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

MONTHLY EM&A REPORT FOR KT13 (JANUARY 2009)

PREPARED FOR
CHINA ROAD & BRIDGE CORPORATION

Quality Index

Date	Reference No.	Prepared By	Certified by
		(Environmental Consultant)	(Environmental Team Leader)
10 February 2009	TCS00408/08/600/r0733r2	Nicola Hon	FN Wong

Rev.	Date	Prepared by:	Certified by:	Description
1	06 February 2009	Nicola Hon	FN Wong	First submission
2	10 February 2009	Nicola Hon	FN Wong	Amended against IEC's comments

EXECUTIVE SUMMARY

ES01 This is the forth monthly EM&A report for KT13, covering the construction period from 26 December 2008 to 25 January 2009.

Breaches of AL levels

ES02 Monitoring results of the Reporting Period demonstrated no exceedances of environmental quality criteria for air quality, construction noise and ecology.

ES03 However, a total of **twelve (12)** exceedances of Limit levels were recorded during the Reporting Period. They are summarized below:

Location	Exceedance	DO	Turbidity	pH	SS	NH_4^+-N	Zc	Total
W2	Action Level	0	0	0	0	0	0	0
	Limit Level	0	0	0	1	0	0	1
W6	Action Level	0	0	0	0	0	0	0
	Limit Level	0	5	0	6	0	0	11
Total	Action Level	0	0	0	0	0	0	0
	Limit Level	0	5	0	7	0	0	12

ES04 Although Illegal discharge of the agricultural farm wastewater was significantly attributed to the water quality exceedances of Turbidity and SS recorded at W2 and W6 during the Reporting Period, attribution of the water quality impacts due to excavation and construction of channel to the Turbidity and SS Limit level exceedances can not be over ruled. It is therefore recommended that water quality mitigation measures stipulated in the EIA and summarized in mitigation measures implementation schedule in the EM&A Manual, including containment structure such as temporary earth bunds, sand bags, sheet pile barriers or other similar techniques, is fully implemented. In addition, implemented mitigation measures in particular the erected dams with sand bags downstream the excavation site within the water course of KT13 may also be improved to enhance sedimentation of Turbidity and SS, e.g. by using silt curtain, as appropriate.

ES05 During the Reporting Period, there was no construction work conducted within 100 m area from the cultural heritage site within KT13, so no cultural heritage monitoring was required in accordance with the approved methodology. Landscape inspection was conducted on 5 and 23 January 2009. No significant changes were observed for identified landscape resources and visual sensitive receivers, except for minor changes due to channel excavation, site clearance and preparation work at the identified landscape resources including LR1, LR2.1, LR2.2, LCA3 and LCA4.

Environmental Complaint, Notifications of Summons and Prosecutions

ES06 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, although further implementation or improvement as appropriate, of the mitigation measures need to be made to minimize adverse water quality impacts.

Reporting Changes

ES07 No reporting changes were made during the Reporting Period.

Future key issues

ES08 As dry season has approached, construction dust will continue to be 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 ingression of turbidity and other water quality pollutants via site surface water runoff into the river within KT13 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.

Recommendation

ES11 No sensible discussion can be made on water quality parameter of pH against the existing pH A/L levels, although all the pH results are considered perfectly healthy for the environment of aquatic life. Proposal for adopting the pH range of 6 to 9 pH value in place of the existing pH Action and Limit level has been submitted and awaiting the ER and IEC's agreement prior to submission to EPD for formal approval.

Table of Contents

LIST OF TABLES

LIST OF APPENDICES

1 ENVIRONMENTAL STATUS

This is the forth monthly EM&A report for KT13, covering the construction period from 26 December 2008 to 25 January 2009 (Hereinafter 'the Reporting Period').

1.1 PROJECT AREA AND CONSTRUCTION PROGRAMME

Drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations is enclosed in ***Appendix A***, while CRBC's construction program is enclosed in ***Appendix B***.

1.2 WORKS UNDERTAKEN DURING THE REPORTING PERIOD

Apart from general works of tree survey, structural survey and environmental monitoring and audit, works undertaken during the Reporting Period with fine tuning of construction activities showing the inter-relationship with environmental protection/mitigation measures for the month are summarized as follows:

(a) Excavation for channel formation;

(b) Construction of channel structure; and

(c) Disposal of excavated materials.

1.3 ENVIRONMENTAL MANAGEMENT ORGANIZATION

Management structure and key personnel contact names and telephone numbers of the environmental management organization are presented in ***Appendix C***, 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').

1.4 LICENSING STATUS

1.4.1 Air Pollution Control (Construction Dust) Regulation

Pursuant to the ***Air Pollution Control (Construction Dust) Regulation***, CRBC has notified EPD, via submission of Form NA dated 14 February 2008, of the scope and nature of the works to be carried out under the Project, including construction activities such as stockpiling, loading and unloading, transfer of dusty material, use of vehicles and debris handling, etc. CRBC will continuously review the status of the environmental licenses and apply the required licenses/permits prior to the commencement of construction work.

1.4.2 Noise Control Ordinance

No ***Construction Noise Permit*** (hereinafter 'CNP') is required for the Project pursuant to the Noise Control Ordinance (hereinafter 'NCO') and the associated applicable subsidiary regulations of ***Noise Control (General) Regulation, Noise Control (Hand-held Percussive Breaker) Regulation and Noise Control (Air Compressor) Regulation***, as the use of powered mechanical equipment, or conducting construction work in during restricted hours, i.e. 1900 to 0700 hours on normal weekdays and any time on general holidays including Sundays is not anticipated during the whole construction period. CRBC will continuously review the status of the environmental licenses under the NCO and apply the required licenses/permits prior to the commencement of construction work.

1.4.3 Waste Disposal (Charges for Disposal of Construction Waste) Regulation

CRBC has applied for a Billing Account (Construction Work Contract with Value of $1million or Above), under the ***Waste Disposal (Charges for Disposal of Construction Waste) Regulation***. The account number 7006524 has been assigned on 9 Jan 2008.

1.4.4 Water Pollution Control Ordinance

CRBC has applied for a discharge license under Section 20 of the ***Water Pollution Control Ordinance***, and the license No. 1U461/1 has been issued.

1.4.5 Waste Disposal (Chemical Waste) (General) Regulation

CRBC has registered as a Chemical Waste Producer with EPD under the Waste Disposal (Chemical Waste) (General) Regulation and the Waste Producer Number assigned is WPN: 5611-531-C3124-28 dated 2 May 08.

1.4.6 Dumping at Sea Permit

CRBC has been granted the Environmental Protection Department Permit Issued under the Dumping at Sea Ordinance (Permit no. EP/I4D/08-095, dated 18 September 2008, permit validity period of six months from 18 September 2008 to 17 March 2009) for 18,469 m^3 sediment requiring Type 1 – open sea disposal at East Sha Chau Contaminated Mud Disposal Site – Pit IV b to be capped as directed by the management Team of the Civil Engineering and Development Department.

1.5 Environmental Protection and Pollution Control Mitigation Measures

CRBC has committed to implement environmental protection and pollution control and mitigation measures, as recommended in the EIA, EP and the EM&A Manuals, summarized in the Mitigation Measures Implementation Schedules in the EM&A Manual. The implemented mitigation measures include

(a) Watering of stockpiles of rip-rap at KT13;
(b) Covering of the loose soil at KT13 to minimize water quality impacts;
(c) Hard pavement of haul road leading to public roads at KT13;
(d) Classification and disposal of illegally dumped construction and demolishment materials at KT13;
(e) Construction of noise barriers; and
(f) Erection of dams with sand bags downstream the excavation site within the water course of KT13 to enhance sedimentation of Turbidity and SS,

2 MONITORING METHODOLOGY

2.1 Monitoring Parameters

According to the EM&A requirements set out in the EIA, Environmental Permits No.EP263/2007 (hereinafter 'the EP') and the associated EM&A Manual, monitoring parameters are summarized as follows.

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_3-N') and Zinc (hereinafter 'Zn')
Ecology	Vegetation, All bird species of wetland, Ho Pui Egret, Ma On Hong Egret and Flight Line Survey	
Waste Management	Inspection and the document audit	
Cultural Heritage	Condition survey for a historical grave	
Landscape & Visual	To audit the implementation of the proposed construction phase mitigation measure stipulated in EIA.	

2.2 MONITORING LOCATIONS

Details of the monitoring locations are summarized in ***Table 2-2*** and shown in ***Appendix A***. For ease of reference, '(a)' is denoted for the relocated location IDs to differentiate from the original 'EM&A Manual' locations.

Table 2-2 Summary of Monitoring Locations

Env. Aspect	Monitoring Location ID	Identified Address / Co-ordinates	Status of Monitoring Locations / Rationale for Recommended Replacement
Air	A1(a)	No.68 Ho Pui Village	The original location of EM&A Manuals A1 has permanently been abandoned. No access can be acquired in the vicinity of A1. Taken into consideration that Ho Pui Village is one of the most important sensitive receivers near KT-13 without monitoring, the most fronting house, No. 68 Ho Pui Village, is therefore recommended as the replacement location A1(a).
	A2	No.1 Ma On Kong Village	Original location of the EM&A Manual; access granted.
Noise	N1(a)	168-169 Kam Ho Road, Ma On Kong Village,	Original location of N1 identified in the EM&A Manual was relocated to proposed area as recommended by IEC.
	N2(a)	No. 68 Ho Pui Village,	The original location of EM&A Manuals N2 has permanently been abandoned. No access can be acquired in the vicinity of N2. Taken into consideration that Ho Pui Village is one of the most important sensitive receivers near KT-13 without monitoring, the most fronting house, No. 68 Ho Pui Village, is therefore recommended as the replacement location N2(a).
	N3	No.1 Ma On Kong Village	Original locations of the EM&A Manual; access granted.
Water	W1	E824539 / N830283	Original locations of the EM&A Manual; access resolved.
	W2	E824693 / N830258	Original locations of the EM&A Manual; access resolved.
	W3(a)	E824833 / N830374	The W3 is proposed to be relocated about 55 m down stream to W3(a) for safety reason as there is no any discharge point observed between W3 and the proposed W3(a).
	W4	E824936 / N830618	Original locations of the EM&A Manual; access resolved.
	W5	E825008 / N830812	Original locations of the EM&A Manual; access resolved.
	W6	E825100 / N830987	Original locations of the EM&A Manual; access resolved.
Ecology	Monthly monitoring along the boundary of the works area to confirm that there are no adverse impacts on habitats outside the site in particular the Conservation Area (CA) zone and Ho Pui Egretry. Photographic records at six-month intervals; Monthly monitoring of all bird numbers including wetland species and species identified as being of conservation importance; Monitoring of Ho Pui egretry during March to August. The Ma On Kong egretry is also surveyed to provide reference information on the breeding egrets nearby; and Flight line surveys twice per month during April to June.		
Waste Management	Whole constriction site and document		
Cultural Heritage	Ma On Kong	Refer to EM&A Manual (KT13) Figure 7.1.	
Landscape & Visual	Refer to EIA Section 10		

2.3 MONITORING FREQUENCY, DURATION AND SCHEDULE

2.3.1 Monitoring Frequency and Duration

Impact environmental monitoring is conducted upon commencement of the construction activities and throughout the whole construction period to detect and minimize any adverse environmental impacts generated from the construction activities of the Project. The monitoring frequency and duration for air quality, construction noise, water quality, ecology and other parameters are summarized below.

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

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

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 KT13 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.

Ecology

The Ecology Monitoring is required in accordance with the EM&A Manual.

Parameters: Vegetation, All bird species including wetland birds, Ho Pui and Ma On Hong Egretries and Flight line survey

Frequency: Vegetation – Impact monitoring – monthly;
Photographic records/checks against baseline records– six monthly
Wetland Bird survey – Monthly of half-day survey;
Ma On Kong egretry – Monthly between March to August; and
Ho Pui egretry – Bi-weekly between March and August;
Flight line Survey – Month during the period from April to June

Duration: Throughout the whole construction period

Waste Management Audit

Frequency: Once per month

Duration: Throughout the construction period.

Cultural Heritage

Frequency: Bi-monthly

Requirement: Condition survey of a Qing Dynasty Grave.

Duration: Throughout the construction phase period.

Landscape & Visual

Frequency: Bi-weekly

Duration: Throughout the construction phase period.

2.3.2 Environmental Monitoring Schedule

The monitoring schedules for the Reporting Period and forthcoming month are presented in ***Appendix D***.

2.4 Monitoring Equipment and Procedure

The monitoring equipment and procedures for air quality, construction noise, stream water quality and ecology are summarized below. Calibration certificates of the equipment and the related laboratories are presented in ***Appendix E***.

2.4.1 Weather Conditions during the Reporting Period

All meteorological information is sourced from the Hong Kong Observatory (Lau Fau Shan Station). The meteorological data include wind direction, wind speed, humidity, rainfall, air pressure and temperature etc., that in general are required for evaluating the environmental impact arising from the construction activities. The meteorological data are presented in ***Appendix D***.

2.4.2 Air Quality

Monitoring Equipment

A list of air quality monitoring equipment is shown below.

Table 2-4-2 Air Quality Monitoring Equipment

Equipment	Model
24-Hr TSP	
High Volume Air Sampler	Grasby Anderson GMWS 2310 HVS
Calibration Kit	TISCH Model TE-5028A
1-Hr TSP	
Portable Dust Meter	TSI DustTrak Model 8520 / Sibata LD-3 Laser Dust Meter

Monitoring Procedure

1-Hr TSP

The 1-Hr TSP measurement follows manufacturer's Operation and Service Manual, using a 1-Hr TSP monitor brand named TSI Dust Track Aerosol Monitor Model 8520 or Sibata LD-3 Laser Dust Meter, which is a portable, battery-operated laser photometer to record the real time 1-hr TSP based on 90^0 light scattering. The 1-hr TSP monitor consists of the following:

(a) A pump to draw sample aerosol through the optic chamber where TSP is measured;
(b) A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
(c) A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

The 1-Hr TSP meter to be used will be within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument will be checked before and after each monitoring event.

24-hr TSP

The equipment used for 24-Hr TSP measurement is the high volume air sampling system (hereinafter 'HVS') brand named Thermo Andersen, Model GS2310 TSP. The HVS complies with US EPA Code of Federal Regulation, Appendix B to Part 50. The HVS consists of the following:

(a) An anodized aluminum shelter;
(b) A 8"x10" stainless steel filter holder;
(c) A blower motor assembly;
(d) A continuous flow/pressure recorder;
(e) A motor speed-voltage control/elapsed time indicator;
(f) A 6-day mechanical timer, and
(g) A power supply of 220v/50 Hz

The HVS is operated and calibrated on a regular basis following the manufacturer's instruction using the NIST-certified standard calibrator brand named TISCH Calibration Kit Model TE-5025A. Regular HVS operation and maintenance as well as filter paper installation and collection is performed by the ET's competent technicians, whereas laboratory analyses are conducted in a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (herein after 'ALS'). The 24-hr TSP filters of the 24-Hour TSP will be kept in ALS for six months prior to disposal.

All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper are recorded in details.

2.4.3 Construction Noise

Monitoring Equipment

A list of construction noise monitoring equipment is shown below.

Table 2-4-3 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	B&K Type 2236 & 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer

Monitoring Procedure

Sound level meters listed above comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications, as recommended in Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO).

All noise measurements will be performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq(30 min) in six consecutive Leq(5 min) measurements will be used as the monitoring parameter for the time period between 0700-1900 hours on weekdays throughout the construction period. Leq(15min) in three consecutive Leq(5 min) measurements for other time periods (e.g. during restricted hours) will only be conducted for monitoring the construction noise during restricted hours as necessary.

The sound level meter is mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield is fitted for all measurements. Where a measurement is to be carried out at a building, the assessment point is normally at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point is at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.

Immediately prior to and following each noise measurement the accuracy of the sound level meter is checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0dB. No noise measurement will be made in the present of significant fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed is checked with a portable wind speed meter capable of measuring the wind speed in m/s.

2.4.4 Water Quality

Monitoring Equipment

Monitoring Equipment for water quality is listed below.

Table 2-4-4 Water Quality Monitoring Equipment

Equipment	Model / Description
Water Depth Detector	Eagle Sonar
Water Sampler	Teflon bailer / bucket
Thermometer & DO meter	YSI 550A DO Meter
pH meter	Hanna HI 98128
Turbidimeter	Hach 2100p
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box

Monitoring Procedure

Water Depth

As the water columns in the stream water within KT13 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.

Water depths are determined prior to measurement and sampling, using a portable battery operated depth detector, brand named 'Eagle Sonar', if the depths exceed 1.5 meter. For the depths well below 1 meter, the depths of water columns are measured with a steel ruler with appropriate weight.

Dissolved Oxygen (DO)

A portable YSI 550A DO Meter will be used for in-situ DO measurement. The DO meter is capable of measuring DO in the range of 0 - 20 mg/L and 0 - 200 % saturation and checked against water saturated ambient air on each monitoring day prior to monitoring. Although the DO Meter automatically compensates ambient water temperature to a standard temperature of 20^0C for ease of comparison of the data under the changing reality, the temperature readings of the DO Meter will be recorded in the field data sheets. Calibration of the equipment will be performed by ALS on quarterly basis.

pH

A portable Hanna pH Meter will be used for in-situ pH measurement. The pH meter is capable of measuring pH in the range of 0 – 14 and readable to 0.1. Standard buffer solutions of pH 7 and pH 10 are used for calibration of the instrument before and after measurement. Quarterly calibration of the equipment will be performed by ALS.

Turbidity

A portable Hach 2100p turbidity Meter will be used for in-situ turbidity measurement. The turbidity meter is capable of measuring turbidity in the range of 0 – 1000 NTU. Calibration of the equipment will be performed by ALS on quarterly basis.

Suspended Solids (SS)

SS will be determined by ALS upon receipt of the water samples using the HOKLAS accredited analytical method - ALS Method EA-025.

Ammonia Nitrogen(NH_3-N)

NH_3-N will be examined by ALS upon receipt of the water samples using the HOKLAS accredited analytical methods - ALS Method EK-055A.

Zinc(Zn)

Zn will be analyzed by ALS upon receipt of the water samples using the HOKLAS accredited analytical methods - ALS Method EG-020.

Water Sampler

Water samples will be collected using a plastic sampler to prevent metal contamination. As the water depths in the stream water within KT13 are generally less than 0.5 m, a plastic bucket with a rope of appropriate length is used for water sampling. The sampler is rinsed before collection with the sample to be taken. For water depths deeper than 0.5 meter, a cleaned plastic bailer bucket will be used for sample collection.

1000 mL water sample is collected from each depth for SS determination. The samples collected are stored in a cool box maintained at 4^0C and delivered to ALS upon completion of the sampling by end of each sampling day.

Sample Container

Water samples are contained in screw-cap PE (Poly-Ethylene) bottles, which are provided and pretreated according to corresponding HOKLAS and ALS analytical requirements. Where appropriate, the sampling bottles are rinsed with the water to be contained. Water samples are then transferred from the water sampler to the sampling bottles to 95% bottle capacity to allow possible volume expansion during delivery and storage.

Sample Storage

A 'Willow' 33-litter plastic cool box packed with ice will be used to preserve the collected water samples prior to arrival at ALS. The water temperature of the cool box will be maintained at a temperature as close to 4^0C as possible without being frozen. Samples collected will be delivered to the laboratory upon collection within the maximum storage time required under the HOKLAS and ALS analytical requirements

2.4.5 Ecology

Monthly walk through survey will be conducted along the boundary of work area for KT13. Bird monitoring will be conducted in the study areas monthly for KT13. Monitoring on the Ho Pui egretry and Ma On Kong egretry will be conducted between March to August. Flight line surveys to record the feeding areas and the habitat use of breeding egrets will be conducted between April to June. Photographic record should be made at six month intervals.

Monitoring Equipment

The following equipment will be used for monitoring:-

Standard portable field survey equipment was used for ecological monitoring, including

(a) Binoculars of 10 x 40 magnifications;

(b) Digital camera; and

(c) Notebook.

Study Area

The areas for the ecological monitoring programme would cover 60 m on either side of the existing channel as well as the proposed bypass culvert, as shown in Figure 6.1 of the EM&A Manual. Within these, emphasis will be given to the area around the Ho Pui and Ma On Kong egretries and habitats of at least moderate ecological value. In addition, monitoring would also be undertaken at the Ho Pui egretry and Ma On Kong egretry (The Ma On Kong egretry is outside the demarcated monitoring area but is also monitored to identify any adverse effects on the breeding egrets).

Survey Method

Monthly monitoring will be conducted by means of walk through survey, along the boundary of work area for KT13. Any adverse impacts to the habitats outside the site, in particular the Conservation Area (CA) zone and Ho Pui Egretry, will be checked and reported.

Photographic records will be made every six months on the fixed photo record points selected during the baseline survey. The photos from the construction phase ecological monitoring will be compared with those taken during the baseline, which are used as the baseline conditions.

Bird monitoring will be conducted in the study areas monthly for KT13. Attention should be paid on wetland species and species identified as being of conservation importance, and the habitats utilized should also be recorded. Bird surveys should commence no later than 2 hours after dawn.

Monitoring on the Ho Pui egretry and Ma On Kong egretry will be conducted between March to August. The frequency would be twice per month during March to May. Depending upon the nesting conditions at Ho Pui egretry, the frequency could be reduced to monthly between June and August if no egret nest found by the end of May, or maintained at twice per month till the end of August if there are egret nests. Number of active nests, species and number of birds present and breeding stage should be recorded.

Flight line surveys to record the feeding areas and the habitat use of breeding egrets will be conducted twice per month between April to June. The number and species of flying egrets, and their landing habitats and locations should be recorded.

2.4.6 Waste Management, Cultural Heritage and Landscape & Visual

Waste Management, Cultural Heritage and Landscape & Visual monitoring is required for KT13 as stipulated in the EM&A manual [382047/E/EMA/Issue 5] ***Section 5***, ***Section 7*** and ***Section 8*** accordingly.

Waste Management

During the monthly audit, ETL will pay attention to the issues relating to waste management, and check whether the Contractor has followed the relevant contract Specifications and the procedures specified under the law of HKSAR.

Cultural Heritage

Condition survey by a qualified archaeologist is required for the historical grave near Ma On Kong before and during the construction phase. The method statement of condition survey of Ma On Kong Historic Grave (KT13-02-02) was issued to EPD and endorsed on 27 July 2008, the frequency of the condition survey during the construction phase and given the open cut method would be adopted for the construction of the proposed bypass box culvert under KT13 project, subject to the result of the condition survey carried out before the construction stage, it is recommended that bi-monthly condition survey be undertaken during the construction work within 100m area from the grave.

Landscape and Visual

In accordance with the EM&A manual [382047/E/EMA/Issue5] ***Section 8*** landscape and visual mitigation measures are required during construction and operation phase. Site inspection will be undertaken at least once every two weeks throughout the construction period to ensure compliance with the intended aims of the proposed mitigation measures.

2.5 Quality Assurance Procedures and Data Management

2.5.1 Documentation of the Environmental Monitoring

Field data including in-situ monitoring results, weather conditions and water sampling information and observation will be recorded in corresponding Field Data Sheets, which will be signed and dated by the respective environmental technician prior to submission to the ETL for validation and endorsement at the end of the monitoring day.

2.5.2 Data Management and Analysis

All impact monitoring data will be processed by the AUES data recording and management system, which complies with in-house Quality (***ISO 9001:2000***) Management System. Monitoring results recorded in the monitoring equipment e.g. 1-Hr TSP Meters and Noise Meters will be downloaded directly from the equipment at the end of the monitoring period and input into a computerized database maintained by the ET. Laboratory results will be input directly into the computerized database and checked by personnel other than those who input the data.

2.5.3 Quality Assurance Procedures

Appropriate and standard QA/QC measures will be adopted for the environmental monitoring to ensure the scientific integrity of the data produced. Sources of error in the impact monitoring will be properly controlled with the following QA/QC procedures:

(a) Appropriate field monitoring and sampling techniques, including monitoring equipment, storage and delivery of samples;

(b) Well organized systematic field-data system e.g. all baseline monitoring information, field observation, results, weather conditions and water sampling information, etc. will be recorded in the field monitoring record sheets. The laboratory analysis records will be maintained by the HOKLAS following HOKLAS requirements;

(c) HOKLAS requirements for QA/QC of all laboratory testing to ensure acceptable accuracy and reproducibility of the laboratory analysis indicated by consistent agreement between duplicate samples, validity of the analytical results by compliance with the required blanks and recovery of standard addition.

2.5.4 Records

All impact monitoring data will be clearly and systematically documented in both hardware and software format and the software copy will be available for inspection upon request. All the document and data will be kept for at lest one year after completion of the Project. Field Data Sheets used to record the impact monitoring information, field observation, results, weather conditions and water sampling information, etc., will be properly maintained and kept by the ET. The copies of laboratory analysis records from ALS will be keep by the ET throughout the at least one year after completion of the EM&A program of the Project.

2.6 REPORTING

2.6.1 General Requirements for Report Submission

General requirements for Monthly EM&A report submission as stipulated in the EIA, EP and EM&A Manual are summarized below.

Table 2-6 Requirements for Report Submission

Report	Submission
Monthly EM&A Report	• Within 10 working days of the end of each reporting month.
Quarterly EM&A Summary Report	• No specific requirement, proposed three weeks after endorsement of the 3rd monthly EM&A report within a particular quarter.
Final EM&A Summary Report	• No specific requirement, proposed one month upon completion of entire EM&A program

2.6.2 Cut-Off Day of the Reporting Month

It is also agreed among the ER, IEC, CRBC, ET and EPD that, in order to avoid unnecessary delay of the EM&A report submission due to the time required for laboratory analyses for those environmental monitoring samples collected at the ends or near the ends of the reporting months, in particular on eve of public holidays, the cutoff day is 25th of each month. That is to say, the reporting month is counted from 26th of the previous month to 25th of the reporting month.

3 MONITORING RESULTS

The environmental monitoring results will be compared against the Action and Limit Levels established based on the baseline monitoring results. Should non-compliance with the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in ***Appendix F***. The environmental monitoring results are presented in tabulation below and graphical plots in ***Appendix G.***

3.1 AIR QUALITY

3.1.1 Action and Limit Levels

According to the Baseline Monitoring Report for KT13, the Action and Limit Levels for 24-Hr and 1-Hr TSP are established as follows:

Table 3-1-1 Air Quality Action and Limit Levels

Monitoring Station	Action Level (μg /m³)		Limit Level (μg/m³)	
	1-Hr TSP	24-Hr TSP	1-Hr TSP	24-Hr TSP
KT13(A1(a))	309	144	500	260
KT13(A2)	307	141	500	260

3.1.2 Results

Results of air quality monitoring at the identified locations during the Reporting Period are summarized in ***Tables 3-1-3-1*** and ***3-1-3-2*** below. Details of 24-hr TSP data and graphical plots of trends of monitored parameters at key stations over the past four reporting periods are presented in ***Appendix G***.

Table 3-1-2-1 Summary of Air Quality Monitoring Results at KT13-A1(a)

1-Hour TSP (μg/m³)						24-Hour TSP (μg/m³)	
Date	Start Time	1st Hr	2nd Hr	3rd Hr	Average	Date	Results
27-Dec-08	13:50	98	103	99	100	31-Dec-08	24
2-Jan-09	14:20	119	123	120	121	7-Jan-09	43
08-Jan-09	14:20	121	127	124	124	13-Jan-09	61
14-Jan-09	08:20	154	137	163	151	20-Jan-09	34
20-Jan-09	14:20	154	161	158	158	24-Jan-09	23
Action Level		309				144	
Limit Level		500				260	

Table 3-1-2-2 Summary of Air Quality Monitoring Results at KT13-A2

1-Hour TSP (μg/m³)						24-Hour TSP (μg/m³)	
Date	Start Time	1st Hr	2nd Hr	3rd Hr	Average	Date	Results
27-Dec-08	11:20	105	113	109	109	31-Dec-08	17
2-Jan-09	13:00	124	131	129	128	7-Jan-09	55
08-Jan-09	13:00	126	135	132	131	13-Jan-09	38
14-Jan-09	13:00	144	162	150	152	20-Jan-09	44
20-Jan-09	13:00	171	179	176	175	24-Jan-09	26
Action Level		307				141	
Limit Level		500				260	

3.1.3 Discussion

As shown in ***Tables 3-1-2-1 and 3-1-2-2***, 1-HR TSP and 24-Hr TSP results fluctuated below the Action level. No exceedance of Action and Limit levels was recorded during the Reporting Period. Neither Notification of Exceedance (hereinafter 'NOE') of air quality criteria nor corrective action was required.

3.2 CONSTRUCTION NOISE

3.2.1 Action and Limit Levels

The Action and Limit levels for construction noise are illustrated in ***Table 3-2-1***.

Table 3-2-1 Construction Noise Action and Limit Levels

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.

3.2.2 Results

Results of construction noise monitoring at the identified locations N1(a), N2(a) and N3 during the Reporting Period are summarized in ***Table 3-2-2-1*** and ***Table 3-2-2-3***.

The baseline monitoring for N1(a) and N2(a) was performed on the 1st floor of the bedroom of 168-169 Kam Ho Road, Ma On Kong Village and No. 68 Ho Pui Village respectively. The impact noise monitoring, however, is performed on the ground floor of the same house due to denial of the access to the 1st floor. The change of noise monitoring from 1st floor to ground floor will omit 3dB(A) façade correction but will neither introduce any difference in detection and minimization of the of construction noise impacts, nor alter the existing construction noise A/L levels. The ET has written to EPD for formal information and approval upon agreement with the ER and IEC.

Table 3-2-2-1 Summary of Construction Noise Monitoring Results – N1(a)

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30
27-Dec-08	11:00	58.0	63.2	60.5	60.3	62.1	61.5	61.2
2-Jan-09	11:00	54.3	49.9	56.7	57.5	54.8	52.3	54.9
8-Jan-09	15:00	59.0	57.9	59.8	60.7	58.4	56.5	58.9
14-Jan-09	13:20	57.3	59.7	58.2	57.8	59.0	56.6	58.2
20-Jan-09	15:00	58.9	56.7	59.7	61.2	58.4	62.7	60.0
Limit Level								75 dB(A)

Table 3-2-2-2 Summary of Construction Noise Monitoring Results – N2(a)

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30
27-Dec-08	13:00	52.6	49.8	52.7	50.9	59.2	49.7	54.0
2-Jan-09	14:20	54.5	55.0	56.2	54.3	54.5	55.9	55.1
8-Jan-09	14:20	68.0	46.1	48.5	63.5	51.3	50.5	61.7
14-Jan-09	11:05	55.9	57.7	56.5	57.4	55.0	53.6	56.2
20-Jan-09	14:20	54.5	49.0	49.5	48.5	52.0	48.9	51.0
Limit Level		-						75 dB(A)

Table 3-2-2-3 Summary of Construction Noise Monitoring Results – N3

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30
27-Dec-08	13:40	57.6	60.8	63.7	60.5	63.2	61.9	61.7
2-Jan-09	13:00	60.5	59.7	57.4	61.2	55.0	57.2	59.0
8-Jan-09	13:00	54.7	57.6	52.1	55.6	56.3	59.0	56.4
14-Jan-09	10:25	51.2	53.8	52.9	54.3	53.0	55.1	53.6
20-Jan-09	13:00	52.9	54.2	60.5	55.5	62.9	58.2	58.8
Limit Level		-						75 dB(A)

3.2.3 Discussion

As shown in ***Tables 3-2-2-1***, ***Table 3-2-2-2*** and ***Table 3-2-2-3***, all the construction noise results fluctuated well below the Limit level. Neither exceedance of Limit levels nor documented construction complaint was recorded during the Reporting Period, and neither NOE of construction noise nor corrective action was therefore required.

3.3 WATER QUALITY

3.3.1 Action and Limit Levels

The Action and Limit levels for water quality are illustrated in ***Table 3-3-1***.

Table 3-3-1 Action and Limit Levels for Water Quality Monitoring

Monitoring Location	DO (mg/L)		Turbidity (NTU)		pH		SS (mg/L)		Ammonia (μg/L)		Zinc (μg/L)	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
W1 (Upstream) Control Station	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W2 (Downstream) Impact Station	1.04	1.00	36.81	37.16	8.65	8.69	79.0	86.2	16.85	16.89	234.95	266.19
W3(a) (Upstream) Control Station	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W4 (Upstream) Control Station	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W5 (Upstream) Control Station	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W6 (Downstream) Impact Station	0.93	0.91	27.88	30.02	8.7	8.7	73.40	78.68	51.62	54.56	191.90	201.58

Notes: # Act as Control Station for the Impact Water Quality Monitoring.
* Alternative Action Level of the Turbidity, pH, Suspended Solid, Ammonia Nitrogen and Zinc are 120% of upstream control station of same day.
**Alternative Action Level of the Turbidity, pH, Suspended Solid, Ammonia Nitrogen and Zinc are 130% of upstream control station of same day.

3.3.2 Results

Water quality monitoring results measured at W1, W2, W3(a), W4, W5 and W6 during the Reporting Period are presented in tabulation and graphical plots in ***Appendix G***.

3.3.3 Discussion

DO and NH_4^+-N

No exceedances of Action and Limit levels of DO and NH_4^+-N were recorded during the Reporting Period.

pH

pH fluctuated within a range from 6.7 to 7.2, which significantly deviated from the Action and Limit levels of 8.65 and 8.69 for W2 and 8.7 for W6. No sensible discussion can be made on the parameter against the existing A/L levels. Nevertheless, all the pH results are considered perfectly healthy for the environment of aquatic life. Neither NOE nor remedial actions are recommended for the parameter.

Table 3-3-1 demonstrates the pH Action and Limit levels derived from the percentile definition (i.e. 95%-ile for Action Level and 99%-ile for Limit Level) in the EM&A Manual set at 8.65 and 8.69 respectively for W2 and at the same level of 8.7 for W6. All the derived three pH A/L levels are actually an identical pH level of 8.7, which is slightly alkaline but still within the suitable range of acidity. It is iterated that the percentile definition deviates from the consensus of the pH significance and should not be applied for establishment of pH A/L levels to avoid nonsensical interpretation of any potential adverse pH impacts, e.g. to tolerate extremely high pH levels or the contrary.

pH value is an important parameter for water quality assessment. It denotes ionic strength of hydrogen ions in the water bodies. For convenience, the hydrogen ion concentration is conventionally reported in term of – log[H+], i.e., pH = – log[H+], where [H+] denotes molar concentration of the hydrogen ions. Henceforth, neutral water containing [H+] of 0.0000001 (10-7) has pH value of 7; acidic soft drink '7-Up' containing [H+] of 0.0001 (10-4) has pH value of 4; and slightly alkaline tap water containing [H+] of 0.00000001 (10-8) has pH value of 8.00, and so on. It is generally recognized that pH values in the range of 6 to 9 are suitable for aquatic life, and pH values outside the range 6 to 9, in particular those significantly lower than 6 or significantly higher than 9, are 'unsuitable'.

As a matter of fact, the consensual suitable pH range of 6-9 has ever been used in the EPD water discharge license and Technical Memorandum for Effluents Discharged into Drainage and Sewerage System, Inland and Coastal Water, etc. Proposal for adopting the pH range of 6 to 9 pH value in place of the existing pH Action and Limit level has been submitted and awaiting the ER and IEC's agreement prior to submission to EPD for formal approval.

Turbidity and SS

5-Action
A total of twelve (12) Limit level exceedances, namely five (5) Limit level exceedances of Turbidity and seven (7) Limit level exceedances of Suspended Solids (SS), were registered during the Reporting Period as shown in the Table 3-3-2.

Table 3-3-2 Summary of Water Quality Exceedances

Location	Exceedance	DO	Turbidity	pH	SS	NH4+-N	Zc	Total
W2	Action Level	0	0	0	0	0	0	0
	Limit Level	0	0	0	1	0	0	1
W6	Action Level	0	0	0	0	0	0	0
	Limit Level	0	5	0	6	0	0	11
Total	Action Level	0	0	0	0	0	0	0
	Limit Level	0	5	0	7	0	0	12

NOEs were issued upon confirmation of the monitoring results, while investigation of the NOE was conducted upon receipt of the information of construction activities and the implemented mitigation measures provided by CRBC, although the NOE and the associated investigation have not yet been agreed by the ER and IEC's for closure.

It is noted that untreated or under-treated agricultural wastewater, which contains significant amount of pig manure, is illegally discharged from surrounding pig farms to the stream water under KT13. The pig manure comprises very high concentration of Turbidity, SS, Biochemical Oxygen Demand (BOD), Ammoniacal Nitrgen (NH_4^+-N) as well as heavy metal e.g. Copper (Cu) and Zn. The illegal discharge of the agricultural farm wastewater has been well known to be the main pollution sources of the receiving water bodies of the Yuen Long area, including KT13 stream water. They are significantly attributed to the Turbidity and SS exceedances recorded at W2 and W6 during the Reporting Period.
As stated in section ***1.2 Works Undertaken During the Reporting Period***, excavation for channel formation and construction of channel structure were undertaken during the Reporting Period. Attribution of the impacts of the construction activities to the Turbidity and SS Limit level exceedances at W2 and W6 can not be over ruled. In order to minimize the construction impacts on the water quality environment within KT13, it is recommended that water quality mitigation measures stipulated in the EIA and summarized in mitigation measures implementation schedule in the EM&A Manual, including containment structure such as temporary earth bunds, sand bags, sheet pile barriers or other similar techniques, is fully implemented. In addition, implemented mitigation measures in particular the erected dams with sand bags downstream the excavation site within the water course of KT13 may also be improved to enhance sedimentation of Turbidity and SS, e.g. by using silt curtain, as appropriate.

3.4 ECOLOGY

3.4.1 Action and Limit Levels

The Action and Limit levels for Construction Ecology Monitoring are shown in ***Table 3-4-1*** to according with the EM&A manual.

Table 3-4-1 Ecological Action and Limit Levels

Parameters	Action Level	Limit Level
Decrease in number of breeding egrets since previous year	>20%	> 40%

3.4.2 Results

51 individuals of birds from 18 species were recorded during the survey for the present monthly monitoring on 18 January 2009. Among the birds recorded, 4 individuals of wetland dependent birds (from 2 species) were recorded.

It is stated in the EP for KT13 that the monitoring of the Ho Pui egretry shall be carried out during the period from 1st March to 31st August as specified in the EM&A Manual. If no egret nest is found at the egretry during the period from 1st March to 31st May, the Permit Holder can start the construction works within 100m of the ecological buffer area upon obtaining the Director's approval until February in the next year. If egret nests are found during the period from 1st March to 31st August, no construction shall take place within 100m of the ecological buffer area before 1st October.

In addition, it is required in the EM&A manual that biweekly monitoring of the Ho Pui egretry for the period from 1st March to end of May. Should no egret nest be found at the Ho Pui egretry by the end of May, monitoring frequency from June to August can be downgraded to Monthly. No egret nests were found in Ho Pui egretry during the special survey, but two nests were observed in the Ma On Kong egretry previously. Therefore the egretry monitoring was conducted monthly between June to August 2008.

Egretry survey was NOT required in the present monitoring. Photo records of trees are scheduled in every six months and are not required in the present monitoring.

During the walk through survey, neither intrusions into the Conservation Area and the location of Ho Pui Egretry nor adverse impacts on habitats outside the site were found during the reporting period. No non-compliance of ecology was recorded.

Ecology Impact Monitoring Results are presented in the ***Table 5-5.***

Table 5-5 Summary of KT13 Ecology Impact Monitoring Bird Survey

Scientific Name	Common Name	Reported in the project profile	Abundance recorded in the present survey (18 Jan 09)	Habitat utilized
Birds				
Little Egret	***Egretta garzetta***	✓		
Cattle Egret	***Bubulcus ibis***	✓		
Chinese Pond Heron	***Ardeola bacchus***	✓	**2**	river/stream
Crested Serpent Eagle	*Spilornis cheela*	✓		
Bonelli's Eagle	*Hieraaetus fasciatus*	✓		
Eurasian Hobby	*Falco subbuteo*	✓		
White-breasted Waterhen	***Amaunornis phoenicurus***	✓	**2**	river/stream
Spotted Dove	*Streptopelia chinensis*	✓	4	Woodland, Low lying grassland
Common Koel	*Eudynamys scolopacea*	✓		
Greater Coucal	*Centropus sinensis*	✓		
Little Swift	*Apus affinis*	✓		
White-Throated Kingfisher	***Halcyon smyrnensis***	✓		
Barn Swallow	*Hirundo rustica*	✓		
Red-Whiskered Bulbul	*Pycnonotus jocosus*	✓	3	Woodland
Chinese Bulbul	*Pycnonotus sinensis*	✓	5	Woodland
Long-Tailed Shrike	*Lanius schach*	✓	1	Bare ground
Oriental Magpie Robin	*Copsychus saularis*	✓	4	Bare ground , Agricultural land
Masked Laughingthrush	*Garrulax perspicillatus*	✓	2	Woodland
Yellow-Bellied Prinia	*Prinia flaviventris*	✓	1	Low lying grassland
Common Tailorbird	*Orthotomus sutorius*	✓	1	Woodland
Great Tit	*Parus major*	✓		
Japanese White-Eye	*Zosterops japonicus*	✓	4	Woodland
White-Rumped Munia	*Lonchura striata*	✓		
Eurasian Tree Sparrow	*Passer montanus*	✓	6	Woodland
Black-Collared Starling	*Sturnus nigricollis*	✓	2	Bare ground
Common Myna	*Acridotheres tristis*	✓		
Crested Myna	*Acridotheres cristatellus*	✓	5	Low lying grassland , bare ground
Black Kite	*Milvus migrans*	\		
White Wagtail	*Motacilla alba*	\	3	river/stream
Plain Prinia	*Prinia inornata*	\		
Blue Magpie	*Urocissa eythrorhyncha*	\		
Fork-tailed Sunbird	Aethopyga christinae	\		
Indian Cuckoo	*Cuculus micropterus*	\		
Common Mapie	*Pica pica*	\		
Green Sandpiper	*Tringo ochropus*	\	3	river/stream
Yellow Wagtail	*Motacilla flava*	\	2	river/stream
Common Sandpipper	*Actitis hypoleucos*	\	1	river/stream
Species Number		27	**18**	
Individual Number		**NA**	**51**	

Wetland dependent species recorded with abundance during the baseline study with the names bolded

3.5 WASTE MANAGEMENT, CULTURAL HERITAGE AND LANDSCAPE & VISUAL

3.5.1 Waste Management

In order to comply with the waste management requirements, CRBC has been

(a) assigned since 9 Jan 2008 a Billing Account (account number 7006524) under the ***Waste Disposal (Charges for Disposal of Construction Waste) Regulation***;

(b) issued Discharge License No. 1U461/1 under Section 20 of the ***Water Pollution Control Ordinance*** has been issued;

(c) register as a Chemical Waste Producer under the Waste Disposal (Chemical Waste) (General) Regulation (the Waste Producer Number assigned is WPN: 5611-531-C3124-28 dated 2 May 08); and

(d) granted the Environmental Protection Department Permit Issued under the Dumping at Sea Ordinance (Permit no. EP/I4D/08-095, dated 18 September 2008, permit validity period of six months from 18 September 2008 to 17 march 2009) for 18, 469 M^3 sediment requiring type 1 – open sea disposal at East Sha Chau Contaminated Mud Disposal Site – Pit IV b to be capped as directed by the management Team of the CEDD.

3.5.2 Cultural Heritage

Action and Limit Levels

The Action and Limit levels for Cultural Heritage are shown in ***Table 3-5-2*** according to the EM&A Manual.

Table 3-5-2 Cultural Heritage Resources Action and Limit Levels

Action Level	Limit Level
When damage or structural instability is first detected	Signs of deterioration and structural instability continues on subsequent visits after action level is triggered

During the Reporting Period, there was no construction work conducted within 100 m area from the cultural heritage site within KT13, no cultural heritage monitoring was required in accordance with the approved methodology.

3.5.3 Landscape and Visual

Landscape and visual inspection was conducted on 5 and 23 January 2009. Current situation of the identified landscape resources remained the same as those of the baseline, except minor changes of river/stream/fish pond landscape character area at LR1, LR2.1, LR2.2, LCA3 and LCA4 due to site clearance, soil stockpiling and preparation work within KT13. Updated landscape and visual status is presented in ***Appendix I***.

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

4.1 NON-COMPLIANCE

Exceedance of environmental quality criteria has been discussed in ***Section 3.1*** to ***3.5***. 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 J***: ***Monthly Summary Waste Flow Table for 2008***.

4.4.2 Site Inspection and Environmental Audit

In this reporting period, four (4) occasions of weekly environmental site inspection and audit were conducted during the Reporting Period jointly by the ER, EO and ET during the Reporting Period. No adverse environmental impacts were registered, indicating the mitigation measures implemented were effective and sufficient for the construction activities or preparation work and site clearance undertaken. Minor deficiencies found in the site inspection and audit was in general rectified within the specified deadlines. Findings of the site inspection and environmental audit are summarized below.

Table 4-4-2 Summary of Findings of Site Inspection and Environmental Audit

Date	Findings / Deficiencies	Follow-Up Status
2 Jan 2009	No adverse environmental impacts were observed during the site inspection. However, further improvement of house keeping is reminded to contractor as scattered of general waste was observed on site. More frequent water spraying during dry season was reminded	Reminded measures based on the observation were observed on 08 Jan 2009.
8 Jan 2009	Haul road within the site were observed dry and general waste was found scattered on excavation site. Thorough water spraying and wheel washing of the vehicles leaving the site is reminded. 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 15 Jan 2009.
15 Jan 2009	Stockpile exposed to the site was observed. The contractor is reminded to remove or cover the stockpile with tarpaulin to minimize the dust generation. During dry season, construction dust suppression measures are reminded during dry and dusty works as well as vehicle movement.	Reminded measures based on the observation were observed on 19 Jan 2009.
19 Jan 2009	Mosquito control measures is reminded to prevent mosquito breeding as stagnant water was observed. Stockpile shall be removed or covered with tarpaulin sheet to avoid dust pollution. As in dry season, 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 to be followed-up on the forth coming site inspection.

4.4.3 Works to be Undertaken in the Forth-Coming Month

Works to be undertaken in the forth-coming month are shown in the construction program enclosed in ***Appendix B***. The construction activities undertaken in the Reporting Period including tree survey, environmental impact monitoring, structural conditional survey and construction of channel structure will also be continued in the forth-coming month.

4.4.4 Future Key Issues and Mitigation Measures for the Forth-Coming Month

As dry season has approached, construction dust will continue to be a key environmental issue during dusty construction activities including vehicle movement on dry and windy days. The implemented air quality mitigation measures should be properly maintained and improved as appropriate.

In addition, special attention should also be paid to construction noise, water quality, ecology and other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the EIA and summarized in Mitigation Measure Implementation Schedule (EMIS) should be fully implemented.

5 CONCLUSIONS AND RECOMMENDATIONS

i) This is the forth monthly EM&A report for KT13, covering the construction period from 26 December 2008 to 25 January 2009.

ii) Monitoring results of the Reporting Period demonstrated no exceedances of environmental quality criteria of air quality, construction noise and ecology.

iii) However, a total of twelve (12) water quality were recorded during the Reporting Period. Although Illegal discharge of the agricultural farm wastewater was significantly attributed to the water quality exceedances of Turbidity and SS recorded at W2 and W6 during the Reporting Period, attribution of the water quality impacts due to excavation and construction of channel to the Turbidity and SS Limit level exceedances can not be over ruled. It is therefore recommended that water quality mitigation measures stipulated in the EIA and summarized in mitigation measures implementation schedule in the EM&A Manual, including containment structure such as temporary earth bunds, sand bags, sheet pile barriers or other similar techniques, is fully implemented. In addition, implemented mitigation measures in particular the erected dams with sand bags downstream the excavation site within the water course of KT13 may also be improved to enhance sedimentation of Turbidity and SS, e.g. by using silt curtain, as appropriate.

iv) Landscape inspection was conducted on 5 and 23 January 2009. No significant changes were observed for identified landscape resources and visual sensitive receivers, except for minor changes due to channel excavation, site clearance and preparation work at the identified landscape resources including LR1, LR2.1, LR2.2, LCA3 and LCA4

v) 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, although further implementation or improvement, where appropriate, of the mitigation measures need to be made for water quality.

vi) As dry season has approached, construction dust will continue to be 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.

vii) On the other hand, water quality mitigation measures to avoid ingression of turbidity and other water quality pollutants via site surface water runoff into the river within KT13 should be properly maintained or improved, as appropriate.

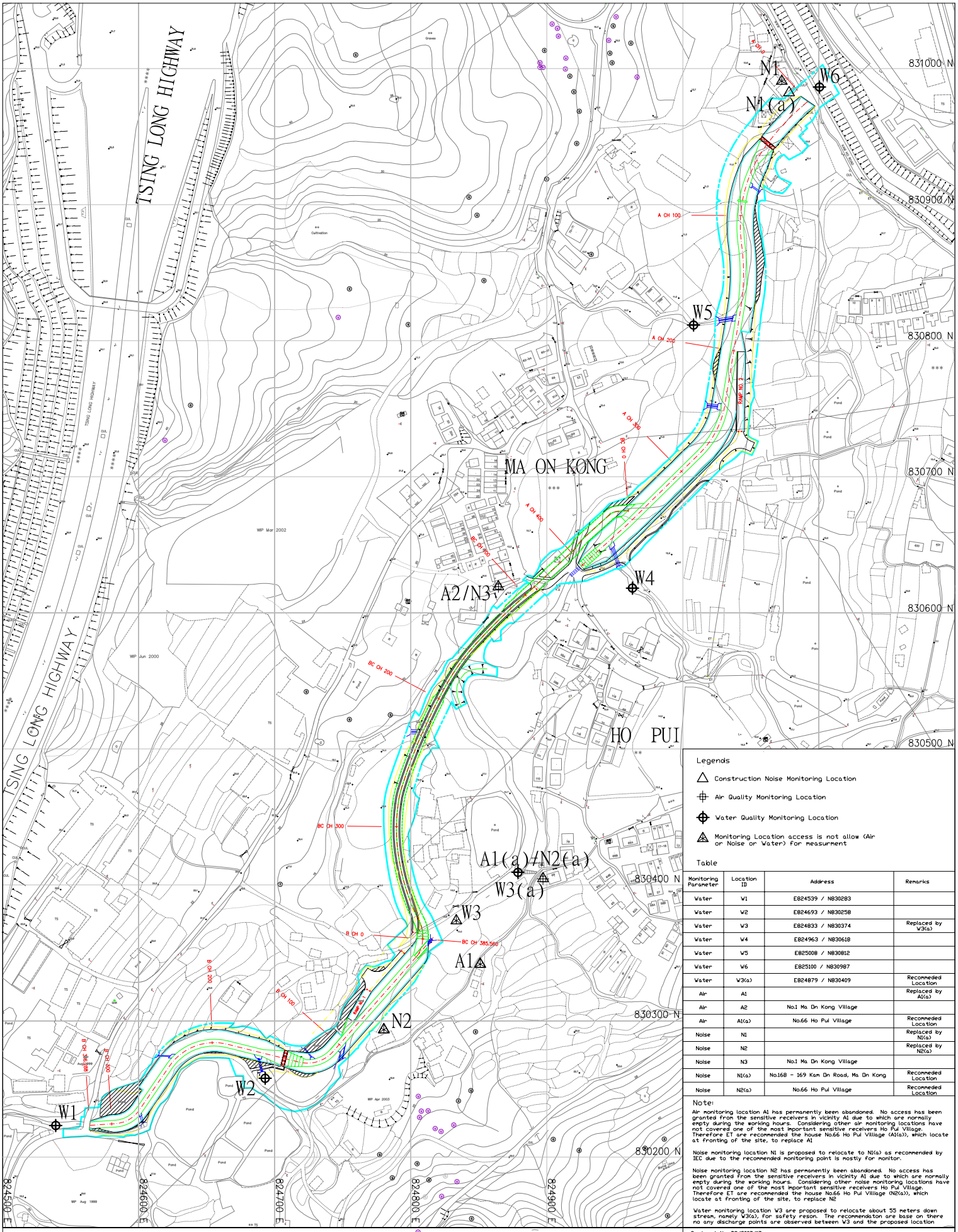
viii) In addition, special attention should also be paid to construction noise and other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the EIA and summarized in Mitigation Measure Implementation Schedule should be fully implemented.

ix) No sensible discussion can be made on water quality parameter of pH against the existing pH A/L levels, although all the pH results are considered perfectly healthy for the environment of aquatic life. Proposal for adopting the pH range of 6 to 9 pH value in place of the existing pH Action and Limit level has been submitted and awaiting the ER and IEC's agreement prior to submission to EPD for formal approval.

END OF TEXT

Appendix A

Location Plan and Environmental Monitoring Locations Under the Project



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 measurment

Table

Monitoring Parameter	Location ID	Address	Remarks
Water	W1	E824539 / N830283	
Water	W2	E824693 / N830258	
Water	W3	E824833 / N830374	Replaced by W3(a)
Water	W4	E824963 / N830618	
Water	W5	E825008 / N830812	
Water	W6	E825100 / N830987	
Water	W3(a)	E824879 / N830409	Recommeded Location
Air	A1		Replaced by A1(a)
Air	A2	No.1 Ma On Kong Village	
Air	A1(a)	No.66 Ho Pui Village	Recommeded Location
Noise	N1		Replaced by N1(a)
Noise	N2		Replaced by N2(a)
Noise	N3	No.1 Ma On Kong Village	
Noise	N1(a)	No.168 - 169 Kam On Road, Ma On Kong	Recommeded Location
Noise	N2(a)	No.66 Ho Pui Village	Recommeded Location

Note:

Air monitoring location A1 has permanently been abandoned. No access has been granted from the sensitive receivers in vicinity A1 due to which are normally empty during the working hours. Considering other air monitoring locations have not covered one of the most important sensitive receivers Ho Pui Village. Therefore ET are recommended the house No.66 Ho Pui Village (A1(a)), which locate at fronting of the site, to replace A1

Noise monitoring location N1 is proposed to relocate to N1(a) as recommended by IEC due to the recommended monitoring point is mostly for monitor.

Noise monitoring location N2 has permanently been abandoned. No access has been granted from the sensitive receivers in vicinity A1 due to which are normally empty during the working hours. Considering other noise monitoring locations have not covered one of the most important sensitive receivers Ho Pui Village. Therefore ET are recommended the house No.66 Ho Pui Village (N2(a)), which locate at fronting of the site, to replace N2

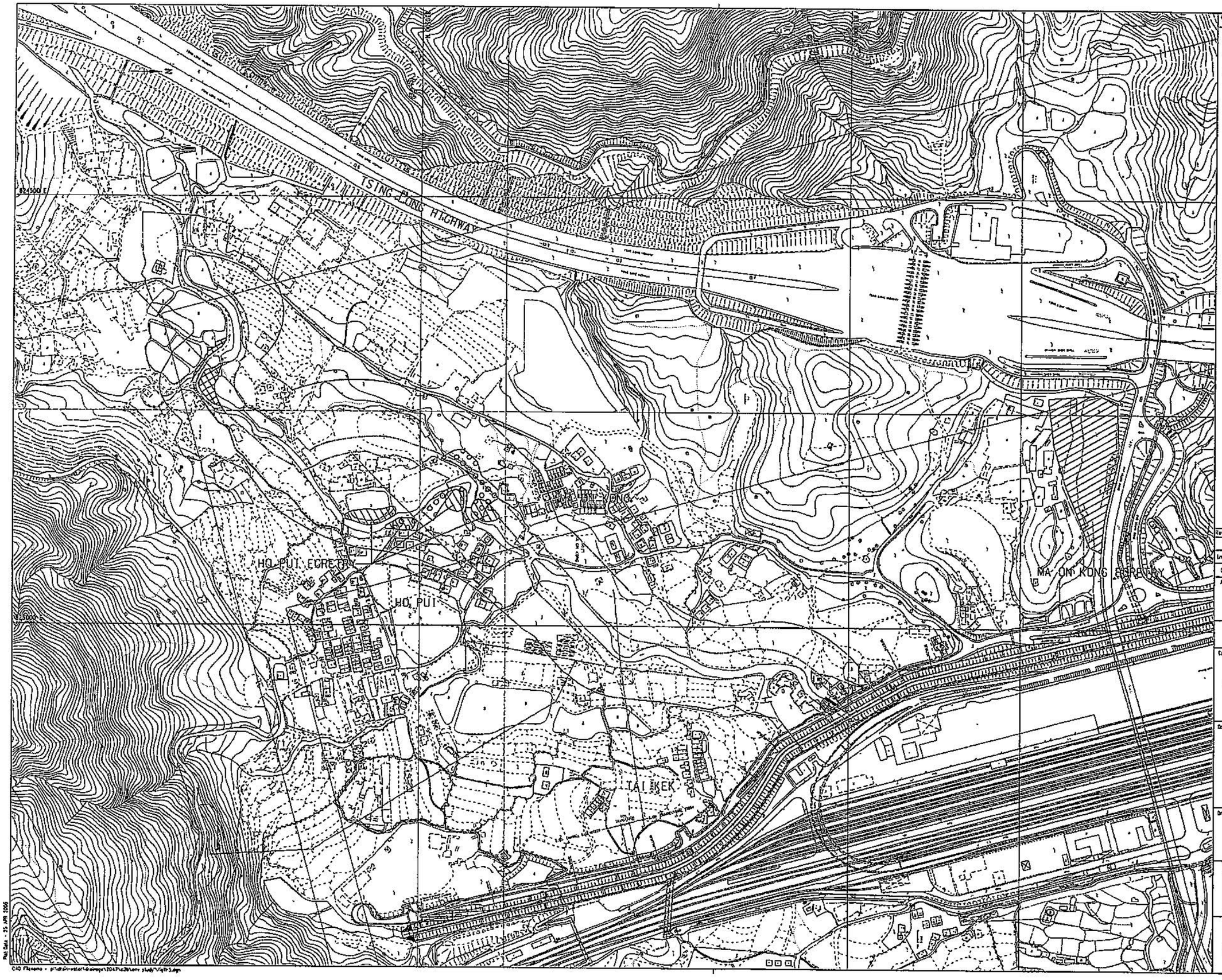
Water monitoring location W3 are proposed to relocate about 55 meters down stream, namely W3(a), for safety reson. The recommendaton are base on there no any discharge points are observed between W3 and the proposed location

Drawing:

Air, Noise and Stream Water Monitoring Location at KT-13

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

AUES



NOTES :

1. GRID LINES ARE HONG KONG METRIC GRID 1980.

LEGEND:

- MA ON KONG AND HO PUI ECRETARIES
- PROPOSED COMPENSATORY TREE PLANTING
- CONSERVATION AREA DENOTED ON OUTLINE ZONING PLAN
- WORKS BOUNDARY OF CHANNEL KY13
- ECOLOGY MONITORING AREAS

Revision	Date	Description			Initial
	Designed	Checked	Drawn		Checked
Initial	MC	KIL	YLL		KIL
Date	09/05	09/05	09/05		09/05

Approved

AGREEMENT NO. CE 67/98

Contract title

YUEN LONG, KAM TIN,
NGAU TAM MEI AND TIN SHUI WAI
DRAINAGE IMPROVEMENT, STAGE 1,
PHASE 2B – KAM TIN

Drawing title

ECOLOGY MONITORING AREAS
RECOMMENDED FOR
CONSTRUCTION PHASE AND
OPERATION PHASE

Drawing no.

Figure 6.1

Scale

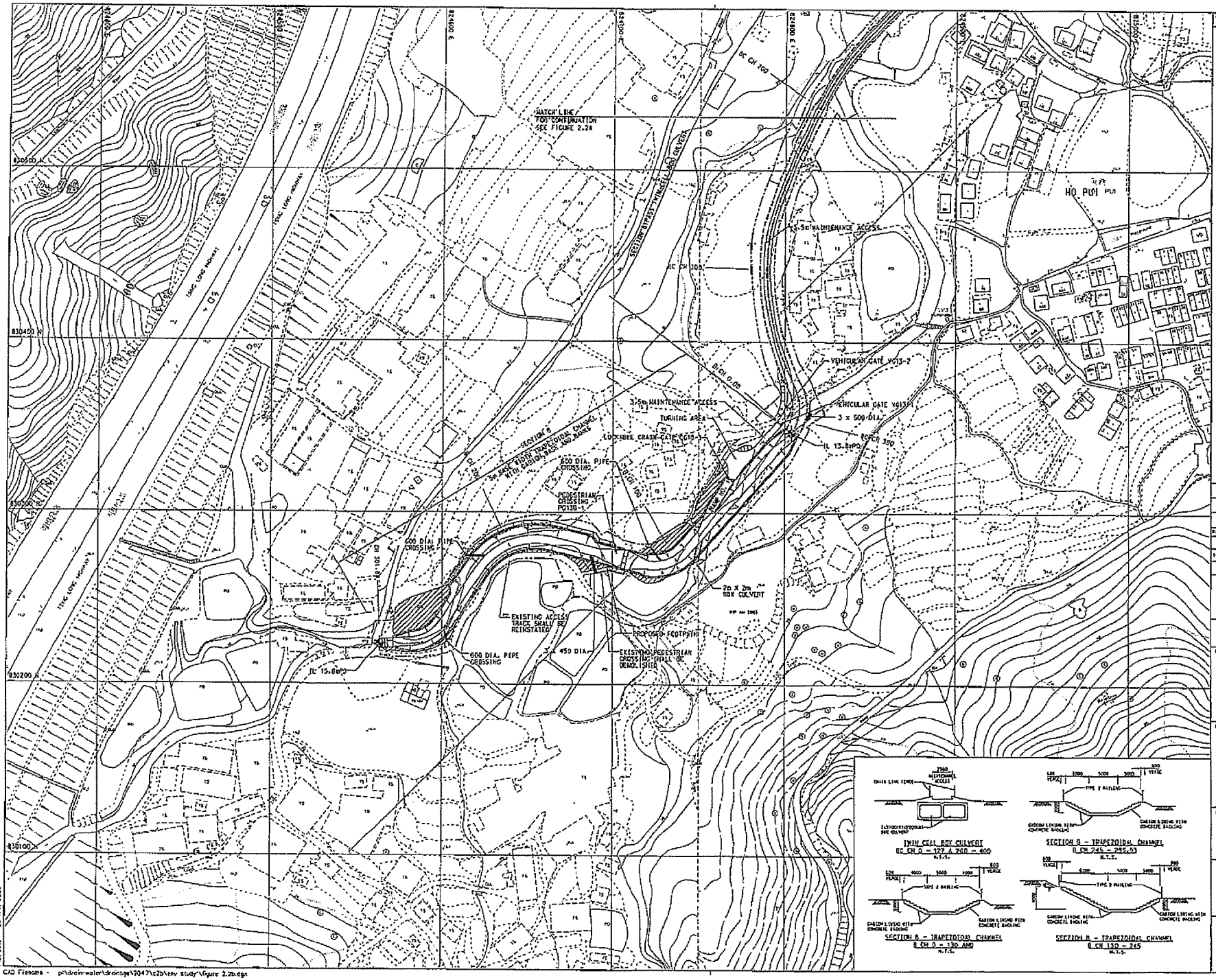
1:2000 A1
1:4000 A3

香港特別行政區政府渠務署
THE GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION
DRAINAGE SERVICES DEPARTMENT

BLACK & VEATCH HONG KONG LIMITED
柏威工程顧問有限公司

Plot Date : 25 APR 2006

CAD Filename : p:\drainage\2047\c2b\env study\fig1-3.dgn



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
2. GRID LINES ARE HONG KONG METRIC GRID 1980.
3. TYPE 2 RAILING WITH DEBRIS TRAP BAR AND GENERAL MESH FILL SHALL BE PROVIDED AT BOTH SIDES OF THE CHANNEL BANKS

LEGEND :

- SITE BOUNDARY
- PROPOSED CHANNEL
- PROPOSED SLOPE
- AREA TO BE FILLED TO ADJACENT GROUND LEVEL
- I.L. INVERT LEVEL
- PROPOSED RETAINING WALL

Revision	Date	Description	Initial
C	03/06	AMENDMENT TO BY-PASS CULVERT	KIL
B	10/05	MINOR AMENDMENT TO CHANNEL LAYOUT	KIL
A	05/05	MINOR AMENDMENTS TO SITE BOUNDARY	KIL

	Designed	Checked	Drawn	Verified
Initial	TW	KIL	MK	KIL
Date	04/04	04/04	04/04	04/04

Approved

AGREEMENT NO. CE 67/98

Contract title

YUEN LONG, KAM TIN, NGAU TAM MEI AND TIN SHUI WAI DRAINAGE IMPROVEMENT, STAGE 1, PHASE 2B - KAM TIN

Drawing title

MA ON KONG CHANNEL KT13 PROPOSED LAYOUT PLAN (SHEET 2 OF 2)

Drawing no.	Scale
FIGURE 1.3b	1:1000 A1 1:2000 A3

香港特別行政區政府渠務署
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION DRAINAGE SERVICES DEPARTMENT

BLACK & VEATCH HONG KONG LIMITED
柏威工程顧問有限公司

Plot Date - 26 APR 2006

CAD Filename - p:\drainwater\drainage\2047\e2b\env study\figure 2.2b.dgn

Appendix B

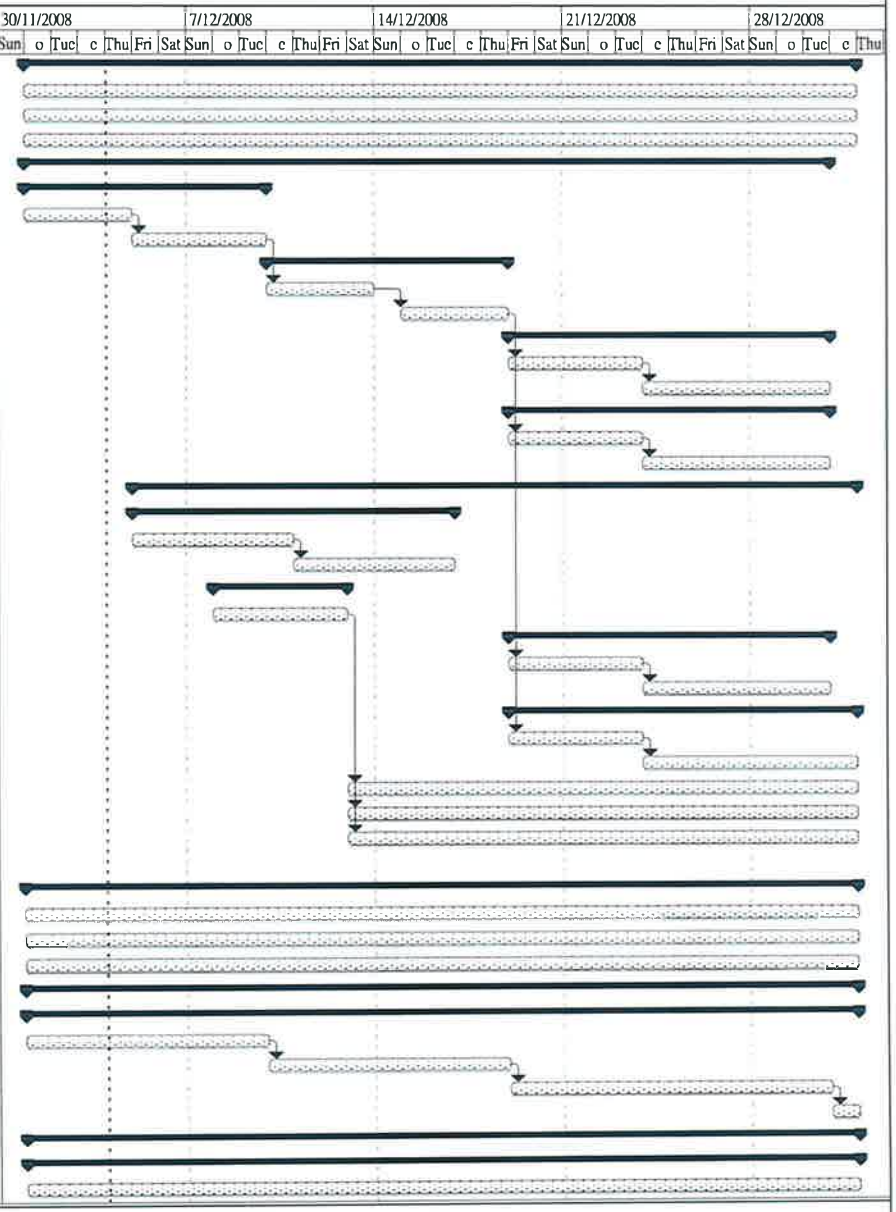
Construction Program

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

Monthly Programme (December 2008)

ID	Task Name	Duration	Start	Finish
1	**Section I (Channel KT12)**	**25 days**	**2008/12/1**	**2008/12/31**
2	**Regular Environmental Impact Monitoring**	25 days	2008/12/1	2008/12/31
3	**Regular Tree Survey**	25 days	2008/12/1	2008/12/31
4	**Regular Structural Condition Survey**	25 days	2008/12/1	2008/12/31
5	**Construction of Trapezoidal Channel**	**24 days**	**2008/12/1**	**2008/12/30**
6	**Bay TC5 - West Wall (CH51.00 - CH63.00)**	**8 days**	**2008/12/1**	**2008/12/9**
7	1st Pour	4 days	2008/12/1	2008/12/4
8	2nd Pour	4 days	2008/12/5	2008/12/9
9	**Bay TC4 - West Wall (CH63.00 - CH78.00)**	**8 days**	**2008/12/10**	**2008/12/18**
10	1st Pour	4 days	2008/12/10	2008/12/13
11	2nd Pour	4 days	2008/12/15	2008/12/18
12	**Bay TC6 - West Wall (CH39.00 - CH51.00)**	**8 days**	**2008/12/19**	**2008/12/30**
13	1st Pour	4 days	2008/12/19	2008/12/23
14	2nd Pour	4 days	2008/12/24	2008/12/30
15	**Bay TC7 - West Wall (CH27.00 - CH39.00)**	**8 days**	**2008/12/19**	**2008/12/30**
16	1st Pour	4 days	2008/12/19	2008/12/23
17	2nd Pour	4 days	2008/12/24	2008/12/30
18	**Construction of Transition Structure**	**21 days**	**2008/12/5**	**2008/12/31**
19	**Bay TC2 (CH90.00 - 97.00)**	**10 days**	**2008/12/5**	**2008/12/16**
20	Construction of Base Slab	5 days	2008/12/5	2008/12/10
21	Construction of Wall	5 days	2008/12/11	2008/12/16
28	**Bay TC10 (CH4.00 - 10.00)**	**5 days**	**2008/12/8**	**2008/12/12**
29	Construction of Wall	5 days	2008/12/8	2008/12/12
22	**Bay TC8 - East Wall (CH17.00 - CH27.00)**	**8 days**	**2008/12/19**	**2008/12/30**
23	1st Pour	4 days	2008/12/19	2008/12/23
24	2nd Pour	4 days	2008/12/24	2008/12/30
25	**Bay TC9 (CH10.00 - CH17.74)**	**9 days**	**2008/12/19**	**2008/12/31**
26	Construction of Base Slab	4 days	2008/12/19	2008/12/23
27	Constructionn of Wall	5 days	2008/12/24	2008/12/31
30	**Backfilling (CH4.00 - CH105.00)**	14 days	2008/12/13	2008/12/31
31	**2 x 600mm Dia. Pipe Crossing at CH178.00 East Bank**	14 days	2008/12/13	2008/12/31
32	**Diversion of Existing Water Main to Pedestrian Crossing PC12-1**	14 days	2008/12/13	2008/12/31
33				
34	**Section II (Channel KT13)**	**25 days**	**2008/12/1**	**2008/12/31**
35	**Regular Environmental Impact Monitoring**	25 days	2008/12/1	2008/12/31
36	**Regular Tree Survey & Protection**	25 days	2008/12/1	2008/12/31
37	**Regular Structural Condition Survey**	25 days	2008/12/1	2008/12/31
38	**Section A**	**25 days**	**2008/12/1**	**2008/12/31**
39	**Excavation to Channel Formation & Laying of Rock Fill Material**	**25 days**	**2008/12/1**	**2008/12/31**
40	Bay 1 (A CH00.00 - A CH20.00)	8 days	2008/12/1	2008/12/9
41	Bay 2 (A CH20.00 - A CH40.00)	8 days	2008/12/10	2008/12/18
42	Bay 3 (A CH40.00 - A CH60.00)	8 days	2008/12/19	2008/12/30
43	Bay 4 (A CH60.00 - A CH80.00)	1 day	2008/12/31	2008/12/31
44	**Section of Box Culvert BC13-1**	**25 days**	**2008/12/1**	**2008/12/31**
45	**Excavation to Channel Formation & Laying of Rock Fill Material**	**25 days**	**2008/12/1**	**2008/12/31**
46	Bay 1 (BC CH00.00 - BC CH50.00)	25 days	2008/12/1	2008/12/31



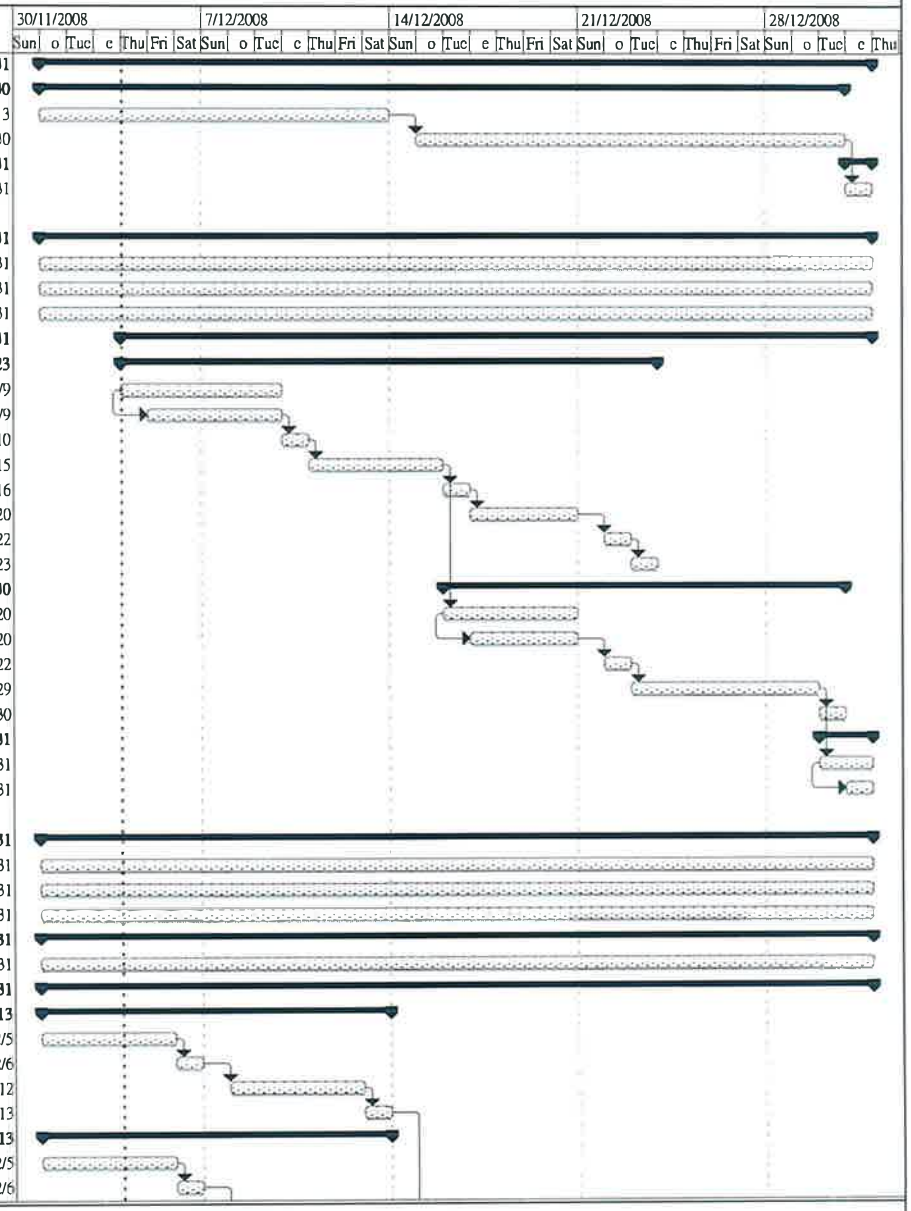
Task — Progress — Summary — External Tasks — Deadline
Split — Milestone — Project Summary — External Milestone

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

Monthly Programme (December 2008)

ID	Task Name	Duration	Start	Finish
47	**Section B**	**25 days**	**2008/12/1**	**2008/12/31**
48	**Excavation to Channel Formation & Laying of Rock Fill Material**	**24 days**	**2008/12/1**	**2008/12/30**
49	Bay 1 (B CH300.00 - B CH316.00)	12 days	2008/12/1	2008/12/13
50	Bay 2 (B CH300.00 - B CH292.00) - Transition	12 days	2008/12/15	2008/12/30
51	**Construction of Channel Structures**	**1 day**	**2008/12/31**	**2008/12/31**
52	Bay 1 (B CH300.00 - B CH316.00)	1 day	2008/12/31	2008/12/31
53				
54	**Section III (Channel KT14A)**	**25 days**	**2008/12/1**	**2008/12/31**
55	**Regular Environmental Impact Monitoring**	25 days	2008/12/1	2008/12/31
56	**Regular Tree Survey**	25 days	2008/12/1	2008/12/31
57	**Regular Structural Condition Survey**	25 days	2008/12/1	2008/12/31
58	**Construction of Rectangular Channel**	**22 days**	**2008/12/4**	**2008/12/31**
59	**Bay 1 (CH0.00 - CH11.00)**	**17 days**	**2008/12/4**	**2008/12/23**
60	Excavation	5 days	2008/12/4	2008/12/9
61	Installation of Sheet Piling	4 days	2008/12/5	2008/12/9
62	Cast Blinding Layer	1 day	2008/12/10	2008/12/10
63	Construction of Base Slab	4 days	2008/12/11	2008/12/15
64	Backfilling to the Kicker Level	1 day	2008/12/16	2008/12/16
65	Construction of Vertical Wall	4 days	2008/12/17	2008/12/20
66	Backfilling	1 day	2008/12/22	2008/12/22
67	Removal of Sheet Piling	1 day	2008/12/23	2008/12/23
68	**Bay 2 (CH11.00 - CH23.00)**	**11 days**	**2008/12/16**	**2008/12/30**
69	Excavation	5 days	2008/12/16	2008/12/20
70	Installation of Sheet Piling	4 days	2008/12/17	2008/12/20
71	Cast Blinding Layer	1 day	2008/12/22	2008/12/22
72	Construction of Base Slab	4 days	2008/12/23	2008/12/29
73	Backfilling to the Kicker Level	1 day	2008/12/30	2008/12/30
74	**Bay 3 (CH23.00 - CH35.00)**	**2 days**	**2008/12/30**	**2008/12/31**
75	Excavation	2 days	2008/12/30	2008/12/31
76	Installation of Sheet Piling	1 day	2008/12/31	2008/12/31
77				
78	**Section IV (Channel KT14B & KT14C)**	**25 days**	**2008/12/1**	**2008/12/31**
79	**Regular Environmental Impact Monitoring**	25 days	2008/12/1	2008/12/31
80	**Regular Tree Survey & Protection**	25 days	2008/12/1	2008/12/31
81	**Regular Structural Condition Survey**	25 days	2008/12/1	2008/12/31
82	**Construction of Kam Sheung Road (Portion 8B)**	**25 days**	**2008/12/1**	**2008/12/31**
83	Construction of Channel between existing and CP9	25 days	2008/12/1	2008/12/31
84	**Construction of Rectangular Channel of KT14B**	**25 days**	**2008/12/1**	**2008/12/31**
85	**Bay 12 (CH110.00 - CH122.00)**	**12 days**	**2008/12/1**	**2008/12/13**
86	Excavation	5 days	2008/12/1	2008/12/5
87	Cast Blinding Layer	1 day	2008/12/6	2008/12/6
88	Construction of Base Slab & Vertical Wall	5 days	2008/12/8	2008/12/12
89	Backfilling	1 day	2008/12/13	2008/12/13
95	**Bay 13-2 (CH125.00 - CH134.00)**	**12 days**	**2008/12/1**	**2008/12/13**
96	Excavation	5 days	2008/12/1	2008/12/5
97	Cast Blinding Layer	1 day	2008/12/6	2008/12/6



Task Progress Summary External Tasks Deadline

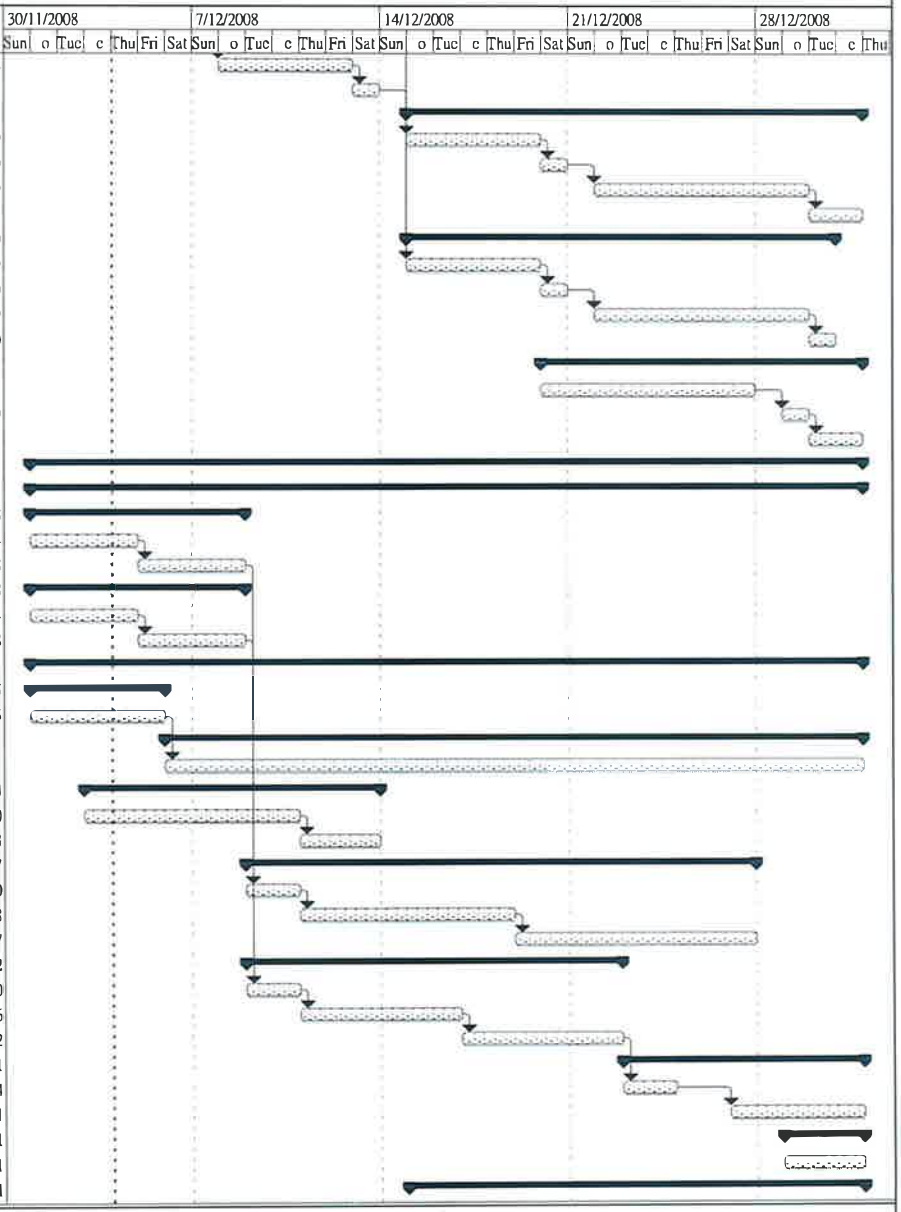
Split Milestone Project Summary External Milestone

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

Monthly Programme (December 2008)

ID	Task Name	Duration	Start	Finish
98	Construction of Base Slab & Vertical Wall	5 days	2008/12/8	2008/12/12
99	Backfilling	1 day	2008/12/13	2008/12/13
90	**Bay 13-1 (CH122.00 - CH125.00)**	**13 days**	**2008/12/15**	**2008/12/31**
91	Excavation	5 days	2008/12/15	2008/12/19
92	Cast Blinding Layer	1 day	2008/12/20	2008/12/20
93	Construction of Base Slab	5 days	2008/12/22	2008/12/29
94	Construction of Vertical Wall & Top Slab	2 days	2008/12/30	2008/12/31
100	**Bay 14 (CH134.00 - CH146.00)**	**12 days**	**2008/12/15**	**2008/12/30**
101	Excavation	5 days	2008/12/15	2008/12/19
102	Cast Blinding Layer	1 day	2008/12/20	2008/12/20
103	Construction of Base Slab & Vertical Wall	5 days	2008/12/22	2008/12/29
104	Backfilling	1 day	2008/12/30	2008/12/30
105	**Bay 15 (CH146.00 - CH158.00)**	**8 days**	**2008/12/20**	**2008/12/31**
106	Excavation	5 days	2008/12/20	2008/12/27
107	Cast Blinding Layer	1 day	2008/12/29	2008/12/29
108	Construction of Base Slab & Vertical Wall	2 days	2008/12/30	2008/12/31
109	**Construction of Rectangular Channel of KT14C**	**25 days**	**2008/12/1**	**2008/12/31**
110	**West Portion (CH0.00 - CH183.00)**	**25 days**	**2008/12/1**	**2008/12/31**
114	**Bay 7W (CH55.00 - CH68.00)**	**7 days**	**2008/12/1**	**2008/12/8**
115	Construction of Base Slab & Vertical Wall	4 days	2008/12/1	2008/12/4
116	Backfilling	3 days	2008/12/5	2008/12/8
121	**Bay 10W (CH92.00 - CH104.00)**	**7 days**	**2008/12/1**	**2008/12/8**
122	Construction of Base Slab & Vertical Wall	4 days	2008/12/1	2008/12/4
123	Backfilling	3 days	2008/12/5	2008/12/8
133	**Bay 17W (CH174.00 - CH183.00)**	**25 days**	**2008/12/1**	**2008/12/31**
134	**Bay 1 - Pedestrian Section**	**5 days**	**2008/12/1**	**2008/12/5**
135	Construction of Vertical Wall & Top Slab	5 days	2008/12/1	2008/12/5
136	**Bay 2 - Road Section**	**20 days**	**2008/12/6**	**2008/12/31**
137	Expose and Diversion of Utility	20 days	2008/12/6	2008/12/31
111	**Bay 1W (CH1.00 - CH6.00)**	**10 days**	**2008/12/3**	**2008/12/13**
112	Construction of Base Slab & Vertical Wall	7 days	2008/12/3	2008/12/10
113	Backfilling	3 days	2008/12/11	2008/12/13
117	**Bay 9W (CH80.00 - CH92.00)**	**15 days**	**2008/12/9**	**2008/12/27**
118	Cast Blinding Layer	2 days	2008/12/9	2008/12/10
119	Construction of Base Slab & Vertical Wall	7 days	2008/12/11	2008/12/18
120	Backfilling	6 days	2008/12/19	2008/12/27
124	**Bay 11W (CH104.00 - CH116.00)**	**12 days**	**2008/12/9**	**2008/12/22**
125	Cast Blinding Layer	2 days	2008/12/9	2008/12/10
126	Construction of Base Slab & Vertical Wall	5 days	2008/12/11	2008/12/16
127	Backfilling	5 days	2008/12/17	2008/12/22
128	**Bay 12W (CH116.00 - CH128.00)**	**6 days**	**2008/12/23**	**2008/12/31**
129	Cast Blinding Layer	2 days	2008/12/23	2008/12/24
130	Construction of Base Slab & Vertical Wall	4 days	2008/12/27	2008/12/31
131	**Bay 13W (CH128.00 - CH139.00)**	**3 days**	**2008/12/29**	**2008/12/31**
132	Excavation	3 days	2008/12/29	2008/12/31
138	**East Portion (CH183.00 - CH484.00)**	**13 days**	**2008/12/15**	**2008/12/31**



Task — Progress — Summary — External Tasks — Deadline

Split — Milestone — Project Summary — External Milestone

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

Monthly Programme (December 2008)

ID	Task Name	Duration	Start	Finish
139	**Bay 1E (CH466.00 - CH484.00)**	**13 days**	**2008/12/15**	**2008/12/31**
140	Excavation	10 days	2008/12/15	2008/12/27
141	Installation of Sheet Piling	8 days	2008/12/16	2008/12/24
142	Cast Blinding Layer	2 days	2008/12/29	2008/12/30
143	Construction of Base Slab	1 day	2008/12/31	2008/12/31
144	**Bay 3E (CH448.00 - CH460.00)**	**13 days**	**2008/12/15**	**2008/12/31**
145	Excavation	10 days	2008/12/15	2008/12/27
146	Installation of Sheet Piling	8 days	2008/12/16	2008/12/24
147	Cast Blinding Layer	2 days	2008/12/29	2008/12/30
148	Construction of Base Slab	1 day	2008/12/31	2008/12/31
149				
150	**Section V (For Section I, II, III & IV)**	**25 days**	**2008/12/1**	**2008/12/31**
151	Preservation and Protection of Trees	25 days	2008/12/1	2008/12/31
152				
153	**Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)**	**25 days**	**2008/12/1**	**2008/12/31**
154	Structural Survey and Monitoring	25 days	2008/12/1	2008/12/31
155	Construction of Manhole, Timber Box and Trench Excavation	25 days	2008/12/1	2008/12/31
156	Apply XP Approval for Construction	25 days	2008/12/1	2008/12/31
157				
158	**Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)**	**25 days**	**2008/12/1**	**2008/12/31**
159	Structural Survey and Monitoring	25 days	2008/12/1	2008/12/31
160	Construction of Manhole, Timber Box and Trench Excavation	25 days	2008/12/1	2008/12/31
161	Apply XP Approval for Construction	25 days	2008/12/1	2008/12/31

Task Progress Summary External Tasks Deadline

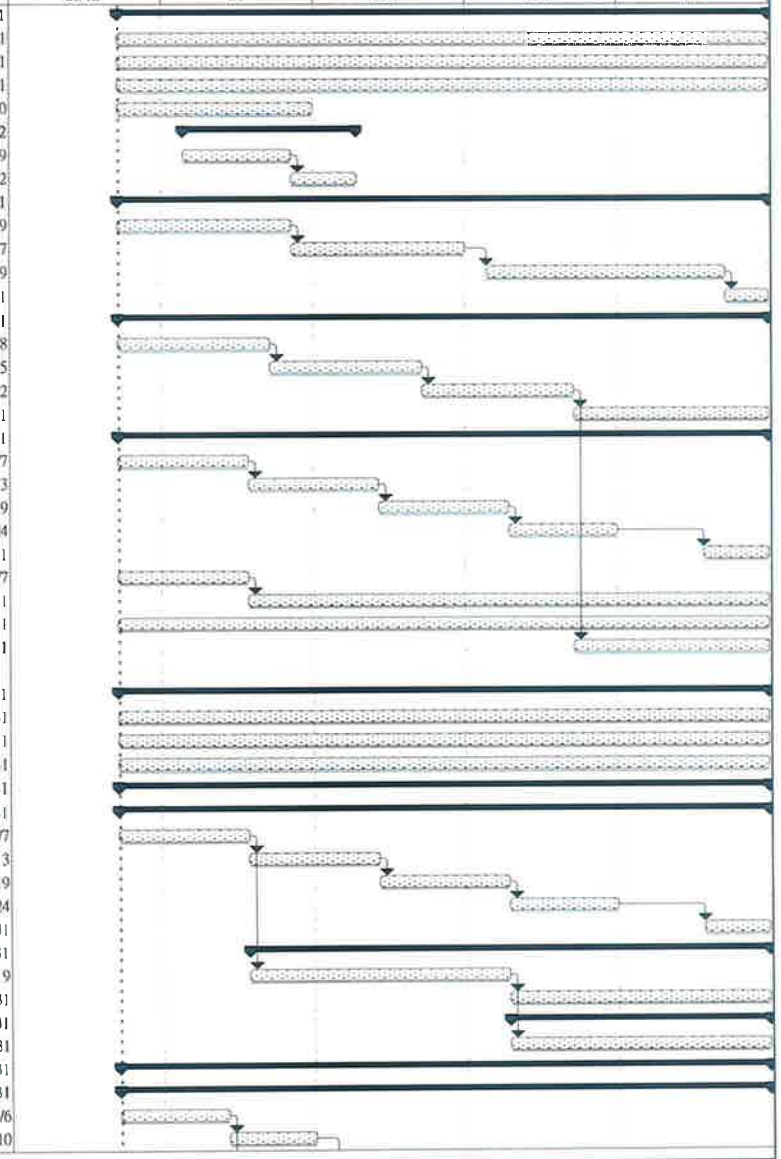
Split Milestone Project Summary External Milestone

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

One Month Rolling Programme (January 2009)

No	Task Name	Duration	Start	Finish
1	Section I (Channel KT12)	23 days	2009/1/2	2009/1/31
2	Regular Environmental Impact Monitoring	23 days	2009/1/2	2009/1/31
3	Regular Tree Survey	23 days	2009/1/2	2009/1/31
4	Regular Structural Condition Survey	23 days	2009/1/2	2009/1/31
5	Backfilling (CH4.00 - CH105.00)	8 days	2009/1/2	2009/1/10
6	Bay TC7 - East Wall	7 days	2009/1/5	2009/1/12
7	1st Pour	5 days	2009/1/5	2009/1/9
8	2nd Pour	2 days	2009/1/10	2009/1/12
9	Laying of Gabion Block Inside the Channel	23 days	2009/1/2	2009/1/31
10	Bay TC3	7 days	2009/1/2	2009/1/9
11	Bay TC4	7 days	2009/1/10	2009/1/17
12	Bay TC5	7 days	2009/1/19	2009/1/29
13	Bay TC6	2 days	2009/1/30	2009/1/31
14	Construction of Catch Pit / U-Channel / Manholc	23 days	2009/1/2	2009/1/31
15	Bay TC1	6 days	2009/1/2	2009/1/8
16	Bay TC2	6 days	2009/1/9	2009/1/15
17	Bay TC3	6 days	2009/1/16	2009/1/22
18	Bay TC4	5 days	2009/1/23	2009/1/31
19	Installation of Type 2 Railing	23 days	2009/1/2	2009/1/31
20	Bay TC1	5 days	2009/1/2	2009/1/7
21	Bay TC2	5 days	2009/1/8	2009/1/13
22	Bay TC7	5 days	2009/1/14	2009/1/19
23	Bay TC8	5 days	2009/1/20	2009/1/24
24	Bay TC9	3 days	2009/1/29	2009/1/31
25	Construction of Inlet at CH178.00	5 days	2009/1/2	2009/1/7
26	2 x 600mm Dia. Pipe Crossing at CH178.00 East Bank	18 days	2009/1/8	2009/1/31
27	Diversion of Existing Water Main to Pedestrian Crossing PC12-1	23 days	2009/1/2	2009/1/31
28	Installation of Sign Plate / Street Furniture along the sides of Channel (CH0.00 to CH178.00)	5 days	2009/1/23	2009/1/31
29				
30	Section II (Channel KT13)	23 days	2009/1/2	2009/1/31
31	Regular Environmental Impact Monitoring	23 days	2009/1/2	2009/1/31
32	Regular Tree Survey & Protection	23 days	2009/1/2	2009/1/31
33	Regular Structural Condition Survey	23 days	2009/1/2	2009/1/31
34	Section A	23 days	2009/1/2	2009/1/31
35	Excavation to Channel Formation & Laying of Rock Fill Material	23 days	2009/1/2	2009/1/31
36	Bay 1 (A CH00.00 - A CH20.00)	5 days	2009/1/2	2009/1/7
37	Bay 2 (A CH20.00 - A CH40.00)	5 days	2009/1/8	2009/1/13
38	Bay 3 (A CH40.00 - A CH60.00)	5 days	2009/1/14	2009/1/19
39	Bay 4 (A CH60.00 - A CH80.00)	5 days	2009/1/20	2009/1/24
40	Bay 5 (A CH80.00 - A CH100.00)	3 days	2009/1/29	2009/1/31
41	Construction of Channel Structures	18 days	2009/1/8	2009/1/31
42	Bay 1 (A CH00.00 - A CH20.00)	10 days	2009/1/8	2009/1/19
43	Bay 2 (A CH20.00 - A CH40.00)	8 days	2009/1/20	2009/1/31
44	Backfilling along the completed Channel Structures	8 days	2009/1/20	2009/1/31
45	Bay 1 (A CH00.00 - A CH20.00)	8 days	2009/1/20	2009/1/31
46	Section of Box Culvert BC13-1	23 days	2009/1/2	2009/1/31
47	Excavation to Channel Formation & Laying of Rock Fill Material	23 days	2009/1/2	2009/1/31
48	Bay 1 (BC CH00.00 - BC CH12.00)	4 days	2009/1/2	2009/1/6
49	Bay 2 (BC CH12.00 - BC CH24.00) & Demolition of Existing Playground	4 days	2009/1/7	2009/1/10



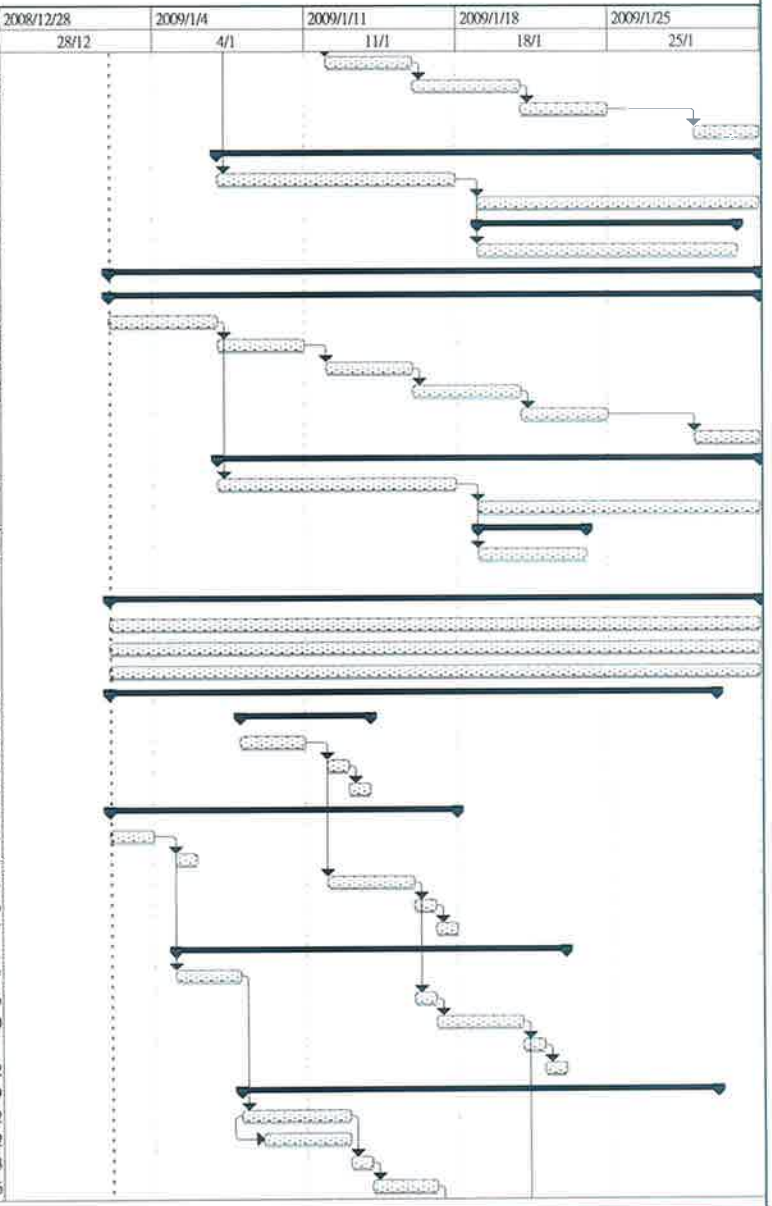
Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

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

One Month Rolling Programme (January 2009)

No	Task Name	Duration	Start	Finish
50	Bay 3 (BC CH24.00 - BC CH36.00)	4 days	2009/1/12	2009/1/15
51	Bay 4 (BC CH36.00 - BC CH48.00)	4 days	2009/1/16	2009/1/20
52	Bay 5 (BC CH48.00 - BC CH60.00)	4 days	2009/1/21	2009/1/24
53	Bay 6 (BC CH60.00 - BC CH72.00)	3 days	2009/1/29	2009/1/31
54	Construction of Channel Structures	19 days	2009/1/7	2009/1/31
55	Bay 1 (BC CH00.00 - BC CH12.00)	10 days	2009/1/7	2009/1/17
56	Bay 2 (BC CH12.00 - BC CH24.00)	9 days	2009/1/19	2009/1/31
57	Backfilling along the Completed Channel Structures	8 days	2009/1/19	2009/1/30
58	Bay 1 (BC CH00.00 - BC CH12.00)	8 days	2009/1/19	2009/1/30
59	Section B	23 days	2009/1/2	2009/1/31
60	Excavation to Channel Formation & Laying of Rock Fill Material	23 days	2009/1/2	2009/1/31
61	Bay 26 (B CH260.00 - B CH272.00)	4 days	2009/1/2	2009/1/6
62	Bay 27 (B CH272.00 - B CH284.00)	4 days	2009/1/7	2009/1/10
63	Bay 28 (B CH284.00 - B CH296.00)	4 days	2009/1/12	2009/1/15
64	Bay 20 (B CH186.00 - B CH198.00)	4 days	2009/1/16	2009/1/20
65	Bay 21 (B CH198.00 - B CH210.00)	4 days	2009/1/21	2009/1/24
66	Bay 22 (B CH210.00 - B CH222.00)	3 days	2009/1/29	2009/1/31
67	Construction of Channel Structures	19 days	2009/1/7	2009/1/31
68	Bay 26 (B CH260.00 - B CH272.00)	10 days	2009/1/7	2009/1/17
69	Bay 27 (B CH272.00 - B CH284.00)	9 days	2009/1/19	2009/1/31
70	Backfilling along the sides of channel & laying of underground drain	5 days	2009/1/19	2009/1/23
71	Bay 26 (B CH260.00 - B CH272.00)	5 days	2009/1/19	2009/1/23
72				
73	Section III (Channel KT14A)	23 days	2009/1/2	2009/1/31
74	Regular Environmental Impact Monitoring	23 days	2009/1/2	2009/1/31
75	Regular Tree Survey	23 days	2009/1/2	2009/1/31
76	Regular Structural Condition Survey	23 days	2009/1/2	2009/1/31
77	Construction of Rectangular Channel	21 days	2009/1/2	2009/1/29
78	Bay 2 (CH11.00 - CH23.00)	5 days	2009/1/8	2009/1/13
79	Construction of Vertical Wall	3 days	2009/1/8	2009/1/10
80	Backfilling	1 day	2009/1/12	2009/1/12
81	Removal of Sheet Piling	1 day	2009/1/13	2009/1/13
82	Bay 3 (CH23.00 - CH35.00)	14 days	2009/1/2	2009/1/17
83	Construction of Base Slab	2 days	2009/1/2	2009/1/3
84	Backfilling to the Kicker Level	1 day	2009/1/5	2009/1/5
85	Construction of Vertical Wall	4 days	2009/1/12	2009/1/15
86	Backfilling	1 day	2009/1/16	2009/1/16
87	Removal of Sheet Piling	1 day	2009/1/17	2009/1/17
88	Bay 4 (CH35.00 - CH48.00)	16 days	2009/1/5	2009/1/22
89	Construction of Base Slab	3 days	2009/1/5	2009/1/7
90	Backfilling to the Kicker Level	1 day	2009/1/16	2009/1/16
91	Construction of Vertical Wall	3 days	2009/1/17	2009/1/20
92	Backfilling	1 day	2009/1/21	2009/1/21
93	Removal of Sheet Piling	1 day	2009/1/22	2009/1/22
94	Bay 5 (CH48.00 - CH52.00)	16 days	2009/1/8	2009/1/29
95	Excavation	4 days	2009/1/8	2009/1/12
96	Installation of Sheet Piling	3 days	2009/1/9	2009/1/12
97	Cast Blinding Layer	1 day	2009/1/13	2009/1/13
98	Construction of Base Slab	3 days	2009/1/14	2009/1/16



Task — Progress — Summary — External Tasks — Deadline

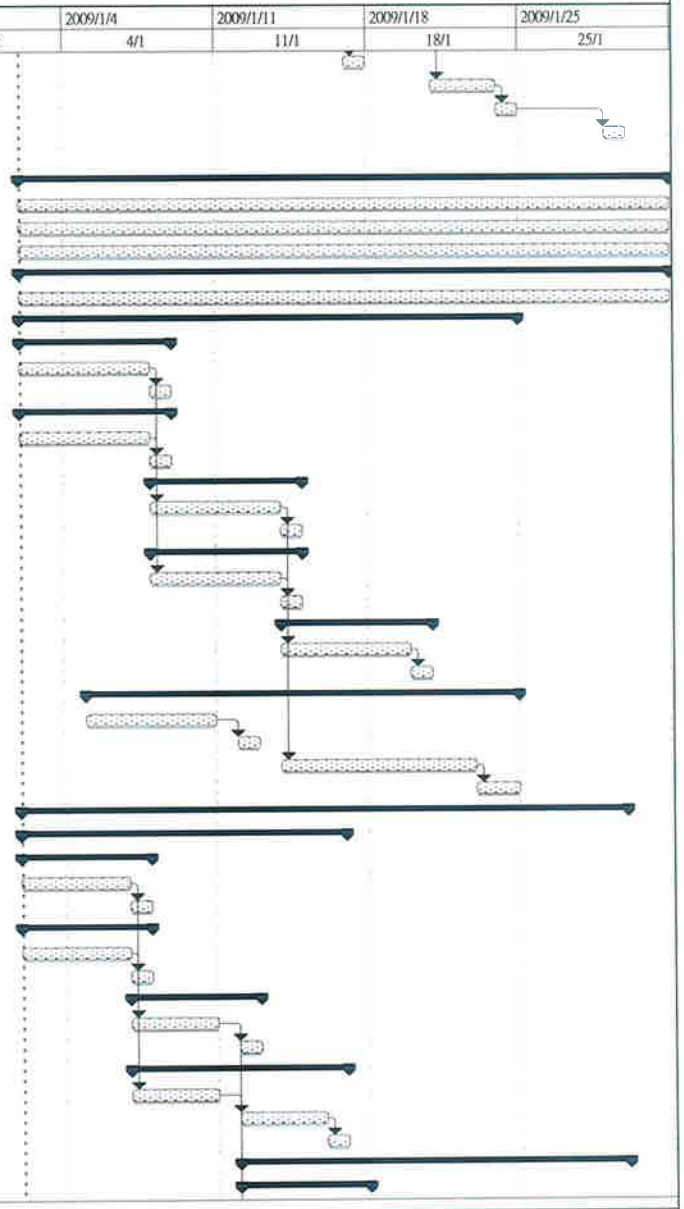
Split — Milestone — Project Summary — External Milestone

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

One Month Rolling Programme (January 2009)

No	Task Name	Duration	Start	Finish
99	Backfilling to the Kicker Level	1 day	2009/1/17	2009/1/17
100	Construction of Vertical Wall	3 days	2009/1/21	2009/1/23
101	Backfilling	1 day	2009/1/24	2009/1/24
102	Removal of Sheet Piling	1 day	2009/1/29	2009/1/29
103				
104	Section IV (Channel KT14B & KT14C)	23 days	2009/1/2	2009/1/31
105	Regular Environmental Impact Monitoring	23 days	2009/1/2	2009/1/31
106	Regular Tree Survey & Protection	23 days	2009/1/2	2009/1/31
107	Regular Structural Condition Survey	23 days	2009/1/2	2009/1/31
108	Construction of Kam Sheung Road (Portion 8B)	23 days	2009/1/2	2009/1/31
109	Construction of Channel between CP9 and CP8	23 days	2009/1/2	2009/1/31
110	Construction of Rectangular Channel of KT14B	20 days	2009/1/2	2009/1/24
111	Bay 16 (CH158.00 - CH171.00)	6 days	2009/1/2	2009/1/8
112	Construction of Base Slab & Vertical Wall	5 days	2009/1/2	2009/1/7
113	Backfilling	1 day	2009/1/8	2009/1/8
114	Bay 18 (CH183.00 - CH195.00)	6 days	2009/1/2	2009/1/8
115	Construction of Base Slab & Vertical Wall	5 days	2009/1/2	2009/1/7
116	Backfilling	1 day	2009/1/8	2009/1/8
117	Bay 28 (CH284.00 - CH296.00)	6 days	2009/1/8	2009/1/14
118	Construction of Base Slab & Vertical Wall	5 days	2009/1/8	2009/1/13
119	Backfilling	1 day	2009/1/14	2009/1/14
120	Bay 26 (CH260.00 - CH272.00)	6 days	2009/1/8	2009/1/14
121	Construction of Base Slab & Vertical Wall	5 days	2009/1/8	2009/1/13
122	Backfilling	1 day	2009/1/14	2009/1/14
123	Bay 27 (CH272.00 - CH284.00)	6 days	2009/1/14	2009/1/20
124	Construction of Base Slab & Vertical Wall	5 days	2009/1/14	2009/1/19
125	Backfilling	1 day	2009/1/20	2009/1/20
126	Bay 25 (CH248.00 - CH260.00)	18 days	2009/1/5	2009/1/24
127	Excavation	6 days	2009/1/5	2009/1/10
128	Cast Blinding Layer	1 day	2009/1/12	2009/1/12
129	Construction of Base Slab & Vertical Wall	8 days	2009/1/14	2009/1/22
130	Backfilling	2 days	2009/1/23	2009/1/24
131	Construction of Rectangular Channel of KT14C	21 days	2009/1/2	2009/1/29
132	East Portion (CH183.00 - CH484.00)	13 days	2009/1/2	2009/1/16
133	Bay 12E (CH348.00 - CH360.00)	5 days	2009/1/2	2009/1/7
134	Construction of Base Slab & Vertical Wall	4 days	2009/1/2	2009/1/6
135	Backfilling	1 day	2009/1/7	2009/1/7
136	Bay 14E (CH324.00 - CH336.00)	5 days	2009/1/2	2009/1/7
137	Construction of Base Slab & Vertical Wall	4 days	2009/1/2	2009/1/6
138	Backfilling	1 day	2009/1/7	2009/1/7
139	Bay 15E-2 (CH310.00 - CH318.00)	5 days	2009/1/7	2009/1/12
140	Construction of Base Slab & Vertical Wall	4 days	2009/1/7	2009/1/10
141	Backfilling	1 day	2009/1/12	2009/1/12
142	Bay 16E (CH298.00 - CH310.00)	9 days	2009/1/7	2009/1/16
143	Construction of Base Slab	4 days	2009/1/7	2009/1/10
144	Construction of Vertical Wall & Top Slab	4 days	2009/1/12	2009/1/15
145	Backfilling	1 day	2009/1/16	2009/1/16
146	West Portion (CH0.00 - CH183.00)	13 days	2009/1/12	2009/1/29
147	Bay 13W (CH128.00 - CH139.00)	6 days	2009/1/12	2009/1/17



Task — Progress — Summary — External Tasks — Deadline

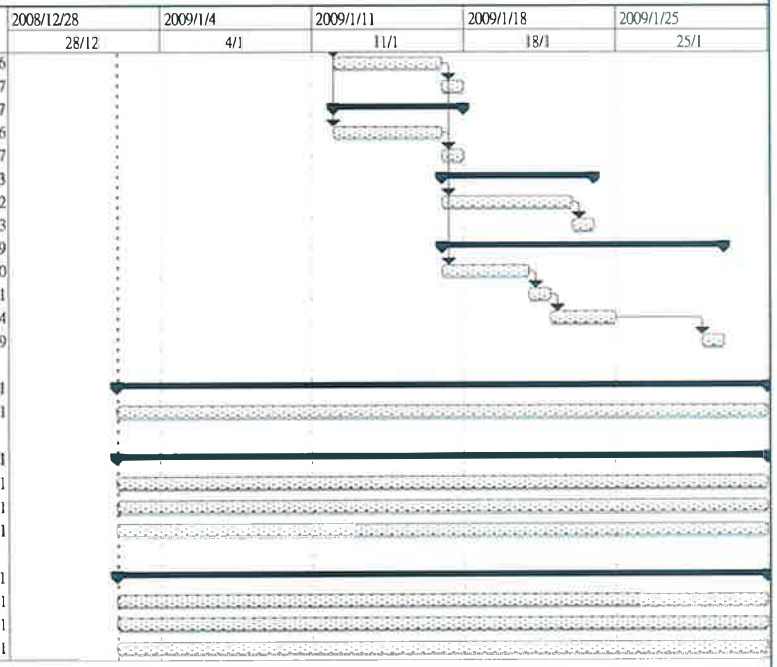
Split — Milestone — Project Summary — External Milestone

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

One Month Rolling Programme (January 2009)

No	Task Name	Duration	Start	Finish
148	Construction of Base Slab & Vertical Wall	5 days	2009/1/12	2009/1/16
149	Backfilling	1 day	2009/1/17	2009/1/17
150	Bay 14W (CH139.00 - CH149.00)	6 days	2009/1/12	2009/1/17
151	Construction of Base Slab & Vertical Wall	5 days	2009/1/12	2009/1/16
152	Backfilling	1 day	2009/1/17	2009/1/17
153	Bay 15W (CH149.00 - CH162.00)	6 days	2009/1/17	2009/1/23
154	Construction of Base Slab & Vertical Wall	5 days	2009/1/17	2009/1/22
155	Backfilling	1 day	2009/1/23	2009/1/23
156	Bay 16W (CH162.00 - CH174.00)	8 days	2009/1/17	2009/1/29
157	Construction of Base Slab	3 days	2009/1/17	2009/1/20
158	Backfilling to the Kicker Level	1 day	2009/1/21	2009/1/21
159	Construction of Vertical Wall & Top Slab	3 days	2009/1/22	2009/1/24
160	Backfilling	1 day	2009/1/29	2009/1/29
161				
162	Section V (For Section I, II, III & IV)	23 days	2009/1/2	2009/1/31
163	Preservation and Protection of Trees	23 days	2009/1/2	2009/1/31
164				
165	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	23 days	2009/1/2	2009/1/31
166	Structural Survey and Monitoring	23 days	2009/1/2	2009/1/31
167	Construction of Manhole, Timber Box and Trench Excavation	23 days	2009/1/2	2009/1/31
168	Apply XP Approval for Construction	23 days	2009/1/2	2009/1/31
169				
170	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	23 days	2009/1/2	2009/1/31
171	Structural Survey and Monitoring	23 days	2009/1/2	2009/1/31
172	Construction of Manhole, Timber Box and Trench Excavation	23 days	2009/1/2	2009/1/31
173	Apply XP Approval for Construction	23 days	2009/1/2	2009/1/31



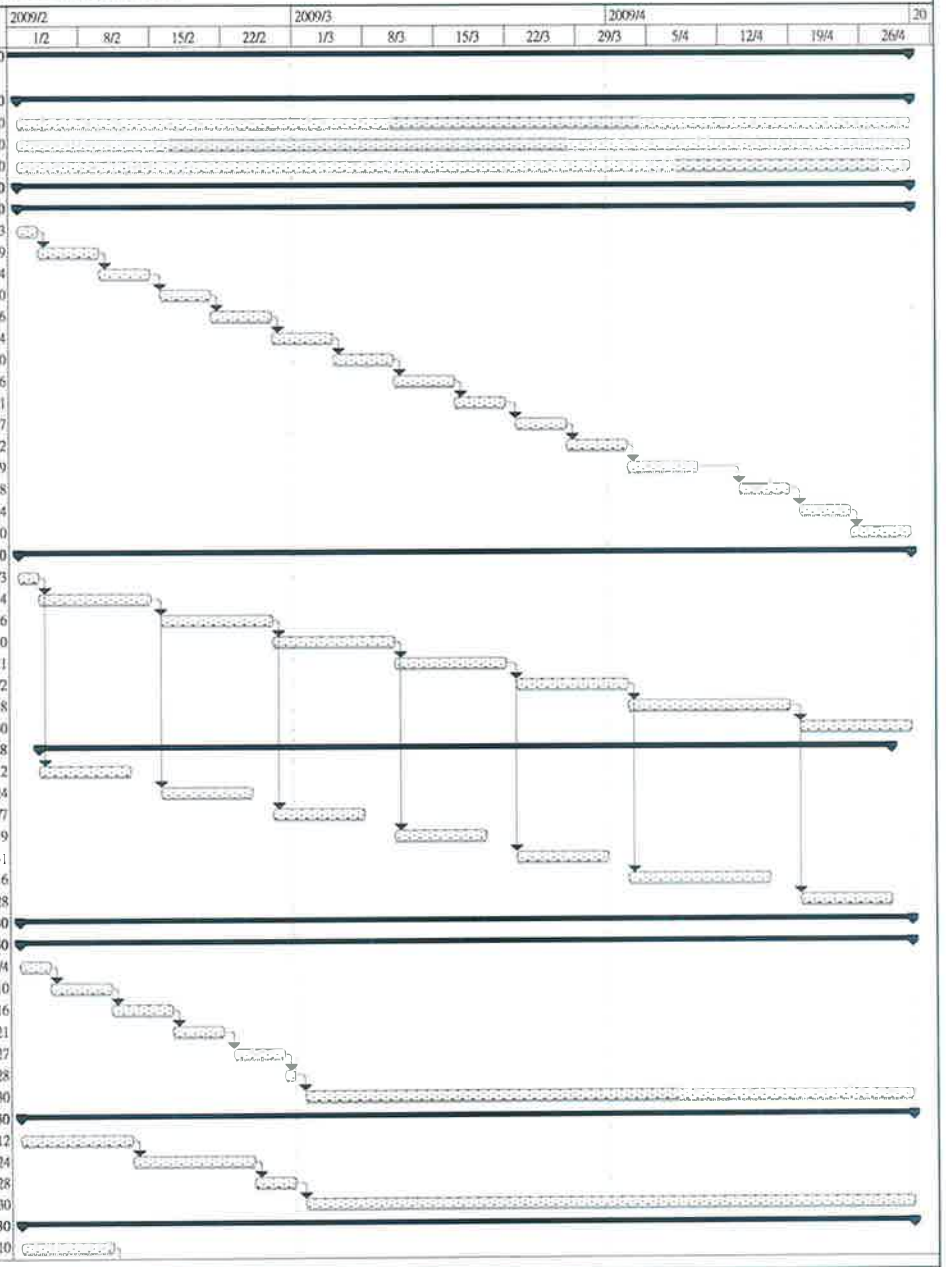
Task Progress Summary External Tasks Deadline
Split Milestone Project Summary External Milestone

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

Three Months Rolling Programme (February 2009 to April 2009)

No	Task Name	Duration	Start	Finish
1	Section I (Channel KT12)	95 days	2009/1/2	2009/4/30
25				
26	Section II (Channel KT13)	72 days	2009/2/2	2009/4/30
27	Regular Environmental Impact Monitoring	72 days	2009/2/2	2009/4/30
28	Regular Tree Survey & Protection	72 days	2009/2/2	2009/4/30
29	Regular Structural Condition Survey	72 days	2009/2/2	2009/4/30
30	Section A	72 days	2009/2/2	2009/4/30
31	Excavation to Channel Formation & Laying of Rock Fill Material	72 days	2009/2/2	2009/4/30
32	Bay 5 (A CH80.00 - A CH100.00)	2 days	2009/2/2	2009/2/3
33	Bay 6 (A CH100.00 - A CH120.00)	5 days	2009/2/4	2009/2/9
34	Bay 7 (A CH120.00 - A CH140.00)	5 days	2009/2/10	2009/2/14
35	Bay 8 (A CH140.00 - A CH160.00)	5 days	2009/2/16	2009/2/20
36	Bay 9 (A CH160.00 - A CH180.00)	5 days	2009/2/21	2009/2/26
37	Bay 10 (A CH180.00 - A CH200.00)	5 days	2009/2/27	2009/3/4
38	Bay 11 (A CH200.00 - A CH220.00)	5 days	2009/3/5	2009/3/10
39	Bay 12 (A CH220.00 - A CH240.00)	5 days	2009/3/11	2009/3/16
40	Bay 13 (A CH240.00 - A CH260.00)	5 days	2009/3/17	2009/3/21
41	Bay 14 (A CH260.00 - A CH280.00)	5 days	2009/3/23	2009/3/27
42	Bay 15 (A CH280.00 - A CH300.00)	5 days	2009/3/28	2009/4/2
43	Bay 16 (A CH300.00 - A CH320.00)	5 days	2009/4/3	2009/4/9
44	Bay 17 (A CH320.00 - A CH340.00)	5 days	2009/4/14	2009/4/18
45	Bay 18 (A CH340.00 - A CH360.00)	5 days	2009/4/20	2009/4/24
46	Bay 19 (A CH360.00 - A CH380.00)	5 days	2009/4/25	2009/4/30
47	Construction of Channel Structures	72 days	2009/2/2	2009/4/30
48	Bay 2 (A CH20.00 - A CH40.00)	2 days	2009/2/2	2009/2/3
49	Bay 3 (A CH40.00 - A CH60.00)	10 days	2009/2/4	2009/2/14
50	Bay 4 (A CH60.00 - A CH80.00)	10 days	2009/2/16	2009/2/26
51	Bay 5 (A CH80.00 - A CH100.00)	10 days	2009/2/27	2009/3/10
52	Bay 6 (A CH100.00 - A CH120.00)	10 days	2009/3/11	2009/3/21
53	Bay 7 (A CH120.00 - A CH140.00)	10 days	2009/3/23	2009/4/2
54	Bay 8 (A CH140.00 - A CH160.00)	10 days	2009/4/3	2009/4/18
55	Bay 9 (A CH160.00 - A CH180.00)	10 days	2009/4/20	2009/4/30
56	Backfilling along the completed Channel Structures	68 days	2009/2/4	2009/4/28
57	Bay 2 (A CH20.00 - A CH40.00)	8 days	2009/2/4	2009/2/12
58	Bay 3 (A CH40.00 - A CH60.00)	8 days	2009/2/16	2009/2/24
59	Bay 4 (A CH60.00 - A CH80.00)	8 days	2009/2/27	2009/3/7
60	Bay 5 (A CH80.00 - A CH100.00)	8 days	2009/3/11	2009/3/19
61	Bay 6 (A CH100.00 - A CH120.00)	8 days	2009/3/23	2009/3/31
62	Bay 7 (A CH120.00 - A CH140.00)	8 days	2009/4/3	2009/4/16
63	Bay 8 (A CH140.00 - A CH160.00)	8 days	2009/4/20	2009/4/28
64	Section of Box Culvert BC13-1	72 days	2009/2/2	2009/4/30
65	Excavation to Channel Formation & Laying of Rock Fill Material	72 days	2009/2/2	2009/4/30
66	Bay 6 (BC CH60.00 - BC CH72.00)	3 days	2009/2/2	2009/2/4
67	Bay 7 (BC CH72.00 - BC CH84.00)	5 days	2009/2/5	2009/2/10
68	Bay 8 (BC CH84.00 - BC CH96.00)	5 days	2009/2/11	2009/2/16
69	Bay 9 (BC CH96.00 - BC CH108.00)	5 days	2009/2/17	2009/2/21
70	Bay 10 (BC CH108.00 - BC CH118.00)	5 days	2009/2/23	2009/2/27
71	Bay 11 (BC CH118.00 - BC CH122.00)	1 day	2009/2/28	2009/2/28
72	Cease work (01/03/09 - 31/05/09) - Restriction of EP-263/2007 Requirement	48 days	2009/3/2	2009/4/30
73	Construction of Channel Structures	72 days	2009/2/2	2009/4/30
74	Bay 3 (BC CH24.00 - BC CH36.00)	10 days	2009/2/2	2009/2/12
75	Bay 4 (BC CH36.00 - BC CH48.00)	10 days	2009/2/13	2009/2/24
76	Bay 5 (BC CH48.00 - BC CH60.00)	4 days	2009/2/25	2009/2/28
77	Cease work (01/03/09 - 31/05/09) - Restriction of EP-263/2007 Requirement	48 days	2009/3/2	2009/4/30
78	Backfilling along the Completed Channel Structures	72 days	2009/2/2	2009/4/30
79	Bay 2 (BC CH12.00 - BC CH24.00)	8 days	2009/2/2	2009/2/10



Task Progress Summary External Tasks Deadline

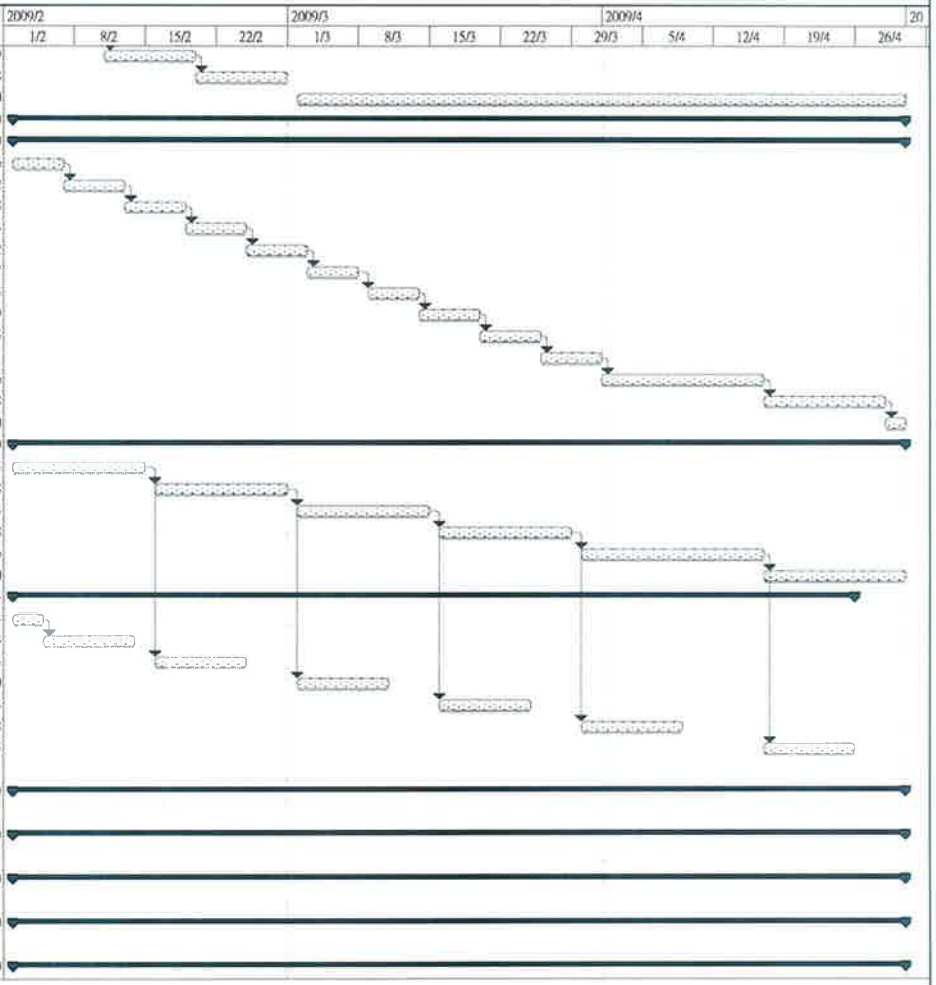
Split Milestone Project Summary External Milestone

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

Three Months Rolling Programme (February 2009 to April 2009)

No	Task Name	Duration	Start	Finish
80	Bay 3 (BC CH24.00 - BC CH36.00)	8 days	2009/2/11	2009/2/19
81	Bay 4 (BC CH36.00 - BC CH48.00)	8 days	2009/2/20	2009/2/28
82	Cease work (01/03/09 - 31/05/09) - Restriction of EP-263/2007 Requirement	48 days	2009/3/2	2009/4/30
83	Section B	72 days	2009/2/2	2009/4/30
84	Excavation to Channel Formation & Laying of Rock Fill Material	72 days	2009/2/2	2009/4/30
85	Bay 29 (B CH297.00 - B CH305.00)	5 days	2009/2/2	2009/2/6
86	Bay 30 (B CH305.00 - B CH312.00)	5 days	2009/2/7	2009/2/12
87	Bay 25 (B CH247.00 - B CH260.00)	5 days	2009/2/13	2009/2/18
88	Bay 24 (B CH235.00 - B CH247.00)	5 days	2009/2/19	2009/2/24
89	Bay 23 (B CH222.00 - B CH235.00)	5 days	2009/2/25	2009/3/2
90	Bay 19 (B CH174.00 - B CH186.00)	5 days	2009/3/3	2009/3/7
91	Bay 18 (B CH162.00 - B CH174.00)	5 days	2009/3/9	2009/3/13
92	Bay 17 (B CH154.00 - B CH162.00)	5 days	2009/3/14	2009/3/19
93	Bay 16 (B CH147.00 - B CH154.00)	5 days	2009/3/20	2009/3/25
94	Bay 15 (B CH144.00 - B CH147.00)	5 days	2009/3/26	2009/3/31
95	Bay 14 (B CH137.00 - B CH144.00)	10 days	2009/4/1	2009/4/16
96	Bay 13 (B CH129.00 - B CH137.00)	10 days	2009/4/17	2009/4/28
97	Bay 12 (B CH119.00 - B CH129.00)	2 days	2009/4/29	2009/4/30
98	Construction of Channel Structures	72 days	2009/2/2	2009/4/30
99	Bay 28 (B CH284.00 - B CH296.00)	12 days	2009/2/2	2009/2/14
100	Bay 20 (B CH186.00 - B CH198.00)	12 days	2009/2/16	2009/2/28
101	Bay 21 (B CH198.00 - B CH210.00)	12 days	2009/3/2	2009/3/14
102	Bay 22 (B CH210.00 - B CH222.00)	12 days	2009/3/16	2009/3/28
103	Bay 29 (B CH297.00 - B CH305.00)	12 days	2009/3/30	2009/4/16
104	Bay 30 (B CH305.00 - B CH312.00)	12 days	2009/4/17	2009/4/30
105	Backfilling along the sides of channel & laying of underground drain	68 days	2009/2/2	2009/4/25
106	Bay 26 (B CH260.00 - B CH272.00)	3 days	2009/2/2	2009/2/4
107	Bay 27 (B CH272.00 - B CH284.00)	8 days	2009/2/5	2009/2/13
108	Bay 28 (B CH284.00 - B CH296.00)	8 days	2009/2/16	2009/2/24
109	Bay 20 (B CH186.00 - B CH198.00)	8 days	2009/3/2	2009/3/10
110	Bay 21 (B CH198.00 - B CH210.00)	8 days	2009/3/16	2009/3/24
111	Bay 22 (B CH210.00 - B CH222.00)	8 days	2009/3/30	2009/4/8
112	Bay 29 (B CH297.00 - B CH305.00)	8 days	2009/4/17	2009/4/25
113				
114	Section III (Channel KT14A)	72 days	2009/2/2	2009/4/30
226				
227	Section IV (Channel KT14B & KT14C)	72 days	2009/2/2	2009/4/30
485				
486	Section V (For Section I, II, III & IV)	72 days	2009/2/2	2009/4/30
488				
489	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	72 days	2009/2/2	2009/4/30
493				
494	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	72 days	2009/2/2	2009/4/30

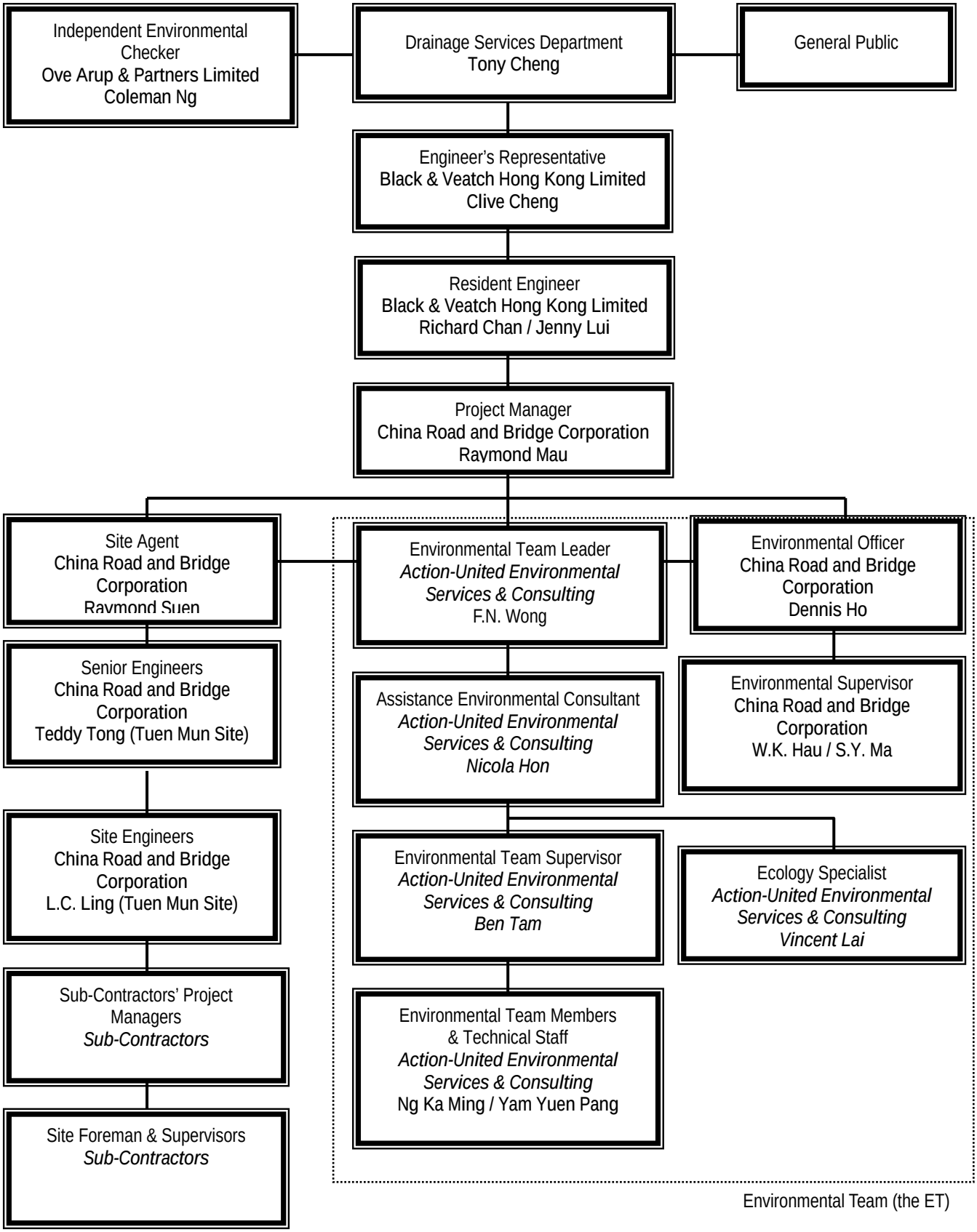


Task Progress Summary External Tasks Deadline

Split Milestone Project Summary External Milestone

Appendix C

Environmental Management Organization and Contacts of Key Personnel



Environmental Management Organization

Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. Tony Cheng	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	2283-1689
CRBC	Senior Engineer (Tuen Mun Site)	Mr. Teddy Tong	6283 9684	2283-1689
CRBC	Site Engineer (Tuen Mun Site)	Mr. L.C. Ling	6770 4010	2283-1689
CRBC	Environmental Officer	Mr. Dennis Ho	6474-6975	2283-1689
CRBC	Environmental / Construction Supervisor (Tuen Mun and Yuen Long site)	Mr. W.K. Hau	6283 9696	2283-1689
CRBC	Environmental / Construction Supervisor (Yuen Long site)	Mr. S.Y. Ma	9401 6296-	2283-1689
CRBC	Safety Officer	Kenny Sze	9374-8954	2283-1689
AUES	Environmental Team Leader	Mr. FN Wong	2959-6059	2959-6079
AUES	Assistance Environmental Consultant	Miss 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 D

(a) Monitoring Schedules
Meteorological Data

Monitoring Schedule for KT 13 (January 2009)

Date		Air Quality		NOISE LEQ 30MIN	WATER QUALITY	ECOLOGY SURVEYS
		1-Hour TSP	24-Hour TSP			
1-Jan-09	Thu					
2-Jan-09	Fri	A1(a), A2		N1(a), N2(a) & N3	W1,W2, W3(a), W4, W5 & W6	
3-Jan-09	Sat					
4-Jan-09	Sun					
5-Jan-09	Mon				W1,W2, W3(a), W4, W5 & W6	
6-Jan-09	Tue					
7-Jan-09	Wed		A1(a), A2		W1,W2, W3(a), W4, W5 & W6	
8-Jan-09	Thu	A1(a), A2		N1(a), N2(a) & N3		
9-Jan-09	Fri				W1,W2, W3(a), W4, W5 & W6	
10-Jan-09	Sat					
11-Jan-09	Sun					
12-Jan-09	Mon				W1,W2, W3(a), W4, W5 & W6	
13-Jan-09	Tue		A1(a), A2			
14-Jan-09	Wed	A1(a), A2		N1(a), N2(a) & N3	W1,W2, W3(a), W4, W5 & W6	
15-Jan-09	Thu					
16-Jan-09	Fri				W1,W2, W3(a), W4, W5 & W6	
17-Jan-09	Sat					
18-Jan-09	Sun					
19-Jan-09	Mon		A1(a), A2		W1,W2, W3(a), W4, W5 & W6	
20-Jan-09	Tue	A1(a), A2		N1(a), N2(a) & N3		
21-Jan-09	Wed				W1,W2, W3(a), W4, W5 & W6	
22-Jan-09	Thu					
23-Jan-09	Fri				W1,W2, W3(a), W4, W5 & W6	
24-Jan-09	Sat		A1(a), A2			
25-Jan-09	Sun					
26-Jan-09	Mon					
27-Jan-09	Tue					
28-Jan-09	Wed					
29-Jan-09	Thu				W1,W2, W3(a), W4, W5 & W6	
30-Jan-09	Fri		A1(a), A2			
31-Jan-09	Sat	A1(a), A2		N1(a), N2(a) & N3	W1,W2, W3(a), W4, W5 & W6	

	Monitoring Day
	Sunday or Public Holiday

Monitoring Schedule for KT 13 (February 2009)

Date		Air Quality		NOISE LEQ 30MIN	WATER QUALITY	ECOLOGY SURVEYS
		1-Hour TSP	24-Hour TSP			
1-Feb-09	Sun					
2-Feb-09	Mon				W1,W2, W3(a), W4, W5 & W6	
3-Feb-09	Tue					
4-Feb-09	Wed				W1,W2, W3(a), W4, W5 & W6	
5-Feb-09	Thu		A1(a), A2			
6-Feb-09	Fri	A1(a), A2		N1(a), N2(a) & N3	W1,W2, W3(a), W4, W5 & W6	
7-Feb-09	Sat					
8-Feb-09	Sun					
9-Feb-09	Mon				W1,W2, W3(a), W4, W5 & W6	
10-Feb-09	Tue					
11-Feb-09	Wed		A1(a), A2		W1,W2, W3(a), W4, W5 & W6	
12-Feb-09	Thu	A1(a), A2		N1(a), N2(a) & N3		
13-Feb-09	Fri				W1,W2, W3(a), W4, W5 & W6	
14-Feb-09	Sat					
15-Feb-09	Sun					
16-Feb-09	Mon				W1,W2, W3(a), W4, W5 & W6	
17-Feb-09	Tue		A1(a), A2			
18-Feb-09	Wed	A1(a), A2		N1(a), N2(a) & N3	W1,W2, W3(a), W4, W5 & W6	
19-Feb-09	Thu					
20-Feb-09	Fri				W1,W2, W3(a), W4, W5 & W6	
21-Feb-09	Sat					
22-Feb-09	Sun					
23-Feb-09	Mon		A1(a), A2		W1,W2, W3(a), W4, W5 & W6	
24-Feb-09	Tue	A1(a), A2		N1(a), N2(a) & N3		
25-Feb-09	Wed				W1,W2, W3(a), W4, W5 & W6	
26-Feb-09	Thu					
27-Feb-09	Fri				W1,W2, W3(a), W4, W5 & W6	
28-Feb-09	Sat		A1(a), A2			

	Monitoring Day
	Sunday or Public Holiday

Meteorological Data Extracted from HKO during the Reporting Period

Date		Weather		Lau Fau Shan Weather Station			
			Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-Dec-08	Fri	Holiday	-	-	-	-	-
27-Dec-08	Sat	cloudy/rain/moderate/fresh	Trace	20	9	64	E/NE
28-Dec-08	Sun	cloudy/haze/moderate/fresh	0.1	19.4	8.2	81	N/NE
29-Dec-08	Mon	cloudy/haze/moderate/fresh	2	19.5	11.7	76	N/NE
30-Dec-08	Tue	cloudy/rain/cool/moderate/fresh	5.2	15.9	12.2	76	E/NE
31-Dec-08	Wed	rain/fine/moderate/fresh	1.1	13.9	19	72.5	NE
1-Jan-09	Thu	Holiday	-	-	-	-	-
2-Jan-09	Fri	fine/dry/moderate	0	10.7	19	35.5	E/NE
3-Jan-09	Sat	fine/dry/cloudy/moderate/fresh	0	14.7	9	48.5	E/NE
4-Jan-09	Sun	fine/dry/moderate/fresh	Trace	18	13	50	E/NE
5-Jan-09	Mon	fine/dry/moderate/fresh	0	18	7.5	43.5	E/NE
6-Jan-09	Tue	fine/fresh/strong	0	19.3	10.5	66.7	E/SE
7-Jan-09	Wed	fine/dry/hazy/moderate/fresh	0	16.5	14.7	65	E/NE
8-Jan-09	Thu	fine/dry/moderate/fresh	0	13.8	17	57	NE
9-Jan-09	Fri	fine/dry/cold/fresh/strong	0	12.1	22.5	48.5	N/NE
10-Jan-09	Sat	fine/very dry/cold/fresh/strong	0	12.1	21.5	32.5	NE
11-Jan-09	Sun	fine/cold/very dry/moderate/fresh	0	11.6	9	Maintenance	E/SE
12-Jan-09	Mon	fine/very dry/cold/moderate/fresh	0	13.8	17.7	Maintenance	E/NE
13-Jan-09	Tue	fine/cold/very dry/moderate/fresh	0	12.5	18.7	28	E/NE
14-Jan-09	Wed	fine/dry/cold/moderate/fresh	0	11.8	16.5	25	E/NE
15-Jan-09	Thu	fine/very dry/cool/moderate	0	12.9	10.7	47.5	E/NE
16-Jan-09	Fri	fine/dry/cool/moderate	0	13.4	11.5	52.7	E/SE
17-Jan-09	Sat	fine/dry/cool/moderate	0	15.9	11	57.5	E/SE
18-Jan-09	Sun	fine/haze/moderate/fresh	0	17.7	8	63.5	W/SW
19-Jan-09	Mon	fine/haze/moderate/fresh	0	22	10	60.5	E/SE
20-Jan-09	Tue	sunny periods/cloudy/moderate/fresh	0	18.8	12.2	54.5	E
21-Jan-09	Wed	fine/hazy/light winds/moderate	0	21.7	9	63	E
22-Jan-09	Thu	fine/dry/hazy/moderate	0	18.5	12	66	W/SW
23-Jan-09	Fri	cloudy/dry/hazy/moderate/fresh	0	16.3	16	70	E/NE
24-Jan-09	Sat	cloudy/very dry/cold/fresh/strong	0	12.6	22.5	47	NE
25-Jan-09	Sun	cloudy/very dry/cold/fresh/strong	0	12.6	24	43.5	NE

Appendix E

Calibration Certificates and HOKLAS-Accreditation Certificate

CERTIFICATE OF ANALYSIS

Batch: HK0817539
Date of Issue: 17/10/2008
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Thermometer

Item : YSI Multimeter

Model No. : YSI 550A

Serial No. : 05F2063AZ

Equipment No.: - -

Calibration Method : In-house Method

Date of Calibration : 17 October, 2008

Testing Results :

Reference Temperature (^{0}C)	Recorded Temperature (^{0}C)
23.2 °C 31.5 °C	23.3°C 31.4 °C
Allowing Deviation	±0.2 mg/L

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0901066
Date of Issue: 19/01/2009
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Thermometer

Item : YSI Multimeter

Model No. : YSI 550A

Serial No. : 05F2063AZ

Equipment No.: - -

Calibration Method : In-house Method

Date of Calibration : 19 January, 2009

Testing Results :

Reference Temperature (^{0}C)	Recorded Temperature (^{0}C)
20.3 °C 29.1 °C	20.5°C 29.5 °C
Allowing Deviation	±2.0^{0}C

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0817539
Date of Issue: 17/10/2008
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of DO System

Item : YSI Multimeter

Model No. : YSI 550A

Serial No. : 05F2063AZ

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-0C & G

Date of Calibration : 17 October, 2008

Testing Results :

Expected Reading	Recording Reading
4.88 mg/L 6.52 mg/L 7.89 mg/L	4.76 mg/L 6.38 mg/L 7.86 mg/L
Allowing Deviation	±0.2 mg/L

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0901066
Date of issue: 19/01/2009
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of DO System

Item : YSI Multimeter

Model No. : YSI 550A

Serial No. : 05F2063AZ

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-0C & G

Date of Calibration : 19 January, 2009

Testing Results :

Expected Reading	Recording Reading
3.80 mg/L 5.81 mg/L 9.12 mg/L	3.90 mg/L 5.90 mg/L 9.08 mg/L
Allowing Deviation	±0.2 mg/L

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0817540
Date of Issue: 17/10/2008
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Salinity System

Item : HAND REFRACTOMETER

Model No. : ATAGO

Serial No. : 289468

Equipment No. : EQ114

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B

Date of Calibration : 17 October, 2008

Testing Results :

Expected Reading	Recording Reading
10 g/L	10 g/L
20 g/L	19 g/L
30 g/L	28 g/L
40 g/L	38 g/L
Allowing Deviation	±10%

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0901067
Date of Issue: 19/01/2009
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Salinity System

Item : HAND REFRACTOMETER

Model No. : ATAGO

Serial No. : 289468

Equipment No. : EQ114

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B

Date of Calibration : 19 January, 2009

Testing Results :

Expected Reading	Recording Reading
0 g/L	0 g/L
10 g/L	9 g/L
20 g/L	18 g/L
30 g/L	27 g/L
40 g/L	37 g/L
Allowing Deviation	±10%

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0822563
Date of Issue: 08/12/2008
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Turbiditv System

Item : HACH Turbidimeter

Model No. : HACH 2100P

Serial No. : 950900008735

Equipment No. : EQ091

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 2130B

Date of Calibration : 01 December, 2008

Testing Results:

Expected Reading	Recording Reading
0.00 NTU	0.14 NTU
1.00 NTU	1.03 NTU
2.00 NTU	2.13 NTU
4.00 NTU	4.28 NTU
16.0 NTU	15.7 NTU
40.0 NTU	41.3 NTU
80.0 NTU	82.7 NTU
160 NTU	174 NTU
400 NTU	413 NTU
Allowing Deviation	±10%

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

Batch: HK0822565
Date of Issue: 08/12/2008
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of pH System

Item : HANNA pH Meter

Model No. : HI98128

Serial No. : S229924

Equipment No. : --

Calibration Method : This meter was calibrated in accordance with standard method APHA (19th Ed.) 4500-H^+B

Date of Calibration : 08 December, 2008

Testing Results :

Expected Reading	Recording Reading
4.00	3.97
7.00	6.93
10.0	9.84
Allowing Deviation	± 0.2

Ms Wong Wai Man, Alice
Laboratory Manager - Hong Kong

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C082016

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ006)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285762

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C082016.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 22 April 2008

Certified by : K C Lee

The test equipment used for testing are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C082016

Calibration Report

ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ006)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 2238
SERIAL NO. : 2285762

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)℃ RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 21 April 2008 ***JOB NO.*** : IC08-0992

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Tested by : *H C Chan* *Date : 22 April 2008*

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Report No. : C082016

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B&K acoustic calibrator 4231, S/N 2326408 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C080037
CL281	Multifunction Acoustic Calibrator	DC080007

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	93.9	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)	
40 - 120	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq. (kHz)		
20 - 100	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.0	± 0.1

Report No. : C082016

Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.00	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	104.9	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	101.9	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{AFP}	A	F	94.00	31.5 Hz	54.8	-39.4 ± 1.5
					63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.6	-16.1 ± 1.0
					500 Hz	90.6	-3.2 ± 1.0
					1 kHz	93.9	Ref.
					2 kHz	95.0	+1.2 ± 1.0
					4 kHz	94.8	+1.0 ± 1.0
					8 kHz	92.6	-1.1 (+1.5 ; -3.0)
					12.5 kHz	88.8	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Parameter	Freq. Weight	Time Weight	Level (dB)	Freq.		
20 - 100	L_{CFP}	C	F	94.00	31.5 Hz	91.0	-3.0 ± 1.5
					63 Hz	93.0	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.0
					500 Hz	93.8	0.0 ± 1.0
					1 kHz	93.9	Ref.
					2 kHz	93.7	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.7	-3.0 (+1.5 ; -3.0)
					12.5 kHz	86.9	-6.2 (+3.0 ; -6.0)

Report No. : C082016

Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Freq. Weight	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
30 - 110	Leq	A	10 sec.	4	1	1/10	110.0	100	100.2	± 0.5
						$1/10^2$		90	90.2	± 0.5
			60 sec.			$1/10^3$		80	79.8	± 1.0
			5 min.			$1/10^4$		70	69.5	± 1.0

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.40 dB
	500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz	: ± 0.40 dB
	4 kHz	: ± 0.50 dB
	8 kHz	: ± 0.70 dB
	12.5 kHz	: ± 1.20 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C082026

Certificate of Calibration

This is to certify that the equipment

Description : Acoustical Calibrator (EQ016)

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2292167

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C082026.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 22 April 2008

Certified by : K C Lee

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C082026

Calibration Report

ITEM TESTED

DESCRIPTION : Acoustical Calibrator (EQ016)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 4231
SERIAL NO. : 2292167

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)℃ RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 21 April 2008 ***JOB NO.*** : IC08-0992

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification & user's specified acceptance criteria.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by : *H C Chan* *Date : 22 April 2008*

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Report No. : C082026

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
TST150A	Measuring Amplifier	C080751
CL129	Universal Counter	C072995
CL281	Multifunction Acoustic Calibrator	DC080007

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	User's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.3	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remarks : - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	No.68 Ho Pui Village	Date of Calibration:	1-Dec-08
Location ID :	ASR14 (A1(a))	Next Calibration Date:	1-Feb-09
		Technician:	Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1021.8	Corrected Pressure (mm Hg)	766.35
Temperature (^{o}C)	18.3	Temperature (K)	291

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.54431
Model->	515N	Qstd Intercept ->	-0.01988

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	4.8	4.8	9.6	2.051	53	54.45	Slope = 42.6924
13	4.0	4.0	8.0	1.873	46	47.25	Intercept = -32.4515
10	3.3	3.3	6.6	1.702	40	41.09	Corr. coeff. = 0.9988
7	2.6	2.6	5.2	1.513	32	32.87	
5	1.4	1.4	2.8	1.113	14	14.38	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

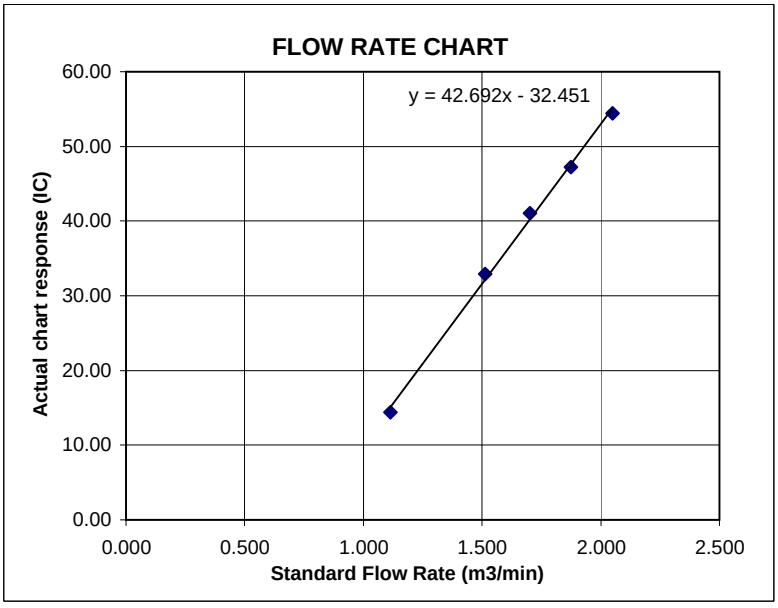
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	No.1 Ma On Kong Village	Date of Calibration:	1-Dec-08
Location ID :	ASR15 (A2)	Next Calibration Date:	1-Feb-09
		Technician:	Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1021.8	Corrected Pressure (mm Hg)	766.35
Temperature (^{o}C)	18.3	Temperature (K)	291

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.54431
Model->	515N	Qstd Intercept ->	-0.01988

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.0	5.0	10.0	2.093	51	52.39	Slope = 38.4688
13	3.7	3.7	7.4	1.802	40	41.09	Intercept = -28.0856
10	2.8	2.8	5.6	1.569	32	32.87	Corr. coeff. = 0.9995
7	2.1	2.1	4.2	1.361	23	23.63	
5	1.5	1.5	3.0	1.152	16	16.44	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

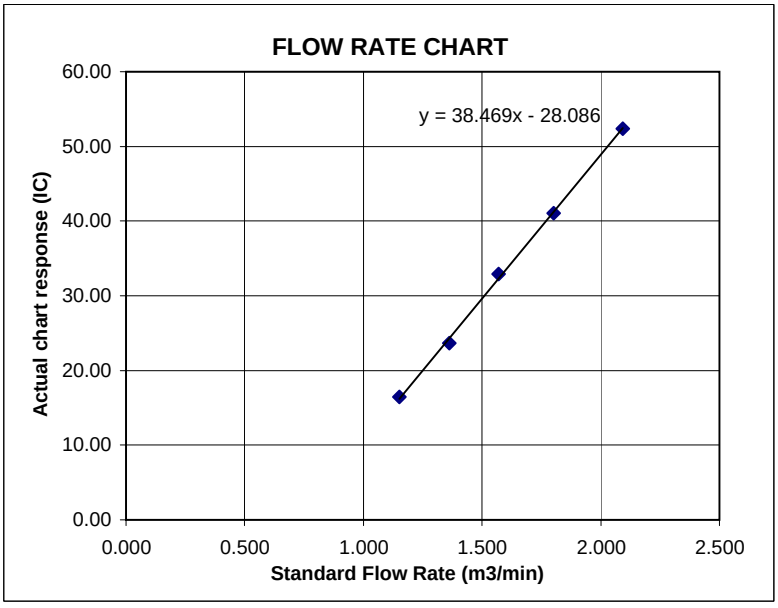
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



AUES

Equipment Calibration Record

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata
Serial No.	362337
Equipment Ref:	EQ094
Sensitivity	722 CPM

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	Village House in Tin Sam San Tsuen
Equipment Ref:	A10
Last Calibration Date:	07 May 2008

Equipment Calibration Results:

Calibration Date: 20 June 2008

Hour	Time	Temp °C	RH %	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
1	11:30 ~ 12:30	31.2	82	0.133	3818	63.6
1	14:30 ~ 15:30	32.1	77	0.056	1430	23.8
1	16:30 ~ 17:30	29.2	81	0.058	1468	24.5

Sensitivity Adjustment Scale Setting (Before Calibration) 722 (CPM)

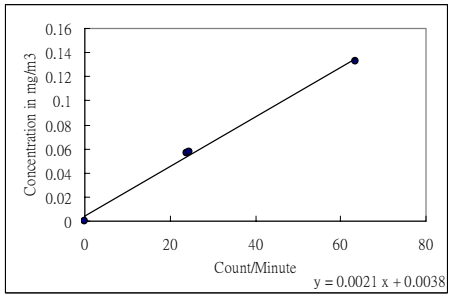
Sensitivity Adjustment Scale Setting (After Calibration) 722 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0021

Correlation Coefficient 0.9977

Validity of Calibration Record 24 June 2008



Operator : Ben Tam Signature : Date : 24 June 2008

QC Reviewer : Ken Wong Signature : Date : 24 June 2008

AUES

Equipment Calibration Record

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata
Serial No.	362359
Equipment Ref:	EQ096
Sensitivity	769 CPM

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	Village House in Cheung Chun San Tsuen
Equipment Ref:	A1
Last Calibration Date:	07 May 2008

Equipment Calibration Results:

Calibration Date: 20 June 2008

Hour	Time	Temp °C	RH %	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
1	11:30 ~ 12:30	31.2	82	0.133	4240	70.7
1	14:30 ~ 15:30	32.1	77	0.056	1602	26.7
1	16:30 ~ 17:30	29.2	81	0.058	1764	29.4

Sensitivity Adjustment Scale Setting (Before Calibration) 769 (CPM)

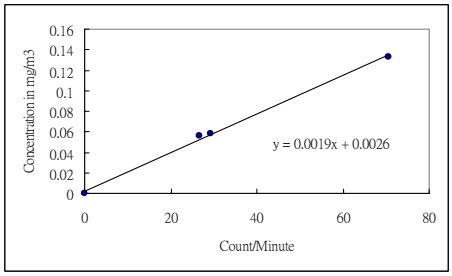
Sensitivity Adjustment Scale Setting (After Calibration) 769 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0019

Correlation Coefficient 0.9988

Validity of Calibration Record 24 June 2008



Operator : Ben Tam Signature : Date : 24 June 2008

QC Reviewer : Ken Wong Signature : Date : 24 June 2008

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，
of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as
獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定
listed in the HOKLAS Directory of Accredited Laboratories within the test category of
測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
這項認可資格表示在指定範疇所需的技術能力及實驗所質量管理體系的運作
quality management system (refer joint ISO-ILAC-IAF Communiqué dated 18 June 2005).
(見國際標準化組織、國際實驗所認可合作組織及國際認可論壇於二零零五年六月十八日的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 3 May 2006
簽發日期：二零零六年五月三日

Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

L 000126

Appendix F

Event and Action Plan

Event/Action Plan for Air Quality

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

Event/Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	CONTRACTOR'S ET LEADER	IEC	ER	Contractor
Action Level	1. Notify IEC, Contractor and ER 2. Carry out investigation 3. Report the results of investigation to the IEC, Contractor and ER 4. Discuss with the Contractor and formulate remedial measures 5. Double monitoring frequency 6. Check compliance to Action/Limit Levels after application of mitigation measures	1. Review the analysed results submitted by the Contract's ET leader 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Review the implementation of remedial measures	1. Confirm receipt of notification of complaint in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to ER and IEC 2. Implement noise mitigation proposals
Limit Level	1. Notify IEC, ER, EPD and Contractor 2. Identify Source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IEC, ER and EPD the causes & actions taken for the exceedances 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, Contractor's ET leader and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Audit the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	Repeat in-site measurement to confirm findings; Identify Source(s) of impact; Inform IEC an Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Repeat measurement on next day of exceedance	Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented;	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check al plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures.
Action level being exceeded by more than one consecutive sampling days	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance.	Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.	Discuss with IEC on the proposed mitigation measures; Made agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level.	Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the R accordingly Assess the effectiveness of the implemented mitigation measures.	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contract to critically review the working methods; Made agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures/
Limit level being exceeded by more than one consecutive sampling days	Repeat in-situ measurement to confirm fundings; Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the Monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level.	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures; As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.

Event/Action Plan for Ecology

EVENT	ACTION			
	ET Leader	**IEC**	**Engineer**	**Contractor**
ACTION LEVEL REACHED	1. Carry out investigation 2. Review results and assess whether amendment to action level is appropriate 3. Report the results of investigation to the IEC 4. Notify Contractor and Engineer 5. Discuss with the Contractor and formulate remedial measures 6. Repeat survey to confirm results	1. Review the analysed results submitted by ET 2. Review the proposed remedial measures by the Contractor and advice the Engineer accordingly 3. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed problem 4. Ensure remedial measures properly implemented	1. Take immediate action to avoid further problem 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control
LIMIT LEVEL REACHED	1. Carry out investigation 2. Review results and assess whether amendment to limit level is appropriate 3. Report the results of investigation to the IEC 4. Notify Contractor and Engineer 5. Discuss with the Contractor and formulate remedial measures 6. Repeat survey to confirm results	1. Review the analysed results submitted by ET 2. Review the proposed remedial measures by the Contractor and advice the Engineer accordingly 3. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed problem 4. Ensure remedial measures properly implemented 5. Issue instruction to stop the relevant portion of the works until the problem is abated (construction period only).	1. Take immediate action to avoid further problem 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the Engineer until the problem is abated (construction period only)

Event and Action Plan for Cultural Heritage

EVENT	ACTION			
	ET Leader	IEC	ER	Contractor
Action Level	Notify IEC and Contractor to carry out investigation Report reasons of structural damage or instability to the IEC and Contractor Discuss with the Contractor and formulate remedial measures Increase monitoring frequency to once per week to check mitigation effectiveness	Review report of structural damage or instability by the ET. Review proposed remedial measures by the Contractor and advise the ER and Antiquities and Monuments Office (AMO) accordingly Supervise the implementation of remedial measures, with approval from AMO.	Confirm receipt of notification of failure in writing Notify Contractor Require Contractor to propose remedial measures and to notify and seek approval from AMO. Ensure remedial measures are properly implemented.	Notify AMO concerning the damage or structural instability of the cultural heritage resources Submit proposals for repair of damage to cultural heritage resources to AMO for approval and to implement approved measures.
Limit Level	Notify IEC and Contractor to carry out investigation and to stop construction work within 100m of cultural heritage resource to avoid further impact until AMO are satisfied that the relevant structure has been repaired or stabilized to an acceptable level. Report reasons of continued structural damage or instability to the IEC and Contractor Discuss with the Contractor and formulate remedial measures Increase monitoring frequency to daily to check mitigation effectiveness	Review report of structural damage or instability by the ET. Review proposed remedial measures by the Contractor and advise the ER and Antiquities and Monuments Office (AMO) accordingly. Supervise the implementation of remedial measures, with approval from AMO.	Confirm receipt of notification of failure in writing Notify Contractor Require Contractor to propose remedial measures and to notify and seek approval from AMO. Ensure remedial measures are properly implemented.	To carry out investigation and to stop construction work within 100m of cultural heritage resource to avoid further impact until AMO are satisfied that the relevant structure has been repaired or stabilized to an acceptable level. Propose remedial measures for the repair and stabilization of cultural heritage resources, up to liaison of moving and rebuilding the relevant structure with the approval of owner (usually the clan members) and AMO.

Event and Action Plan for Landscape and Visual Impact - Construction Phase

Action Level	Environmental Team Leader (ETL)	Independent Evnironmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Non-conformity on one occasion	1. Identify source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement
Repeated Non-conformity	1. Identify source 2. Inform the IEC and the ER 3. Increase monitoring (site audit) frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring (site audit)	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement

Appendix G

(A) Environmental Monitoring Data

(A)(1) Air Quality

(A)(2) Construction Noise

(A)(3) Water Quality

(B) Graphical Plots

(B)(1) Air Quality

(B)(2) Construction Noise

(B)(3) Water Quality

(A) Environmental Monitoring Data

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

24-Hour TSP Monitoring Results

DATE	SAMPLE NUMBER	STANDARD										BLANK				SAMPLE OF FILTER PAPER			Dust 24-Hr TSP in Air (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
		ELAPSED TIME			CHART READING		AVERAGE			FLOW	AIR	SAMPLE NUMBER	WEIGHT (g)			WEIGHT (g)					
		INITIAL	FINAL	(min)	MIN	MAX	CHART READING	TEMP (°C)	PRESS (hPa)	RATE (m³/min)	VOLUME (std m³)		INTIAL	FINAL	DIFF	INITIAL	FINAL	DUST COLLECTION			
KT13(A1(a)) Date of Calibration: 1-Dec-2008 Next Calibration Date: 1-Feb-09 Cal Graph Slope = 42.6924 Intercept = -32.4515																					
31-Dec-08	SC62	1334.18	1357.87	1421.40	31	32	31.5	9.8	1020.3	1.52	2161	NA	3.6459	3.6419	-0.0040	3.5119	3.5603	0.0484	24	144	260
7-Jan-09	SD01	1357.87	1381.25	1402.80	31	32	31.5	17.2	1021.6	1.51	2119	NA	3.6459	3.6419	-0.0040	3.4861	3.5738	0.0877	43	144	260
13-Jan-09	SD43	1381.25	1404.56	1398.60	31	32	31.5	12.7	1029.8	1.52	2126	NA	3.6459	3.6419	-0.0040	3.4813	3.6070	0.1257	61	144	260
20-Jan-09	SD69	1404.56	1427.75	1391.40	31	32	31.5	19.2	1017.3	1.51	2096	NA	3.6459	3.6419	-0.0040	3.4689	3.5360	0.0671	34	144	260
24-Jan-09	SD87	1427.75	1461.72	2038.20	30	31	30.5	11.6	1024.9	1.50	3051	NA	3.6459	3.6419	-0.0040	3.4689	3.5360	0.0671	23	144	260
KT13(A2) Date of Calibration: 1-Dec-2008 Next Calibration Date: 1-Feb-09 Cal Graph Slope = 38.4688 Intercept = -28.0856																					
31-Dec-09	SC61	1309.17	1332.53	1401.60	31	32	31.5	9.8	1020.3	1.57	2205	NA	3.6459	3.6419	-0.0040	3.5064	3.5407	0.0343	17	141	260
7-Jan-09	SC99	1332.53	1356.20	1420.20	31	32	31.5	17.2	1021.6	1.56	2220	NA	3.6459	3.6419	-0.0040	3.4837	3.6021	0.1184	55	141	260
13-Jan-09	SD42	1356.20	1379.90	1422.00	31	32	31.5	12.7	1029.8	1.57	2237	NA	3.6459	3.6419	-0.0040	3.4824	3.5641	0.0817	38	141	260
20-Jan-09	SD68	1379.90	1403.64	1424.40	32	33	32.5	19.2	1017.3	1.58	2258	NA	3.6459	3.6419	-0.0040	3.4777	3.5736	0.0959	44	141	260
24-Jan-09	SD86	1403.64	1439.61	2158.20	32	33	32.5	11.6	1024.1	1.58	3413	NA	3.6459	3.6419	-0.0040	3.4777	3.5736	0.0839	26	141	260

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

Construction Noise Monitoring Data

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Limit Level
Impact Noise Monitoring at KT13(N1)									
27-Dec-08	11:00	58.0	63.2	60.5	60.3	62.1	61.5	61.2	75.0
2-Jan-09	11:00	54.3	49.9	56.7	57.5	54.8	52.3	54.9	75.0
8-Jan-09	15:00	59.0	57.9	59.8	60.7	58.4	56.5	58.9	75.0
14-Jan-09	13:20	57.3	59.7	58.2	57.8	59.0	56.6	58.2	75.0
20-Jan-09	15:00	58.9	56.7	59.7	61.2	58.4	62.7	60.0	75.0
Impact Noise Monitoring at KT13(N2)									
27-Dec-08	13:00	52.6	49.8	52.7	50.9	59.2	49.7	54.0	75.0
2-Jan-09	14:20	54.5	55.0	56.2	54.3	54.5	55.9	55.1	75.0
8-Jan-09	14:20	68.0	46.1	48.5	63.5	51.3	50.5	61.7	75.0
14-Jan-09	11:05	55.9	57.7	56.5	57.4	55.0	53.6	56.2	75.0
20-Jan-09	14:20	54.5	49.0	49.5	48.5	52.0	48.9	51.0	75.0
Impact Noise Monitoring at KT13(N3)									
27-Dec-08	13:40	57.6	60.8	63.7	60.5	63.2	61.9	61.7	75.0
2-Jan-09	13:00	60.5	59.7	57.4	61.2	55.0	57.2	59.0	75.0
8-Jan-09	13:00	54.7	57.6	52.1	55.6	56.3	59.0	56.4	75.0
14-Jan-09	10:25	51.2	53.8	52.9	54.3	53.0	55.1	53.6	75.0
20-Jan-09	13:00	52.9	54.2	60.5	55.5	62.9	58.2	58.8	75.0

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

AUES

Summary of Water Quality Monitoring Results - KT13

Date			27-Dec-08																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	9:30	0.10	22.1	22.1	2.35	2.38	23.8	24.4	4.2	4.4	0	0.0	6.98	7.0	<2	2.0	0.08	0.08	<10	10.0
			22.1		2.41		24.9		4.7		0		6.98		<2		0.08		<10	
W2	9:35	0.12	21.8	21.8	2.68	2.71	27.1	27.5	3.9	3.9	0	0.0	7.01	7.0	<2	2.0	0.01	0.01	<10	10.0
			21.8		2.73		27.8		4.0		0		7.01		<2		0.01		<10	
W3	9:45	0.22	22.3	22.3	2.95	2.97	30.6	30.9	12.5	12.6	0	0.0	6.87	6.9	117	117.0	0.02	0.02	60	60.0
			22.3		2.99		31.1		12.6		0		6.87		117		0.02		60	
W4	9:50	0.10	22.4	22.4	2.16	2.20	22.0	22.2	2.7	2.8	0	0.0	6.93	6.9	<2	2.0	0.02	0.02	<10	10.0
			22.4		2.24		22.4		2.8		0		6.93		<2		0.02		<10	
W5	10:00	0.10	21.9	21.9	3.67	3.70	38.6	38.9	13.1	13.2	0	0.0	7.12	7.1	206	206.0	0.02	0.02	66	66.0
			21.9		3.73		39.1		13.2		0		7.12		206		0.02		66	
W6	10:05	0.25	22.2	22.2	3.25	3.20	31.8	31.3	20.7	20.7	0	0.0	6.85	6.9	162	**162.0**	0.01	0.01	42	42.0
			22.2		3.14		30.7		20.7		0		6.85		162		0.01		42	

Date			29-Dec-08																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	12:50	0.11	22.3	22.3	3.63	3.66	39.9	40.1	6.4	6.4	0	0.0	6.84	6.8	5	5.0	4.18	4.18	17	17.0
			22.3		3.68		40.3		6.4		0		6.84		5		4.18		17	
W2	12:55	0.14	22.5	22.5	2.97	2.92	33.5	33.1	15.6	15.7	0	0.0	6.91	6.9	278	**278.0**	4.36	4.36	69	69.0
			22.5		2.86		32.6		15.7		0		6.91		278		4.36		69	
W3	13:05	0.25	22.2	22.2	3.36	3.32	36.4	36.1	5.6	5.7	0	0.0	6.93	6.9	<2	2.0	4.26	4.26	15	15.0
			22.2		3.27		35.8		5.7		0		6.93		<2		4.26		15	
W4	13:10	0.12	22.4	22.4	3.12	3.11	34.1	33.9	6.9	6.8	0	0.0	6.99	7.0	8	8.0	4.22	4.22	16	16.0
			22.4		3.09		33.6		6.7		0		6.99		8		4.22		16	
W5	13:20	0.13	22.5	22.5	2.88	2.79	31.6	30.7	4.6	4.6	0	0.0	6.81	6.8	7	7.0	4.08	4.08	16	16.0
			22.5		2.69		29.7		4.5		0		6.81		7		4.08		16	
W6	13:25	0.28	22.1	22.1	3.41	3.39	37.2	36.6	23.1	23.0	0	0.0	6.83	6.8	353	**353.0**	4.38	4.38	75	75.0
			22.1		3.36		35.9		22.9		0		6.83		353		4.38		75	

Date			31-Dec-08																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	11:50	0.10	21.8	21.8	2.39	2.33	25.7	25.0	2.6	2.6	0	0.0	6.8	6.8	14	14.0	4.45	4.45	32	32.0
			21.8		2.27		24.2		2.7		0		6.8		14		4.45		32	
W2	11:55	0.12	22.0	22.0	2.65	2.62	27.2	27.1	4.7	4.6	0	0.0	6.8	6.8	13	13.0	4.59	4.59	25	25.0
			22.0		2.58		26.9		4.6		0		6.8		13		4.59		25	
W3	12:05	0.23	21.9	21.9	2.41	2.43	26.8	26.9	5.4	5.4	0	0.0	6.9	6.9	14	14.0	4.63	4.63	25	25.0
			21.9		2.44		27.0		5.4		0		6.9		14		4.63		25	
W4	12:10	0.11	22.2	22.2	2.16	2.22	23.5	23.9	5.0	4.9	0	0.0	6.9	6.9	14	14.0	4.63	4.63	25	25.0
			22.2		2.28		24.3		4.8		0		6.9		14		4.63		25	
W5	12:20	0.12	22.1	22.1	1.98	1.92	21.1	20.7	6.4	6.5	0	0.0	6.9	6.9	13	13.0	4.77	4.77	26	26.0
			22.1		1.85		20.2		6.6		0		6.9		13		4.77		26	
W6	12:30	0.24	22.2	22.2	2.71	2.67	29.6	28.9	9.6	9.6	0	0.0	6.8	6.8	14	14.0	4.69	4.69	27	27.0
			22.2		2.62		28.1		9.5		0		6.8		14		4.69		27	

Date			2-Jan-09																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	9:35	0.10	18.3	18.3	2.65	2.67	28.8	29.2	4.9	4.9	0	0.0	6.7	6.7	3	3.0	4.57	4.57	14	14.0
			18.3		2.69		29.6		4.9		0		6.7		3		4.57		14	
W2	9:40	0.12	18.1	18.1	3.31	3.29	34.3	33.7	6.2	6.2	0	0.0	6.8	6.8	2	2.0	4.81	4.81	16	16.0
			18.1		3.26		33.1		6.1		0		6.8		2		4.81		16	
W3	9:50	0.22	18.2	18.2	2.84	2.89	29.6	30.0	5.0	5.1	0	0.0	6.8	6.8	2	2.0	4.42	4.42	15	15.0
			18.2		2.93		30.4		5.1		0		6.8		2		4.42		15	
W4	9:55	0.11	17.9	17.9	2.95	3.01	30.8	31.2	3.2	3.2	0	0.0	6.9	6.9	3	3.0	4.48	4.48	14	14.0
			17.9		3.07		31.5		3.3		0		6.9		3		4.48		14	
W5	10:05	0.11	18.0	18.0	2.86	2.77	29.9	29.1	4.9	4.9	0	0.0	6.8	6.8	3	3.0	4.65	4.65	15	15.0
			18.0		2.68		28.2		5.0		0		6.8		3		4.65		15	
W6	10:10	0.25	18.2	18.2	3.05	3.11	31.6	32.0	8.6	8.7	0	0.0	6.9	6.9	3	3.0	4.56	4.56	15	15.0
			18.2		3.17		32.4		8.8		0		6.9		3		4.56		15	

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

Summary of Water Quality Monitoring Results - KT13

AUES

Date			5-Jan-09																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	14:40	0.15	19.9	19.9	2.86	2.84	28.5	28.2	2.9	2.9	0	0.0	6.9	6.9	<2	2.0	0.16	0.16	<10	10.0
			19.9		2.81		27.9		2.9		0		6.9		<2		0.16		<10	
W2	14:45	0.13	20.2	20.2	3.13	3.15	36.1	36.5	3.7	3.7	0	0.0	6.8	6.8	3	3.0	0.17	0.17	<10	10.0
			20.2		3.17		36.9		3.6		0		6.8		3		0.17		<10	
W3	14:25	0.18	20.8	20.8	3.01	3.04	31.2	31.5	28.9	28.8	0	0.0	6.8	6.8	51	51.0	6.44	6.44	107	107.0
			20.8		3.06		31.8		28.6		0		6.8		51		6.44		107	
W4	14:15	0.14	18.9	18.9	1.86	1.87	21.0	21.2	6.8	6.8	0	0.0	6.9	6.9	2	2.0	5.99	5.99	11	11.0
			18.9		1.88		21.4		6.8		0		6.9		2		5.99		11	
W5	14:05	0.10	19.5	19.5	2.01	2.09	24.1	25.1	8.4	8.6	0	0.0	7	7.0	11	11.0	2.89	2.89	15	15.0
			19.5		2.16		26.0		8.7		0		7		11		2.89		15	
W6	14:00	0.28	21.3	21.3	2.51	2.55	26.2	26.5	27.4	27.6	0	0.0	6.9	6.9	45	45.0	6.47	6.47	101	101.0
			21.3		2.58		26.7		27.8		0		6.9		45		6.47		101	

Date			7-Jan-09																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	11:50	0.16	16.9	16.9	4.26	4.24	47.1	46.7	2.9	2.9	0	0.0	6.9	6.9	2	2.0	0.08	0.08	<10	10.0
			16.9		4.21		46.3		2.8		0		6.9		2		0.08		<10	
W2	11:55	0.14	17.6	17.6	3.58	3.54	38.6	38.3	3.6	3.7	0	0.0	7	7.0	<2	2.0	0.08	0.08	<10	10.0
			17.6		3.5		37.9		3.7		0		7		<2		0.08		<10	
W3	11:40	0.21	17.8	17.8	2.87	2.90	28.4	28.7	26.9	26.2	0	0.0	7	7.0	40	40.0	4.13	4.13	87	87.0
			17.8		2.93		28.9		25.4		0		7		40		4.13		87	
W4	11:30	0.17	17.4	17.4	1.93	2.00	22.4	22.9	29.8	29.1	0	0.0	7.2	7.2	16	16.0	0.86	0.86	18	18.0
			17.4		2.07		23.3		28.4		0		7.2		16		0.86		18	
W5	11:20	0.12	19.2	19.2	5.33	5.35	54.4	54.7	21.6	22.2	0	0.0	7.3	7.3	23	23.0	2.21	2.21	17	17.0
			19.2		5.37		55.0		22.8		0		7.3		23		2.21		17	
W6	11:15	0.31	18.1	18.1	3.97	3.96	43.9	43.6	31.3	**31.7**	0	0.0	6.9	6.9	39	39.0	4.16	4.16	83	83.0
			18.1		3.94		43.2		32.0		0		6.9		39		4.16		83	

Date			9-Jan-09																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	13:40	0.15	12.5	12.5	3.58	3.64	34.9	35.1	3.2	3.3	0	0.0	6.9	6.9	<2	<2	0.01	0.01	<10	10.0
			12.5		3.69		35.3		3.3		0		6.9		<2		0.01		<10	
W2	13:45	0.13	13.1	13.1	3.87	3.79	37.7	37.4	4.1	4.1	0	0.0	6.9	6.9	11	11.0	<0.01	0.01	10	10.0
			13.1		3.71		37.0		4.1		0		6.9		11		<0.01		10	
W3	13:55	0.17	12.8	12.8	3.65	3.69	35.6	36.1	21.3	21.4	0	0.0	6.8	6.8	85	85.0	0.02	0.02	24	24.0
			12.8		3.73		36.5		21.5		0		6.8		85		0.02		24	
W4	14:05	0.15	13.2	13.2	2.18	2.21	22.9	23.0	7.8	7.8	0	0.0	7	7.0	9	9.0	0.01	0.01	<10	10.0
			13.2		2.24		23.1		7.7		0		7		9		0.01		<10	
W5	14:15	0.11	13.0	13.0	4.07	4.02	39.9	39.5	6.9	6.9	0	0.0	7	7.0	3	3.0	<0.01	0.01	<10	10.0
			13.0		3.96		39.1		6.9		0		7		3		<0.01		<10	
W6	14:20	0.26	13.7	13.7	3.85	3.89	38.0	38.4	24.4	24.6	0	0.0	6.9	6.9	158	**158.0**	0.02	0.02	36	36.0
			13.7		3.92		38.8		24.7		0		6.9		158		0.02		36	

Date			12-Jan-09																	
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pH		SS		Ammonia N		Zinc	
W1	11:45	0.18	16.6	16.6	4.49	4.51	46.2	46.6	6.6	6.7	0	0.0	7	7.0	5	5.0	0.14	0.14	13	13.0
			16.6		4.52		47.0		6.8		0		7		5		0.14		13	
W2	11:50	0.14	16.7	16.7	4.43	4.40	45.5	45.2	7.1	7.1	0	0.0	7.1	7.1	5	5.0	0.15	0.15	<10	10.0
			16.7		4.37		44.9		7.0		0		7.1		5		0.15		<10	
W3	11:30	0.19	15.3	15.3	2.74	2.72	27.2	27.0	83.7	85.1	0	0.0	7	7.0	102	102.0	6.44	6.44	96	96.0
			15.3		2.7		26.7		86.4		0		7		102		6.44		96	
W4	11:20	0.12	15.0	15.0	1.96	1.92	19.3	18.9	121.0	122.0	0	0.0	6.8	6.8	26	26.0	5.82	5.82	14	14.0
			15.0		1.87		18.5		123.0		0		6.8		26		5.82		14	
W5	11:15	0.08	16.3	16.3	1.69	1.73	17.2	17.6	10.6	10.5	0	0.0	6.7	6.7	7	7.0	4.18	4.18	<10	10.0
			16.3		1.76		18.0		10.3		0		6.7		7		4.18		<10	
W6	11:10	0.26	15.4	15.4	2.78	2.82	27.8	28.2	92.5	**91.8**	0	0.0	6.9	6.9	101	**101.0**	6.37	6.37	94	94.0
			15.4		2.86		28.6		91.0		0		6.9		101		6.37		94	

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

Summary of Water Quality Monitoring Results - KT13

AUES

Date			14-Jan-09															
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DOS (%)**		**Turbidity (NTU)**		**Salinity**		**pH**		**SS**		**Ammonia N**		**Zinc**	
W1	11:50	0.16	15.8	15.8	4.77	4.80	48.1	48.6	2.9	3.0	0	0.0	7	7.0	<2	2.0	0.14	0.14	<10	10.0
			15.8		4.82		49.0		3.0		0		7		<2		0.14		<10	
W2	11:55	0.14	16.0	16.0	4.17	4.15	42.3	41.9	3.6	3.8	0	0.0	7	7.0	<2	2.0	0.11	0.11	<10	10.0
			16.0		4.12		41.4		3.9		0		7		<2		0.11		<10	
W3	11:40	0.23	16.3	16.3	3.11	3.16	31.7	32.2	18.1	18.5	0	0.0	6.9	6.9	33	33.0	5	5.00	62	62.0
			16.3		3.2		32.6		18.9		0		6.9		33		5		62	
W4	11:30	0.13	13.8	13.8	2.17	2.16	20.9	20.6	7.3	7.2	0	0.0	7	7.0	8	8.0	9.71	9.71	14	14.0
			13.8		2.14		20.2		7.1		0		7		8		9.71		14	
W5	11:20	0.09	16.8	16.8	2.75	2.79	28.3	29.0	5.1	5.3	0	0.0	7.2	7.2	8	8.0	4.64	4.64	16	16.0
			16.8		2.82		29.6		5.4		0		7.2		8		4.64		16	
W6	11:15	0.31	16.5	16.5	3.22	3.24	32.9	33.2	19.5	19.0	0	0.0	6.9	6.9	35	35.0	5.28	5.28	77	77.0
			16.5		3.26		33.4		18.4		0		6.9		35		5.28		77	

Date			16-Jan-09															
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DOS (%)**		**Turbidity (NTU)**		**Salinity**		**pH**		**SS**		**Ammonia N**		**Zinc**	
W1	12:10	0.14	14.6	14.6	3.98	4.01	40.5	40.9	4.6	4.6	0	0.0	7	7.0	<2	2.0	0.03	0.03	15	15.0
			14.6		4.03		41.2		4.6		0		7		<2		0.03		15	
W2	12:15	0.16	13.9	13.9	3.84	3.80	39.8	39.5	4.9	5.0	0	0.0	6.9	6.9	<2	2.0	0.01	0.01	20	20.0
			13.9		3.76		39.2		5.0		0		6.9		<2		0.01		20	
W3	12:25	0.18	15.1	15.1	3.29	3.31	33.7	34.0	26.5	26.6	0	0.0	6.8	6.8	1910	1910.0	4.33	4.33	78	78.0
			15.1		3.33		34.3		26.6		0		6.8		1910		4.33		78	
W4	12:35	0.13	14.8	14.8	2.49	2.54	25.6	25.8	5.7	5.7	0	0.0	7.1	7.1	<2	2.0	0.02	0.02	<10	10.0
			14.8		2.58		26.0		5.7		0		7.1		<2		0.02		<10	
W5	12:45	0.11	14.9	14.9	4.25	4.18	41.8	42.1	6.4	6.5	0	0.0	7	7.0	14	14.0	0.01	0.01	<10	10.0
			14.9		4.11		42.4		6.6		0		7		14		0.01		<10	
W6	12:50	0.24	15.4	15.4	3.86	3.93	39.7	40.3	27.5	27.6	0	0.0	6.9	6.9	1650	**1650.0**	7.52	7.52	73	73.0
			15.4		3.99		40.9		27.7		0		6.9		1650		7.52		73	

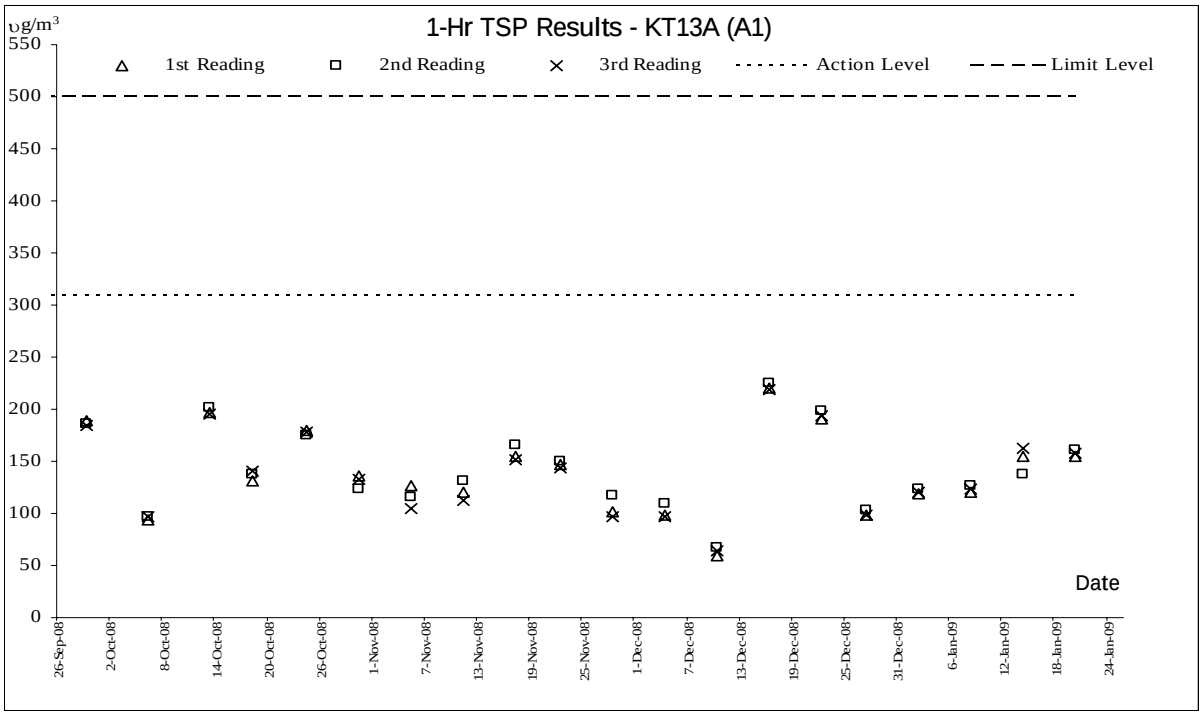
Date			19-Jan-09															
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DOS (%)**		**Turbidity (NTU)**		**Salinity**		**pH**		**SS**		**Ammonia N**		**Zinc**	
W1	11:35	0.18	20.1	20.1	3.77	3.75	39.2	39.0	2.9	3.0	0	0.0	7.3	7.3	<2	2.0	0.13	0.13	<10	10.0
			20.1		3.73		38.7		3.0		0		7.3		<2		0.13		<10	
W2	11:40	0.13	20.3	20.3	3.89	3.91	40.5	41.1	3.5	3.5	0	0.0	7.3	7.3	4	4.0	0.15	0.15	<10	10.0
			20.3		3.92		41.7		3.5		0		7.3		4		0.15		<10	
W3	11:20	0.21	20.4	20.4	3.56	3.53	37.8	37.5	76.4	77.2	0	0.0	7.2	7.2	97	97.0	24.1	24.10	111	111.0
			20.4		3.5		37.2		77.9		0		7.2		97		24.1		111	
W4	11:05	0.16	19.6	19.6	1.89	1.87	20.4	20.2	56.9	56.0	0	0.0	6.8	6.8	16	16.0	63	63.00	21	21.0
			19.6		1.84		20.0		55.1		0		6.8		16		63		21	
W5	10:55	0.09	19.8	19.8	3.1	3.06	32.3	31.9	16.0	16.4	0	0.0	6.9	6.9	24	24.0	14.2	14.20	43	43.0
			19.8		3.02		31.5		16.8		0		6.9		24		14.2		43	
W6	10:50	0.33	20.5	20.5	3.88	3.82	40.3	39.6	82.3	**82.6**	0	0.0	7.1	7.1	85	**85.0**	24	24.00	103	103.0
			20.5		3.75		38.9		82.9		0		7.1		85		24		103	

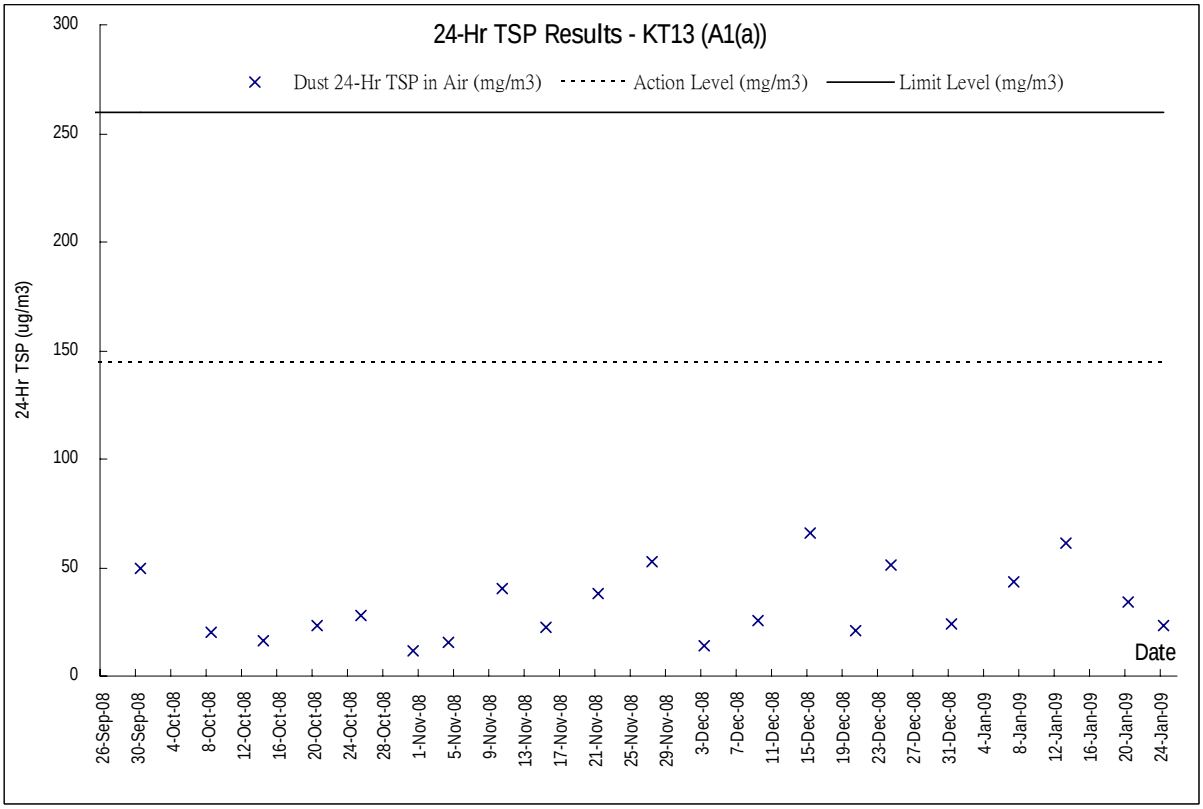
Date			21-Jan-09															
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DOS (%)**		**Turbidity (NTU)**		**Salinity**		**pH**		**SS**		**Ammonia N**		**Zinc**	
W1	12:40	0.17	22.3	22.3	5.05	5.09	60.4	60.8	12.8	13.1	0	0.0	7.2	7.2	5	5.0	0.21	0.21	<10	10.0
			22.3		5.12		61.2		13.3		0		7.2		5		0.21		<10	
W2	12:45	0.13	22.5	22.5	4.62	4.66	56.3	56.7	7.6	7.8	0	0.0	7.1	7.1	5	5.0	0.2	0.20	<10	10.0
			22.5		4.69		57.1		7.9		0		7.1		5		0.2		<10	
W3	12:30	0.25	22.1	22.1	3.19	3.22	43.7	44.1	62.9	62.2	0	0.0	7.2	7.2	57	57.0	4.55	4.55	88	88.0
			22.1		3.24		44.5		61.4		0		7.2		57		4.55		88	
W4	12:20	0.19	20.4	20.4	2.23	2.26	29.5	29.8	17.5	17.6	0	0.0	7.2	7.2	13	13.0	3.57	3.57	16	16.0
			20.4		2.28		30.1		17.7		0		7.2		13		3.57		16	
W5	12:15	0.07	20.7	20.7	1.82	1.90	21.5	22.2	10.4	10.8	0	0.0	6.9	6.9	15	15.0	13.1	13.10	23	23.0
			20.7		1.97		22.9		11.1		0		6.9		15		13.1		23	
W6	12:10	0.32	21.6	21.6	2.89	2.90	35.3	35.5	31.4	**31.2**	0	0.0	7.1	7.1	42	42.0	4.6	4.60	67	67.0
			21.6		2.9		35.6		31.0		0		7.1		42		4.6		67	

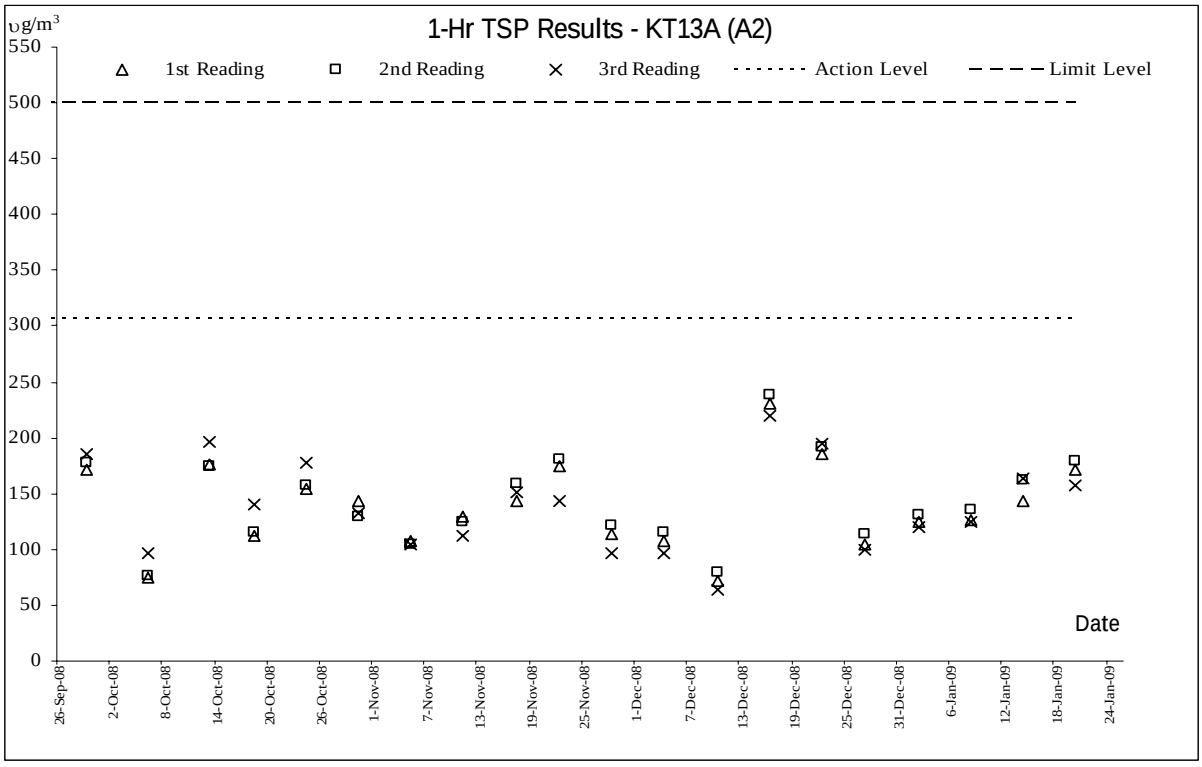
Date			23-Jan-09															
Location	**Time**	**Depth (m)**	**Temp (oC)**		**DO (mg/L)**		**DOS (%)**		**Turbidity (NTU)**		**Salinity**		**pH**		**SS**		**Ammonia N**		**Zinc**	
W1	11:25	0.14	18.9	18.9	4.88	4.91	52.6	53.1	6.4	6.7	0	0.0	7	7.0	4	4.0	0.15	0.15	<10	10.0
			18.9		4.94		53.6		6.9		0		7		4		0.15		<10	
W2	11:35	0.12	18.9	18.9	4.93	4.97	53.9	54.4	7.3	7.2	0	0.0	6.9	6.9	6	6.0	0.17	0.17	<10	10.0
			18.9		5.01		54.8		7.1		0		6.9		6		0.17		<10	
W3	11:15	0.22	18.3	18.3	2.97	2.91	35.3	34.9	46.9	46.6	0	0.0	6.8	6.8	65	65.0	5.03	5.03	105	105.0
			18.3		2.84		34.5		46.3		0		6.8		65		5.03		105	
W4	11:00	0.17	17.6	17.6	2.12	2.15	22.2	22.6	14.3	14.2	0	0.0	7.3	7.3	9	9.0	4.53	4.53	17	17.0
			17.6		2.17		22.9		14.0		0		7.3		9		4.53		17	
W5	10:50	0.09	18.5	18.5	4.21	4.23	44.9	45.2	14.2	14.6	0	0.0	7.1	7.1	20	20.0	6.39	6.39	24	24.0
			18.5		4.24		45.4		14.9		0		7.1		20		6.39		24	
W6	10:45	0.36	18.7	18.7	2.85	2.83	30.7	30.4	50.4	**50.7**	0	0.0	7	7.0	72	72.0	4.84	4.84	108	108.0
			18.7		2.8		30.0		50.9		0		7		72		4.84		108	

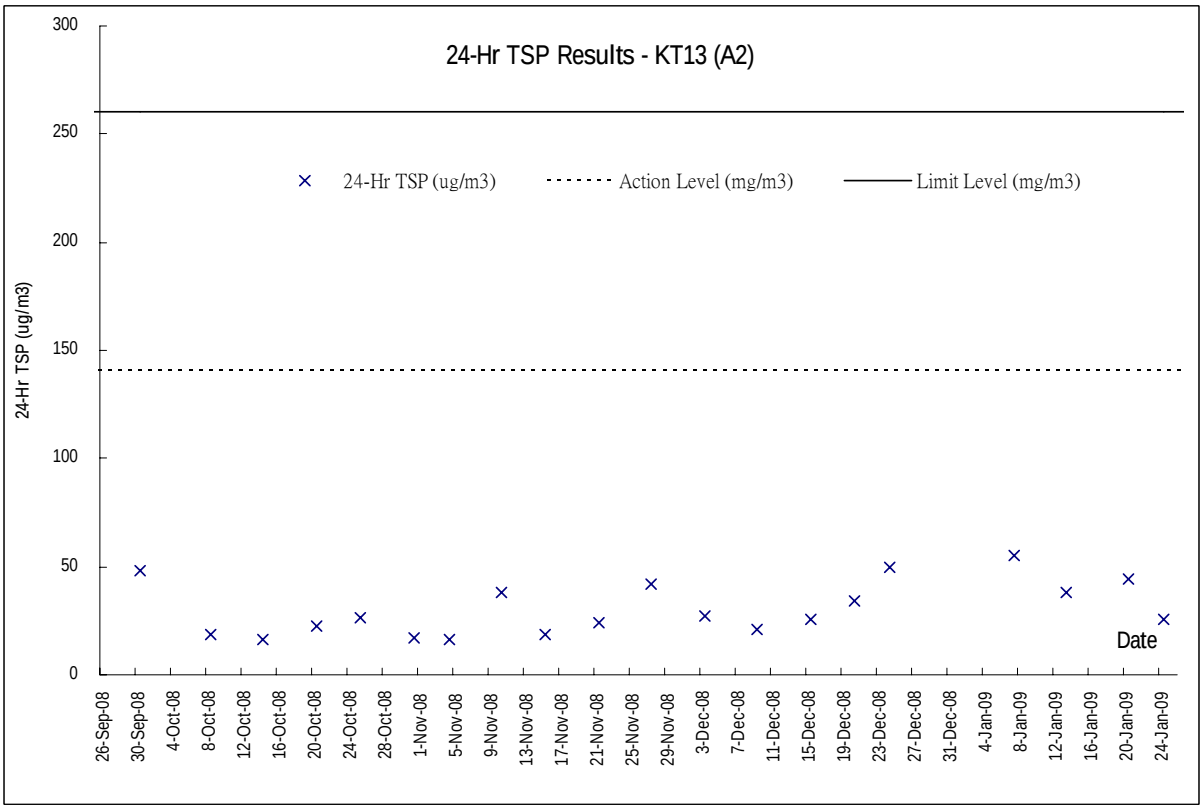
(B) Graphical Plots

(B)(1) Air Quality

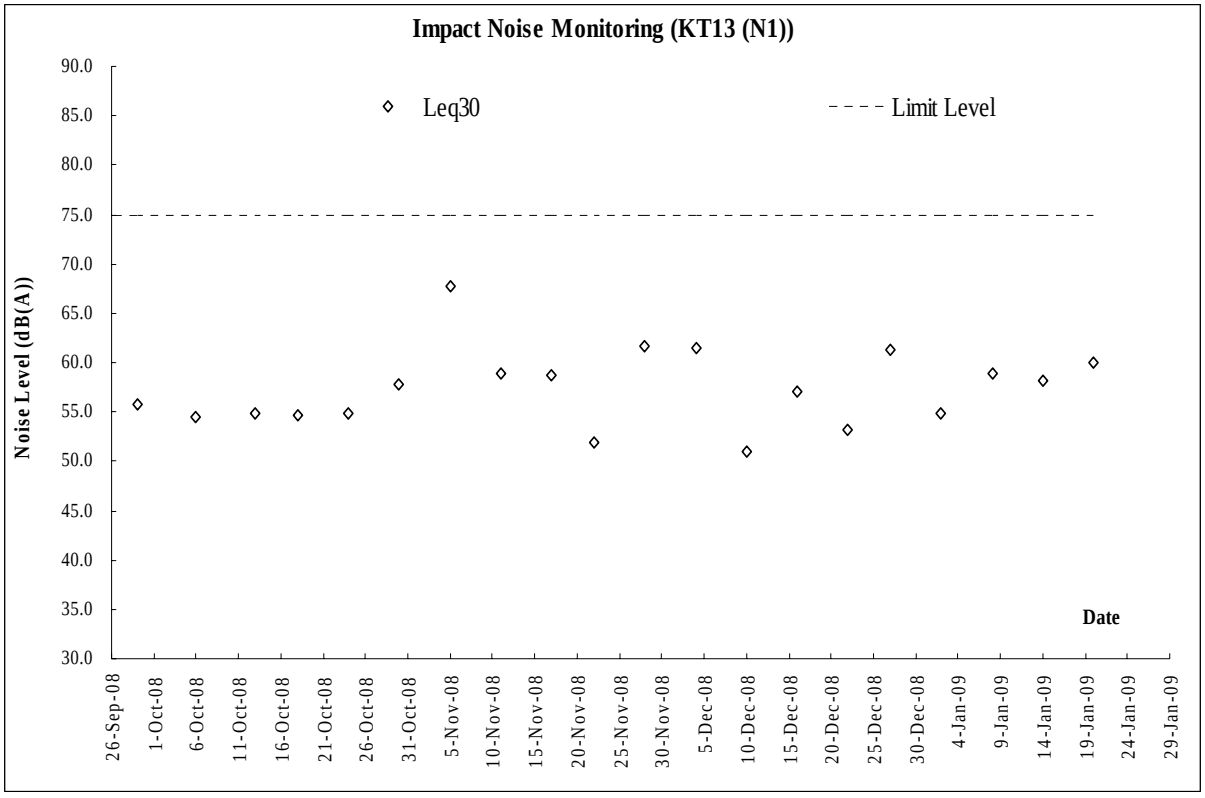


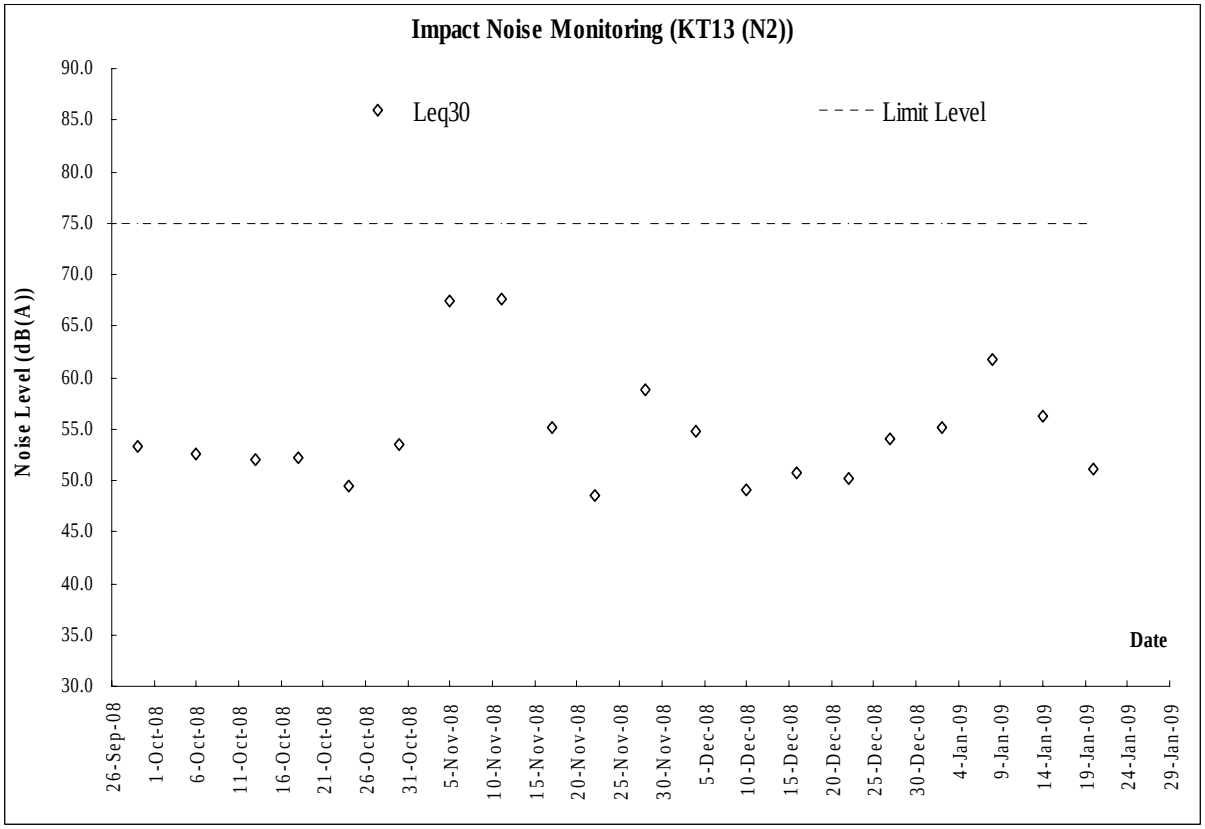


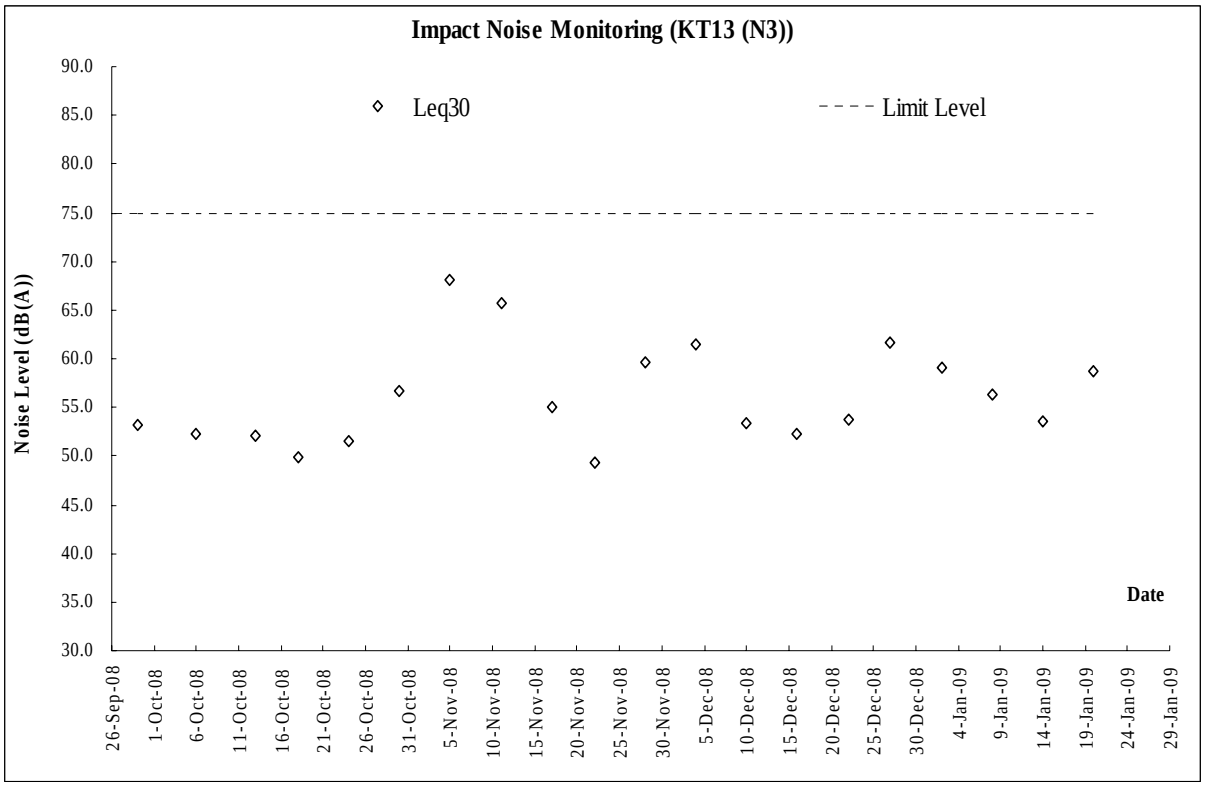

1-Hr TSP Results - KT13A (A2)
υg/m³
1st Reading
2nd Reading
3rd Reading
Action Level
Limit Level
550
500
450
400
350
300
250
200
150
100
50
0
Date
26-Sep-08
2-Oct-08
8-Oct-08
14-Oct-08
20-Oct-08
26-Oct-08
1-Nov-08
7-Nov-08
13-Nov-08
19-Nov-08
25-Nov-08
1-Dec-08
7-Dec-08
13-Dec-08
19-Dec-08
25-Dec-08
31-Dec-08
6-Jan-09
12-Jan-09
18-Jan-09
24-Jan-09


24-Hr TSP Results - KT13 (A2)
24-Hr TSP (ug/m3)
24-Hr TSP (ug/m3)
Action Level (mg/m3)
Limit Level (mg/m3)
300
250
200
150
100
50
0
Date
26-Sep-08
30-Sep-08
4-Oct-08
8-Oct-08
12-Oct-08
16-Oct-08
20-Oct-08
24-Oct-08
28-Oct-08
1-Nov-08
5-Nov-08
9-Nov-08
13-Nov-08
17-Nov-08
21-Nov-08
25-Nov-08
29-Nov-08
3-Dec-08
7-Dec-08
11-Dec-08
15-Dec-08
19-Dec-08
23-Dec-08
27-Dec-08
31-Dec-08
4-Jan-09
8-Jan-09
12-Jan-09
16-Jan-09
20-Jan-09
24-Jan-09

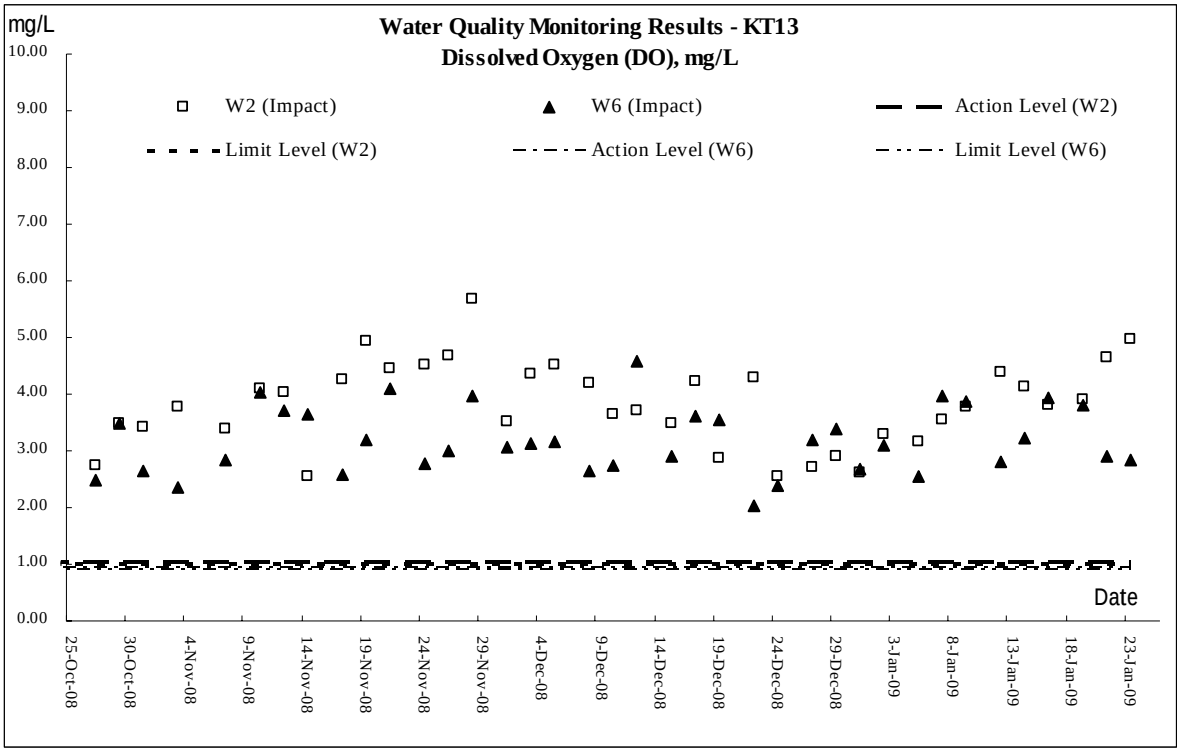
(B)(2) Construction Noise

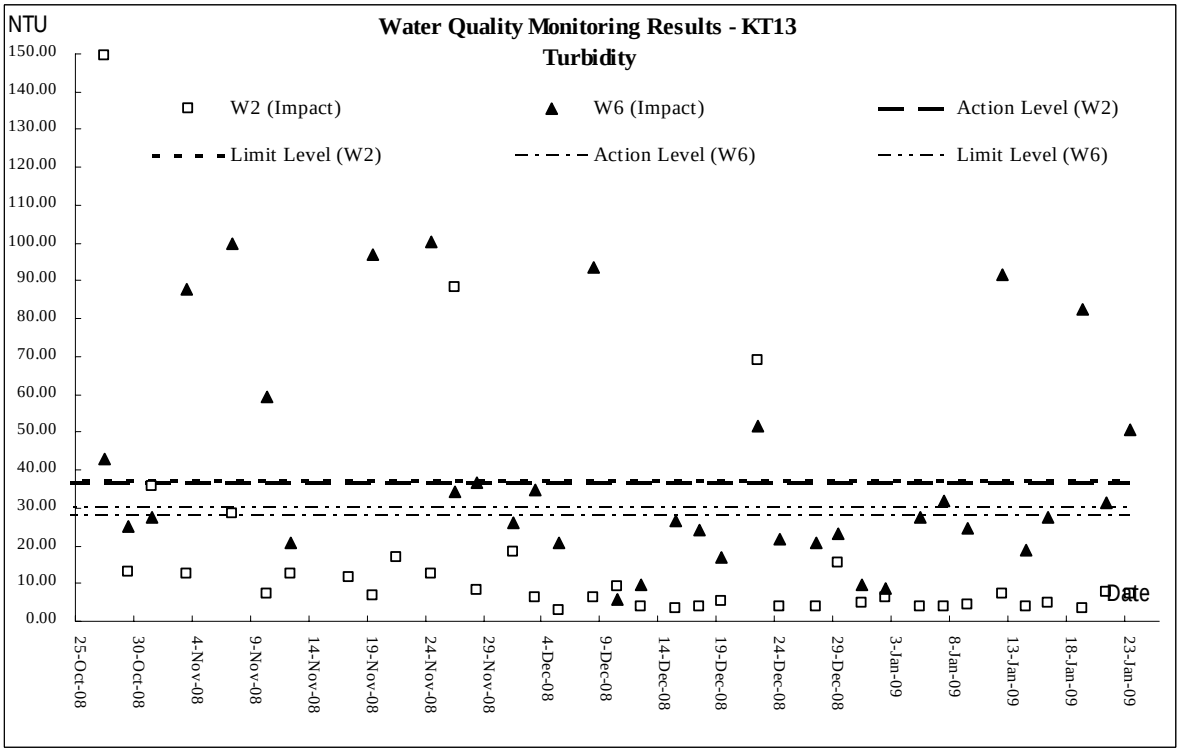


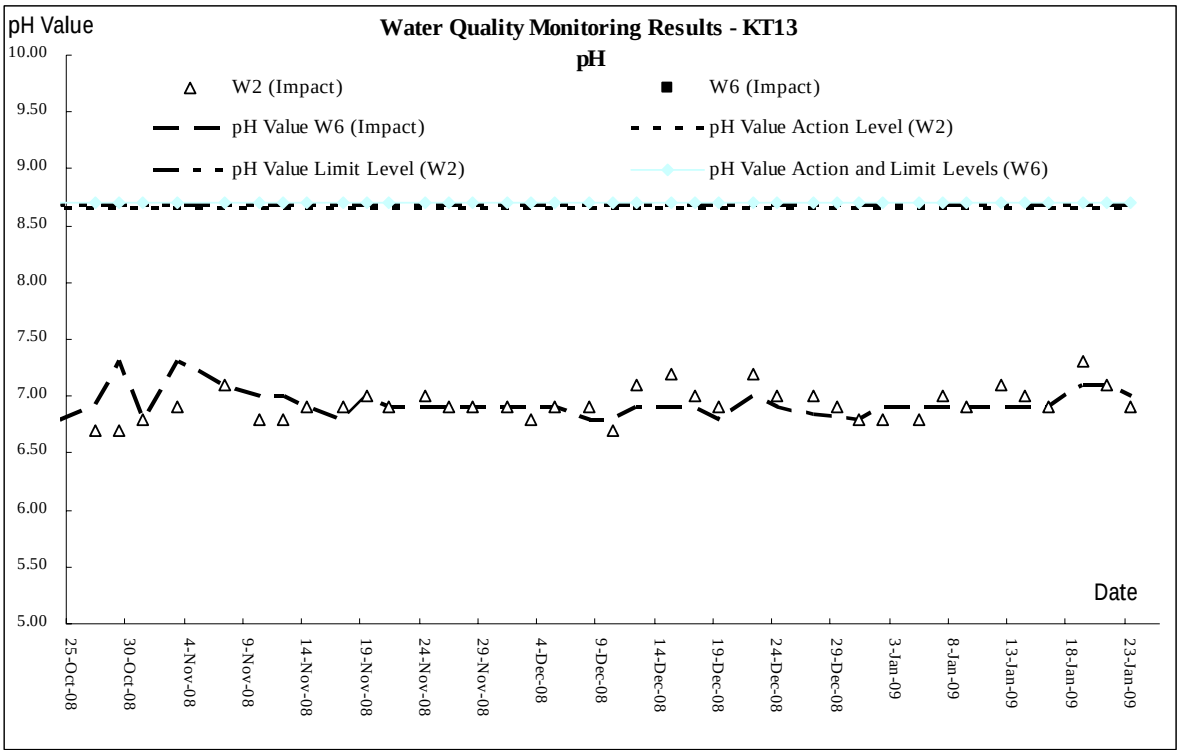


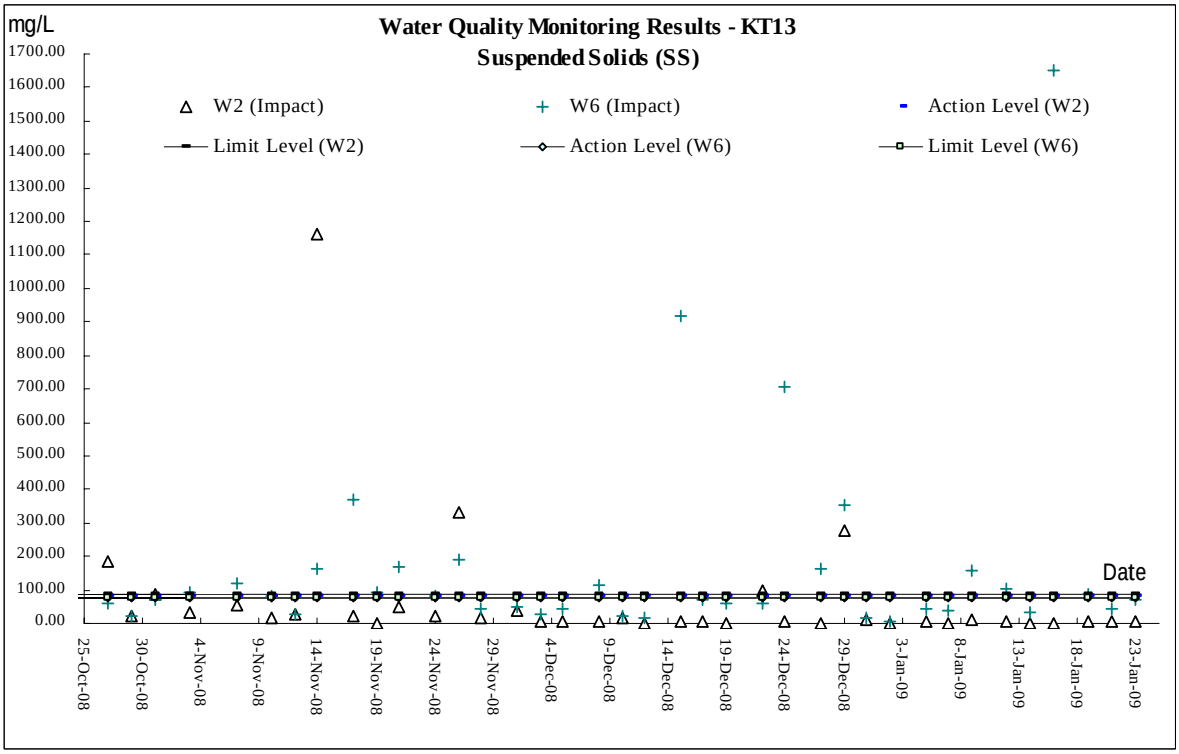

Impact Noise Monitoring (KT13 (N3))
Leq30
Limit Level
Noise Level (dB(A))
Date
90.0
85.0
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
26-Sep-08
1-Oct-08
6-Oct-08
11-Oct-08
16-Oct-08
21-Oct-08
26-Oct-08
31-Oct-08
5-Nov-08
10-Nov-08
15-Nov-08
20-Nov-08
25-Nov-08
30-Nov-08
5-Dec-08
10-Dec-08
15-Dec-08
20-Dec-08
25-Dec-08
30-Dec-08
4-Jan-09
9-Jan-09
14-Jan-09
19-Jan-09
24-Jan-09
29-Jan-09

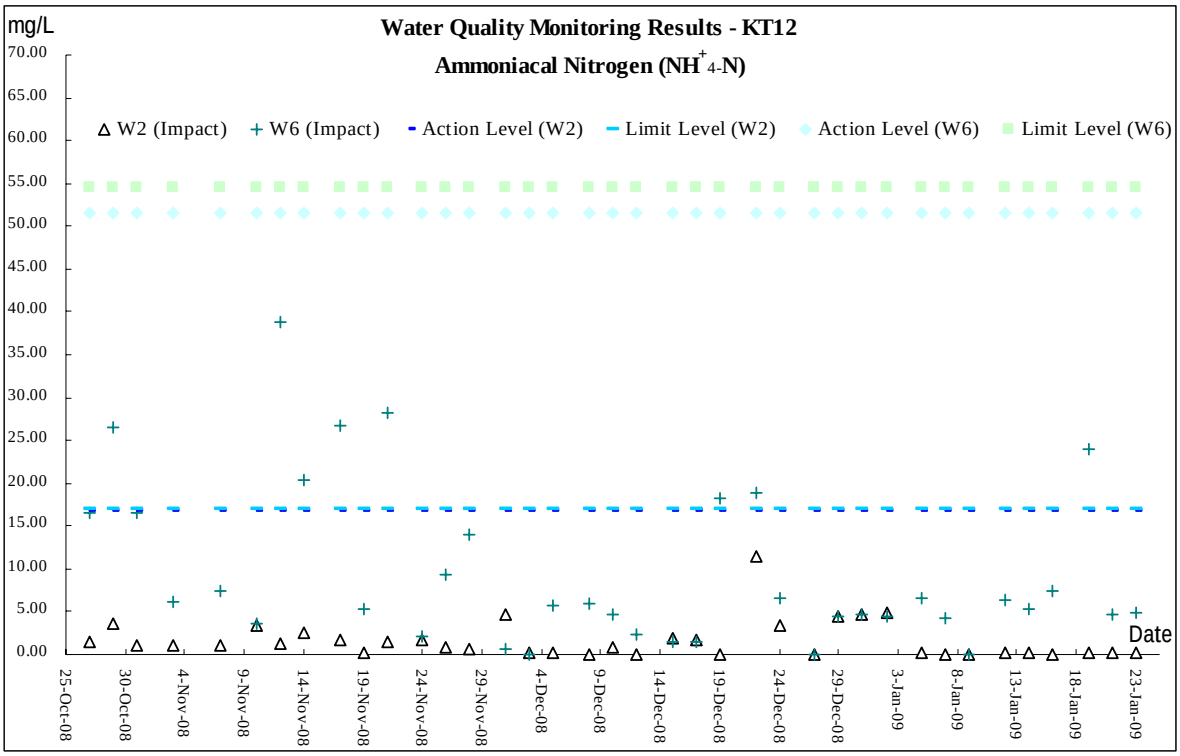
(B)(3) Water Quality

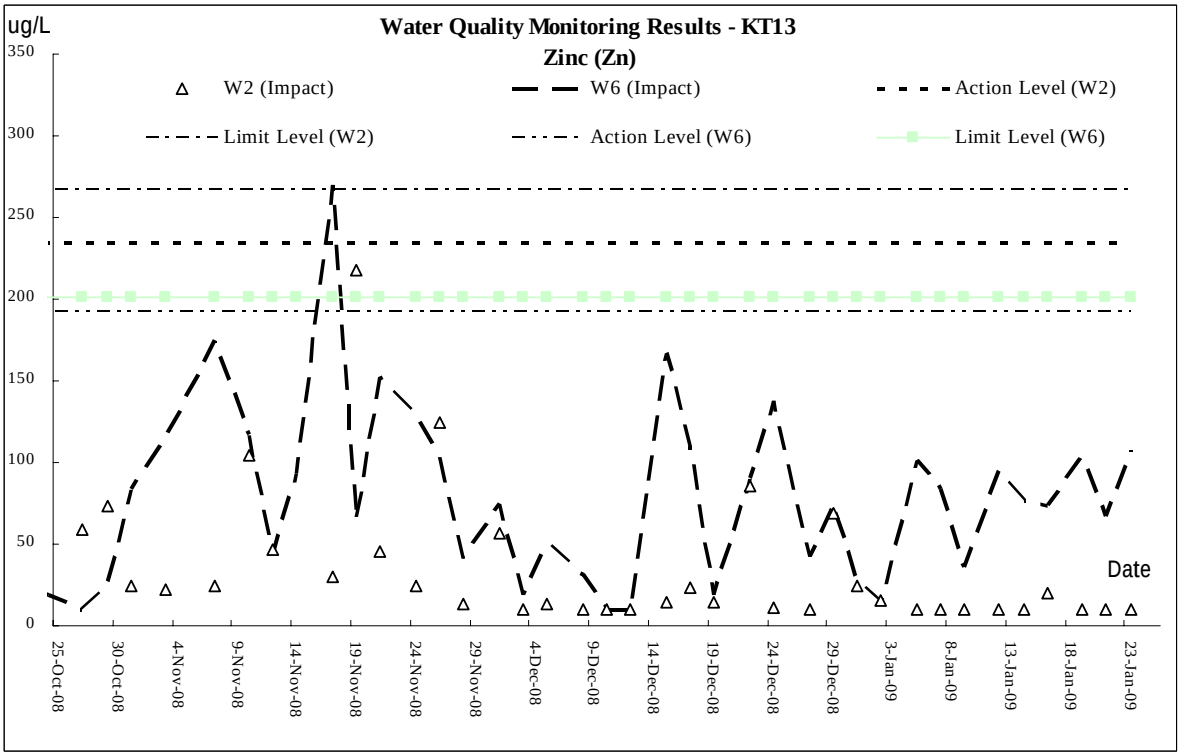





Water Quality Monitoring Results - KT13
pH
pH Value
W2 (Impact)
W6 (Impact)
pH Value W6 (Impact)
pH Value Action Level (W2)
pH Value Limit Level (W2)
pH Value Action and Limit Levels (W6)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
Date
25-Oct-08
30-Oct-08
4-Nov-08
9-Nov-08
14-Nov-08
19-Nov-08
24-Nov-08
29-Nov-08
4-Dec-08
9-Dec-08
14-Dec-08
19-Dec-08
24-Dec-08
29-Dec-08
3-Jan-09
8-Jan-09
13-Jan-09
18-Jan-09
23-Jan-09


Water Quality Monitoring Results - KT13
Suspended Solids (SS)
mg/L
W2 (Impact)
W6 (Impact)
Action Level (W2)
Limit Level (W2)
Action Level (W6)
Limit Level (W6)
1700.00
1600.00
1500.00
1400.00
1300.00
1200.00
1100.00
1000.00
900.00
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
Date
25-Oct-08
30-Oct-08
4-Nov-08
9-Nov-08
14-Nov-08
19-Nov-08
24-Nov-08
29-Nov-08
4-Dec-08
9-Dec-08
14-Dec-08
19-Dec-08
24-Dec-08
29-Dec-08
3-Jan-09
8-Jan-09
13-Jan-09
18-Jan-09
23-Jan-09


mg/L
Water Quality Monitoring Results - KT12
Ammoniacal Nitrogen (NH^{+}_{4}-N)
W2 (Impact)
W6 (Impact)
Action Level (W2)
Limit Level (W2)
Action Level (W6)
Limit Level (W6)
70.00
65.00
60.00
55.00
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Date
25-Oct-08
30-Oct-08
4-Nov-08
9-Nov-08
14-Nov-08
19-Nov-08
24-Nov-08
29-Nov-08
4-Dec-08
9-Dec-08
14-Dec-08
19-Dec-08
24-Dec-08
29-Dec-08
3-Jan-09
8-Jan-09
13-Jan-09
18-Jan-09
23-Jan-09


ug/L
Water Quality Monitoring Results - KT13
Zinc (Zn)
W2 (Impact)
W6 (Impact)
Action Level (W2)
Limit Level (W2)
Action Level (W6)
Limit Level (W6)
350
300
250
200
150
100
50
0
Date
25-Oct-08
30-Oct-08
4-Nov-08
9-Nov-08
14-Nov-08
19-Nov-08
24-Nov-08
29-Nov-08
4-Dec-08
9-Dec-08
14-Dec-08
19-Dec-08
24-Dec-08
29-Dec-08
3-Jan-09
8-Jan-09
13-Jan-09
18-Jan-09
23-Jan-09

Appendix H

Photographic Records of

Ecological Monitoring of Vegetation

(Not Used)

Appendix I

Physical, Human and Cultural Landscape Resources at KT13

Current Situation of Physical, Human and Cultural Landscape Resources at KT13, inspected on 5 and 23 January 2009

The physical resources that will be affected during the Construction Phase and Operational Phase, together with their sensitivity to change, are described below. The locations of the baseline landscape resources are mapped in Drawing no. LR-001. The Landscape Resources in direct conflict with the Project are mapped together with their extent outside study boundary for integrity of information. Photo views illustrating the landscape resources of the study area are illustrated in Drawing Nos. PR-001 to 002 inclusive. For ease of reference and co-ordination between text, tables and figures each landscape resources is given an identity number.

Table compares the baseline study and the current situation for KT13: (Landscape Resources)

Section in EIA Report	Identify number – Landscape Resources	Photo No	Baseline Study, Environmental Impact Assessment Final Report [382047/E/EIA/Issue 9]	Current Situation
Drainage				
10.7.3	LR1 – River/ Stream	A1 - A5	There is a semi-natural drainage features (the Ma On Kong Channel) in the study area with untrained natural upstream and partial trained downstream with a total length of 800m. The Channel originates from the South-West of the valley and discharge to the existing Primary Channel by Kam Ho Road running through and along the site area spanning across majority of the river valley, together with the existing vegetations forming the central part of riparian landscape network. They have medium landscape value and sensitive to change.	Minor change due to channel excavation and preparation work within site boundary
Fish Pond				
10.7.4	LR2.1 (Fish Pond) within site boundary LR2.2 (Fish Pond) outside site boundary	A6 A7	There are 4 numbers of fallowed fish ponds at the upstream of the Ma On Kong Channel. A chain of fish ponds near downstream but distant from the Channel is noted. The fish ponds cover area of in total 23,000 m2. Most of them are heavily colonized by aquatic plants, which attribute to their low visual quality as a water landscape element. They have low landscape value and sensitive to change.	Minor change due to construction of structures within site boundary.

Marsh				
10.7.5	LR3 (Marsh)	A8	It comprises 2 marshes at the upstream channel of the Channel. They are inundated lowland heavily colonized with wetland aquatic plants. They have low landscape value and sensitive to change.	Remain the same as the baseline
Vegetation				
10.7.7	LR4 (Woodland/ Wooded Area)	A9 A10	It comprises two major communities of woodland/ wooded area. One is dense natural woodland stretching across the Conservation Area and area behind Ma On Kong and consists approximate 450 numbers of trees based on visual estimation. The trees are mainly native species and mature in size. It is dominated by *Schefflera octophylla, Pinus massoniana, Aporusa chinensis, Celtis sinensis, Bridelia tomentosa, Cinnamomum cmaphora, Rhus chinensis* and *Phus succedanes*. Another one is a natural more sparse riparian wooded area at upstream of the Channel and consists approximate 60 numbers of trees based on visual estimation. The trees are mainly pioneer species and poorer in form and maturity. It is dominated by Ficus hispide and Macaranga tanarius. They have high landscape value and sensitivity to change.	Remain the same as the baseline
10.7.8	LR5 (Orchard/ Horticultural Trees)	A11	It comprises two groups of trees at downstream below Ma On Kong and north of Ho Pui Amongst there are approximate 400 numbers of trees based on visual estimation. They are fruit trees and landscape plants of horticultural practices. It is dominated by *Dimocarpus longan, Delonix regian, Roystonea regia and Pachira macrocarpa*. For their anthropogenic and not permanent in nature, they have medium landscape value and sensitivity to change.	Remain the same as the baseline
10.7.9	LR6 (Low-Lying Agricultural Land/ Fallowed Land)	A12	It comprises fallowed land and agricultural land in low rate of uses. The vegetation is mainly grass and sedge with mosaics of shrubs approaching the Channel. It fills up the about half of the existing landscape within the study area. They have low landscape value and sensitivity to change.	Remain the same as the baseline.

Sitting-Out Area				
10.7.10	LR7 (Sitting-Out Area at Ma On Kong)	A13	It is located at the Ma On Kong next to the access road. It is a small sitting-out area primarily hard-paved with only 3 amenity trees and on pavilion. It has low landscape value and sensitivity to change.	Remain the same as the baseline
Landscape Character Areas				
10.7.12	LCA1 (Agricultural Landscape Character Area)	B1 & B2	This comprises fallowed land & agricultural land not in active uses. This character area is flat and gentle sloping in landform and vegetated with grass of various heights. It forms the majority of the landscape character of the entire river valley and the connecting landscape element between other landscape character areas. The sensitivity to change of this area is low.	Remain the same as the baseline
10.7.13	LCA2 (Woodland Landscape Character Area)	B3	This is natural woodland between southern Ma On Kong and the Channel extending up to the access road behind Ma On Kong. The trees are mature in size forming a close woodland landscape. It is the location of egretry of conservation importance. The sensitivity to change of this area is high.	Remain the same as the baseline
10.7.14	LCA3 (River/ Stream Landscape Character Area)	B4 – B7	This is the main stream of the Channel in associate with its riparian vegetation. It meanders through the river valley landscape. It is used as a receptor of agricultural effluent from poultry farm around upstream, which contribute to the polluted appearance of the character area around upstream. The sensitivity to change of this area is medium.	Minor change due to site clearance and preparation work within site boundary
10.7.15	LCA4 (Fish Pond Landscape Area)	B8	This comprises a number of fish ponds of various sizes distributed about the Channel. Most of them are abandoned or with limited uses and colonized with aquatic plants. The sensitivity to change of this area is medium.	Minor change due to construction of structures within site boundary.
10.7.16	LCA5 (Village Landscape Character Area)	B9 & B10	This comprises the four major village types rural settlement encompassing tai Kek, Ma On Kong, Ho Pui and north of Ho Pui. Except Tai Kek which is less revitalized and actively resided, all other three are actively resided. This area is lightly urbanized with low rise village house. The sensitivity	Remain the same as the baseline

			to change of this area is low.	
10.7.17	LCA6 (Industrial Landscape Character Area)	B11 & B12	This comprise collection of slummy-built temporary structure and open storage uses land, which are characterized with metallic hoarding and used for poultry, recycling, vehicle repairing etc. The sensitivity to change of this area is low.	Remain the same as the baseline
10.7.18	LCA7 (Nullah Landscape Character Area)	B13	This is the trained nullah next to Kam Ho Road. It is the primary tributary connecting and receiving outflow from the Ma On Kong Channel. The area is man-made and with poor and monotonous riverside vegetation. The sensitivity to change of this area is low.	Remain the same as the baseline

10.7.19 Visual Character

The visual quality of the river valley of Ma On Kong Channel is semi-natural based on combination of rural landscape elements including agricultural land, village houses, woodland and pond and stream and industrial landscape elements including open storage and temporary structures. Interspersed landscape elements on general flat landform with minor undulation render numerous small enclosed views. No major vista and high quality open view identified.

10.7.20 Visual Sensitive Receiver (VSR)

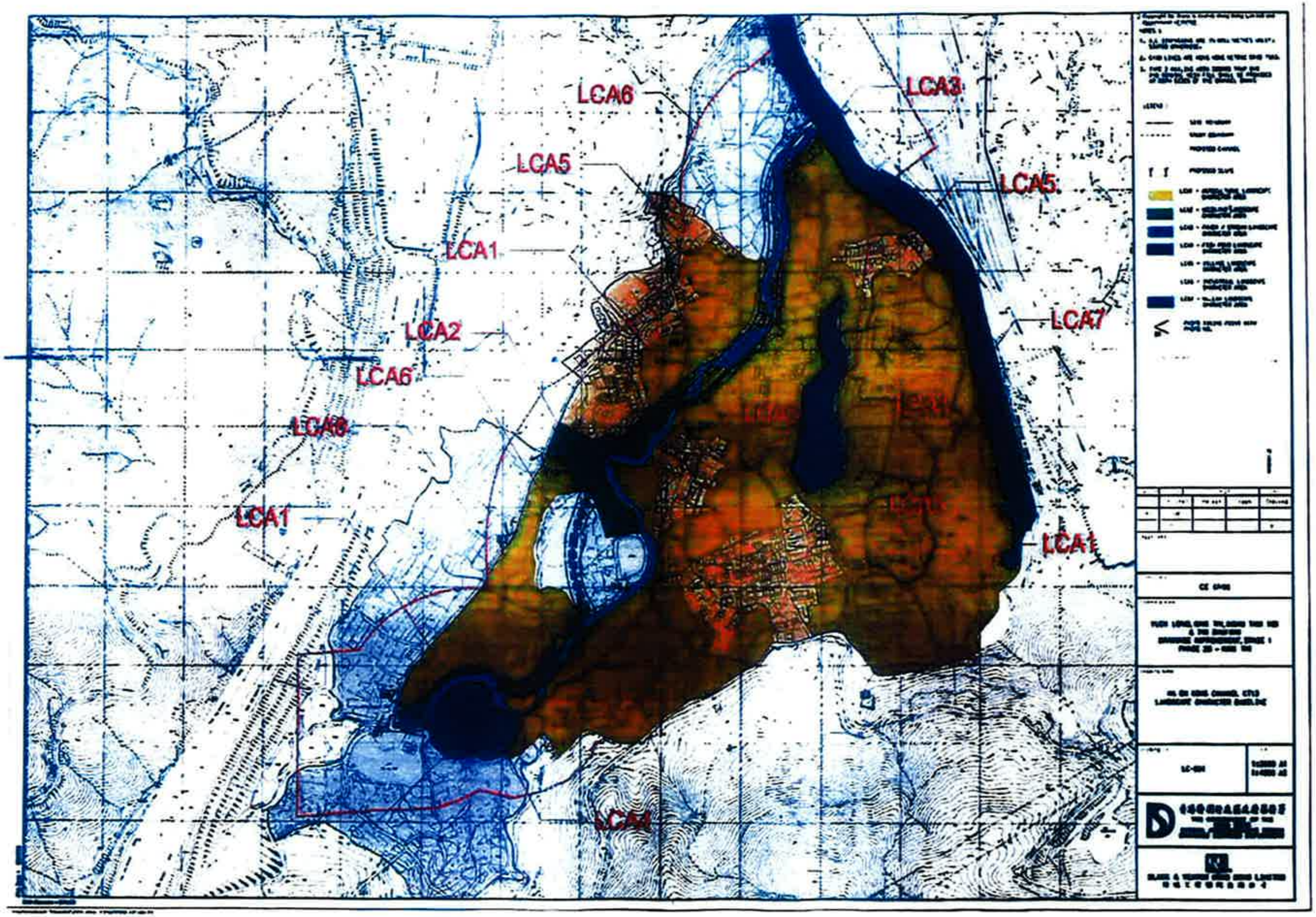
Within the ZVI, a number of key Visual Sensitive Receivers (VSRs) have been identified. These VSRs are mapped in Drawing V-001. They are listed, together with their sensitivity, in Table 10/5. Photo views illustrating the VSRs are illustrated in Drawing nos. PV-001 to 002 inclusive. For the ease of reference, each VSR is given an identity number, which is used in the text, tables and figures.

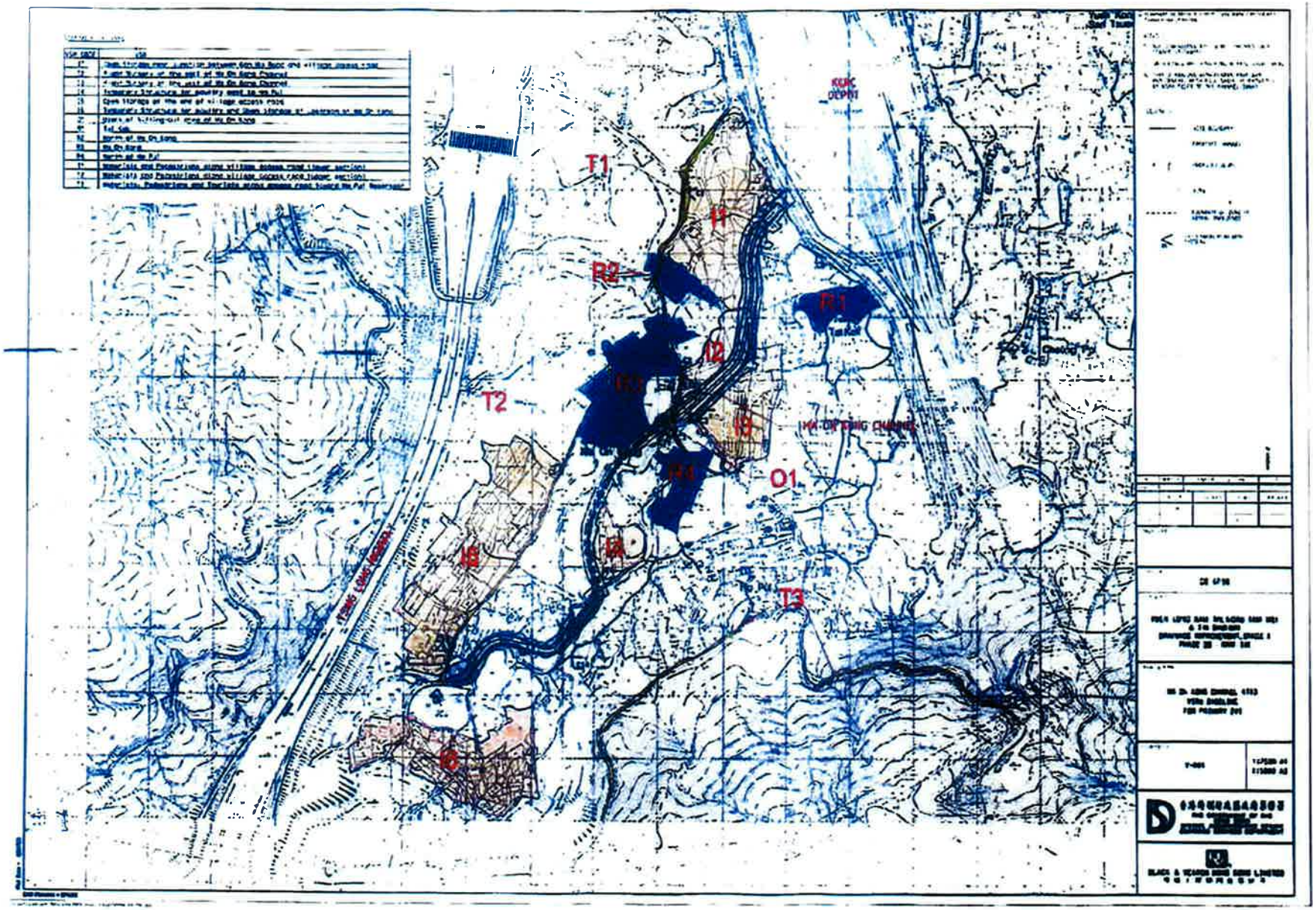
Table compares the baseline study and the current situation for KT13: (Visual Sensitive Receiver)

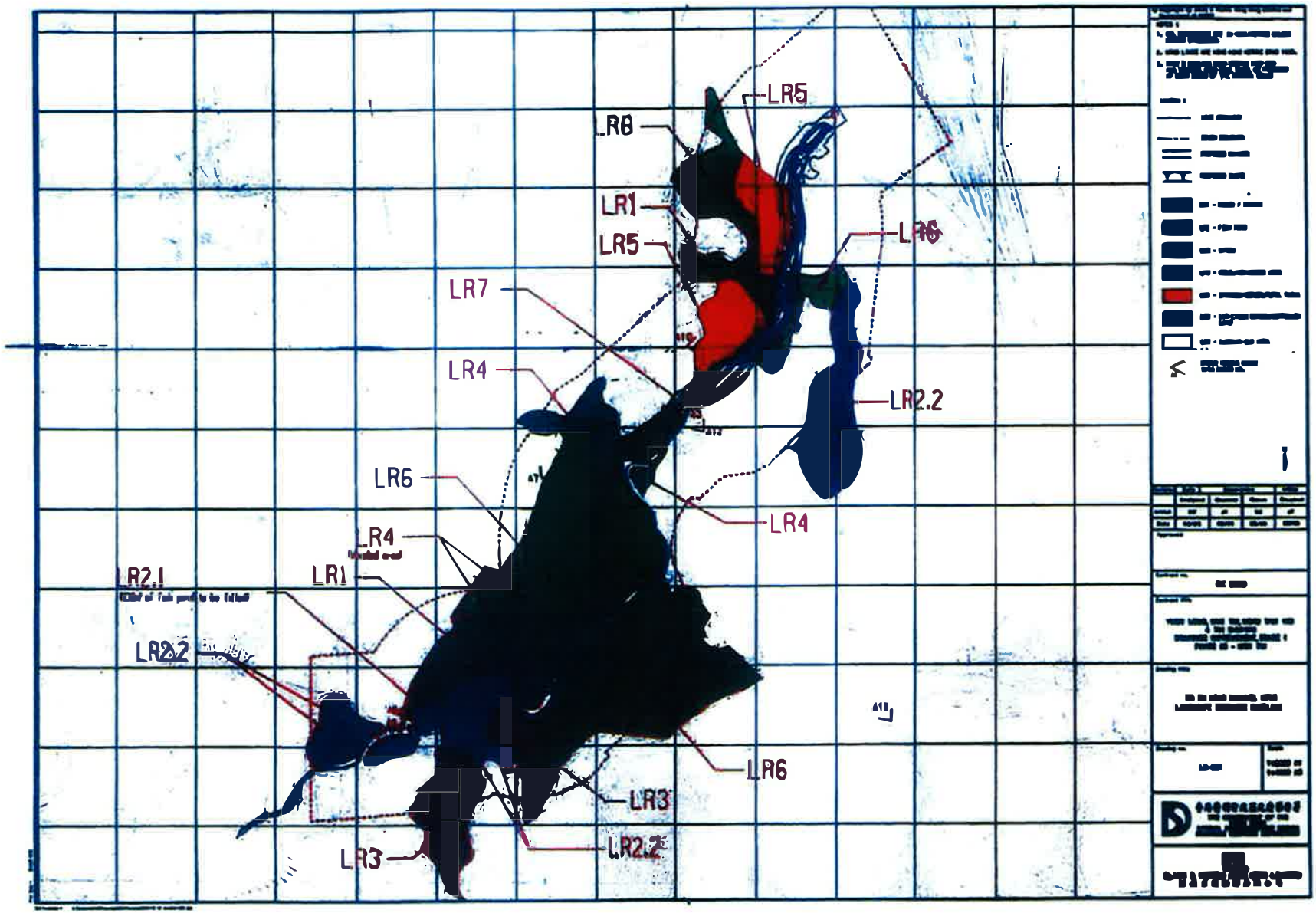
Section in EIA Report	**Identify number – VSR**	**Photo No.**	**Baseline Study, Environmental Impact Assessment Final Report [382047/E/EIA/Issue 9]**	**Current Situation**
Industrial VSRs				
10.7.21	I1	C1	Open storage near junction between Kam Ho Road and Village access The VSRs is workers of the open storage. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.22	I2	C2	Plant Nursery at the east of Ma On Kong Channel The VSRs is workers of the plant nursery. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.23	I3	C3	Plant Nursery at the west of Ma On Kong Channel The VSRs is workers of the plant nursery. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.24	I4	C4	Temporary Structure for poultry east to Ho Pui The VSRs is workers of the temporary structure. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.25	I5	C5	Open Storage at the end of village access road The VSRs is workers of the open storage. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.26	I6	C6	Temporary Structure for poultry and Open Storage at upstream of Ma On Kong Channel The VSRs is workers of the temporary structure and open storage. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline

Open Space / Sitting – Out Area VSRs				
10.7.27	O1	C7	Users of Sitting-out Area at Ma On Kong The VSRs is future users of the re-provided sitting-out area during operation phase. The number of individual is few and their sensitivity to visual impacts is medium.	Remain the same as the baseline
Residential VSRs				
10.7.28	R1	C8	Tai Kek The VSRs is residents of the village. The number of individual is very few and their sensitivity to visual impacts in high.	Remain the same as the baseline
10.7.29	R2	C9	North of Ma On Kong The VSRs is residents of the village. The number of individual is very few and their sensitivity to visual impacts is high.	Remain the same as the baseline
10.7.30	R3	C10	Ma On Kong The VSRs is residents of the village. The number of individual is very few and their sensitivity to visual impacts is high.	Remain the same as the baseline
10.7.31	R4	C11	North of Ho Pui The VSRs is residents of the village. The number of individual is few and their sensitivity to visual impacts is high.	Remain the same as the baseline

Transport-related VSRs				
10.7.32	T1	C12	Motorists and Pedestrians along village access road (lower section) The VSRs is the road users of the road section. The number of individual is few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.33	T2	C13	Motorists and Pedestrians along village access road (high section) The VSRs is the road users of the road section. The number of individual is very few and their sensitivity to visual impacts is low.	Remain the same as the baseline
10.7.34	T3	C14	Motorists, Pedestrians and Tourists along access road toward Ho Pui Reservoir The VSRs is the road users of the road section, part of which are tourist to Ho Pui Reservoir. The number of individual is very few and their sensitivity to change is low.	Remain the same as the baseline


LCA6
LCA5
LCA1
LCA2
LCA6
LCA8
LCA1
LCA3
LCA5
LCA7
LCA1
LCA4


T1
T2
T3
R1
R2
R3
R4
I1
I2
I3
I4
I5
I6
O1
KCRC DEPOT
HA OI KING CHANNEL


LR5
LR8
LR1
LR5
LR6
LR7
LR4
LR2.2
LR6
LR4
LR4
LR1
LR2.1
LR2.2
LR6
LR3
LR2.2
LR3

Physical, Human and Cultural Landscape Resources Photo record

5 January 2009

Photo No. A1 – LR1 River/Stream

Photo No. A2 – LR1 River/Stream

Photo No. A3 – LR1 River/Stream

Photo No. A4 – LR1 River/Stream

Photo No. A5 – LR1 River/Stream

Photo No. A6 – LR2.1 Fish Pond within site boundary

Photo No. A7 – LR2.2 River/Stream

Photo No. A8 – LR3 River/Stream

Photo No. A9 – LR4 Woodland/Wooded Area

Photo No. A10 – LR4 Woodland

Photo No. A11 – LR5 Orchard/ Horticultural Trees

Photo No. A12 – LR6 Low-Lying Agricultural Land/ Fallowed Land

Photo No. A13 –LR7 Sitting-Out Area at Ma On Kong

Photo No. B1 – LCA1 Agricultural Landscape Character Area

Photo No. B2 – LCA1 Agricultural Landscape Character Area

Photo No. B3– LCA2 Woodland Landscape Character Area

Photo No. B4 – LCA3 River/ Stream Landscape Character Area

Photo No. B5 – LCA3 River/ Stream Landscape Character Area

Photo No. B6 – LCA3.1 River/ Stream Landscape Character Area

Photo No. B7 – LCA3 River/ Stream Landscape Character Area

Photo No. B8 – LCA4 Fish Pond Landscape Area

Photo No. B9– LCA5 Village Landscape Character Area

Photo No. B10—LCA 5 Village Landscape Character Area

Photo No. B11—LCA 6 Industrial Landscape Character Area

Photo No. B12—LCA 6 Industrial Landscape Character Area

Photo No. B13—LCA 7 Nullah Landscape Character Area

Photo No. C1 – I1 Open storage near junction between Kam Ho Road and Village access road

Photo No. C2—I2 Plant Nursery at the east of Ma On Kong Channel

Photo No. C3—I3 Plant Nursery at the east of Ma On Kong Channel

Photo No. C4—I4 Temporary Structure for poultry east to Ho Pui

Photo No. C5—I5 Open Storage at the end of village access road

Photo No. C6—I6 Temporary Structure for poultry and Open Storage at upstream of Ma On Kong Channel

Photo No. C7—O1 Sitting-out Area at Ma On Kong

Photo No. C8—R1 Tei Kek

Photo No. C9—R2 North of Ma On Kong

Photo No. C10—R3 Ma On Kong

Photo No. C11—R4 North of Ho Pui

Photo No. C12—T1 Motorists and Pedestrians along village access road (lower section)

Photo No. C13—T2 Motorists and Pedestrians along village access road (high section)

Photo No. C14—T3 Motorists, Pedestrians and Tourists along access road toward Ho Pui Reservoir

Physical, Human and Cultural Landscape Resources Photo record

23 January 2009

Photo No. A1 – LR1 River/Stream

Photo No. A2 – LR1 River/Stream

Photo No. A3 – LR1 River/Stream

Photo No. A4 – LR1 River/Stream

Photo No. A5 – LR1 River/Stream

Photo No. A6 – LR2.1 Fish Pond within site boundary

Photo No. A7 – LR2.2 River/Stream

Photo No. A8 – LR3 River/Stream

Photo No. A9 – LR4 Woodland/Wooded Area

Photo No. A10 – LR4 Woodland

Photo No. A11 – LR5 Orchard/ Horticultural Trees

Photo No. A12 – LR6 Low-Lying Agricultural Land/ Fallowed Land

Photo No. A13 –LR7 Sitting-Out Area at Ma On Kong

Photo No. B1 – LCA1 Agricultural Landscape Character Area

Photo No. B2 – LCA1 Agricultural Landscape Character Area

Photo No. B3– LCA2 Woodland Landscape Character Area

Photo No. B4 – LCA3 River/ Stream Landscape Character Area

Photo No. B5 – LCA3 River/ Stream Landscape Character Area

Photo No. B6 – LCA3.1 River/ Stream Landscape Character Area

Photo No. B7 – LCA3 River/ Stream Landscape Character Area

Photo No. B8 – LCA4 Fish Pond Landscape Area

Photo No. B9– LCA5 Village Landscape Character Area

Photo No. B10—LCA 5 Village Landscape Character Area

Photo No. B11—LCA 6 Industrial Landscape Character Area

Photo No. B12—LCA 6 Industrial Landscape Character Area

Photo No. B13—LCA 7 Nullah Landscape Character Area

Photo No. C1 – I1 Open storage near junction between Kam Ho Road and Village access road

Photo No. C2—I2 Plant Nursery at the east of Ma On Kong Channel

Photo No. C3—I3 Plant Nursery at the east of Ma On Kong Channel

Photo No. C4—I4 Temporary Structure for poultry east to Ho Pui

Photo No. C5—I5 Open Storage at the end of village access road

Photo No. C6—I6 Temporary Structure for poultry and Open Storage at upstream of Ma On Kong Channel

Photo No. C7—O1 Sitting-out Area at Ma On Kong

Photo No. C8—R1 Tei Kek

Photo No. C9—R2 North of Ma On Kong

Photo No. C10—R3 Ma On Kong

Photo No. C11—R4 North of Ho Pui

Photo No. C12—T1 Motorists and Pedestrians along village access road (lower section)

Photo No. C13—T2 Motorists and Pedestrians along village access road (high section)

Photo No. C14—T3 Motorists, Pedestrians and Tourists along access road toward Ho Pui Reservoir

Appendix J

Monthly Summary Waste Flow Table for 2008

Monthly Summary Waste Flow Table

Date: 31-Jan-09
Year/Month: Jan-09

Monthly Summary Waste Flow Table for January 2009										
Year	Actual Quantities of Inert C & D Materials Generated Monthly					Estimated Annual Quantities of C & D Wastes Generated Monthly				
	Total Quantitiy 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^3)	(in '000M^3)	(in '000M^3)	(in '000M^3)	(in '000M^3)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000M^3)
Jan	6.716	0.008	6.708	0	0	0	0	0	0	0
Feb										
Mar										
Apr										
May										
Jun										
Sub-Total	6.72	0.008	6.708	0	0	0	0	0	0	0
Jul										
Aug										
Sep										
Oct										
Nov										
Dec										
Total	6.716	0.008	6.708	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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

Appendix K

Response to IEC's Comments

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.
Baseline Monitoring Report for the Designated Works under the Project (r0733 Revision 2)
Response to IEC's comments

No.	Section / Paragraph	Comments	Response to Comments
1	Appendix D	Ecology monitoring shall be provided in the monthly monitoring schedule on Jan and Feb 09.	Amended. The ecology monitoring date was on 18 January 2009. The ecology monitoring schedule for February is on 21 February 2009.
2	Appendix J	Please provide the updated monthly waste flow table including waste flow on Jan 2009.	The waste flow table is revised.
3	Table 4-4-1-1	Please provide the update quantity of Type 1 or Type 2, if any, contaminated material for disposal in the reporting period (Jan 09).	According to site information provided by CRBC, there was no contaminated material for disposal in the reporting period (Jan 09).
4	Table 4-4-2	Please clarify whether the follow up measures due to the finding on 8 Jan 2009 was observed on 16 Jan 2009 or other date.	In accordance with the site inspection record, the follow up measures due to the finding on 8 Jan 2009 was observed on 15 Jan 2009.
5	Appendix G (A1) – Air quality monitoring data	The elapsed time for the both 24-hours TSP results on 24 Jan 2009 exceeded 2000 minutes. The accuracy of the results was doubted as the actual TSP levels may be under-measured. Please advise on the above results.	The fault of elapsed time was due to the failure of the HVS. The results may be under-measured, however, with the support of the 1 hour TSP result on the same day, it is estimated that the 24-hr TSP result would not exceed the A/L Levels.
6	Appendix (B)(3) Water Quality	As stated in the report, twelve exceedances on SS and turbidity were found during the reporting period. However, the corresponding graphs were failed to present the correct quantity of exceedances. Please check and amend the graphs of SS and Turbidity again.	Noted. The scale of the graphs (SS and Turbidity) is amended.