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

November 2008

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APPROVAL SHEET

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(Ecologist)

EM&A Manual in relation to 2-year post construction monitoring program for Upper Tai Po River

Endorsed by: **IEC(Environmental Resources Management)

Signature: _____ Date: _____

Mr. Marcus IP
(IEC)

* ET – Environmental Team
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EXECUTIVE SUMMARY

This is the third monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Service Department Contract No. DC/2007/06 entitled “River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River”. This report concludes the impact monitoring for the activities undertaken during the period from 1st November to 30th November 2008. The major construction activities carried out by the contractor during this reporting period include erection of temporary noise barrier and construction of boulder trap.

The Environmental Team 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.

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 graphical plots presenting the data are provided in **Appendix G**.

Piling works were not scheduled for this month. Therefore, Environmental Team had not carried out vibration monitoring during the month.

Ecological capture survey was carried out for this month. The report that is prepared by the Ecologist, Dr Mark Shea is presented in section 3.2. The summary of ecological site inspection findings and implementation status of environmental protection and mitigation for ecology, prepared by the Ecologist Dr. Mark Shea, are provided in table 6.2and **Appendix I** respectively.

There was one non-compliance recorded for the reporting month.

There were two formal public complaints received in the reporting month. For further details, please refer to **section 2.7** of this report. For the complaint reports and logs, please refer to **Appendix A and Appendix B** of this report.

There was no breach of Action and Limit levels for this month.

There was no reporting change for this reporting month.

Key construction activities in the coming month will be construction of boulder trap and gabion wall construction. It is expected that noise impacts, runoff impacts and waste disposal will be generated on site.

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 third monthly Environmental Monitoring and Audit (EM&A) Report for the river improvement works at Upper Tai Po River under Drainage Service 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 was 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 November 2008. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the 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

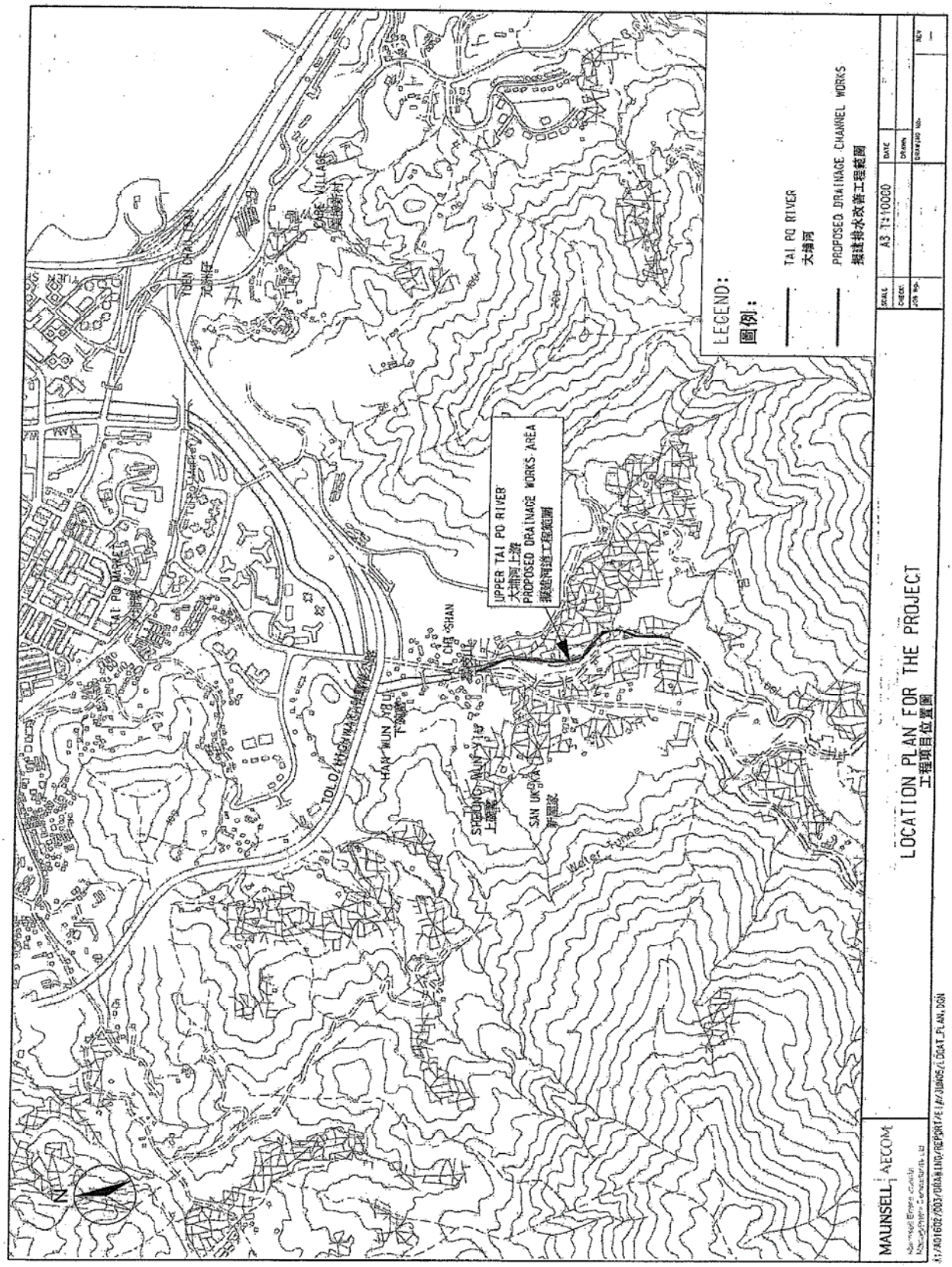
been commenced on September 15th 2008 and anticipated to complete in April 2011.

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 this reporting period include:

(1) Erection of temporary noise barriers
(2) Construction of boulder trap.

2.5 Construction activities for the next reporting period

Major construction activities carried out by the contractor anticipated for the coming month include:

(1) Construction of boulder trap
(2) Construction of gabion wall

2.6 Non-compliance with the environmental performance limits

There was one non-compliance recorded on Nov 5th regarding muddy water in Upper Tai Po river, please refer to section 6.2 for further details.

The event and action plan for Ecology is shown in Appendix C.

The action and limit level for Noise is shown in Appendix D.

The reference standards for vibration are shown in Appendix E.

2.7 Summary of Complaints

There were two formal complaints received in this reporting month. Cumulative complaint log is shown in Appendix H.

The complaint on Nov 5th 2008 was regarding muddy water from the Upper Tai Po River (Chainage 100). ET arranged a site investigation and a follow up meeting with representative from the contractor to resolve the incident on Nov 5th 2008. Findings from the investigation showed that muddy water was mainly generated by river diversion activities and formation works of barrier bunds. Barrier bunds covered by geo-textile was found defective that soil runoff could not be prevented effectively. ET has urged the contractor to rectify the discrepancy as soon as possible and second site investigation on Nov 10th was conducted to check the remedial actions taken. During the follow up investigation, no muddy water was found.

For the detailed complaint report, please refer to Appendix A of this report.

Another complaint on Nov 28th 2008 was regarding mud deposition and dust generation by vehicles leaving out from the site. ET arranged a site investigation and a follow up meeting with the representative of contractor to resolve the incident on Dec 3rd. In the investigation follow up actions taken by contractor were observed which include provision of water sprinklers for regular watering to the dusty surfaces and paving the section of site entrance by bituminous materials for dust suppression issues. ET suggested contractor to wash the vehicles before leaving site and immediate clean up to the public access should be given once earthy materials were found brought from the site.

For the detailed complaint report, please refer to Appendix B of this report.

For the cumulative complaint log, please refer to Appendix G of this report

3.0 Ecological Monitoring Results

Capture survey was carried out in this reporting month. The report was prepared by the ecologist Dr. Mark Shea and it is incorporated into this monthly report.

3.1 Capture survey monitoring parameters, methodology and locations.

Detailed monitoring parameters methodology and locations for ecological impact were proposed and summarized in table 3.2.1 below. The capture survey results were presented in table 3.2.2. The capture survey and releasing site is shown in section 3.2.3, for the detailed capture survey results and report, please refer to section 3.2 of this report.

3.2 Capture survey results and report

Ecological Capture Survey

Trip Report for Upper Tai Po River

(Survey Date: 4 Nov 2008)

3.2.1 SCOPE OF SURVEY

Scope of surveys is detailed in the Table 3.2.1.

Table 3.2.1 Summary of scope of ecological baseline monitoring*

No.	Item	Form	Methodology	Locations	Frequency	Duration
1	Hong Kong Newt *Paramesotriton hongkongensis*	Amphibian	live trapping, netting	Upper River, Lower river	1	Daytime Nov. 08
2	*Pseudobagrus trilineatus*	Fish	live trapping, netting	Upper River, Lower river	1	Nighttime Nov. 08
3	*Parazacco spilurus*	Fish	live trapping, netting	Upper River, Lower river	1	Daytime Nov. 08

3.2.2 RESULTS OF CAPTURE SURVEYS

Hong Kong Newt and target fish

Capture survey was undertaken within works boundary along the Upper Tai Po river during daytime and night time on the 4th 2008. Captured target species were released at the upper stream of Tai Po River shown in figure 1 of **section 3.2.3**.Result of capture survey was presented in the table 3.2.2 below:

Table 3.2.2. Capture survey results

Species Name	Species name in Chinese	No of captured	No of individuals released at Wo Liu
Paramesotriton hongkongensis	香港瘰螈	0	0
Pseudobagrus trilineatus	三線擬鱨	0	0
Parazacco spilurus	異鱲	220	220

3.2.3. Capture Survey route and Releasing site for capture survey location

The following map is the location indication for capture survey route and release location for *Paramesotriton hongkongensis*, *Pseudobagrus trilineatus* and *Parazacco spilurus* at Upper Tai Po River for this project.

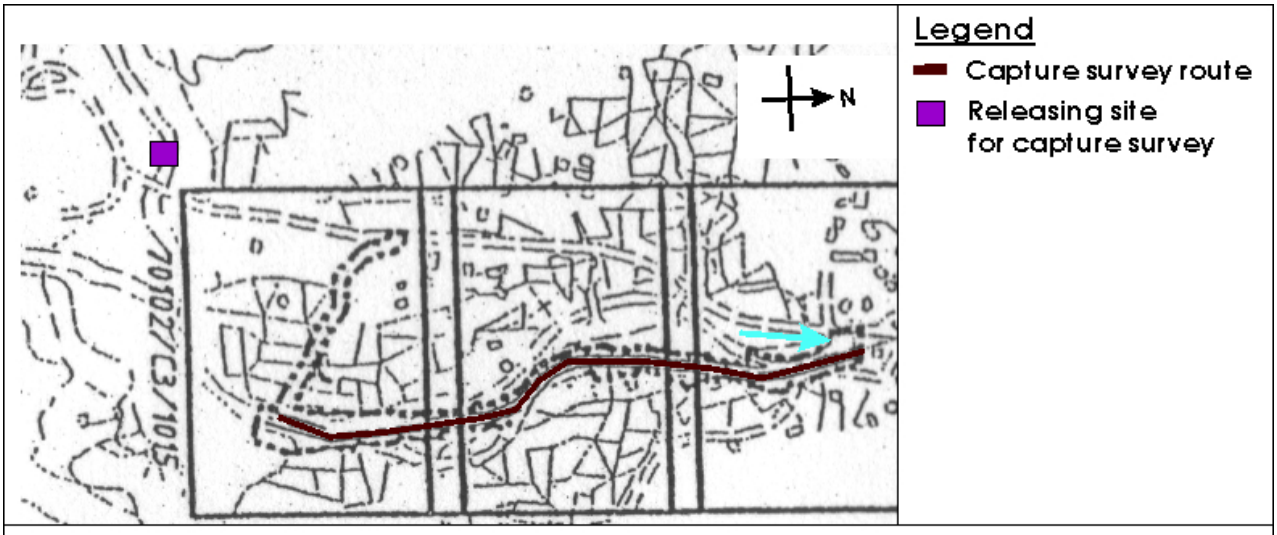


Figure 1 . Location of capture survey and releasing site at Upper Tai Po River

4.0 Noise Monitoring Results

Noise monitoring was carried out by the Environmental Team for this month from Nov 1st to Nov 30th. The Leq(30min) result ranged from 51.5dB(A) to 72.2dB(A) for all the monitoring locations in the month of November. The results, graphical plots and the location plan for the noise monitoring locations are presented in **APPENDIX F.**

4.1 Noise Monitoring Location

In accordance with the EM&A Manual, noise monitoring locations were established at 11 N.S.R. locations**.** During this month of monitoring, the RE requested an additional monitoring at Hilltop Garden on Nov 22nd and it is a free field measurement location. UTP 5 could not be monitored by the Environmental Technician due to the danger caused by dogs on Nov 5th. The following table 4.1 is the description of those 11 N.S.R. and the additional temporary monitoring location at Hilltop Garden on Nov 22nd.

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
Hilltop Garden	Temporary measurement requested by RE at Hilltop Garden on Nov 22nd only.

5.0 Vibration monitoring Results

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

6.0 Environmental issues and Actions

6.1 Site inspections and key environmental issues

As mentioned in Section 8.1 of the EM&A manual, 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. For the implementation status of the environmental protection and mitigation measures, please refer to Appendix I of this report.

Site inspection were conducted on 5, 12, 19 and 26th of November 2008. A detailed checklist of each site inspection together with comments and relevant photos have been filed and kept. The inspections were summarized in Table 6.1. The ecological inspections prepared by the Ecologist, Dr. Mark Shea were summarized in Table 6.2.

Table 6.1 Summary results of site inspection findings.

Date	Observations	Observation or Non compliance	Advice from ET	Action Taken	Closing Date	Remarks
Nov 5th	1. Muddy water was found along Chainage 0-50 due to the poor design and installation of the Geo-textile along the banks which resulted in surface runoff was directly discharged into the river	Non-Compliance	Contractor was reminded to improve the design of the Geo-textile along the banks to avoid the runoff to be directly discharged into the river	-Action taken as advised by changing and improving the design of barriers formed by rocks/bunds and geo-textile prior to the Nov 12th inspection. -No muddy water was found during the Nov 12th inspection	Nov 12th 2008	This observation has been recorded as a non-compliance; please refer to section 6.2 for details.
Nov 12th	1. Barriers formed by rocks/bunds and geo-textile materials should be maintained properly. 2. The coverage of the barriers formed by rocks/ bunds and geo-textile materials was not enough along the construction zone	1. Observation 2. Observation	1. Contractor was reminded to be cautious of the barriers conditions formed by rocks/bunds and geo-textile. 2. Contractor was reminded to extended the coverage of the barriers formed by rocks/bunds and geo-textile along the	1. Action taken as advised by the contractor by replacing the broken geo-textile prior to the Nov 19th inspection. . 2. Action taken as advised by the contractor by extending the coverage of the barriers formed by rocks/bunds and geo textile along the construction zones of the river prior	Nov 19th 2008	-- --

	of the river.		construction zone of the river.	to the Nov 19th inspection.		
Nov 19th	The height coverage of the newly formed barriers formed by rocks/bunds and geo-textile materials was not high enough along the construction zone of the river	Observation	Contractor was reminded to place more sandbags under the geo-textile materials to increase the height coverage of barriers formed by rocks/bunds and geo-textile materials	Action taken as advised by the contractor by placing additional sandbags under the geo-texile materials to increase the height coverage of the barriers formed by rocks/bunds, sandbags and geo textile materials prior to the Nov 26th inspection.	Nov 26th 2008	--
Nov 26th	Outlet of the drip tray provided for drilling rig was not sealed properly, this may cause leakage to the surrounding area.	Observation	Contractor was reminded to place a cap on the outlet of the drip tray to avoid any leakage to the surrounding area.	The contractor has taken immediate follow up action by sealing the outlet with tapes temporarily. The contractor said the whole set of drilling rig will be removed in two days.	Dec 3rd 2008	--

Ecological inspections prepared by Dr. Mark Shea. In Table 6.2

Table 6.2 Summary results of ecological site inspection findings

Date	Observations	Advice from Ecologist	Action Taken	Closing Date
Nov 5th	No Major findings for this inspection	No Advice is required	No Action is required to be taken	Nov 12th
Nov 12th	No Action is required to be taken	No Advice is required	No Action is required to be taken	Nov 19th
Nov 18th	No Action is required to be taken	No Advice is required	No Action is required to be taken	Nov 26th
Nov 26th	No Action is required to be taken	No Advice is required	No Action is required to be taken	Dec 3rd

6.2 Non-compliance

There was one non-compliance recorded on November 5th 2008. Muddy water was found at Upper Tai Po River during the site inspection. The contractor was advised to improve the design of the barriers of the formed by rocks/bunds and geo-textile. The contractor took the advice and implemented newly designed barriers formed by bunds/ rocks and geo-textile. Muddy water was not found during the Nov 12th site inspection.

6.3 Recommendations

Water quality was the main concern for this month. Progressive improvement for rectifying the muddy water that was being discharged into the stream was the priority task. As mentioned in table 6.1 in the above, the contractor should properly maintain the barriers formed by bunds rocks and geo-textile. The contractor should be aware of the conditions of the barriers to avoid the leakage of muddy water. Also, they should extend the height of the barriers to avoid muddy runoff being directly discharged into the stream. Besides, Contractor should also be cautious on drip tray condition to avoid chemical leakage to the surround area.

6.4 Implementation status and effectiveness of the mitigation measures

During the site investigation, it was found that the contractor improved the design of geo-textile along the stream. The height coverage of the geo-textile coverage had been extended. Contractor was reminded to properly maintain the de-silting facilities that have implemented on site to avoid muddy water being discharged into the river.

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 to the Waste Disposal recorded by the Contractor recorded on November 2008.

Table 7.1 Summary of Waste Disposal in November 2008

Type of waste	Inert Waste	Non-Inert Waste	Chemical Waste
November 2008	$36m^3$	0	0

8.0 Status of permits and Licenses Obtained

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

Table 8.1 A summary of permits / licenses obtained by the contractor

Description	License / Permit No.#	Date of Issue	Date of Expiry	Remarks
Environmental Permit	EP-223/2005	31st Aug, 2005	N/A	Issued
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 Chemical Producer	5213-724-C3251-03	19th Dec, 2007	Not applicable	Issued
Registration of C&D Waste Producer	N/A	N/A	N/A	N/A

9.0 Future Key issues

Key construction activity in the coming month will be the construction of boulder trap and the gabion wall. The construction activities for these items may generate some environmental impacts. They include air, noise, water and waste.

The construction site and the site entrance may generate dust. Therefore, proper water spraying, tarpaulin covering and wheel washing at the site entrance are recommended

The plants for the construction of boulder trap will generate construction noise. The plants may be in intermittent use should be shut down between work periods or should be throttled down to a minimum in order to minimize the noise impact from the construction activities.

The construction of boulder trap may generate runoff and water concern at the site. The contractor shall implement proper barriers formed by bunds, rocks and geo-textile or wastewater treatment facilities to avoid muddy water being discharged into the stream.

It is expected that construction waste would be generated on site for the boulder trap and the gabion wall construction. Contractor shall assign proper site storage area for waste and construction materials.

Drip tray pans are recommended to be provided on site and ready to be used when there are diesel containers placed on site.

10.0 Conclusion

In this reporting month, construction works for hoarding (noise barriers) and boulder trap were carried out as the main part of the construction activities.

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

Environmental Team had carried out construction noise monitoring on weekly basis and no exceedance was found.

The capture survey was carried out by the Ecologist, Dr. Mark Shea. 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 one non-compliance recorded for the reporting month.

There were two complaints in the reporting month regarding muddy water and dust respectively. ET has followed the compliant procedure, and conducted site investigations and meetings, and submitted the compliant report accordingly. Remedial actions and recommendations have been proposed to the contractor for follow-up.

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: Complaint report and Log on November 5th 2008

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

Report for Complaint/ Concern
Ref: **Sheet: 1 of 2**

RECIPIENT

Name: Chiu Hing Construction & Transportation Co., Ltd,
Details: EPD formally informed Chiu Hing Construction & Transportation Co., Ltd, on 5th November 2008 regarding a complaint on muddy water caused by river improvement works at Upper Tai Po River(UTPR).
Received Date: 5 November 2008 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: 5 November 2008
Location: A complaint was recorded on muddy water from the construction site at Upper Tai Po River (Chainage 100).

INVESTIGATION RESULTS & MITIGATION MEASURES

1. A complaint on 5th November 2008 was recorded that the muddy water was caused by the river improvement works. ET was informed by the Contractor on 5th November 2008.

2. As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, Residential Engineer on 5th November 2008 to resolve the above compliant.

3. During the investigation, muddy water was found due to the disturbance of river sediment when site works being carried out (e.g. drainage diversions and barriers formation).Barriers formed by bunds and geo-textile materials were found poorly installed.

4. A follow up meeting at site with participation of the ET, reps from Contractor and RE after the investigation of the same day.

5. The Contractor agreed to be cautious on not arising muddy water in the future construction works across the river; and agreed to take immediate actions to rectify the discrepancies mentioned above. (Part 3)

6. ET carried out a second site investigation on 10th November 2008 to check the remedial actions taken by the contractor, with findings as follows:
   - Barriers are properly established and covered with geo-textile materials to ensure no muddy water being formed.
   - No muddy water was observed along UTPR during investigation.

RECOMMENDATIONS

- The contractor shall always check the performance of bunds and barriers in order to ensure no muddy water was discharged to the river by site works in the future.
- The Contractor should minimize adverse effect caused by the construction related activities across the river in the future.
- The Contractor should take serious notice on the compliant and always keep good environmental management at site.

Signed:  Date: 10-11-2008

COMPLAINT / CONCERN LOG

Ref:_____

Log Ref	Event Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/Mitigation Action	File Closed
	5th November 2008; at Upper Tai Po River (Chainage 100).	A complaint received by Contractor via EPD on 5th November 08 regarding the muddy water on Upper Tai Po River	A compliant was recorded on muddy water from the construction site at Upper Tai Po River.	1) The event investigation on 5th November 2008 has been conducted to figure out major source of impacts produced from the site. 2) Muddy water was found in the river, caused by the river improvement works conducted by the contractor. De-silting facilities such as barriers formed by bunds and geo-textile materials were poorly installed. 3) The second investigation was conducted on 10th November 2008 to check the remedial actions taken by the contractor. 4) The remedial actions taken by the contractor are as follows: i. Barriers are properly established and covered with geo-textile materials to ensure no muddy water being formed. ii. No muddy water was observed along UTPR during investigation.	Yes

Filed by Environmental Team Leader: _____ Date: 10th November 2008

Appendix B: Complaint Report and Log on November 28th 2008

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-081108(EPD)
Sheet: 1 of 3

RECIPIENT

Name: Chiu Hing Construction & Transportation Co., Ltd,
Details: EPD formally informed Chiu Hing Construction & Transportation Co., Ltd, on 28th November 2008 regarding a complaint on deposition of mud/ dust generated on site to the public road at Upper Tai Po River (UTPR)
Received Date: 28 November 2008 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: 28 November 2008
Location: A complaint was recorded for deposition of mud/ dust generated on site to the public road at UTPR.

INVESTIGATION RESULTS & MITIGATION MEASURES

1. A complaint on 28th November 2008 was recorded that mud was deposited by vehicles coming out from the site.
2. As per the EM&A Manual section 9.3, ET arranged a site investigation with the representatives from Contractor, ER and IEC, on 03rd December 2008 to resolve the above compliant.
3. During the investigation it was found that several remedial actions have been implemented by the contractor as follows:
   - Site entrance was paved with bituminous materials (fig.1);
   - High jet water sprayer was provided for washing the vehicles (fig.2); and
   - Water sprinklers were installed in the site entrance for dust suppression (fig.3).
4. A follow up meeting was held at site with participation of the ET, representatives from Contractor after the investigation of the same day.
5. ET has reminded the contractor on the importance of dust control on site and that bringing any earth material from site to the public road is not allowed.

RECOMMENDATIONS

1. Contractor was reminded if any earth materials are brought to the public access, action of cleaning up shall be taken immediately.
2. The bituminous materials should be well paved to minimize bringing the debris of bitumen, to the public access.

3. Vehicles should be washed before exiting the site to ensure no earth materials can be brought to the public access.
4. The remedial action taken by the contractor as mentioned above should be continuously implemented if necessary.

Signed:

Date: 03-12-2008

(Fig 1) Site entrance was paved with bituminous materials, photo taken on 3rd December 2008

(Fig 2) High jet water sprayer was provided for washing vehicles, photo taken on 3rd December 2008

(Fig 3) Water sprinklers were installed for dust suppression, photo taken on 3rd December 2008

COMPLAINT / CONCERN LOG

Ref: DC0706-CL-081108(EPD)

Log Ref	Event Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/Mitigation Action	File Closed
	28th Nov 08, public road outside of the site entrance at Upper Tai Po River (UTPR)	A complaint received by contractor via EPD on 28th Nov 08, regarding vehicles bringing mud to the public access and dust generation.	A complaint was recorded about site vehicles bringing mud and dust to the public access.	1) Site investigation was carried out on 3rd Dec 08 to find out the major source of impact, as well as checking the performance of remedial actions taken from the location. 2) Muddy vehicles before exiting the site without proper washing cause the deposit of earth material and dust problem on the public road. 3) Several remedial actions were taken as follows: - Site entrance was paved with bituminous materials; - High jet water sprayer was provided for washing the vehicles; and - Water sprinklers were installed within the site entrance for dust suppression.	Yes

Filed by Environmental Team Leader: _____ Date: 3rd Dec 08

Appendix C: 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 provided on **Appendix table 1**.

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 D: 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 E: 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 F: Noise monitoring results, graphical plots and Location Plan

Noise monitoring for the Nov 7th and Nov 8th Measurement

Location		L90 30min	L10 30min	Leq 30min	Date	Time duration	Major Construction Noise	Other Noise source	Weather	Location Description
UTP	1	52.6	62.8	60.4	Nov 8th 08	10:30 -11:00	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Façade
UTP	2	53.4	61.2	58.0	Nov 8th 08	11:10-11:40	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Facade
UTP	3	49.4	61.3	59.7	Nov 8th 08	9:50-10:20	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Facade
UTP	4	43.7	55.0	52.6	Nov 8th 08	13:10-13:40	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Facade
UTP	5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UTP	6	57.1	72.6	70.1	Nov 8th 08	13:45-14:15	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade
UTP	7	58.3	69.1	67.4	Nov 7th 08	16:50-17:20	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade
UTP	8	62.4	73.0	69.8	Nov 8th 08	14:30-15:00	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise, 3 Bird's noise	Fine	Facade
UTP	9	55.0	65.3	62.4	Nov 8th 08	17:25-17:55	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade
UTP	10	55.3	65.7	62.4	Nov 7th 08	16:00-16:30	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise, 3 Bird's noise	Fine	Facade
UTP	11	58.2	67.2	63.3	Nov 7th 08	15:15-15:45	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade

5* Note: The environmental technician could not get into the location for noise measurement due to the danger caused by dogs

Noise monitoring for the Nov 15th Measurement

Location		L90 30min	L10 30min	Leq 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP	1	55.2	69.0	66.8	Nov 15th 08	13:35-14:05	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Facade
UTP	2	54.4	60.1	59.9	Nov 15th 08	13:00-13:30	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Facade
UTP	3	50.1	60.3	58.4	Nov 15th 08	16:10-16:40	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise, 3 River Noise	Fine	Facade
UTP	4	42.3	54.2	51.5	Nov 15th 08	15:30-16:00	Construction site is too far away from NSR	1 Residential noise	Fine	Facade
UTP	5	44.8	56.0	55.7	Nov 15th 08	14:50-15:20	Construction site is too far away from NSR	1, River noise, 2 Public noise, 3 Dog's noise	Fine	Facade
UTP	6	64.3	70.4	66.5	Nov 15th 08	14:10-14:40	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise	Fine	Facade
UTP	7	42.3	54.2	51.5	Nov 15th 08	10:55-11:25	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade
UTP	8	57.5	72.4	70.5	Nov 15th 08	11:30-12:00	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 None	Fine	Facade
UTP	9	48.3	55.4	52.9	Nov 15th 08	10:20-10:50	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. House renovation noise	Fine	Facade
UTP	10	44.7	54.3	51.7	Nov 15th 08	9:43-10:13	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Public noise, 3 radio noise	Fine	Facade
UTP	11	42.0	57.9	53.4	Nov 15th 08	9:05-9:35	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade

Noise monitoring for the Nov 22nd Measurement

Location		L90 30min	L10 30min	Leq 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location Description
UTP	1	55.0	68.8	65.0	Nov 22nd 08	13:00-13:30	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise	Fine	Façade
UTP	2	55.5	68.4	65.0	Nov 22nd 08	14:18-14:48	Construction site is too far away from NSR	1 Traffic noise	Fine	Facade
UTP	3	50.5	60.7	56.5	Nov 22nd 08	16:40-17-10	Construction site is too far away from NSR	1 Traffic noise, 2 Residential noise, 3 River Noise	Fine	Facade
UTP	4	59.1	61.1	60.7	Nov 22nd 08	14:53-15:23	Construction site is too far away from NSR	1 Residential noise	Fine	Facade
UTP	5	52.1	58.7	57.0	Nov 22nd 08	15:30-16:00	Construction site is too far away from NSR	1, River noise, 2 Public noise, 3 Dog's noise	Fine	Facade
UTP	6	64.3	70.4	66.5	Nov 22nd 08	16:05-16:35	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2Dog's noise	Fine	Facade
UTP	7	48.9	68.2	62.8	Nov 22nd 08	11:20-11:50	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 Water flowing noise, 2 Residential Noise	Fine	Facade
UTP	8	52.6	68.5	66.4	Nov 22nd 08	10:45-11:15	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1, Water flowing noise 2, Public noise	Fine	Facade
UTP	9	57.5	77.5	72.2	Nov 22nd 08	9:15-9:45	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. Water flowing noise	Fine	Facade
UTP	10	49.7	70.2	65.1	Nov 22nd 08	9:55-10:25	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1 none	Fine	Facade
UTP	11	43.8	55.6	52.4	Nov 22nd 08	8:30-9:00	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. Dog's noise	Fine	Façade
Additional Measurement requested by RE. Hilltop Garden measurement		49.6	64.5	60.5	Nov 22nd 08	13:40-14:10	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	Public noise	Fine	**Freefield* NOTE**

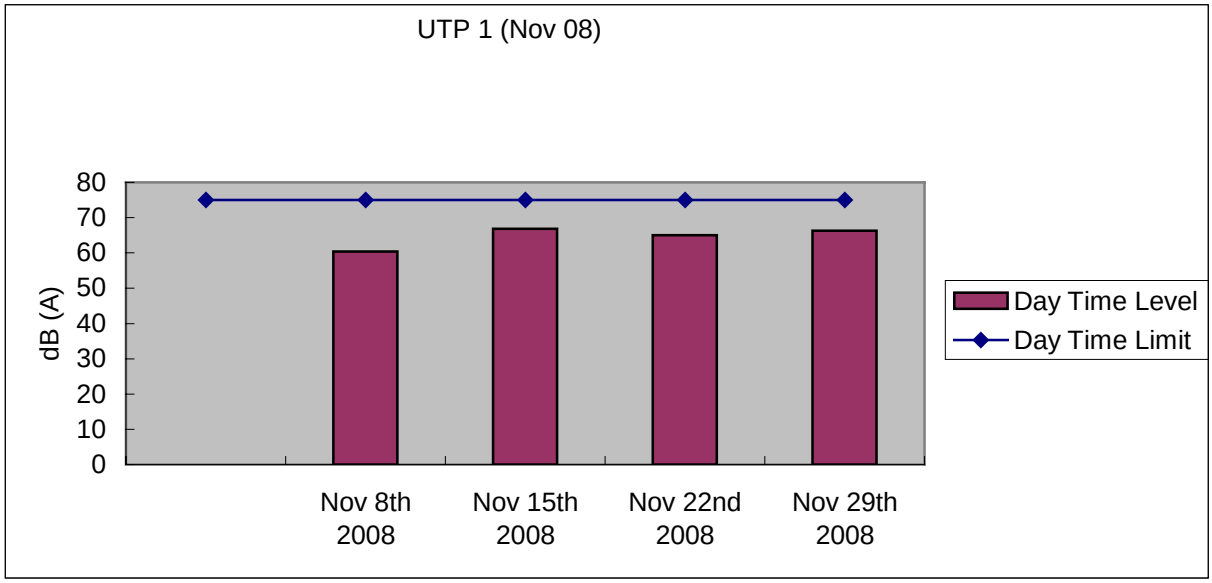
Note* Hilltop garden was a freefield measurement,
therefore 3dB(A) has to be added to the measured result

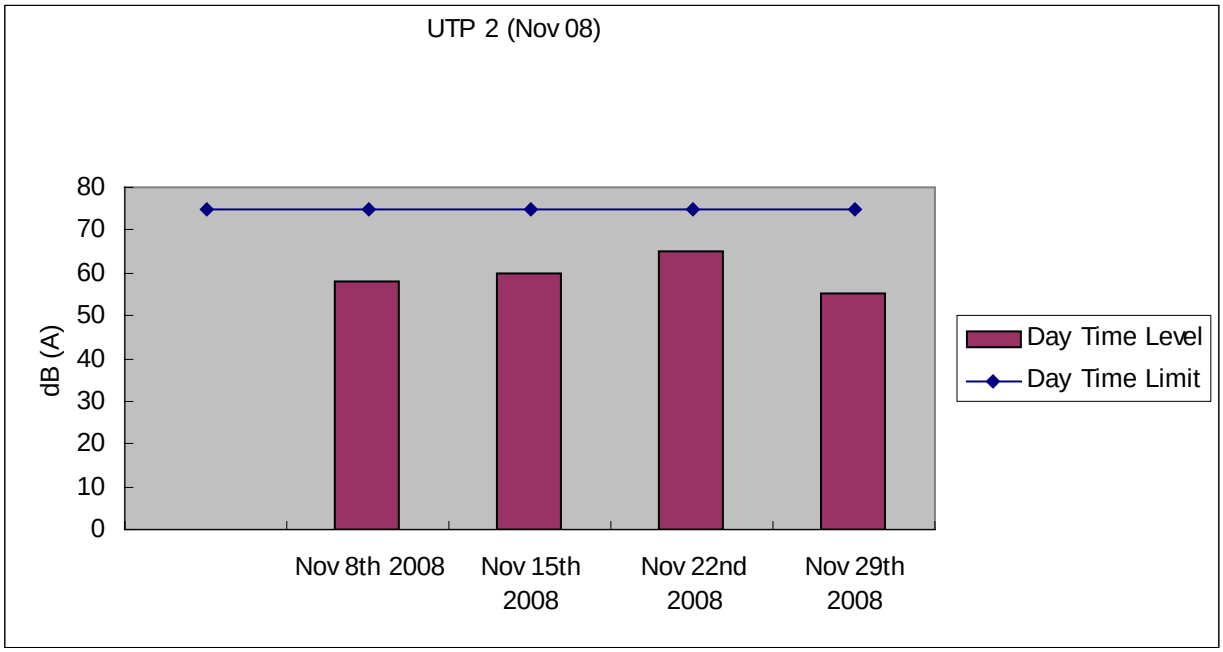
Noise monitoring for the Nov 29nd Measurement

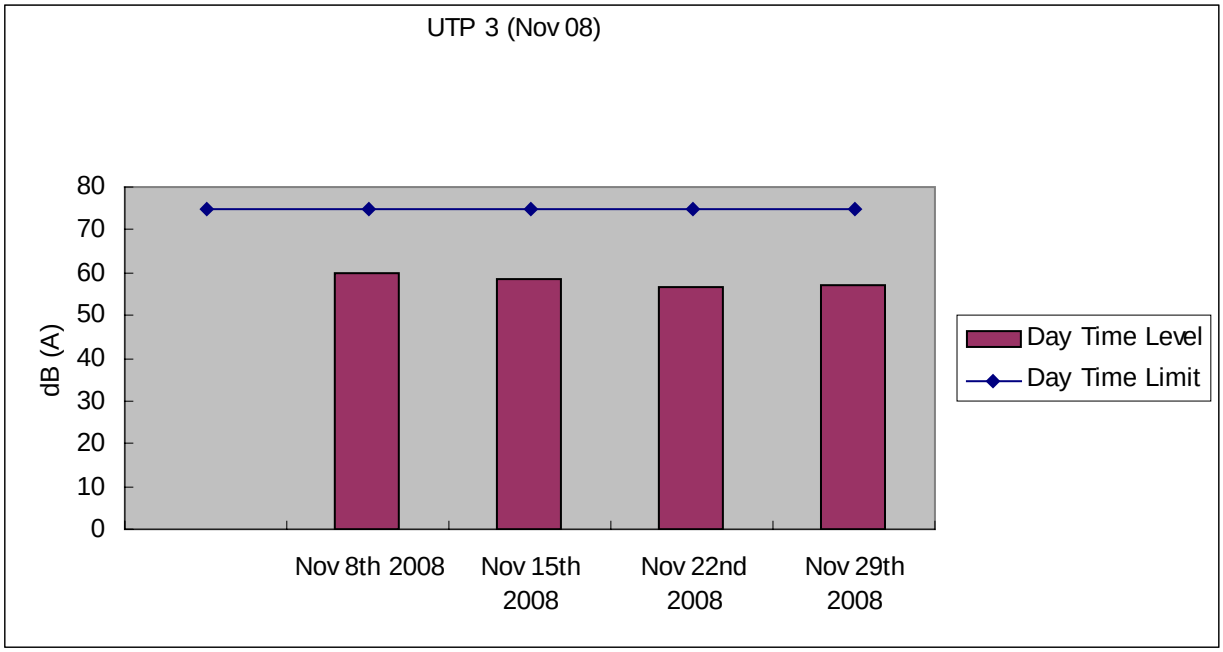
Location		L90 30min	L10 30min	Leq 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP	1	53.6	67.6	66.3	Nov 29th 2008	13:00-13:30	Construction site is too far away from NSR	1 Public noise, 2 River noise, 3 Transportation noise	Fine	Façade
UTP	2	44.3	54.2	52.2	Nov 29th 2008	16:00-16:30	Construction site is too far away from NSR	1 Transportation noise	Fine	Façade
UTP	3	51.5	57.3	56.9	Nov 29th 2008	16:40-17:10	Construction site is too far away from NSR	1 Residential Noise, 2 Radio noise	Fine	Façade
UTP	4	58.0	62.0	60.9	Nov 29th 2008	13:33-14:03	Construction site is too far away from NSR	1 Residential Noise, 2 Radio noise	Fine	Façade
UTP	5	50.5	57.7	55.9	Nov 29th 2008	14:05-14:35	Construction site is too far away from NSR	1 Public noise, 2 River noise	Fine	Façade
UTP	6	47.3	58.6	57.3	Nov 29th 2008	14:40-15:10	1Boulder Breaking noise, 2 Excavator noise	1 Public noise, 2 Dog's noise	Fine	Façade
UTP	7	47.0	56.3	54.9	Nov 29th 2008	15:15-15:45	1Boulder Breaking noise, 2 Excavator noise	1 Public noise, 2 Bird's noise	Fine	Façade
UTP	8	54.4	66.5	63.3	Nov 29th 2008	9:55-10:25	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. River noise	Fine	Façade
UTP	9	54.4	46.1	57.6	Nov 29th 2008	11:15-11:45	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. Dog's noise	Fine	Façade
UTP	10	51.7	71.5	66.5	Nov 29th 2008	10:37-11:07	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. Bird's noise	Fine	Façade
UTP	11	45.4	56.9	54.4	Nov 29th 2008	9:15-9:45	1. Boulder Breaking, 2 Excavator Noise, 3 Boulder removing	1. Residential noise, 2.Public noise	Fine	Façade

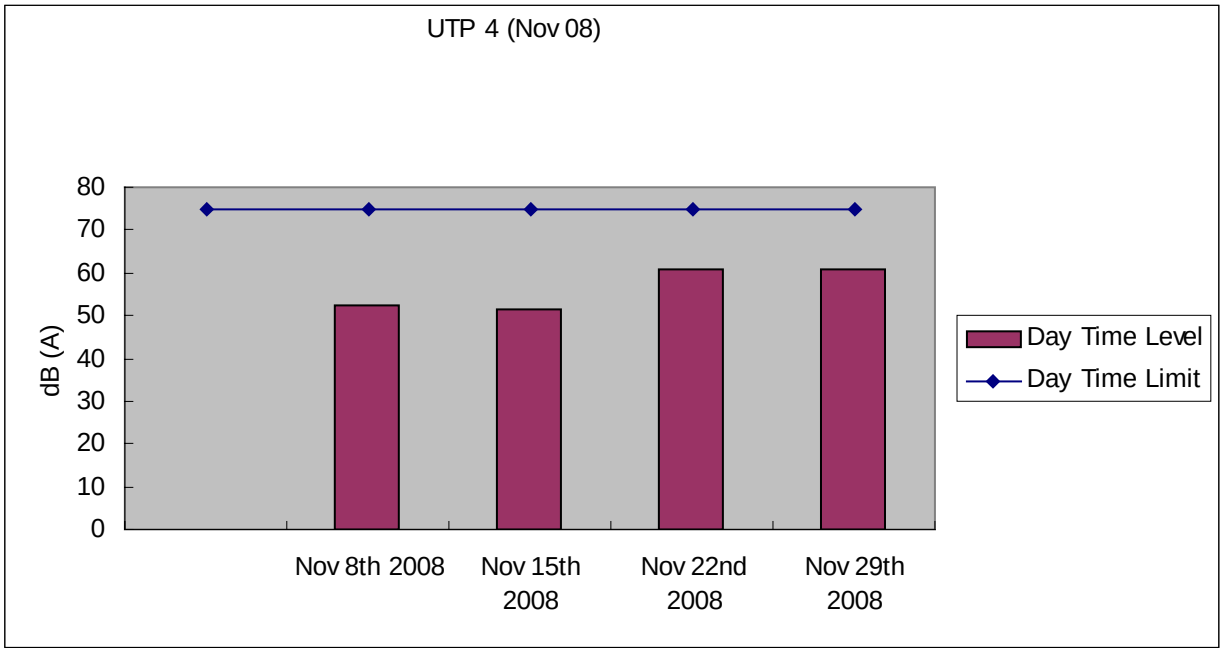
Graphical plot for Noise Measurements

The following plots were the graphical plots for the 11 monitoring locations with the additional monitoring location requested by RE on Nov 22nd. Each plot showed the day time limit 75 dB(A), day time level, date and the measured dB (A) results as in Leq 30min for each location.



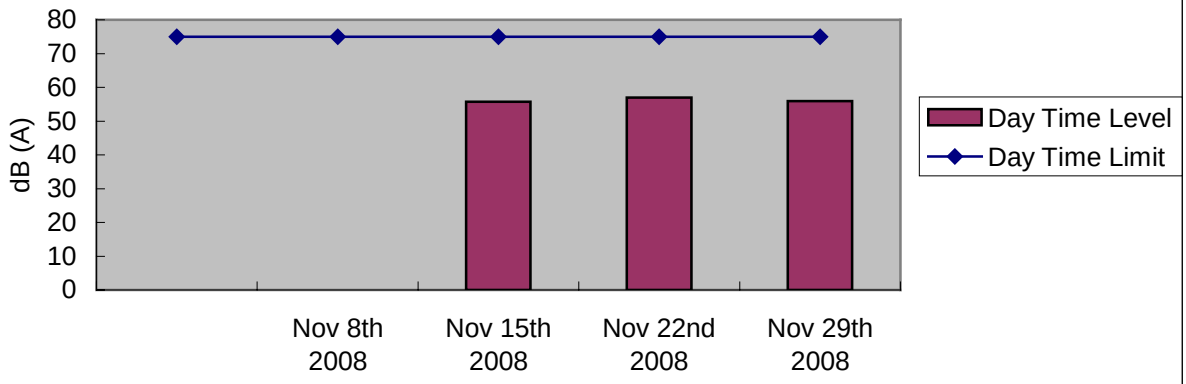



UTP 3 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 8th 2008
Nov 15th 2008
Nov 22nd 2008
Nov 29th 2008
Day Time Level
Day Time Limit

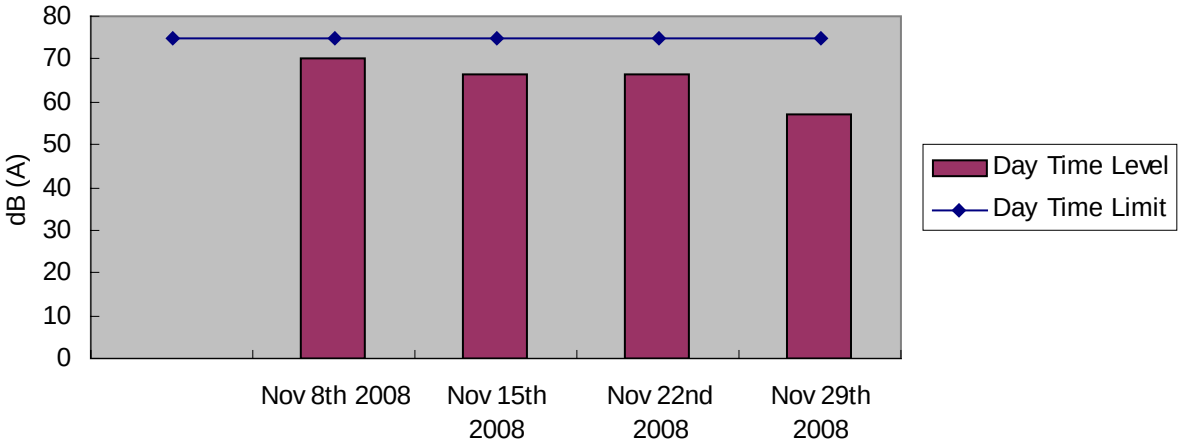

UTP 4 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 8th 2008
Nov 15th 2008
Nov 22nd 2008
Nov 29th 2008
Day Time Level
Day Time Limit

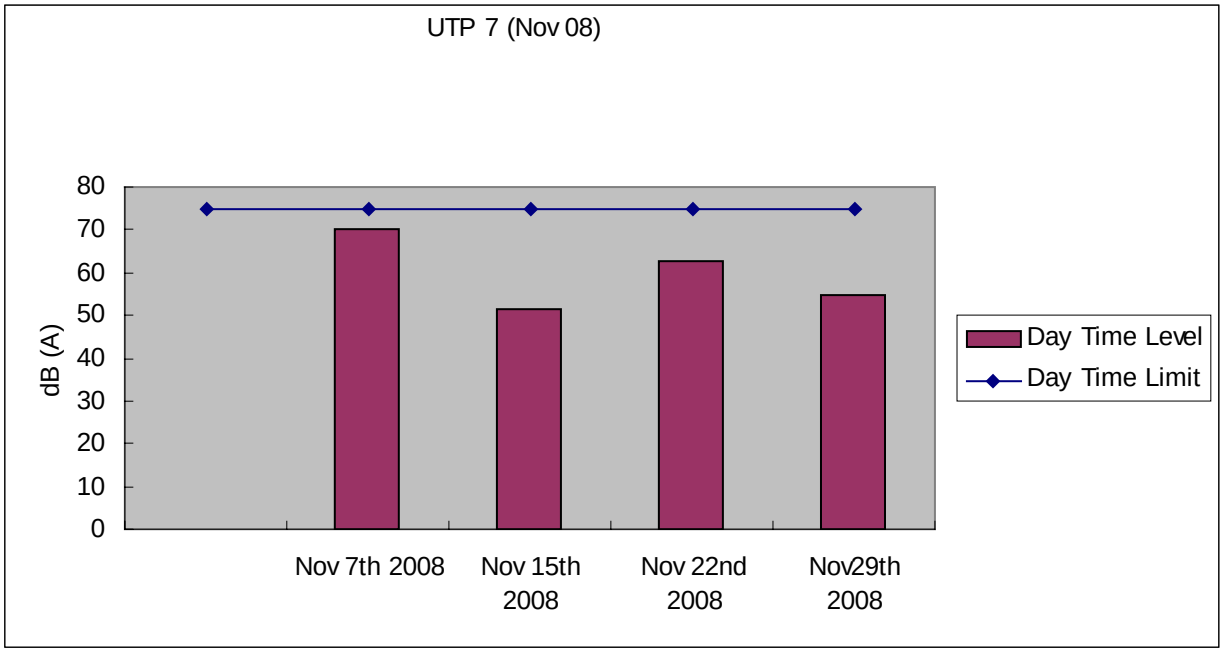
UTP 5 (Nov 08)

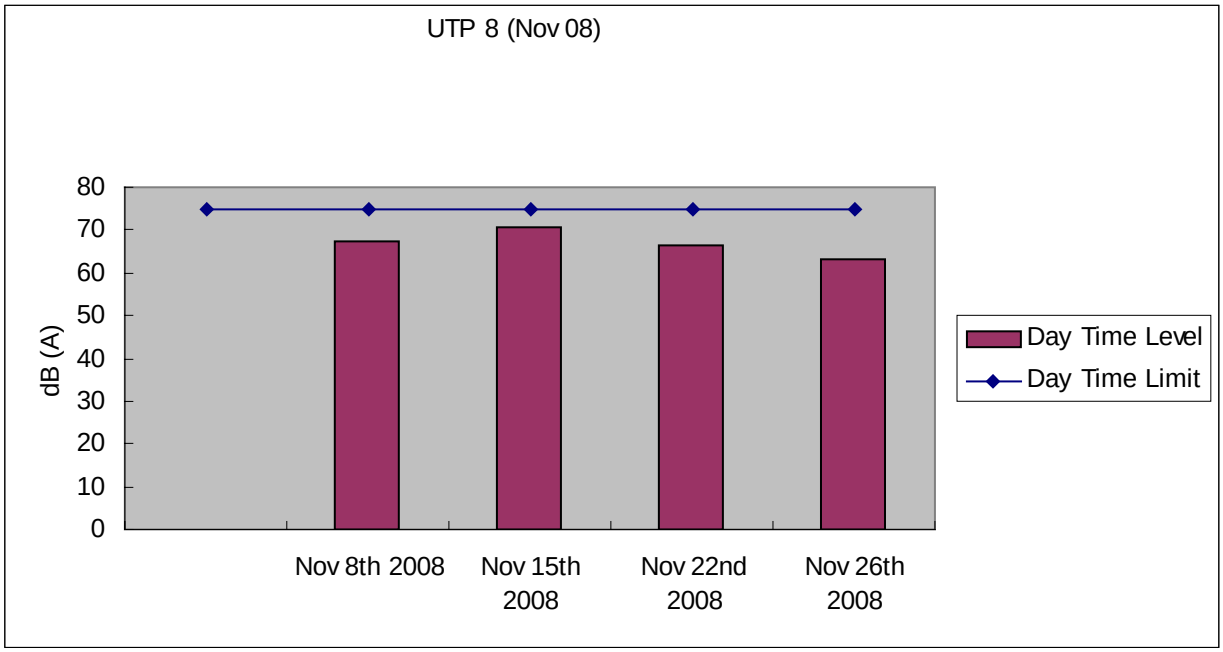
Note: The environmental technician cannot get into the location for noise measurement due to the danger caused by dogs on Nov 8th

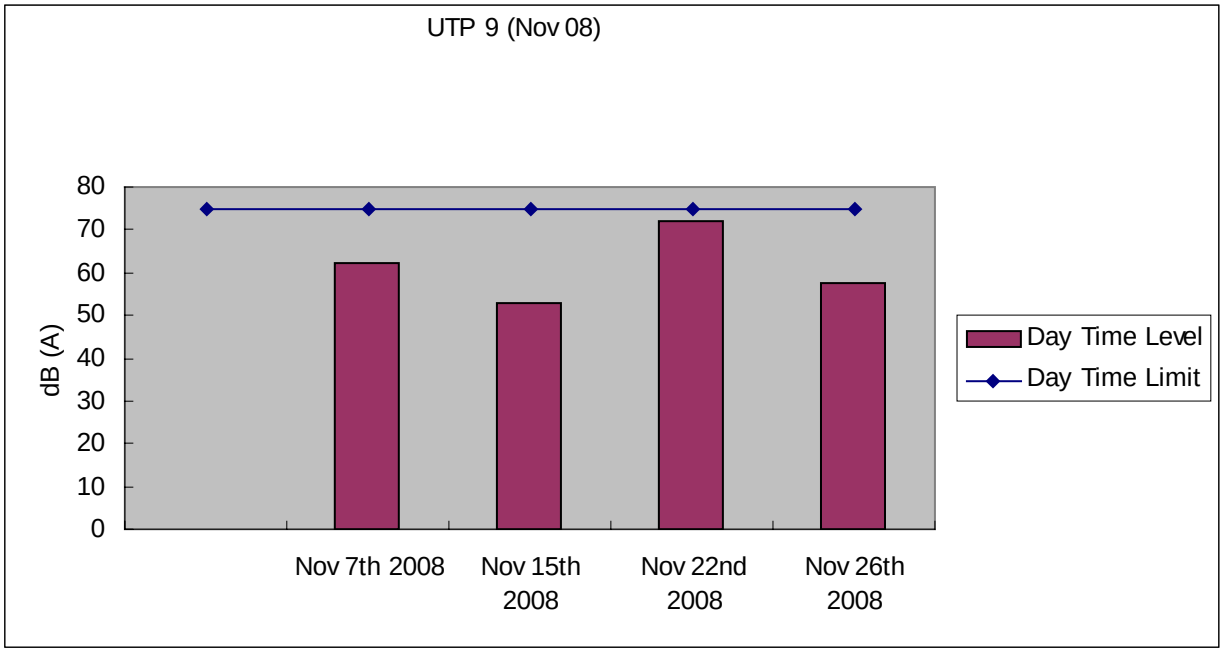


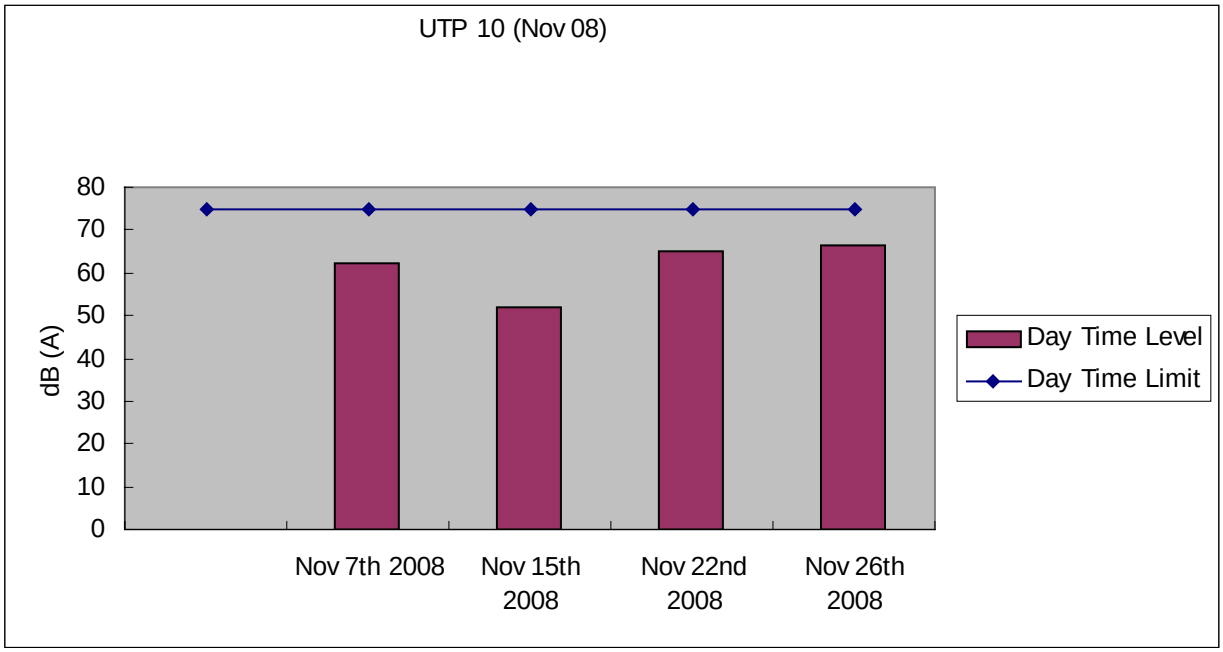
UTP 6 (Nov 08)

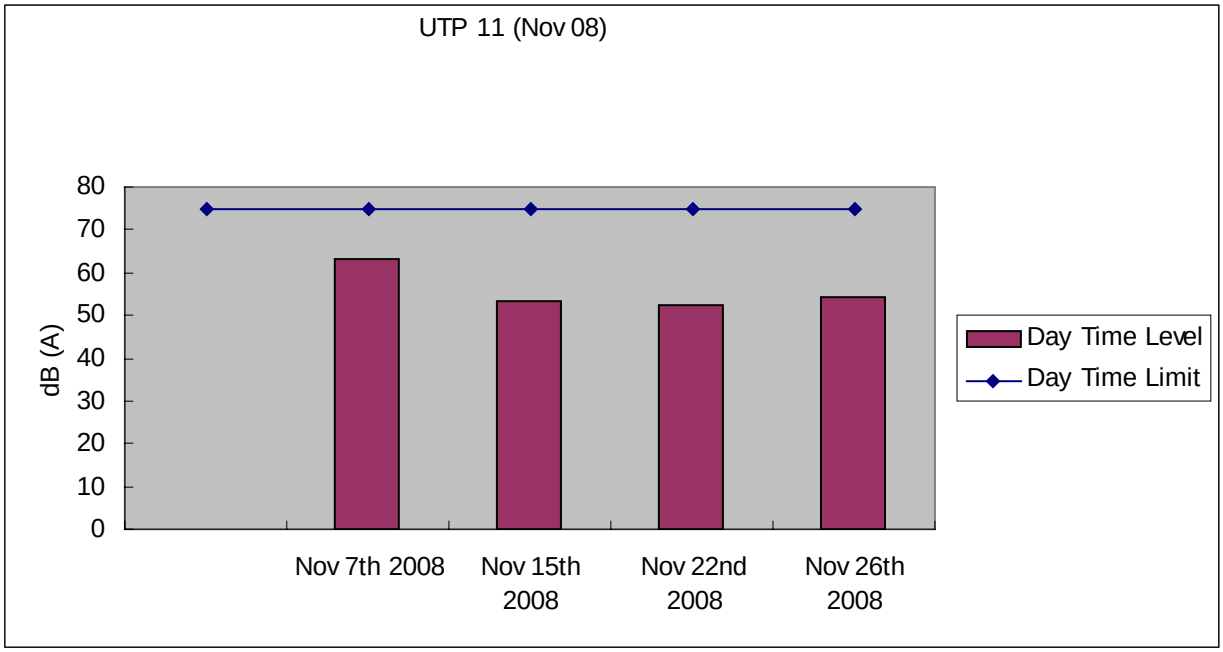


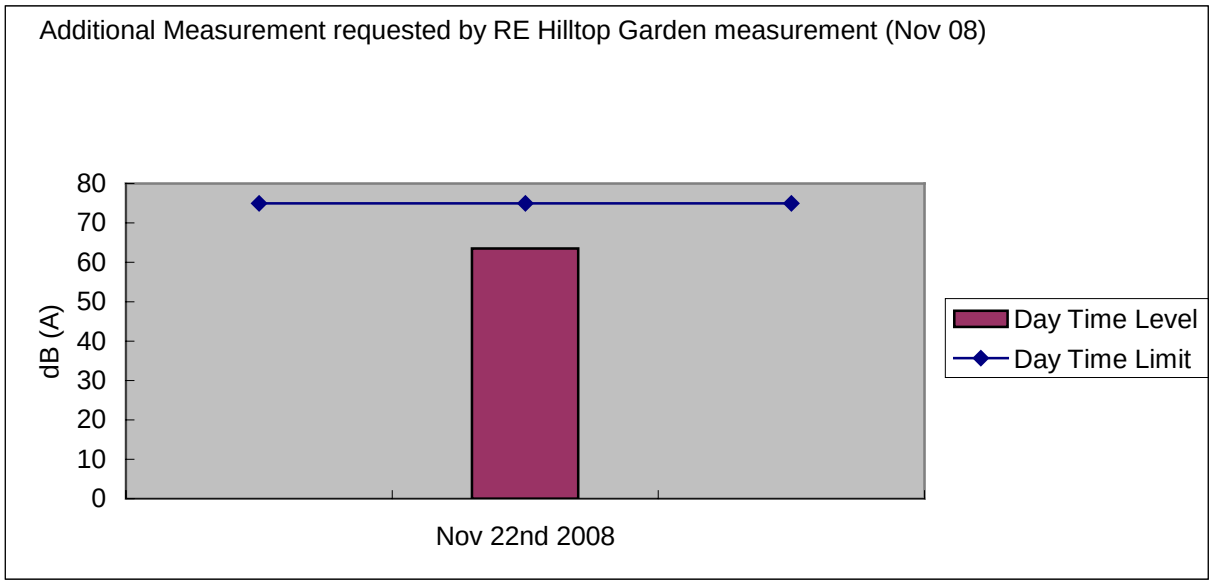

UTP 7 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 7th 2008
Nov 15th 2008
Nov 22nd 2008
Nov29th 2008
Day Time Level
Day Time Limit

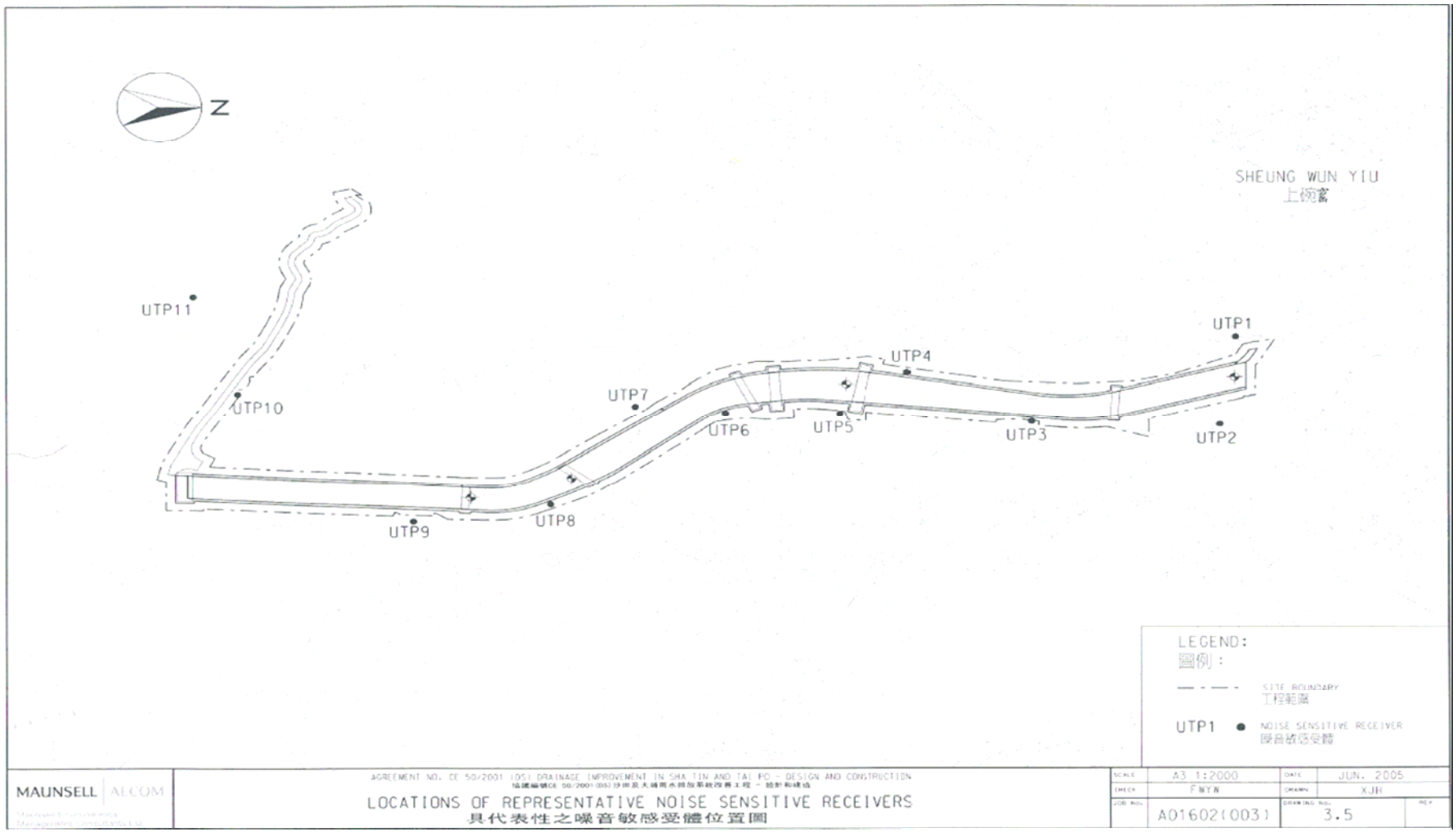

UTP 8 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 8th 2008
Nov 15th 2008
Nov 22nd 2008
Nov 26th 2008
Day Time Level
Day Time Limit


UTP 9 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 7th 2008
Nov 15th 2008
Nov 22nd 2008
Nov 26th 2008
Day Time Level
Day Time Limit


UTP 10 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 7th 2008
Nov 15th 2008
Nov 22nd 2008
Nov 26th 2008
Day Time Level
Day Time Limit


UTP 11 (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 7th 2008
Nov 15th 2008
Nov 22nd 2008
Nov 26th 2008
Day Time Level
Day Time Limit


Additional Measurement requested by RE Hilltop Garden measurement (Nov 08)
dB (A)
80
70
60
50
40
30
20
10
0
Nov 22nd 2008
Day Time Level
Day Time Limit


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
AGREEMENT NO. CE 50/2001 (DS) DRAINAGE IMPROVEMENT IN SHA TIN AND TAI PO - DESIGN AND CONSTRUCTION
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. A016021003
DRAWING NO. 3.5
REV.

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

Master Schedule of EM&A works in November 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						11/1
11/2	11/3	11/4	11/5	11/6	11/7	11/8
			Site inspection in the afternoon		Noise monitoring	Noise monitoring
11/9	11/10	11/11	11/12	11/13	11/14	11/15
			Site inspection in the afternoon			Noise Monitoring
11/16	11/17	11/18	11/19	11/20	11/21	11/22
			Site inspection in the afternoon			Noise Monitoring
11/23	11/24	11/25	11/26	11/27	11/28	11/29
			Site inspection in the afternoon			Noise Monitoring
11/30						

Master Schedule of EM&A works in November 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	12/1	12/2	12/3	12/4	12/5	12/6
		Noise Monitoring	Site inspection in the afternoon			
12/7	12/8	12/9	12/10	12/11	12/12	12/13
		Noise Monitoring	Site inspection in the afternoon			
12/14	12/15	12/16	12/17	12/18	12/19	12/20
		Noise Monitoring	Site inspection in the afternoon			
12/21	12/22	12/23	12/24	12/25	12/26	12/27
		Noise Monitoring	Site inspection in the afternoon			
12/28	12/29	12/30	12/31			
		Noise Monitoring	Site inspection in the afternoon			

Appendix H: Cumulative Complaint log

Environmental Parameters	**Cumulative no. Brought forward**	**No. of complaint November 2008**	**Overall Total**
Air/Dust	0	1	1
Noise	0	0	0
Water	0	1	1
House Keeping Hygiene	0	0	0
Chemical waste	0	0	0
Total	0	2	2

Appendix I: Implementation status of environmental protection and mitigation measures

Implementation status of environmental protection and mitigation

Environmental Aspect	Protectection / Mitigation Measures	Implementation status	Follow-up action
Construction Noise	No percussive piling shall be carried out	Not applicable	Not required
	-Use well maintained construction plant	Implemented	Not required
	-Shut down plants between	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	Implemented	Not required
	-Cover excavated or stockpile of dusty material by impervious sheeting or sprayed with water	Implemented	Not required
	-Use tarpaulin to cover dusty materials on vehicles	Implemented	In progress
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	Implemented	Not required
	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	Not applicable at this stage	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	Needs further improvement	To be followed up
	Provide silt trap and oil interceptor to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before pumped to the public stormwater drainage system	Needs further improvement	Not required
	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, 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 and also during the wet season July/August 2008	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
	Site runoff should be directed towards regularly cleaned and maintained silt traps to minimise the risk of sedimentation and pollution of river water.	Implemented	Not required
	Excavation works shall be carried out by land based plant within enclosed dry section of river channel.	Implemented	Not required

Ecology Continue	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 J: Cumulative waste flow table

Cumulative waste flow table since September 15th 2008 to November 2008

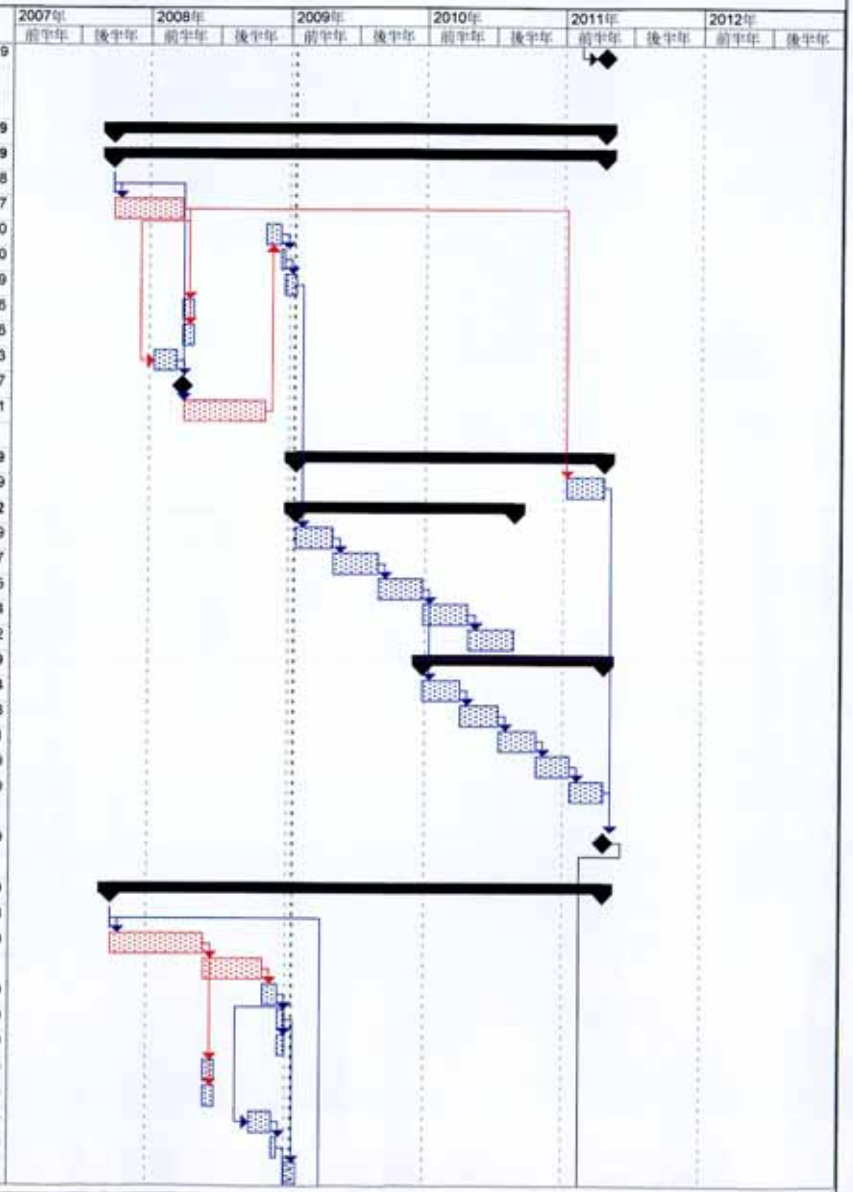
Type of waste	Inert Waste	Non-Inert Waste	Chemical Waste
September 2008	0	0	0
October 2008	0	2 tonnes	0
November 2008	$36m^3$	0	0
Total	$36m^3$	2 tonnes	0

Appendix K: Construction programme

Drainage Services Department

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

識別碼	Task Name	工期	最早開始時間	最早完成時間	開始時間	完成時間
654	Completion of Work at Section 2	0 days	2011/4/19	2011/4/19	2011/4/19	2011/4/19
655						
656						
657	**Section 3 - Upper Tai Po River (Area L, N & P)**	**1300 days**	**2007/9/28**	**2011/4/19**	**2007/9/28**	**2011/4/19**
658	**Section 3 - Upper Tai Po River (Area L)**	**1300 days**	**2007/9/28**	**2011/4/19**	**2007/9/28**	**2011/4/19**
659	Commencement of Work	1 day	2007/9/28	2007/9/28	2007/9/28	2007/9/28
660	Possession to Portion of the Site (Area L)	181 days	2007/9/29	2008/3/27	2007/9/29	2008/3/27
661	Temp. Site Access	40 days	2008/11/1	2008/12/10	2008/11/1	2008/12/10
662	Site Clearance	10 days	2008/12/11	2008/12/20	2008/12/11	2008/12/20
663	Chainlink Fencing Work / Hoarding	30 days	2008/12/21	2009/1/19	2008/12/21	2009/1/19
664	Initial Survey	30 days	2008/3/28	2008/4/26	2008/3/28	2008/4/26
665	Condition Surveys / Set up markers	30 days	2008/3/28	2008/4/26	2008/3/28	2008/4/26
666	Preparation of Temporary Works Design	60 days	2008/1/14	2008/3/13	2008/1/14	2008/3/13
667	Approval of Temporary Works Design	0 days	2008/3/27	2008/3/27	2008/3/27	2008/3/27
668	Wet Season (April to Oct 2008)	214 days	2008/4/1	2008/10/31	2008/4/1	2008/10/31
669						
670	**Chainage from CH 0 to CH130**	**820 days**	**2009/1/20**	**2011/4/19**	**2009/1/20**	**2011/4/19**
671	Access to the Site	100 days	2011/1/10	2011/4/19	2011/1/10	2011/4/19
672	**Boulder Trap**	**580 days**	**2009/1/20**	**2010/8/22**	**2009/1/20**	**2010/8/22**
673	Excavation	100 days	2009/1/20	2009/4/29	2009/1/20	2009/4/29
674	Rockfill & Blinding Layer	120 days	2009/4/30	2009/8/27	2009/4/30	2009/8/27
675	Base Slab Structure	120 days	2009/8/28	2009/12/25	2009/8/28	2009/12/25
676	Wall Structure	120 days	2009/12/26	2010/4/24	2009/12/26	2010/4/24
677	Cut/Fill Slope	120 days	2010/4/25	2010/8/22	2010/4/25	2010/8/22
678	**Footbridge, Platform and Fill Slope**	**480 days**	**2009/12/26**	**2011/4/19**	**2009/12/26**	**2011/4/19**
679	Footing for footbridge	100 days	2009/12/26	2010/4/4	2009/12/26	2010/4/4
680	Gabion Wall	100 days	2010/4/5	2010/7/13	2010/4/5	2010/7/13
681	Footbridge (TB1)	100 days	2010/7/14	2010/10/21	2010/7/14	2010/10/21
682	Platform & Fill Slope & Maintenance stairway	90 days	2010/10/22	2011/1/19	2010/10/22	2011/1/19
683	Footpaths	90 days	2011/1/20	2011/4/19	2011/1/20	2011/4/19
684						
685	Completion of Area L	0 days	2011/4/19	2011/4/19	2011/4/19	2011/4/19
686						
687	**Section 3 - Upper Tai Po River (Area P)**	**1300 days**	**2007/9/28**	**2011/4/19**	**2007/9/28**	**2011/4/19**
688	Commencement of Work	1 day	2007/9/28	2007/9/28	2007/9/28	2007/9/28
689	Possession to Portion of the Site (Area P)	244 days	2007/9/29	2008/5/29	2007/9/29	2008/5/29
690	Wet Season	155 days	2008/5/30	2008/10/31	2008/5/30	2008/10/31
691	Temp. Site Access	40 days	2008/11/1	2008/12/10	2008/11/1	2008/12/10
692	Site Clearance	20 days	2008/12/11	2008/12/30	2008/12/11	2008/12/30
693	Chainlink Fencing Work	20 days	2008/12/11	2008/12/30	2008/12/11	2008/12/30
694	Initial Survey	30 days	2008/5/30	2008/6/28	2008/5/30	2008/6/28
695	Condition Surveys / Set up markers	30 days	2008/5/30	2008/6/28	2008/5/30	2008/6/28
696	Preparation of Temporary Works Design	60 days	2008/9/28	2008/11/26	2008/9/28	2008/11/26
697	Approval of Temporary Works Design	14 days	2008/11/27	2008/12/10	2008/11/27	2008/12/10
698	S.I. Works	30 days	2008/12/31	2009/1/29	2008/12/31	2009/1/29



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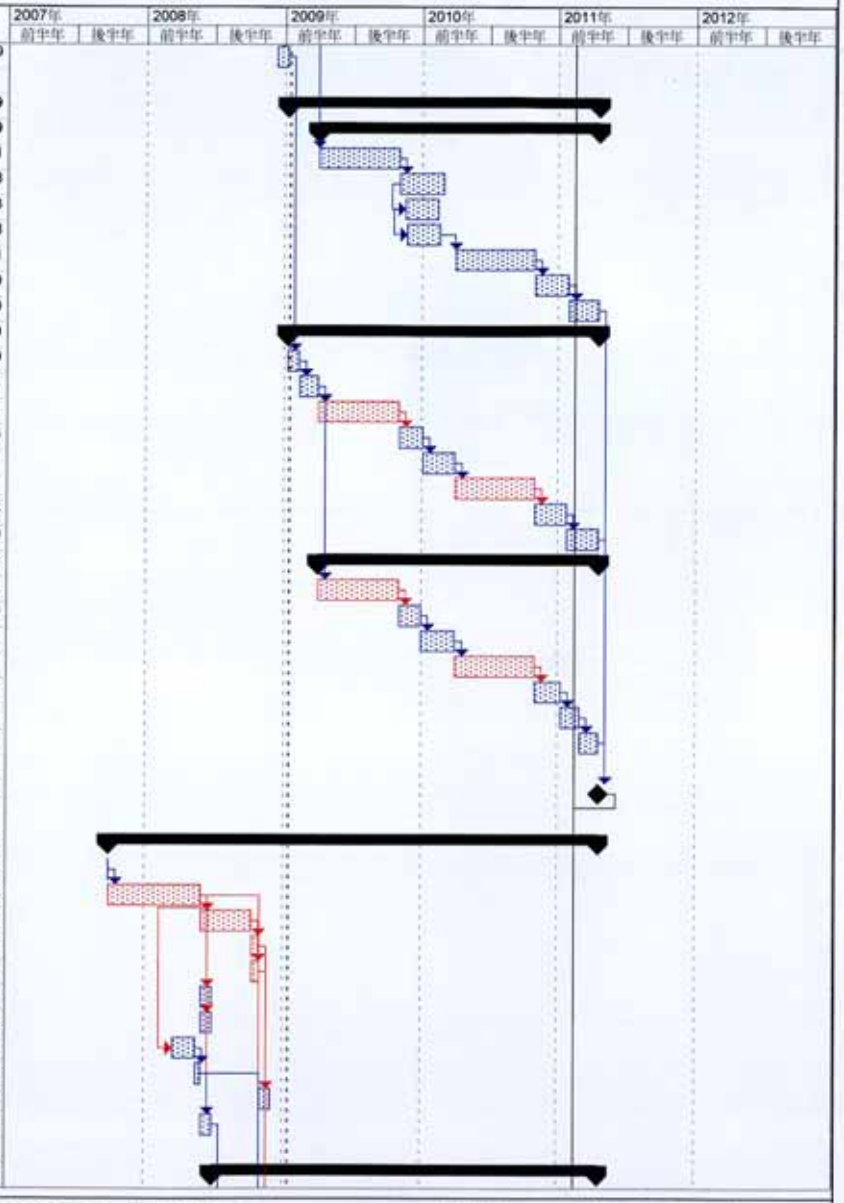
Drainage Services Department

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

識別碼	Task Name	工期	最早開始時間	最早完成時間	開始時間	完成時間
699	Temp. Shoring Works	30 days	2008/12/11	2009/1/9	2008/12/11	2009/1/9
700						
701	**Chainage from CHL 250 to CHL 130**	**830 days**	**2009/1/10**	**2011/4/19**	**2009/1/10**	**2011/4/19**
702	**From CHL 250 to CHL 130**	**749 days**	**2009/4/1**	**2011/4/19**	**2009/4/1**	**2011/4/19**
703	Wet Season (April to Oct 2009)	214 days	2009/4/1	2009/10/31	2009/4/1	2009/10/31
704	Excavation	120 days	2009/11/1	2010/2/28	2009/11/1	2010/2/28
705	Rockfill & Blinding	90 days	2009/11/16	2010/2/13	2009/11/16	2010/2/13
706	Base Slab Structure	90 days	2009/11/21	2010/2/18	2009/11/21	2010/2/18
707	Wet Season (April to Oct 2010)	214 days	2010/4/1	2010/10/31	2010/4/1	2010/10/31
708	Wall Structure	90 days	2010/11/1	2011/1/29	2010/11/1	2011/1/29
709	Gabion Wall	80 days	2011/1/30	2011/4/19	2011/1/30	2011/4/19
710	**Footbridge, Platform and Cut/Fill Slope**	**830 days**	**2009/1/10**	**2011/4/19**	**2009/1/10**	**2011/4/19**
711	Demolition of existing structure	31 days	2009/1/10	2009/2/9	2009/1/10	2009/2/9
712	Footing for Footbridge (TB3)	50 days	2009/2/10	2009/3/31	2009/2/10	2009/3/31
713	Wet Season	214 days	2009/4/1	2009/10/31	2009/4/1	2009/10/31
714	Dwarf Wall	65 days	2009/11/1	2010/1/4	2009/11/1	2010/1/4
715	Footbridge (TB3)	86 days	2010/1/5	2010/3/31	2010/1/5	2010/3/31
716	Wet Season	214 days	2010/4/1	2010/10/31	2010/4/1	2010/10/31
717	Platform & Cut/Fill Slope & Maintenance Stairway	85 days	2010/11/1	2011/1/24	2010/11/1	2011/1/24
718	Footpaths	85 days	2011/1/25	2011/4/19	2011/1/25	2011/4/19
719	**Footbridge, Platform and Cut/Fill Slope**	**749 days**	**2009/4/1**	**2011/4/19**	**2009/4/1**	**2011/4/19**
720	Wet Season	214 days	2009/4/1	2009/10/31	2009/4/1	2009/10/31
721	Footing for Footbridge (TB2)	60 days	2009/11/1	2009/12/30	2009/11/1	2009/12/30
722	Dwarf Wall	91 days	2009/12/31	2010/3/31	2009/12/31	2010/3/31
723	Wet Season	214 days	2010/4/1	2010/10/31	2010/4/1	2010/10/31
724	Footbridge (TB2)	70 days	2010/11/1	2011/1/9	2010/11/1	2011/1/9
725	Platform & Cut/Fill Slope & Maintenance Stairway	50 days	2011/1/10	2011/2/28	2011/1/10	2011/2/28
726	Footpaths	50 days	2011/3/1	2011/4/19	2011/3/1	2011/4/19
727						
728	Completion of Area P	0 days	2011/4/19	2011/4/19	2011/4/19	2011/4/19
729						
730	**Section 3 - Upper Tai Po River (Area N)**	**1300 days**	**2007/9/28**	**2011/4/19**	**2007/9/28**	**2011/4/19**
731	Commencement of Work	1 day	2007/9/28	2007/9/28	2007/9/28	2007/9/28
732	Possession to Portion of the Site (Area N)	244 days	2007/9/29	2008/5/29	2007/9/29	2008/5/29
733	Temp. Site Access (XP/TTA)	135 days	2008/5/30	2008/10/11	2008/5/30	2008/10/11
734	Site Clearance	20 days	2008/10/12	2008/10/31	2008/10/12	2008/10/31
735	Chainlink Fencing Work	20 days	2008/10/12	2008/10/31	2008/10/12	2008/10/31
736	Initial Survey	30 days	2008/5/30	2008/6/28	2008/5/30	2008/6/28
737	Condition Surveys / Set up markers	30 days	2008/5/30	2008/6/28	2008/5/30	2008/6/28
738	Preparation of Temporary Works Design	60 days	2008/3/17	2008/5/15	2008/3/17	2008/5/15
739	Approval of Temporary Works Design	14 days	2008/5/16	2008/5/29	2008/5/16	2008/5/29
740	S.I. Works	30 days	2008/11/1	2008/11/30	2008/11/1	2008/11/30
741	Temp. Shoring Works	30 days	2008/5/30	2008/6/28	2008/5/30	2008/6/28
742						
743	**Chainage from CHL 230 to CHL 600**	**1025 days**	**2008/6/29**	**2011/4/19**	**2008/6/29**	**2011/4/19**



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