Recommended Water Quality Action and Limit Levels for KT14A

Parameter	Monitoring Location	Type of Station	Action Level	Limit Level
DO* (mg/L)	W8A	Impact Monitoring Station	2.22	1.80
	W8B	Impact Monitoring Station	4.06	4.04
Turbidity (NTU)	W8A	Impact Monitoring Station	36.5	39.6
	W8B	Impact Monitoring Station	18.6	52.0
pH+	W8A	Impact Monitoring Station	6.5 – 8.5	6.0 – 9.0
	W8B	Impact Monitoring Station	6.5 – 8.5	6.0 – 9.0
SS (mg/L)	W8A	Impact Monitoring Station	70	95
	W8B	Impact Monitoring Station	29	39
Ammonia (mg/L)	W8A	Impact Monitoring Station	40.8	43.7
	W8B	Impact Monitoring Station	3.46	4.44
Zinc (µg/L)	W8A	Impact Monitoring Station	136	166
	W8B	Impact Monitoring Station	54	63

\* A/L levels of DO are respectively set at 5%-ile and 1%-ile of baseline level

- + A/L levels of pH are respectively set at out side the ranges of 6.5 - 8.5 and 6 – 9 as generally used for environmental water quality standards.
- # Zn obtained at W8A on 18 March (458 ug/L) and 2 September 2008 (228 ug/L), as well as Turbidity, SS and Zn obtained at W8B on 2 September 2008 (161.5 NTU, 473 mg/L and 492 ug/L respectively) and SS and Zn obtained at W8B on 24 September 2008 (492 mg/L and 107 ug/L respectively) are considered as outliers and excluded from A/L level calculation

### 3.4 SUMMARIES WEATHER CONDITIONS DURING THE QUARTER REPORTING PERIOD

#### October 2008

This month was unseasonably warm. The total rainfall in the month was 144.6 millimetres. Under the influence of a ridge of high pressure, the weather was mainly fine for the first two days of the month. Tropical Depression Higos entered the South China Sea on 2 October 2008, therefore raining with heavy squally showers and thunderstorms were recorded after three days on 5 October 2008. The mean temperature as recorded by Lau Fau Shan Weather Station in this month was 27.1 degrees. The weed speed in this month at Yuen Long was recorded 29.5km/hr of higher on 5 October 2008 and 9.0km/hr of lower on 2, 15, 22 and 30 October 2008.

#### November 2008

The total rainfall in this period was 54.3 millimetres. The mean temperature as recorded by Lau Fau Shan Weather Station in this period was 23.1 degrees. The weed speed in this month at Yuen Long was recorded 27.5km/hr of higher on 9 November 2008 and 7.2km/hr of lower on 15 November 2008

#### December 2008

In December 2008, the monthly mean temperature of 18.4 degrees was 0.6 degrees above normal. The monthly total rainfall of 9.0 millimetres was 25.5 millimetres below normal. Under the influence of a ridge of high pressure over southern China, the weather in Hong Kong was fine and dry for the first two days of the month. The winter monsoon behind the cold front brought rather cool and very dry weather to Hong Kong for the ensuing seven days. A dry northeast monsoon reached the south China coastal areas on the morning of 14 December and brought fine and dry conditions to the territory from 14 to 21 December. Under the influence of an intense winter monsoon, the temperature recorded at the Hong Kong Observatory fell to 11.5 degrees on the morning of 23 December, the lowest of the month. The weather in Hong Kong turned cool and rainy for the rest of the month.

## 4 NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

### 4.1 NON-COMPLIANCE

Apart from the exceedances of water quality A/L levels summarized in **Table 3-3-1** above, no non-compliance or deficiency was identified during regular site inspection and environmental audit. No associated remedial actions were recommended. No other non-compliance or deficiency was identified during regular site inspection and environmental audit. No associated remedial actions were recommended.

### 4.2 ENVIRONMENTAL COMPLAINTS

No written or verbal complaints were received for each environmental issue during the Reporting Period. No associated remedial actions were recommended.

### 4.3 NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

No notifications of summons and successful prosecutions were recorded during the Reporting Period. No associated remedial actions were recommended.

#### 4.4 OTHERS

##### 4.4.1 Waste Management Status

All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil and sediment

Waste generated, re-used, recycled and disposed of during the Reporting Period is shown in **Appendix F: Monthly Summary Waste Flow Table for 2008**.

The quantities of waste for disposal or reuse in this quarter reporting period are summarized in **Tables 4-1** and **4-2**.

**Table 4-1 Summary of Waste Quantities for Disposal**

Type of Waste	Quantity			Disposal Locations
	Oct 08	Nov 08	Dec 08	
C&D Materials (Inert) (m3) – Disposed	1.516	1.374	0.732	Tuen Mun 38 Fill Bank
C&D Materials (Inert) (m3) – Reused	2.526	5.262	8.286	DSD Contract DC/2007/17
C&D Materials (Non-Inert) (tons)	0.002	0.011	0.032	NA
Chemical Waste (Litres)	0	0	0	NA
General Refuse (tons)	0.000	0.012	0	Refuse Collector

**Table 4-2 Summary of Waste Quantities for Reuse/Recycling**

Type of Waste	Quantity			Disposal Locations
	Oct 08	Nov 08	Dec 08	
Metals for Recycling (kg)	0	0	0	NA
Paper for Recycling (kg)	0	0	0	NA
Plastics for Recycling (kg)	0	0	0	NA

##### 4.4.2 Site Inspection and Environmental Audit

A total of thirteen (13) occasions of weekly environmental site inspection and audit were conducted jointly by the ER, EO and ET during the Reporting Period. Minor deficiencies found during the site inspection and audit were in general rectified within the specified deadlines. Findings of the site inspection and environmental audit are summarized in **Table 4-3**.

**Table 4-3 Summary of Findings of Site Inspection and Environmental Audit**

Date	Findings / Deficiencies	Follow-Up Status
4 Oct 2008	Debris of general refuse are observed surrounding at working area, the contractor was reminded that the housekeeping should be undertaken.	Rubbish bin is observed to provide in the working site on 9 October 2008.
9 Oct 2008	No adverse environmental impacts were observed however the contractor was reminded the provided noise mitigation measures should be met the EP, PP and EM&A manual requirement,	Only reminder
16 Oct 2008	No adverse environmental impacts were observed during the site inspection. Dust suppression measures were reminded for KT14A during vehicle release to site.	Wheel wash was observed in site exist during inspection on 24 October 2008.
24 Oct 2008	No adverse environmental impacts were observed. Excavation and formwork were observed at working site. Noise and water quality impact is reminded to implement by the contractor. Housekeeping should be undertaken to ensure the environmental performance.	Only reminder
31 Oct 2008	No adverse environmental impacts were observed during the site inspection. However, as dry season has approached, construction dust suppression measures, in particular construction dust suppression measures including watering of dry and dusty haul roads within the Site during dusty construction activities on dry and windy days, are reminded to be fully implemented.	Reminded measures based on the observation were observed on 6 Nov 2008.
6 Nov 2008	Haul road within the site were observed dry on excavation site. Watering is reminded.	Reminded measures based on the observation were observed on 13 Nov 2008.
13 Nov 2008	Vehicle movement was observed on excavation site. Thorough wheel washing of the vehicles leaving the site is reminded.	Reminded measures based on the observation were observed

		on 20 Nov 2008.
20 Nov 2008	Stock piles of dusty materials were observed. Construction dust suppression measures e.g. covering with tarpaulin sheeting or watering or preferably removal from site or appropriate disposal is reminded	Reminded measures based on the observation to be followed-up on the forth coming site inspection.
28 Nov 2008	No adverse environmental impacts were observed during the site inspection. However, as dry season has approached, The Contractor is reminded to fully implement construction dust suppression measures when carrying out dusty works including vehicle movement during dry and sunny days.	Reminded measures based on the observation were observed on 04 Dec 2008.
04 Dec 2008	Vehicle movement was observed on excavation site. Thorough wheel washing of the vehicles leaving the site is reminded. Also house keeping is reminded as general waste was observed.	Reminded measures based on the observation were observed on 11 Dec 2008.
11 Dec 2008	It is observed that C&D material was scattered after formwork. House Keeping is reminded to be improved. Haul road within the site were observed dry and general waste was found scattered on excavation site. Watering is reminded.	Reminded measures based on the observation were observed on 16 Dec 2008.
16 Dec 2008	Sand bag barriers were worn out that should be replaced. Also, as dry season has approached, The Contractor is reminded to fully implement construction dust suppression measures when carrying out dusty works including vehicle movement during dry and sunny days	Reminded measures based on the observation were observed on 22 Dec 2008.
22 Dec 2008	Dry and dusty haul road and stock piles of excavated materials on site. Construction dust suppression measures are reminded during dusty construction activities including vehicle movement on dry and windy days. Further improvement of house keeping on site is recommended prior to X'mas holiday	Reminded measures based on the observation to be followed-up on the forth coming site inspection.

## 5 CONCLUSIONS

- 5.1 This is the first quarterly EM&A summary report for KT14A, covering the construction period from 2 October to 25 December 2008.
- 5.2 Monitoring results of the Reporting Period demonstrated no exceedances of environmental quality criteria of construction noise.
- 5.3 For air quality, there was one (1) exceedance of environmental quality criteria (A/L/Levels) as shown below:

Location	Exceedance (Date Recorded)	1-Hour TSP	24-Hour TSP	Total
A8(a)	Action Level (27 November 2008)	0	1	1
	Limit Level (-)	0	0	0

The exceedance is concluded not related to the works under the Project but due to a hill fire on the day of exceedance. No remedial action was recommended.

- 5.4 A total of 60 exceedances of water quality A/L levels, namely 22 exceedances of Action levels and 38 exceedances of Limit levels, were recorded during the Reporting Period as shown below:

location	Exceedance	DO	Turbidity	pH	SS	NH <sub>4</sub> +N	Zn	Total
W8B (October 2008)	Action Level	6	0	0	0	0	2	8
	Limit Level	5	7	0	8	0	3	23
W8B (November 2008)	Action Level	6	0	0	0	0	0	6
	Limit Level	0	1	0	5	0	1	7
W8B (December 2008)	Action Level	6	0	0	1	1	0	8
	Limit Level	0	3	0	4	0	1	8
Total	Action Level	18	0	0	1	1	2	22
	Limit Level	5	11	0	17	0	5	38
Total (60)		23	11	0	18	1	7	60
Compliance (%) (Number of monitoring occasions per parameter per location = 37)	Action Level	51.4	100	100	97.3	97.3	94.6	82.9
	Limit Level	40.6	70.3	100	54.0	100	86.5	73.0

Investigation concluded that all of the exceedances are not related to the works under the Project. No corrective actions were recommended.

- 5.5 It is noted that abnormally high frequency of exceedance of the existing water quality criteria has occurred since the commencement of the water quality monitoring at W8B of KT14A. Particular attention has been paid to the water quality exceedances during 26 August to 2 October 2008, when no construction activities were commenced. This implies that the exceedances are not related to the works under the Project but due to changes of the ambient conditions and up-stream control station.

A proposal on the revision of the A/L levels has been submitted for agreement of the ER and IEC prior to seek formal approval from EPD. Percentile approach as recommended in the EM&A Manual is applied to the baseline monitoring data with replenishment of the most recent monitoring data obtained under zero construction impacts. The recommended A/L levels are summarized in **Table 3-3-2**.

Parameter	Monitoring Location	Type of Station	Action Level	Limit Level
DO* (mg/L)	W8A	Impact Monitoring Station	2.22	1.80
	W8B	Impact Monitoring Station	4.06	4.04
Turbidity (NTU)	W8A	Impact Monitoring Station	36.5	39.6
	W8B	Impact Monitoring Station	18.6	52.0
pH+	W8A	Impact Monitoring Station	6.5 – 8.5	6.0 – 9.0



Parameter	Monitoring Location	Type of Station	Action Level	Limit Level
	W8B	Impact Monitoring Station	6.5 – 8.5	6.0 – 9.0
SS (mg/L)	W8A	Impact Monitoring Station	70	95
	W8B	Impact Monitoring Station	29	39
Ammonia (mg/L)	W8A	Impact Monitoring Station	40.8	43.7
	W8B	Impact Monitoring Station	3.46	4.44
Zinc (µg/L)	W8A	Impact Monitoring Station	136	166
	W8B	Impact Monitoring Station	54	63

\* A/L levels of DO are respectively set at 5%-ile and 1%-ile of baseline level

+ A/L levels of pH are respectively set at out side the ranges of 6.5 - 8.5 and 6 – 9 as generally used for environmental water quality standards.

# Zn obtained at W8A on 18 March (458 ug/L) and 2 September 2008 (228 ug/L), as well as Turbidity, SS and Zn obtained at W8B on 2 September 2008 (161.5 NTU, 473 mg/L and 492 ug/L respectively) and SS and Zn obtained at W8B on 24 September 2008 (492 mg/L and 107 ug/L respectively) are considered as outliers and excluded from A/L level calculation

- 5.6 No documented complaints, notifications of summons and successful prosecutions were received during the Reporting Period. No adverse environmental impacts were observed during the weekly site inspection and environmental audit of the Reporting Period, indicating the implemented mitigation measures for air quality, construction noise and ecology were effective. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.
- 5.5 As dry season has approached, construction dust will become a key environmental issue. Construction dust suppression measures should be fully implemented. The implemented construction dust mitigation measures should also be maintained and improved, as necessary, during dusty works including vehicle movement on dry and windy days.
- 5.6 On the other hand, water quality mitigation measures to avoid ingress of turbidity and other water quality pollutants via site surface water runoff into the river within KT14A should be properly maintained or improved, as appropriate.
- 5.7 In addition, special attention should also be paid to construction noise and other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the EIA and summarized in Mitigation Measure Implementation Schedule should be fully implemented.

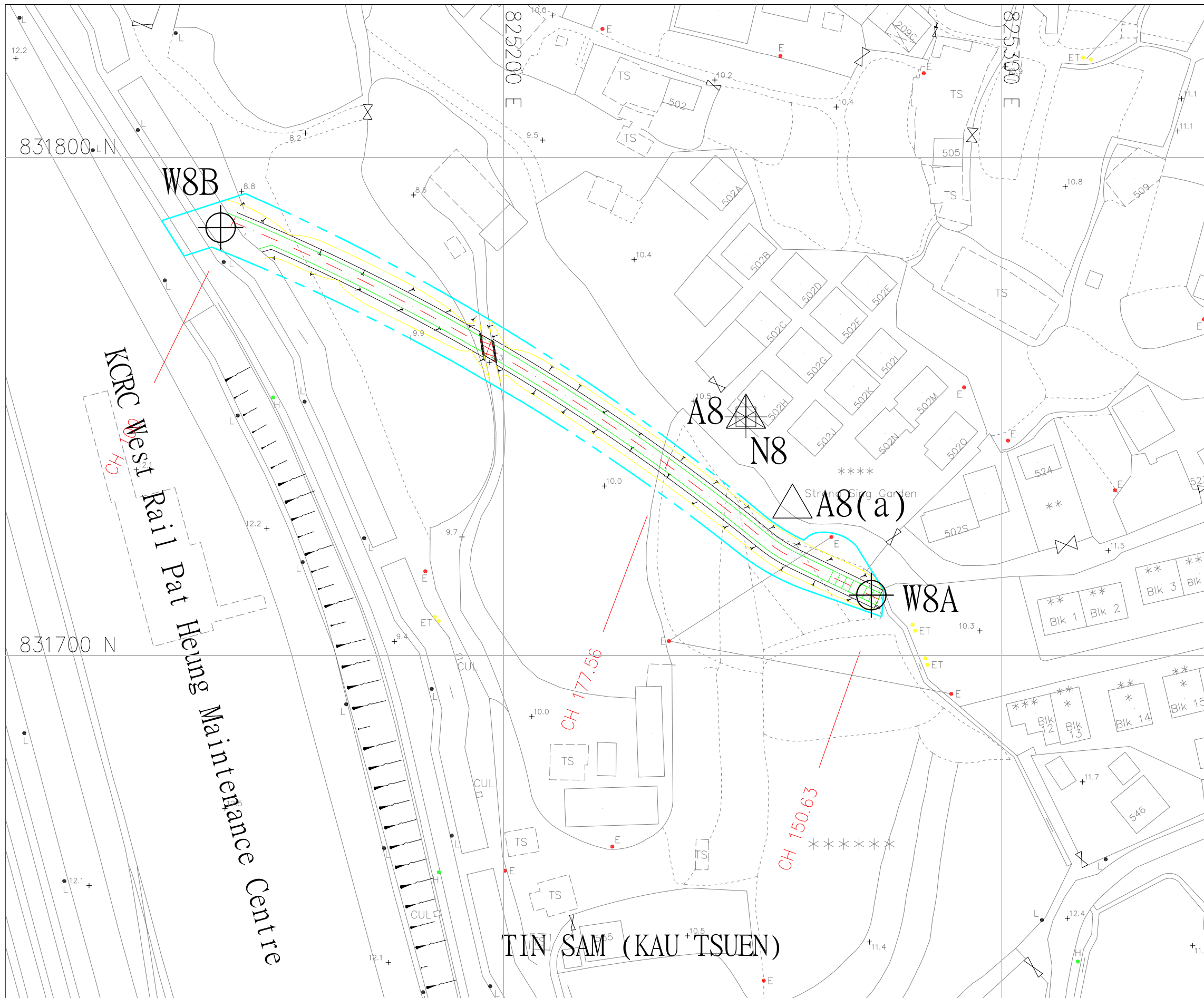
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


## **Appendix A**

### **Location Plan of the Project and Environmental Monitoring Locations**





Legends

-  Construction Noise Monitoring Location
-  Air Quality Monitoring Location
-  Water Quality Monitoring Location
-  Monitoring Location access is not allow (Air or Noise or Water) for measurement

Table

Monitoring Parameter	Location ID	Address	Remarks
Water	W8A	E825274 / N831712	
Water	W8B	E825143 / N831786	
Air	A8		Replaced by A8(a)
Air	A8(a)	Entrance of Strong Sing Garden	Recommended Location
Noise	N8	No. 205H of Strong Sing Garden	

Note:

Air Monitoring Location A8 are proposed to relocate at the entrance of Strong Sing Garden A8(a) due to request of the property management. The relocated monitoring point is considered suitable as representative sensitive receiver for Strong Sing Garden.

Drawing:

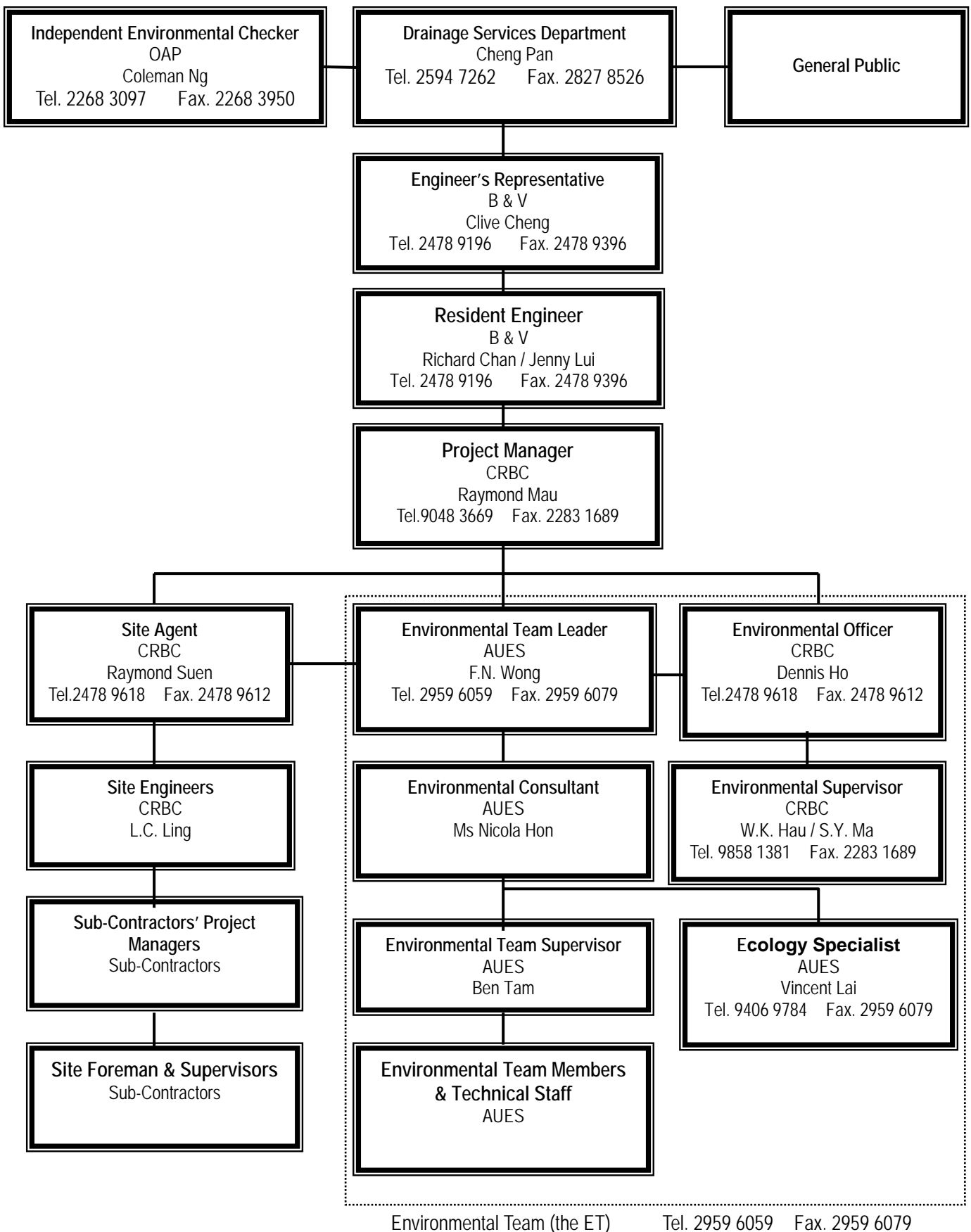
Air, Noise and Stream Water Monitoring Location at KT-14A

Contract No. DC/2007/17-  
Drainage Improvement Works in Cheung Po, Ma On Kong, Yuen Kong San Tsuen and Tin Sam Tsuen of Yuen Long District and Sewerage at Tseng Tau Chung Tsuen, Tuen Mun

**AUES**

**Appendix B**

**Environmental Management Organization and  
Contacts of Key Personnel**



**Environmental Management Organization**

**Contact Details of Key Personnel**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
DSD	Employer	Mr. Cheng Pan	2594 7264	2827-8526
B&V	Engineer's Representative	Mr. Clive Cheng	2478-9161	2478-9369
B&V	Resident Engineer	Mr. Richard Chan	2478-9161	2478-9369
B&V	Resident Engineer	Mr. Jenny Lui	2478-9161	2478-9369
OAP	Independent Environmental Checker	Mr. Coleman Ng	2268 3097	2268 3950
CRBC	Project Director	Mr. Wang Yanhua	22831688	2283-1689
CRBC	Project Manager	Mr. Raymond Mau	9048-3669	2283-1689
CRBC	Site Agent	Mr. Raymond Suen	9779-8871	2478 9612
CRBC	Site Engineer (Tuen Mun Site)	Mr. L.C. Ling	6770 4010	2478 9612
CRBC	Environmental Officer	Dennis Ho	2478 9618	2478 9612
CRBC	Environmental Supervisor	Mr. W.K. Hau	6283 9696	2283-1689
CRBC	Environmental Supervisor	Mr. S.Y. Ma	9401 6296-	2283-1689
CRBC	Safety Officer	Kenny Sze	9374-8954	2283-1689
AUES	Environmental Team Leader	Mr. F.N. Wong	2959-6059	2959-6079
AUES	Environmental Consultant	Ms Nicola Hon	2959-6059	2959-6079
AUES	Environmental Site Inspector	Mr. Ben Tam	2959-6059	2959-6079
AUES	Ecologist	Mr. Vincent Lai	2959-6059	2959-6079

**Legend:**

- DSD (Employer) – Drainage Services Department*  
*B&V (Engineer) – Black & Veatch Hong Kong Limited*  
*CRBC (Main Contractor) – China Road and Bridge Corporation*  
*OAP (IEC) – Ove Arup & Partners Ltd*  
*AUES (ET) – Action-United Environmental Services & Consulting*

## **Appendix C**

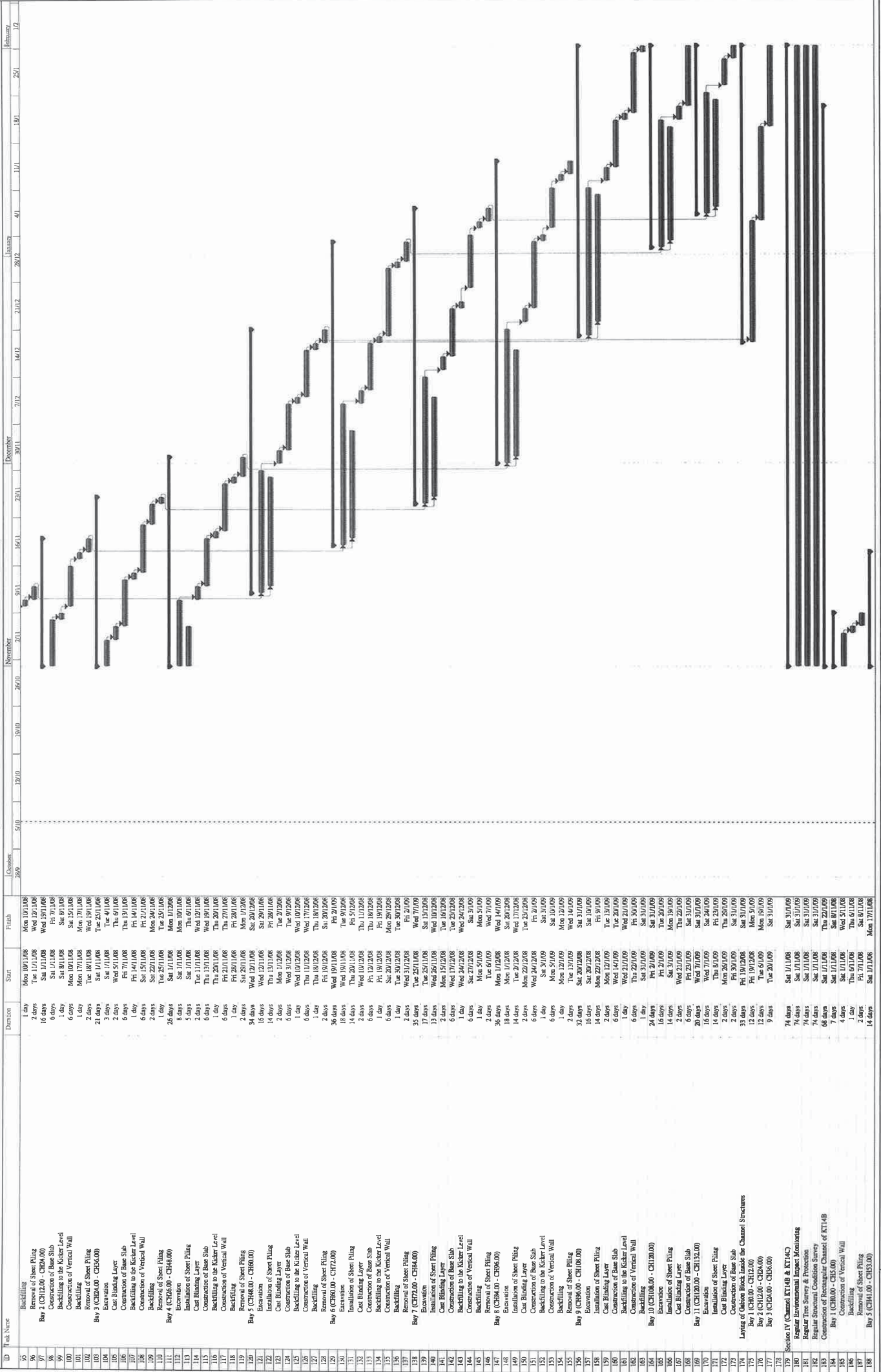
### **Construction Program**



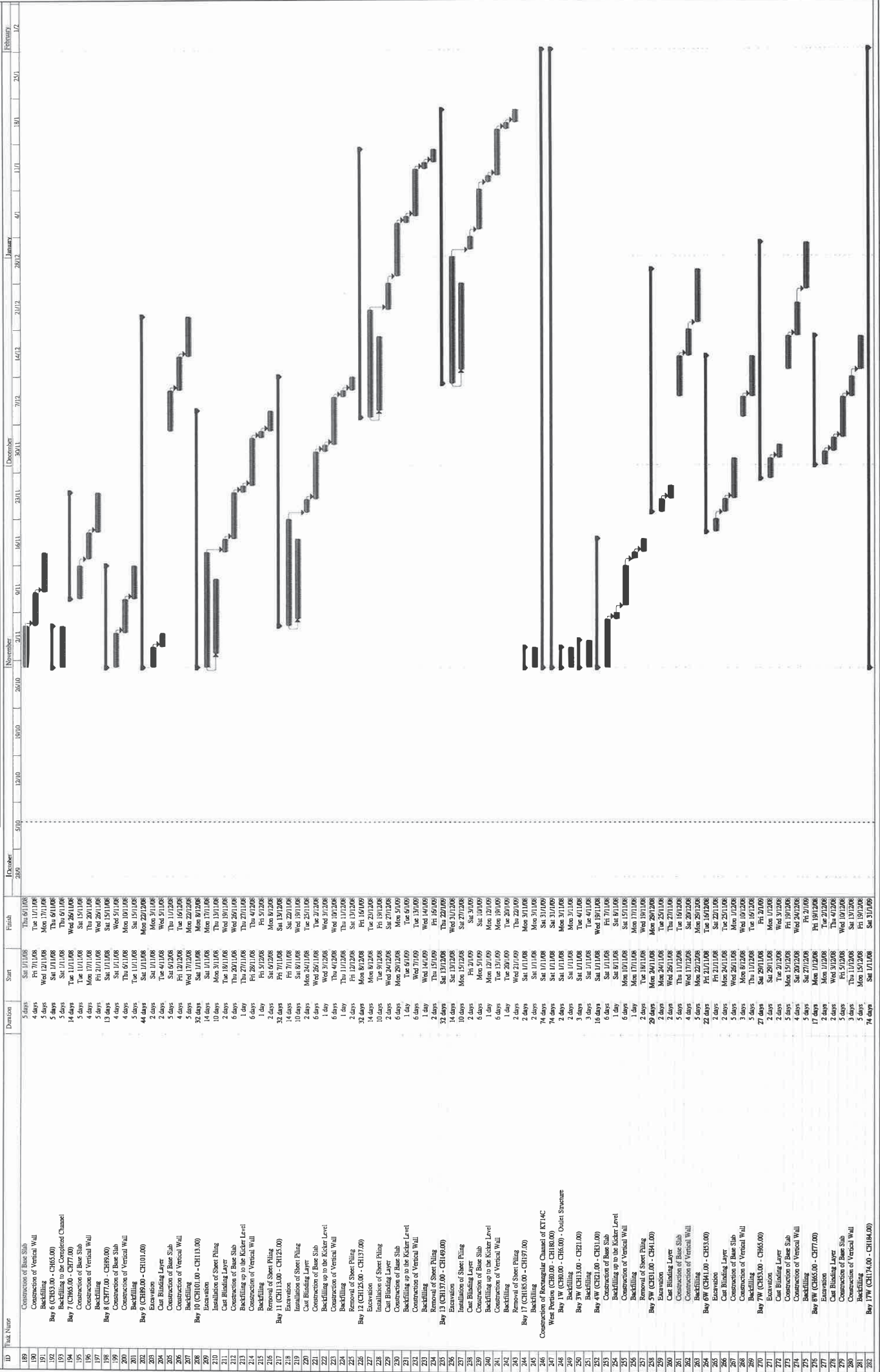
**Contract No.: DC/2007/17  
Drainage Improvement Works in Cheung Po Ma On Kona, Yuen Kona, San Tsuen and Tin Sam Tsuen of Yuen Long District and Sewerage at Tsoung Tau Chung Tsuen, Tuen Mun  
Three Months Rolling Programme (November 2008 to January 2009)**

ID	Task Name	Duration	Start	Finish	October	November	December	January	February
1	Section I (Channel KT12)								
2	Regular Environmental Impact Monitoring	74 days	Sat 1/1/08	Sat 31/1/09					
3	Regular Tree Survey	74 days	Sat 1/1/08	Sat 31/1/09					
4	Regular Structural Condition Survey	74 days	Sat 1/1/08	Sat 31/1/09					
5	Regular Structural Condition Survey	74 days	Sat 1/1/08	Sat 31/1/09					
6	Construction of Trapezoidal Channel	28 days	Wed 12/1/08	Wed 3/2/08					
7	Cast Blinding Layer for Bay TC5 & TC6 (CH90.00 - CH63.00)	10 days	Sat 1/1/08	Wed 12/1/08					
8	Bay TC5 - East Wall (CH90.00 - CH63.00)	9 days	Thu 13/1/08	Thu 20/1/08					
9	1st Pour	7 days	Thu 13/1/08	Fri 21/1/08					
10	2nd Pour	2 days	Fri 21/1/08	Sat 22/1/08					
11	1st Pour	7 days	Thu 13/1/08	Thu 20/1/08					
12	2nd Pour	2 days	Fri 21/1/08	Sat 22/1/08					
13	Bay TC5 - West Wall (CH51.00 - CH63.00)	9 days	Mon 24/1/08	Mon 31/1/08					
14	1st Pour	7 days	Mon 24/1/08	Tue 29/1/08					
15	2nd Pour	2 days	Tue 29/1/08	Wed 3/2/08					
16	Bay TC6 - East Wall (CH90.00 - CH51.00)	9 days	Mon 24/1/08	Wed 3/2/08					
17	1st Pour	7 days	Mon 24/1/08	Mon 1/2/08					
18	2nd Pour	2 days	Mon 1/2/08	Wed 3/2/08					
19	Bay TC7 - West Wall (CH27.00 - CH59.00)	9 days	Sat 1/1/08	Wed 3/2/08					
20	1st Pour	7 days	Sat 1/1/08	Thu 11/2/08					
21	2nd Pour	2 days	Thu 11/2/08	Thu 11/2/08					
22	Construction of Transition Structure	10 days	Mon 17/1/08	Mon 17/1/08					
23	Bay TC2 (CH90.00 - 97.00)	5 days	Thu 6/1/08	Thu 6/1/08					
24	Construction of Base Slab	5 days	Wed 12/1/08	Mon 17/1/08					
25	Construction of Wall and Top Slab	10 days	Mon 17/1/08	Thu 11/2/08					
26	Bay TC9 (CH10.00 - 17.00)	5 days	Mon 17/1/08	Mon 17/1/08					
27	Construction of Base Slab	5 days	Mon 17/1/08	Mon 17/1/08					
28	Construction of Wall and Top Slab	10 days	Fri 21/2/08	Thu 11/2/08					
29	Bay TC10 (CH40.00 - 10.00)	5 days	Fri 21/2/08	Fri 21/2/08					
30	Construction of Wall and Top Slab	10 days	Thu 13/2/08	Thu 13/2/08					
31	Construction of Pedestrian Crossing PC124	14 days	Mon 17/2/08	Mon 17/2/08					
32	Bay TC12-1 (CH0.00 - 4.00)	14 days	Mon 17/2/08	Mon 17/2/08					
33	Cast Blinding Layer	2 days	Mon 17/2/08	Tue 16/2/08					
34	Construction of Base Slab	2 days	Mon 17/2/08	Tue 16/2/08					
35	Construction of Wall and Top Slab	6 days	Wed 19/2/08	Tue 16/2/08					
36	Backfilling (CH40.00 - CH105.00)	27 days	Mon 17/2/08	Sat 31/1/09					
37	Laying of Catcher Block Inside the Channel	8 days	Mon 5/1/09	Mon 5/1/09					
38	Bay TC3 (CH63.00 - CH78.00)	5 days	Wed 4/1/09	Wed 4/1/09					
39	Bay TC4 (CH63.00 - CH63.00)	5 days	Fri 23/1/09	Fri 23/1/09					
40	Construction of Catcher PH / U-Channel / Manhole	6 days	Wed 14/1/09	Sat 31/1/09					
41	Bay TC5 (CH78.00 - CH90.00)	6 days	Wed 14/1/09	Thu 20/1/09					
42	Bay TC6 (CH63.00 - CH78.00)	2 days	Fri 30/1/09	Sat 31/1/09					
43	Installation of Type 2 Rating	5 days	Fri 23/1/09	Fri 30/1/09					
44	Bay TC7 (CH51.00 - CH63.00)	5 days	Mon 5/1/09	Mon 5/1/09					
45	Bay TC8 (CH51.00 - CH63.00)	5 days	Mon 5/1/09	Mon 5/1/09					
46	Construction of Overflow Weir & 2.1 60mm Dia. Pipe Crossing at CH178.00 East Bank	20 days	Wed 14/1/08	Wed 14/1/08					
47	Installation of 60mm Dia. Pipe Crossing at CH115.00 East Bank	9 days	Mon 20/1/09	Sat 31/1/09					
48	Diversion of Running Water Main to Pedestrian Crossing PC12-1	22 days	Mon 5/1/09	Mon 5/1/09					
49	Section II (Channel KT13)								
50	Regular Environmental Impact Monitoring	74 days	Sat 1/1/08	Sat 31/1/09					
51	Regular Tree Survey	74 days	Sat 1/1/08	Sat 31/1/09					
52	Regular Structural Condition Survey	74 days	Sat 1/1/08	Sat 31/1/09					
53	Regular Structural Condition Survey	74 days	Sat 1/1/08	Sat 31/1/09					
54	Excavation to Channel Formation & Laying of Rock Fill Material	4 days	Wed 5/1/08	Wed 5/1/08					
55	Bay 2 (A) (CH20.00 - CH40.00)	8 days	Thu 6/1/08	Fri 14/1/08					
56	Bay 3 (A) (CH40.00 - CH60.00)	8 days	Sat 15/1/08	Mon 24/1/08					
57	Bay 4 (A) (CH60.00 - CH80.00)	8 days	Thu 25/1/08	Wed 3/2/08					
58	Bay 5 (A) (CH80.00 - CH100.00)	8 days	Thu 4/2/08	Fri 12/2/08					
59	Bay 6 (A) (CH100.00 - CH120.00)	8 days	Sat 13/2/08	Mon 22/2/08					
60	Bay 7 (A) (CH120.00 - CH140.00)	8 days	Thu 27/2/08	Sat 3/3/08					
61	Bay 8 (A) (CH140.00 - CH160.00)	8 days	Thu 27/2/08	Thu 27/2/08					
62	Bay 9 (A) (CH160.00 - CH180.00)	8 days	Wed 4/3/08	Wed 4/3/08					
63	Bay 10 (A) (CH180.00 - CH200.00)	6 days	Fri 23/3/08	Fri 23/3/08					
64	Excavation to Channel Formation & Laying of Rock Fill Material	74 days	Sat 1/1/08	Sat 31/1/09					
65	Bay 1 (B) (CH50.00 - BC CH50.00)	25 days	Wed 12/1/08	Wed 10/2/08					
66	Bay 2 (B) (CH100.00 - BC CH100.00) & Demolition of Existing Playground	12 days	Thu 13/2/08	Mon 12/3/08					
67	Bay 3 (B) (CH150.00 - BC CH150.00)	7 days	Fri 14/2/08	Fri 14/2/08					
68	Section B								
69	Excavation to Channel Formation & Laying of Rock Fill Material	1 day	Sat 1/1/08	Sat 1/1/08					
70	Bay 1 (B) (CH0.00 - B CH20.00)	12 days	Mon 3/1/08	Sat 15/1/08					
71	Bay 2 (B) (CH20.00 - B CH40.00)	12 days	Mon 3/1/08	Sat 15/1/08					
72	Bay 3 (B) (CH40.00 - B CH60.00)	12 days	Mon 3/1/08	Sat 15/1/08					
73	Bay 4 (B) (CH60.00 - B CH80.00)	12 days	Mon 3/1/08	Sat 15/1/08					
74	Bay 5 (B) (CH80.00 - B CH100.00)	12 days	Mon 3/1/08	Sat 15/1/08					
75	Bay 6 (B) (CH100.00 - B CH120.00)	12 days	Mon 3/1/08	Sat 15/1/08					
76	Bay 7 (B) (CH120.00 - B CH140.00)	12 days	Mon 3/1/08	Sat 15/1/08					
77	Bay 8 (B) (CH140.00 - B CH160.00)	12 days	Mon 3/1/08	Sat 15/1/08					
78	Section III (Channel KT14A)								
79	Regular Environmental Impact Monitoring	74 days	Sat 1/1/08	Sat 31/1/09					
80	Regular Tree Survey	74 days	Sat 1/1/08	Sat 31/1/09					
81	Regular Structural Condition Survey	74 days	Sat 1/1/08	Sat 31/1/09					
82	Construction of Rectangular Channel	10 days	Sat 1/1/08	Wed 12/1/08					
83	Bay 1 (CH100.00 - CH120.00)	6 days	Mon 3/1/08	Mon 3/1/08					
84	Construction of Vertical Wall	6 days	Mon 3/1/08	Mon 3/1/08					

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Drainage Improvement Works in Cheung Po Ma On Kona, Yuen Kona, San Tau, and Tin San Tau of Yuen Long District and Sewerage at Tsou Tai Chung Tau, Tuen Mun  
Three Months Rolling Programme (November 2008 to January 2009)**

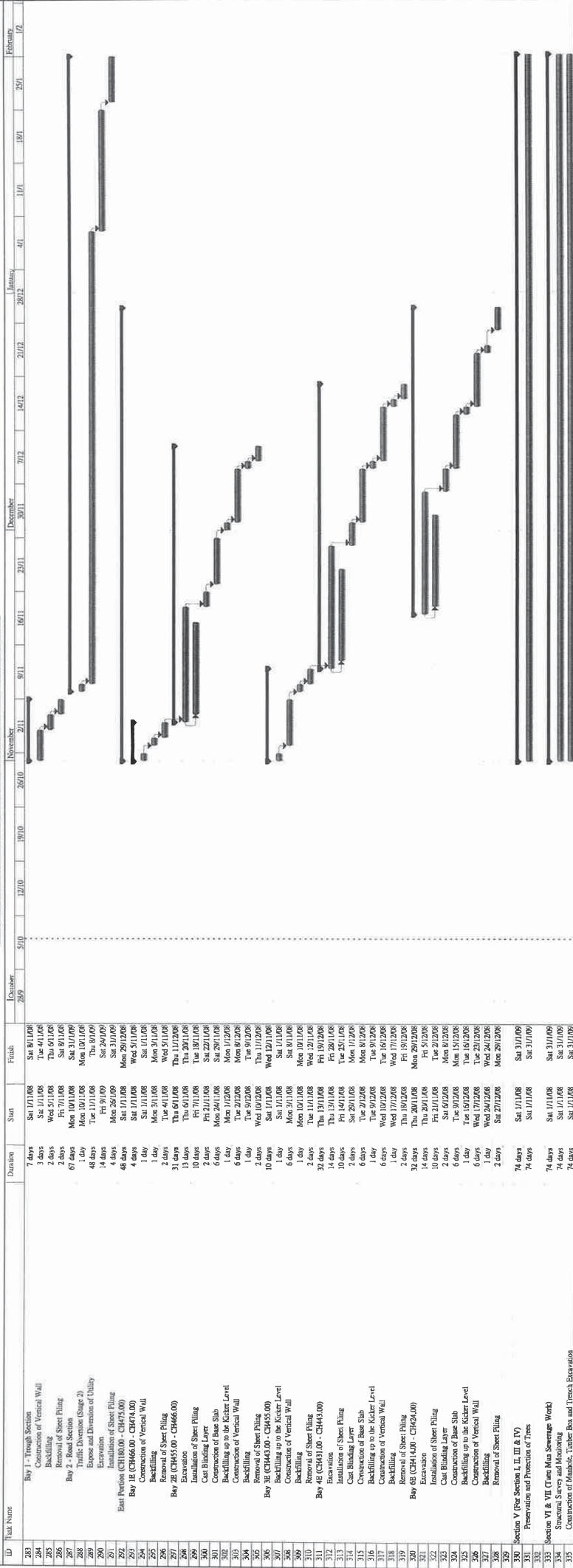


Contract No. : DC/2007/17  
 Drainage Improvement Works in Cheung Po Ma On Kong, Yuen Kong San Tuen and Tin Sam Tuen of Yuen Long District and Sewerage at Tsang Tau Chung Tuen, Tuen Mun  
 Three Months Rolling Programme (November 2008 to January 2009)





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 Drainage Improvement Works in Cheung Po, Ma On Kong, Yuen Kong, San Tsuen and Tin Sam Tsuen of Yuen Long District and Sewerage at Tsang Tau Chung, Tsuen, Tuen Mun  
 Three Months Rolling Programme (November 2008 to January 2009)**





Contract No. : DC/2007/17  
 Drainage Improvement Works in Cheung Po Ma On Kopp, Tuen Kong San Tsuen and Tin Sam Tsuen of Tuen Long District and Sewerage at Tsing Tau Chung Tsuen, Tuen Mun  
 Monthly Programme for October 2004

ID	Task Name	Start	Duration	Finish	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
95	Excavation	Mon 13/10/04	2 days	Thu 14/10/04																				
96	Cut Blinding Layer	Wed 15/10/04	2 days	Thu 16/10/04																				
97	Bay 6 (CH453.00 - CH46.00)	Wed 15/10/04	13 days	Fri 31/10/04																				
98	Excavation	Fri 17/10/04	2 days	Sat 18/10/04																				
99	Cut Blinding Layer	Mon 20/10/04	2 days	Tue 21/10/04																				
100	Construction of Base Slab	Wed 22/10/04	5 days	Fri 24/10/04																				
101	Construction of Vertical Wall	Mon 27/10/04	4 days	Thu 29/10/04																				
102	Bay 7 (CH465.00 - CH77.00)	Wed 22/10/04	4 days	Fri 24/10/04																				
103	Excavation	Wed 22/10/04	2 days	Thu 23/10/04																				
104	Cut Blinding Layer	Fri 24/10/04	2 days	Sat 25/10/04																				
105	Bay 8 (CH77.00 - CH89.00)	Fri 31/10/04	5 days	Mon 5/11/04																				
106	Excavation	Mon 27/10/04	2 days	Tue 28/10/04																				
107	Cut Blinding Layer	Thu 29/10/04	2 days	Fri 30/10/04																				
108	Construction of Base Slab	Fri 31/10/04	1 day	Sat 1/11/04																				
109	Bay 9 (CH90.00 - CH105.00)	Mon 1/11/04	18 days	Mon 15/11/04																				
110	Excavation	Tue 2/11/04	2 days	Wed 3/11/04																				
111	Cut Blinding Layer	Thu 4/11/04	2 days	Fri 5/11/04																				
112	Construction of Base Slab	Mon 13/10/04	5 days	Mon 13/10/04																				
113	Construction of Vertical Wall	Fri 17/10/04	4 days	Fri 17/10/04																				
114	Backfilling	Thu 14/10/04	5 days	Thu 14/10/04																				
115	Excavation	Sat 18/10/04	5 days	Sat 18/10/04																				
116	Cut Blinding Layer	Thu 14/10/04	2 days	Thu 14/10/04																				
117	Construction of Base Slab	Thu 14/10/04	4 days	Thu 14/10/04																				
118	Construction of Vertical Wall	Fri 17/10/04	4 days	Fri 17/10/04																				
119	Backfilling	Thu 14/10/04	3 days	Thu 14/10/04																				
120	Bay 10 (CH105.00 - CH114.00)	Wed 29/10/04	3 days	Fri 31/10/04																				
121	Construction of Rectangular Channel of KTI-4C	Thu 21/10/04	25 days	Thu 21/10/04																				
122	West Portion (CH100 - CH180.00)	Thu 21/10/04	25 days	Thu 21/10/04																				
123	Bay 2W (CH16.00 - CH13.00)	Thu 21/10/04	18 days	Thu 21/10/04																				
124	Excavation	Thu 21/10/04	2 days	Fri 31/10/04																				
125	Cut Blinding Layer	Mon 6/10/04	2 days	Mon 6/10/04																				
126	Construction of Base Slab	Wed 9/10/04	5 days	Wed 9/10/04																				
127	Construction of Vertical Wall	Thu 10/10/04	5 days	Thu 10/10/04																				
128	Backfilling	Sat 18/10/04	5 days	Sat 18/10/04																				
129	Bay 1W (CH20.00 - CH6.00) - Outlet Structure	Wed 8/10/04	21 days	Fri 31/10/04																				
130	Excavation	Wed 8/10/04	2 days	Thu 9/10/04																				
131	Cut Blinding Layer	Fri 10/10/04	2 days	Sat 11/10/04																				
132	Construction of Base Slab	Sat 18/10/04	5 days	Thu 29/10/04																				
133	Construction of Vertical Wall	Fri 24/10/04	4 days	Thu 29/10/04																				
134	Backfilling	Wed 29/10/04	17 days	Fri 31/10/04																				
135	Bay 2W (CH13.00 - CH21.00)	Mon 13/10/04	2 days	Fri 31/10/04																				
136	Excavation	Wed 29/10/04	2 days	Thu 30/10/04																				
137	Cut Blinding Layer	Mon 20/10/04	5 days	Mon 20/10/04																				
138	Construction of Base Slab	Wed 29/10/04	4 days	Wed 29/10/04																				
139	Construction of Vertical Wall	Sat 25/10/04	4 days	Thu 29/10/04																				
140	Backfilling	Thu 30/10/04	2 days	Thu 30/10/04																				
141	Bay 4W (CH21.00 - CH3.00)	Thu 21/10/04	16 days	Thu 21/10/04																				
142	Excavation	Thu 21/10/04	14 days	Thu 21/10/04																				
143	Installation of Sheet Piling	Fri 31/10/04	2 days	Wed 15/10/04																				
144	Construction of Base Slab	Mon 20/10/04	1 day	Mon 20/10/04																				
145	Bay 1W (CH174.00 - CH184.00)	Mon 20/10/04	1 day	Mon 20/10/04																				
146	Traffic Diversion (Stage 1)	Mon 20/10/04	1 day	Mon 20/10/04																				
147	Bay 1 - Trough Section	Tue 21/10/04	10 days	Fri 31/10/04																				
148	Excavation	Tue 21/10/04	2 days	Wed 22/10/04																				
149	Installation of Sheet Piling	Thu 23/10/04	1 day	Thu 23/10/04																				
150	Cut Blinding Layer	Fri 24/10/04	1 day	Fri 24/10/04																				
151	Construction of Base Slab	Sat 25/10/04	3 days	Thu 29/10/04																				
152	Construction of Vertical Wall	Thu 29/10/04	3 days	Fri 31/10/04																				
153	Bay 1B (CH46.00 - CH47.40B)	Thu 29/10/04	25 days	Thu 29/10/04																				
154	Excavation	Thu 29/10/04	14 days	Sat 18/10/04																				
155	Installation of Sheet Piling	Fri 31/10/04	10 days	Wed 15/10/04																				
156	Cut Blinding Layer	Mon 20/10/04	2 days	Thu 21/10/04																				
157	Construction of Base Slab	Wed 22/10/04	6 days	Thu 26/10/04																				
158	Construction of Vertical Wall	Fri 24/10/04	3 days	Fri 24/10/04																				
159	Bay 3B (CH40.00 - CH45.00)	Wed 22/10/04	22 days	Fri 31/10/04																				
160	Excavation	Mon 6/10/04	14 days	Mon 6/10/04																				
161	Installation of Sheet Piling	Wed 22/10/04	2 days	Wed 22/10/04																				
162	Cut Blinding Layer	Thu 23/10/04	2 days	Thu 23/10/04																				
163	Construction of Base Slab	Sat 25/10/04	6 days	Fri 31/10/04																				
164	Construction of Vertical Wall	Thu 29/10/04	25 days	Thu 29/10/04																				
165	Section V (Per Section I, II, III & IV)	Thu 21/10/04	25 days	Thu 21/10/04																				
166	Preservation and Protection of Trees	Thu 21/10/04	25 days	Thu 21/10/04																				
167	Excavation	Thu 21/10/04	25 days	Thu 21/10/04																				
168	Cut Blinding Layer	Thu 21/10/04	25 days	Thu 21/10/04																				
169	Construction of Base Slab	Thu 21/10/04	25 days	Thu 21/10/04																				
170	Construction of Vertical Wall	Thu 21/10/04	25 days	Thu 21/10/04																				
171	Construction of Manhole, Trench Box and Trench Excavation	Thu 21/10/04	25 days	Thu 21/10/04																				

## **Appendix D**

### **Mitigation Measure Implementation Schedule**



Mitigation Measure Implementation Schedule – Construction Noise

Construction Noise Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Noise 1	<p>The Contractor is required to adopt Level 1 and 2 site-specific direct technical measures as specified below during the construction phase</p> <p><i>Level 1 Mitigation Measures</i></p> <ul style="list-style-type: none"> <li>The use of equipment with sound power level lower than that stipulated in the Technical Memorandum on Noise from Construction Works Other Than Percussive Piling is recommended as the first level mitigation (Level 1 mitigation) for all construction works under this Project.</li> <li>Quiet plant is defined as PME whose actual sound power level is less than the value specified in the Technical Memorandum on Noise from Construction Works Other Than Percussive Piling for the same piece of equipment. BS5228 also provides examples of quiet construction plant and their sound power level. The quiet plant used in the noise calculation including the BS5228 reference number is shown in Attachment 1 for reference</li> </ul> <p><i>Level 2 Mitigation Measures</i></p> <ul style="list-style-type: none"> <li>In addition to the use of quiet plant purpose-built site noise barriers shall be used as hoarding where construction works would be undertaken close (about 30m or less) to the NSRs (Figure 5.4). Temporary noise barrier with a minimum height of 3m shall be erected along the part of site boundary closest to the NSRs. Notwithstanding the required minimum height these barriers shall be constructed in a way such that no construction works and PME can be visible from the NSRs nearby. The minimum height is estimated assuming the construction equipment activities will be located on the channel bed 2m below the surrounding ground level.</li> </ul>	Prevent noise impact at sensitive receivers	To be implemented at the works site of KT14 during the Construction Phase (Figure 5.4 show locations of proposed temporary noise barriers.)	Construction Contractor		√		EIAO

Construction Noise Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Noise 1 (Cont'd)	<ul style="list-style-type: none"> <li>Stationary equipment shall be placed on the channel bed during construction works.</li> <li>For the construction works which are predicted to exceed 75dB(A) (Leq30min) at nearby NSR and whose line of sight cannot be blocked by the temporary noise barrier (i.e. further away from the hoardings), movable (mobile) noise barrier of more than 3m high shall be provided. A typical example is shown in Figure 5.7.</li> <li>The noise barriers or screens shall be constructed of appropriate material with a minimum surface density of 10kg/m<sup>2</sup>. Generators and compressors, shall be completely screened by construction barriers giving a total noise reduction of 10dB(A) or more. The location of the proposed temporary noise barriers for KT14 is shown on Figures 5.4.</li> </ul>	Prevent noise impact at sensitive receivers	To be implemented at the works site of KT14 during the Construction Phase (Figure 5.4 show locations of proposed temporary noise barriers.)	Construction Contractor		√		EIAO

**Mitigation Measure Implementation Schedule – Air Quality**

Air Quality Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Air 1	The Contractor shall prevent dust nuisance arising from the construction activities. The Contractor is required to follow all the requirements for dust control stipulated in the Air Pollution Control (Construction Dust) Regulation	Prevent dust nuisance	To be implemented at all works are of KT14 site during the Construction Phase.	Construction Contractor		√		Air Pollution Control Ordinance  Air Pollution Control (Construction Dust Regulation)
Air 2	<p>The following dust suppression measures shall be installed as part of construction practice, and these shall be incorporated in the Contract Specification and implemented to minimize dust nuisance to within acceptable levels.</p> <ul style="list-style-type: none"> <li>i) The Contractor shall frequently clean and water the site to minimise fugitive dust emissions.</li> <li>ii) Effective water sprays shall be used during the delivery and handling of aggregate, and other similar materials, when dust is likely to be created and to dampen all stored materials during dry and windy weather.</li> <li>iii) Watering of exposed surfaces shall be exercised at least three times a day.</li> <li>iv) Areas within the site where there is a regular movement of vehicles must be regularly watered at minimum three times a day.</li> <li>v) The Contractor shall restrict all motorised vehicles within the site, excluding those on public roads, to a maximum speed of 15 km per hour and confine haulage and delivery vehicles to designated road ways inside the site.</li> <li>vi) Any stockpiles of construction materials that are likely to generate fugitive dust shall be covered with tarpaulins including the materials on lorries or trucks.</li> </ul>	Prevent dust nuisance	To be implemented at all works are of KT14 site during the Construction Phase.	Construction Contractor		√		Air Pollution Control Ordinance  Air Pollution Control (Construction Dust Regulation)

Air Quality Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Air 2 (Cont'd)	<p>vii) Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facility. Such wheel washing facilities shall be usable prior to any earthworks excavating activity on the site. The Contractor shall also provide a hard-surfaced road between any washing facility and the public road.</p> <p>viii) Any materials dropped on paved roads will need to be cleaned up immediately to prevent dust nuisance.</p>	Prevent dust nuisance	To be implemented at all works are of KT14 site during the Construction Phase.	Construction Contractor		√		<p>Air Pollution Control Ordinance</p> <p>Air Pollution Control (Construction Dust Regulation)</p>

**Mitigation Measure Implementation Schedule – Water Quality**

<b>Water Quality Impact Mitigation</b>								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Water 1	Wash facilities for workers and wheel wash waste result in muddy construction site runoff. Temporary earth hunds and sand barriers shall be used to direct such runoff to a designated settlement area within the site.	Prevent additional pollution load being added to stream due to KT14 works	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WPCO & ProPECC PN1/94
Water 1 (Cont'd)	The settlement area shall be located within the temporary site area. Construction site runoff shall be settled in this settlement area, while runoff from the surface should be channelled through a local site drainage system into the settlement area. When solids build up in the settlement area, and certainly before the onset of the wet season (Apr-Oct) solids shall be excavated from the base of the settlement area. No excavation shall be allowed in rainy weather.	Prevent additional pollution load being added to stream due to KT14 works	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WPCO & ProPECC PN1/94
Water 2	All discharged waters, including sewage and site runoff, should comply with the appropriate standards in the Technical Memorandum on Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters, prior to discharge.  Licensed contractors shall dispose the collected sewage to the government sewers. No sewage shall be allowed to enter wash facilities or sediment setting area.	Prevent additional pollution load being added to stream due to KT14 works	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WPCO & ProPECC PN1/94

**Mitigation Measure Implementation Schedule – Waste Management**

Waste Management								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
	<p><i>Waste Management Plan</i></p> <p>Upon appointment, the main contractor of each construction contract should submit a Waste Management Plan (WMP) to the Engineer for approval. The WMP shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall take into account the recommended mitigation measures in the Project Profile report. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. All mitigation measures numbered Waste 1 to 6 shall be included in the WMP</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase.</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC No. 2/93, 2/93B, 16/96, 4/98, 4/98A, 25/99 25/99A, 25/99C, 12/2000, 19/2001</p> <p>ETWB TC No. 33/2002, 34/2002, 15/2003, 31/2004</p>
Waste 1	<p>i) Trip-ticket system – In order to monitor the disposal of C&amp;D and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be included.</p> <p>ii) Records of wastes – A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) shall be proposed.</p> <p>iii) Training – Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase.</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC No. 2/93, 2/93B, 16/96, 4/98, 4/98A, 25/99 25/99A, 25/99C, 12/2000, 19/2001</p> <p>ETWB TC No. 33/2002, 34/2002, 15/2003, 31/2004</p>

Waste Management								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Waste 2	<p><i>Site Clearance Waste / Demolition Waste</i></p> <p>All construction waste shall be sorted on site into inert and non-inert components. Non-inert materials (wood, glass, metals and plastics) shall be recycled or reused and disposed to landfill only as a last resort. Inert materials (soil, rubble, sand, rock, brick and concrete) shall be separated and reused on site prior to final disposal at public filling facilities. The final disposal site for public fill shall be the Public Filling Facility at Tuen Mun Area 38. The final disposal site for construction and demolition waste shall be the North East New Territories (NENT) Landfill.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase.</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC No. 2/93, 2/93B, 16/96, 4/98, 4/98A, 25/99A, 25/99C, 12/2000, 19/2001</p> <p>ETWB(TC) W No. 33/2002, 34/2002, 15/2003, 31/2004</p>
Waste 3	<p>Excavated Material</p> <p>Any excavated material from the stream shall not be stockpiled, and shall be removed from site on the same day. The material shall be stored in covered impermeable skips while awaiting removal from site.</p> <p>Any leachate from skips shall be treated to meet discharge standard from Government sewers before being collected along with toilet waste by licensed contractor.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p> <p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Stage.</p> <p>To be implemented at the works sites of KT14 during the Construction Stage</p>	<p>Construction Contractor during Construction Stage</p> <p>Construction Contractor during Construction Stage</p>		<p>√</p> <p>√</p>		<p>ETWB(TC) W No. 34/2002,</p> <p>WBTC 12/2000</p> <p>ETWB(TC) W No. 34/2002,</p> <p>WBTC 12/2000</p>



<b>Waste Management</b>								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Waste 4	<p><i>Recycling the Use of Non-Reusable Materials on Site</i></p> <p>Hoarding, shutters, form works and false works made of reusable materials such as steel or plastic concrete panels shall be used as a preferred alternative to non-reusable materials such as wood and timber, with reference to WBTC No. 19/2001 – Metallic Site Hoarding and Signboards.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC 19/2001</p>
Waste 5	<p><i>Chemical Waste</i></p> <p>Any Contractor generating waste oil, lubricants, paints or other chemicals as a result of his activities should register in a chemical waste producer. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD. Chemical waste should be collected by licensed collector.</p> <p>The Contractor shall provide a storage area with hard standing, impermeable surface for storing chemicals on site to prevent inadvertent release of waste oil or other chemicals into nearby water bodies. Oil and fuel bunkers should be bunded and/or enclosed on three sides to prevent discharge due to accidental spillages or breaches of tanks. Bunded area should be of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste, whichever is largest. For construction plant that is likely to leak oil, absorbent inert materials e.g. sand, shall be placed beneath it. This material should be replaced on a regular basis and the contaminated material disposed as chemical wastes. Storage areas should have adequate ventilation and be covered to prevent rain entering.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WDO Waste Disposal (Chemical Waste) General Regulation)</p>

<b>Waste Management</b>								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Waste 5 (Cont'd)	Grease traps shall be installed for site drains. These traps shall be cleared at least once a week. A licensed contractor shall regularly clear the traps and dispose waste oils. No chemicals should be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.  Training on safety codes and relevant manuals related to the chemicals stored on site should be obligatory for the personnel who handle the chemicals on site.	Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WDO Waste Disposal (Chemical Waste) General Regulation)
Waste 6	Domestic garbage generated by site staff shall be stored at dry locations in covered impermeable skips. It should be collected daily and disposed to the nearest Refuse Collection Point or arranged for collection by licensed contractors. The Engineer is responsible for checking that no chemical waste, sewage, excavated material or sorted reusable material is disposed as domestic garbage.	Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline	To be implemented at all of KT14 construction site	Construction Contractor		√		Public Health and Municipal Services Ordinance

**Mitigation Measure Implementation Schedule – Landscape / Visual**

Landscape / Visual Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Land 1	A survey of existing trees shall be completed in accordance with Works Branch Technical Circular No. 14/2002. Management and Maintenance of Natural Vegetation and Landscape Works, and Tree Preservation during detailed design stage. The results of the survey shall form consideration in the detail design for the proposed Secondary Channels KT14, in order that any significant trees shall be protected during both the design and construction periods. Parameters assessed in the survey shall include species, health, form, transplant-ability and amenity value (assessed according to form, size, age, condition and situation of the tree). All surveyed trees should be checked with species listed under the “Animals and Plants (Protection of Endangered Species) Ordinance (CAP 187)” and Forestry and Countryside Ordinance (CAP. 96)” to ensure that no endangered species are affected. Where tree felling is unavoidable, compensatory planting proposal shall be prepared and submitted to EPD and LandsD for approval.	Protect visual quality of project area and proposed works  Ensure protection of trees.	To be implemented along KT14 during the Detail Design Phase and Construction Phase.	Design Engineer to conduct tree survey during detailed design stage.  Construction Contractor to follow the results during construction	√			Works Bureau Technical Circular No. 14/2002
					√	√		
		Protect visual quality of project area and proposed works  Ensure protection of trees	To be implemented along KT14 during the Detail Design Phase and Construction Phase.	Design Engineer to conduct tree survey during detailed design stage.  Construction Contractor to follow the results during construction				

Note:

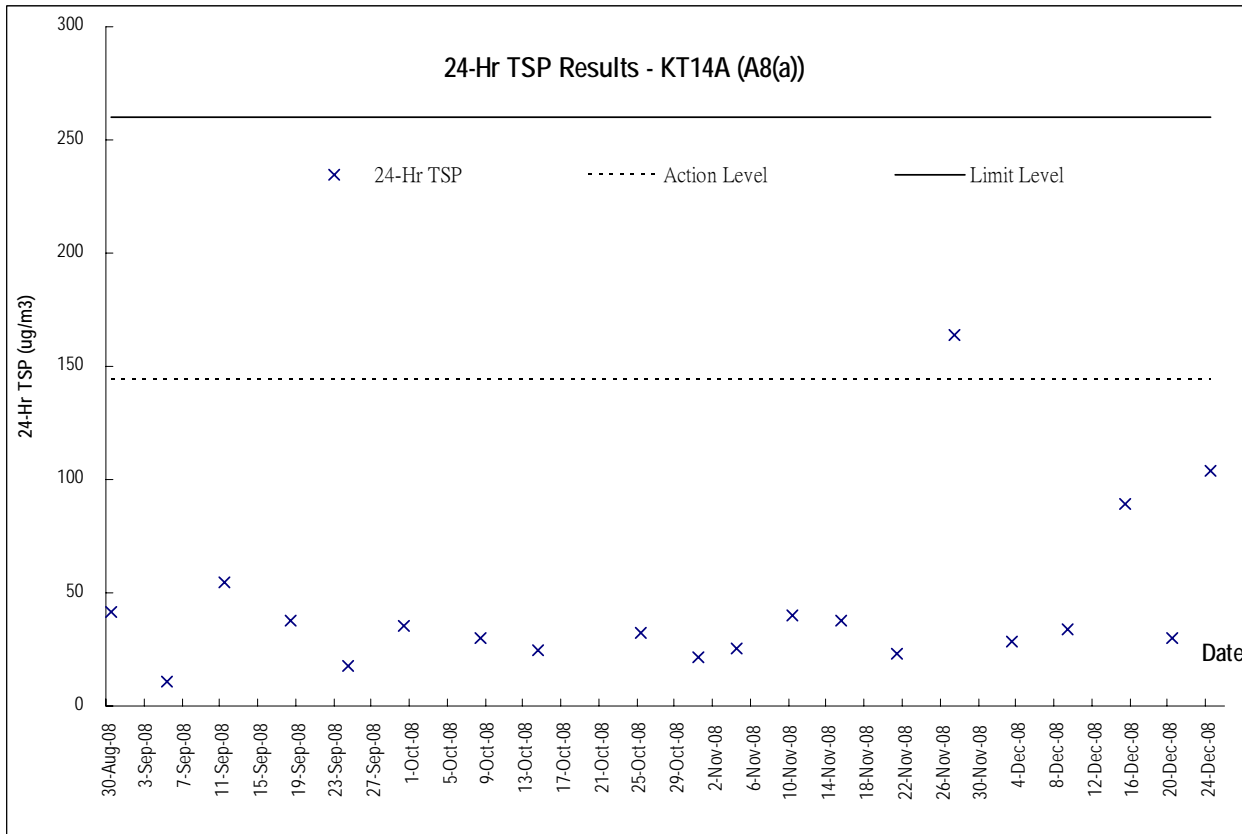
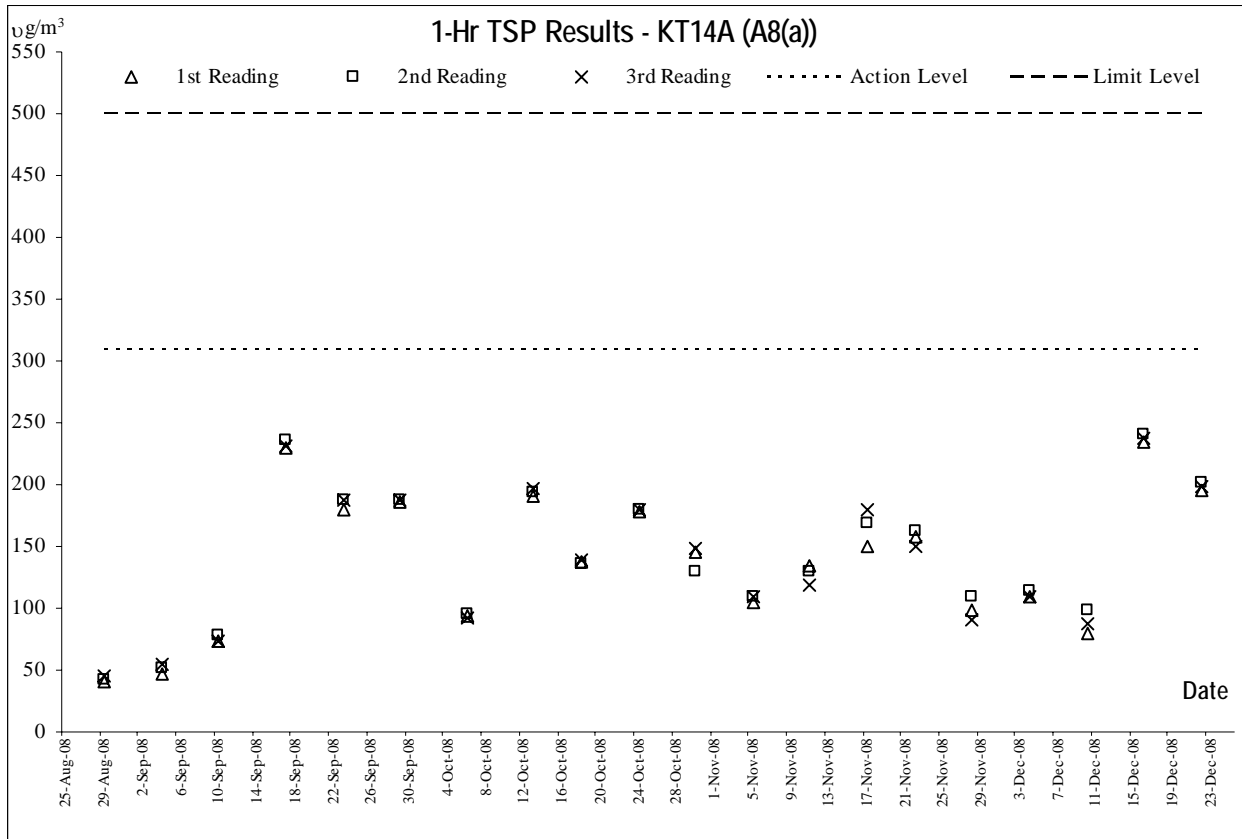
- EIAO Environmental Impact Assessment Ordinance
- WDO Waste Disposal Ordinance
- WPCO Water Pollution Control Ordinance
- TMEIA Technical Memorandum on Environmental Impact Assessment Process

## **Appendix E**

### **Graphic Plots of**

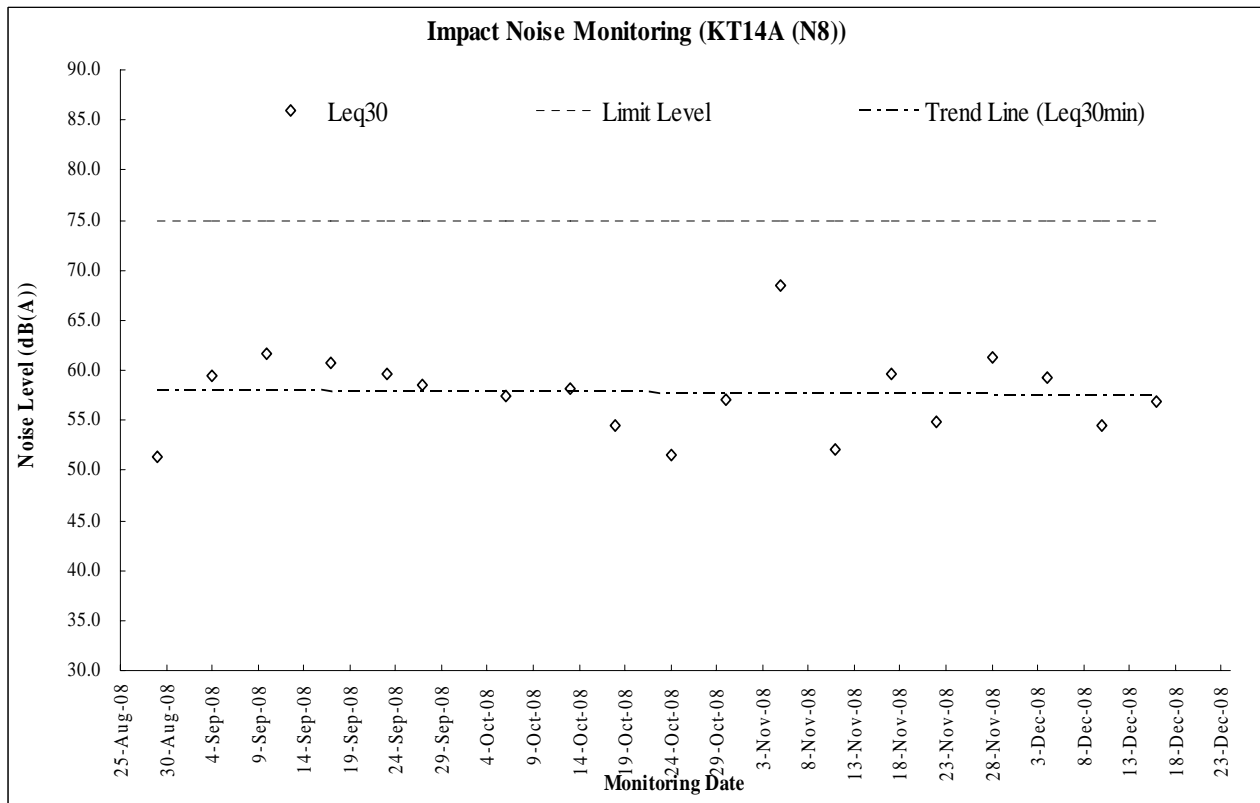
- (a) Air Quality**
- (b) Construction Noise**
- (c) Water Quality**

## **Air Quality**

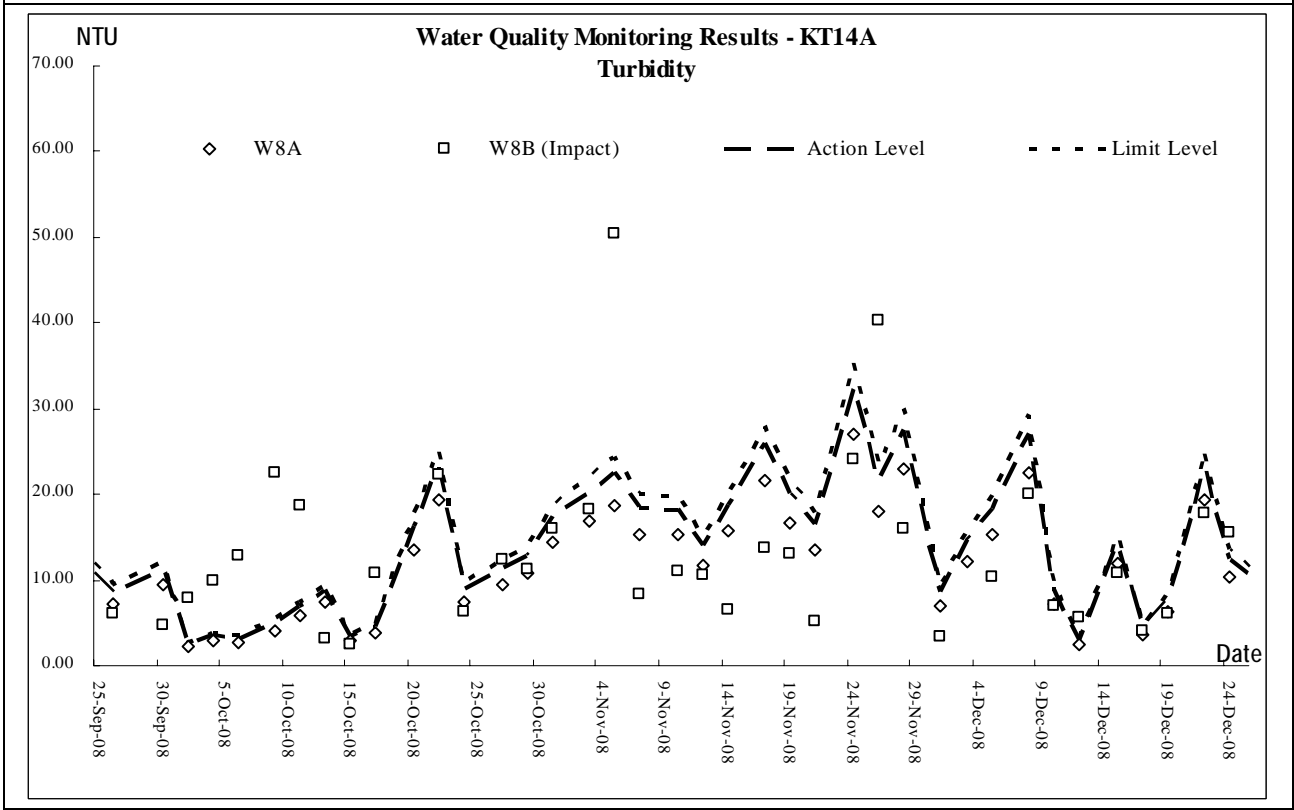
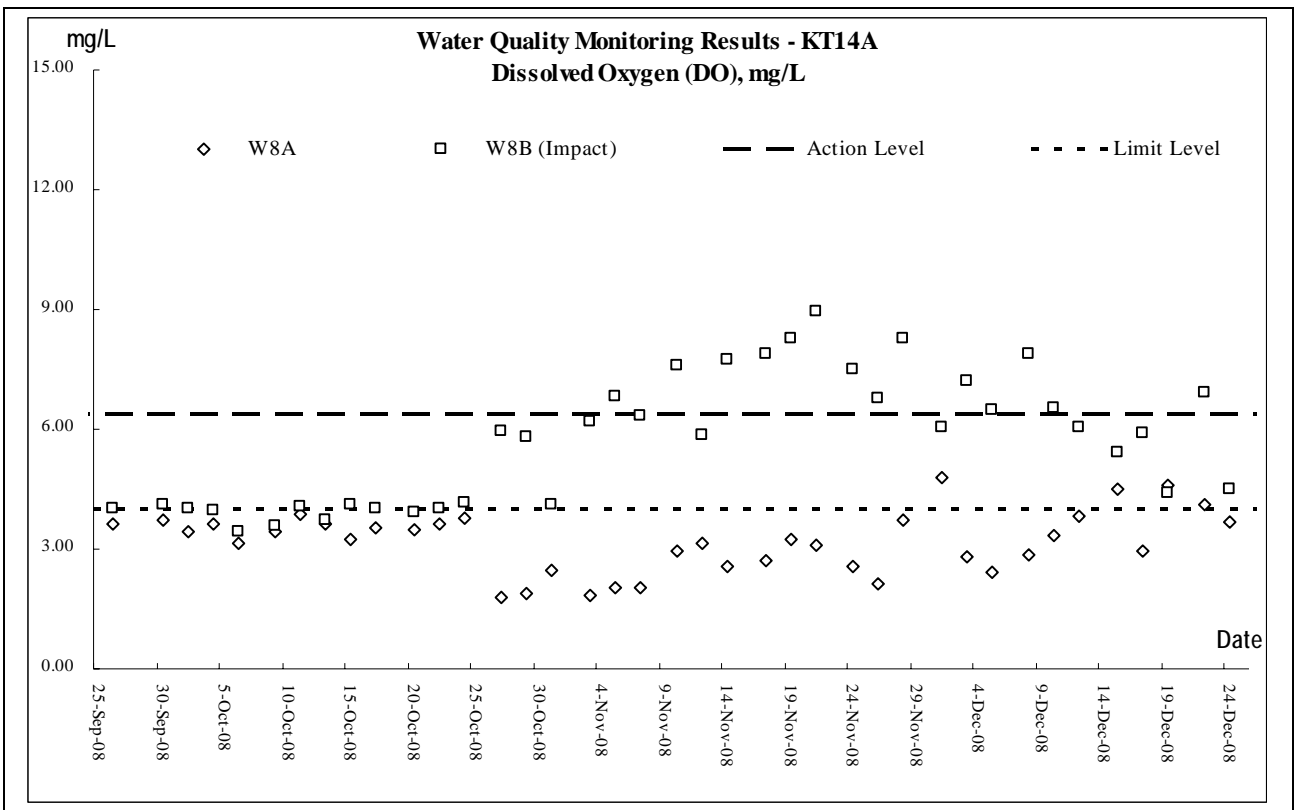


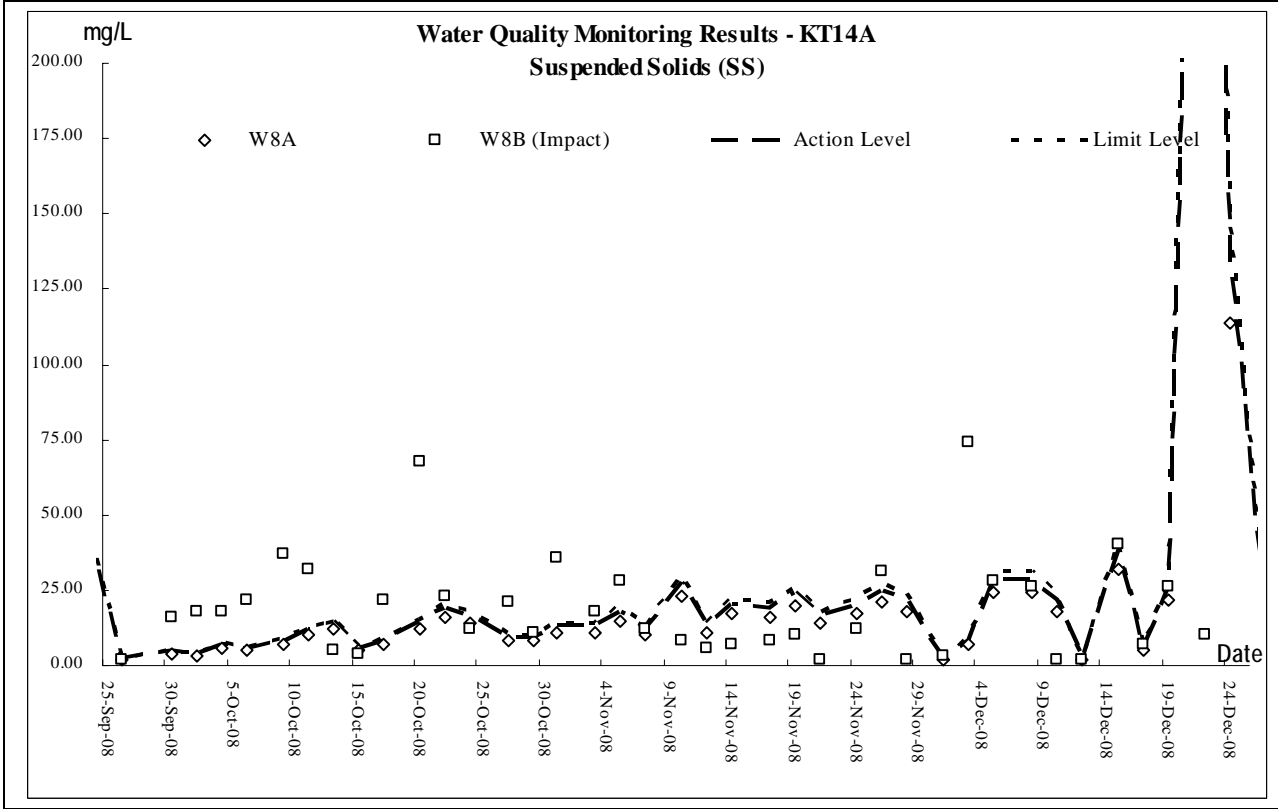
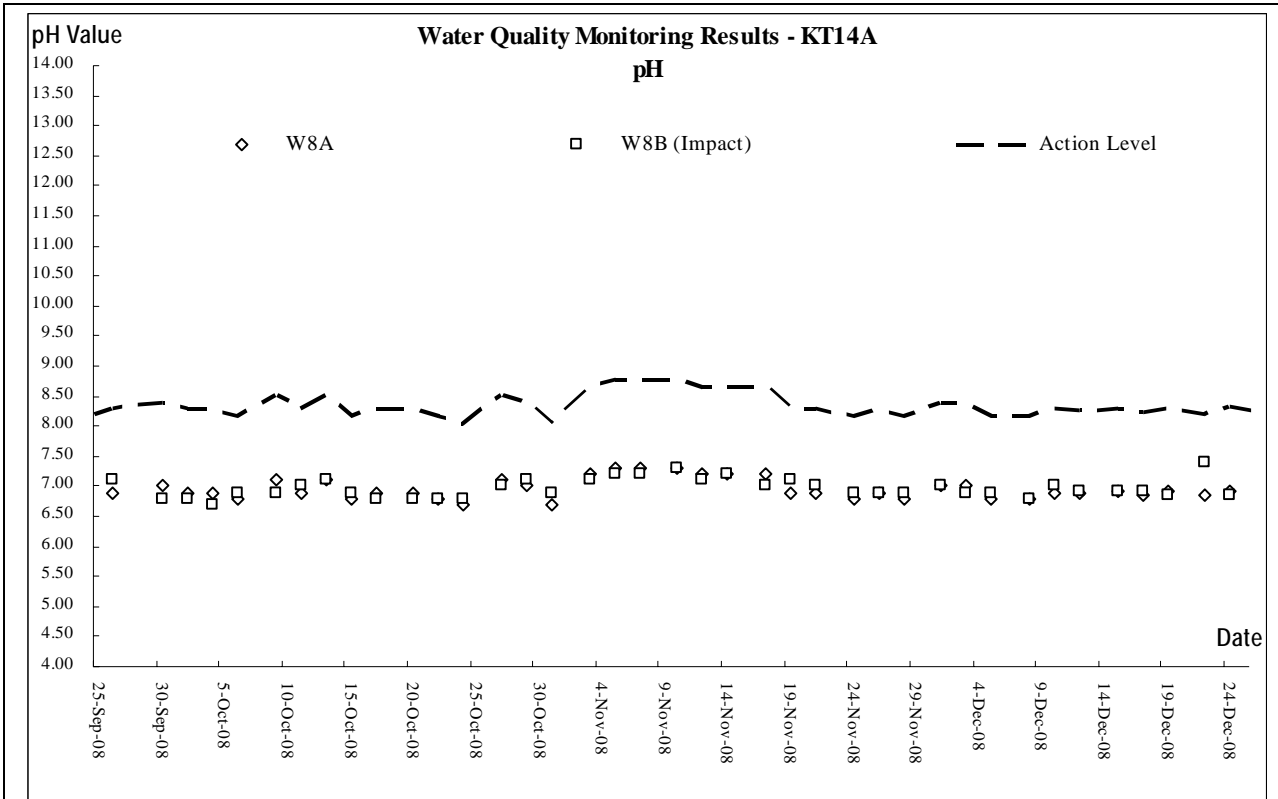
## **Construction Noise**

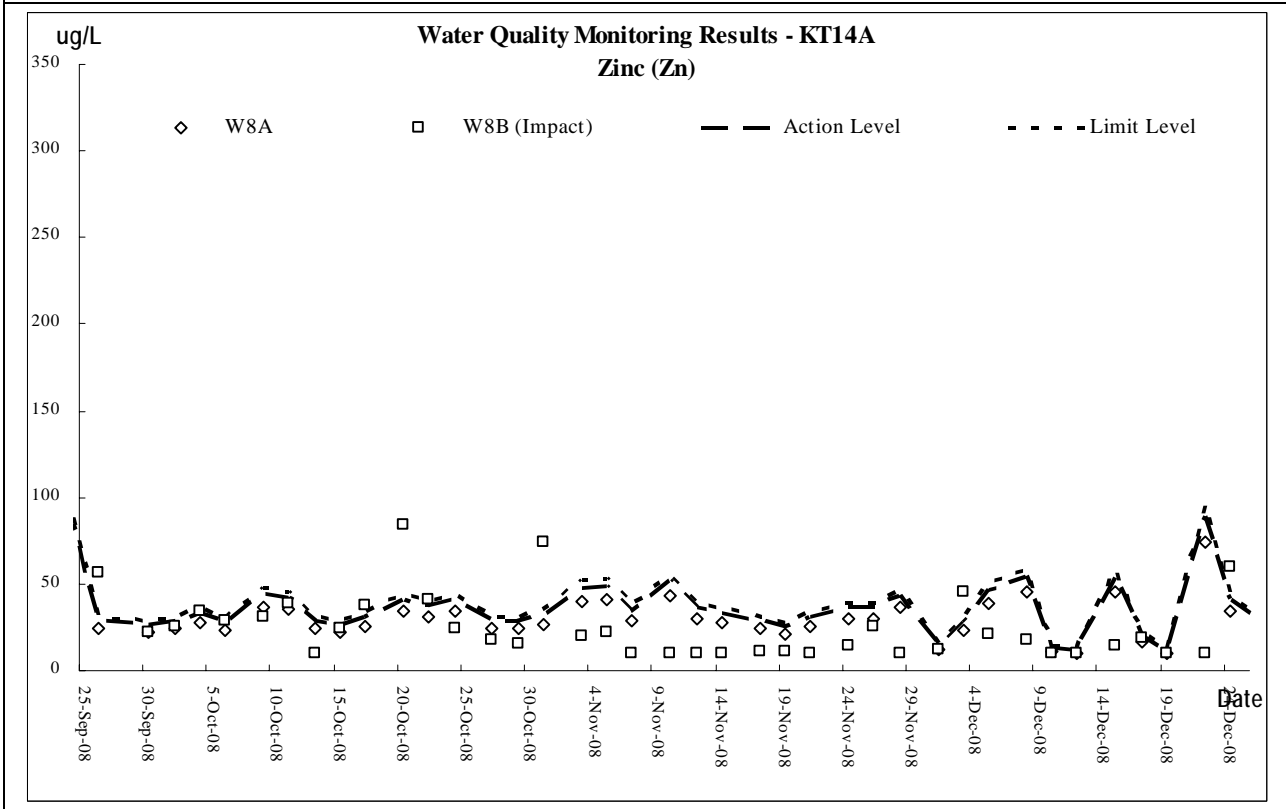
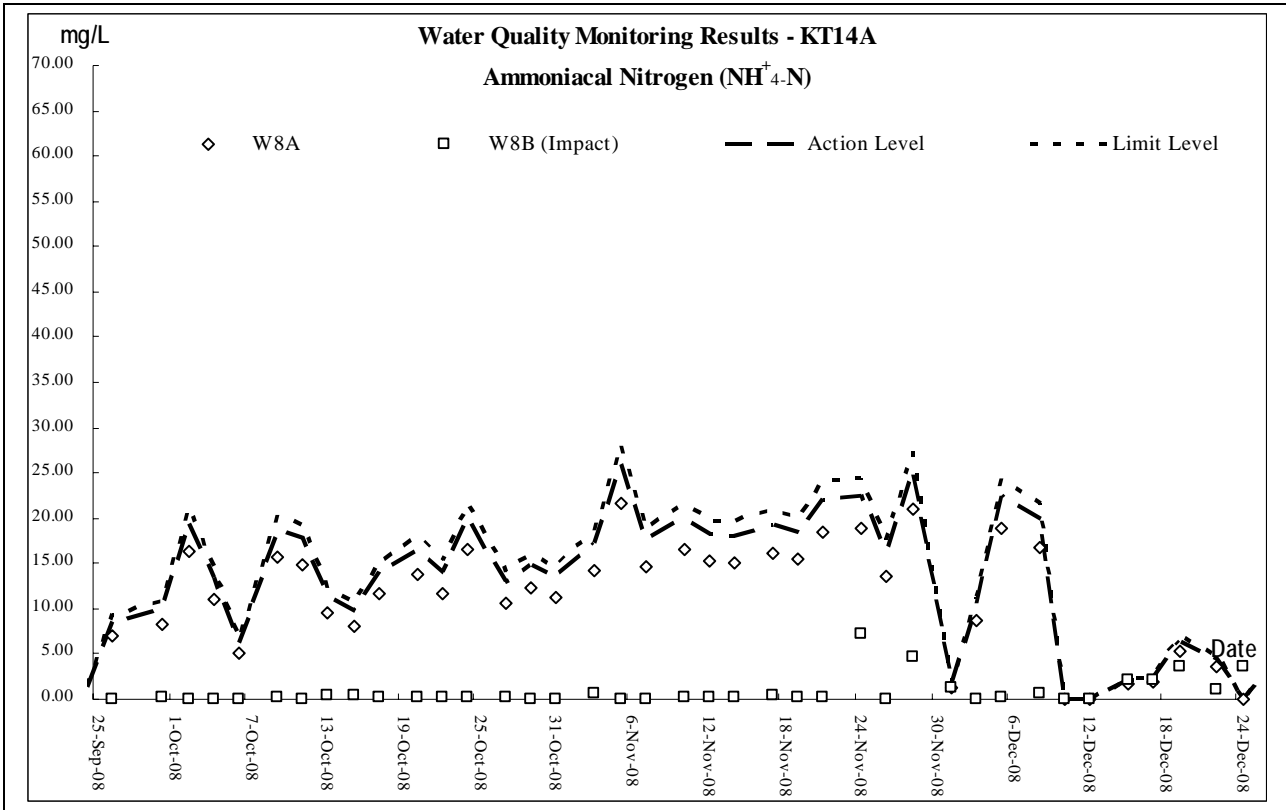




## **Water Quality**







## **Appendix F**

### **Monthly Summary Waste Flow Table for 2008**

**Monthly Summary Waste Flow Table**

Date: 31-Dec-08  
Year/Month: Dec-08

<b>Monthly Summary Waste Flow Table for <u>December 2008</u></b>										
Year	Actual Quantities of Inert C & D Materials Generated Monthly					Estimated Annual Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ Cardboard packaging	Plastics (see note 3)	Chemical Waste	Others, e.g. General refuse
	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000M <sup>3</sup> )	(in '000KG)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000M <sup>3</sup> )
Jan	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0
May	0.08	0.04	0.04	0	0	0	0	0	0	0
Jun	0.00	0.001	0.001	0	0	0	0	0	0	0
Sub-Total	0.08	0.041	0.041	0	0	0	0	0	0	0
Jul	0.021	0.003	0.018	0	0	0	0	0	0	0
Aug	0.899	0.005	0.894	0	0	0	0	0	0	0.01
Sep	5.055	0.003	3.480	0	1.572	0	0	0	0	0.06
Oct	4.044	0.002	2.526	0	1.516	0	0	0	0	0
Nov	6.647	0.011	5.262	0	1.374	0	0	0	0	0.012
Dec	9.050	0.032	8.286	0	0.732	0	0	0	0	0
Total	25.799	0.097	20.507	0.000	5.194	0.000	0.000	0.000	0.000	0.082

- Notes:
- (1) The performance targets are given in PS Clause 28.10(14)
  - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
  - (3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam form packaging material
  - (4) Broken concrete for recycling into aggregates