Contract No. : DC/2007/06
River Improvement Works in Upper Lam Tsuen, She Shan River and Upper Tai Po River

ENVIRONMENTAL MONITORING AND AUDIT

MONTHLY EM&A REPORT of

UPPER TAI PO RIVER

for May 2010

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Mr. Marcus IP
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Report submission and revision:
First submission on 8th June 2010

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Executive summary

This is the twenty-first monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Services Department Contract No. DC/2007/06 entitled "River Improvement Works in Upper Lam Tsuen River, She Shan River and Tai Po River". This report concludes the impact monitoring for the activities undertaken during the period from 1st May 2010 to 31st May 2010. The major site activities in this reporting month were mainly construction of land-based gabion wall, backfilling works behind the constructed gabion wall and site clearance works.

The Environmental Team (ET) is responsible for the EM&A works required in the EM&A manual. Site inspections were carried out on weekly basis to investigate and audit the equipment and work methodologies with respect to pollution control and environmental mitigation. The weekly inspections records and photos taken were kept.

The last ecological impact monitoring was carried out in January 2010 and the next ecological impact monitoring was scheduled on 13th July 2010. The summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist, are provided in table 6.2 and Appendix G respectively.

Environmental Team had carried out construction noise monitoring on weekly basis and no exceedance was found. Noise monitoring records for the reporting month and the data is presented in Section 4. The location plan and the graphical plots presenting the data are provided in Appendix D.

Piling works were not scheduled for this month. Therefore, no vibration monitoring was conducted by ET during the reporting month.

There was no non-compliance recorded for this reporting month.

There was no breach of action and limit levels for this month.

There were two formal complaints recorded on 7th and 10th May 2010 respectively regarding observation of muddy water along the river channel. For further details of the complaint please refer to Section 2.7 and Appendix J.

There was no reporting change for this month.

In accordance with the contractual requirements, no excavation works in river is allowed to be carried out during the wet season. No major construction activity will be carried out in the upcoming month.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary and to keep a good environmental management at site practice.

1.0 Introduction

This is the twenty-first monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Services Department Contract No. DC/2007/06 entitled "River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River". The site layout plan is shown in Figure 2.1. The Environmental Team, Environmental Pioneers & Solutions Limited appointed by Chiu Hing Construction and Transportation Company Limited, prepares the report. The report is to be submitted to the Contractor, the Engineer and the IEC.

This report presents the results of the environmental monitoring of the project activities for Upper Tai Po River conducted during the month of May 2010. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the Environmental Permit (EP-223/2005/A) (EP), EM&A Manual and the Contractor's Environmental Management Plan (EMP).

2.0 Environmental status

2.1 Project area

The location of the project site – Upper Tai Po River starting from Ta Tit Yan of Yai Mo Shan, the Upper Tai Po River flows from southeast to northeast alongside Wilson Trail, turning northward before joining the Lam Tsuen River and then runs towards Tai Po Market. To the east of the river, there are active and abandoned cultivated lands. While the village settlements are mainly located on the west and northeast side of the river bank, where the San Uk Ka and Lai Chi Shan establishment also lie. The Project site is indicated in **Figure 2.1.**

2.2 Construction programme

Approximately 0.6km of Upper Tai Po River will be improved to enhance the hydraulic performance of the river. The improvement works comprise the following:

(1) Re-profiling and realignment of the Channel;
(2) Inclusion of gabions and retaining wall for bank protection whilst providing a natural channel bed; and
(3) Re-provisioning of footbridges and footpaths along the channel

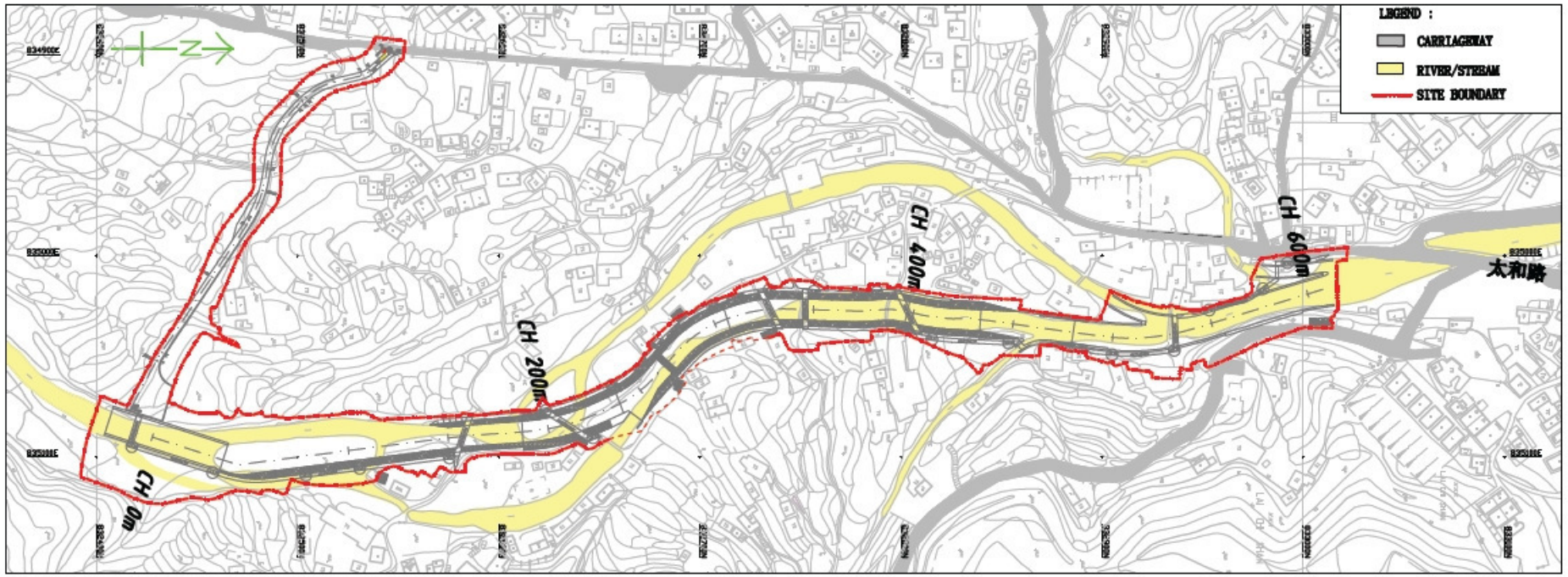
The construction of the proposed improvement works for Upper Tai Po River has been commenced on September 15th 2008 and anticipated to complete in April 2011.

2.3 Proposed construction sequences

The proposed construction sequence is shown in the following sequences:

(1) Site clearance and preparation works
(2) Construction of the maintenance access which involves the construction of retaining walls
(3) River channel construction and excavation, involving the excavation works, construction of retaining walls and gabion walls
(4) Re-provisioning of footbridges
(5) Construction of footpaths
(6) Landscaping works

Fig 2.1 Layout of construction area



2.4 Construction activities for the reporting period

Major construction activities carried out by the contractor during the reporting month was construction of the land-based retaining wall.

2.5 Construction activities for the next reporting period

Construction of land-based retaining wall will be continued in the next reporting month.

2.6 Non-compliance with the environmental performance limits

There was no non-compliance with the environmental performance limits for this reporting month. The event and action plan for Ecology is shown in Appendix A. The action and limit level for Noise is shown in Appendix B. The reference standards for vibration are shown in Appendix C.

2.7 Summary of complaints

There were two formal complaints recorded in this reporting month. Two complaints regarding observation of muddy water along the river channel were referred by EPD on 7th and 10th May 2010 respectively. ET was informed by the Resident Engineer (RE) on the same day of the complaints referred.

To check the site condition and implementation of corrective actions and mitigation measures, site investigations were conducted by ET on 7th and 12th May 2010 and recommendations to minimize water quality from site works were given to the Contractor. The complaint investigation reports and the complaint logs with details of findings, recommendation and outcome were prepared and attached in Appendix J for information.

Totally, nine complaints had been received since the commencement of this project. The cumulative complaint log is shown in the Appendix F.

3.0 Ecological monitoring results

There was no ecological impact monitoring or capture survey scheduled within this reporting month.

4.0 Noise monitoring results

In accordance with the EM&A Manual, monitoring locations were established at 11 N.S.R. locations. The description of all 11 N.S.R. are shown in Table 4.1.

TABLE 4.1 Description of Noise Sensitive Receivers

Sensitive Receiver No.	Location and Description
UTP1	54B, Sheung Wun Yiu
UTP2	Village House in Lai Chi Shan
UTP3	Village House near Upper Tai Po River
UTP4	Village House near Upper Tai Po River
UTP5	Village House near Upper Tai Po River
UTP6	Village House near Upper Tai Po River
UTP7	Village House near Upper Tai Po River
UTP8	Village House near Upper Tai Po River
UTP9	49A, Pun Shan Chau
UTP10	Village House near the proposed access road
UTP11	49G, San Uk Ka

Noise monitoring was carried out by the Environmental Team on weekly basis for this reporting month on 7th, 14th, 20th and 28th May 2010. Due to the adverse rainy weather, monitoring on 6th May 2010 was not conducted at five of the monitoring stations including UTP4, 7, 9, 10 and 11.

Measured $L_{eq\ (30min)}$ results ranged from 47.3dB(A) to 68.2dB(A). And therefore, no exceedance was recorded within the reporting period.

For further details of the monitoring results, graphical plots and the location plan, please refer to the Appendix D.

5.0 Vibration monitoring results

There was no vibration monitoring results for this reporting month. Vibration monitoring will be started once the piling works start in Upper Tai Po River.

6.0 Environmental issues and actions

6.1 Site inspections and key environmental issues

Site inspections were undertaken routinely to inspect the construction activities in Upper Tai Po River to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. Implementation status of environmental protection and mitigation measures is shown in Appendix G.

Within this reporting month, site inspections were conducted on 5th, 12th, 19th and 26th May 2010. A detailed checklist of each site inspection together with comments and relevant photos have been filed and kept. The findings from inspection were summarized in Table 6.1.

Ecological inspections by the Ecologist Dr. Mark Shea were carried out on 1st, 10th, 17th and 24th May 2010. Details of findings were summarized in Table 6.2.

Table 6.1 Summary results of site inspections findings

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
19 & 21 Apr 2010	As reported by RE, Mal-practice of site water discharge at site ch.165 caused pollution to the river channel consecutively since 17 Apr 10	Non-compliance	Contractor was requested to provide proper silt removal facilities for muddy water arisen from construction works. Proper bund walls with geo-textile coverings should be provided to prevent site water seepage and runoff from entering into the river channel.	As further follow up action, the excavated pit was backfilled prior to the inspection on 05 May. During inspection accumulation of site water was not observed at the concerned area.	05 May 10	--
05 May 10	No particular findings	N/A	N/A	N/A	N/A	--
12 & 19 May 10	Loosed earth surface of the haul access was observed at ch.300 to ch.450	Observation	Contractor was advised to implement protective measures such as compaction by roller and/or hydro-seeding to minimize soil runoff to the river stream	As reported by Contractor, loosed haul access was compacted by roller while part of the area that site equipment cannot be reached was hydro-seeded instead	20 May 10	--
26 May 10	A fuel drum without secondary containment was found at the haul access at approximate ch.450	Observation	Contractor was advised to provide proper drip pan to fuel and chemical containers using on site; idling chemicals or fuel should be relocated to designate chemical storage to prevent spillage to the river stream and surrounding area	To be followed in the next reporting period.	Ongoing	--

The summary of ecological inspection prepared by the Ecologist, Dr. Mark Shea is shown in Table 6.2.

Table 6.2 Summary results of ecological site inspection findings

Date	Observations	Advice from Ecologist	Action Taken	Closing Date
01 May 2010	No Major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
10 May 2010	No Major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
17 May 2010	No Major findings for this inspection	No Advice is required	No Action is required to be taken	N/A
24 May 2010	No Major findings for this inspection	No Advice is required	No Action is required to be taken	N/A

6.2 Non-compliance

There was no non-compliance recorded for the month of May 2010.

In regard to the non-compliance event about mal-practice of muddy effluent discharge recorded on 19th April 2010 from the twentieth report, further follow up action was taken by Contractor and was inspected on 5th May 2010.

The excavated pit at ch.165, where site water seepage and discharge was concerned, was backfilled to prevent accumulation of site water. Construction activities at the concerned site area were ceased until the next dry season.

6.3 Recommendations

Contractor was advised to be cautious on the condition of haul access, soil slopes and earth stockpile and implement sufficient protective measures to prevent erosion and soil runoff causing water quality impact to the river stream. Exposed earth surface should be protected by means such as tarpaulin coverings, compaction and/or hydro-seeding. Also, excavated pit should be backfilled as far as practicable to prevent accumulated site water from overflowing into the river channel during rainy weather.

6.4 Implementation status and effectiveness of the mitigation measures

Refer the previous table 6.1, contractor has implemented mitigation measures to address those problems as advised by ER, IEC and ET. Some of the measures taken by the contractor were considered as effective to minimize negative impact to the environment. Ongoing investigation will be carried out to observe performance and effectiveness of those measures. Outstanding environmental items will be inspected in the follow month.

As there were some ongoing follow up practices, contractor was reminded to regularly review and rectify the discrepancy once found and maintain good site condition.

7.0 Waste management status

It is the contractor's responsibility to ensure that all wastes produced during construction phase for the drainage improvement works are handled, stored and disposed of in accordance with good waste management practices and EPD's regulation and requirement. Waste materials generated during construction activities such as construction and demolition(C&D) material, chemical wastes and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and general reuse are recommended to be audited to ensure that proper storage, transportation and disposal practices are being implemented. **Table 7.1** is the Waste Disposal recorded by the Contractor in this month.

From the report of Contractor, C&D materials generated were all reused in the project and therefore no inert waste was disposed from the project.

Table 7.1 Summary of Waste Disposal for the reporting month

Type of waste	Inert Waste	Non-Inert Waste	Chemical Waste
May 2010	0	0	0

The cumulative waste flow table is shown in Appendix H.

8.0 Status of environmental licensing and permit

This project requires different permits and licenses to be run legally. **Table 8.1** is the summary of permits/ licenses for this project.

Table 8.1 Summary of Environmental Licensing and Permit Status

Description	License / Permit No.	Date of Issue	Date of Expiry	Remarks
Environmental Permit	EP-223/2005	31st Aug, 2005	N/A	Superseded
Amended Environmental Permit	EP-223/2005/A	18th Nov, 2008	N/A	Issued
Construction Noise Permit	N/A	N/A	N/A	N/A
Effluent Discharge License	3678	14th Mar, 2008	31st Mar, 2013	Issued
Registration as a Chemical Waste Producer	5213-724-C3251-03	19th Dec, 2007	Not applicable	Issued
Billing Account for Disposal of Construction Waste	7006101	N/A	N/A	N/A

9.0 Future key issues

Site activity carried out within the river channel will be ceased during the upcoming wet season. No major construction activity will be carried out in the next reporting month. Although there will be no site activities contractor was still reminded to maintain good site condition and housekeeping practices.

10.0 Conclusion

Major site activities carried out by the Contractor in this reporting period included construction of land-based gabion wall, backfilling works behind the constructed gabion wall and site clearance works.

Regular site meetings and inspection audits led by the seniors for discussing environmental issues were held among project proponent, Contractor and the ET on weekly basis.

Environmental Team had carried out construction noise monitoring on weekly basis. All results obtained were within limit and therefore no exceedance was recorded in this reporting month.

Piling works were not scheduled for this month. Therefore, no vibration monitoring was conducted during the reporting month.

From the summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist Dr. Mark Shea, there is no abnormal finding observed in the reporting month. The ecologist has no further advice and no action suggested to the contractor.

There was no non-compliance event recorded within this reporting month.

Two formal complaints regarding observation of muddy water along the river channel were recorded on 7th and 10th May 2010 respectively. The complaints were logged and detailed complaint logs as well as investigation reports please refer to Appendix J

ET has reminded the contractor to provide environmental pollution control measures wherever necessary; and to keep a good environmental management at site practice.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement.

Appendix A: Event and action plan for ecology

Event and action plan for ecology

In the event of non-compliance, the Event / Action plan prepared by the ecologist shall be followed. Detailed Event/ Action plan was shown in **Appendix Table 1** for reference.

It is not proposed to set population size of the three species (i.e. Three-lined Chinese Stream Catfish, Predaceous and the Hong Kong Newt) or other faunal species for the Action Level and Limit Level in the revised EM&A manual in considering the following reasons:

I. The schedule capture surveys would let to decrease in the populations of the target species; and

II. The planned drainage works would also temporally de-fauna the stream habitat.

It is considered logical and appropriate to audit non-compliance events in relation with ecological mitigation measures, which were specified in the EP and the PS of the project.

APPENDIX TABLE 1 Event / Action plan table for Ecology

Event	Action			
	ET	ER	IEC	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 ET and the Contractor on possible remedial measures, 4. Advise the Contractor on effectiveness of proposed remedial measures 5. Check implementation of remedial measures	1. Ensure Remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non conformity	1. Identify Source 2. Inform the IEC and the ER 3. Increase monitoring 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	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the Contractor on effectiveness of proposed remedial measures 5. Check implementation of remedial measures	1. Ensure Remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement

Appendix B: Action and limit level for construction noise

The Action and Limit levels for construction noise are defined in **Appendix Table 2**

Appendix Table 2: Action and Limit Levels for Construction Noise

Time Period	Action	Limit
0700 – 1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*
0700 – 2300hrs on holidays; and 1900 – 2300 hrs on all other days		Subject to the control of Noise Control Ordinance
2300 – 0700 hrs of next day		Subject to the control of Noise Control Ordinance

*Limit level set in accordance with Particular Specification Section 26

Appendix C: Reference standards for vibration

Guidance regarding vibration limits is provided by the following British Standards (or their equivalent ISO standards):
BS 7385 - Measurement and evaluation of vibration in buildings. Part 2: Guide to damage levels from ground borne vibration.

BS 7385 suggests vibration levels, below which damage is unlikely to occur in 95% of buildings. For cosmetic damage, the level is 15 mm/s at 4 Hz, increasing to 20 mm/s at 15 Hz, increasing to 50 mm/s at 40 Hz and above. Minor structural damage is possible at vibration levels twice those given above, major damage at four times the levels given.

Appendix Table 3: Transient vibration guide values for cosmetic building damage (BS7385:Part 2 1993)

	Type of Building	**Peak component particle velocity (mm/s) in frequency range of predominant pulse**
1	Reinforced or framed structures	50 at 4 Hz and above
2	Un-reinforced or light framed structures	15 at 4 Hz, increasing to 20 at 15 Hz, increasing to 50 at 40 Hz and above.

The vibration magnitudes and frequencies refer to Peak Particle Velocities (PPV) occurring in any single direction, measured on the ground level of the building concerned.

Appendix D: Noise monitoring results, graphical plots and location plan

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	64.6	65.8	54.2	7-May-10	13:53-14:23	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Cloudy	Façade
UTP 2	60.3	62.4	51.8	7-May-10	14:31-15:01	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Cloudy	Façade
UTP 3	62.2	64.3	59.7	7-May-10	15:08-15:38	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 4				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 5	48.2	50.0	43.2	7-May-10	14:28-14:58	Site clearance works	N/A	Cloudy	Façade
UTP 6	47.3	49.1	40.4	7-May-10	15:41-16:11	Site clearance works	N/A	Cloudy	Façade
UTP 7				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 8	52.1	53.3	41.4	7-May-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 9				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 10				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	Façade
UTP 11				7-May-10		Monitoring was not carried out due to rainy weather	N/A	Rainy	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	63.4	66.2	52.3	14-May-10	14:55-15:25	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 2	59.7	61.2	50.8	14-May-10	14:20-14:50	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 3	61.3	63.4	58.4	14-May-10	15:34-16:04	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 4	55.4	55.8	43.1	14-May-10	13:35-14:05	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 5	50.4	51.0	45.7	14-May-10	16:08-16:38	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 6	52.6	53.3	41.7	14-May-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 7	51.9	52.6	44.8	14-May-10	11:05-11:35	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 8	55.2	55.6	42.7	14-May-10	10:33-11:03	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 9	52.0	52.5	43.4	14-May-10	10:00-10:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 10	50.8	50.8	41.3	14-May-10	09:23-09:53	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	Façade
UTP 11	54.7	55.4	43.3	14-May-10	08:50-09:20	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Cloudy	*Freefield

Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	68.2	70.2	53.2	20-May-10	15:21-15:51	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Sunny	Façade
UTP 2	61.7	66.8	54.3	20-May-10	14:46-15:16	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Sunny	Façade
UTP 3	62.2	64.7	59.4	20-May-10	15:57-16:27	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 4	54.0	55.3	43.4	20-May-10	14:08-14:38	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 5	53.3	54.6	42.0	20-May-10	13:32-14:02	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 6	51.8	52.2	40.4	20-May-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 7	51.5	53.1	42.2	20-May-10	11:25-11:55	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 8	53.4	56.1	42.6	20-May-10	10:51-11:21	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 9	56.4	57.0	44.4	20-May-10	10:13-10:43	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 10	52.2	54.7	43.1	20-May-10	09:36-10:06	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 11	54.1	54.4	43.8	20-May-10	09:03-09:33	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Suuny	*Freefield

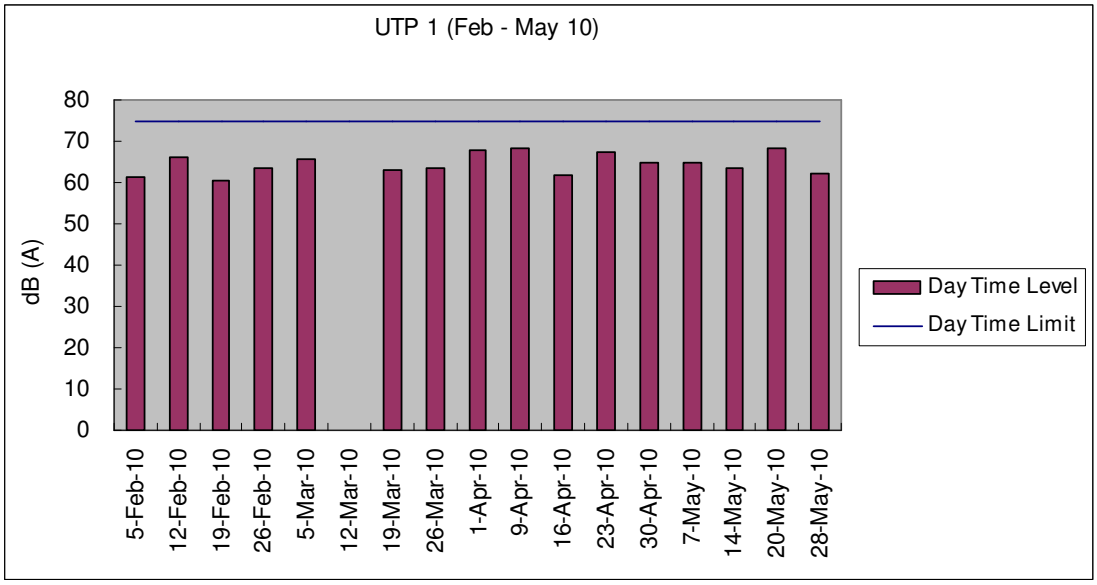
Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

Location	Leq 30min	L_{10} 30min	L_{90} 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	62.3	64.3	52.5	28-May-10	11:26-11:56	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Sunny	Façade
UTP 2	59.4	61.6	50.3	28-May-10	10:53-11:23	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	Background noise from traffic	Sunny	Façade
UTP 3	60.4	64.8	58.4	28-May-10	15:43-16:13	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 4	54.8	57.0	43.1	28-May-10	14:35-15:05	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 5	51.6	54.3	42.6	28-May-10	15:08-15:38	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 6	52.0	53.4	44.1	28-May-10	14:03-14:22	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 7	53.1	54.2	41.8	28-May-10	13:31-14:01	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 8	59.0	59.2	52.2	28-May-10	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 9	53.1	55.2	44.2	28-May-10	10:10-10:40	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 10	50.7	50.8	41.3	28-May-10	09:34-10:04	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Sunny	Façade
UTP 11	54.1	54.5	43.8	28-May-10	09:00-09:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location as no construction activity was being carried out	N/A	Suuny	*Freefield

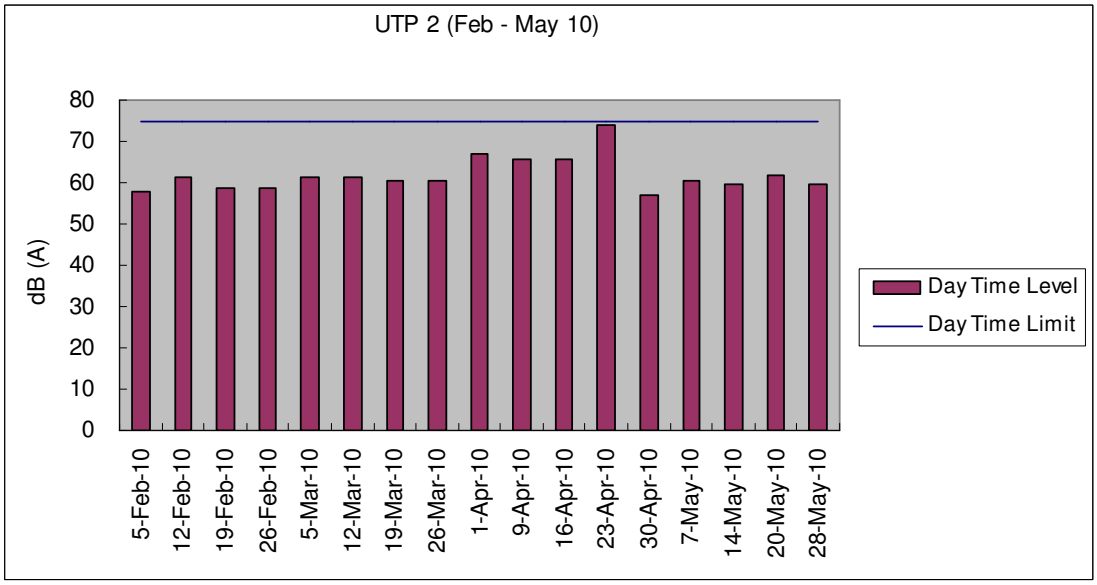
Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

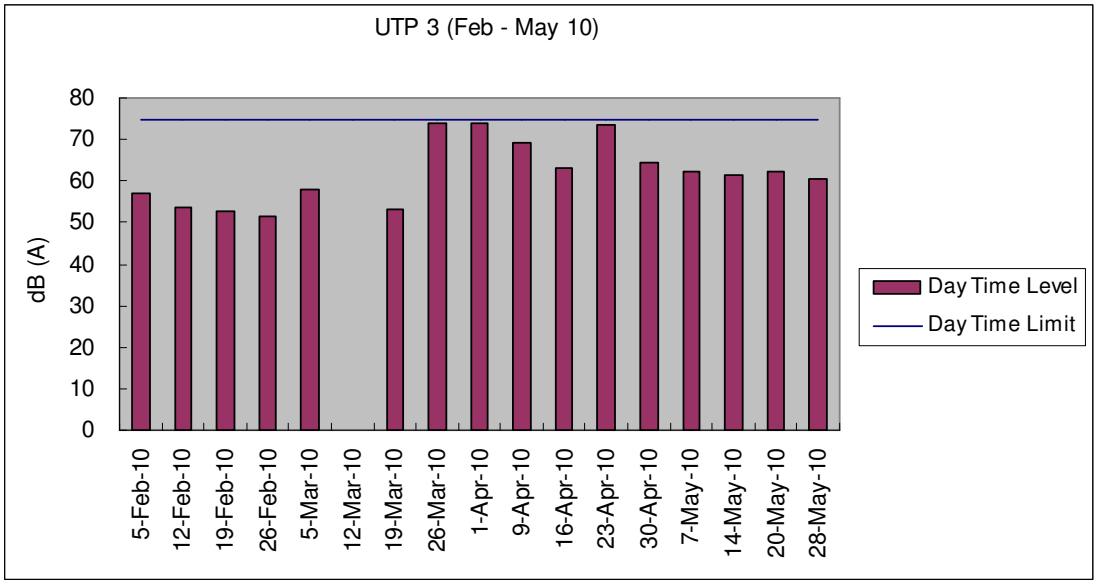
Graphical plot for noise measurements

The followings were the graphical plots for the 11 monitoring locations. Each plot showed the date of measurement taken, day time limit of 75 dB(A) as well as the measured daytime level for each location. The graphs contain the data recorded from February 2010 to May 2010.

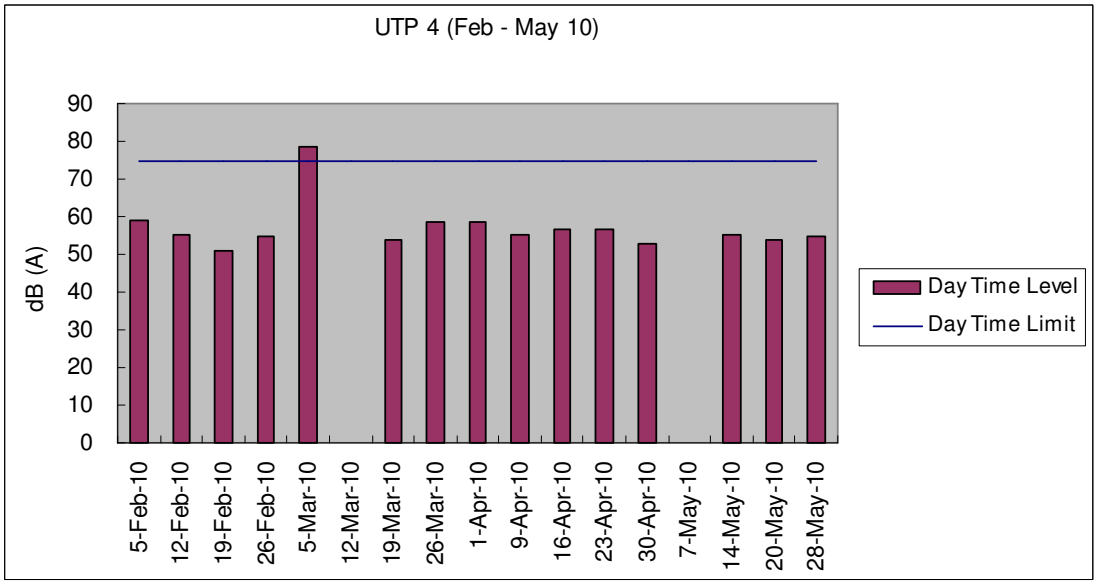


Noise monitoring for 12th March 2010 was cancelled due to heavy rain

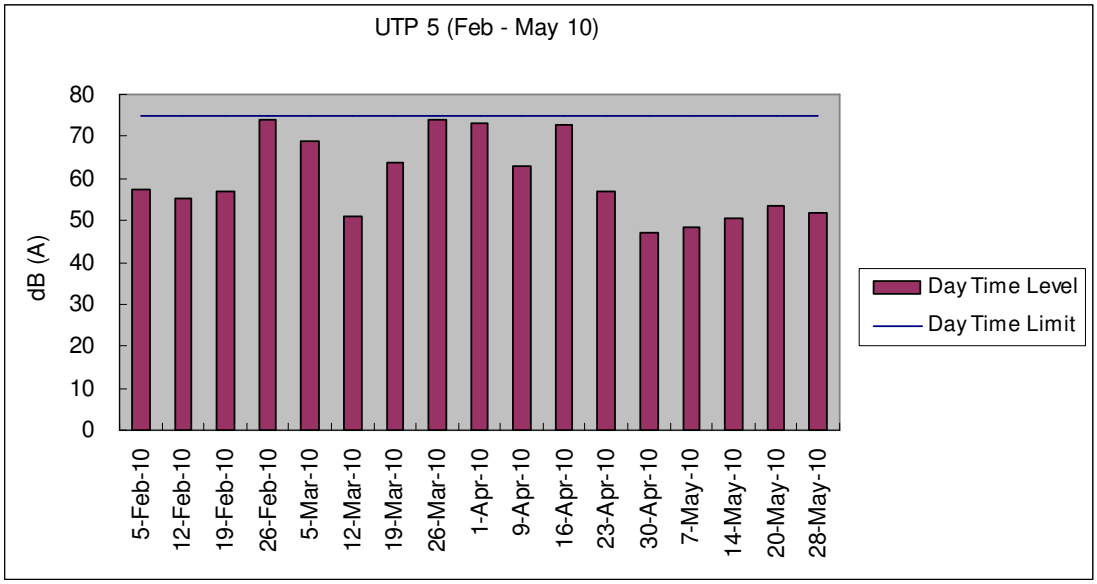


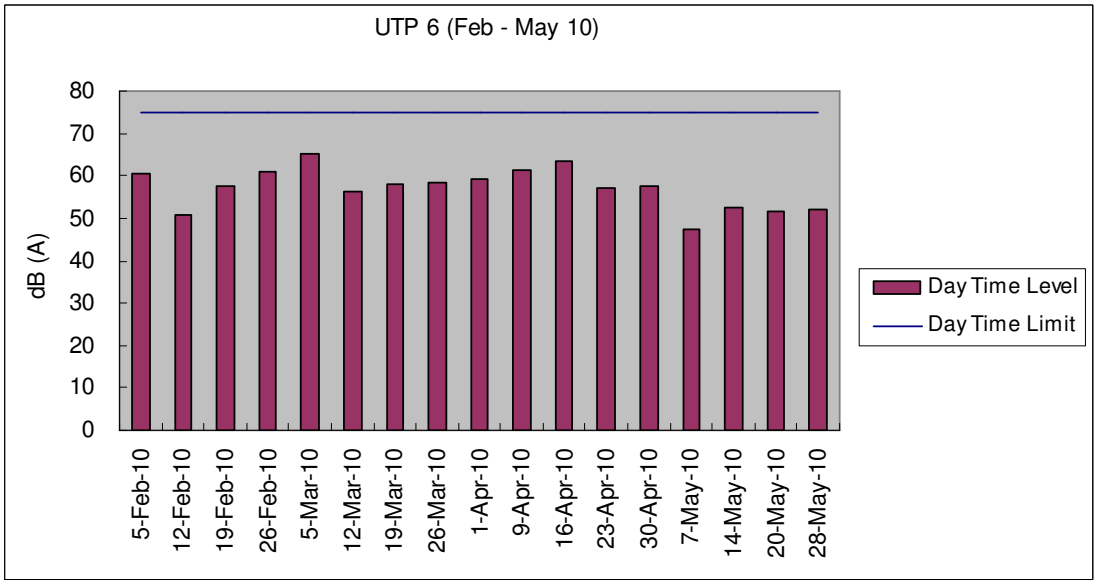


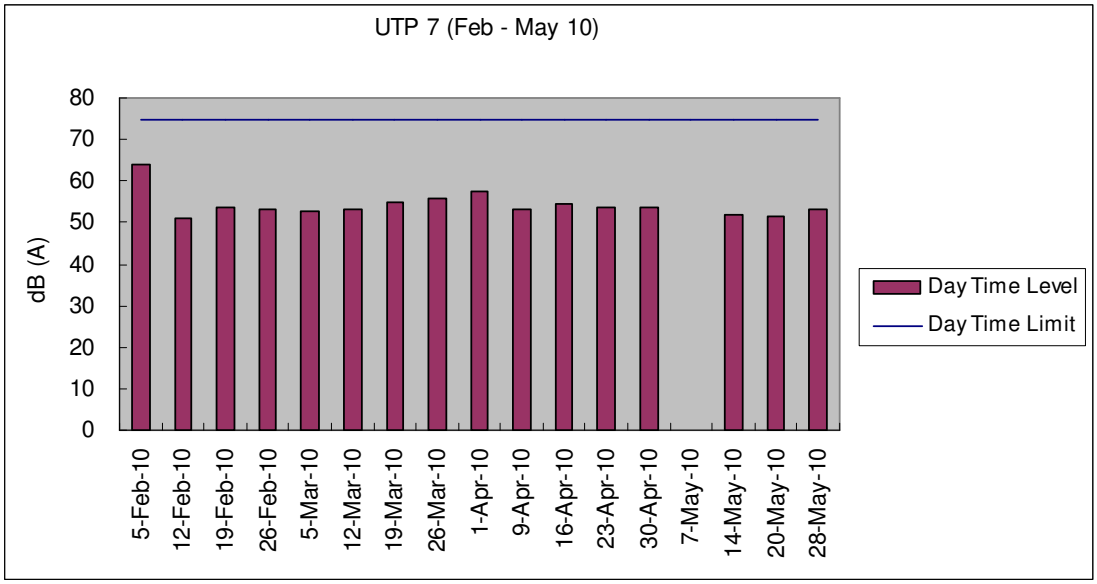
Noise monitoring for 12th March 2010 was cancelled due to heavy rain



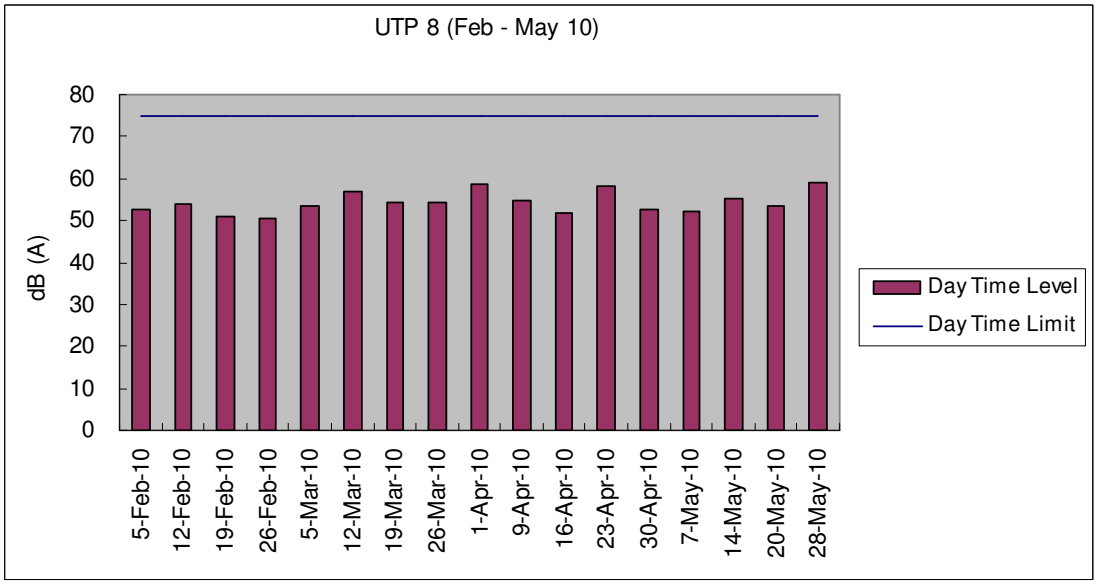
Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain

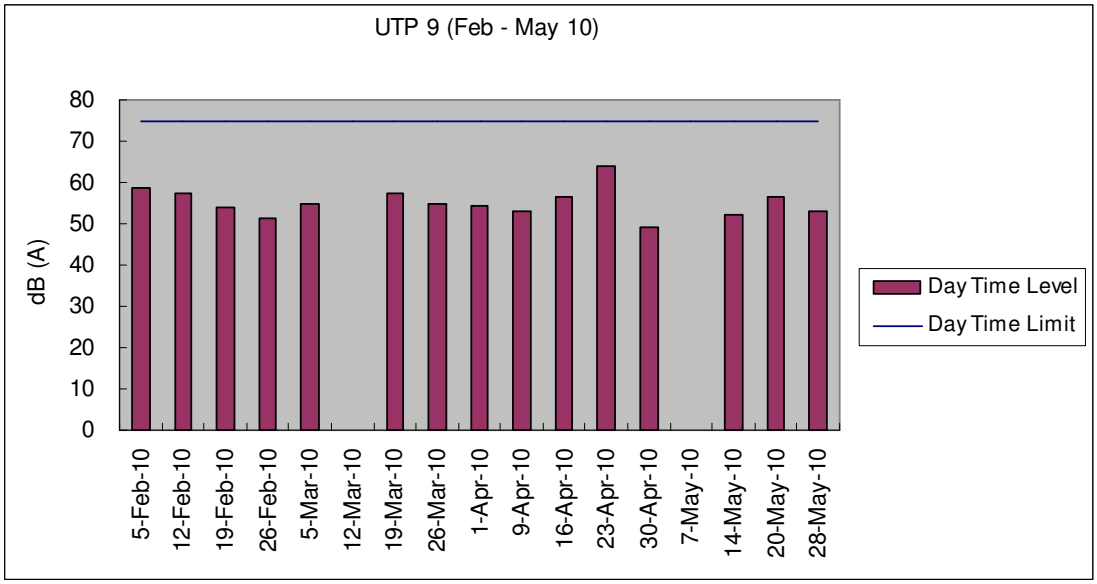

UTP 5 (Feb - May 10)
dB (A)
80
70
60
50
40
30
20
10
0
5-Feb-10
12-Feb-10
19-Feb-10
26-Feb-10
5-Mar-10
12-Mar-10
19-Mar-10
26-Mar-10
1-Apr-10
9-Apr-10
16-Apr-10
23-Apr-10
30-Apr-10
7-May-10
14-May-10
20-May-10
28-May-10
Day Time Level
Day Time Limit


UTP 6 (Feb - May 10)
dB (A)
80
70
60
50
40
30
20
10
0
5-Feb-10
12-Feb-10
19-Feb-10
26-Feb-10
5-Mar-10
12-Mar-10
19-Mar-10
26-Mar-10
1-Apr-10
9-Apr-10
16-Apr-10
23-Apr-10
30-Apr-10
7-May-10
14-May-10
20-May-10
28-May-10
Day Time Level
Day Time Limit

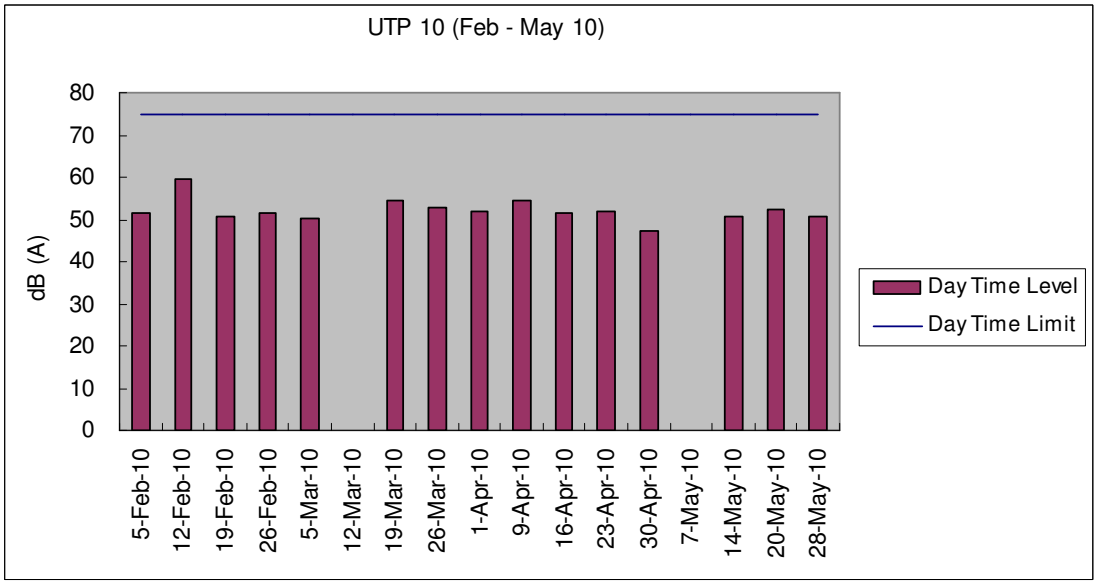


Noise monitoring for 7th May 2010 was cancelled due to heavy rain

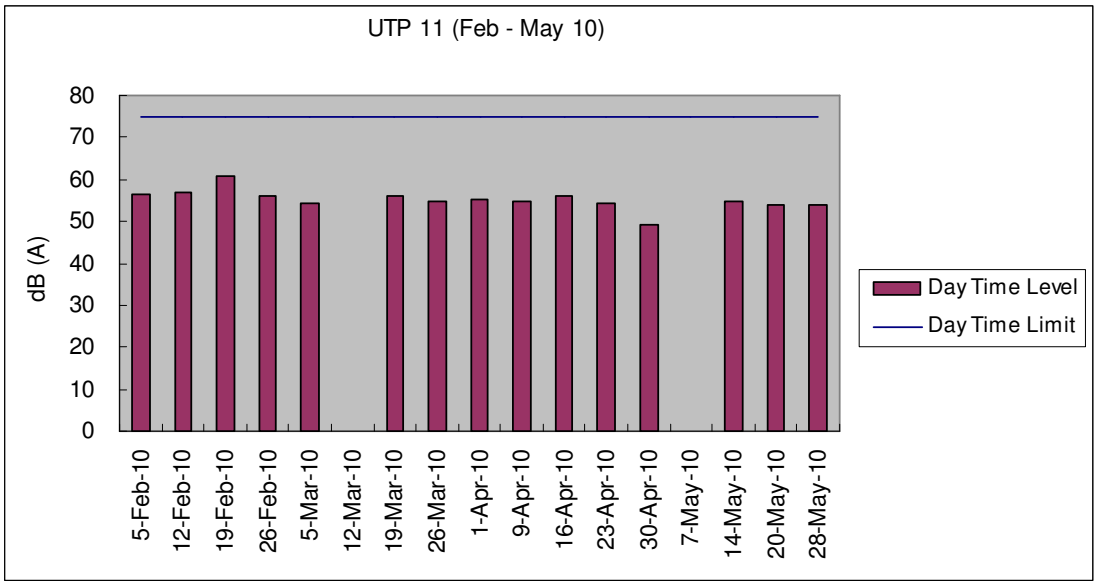




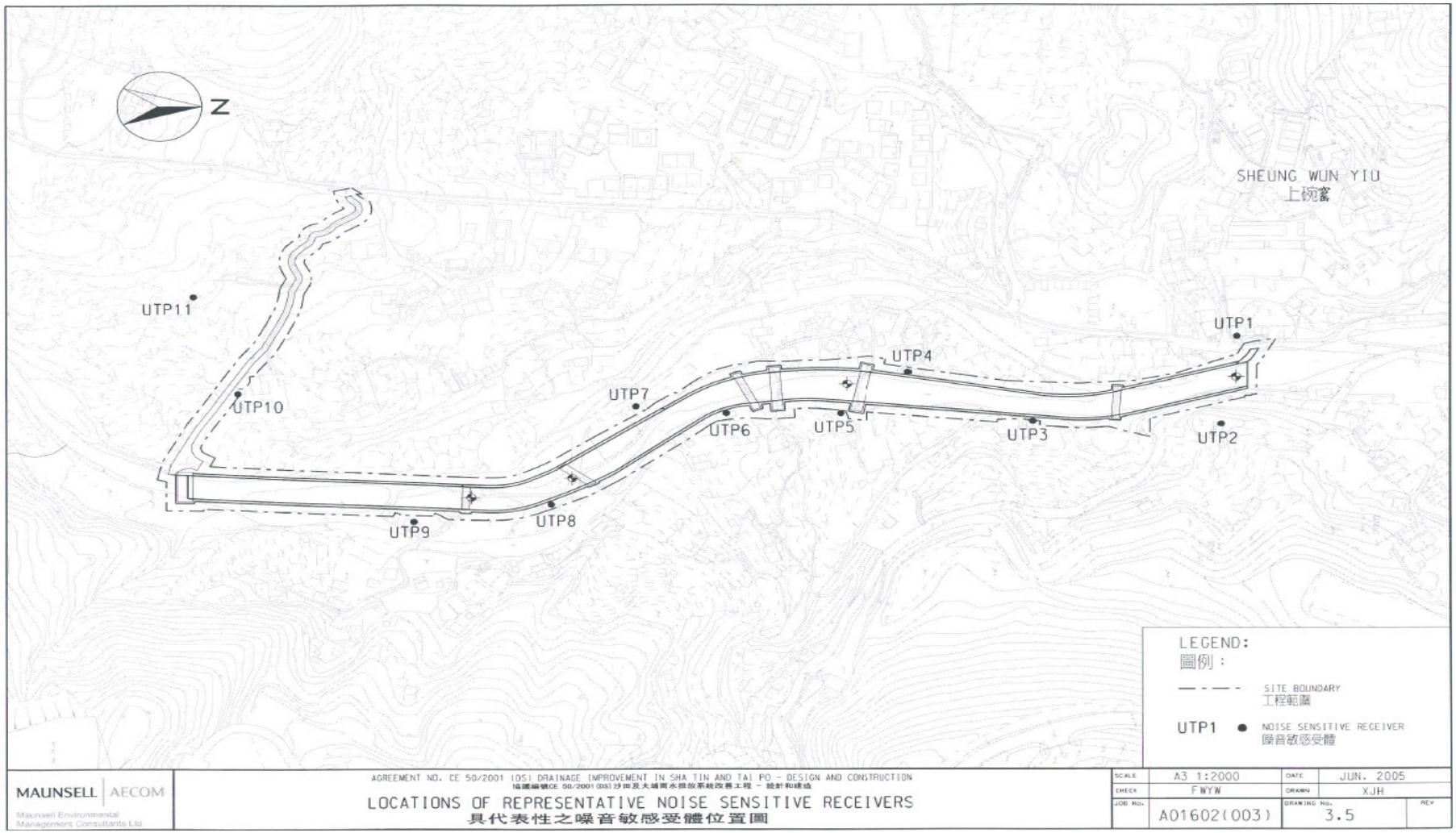
Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain



Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain



Noise monitoring for 12th March 2010 and 7th May 2010 were cancelled due to heavy rain


N
SHEUNG WUN YIU
上碗窰
UTP11
UTP10
UTP9
UTP8
UTP7
UTP6
UTP5
UTP4
UTP3
UTP2
UTP1
LEGEND:
圖例：
SITE BOUNDARY
工程範圍
UTP1
NOISE SENSITIVE RECEIVER
噪音敏感受體
MAUNSELL AECOM
Maunsell Environmental Management Consultants Ltd
AGREEMENT NO. CE 50/2001 (DS) DRAINAGE IMPROVEMENT IN SHA TIN AND TAI PO - DESIGN AND CONSTRUCTION
協議編號CE 50/2001 (DS) 沙田及大埔雨水排放系統改善工程 - 設計和建造
LOCATIONS OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS
具代表性之噪音敏感受體位置圖
SCALE A3 1:2000
DATE JUN. 2005
CHECK FWYW
DRAWN XJH
JOB NO. A01602(003)
DRAWING No. 3.5
REV

Appendix E: Monitoring schedule for the present and next reporting period

Master Schedule of EM&A works in May 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
02/05	03/05	04/05	05/05	06/05	07/05	08/05
			Site inspection at afternoon		Noise monitoring	
09/05	10/05	11/05	12/05	13/05	14/05	15/05
			Site inspection at afternoon		Noise monitoring	
16/05	17/05	18/05	19/05	20/05	21/05	22/05
			Site inspection at afternoon	Noise monitoring		
23/05	24/05	25/05	26/05	27/05	28/05	29/05
			Site inspection and SSEMC at morning		Noise monitoring	
30/05	31/05					01/05

Master Schedule of EM&A works in June 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01/06	02/06	03/06	04/06	05/06
			Site inspection at afternoon		Noise monitoring	
06/06	07/06	08/06	09/06	10/06	11/06	12/06
			Site inspection at afternoon		Noise monitoring	
13/06	14/06	15/06	16/06	17/06	18/06	19/06
		Site inspection at afternoon			Noise monitoring	
20/06	21/06	22/06	23/06	24/06	25/06	26/06
			Site inspection and SSEMC at morning		Noise monitoring	
27/06	28/06	29/06	30/06			
			Site inspection at afternoon		Noise monitoring	

Appendix F: Cumulative complaint log

Environmental Parameters	Cumulative no. Brought forward	No. of complaint May 2010	Overall Total
Air/Dust	1	0	1
Noise	2	0	2
Water	4	2	6
House Keeping Hygiene	0	0	0
Chemical waste	0	0	0
Total	7	2	9

Appendix G: Implementation status of environmental protection and mitigation measures

Implementation status of environmental protection and mitigation

Environmental Aspect	Protection / Mitigation Measures	Implementation status	Follow-up action
Construction Noise	No percussive piling shall be carried out	Implemented	Not required
	-Use well maintained construction plant	Implemented	Not required
	-Shut down plants between work periods	Implemented	Not required
	-Install silencers on construction equipment	Implemented	Not required
	-Locate mobile plant far away from NSRs	Implemented	Not required
	-Quiet plants should be used	Implemented	Not required
	-2m high temporary noise barriers, as stipulated in EP condition 2.9, shall be installed	Implemented	Not required
Fugitive Dust Emission	-Implement regular watering and vehicle washing facilities	Improvement required	Rectified
	-Cover excavated or stockpile of dusty material by impervious sheeting or sprayed with water	Improvement required	Ongoing
	-Use tarpaulin to cover dusty materials on vehicles	Implemented	Not required
Water Quality	Excavation works within the Tai Po River within the Project shall be carried out in stages and excavation area for each stage shall be limited to section of half width of the channel and less than 100m long at any one time in order to maintain water flow within the river during construction stage	Non-compliance recorded on 19 Apr 10	Settled on 28 Apr 10
	Land-based plant shall be employed and site run-off shall be directed towards regularly cleaned and maintained silt traps and oil / grease separators to minimize leakage and loss of sediments during excavation	Implemented	Not required
	Large boulders removed from the Tai Po River within the Project during excavation shall be re-instated upon completion of works A section of 150m long natural riverbank on the western side of the river channel (Ch0 –Ch150) shall be retained	Implemented	Not required
	The excavation area shall be enclosed with bunds or barriers and dewatered prior to excavation to minimize the impacts upon the downstream of the Tai Po River	Implemented	Not required

	Provide silt trap and oil interceptor to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before pumped to the public storm water drainage system	Improvement required	Rectified
	Provide site toilet facilities	Implemented	Not required
Waste Management	Reuse excavated material as far as possible	Implemented	Not required
	Recycle scrap metals or abandoned equipment	Implemented	Not required
	Adopt a trip ticket system for the disposal of C&D materials	Implemented	Not required
	All general refuse should be segregated and stored in enclosed bins or compaction units	Implemented	Not required
Vibration	Percussive piling is to be replaced by bore-hole piling to minimize vibration impacts to the two identified Declared monuments	Not applicable at this stage	Not required
	Carrying out of vibration monitoring to ensure that vibration associated with the construction phase do not exceed the threshold limit otherwise contractor have to review the work method and construction activities have to be slow down or rescheduled to reduce the impacts	Not applicable at this stage	Not required
	Close monitoring and measurement on the cracks of the external wall of Fan Sin Temple during construction works will be carried out. Any changes on the cracks will be recorded for the contractor to slow down the construction activities accordingly; and to review the work methods and equipments immediately	Not Applicable at this stage	Not required

Implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist, Dr. Mark Shea.

Environmental Aspect	Protection / Mitigation Measures	Implementation status	Follow-up action
Ecology	Large boulders will be returned to the riverbed following the excavation works.	Not applicable	Not required
	Construction works from Ch. 0.0m – Ch. 150m would be along one side of the river only	Not applicable	Not required
	Approximately 150m of the existing natural riverbank on the western side of the river would be retained.	Implemented	Not required
	Excavation works within the river channel should be restricted to an enclosed dewater section of the river, and would be limited to sections 50-100m long at any one time.	Implemented	Not required
	Flows to the area downstream shall be maintained at all times during the construction phase	Implemented	Not required
	Capture survey shall be conducted within the Tai Po River before commencement of works. The captured target species shall be relocated to areas of the watercourse upstream of the watercourse upstream of the Tai Po River	Capture surveys had been conducted at the beginning of the Contract, during the wet season July/August 2008, 4th November 2008 and 27th, 28th October 2009	Not required
	Temporary noise barriers should be constructed to control noise impacts to habitats and associated wildlife within and adjacent to the proposed works area	Implemented	Not required
	Excavation works shall be carried out by land based plant within enclosed dry section of river channel.	Implemented	Not required
	Compensatory planting of trees and other vegetation along the banks of the newly improved drainage channel should be provided to compensate for the loss of riparian vegetation.	Not applicable	Not required
	Operation phase activities in the improved drainage channel would be limited to periodic channel maintenance such as de-silting.	Not applicable	Not required

Appendix H: Cumulative waste flow table

Cumulative waste flow table since 15th September 2008

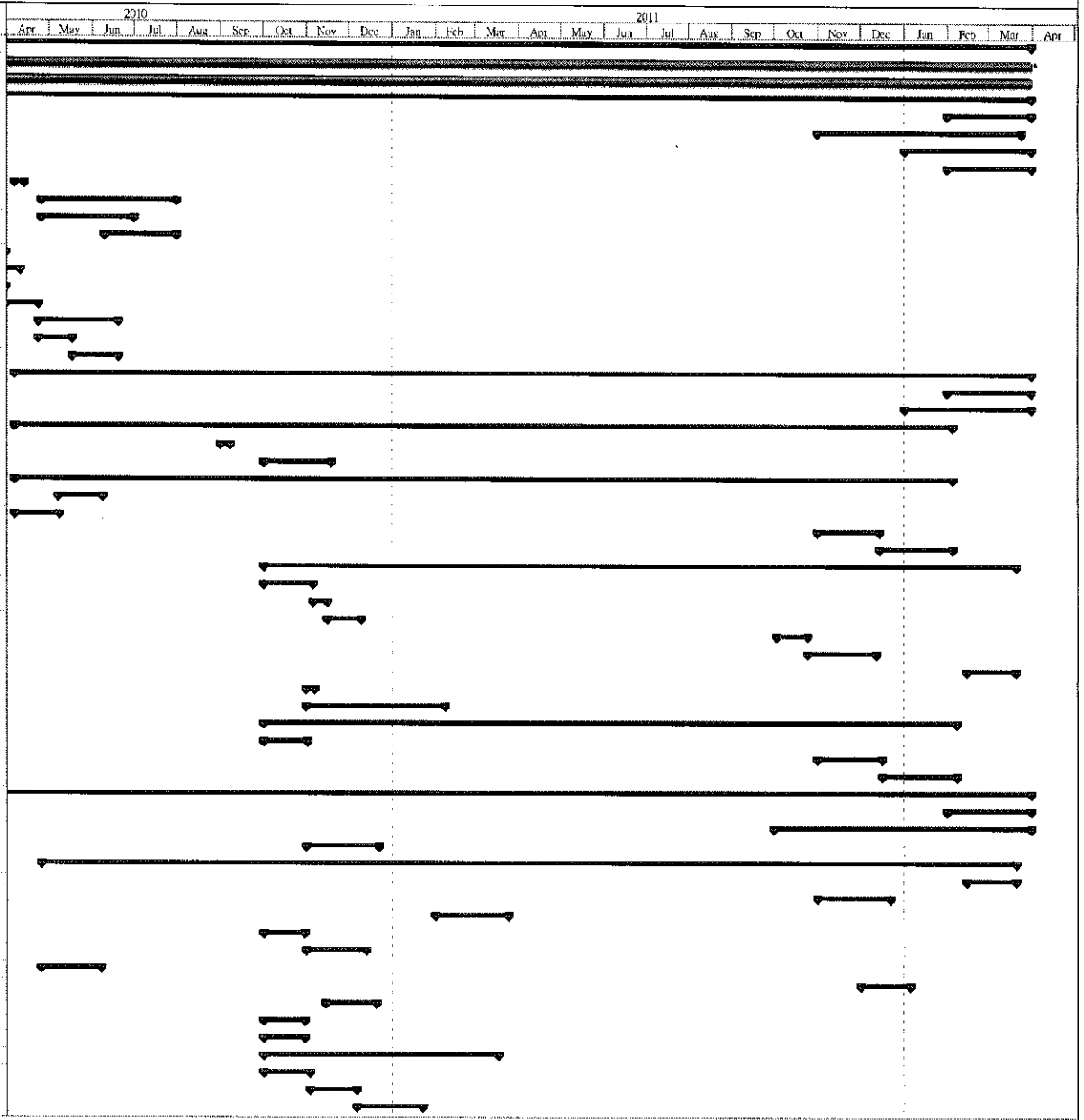
Type of waste	Inert Waste	Non-Inert Waste	Chemical Waste
September 2008	0	0	0
October 2008	0	2 tonnes	0
November 2008	36m^3	0	0
December 2008	0	0	0
January 2009	0	0	0
February 2009	0	0	0
March 2009	0	0	0
April 2009	0	0	0
May 2009	0	0	20kg*
June 2009	0	0	0
July 2009	0	0	0
August 2009	0	0	0
September 2009	0	0	0
October 2009	0.9m^3	0	0
November 2009	0	0	0
December 2009	0	0	0
January 2010	0	0	0
February 2010	0	0	0
March 2010	0	0	0
April 2010	0	0	0
May 2010	0	0	0
Total	36.9m^3	2 tonnes	20kg

Remark*: Chemical wastes generated from the project sites including Upper Tai Po River, Lam Tsuen River and She Shan River were centralized for disposal.

Appendix I: Construction programme

DSD Contract No. DC/2007/06
River Improvement Works in Upper Lam Tsuen River, She Shan River & Upper Tai Po River
Master Programme of Upper Tai Po River (version 9)

ID	Task Name	Duration	Start	Finish	Predecessors
1	Programme of Upper Tai Po River	840 days	27/7/2009	31/3/2012	
2	Site Clearance and Haul Road Maintenance	700 days	6/1/2010	31/3/2012	
3	Water Diversion	840 days	27/7/2009	31/3/2012	
4	Area L (Acess D- Ch110)	657 days	25/2/2010	31/3/2012	
5	Footpath and Dwarf Wall (Ch 0-110)	52 days	1/2/2012	31/3/2012	
8	Lighting at Access D	125 days	1/11/2011	24/3/2012	
17	Vehicular Access D	78 days	2/1/2012	31/3/2012	
20	River Bed formation (Ch 45-110)	52 days	1/2/2012	31/3/2012	
22	Footbridge TB01 (boulder trap, bay 3)	6 days	7/4/2010	13/4/2010	
24	Retaining Wall at Access D (Boulder Trap)	84 days	26/4/2010	31/7/2010	
25	Retaining Wall (RHS)	57 days	26/4/2010	30/6/2010	
44	Retaining Wall (LHS)	45 days	10/6/2010	31/7/2010	
62	Drain-off pipe at Boulder Trap (Ch 45)	30 days	25/2/2010	31/3/2010	
66	Tree Transplant	12 days	29/3/2010	10/4/2010	
68	Gabion Wall at Boulder Trap Entrance (Ch -23)	9 days	22/3/2010	31/3/2010	
70	Filling Work at Boulder Trap (RHS of downstream)	20 days	1/4/2010	23/4/2010	
72	Box Culvert TB03 (Ch 45)	49 days	24/4/2010	19/6/2010	
73	Construction of Base Slab	20 days	24/4/2010	17/5/2010	
78	Construction of Wall Stem and Top Slab	29 days	18/5/2010	19/6/2010	
82	Area P (Ch 110- Ch 230)	622 days	7/4/2010	31/3/2012	
83	River Bed formation (Ch 110-230)	52 days	1/2/2012	31/3/2012	
85	Footpath and Dwarf Wall (Ch 110-230)	78 days	2/1/2012	31/3/2012	
89	Ch 110 - 150	574 days	7/4/2010	4/2/2012	
90	Maintainence Staircase (Ch 130 RHS)	6 days	1/9/2010	7/9/2010	
92	Gabion (Ch 140-150 LHS) TG4	41 days	2/10/2010	18/11/2010	
97	Footbridge TB02 (Ch 150)	574 days	7/4/2010	4/2/2012	
98	Construction of Abutment A	27 days	8/5/2010	8/6/2010	
106	Construction of Abutment B	28 days	7/4/2010	8/5/2010	
114	Construction of Decking	38 days	1/11/2011	14/12/2011	
119	Lighting at Footbridge TB02	45 days	15/12/2011	4/2/2012	
125	Ch 150 - 230	459 days	2/10/2010	20/3/2012	
126	Gabion Wall (Ch 150-190 LHS) TG4	30 days	2/10/2010	5/11/2010	
129	Gabion Wall (Ch 150-160 RHS) TG2	8 days	6/11/2010	15/11/2010	
132	Gabion Wall (Ch 160-185 RHS) TG4	21 days	16/11/2010	9/12/2010	
135	Gabion Wall (Ch 185-210 RHS) TG1	19 days	3/10/2011	24/10/2011	
138	Gabion Wall (Ch 210-225 RHS) TG1	42 days	25/10/2011	12/12/2011	
143	Step 1 (Ch 180)	30 days	15/2/2012	20/3/2012	
145	Maintainence Staircase (Ch 180 LHS)	6 days	1/11/2010	6/11/2010	
147	Lighting CH 175-250	85 days	1/11/2010	7/2/2011	
158	Footbridge TB03 (Ch 210)	423 days	2/10/2010	7/2/2012	
159	Construction of Abutment B	26 days	2/10/2010	1/11/2010	
167	Construction of Decking	40 days	1/11/2011	16/12/2011	
172	Lighting at Footbridge TB03	45 days	17/12/2011	7/2/2012	
178	Area N (Ch230- Ch615)	654 days	1/3/2010	31/3/2012	
179	River Bed formation (Ch 230-450)	52 days	1/2/2012	31/3/2012	
181	Footpath and Dwarf Wall (Ch 230-615)	157 days	1/10/2011	31/3/2012	
187	Lighting at CH 250-320	45 days	1/11/2010	22/12/2010	
193	Ch 230-330	596 days	26/4/2010	20/3/2012	
194	Step 2 (Ch 260)	30 days	15/2/2012	20/3/2012	
196	Cascade (Ch 275)	45 days	1/11/2011	22/12/2011	
198	Gabion Wall (Ch 230-270 LHS) TG2	45 days	1/2/2011	24/3/2011	
201	Gabion Wall (Ch 260-270 RHS) TG1	25 days	2/10/2010	30/10/2010	
204	Retaining Wall (Ch 270-315 LHS) TR1 (replaced by AD1)	37 days	1/11/2010	13/12/2010	
208	Retaining Wall (Ch 270-315 RHS) TR1 (replaced by AD1)	37 days	26/4/2010	7/6/2010	
212	Step 3 (Ch 310)	30 days	2/12/2011	5/1/2012	
214	Maintainence Staircase (Ch 315 LHS)	31 days	15/11/2010	20/12/2010	
217	Gabion Wall (Ch 315-330 LHS) TG2	25 days	2/10/2010	30/10/2010	
220	Gabion Wall (Ch 320-330 RHS) TG2	25 days	2/10/2010	30/10/2010	
223	Footbridge TB04 (ch 330)	143 days	2/10/2010	17/3/2011	
224	Construction of Abutment A	28 days	2/10/2010	3/11/2010	
232	Construction of Abutment B	28 days	4/11/2010	6/12/2010	
240	Construction of decking	41 days	7/12/2010	22/1/2011	

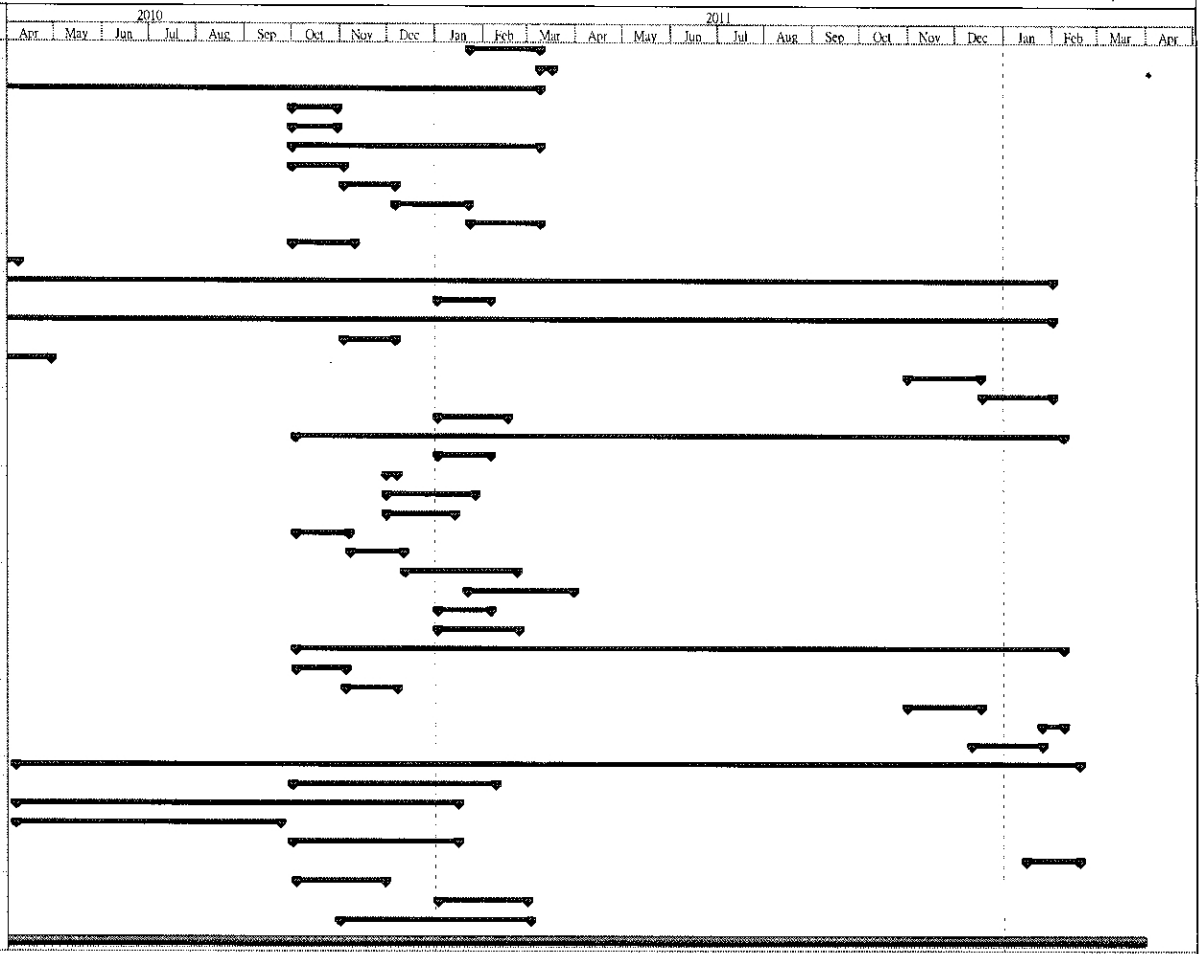


Print Date: 30/3/2010
Revised Date: 29/3/2010

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

DSD Contract No. DC/2007/06
River Improvement Works in Upper Lam Tsuen River, She Shan River & Upper Tai Po River
Master Programme of Upper Tai Po River (version 9)

ID	Task Name	Duration	Start	Finish	Predecessors
245	Lighting at Footbridge TB04	39 days	24/1/2011	9/3/2011	
250	Demolition of Bridge TB-A	7 days	10/3/2011	17/3/2011	
252	Ch 330-350	321 days	1/3/2010	9/3/2011	
253	Gabion Wall (Ch 330-345 LHS) TG2	25 days	2/10/2010	30/10/2010	
256	Gabion Wall (Ch 330-345 RHS) TG2	25 days	2/10/2010	30/10/2010	
259	Footbridge TB05 (ch 350)	136 days	2/10/2010	9/3/2011	
260	Construction of Abutment A	28 days	2/10/2010	3/11/2010	
268	Construction of Abutment B	28 days	4/11/2010	6/12/2010	
276	Construction of decking	41 days	7/12/2010	22/1/2011	
281	Lighting at Footbridge TB05	39 days	24/1/2011	9/3/2011	
286	Retaining Wall (Ch 345-400 LHS) TR1 (replaced by AD1)	34 days	2/10/2010	10/11/2010	
290	Retaining Wall (Ch 345-400 RHS) TR1 (replaced by AD1)	34 days	1/3/2010	8/4/2010	
294	Ch 350-400	579 days	29/3/2010	1/2/2012	
295	Step 4 (Ch 360)	30 days	3/1/2011	5/2/2011	
297	Footbridge TB06 (Ch 400)	579 days	29/3/2010	1/2/2012	
298	Construction of Abutment A	28 days	4/11/2010	6/12/2010	
306	Construction of Abutment B	28 days	29/3/2010	29/4/2010	
314	Construction of decking	41 days	1/11/2011	17/12/2011	
319	Lighting at Footbridge TB06	39 days	19/12/2011	1/2/2012	
324	Lighting at CH 350-380	39 days	3/1/2011	16/2/2011	
328	Ch 400-525	423 days	4/10/2010	8/2/2012	
329	Step 5 (Ch 410)	30 days	3/1/2011	5/2/2011	
331	Maintainence Staircase (Ch 420 LHS)	6 days	1/12/2010	7/12/2010	
333	Box Culvert TB01 (Ch 450)	49 days	1/12/2010	26/1/2011	
343	Retaining Wall (Ch 480-500 LHS) TR2 (20m)	38 days	1/12/2010	13/1/2011	
361	Retaining Wall (Ch 400-450 RHS) TR1 (replaced by AD1)	30 days	4/10/2010	6/11/2010	
365	Retaining Wall (Ch 400-450 LHS) TR1 (replaced by AD1)	30 days	8/11/2010	11/12/2010	
369	Retaining Wall (ch 450-500 RHS) TR2	62 days	13/12/2010	22/2/2011	
411	Retaining Wall (Ch 500-530 LHS) TR3	58 days	22/1/2011	30/3/2011	
429	Step 6 (Ch 500)	30 days	3/1/2011	5/2/2011	
431	Cascades (Ch 500 RHS)	45 days	3/1/2011	23/2/2011	
433	Footbridge TB07 (Ch 525)	423 days	4/10/2010	8/2/2012	
434	Construction of Abutment A	28 days	4/10/2010	4/11/2010	
442	Construction of Abutment B	28 days	5/11/2010	7/12/2010	
450	Construction of decking	41 days	1/11/2011	17/12/2011	
455	Demolition of existing Footbridge TB-D (Ch 525)	12 days	26/1/2012	8/2/2012	
457	Footbridge TB07 Lighting	39 days	12/12/2011	25/1/2012	
462	Ch 525-615	586 days	7/4/2010	18/2/2012	
463	Retaining Wall (Ch 535-555 LHS) TR4	111 days	2/10/2010	8/2/2011	
485	Retaining Wall TR5	244 days	7/4/2010	15/1/2011	
486	(Ch 555-595 LHS) TR5 (AD)	146 days	7/4/2010	23/9/2010	
491	Retaining Wall TR5A CH555-595 LHS	91 days	2/10/2010	15/1/2011	
533	Step 7 (Ch 570)	30 days	16/1/2012	18/2/2012	
535	Box Culvert TB02 (ch 580)	49 days	4/10/2010	29/11/2010	
545	Retaining Wall (ch 595-615) TR3	49 days	3/1/2011	28/2/2011	
559	Lighting at CH 550-610	105 days	1/11/2010	2/3/2011	
568	Project Completion	1414 days	26/9/2007	31/3/2012	



Print Date: 30/3/2010
Revised Date: 29/3/2010

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

Appendix J: Complaint Investigation Report and Log

DSD Project – River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Report for Complaint/ Concern
Ref: DC0706-CL-100507(EPD)R1
EPD Complaint Ref: EP3/N05/RN/00008938-10
Sheet: 1 of 3

RECIPIENT

Name: Chiu Hing Construction & Transportation Co., Ltd,
Details: EPD formally informed Drainage Services Department on 7th May 2010 regarding a complaint on observation of muddy water at section of Upper Tai Po River (UTPR) near Wun Yiu.
Received Date: 7th May 2010 Received Time:

COMPLAINANT / Concern

Name: N/A Tel: N/A
Address: N/A

COMPLAINT

☐Noise ☐Air quality/Dust ☑Water ☐Odour ☐Environment ☐Traffic/Pedestrian ☐Safety ☐Others

Event Date and Time: 7th May 2010
Location: Section of UTPR near Sheung Wun Yiu

INVESTIGATION RESULTS & MITIGATION MEASURES

1. A complaint on 7th May 2010 was recorded that consecutive site water discharge was observed in the site area at the upper stream area of UTPR near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day.

2. As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 7th May 2010 to resolve the above complaint.

3. During the investigation river water was observed to be slightly turbid (Fig.3.1~3.3). Major construction activities were ceased as river-based excavation works were restricted according to contractual requirements. Only site clearance activities of removal of noise barriers were being carried out during the investigation and no generation of muddy effluent was observed from such activities. As reported by Contractor, immediate follow up action was taken on the same day to minimize surface runoff from causing water quality impact.

4. The condition of turbid river water was believed to be attributed by adverse weather condition in the morning on 7th May 2010 (i.e.: amber rainstorm warning signal was hoisted in the morning), which caused soil runoff and disturbance of sediment along the UTPR.

5. Contractor was advised to pay serious attention to the weather condition and provide necessary protective measures to prevent erosion and runoff from deteriorating the river water quality. Bared soil surface and earthy stockpiles on site should be properly covered. Excavated pit should be backfilled as far as practicable.

6. As a follow up investigation, inspection was carried out by ET on 12th May 2010 to check the conditions of project site as well as water quality of UTPR. River water was observed to be clear (Fig.6.1 to 6.3) and no major construction activities were being carried out during investigation.

7. To prevent potential flooding along the project site, haul access from site ch.300 to 450 has been reformed and therefore the haul access was barely exposed (Fig.7.1 & 7.2). To prevent erosion and potential runoff, contractor was advised to implement improvement works to the exposed bare earth surface. Bared haul access should be compacted and/or hydro-seeded as soon as possible. As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site.

8. As reported by Contractor, compaction by roller to the loosed earth surface of the haul access is scheduled in the forthcoming week to upgrade the protective measures to the water stream at UTPR. Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached.

9. ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.

RECOMMENDATIONS

1. To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented.
2. Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge.
3. Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel.
4. The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site.
5. Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil erosion and runoff from causing water quality impact. Also, excavated pits should be backfilled as far as practicable to prevent erosion and generation of muddy water.
6. Contractor should regularly provide training/ toolbox talk on environmental topics, especially about protection of river water quality to their site staffs and sub-contractors.
7. Contractor should also provide detailed briefing to frontline staffs and sub-contractors before commencement of site activities in order to fulfill with planning of construction method statement.
8. Contractor should keep good site practice on regularly checking the environmental performance on sites, especially paying serious attention on any sudden changes of river water quality.
9. Contractor is reminded again to take serious notice on the complaint and always keep good environmental management at site.

Approved by: Patricia Chung Chi Ping
(Environmental Team Leader)

Signature: 

Date: 17-05-2010

Fig.3.1 – Water discharged from approximate ch.200

Fig.3.2 – River water at down stream area

Fig.3.3 – River channel near site ch.400

Fig.3.4 – River water at down stream area

Fig.6.1 – River water at approximate ch.50

Fig.6.2 – River water at approximate ch.150

Fig.6.3 – River water at downstream area

Fig.7.1 – reformed haul access at approximate ch.300

Fig.7.2 – reformed haul access at approximate ch.450

COMPLAINT / CONCERN LOG

Ref: DC0706-CL-100507(EPD)R1

Log Ref	Event Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/Mitigation Action	File Closed
Our Ref: DC0706-CL-100507(EPD) R1 EPD complaint Ref: EP3/N05//RN/ 00007763-10	7th May 2010, A complaint was recorded for the observation of muddy water at the section of Upper Tai Po River near Sheung Wun Yiu	A complaint received via EPD on 7th May 2010	Complaint on Muddy water arisen by drainage improvement works of the project at Upper Tai Po River (UTPR)	1) A complaint on 7th May 2010 was recorded that consecutive site water discharge was observed in the site area at the upper stream area of UTPR near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day. 2) As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 7th May 2010 to resolve the above complaint. 3) During the investigation river water was observed to be slightly turbid. Major construction activities were ceased as river-based excavation works were restricted according to contractual requirements. Only site clearance activities of removal of noise barriers were being carried out during the investigation and no generation of muddy effluent was observed from such activities. As reported by Contractor, immediate follow up action was taken on the same day to minimize surface runoff from causing water quality impact. 4) The condition of turbid river water was believed to be attributed by adverse weather condition in the morning on 7th May 2010 (i.e.: amber rainstorm warning signal was hoisted in the morning), which caused soil runoff and disturbance of sediment along the UTPR. 5) Contractor was advised to pay serious attention to the weather condition and provide necessary protective measures	

				to prevent erosion and runoff from deteriorating the river water quality. Bared soil surface and earthy stockpiles on site should be properly covered. Excavated pit should be backfilled as far as practicable. 6) As a follow up investigation, inspection was carried out by ET on 12th May 2010 to check the conditions of project site as well as water quality of UTPR. River water was observed to be clear and no major construction activities were being carried out during investigation. 7) To prevent potential flooding along the project site, haul access from site ch.300 to 450 has been reformed and therefore the haul access was barely exposed. To prevent erosion and potential runoff, contractor was advised to implement improvement works to the exposed bare earth surface. Bared haul access should be compacted and/or hydroseeded as soon as possible. As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site. 8) As reported by Contractor, compaction by roller to the loosed earth surface of the haul access is scheduled in the forthcoming week to upgrade the protective measures to the water stream at UTPR. Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached. 9) ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.	

				10) Suggestions were given to the Contractor including: - To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented. - Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge. - Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel. - The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site. - Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil erosion and runoff from causing water quality impact. Also, excavated pits should be backfilled as far as practicable to prevent erosion and	

				generation of muddy water. - Contractor should regularly provide training/ toolbox talk on environmental topics, especially about protection of river water quality to their site staffs and sub-contractors. - Contractor should also provide detailed briefing to frontline staffs and sub-contractors before commencement of site activities in order to fulfill with planning of construction method statement. - Contractor should keep good site practice on regularly checking the environmental performance on sites, especially paying serious attention on any sudden changes of river water quality. - Contractor is reminded again to take serious notice on the complaint and always keep good environmental management at site.	

Prepared by Environmental Team Leader: _____ Date: 17th May 2010

Ms. Patricia Chung

DSD Project – River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River

Report for Complaint/ Concern
Ref: DC0706-CL-100510(EPD)
EPD Complaint Ref: EP3/N05/RN/00009177-10
Sheet: 1 of 3

RECIPIENT

Name: Chiu Hing Construction & Transportation Co., Ltd,
Details: EPD formally informed Drainage Services Department on 10th May 2010 regarding a complaint on observation of muddy water at section of Upper Tai Po River (UTPR) near Wun Yiu.
Received Date: 10th May 2010 Received Time:

COMPLAINANT / Concern

Name: N/A Tel: N/A
Address: N/A

COMPLAINT

☐Noise ☐Air quality/Dust ☑Water ☐Odour ☐Environment ☐Traffic/Pedestrian ☐Safety ☐Others

Event Date and Time: 10th May 2010
Location: Section of UTPR near Sheung Wun Yiu

INVESTIGATION RESULTS & MITIGATION MEASURES

1. A complaint on 10th May 2010 was recorded for observation of muddy water along the river stream of UTPR at section near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day.

2. As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor on 12th May 2010 to resolve the above complaint.

3. During the investigation, river water was observed to be clear (Fig.3.1 to 3.4). Major construction activities were ceased as river-based excavation works were restricted during wet season according to contractual requirements. According to the observation and reporting of Contractor, activities of site clearance, removal of noise barriers and reformation of partial haul access had been carried out as measures to prevent surrounding area from flooding during wet season.

4. Contractor was reminded to pay serious attention to the site condition and provide necessary protective measures to prevent erosion and runoff from deteriorating the river water quality. Loosed earth surface of the reformed haul access at ch.300 to 450 should be protected (Fig.4.1 & 4.2). As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site.

5. Contractor took the advice given by ET and scheduled to upgrade the protective measures to the water stream at UTPR. Compaction by roller to the loosed earth surface of haul access at ch.300 to 450 was scheduled to be carried out in the forthcoming week. Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached.

6. ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river.

RECOMMENDATIONS

1. To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented.
2. Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge.
3. Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel.
4. The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site.
5. Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil erosion and runoff from causing water quality impact. Also, excavated pits should be backfilled as far as practicable to prevent erosion and generation of muddy water.
6. Exposed earth surface should be protected by means of geo-textile covering and/or hydro-seeding as far as it is practicable.
7. Contractor should regularly provide training/ toolbox talk on environmental topics, especially about protection of river water quality to their site staffs and sub-contractors.
8. Contractor should also provide detailed briefing to frontline staffs and sub-contractors before commencement of site activities in order to fulfill with planning of construction method statement.
9. Contractor should keep good site practice on regularly checking the environmental performance on sites, especially paying serious attention on any sudden changes of river water quality.
10. Contractor is reminded again to take serious notice on the complaint and always keep good environmental management at site.

Approved by: Patricia Chung Chi Ping
(Environmental Team Leader)

Signature: 

Date: 18-05-2010

Fig.3.1 – Water Quality at approximate ch.50

Fig.3.2 – Water Quality at approximate ch.100

Fig.3.3 – Water Quality at downstream area of the site

Fig.3.4 – Water Quality at approximate ch.600

Fig.4.1 – Reformed haul access at approximate ch.300

Fig.4.2 – Reformed haul access at approximate ch.450

COMPLAINT / CONCERN LOG

Ref: DC0706-CL-100510(EPD)

Log Ref	Event Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/Mitigation Action	File Closed
Our Ref: DC0706-CL-100510(EPD) EPD complaint Ref: EP3/N05//RN/ 00009177-10	10th May 2010, A complaint was recorded for the observation of muddy water at the section of Upper Tai Po River near Sheung Wun Yiu	A complaint received via EPD on 10th May 2010	Complaint on Muddy water arisen by drainage improvement works of the project at Upper Tai Po River (UTPR)	1) A complaint on 10th May 2010 was recorded for observation of muddy water along the river stream of UTPR at section near Sheung Wun Yiu. Environmental Team (ET) was informed by Engineer Representative (ER) on the same day. 2) As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, on 12th May 2010 to resolve the above complaint. 3) During the investigation, river water was observed to be clear. Major construction activities were ceased as river-based excavation works were restricted during wet season according to contractual requirements. According to the observation and reporting of Contractor, activities of site clearance, removal of noise barriers and reformation of partial haul access had been carried out as measures to prevent surrounding area from flooding during wet season. 4) Contractor was reminded to pay serious attention to the site condition and provide necessary protective measures to prevent erosion and runoff from deteriorating the river water quality. Loosed earth surface of the reformed haul access at ch.300 to 450 should be protected. As major construction activities were ceased, temporary stockpiling of earth material should be prevented on site. 5) Contractor took the advice given by ET and scheduled to upgrade the protective measures to the water stream at UTPR. Compaction by roller to the loosed earth surface of haul access at ch.300 to 450 was scheduled to be carried out in the forthcoming week.	

				Hydro-seeding would be also considered as an alternative measure to site area where roller cannot be reached. 6) ET has reminded the Contractor again to be cautious on not arising muddy water in the future construction works along the river. 7) Suggestions were given to the Contractor including: - To meet relevant environmental ordinance such as Environmental Impact Assessment Ordinance (EIAO) and Water Pollution Control Ordinance (WPCO), Contractor was seriously reminded that direct discharge of site water is not allowed and site water seepage to the river should be prevented. - Prior to the excavation and de-watering activities, mitigation measures including provision of site water treatment facilities, bund walls and barriers should be implemented on site. Underground water and muddy effluent drained from excavated pit should be diverted to proper silt removal facilities before discharge. - Contractor should well manage the temporary drainage system on site to avoid surface runoff and muddy effluent from entering into the public drainage and river channel. - The contractor shall always check the performance of bunds and barriers provided in order to minimize site water seepage and surface runoff from site. - Should no construction works will be carried out, temporary stockpiling of earth materials should be prevented on site as to avoid soil erosion and runoff from causing water quality impact.	

				Also, excavated pits should be backfilled as far as practicable to prevent erosion and generation of muddy water. - Exposed earth surface should be protected by means of geo-textile covering and/or hydro-seeding as far as it is practicable. - Contractor should regularly provide training/ toolbox talk on environmental topics, especially about protection of river water quality to their site staffs and sub-contractors. - Contractor should also provide detailed briefing to frontline staffs and sub-contractors before commencement of site activities in order to fulfill with planning of construction method statement. - Contractor should keep good site practice on regularly checking the environmental performance on sites, especially paying serious attention on any sudden changes of river water quality. - Contractor is reminded again to take serious notice on the complaint and always keep good environmental management at site.	

Prepared by Environmental Team Leader: _____

Ms. Patricia Chung

Date: 18th May 2010