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 April 2011

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Executive summary

This is the thirty-second 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". This report concludes the impact monitoring for the activities undertaken during the period from 1st April 2011 to 30th April 2011. Construction of retaining wall, gabion wall, and provision of temporary protection measures for wet season were the major site activities being carried out in this reporting period.

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 next ecological impact monitoring was arranged in July 2011. 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 has been omitted. Therefore, no vibration monitoring was conducted by ET during the reporting month.

There was no non-compliance events recorded in this reporting month.

There was no formal complaint in relation to environmental issue received in the reporting month.

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

There was no reporting change for this month.

Construction of retaining wall and provision of temporary protection measures for wet season will be the major construction activities to 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 thirty-second 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 April 2011. 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

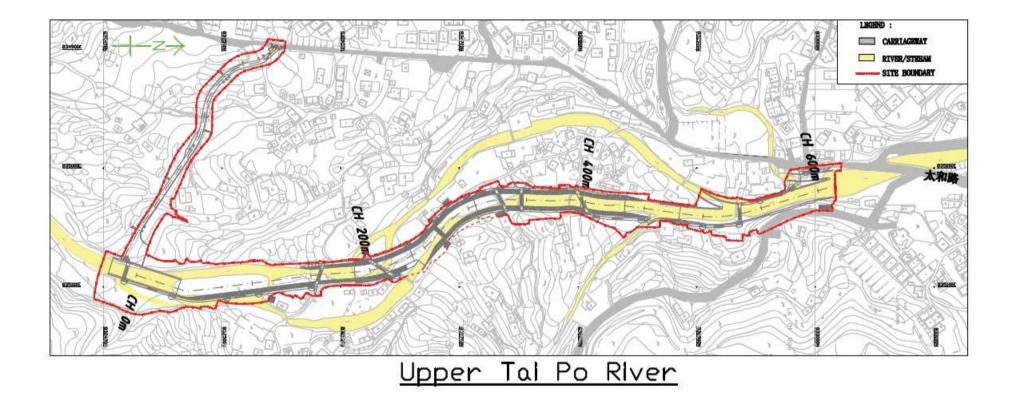
The construction of the proposed improvement works for Upper Tai Po River has been commenced on September 15th 2008 and anticipated to complete in April 2012.

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
- 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.) construction of retaining wall;
- 2.) construction of gabion wall; and
- 3.) provision of temporary protection measures for wet season

2.5 Construction activities for the next reporting period

Major construction activities carried out by the contractor anticipated for the coming month would be mainly construction of retaining wall and provision of temporary protection measures for wet season.

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

No formal complaint in relation to environmental issues was received in the reporting month. Totally fourteen complaints had been received since the commencement of the contract. The cumulative complaint log is shown in Appendix F.

3.0 Ecological monitoring results

No ecological survey was carried out in this reporting period. The next ecological impact monitoring was arranged in July 2011.

4.0 Noise monitoring results

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

Sensitive Receiver	Location and Description
No.	
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

TABLE 4.1 Description of Noise Sensitive Receivers

Noise monitoring was carried out by the Environmental Team on weekly basis for this reporting month on 1st, 8th, 15th, 21st and 29th April 2011.

The monitoring for UTP3 and UTP4 on 29th April 2011 was cancelled due to adverse weather. Compensatory measurements, which were scheduled to be on 30th April 2011, were also cancelled due to the presence of rain.

Measured $L_{eq (30min)}$ results ranged from 44.0dB(A) to 74.2dB(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 6th, 13th, 20th and 27th April 2011. 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, 9th, 16th, 23rd and 30th April 2011. Details of findings were summarized in Table 6.2.

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
30 Mar 11; 13	Implementation of water quality mitigation measure for construction site of footbridge from ch.150 to 600 was outstanding		Contractor was recommended to implement necessary protective measures, such as provision of bund wall and geo-textile coverings, to avoid water contamination from site works	Temporary spraying concrete was applied on the river bank to prevent further erosion and the muddy water from being discharged into the river. The spraying concrete activity was still in progress	28 April 11	
10 Feb 11 & 02 Mar 11	River water was observed to be muddy along the channel from ch.250		abovementioned activities as to	was applied on the river bank to prevent further erosion and the muddy water from being discharged into the river. The	28 April 11	
09, 16, 23 & 30 Mar 11	Tree without identification at ch.300 was observed to be damaged by operation of backhoe		Contractor was advised to check the status of the tree and implement necessary protective measures for preserved trees before commencement of works		Ongoing	
09, 16, 23 &	Site water generated from	Non-compliance	Contractor was recommended	No discharge of muddy site	27 Apr 11	

 Table 6.1 Summary results of site inspections findings

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
30 Mar 11; 6, 13 Apr 11	construction site at ch.200 was found diverted to an ineffective treatment system and then discharged to the river channel		to enhance their site water treatment as to ensure effluent discharged fulfilled with statutory requirements	removed by Contractor		
09, 16, 23 & 30 Mar 11; 6 & 13 Apr 11	Site water generated at construction site at ch.300 was found directly discharged and caused contamination to the river	Non-compliance	Contractor was request to stop such practice and to implement corrective actions immediately	Direct discharge of site water had been terminated as reported by Contractor	20 Apr 11	
16 & 30 Mar 11; 6, 13, 20 & 27 Apr 11	Site surface was observed to be dry and dusty	Observation	Contractor was advised to provide regular water spraying to dusty static area for dust suppression	Still outstanding. To be followed during the next reporting period	Ongoing	
30 Mar 11; 6, 13 Apr 11	There was no proper protective measures implemented for the bared earth surface, riverbanks, earth bunds and earthy stockpiles along the construction site	Non-compliance	Contractor was recommended to implement necessary mitigation measures to avoid erosion of the concerned earth surface and stockpiles from causing water pollution.	Part of the earthy stockpiles had been collected and removed from site as reported by Contractor. The removal works was still in progress	20 Apr 11	
30 Mar 11	General wastes and abandoned site materials was observed along the haul access of approximate ch.600	Observation	Contractor was advised to maintain good housekeeping condition and to remove observed waste during daily cleaning process	General wastes within haul access at ch.600 have been removed as reported by Contractor	6 Apr 11	
6, 13, 20 & 27 Apr 11	The sandbags barrier at temporary crossing at ch.600 were observed to be damaged	Observation	Contractor was advised to replace the sandbags as soon as possible.	Still outstanding. To be followed during the next reporting period	Ongoing	
13 Apr 11	A temporary drainage was observed cutting across the haul access at ch.450 that allows direct discharge of surface runoff into the river	Observation	Contractor was advised to rectify the temporary drainage system	The temporary drainage had been removed as reported by Contractor	20 Apr 11	
13 Apr 11	Wheel washing bay at ch.600 was accumulated with muddy water	Observation	Contractor was advised to well maintain the wheel washing facility to prevent muddy water was brought onto the public access through site vehicles	Maintenance and cleaning were provided as reported by Contractor	20 Apr 11	
13 Apr 11	Oil stains were observed left on the conveyor belt of backhoe at ch.450.	Observation	Contractor was recommended to provide regular maintenance to their site equipments and handle the earth materials contaminated with leaked oil as chemical waste for storage and disposal	Follow up action was taken as reported by Contractor	20 Apr 11	
20 & 27 Apr 11	Empty fuel containers and unused construction equipment were found abandoned along the river bank or in the river channel at approximate ch.400 to ch.450	Observation	Contractor was advised to maintain good housekeeping condition and to remove observed equipment to storage area	The fuel containers had been removed by Contractor, but the unused equipment was still observed. To be followed during the next reporting period	Ongoing	
27 Apr 11	Muddy water was observed along the entire UTPR due to site water seepage and surface runoff caused by excavation works at ch.50.	Observation	Contractor was reminded to maintain the site-water treatment facilities to stop improper discharge and deteriorate water quality.	To be followed during 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	Observations Advice from Action		Closing			
		Ecologist		Date			
01 Apr	No major findings for this	No Advice is	No Action is required to	N/A			
2011	inspection	required	be taken				
09 Apr	No major findings for this	No Advice is	No Action is required to	N/A			
2011	inspection	required	be taken				
16 Apr	No major findings for this	No Advice is	No Action is required to	N/A			
2011	inspection	required	be taken				
23 Apr	No major findings for this	No Advice is	No Action is required to	N/A			
2011	inspection	required	be taken				
30 Apr	No major findings for this	No Advice is	No Action is required to	N/A			
2011	inspection	required	be taken				

6.2 Non-compliance

There was no non-compliance recorded for the month of April 2011.

For the non-compliance event of excessive earth deposit and muddy effluent discharge that was recorded on 30^{th} March 2011 from the thirty-first report, the following follow up actions were taken by Contractor and were inspected on 20^{th} and 27^{th} April 2011.

- Part of the excessive stockpiles of earth debris were collected as reported by Contractor and was observed to be removed from site area. The removal work would still be carried out in the upcoming month.
- Sources of direct discharge of site water had been removed by Contractor and no direct discharge of site water was observed. Spraying concrete was applied on the river bank to prevent further erosion and the muddy water from being discharged into the river. The spraying concrete work would still be carried out in the upcoming month.
- The ineffective treatment system at ch.200, where overflow of muddy site water was concerned, had been removed and backfilled by Contractor to prevent accumulation of site water.

Contractor was reminded to be aware of the implementation of measures to avoid soil erosion and prevent pollution to the river water.

6.3 Recommendations

Contractor was advised to pay attention to the implementation status and effectiveness of water quality mitigation measures to prevent erosion and soil runoff from site area causing water quality impact to the river stream. Riverbanks and earth bunds should be covered with geo-textile coverings to prevent erosion. Exposed earth surface should be protected by means such as tarpaulin covering. Contractor should also prevent excessive storage of any earth materials on site as to avoid soil debris from washing into the river channel by surface runoff.

Sufficient and effective site water treatment facilities should be provided on site. Any wastewater, underground water and muddy effluent within site area should be diverted for treatment before discharge.

Contractor should also implement necessary measure to mitigate air quality impact from construction works, such as ensuring dusty static areas are kept damp for dust suppression.

6.4 Implementation status and effectiveness of the mitigation measures

Refer to the table 6.1 and Section 6.2, contractor has implemented mitigation measures to address those problems as advised by RE, 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 implement necessary mitigation measures to address environmental problem arisen from site activities 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 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 and therefore no inert waste was disposed from the project.

The following table showed amount of waste generation, reused and disposed from this project site in this reporting month.

Type of waste	Amount generated	Amount reused	Amount disposed
Inert waste	467 m^3	467 m^3	0
Non-inert waste	50 kg	0	50 kg
Chemical waste	0	N/A	0

Table 7.1 Summary of Waste generated and disposed in April 2011

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.

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

 Table 8.1 Summary of Environmental Licensing and Permit Status

9.0 Future key issues

Construction of retaining wall and provision of temporary protection measures for wet season will be the major construction activities to be carried out in the upcoming month. It will generate environmental impacts in several aspects.

To minimize water quality impact arising from construction activities within river channel, water quality mitigation measures should be implemented as far as practicable. Any muddy water, underground water or wastewater generated from construction activities should be diverted to proper treatment facility prior to discharge.

For the proposed construction activities, heavy plants and vehicles may be occupied and those would generate certain noise impacts to the sensitive receivers. To minimize noise generation, noisy activities should be well planned and scheduled to avoid parallel operation of multiple plants. Erection of noise barriers and/or movable barriers should be implemented whenever necessary.

Contractor was reminded to provide regular water spraying to dusty static area for dust suppression.

Aforementioned construction works may generate wastes on site. Contractor is advised to assign a site area for temporary waste storage and segregation. Wastes accumulation should be prevented on site; licensed waste collection and disposal should be implemented regularly for hygiene issues.

10.0 Conclusion

Construction of retaining wall, gabion wall and provision of temporary protection measures for wet season were the major site activities carried out by the Contractor in this reporting period.

Regular site meetings and inspection audits led by the seniors for discussing environmental issues were held among project proponent, Contractor and the Environmental Team 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 has been omitted. 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 events recorded in this reporting month.

There was no environmental complaint received in this reporting month. Contractor was also reminded to pay serious attention to prevent causing environmental concerns in the future by implementation of good site practice. 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.

Friend				Action				
Event		ET ER IEC					Contractor	
Non-confor	1.	Identify Source	1.	Check report	1.	Ensure	1.	Amend
mity on one	2.	Inform the IEC and the	2.	Check the Contractor's		Remedial		working
occasion		ER		working method		measures are		methods
	3.	Discuss remedial actions	3.	Discuss with the ET and		properly	2.	Rectify
		with the IEC, the ER and		the Contractor on possible		implemented		damage and
		the Contractor		remedial measures,				undertake
	4.	Monitor remedial actions	4.	Advise the Contractor on				any
		until rectification has been		effectiveness of proposed				necessary
		completed		remedial measures				replacement
			5.	Check implementation of				
				remedial measures				
Repeated	1.	Identify Source	1.	Check monitoring report	1.	Ensure	1.	Amend
Non	2.	Inform the IEC and the	2.	Check the Contractor's		Remedial		working
conformity		ER		working method		measures		methods
	3.	Increase monitoring	3.	Discuss with the ET and		are properly	2.	Rectify
		frequency		the Contractor on possible		implemented		damage and
	4.	Discuss remedial		remedial measures				undertake
		actions with the IEC,	4.	Advise the Contractor on				any
		the ER and the		effectiveness of proposed				necessary
		Contractor		remedial measures				replacement
	5.	Monitor remedial	5.	Check implementation of				
		actions until rectification		remedial measures				
		has been completed						
	6.	If exceedance stops,						
		cease additional						
		monitoring						

APPENDIX TABLE 1 Event / Action plan table for Ecology

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

ndix Table 2:	Action and Limit Levels for Construction Noise
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*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	70.1	73.4	62.2	01-Apr-11	13:00-13:30	Boulder breaking and drilling on slope surface	Background noise from traffic	Sunny	Façade
UTP 2	73.4	74.4	63.7	01-Apr-11	13:35-14:05	Boulder breaking and drilling on slope surface	Background noise from traffic	Sunny	Façade
UTP 3	70.4	73.4	67.2	01-Apr-11	14:11-14:41	Boulder breaking and drilling on slope surface	N/A	Sunny	Façade
UTP 4	62.9	65.3	54.3	01-Apr-11	14:48-15:18	Operation of backhoe	N/A	Sunny	Façade
UTP 5	63.3	68.4	53.7	01-Apr-11	15:19-15:49	Operation of backhoe	N/A	Sunny	Façade
UTP 6	67.3	70.3	55.7	01-Apr-11	15:53-16:23	Boulder breaking	N/A	Sunny	Façade
UTP 7	73.1	77.8	55.8	01-Apr-11	11:28-11:58	Boulder breaking	N/A	Sunny	Façade
UTP 8	67.9	71.8	60.1	01-Apr-11	10:56-11:26	Boulder breaking	N/A	Sunny	Façade
UTP 9	65.4	67.7	52.0	01-Apr-11	10:20-10:50	Boulder breaking	N/A	Sunny	Façade
UTP 10	57.2	57.5	43.4	01-Apr-11	09:41-10:11	Operation of backhoe and boulder breaking	N/A	Sunny	Façade
UTP 11	58.3	58.5	44.6	01-Apr-11	09:06-09:36	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	*Free field

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	69.2	73.4	60.2	08-Apr-11	08:45-09:24	Drilling noise & boulder breaking	N/A	Sunny	Façade
UTP 2	73.4	78.6	59.4	08-Apr-11	09:31-10:01	Drilling noise & boulder breaking	N/A	Sunny	Façade
UTP 3	66.4	69.5	58.8	08-Apr-11	10:10-10:40	Drilling noise & boulder breaking	N/A	Sunny	Façade
UTP 4	63.4	66.6	53.2	08-Apr-11	10:45-11:15	Operation of backhoe and boulder movement	N/A	Sunny	Façade
UTP 5	63.4	66.6	51.8	08-Apr-11	11:18-11:48	Operation of backhoe and boulder movement	N/A	Sunny	Façade
UTP 6	68.8	73.4	44.6	08-Apr-11	16:00-16:30	Operation of backhoe and boulder movement	N/A	Sunny	Façade
UTP 7	70.1	70.9	44.6	08-Apr-11	15:27-15:57	Boulder breaking	N/A	Sunny	Façade
UTP 8	74.2	80.2	60.2	08-Apr-11	14:54-15:24	Boulder breaking	N/A	Sunny	Façade
UTP 9	68.8	71.3	48.8	08-Apr-11	14:18-14:48	Operation of backhoe and boulder breaking	N/A	Sunny	Façade
UTP 10	54.8	55.0	41.2	08-Apr-11	13:36-14:06	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	Façade
UTP 11	58.2	58.5	43.8	08-Apr-11	13:00-13:30	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	*Free field

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	70.4	75.3	56.4	15-Apr-11	15:25-15:55	Drilling noise	Background noise from traffic	Sunny	Façade
UTP 2	64.4	66.8	52.3	15-Apr-11	16:08-16:38	Drilling noise	Background noise from traffic	Sunny	Façade
UTP 3	68.5	70.4	62.2	15-Apr-11	14:44-15:14	Drilling noise and operation noise of backhoe	N/A	Sunny	Façade
UTP 4	70.2	76.8	58.8	15-Apr-11	13:32-14:02	Operation noise of backhoe and boulder movement	N/A	Sunny	Façade
UTP 5	66.8	72.4	51.6	15-Apr-11	13:00-13:30	Operation noise of backhoe and boulder movement	N/A	Sunny	Façade
UTP 6	68.8	72.6	60.5	15-Apr-11	14:06-14:36	Operation noise of backhoe and boulder movement	N/A	Sunny	Façade
UTP 7	73.4	78.4	64.5	15-Apr-11	11:24-11:54	Operation noise of backhoe and hydraulic breaker, boulder movement and boulder breaking	N/A	Sunny	Façade
UTP 8	63.8	65.2	57.6	15-Apr-11	10:52-11:22	Operation noise of hydraulic breaker and boulder breaking	N/A	Sunny	Façade
UTP 9	63.8	65.2	57.6	15-Apr-11	10:17-10:47	Boulder breaking	N/A	Sunny	Façade
UTP 10	58.8	59.4	52.2	15-Apr-11	09:33-10:03	Boulder breaking	N/A	Sunny	Façade
UTP 11	56.3	56.6	44.2	15-Apr-11	08:58-09:28	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	*Free field

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	69.2	70.9	54.9	21-Apr-11	09:13-09:43	Boulder movement	Background noise from traffic, public noise	Sunny	Façade
UTP 2	62.4	65.9	55.2	21-Apr-11	16:30-17:00	Boulder movement	N/A	Sunny	Façade
UTP 3	62.8	65.4	58.7	21-Apr-11	09:46-10:16	Boulder movement	Background noise from traffic	Sunny	Façade
UTP 4	69.7	71.2	64.9	21-Apr-11	10:23-10:53	Operation noise of backhoe and boulder movement	Public noise	Sunny	Façade
UTP 5	70.4	72.1	65.1	21-Apr-11	10:54-11:24	Operation noise of backhoe and boulder movement	Public noise	Sunny	Façade
UTP 6	63.3	65.6	49.1	21-Apr-11	11:26-11:56	Operation noise of backhoe	Public noise	Sunny	Façade
UTP 7	72.0	76.7	57.7	21-Apr-11	13:16-13:46	Operation noise of backhoe	Public noise	Sunny	Façade
UTP 8	73.8	75.6	59.9	21-Apr-11	13:46-14:16	Operation noise of backhoe and boulder movement	Public noise	Sunny	Façade
UTP 9	69.1	72.0	54.4	21-Apr-11	14:18-14:48	Operation noise of backhoe and boulder movement	Public noise	Sunny	Façade
UTP 10	44.0	54.3	53.7	21-Apr-11	15:32-16:02	Operation noise of backhoe and boulder movement	N/A	Sunny	Façade
UTP 11	54.1	57.8	47.8	21-Apr-11	15:00-15:20	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Sunny	*Free field

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

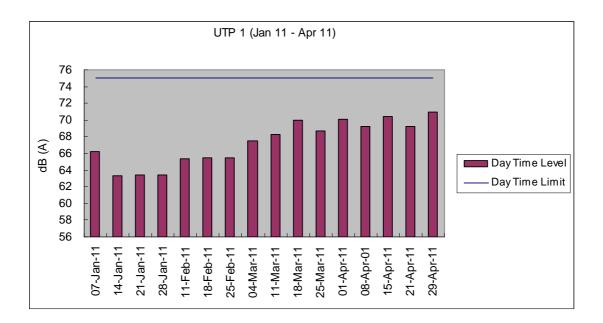
Location	Leq 30min	L ₁₀ 30min	L ₉₀ 30min	Date	Time Duration	Major Construction Noise	Other Noise source	Weather	Location description
UTP 1	71.0	72.2	63.0	29-Apr-11	15:18-15:48	Cement pouring	Background noise from traffic, public noise	Overcast	Façade
UTP 2	64.2	66.9	56.3	29-Apr-11	15:54-16:24	Cement pouring	Background noise from traffic	Overcast	Façade
UTP 3	N/A	N/A	N/A	29-Apr-11	N/A	N/A	N/A	Raining**	Façade
UTP 4	N/A	N/A	N/A	29-Apr-11	N/A	N/A	N/A	Raining**	Façade
UTP 5	69.1	71.1	57.5	29-Apr-11	10:33-11:03	Operation noise of backhoe and boulder movement	Public noise and rooftop construction in neighbourhood	Overcast	Façade
UTP 6	58.4	60.5	49.6	29-Apr-11	14:33-15:03	Operation noise of backhoe and boulder movement	N/A	Overcast	Façade
UTP 7	67.7	72.2	56.5	29-Apr-11	10:01-10:31	Operation noise of backhoe and boulder movement	Public noise	Overcast	Façade
UTP 8	71.7	74.3	64.6	29-Apr-11	13:27-13:57	Operation noise of backhoe and boulder movement	N/A	Overcast	Façade
UTP 9	60.5	67.9	58.4	29-Apr-11	13:58-14:28	Operation noise of backhoe and boulder movement	N/A	Overcast	Façade
UTP 10	58.6	61.2	67.0	29-Apr-11	08:42-09:12	Operation noise of backhoe and boulder movement	N/A	Overcast	Façade
UTP 11	55.1	58.3	49.2	29-Apr-11	09:20-09:50	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	N/A	Overcast	*Free field

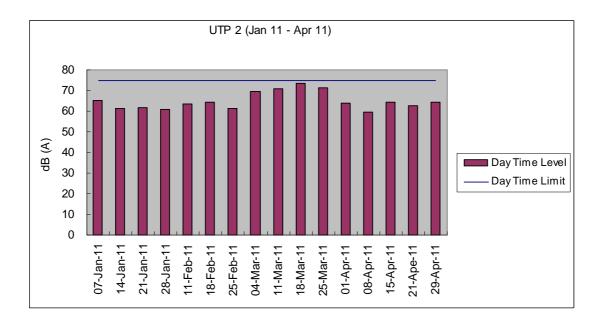
Note* An Additional of 3dB(A) had been added to the measurement result due to Free Field Correction

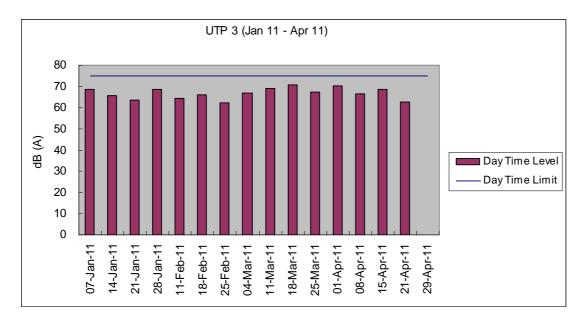
Note** Noise monitoring for UTP3 and UTP4 was cancelled due to adverse weather. Compensatory measurement, which was scheduled to be on 30th April 2011, was also cancelled due to the presence of rain.

Graphical plot for noise measurements

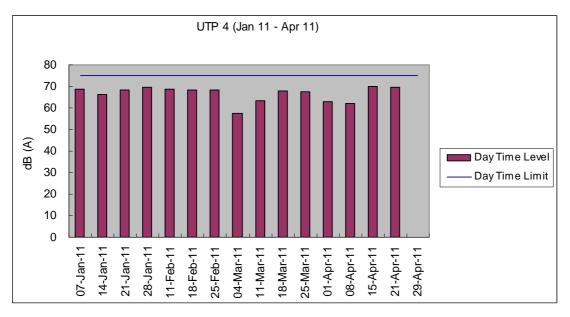
The followings were the graphical plots for the 11 monitoring locations. Each plot showed the date of measurement taken, day time limit of 75 dB(A) as well as the measured daytime level for each location. The graphs contain the data recorded from January 2011 to April 2011.



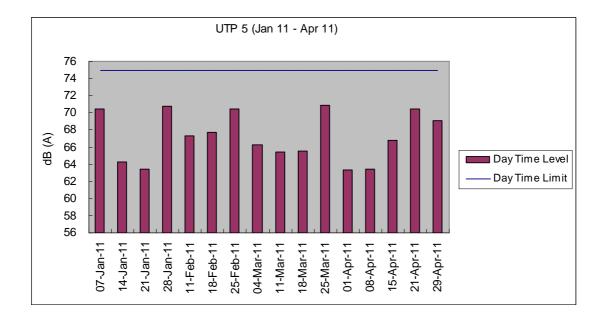


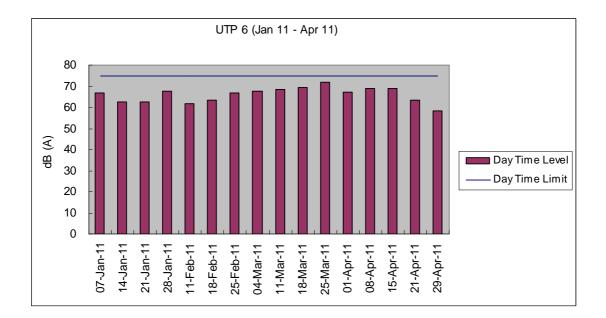


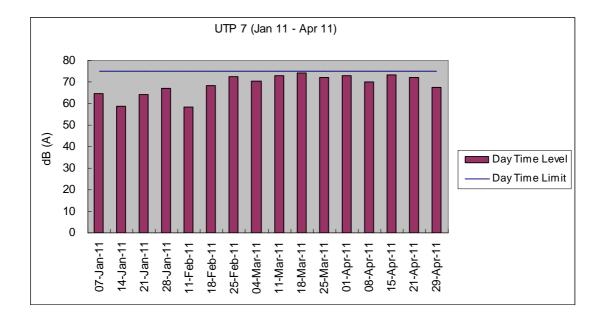
* Noise monitoring for UTP3 on 29th April 2011 was cancelled due to adverse weather. Compensatory measurement, which was scheduled to be on 30th April 2011, was also cancelled due to the presence of rain.

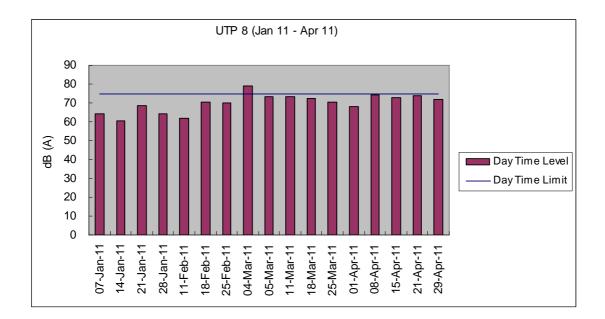


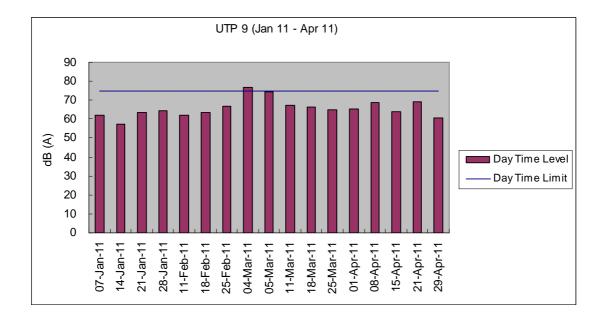
* Noise monitoring for UTP4 on 29th April 2011 was cancelled due to adverse weather. Compensatory measurement, which was scheduled to be on 30th April 2011, was also cancelled due to the presence of rain.

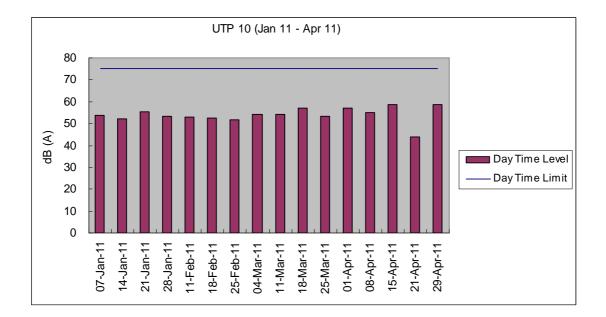


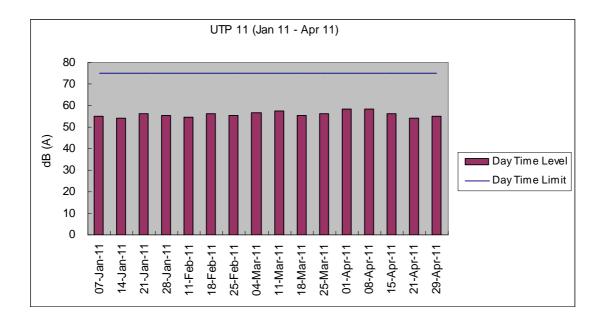




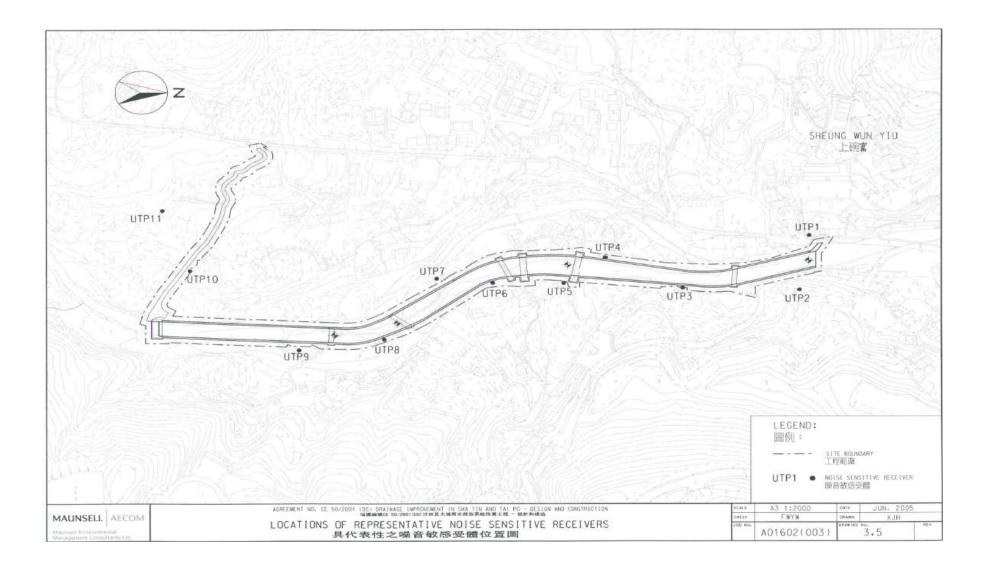








DC/2007/06 River improvement works in Upper Tai Po River Thirty-second Monthly Report



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

Master Schedule of EM&A works in April 2011

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

Master Schedule of EM&A works in May 2011

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

Appendix F: Cumulative complaint log

Environmental	Cumulative no.	No. of complaint	Overall Total
Parameters	Brought forward	April 2011	
Air/Dust	2	0	2
Noise	3	0	3
Water	9	0	9
House Keeping	0	0	0
Hygiene			
Chemical waste	0	0	0
Total	14	0	14

Appendix G: Implementation status of environmental protection and mitigation measures

Environmental	Protection / Mitigation Measures	Implementation	Follow-up
Aspect		status	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,	Implemented	Not required
	shall be installed		
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	Not required
Water Quality	Excavation works within the Tai Po River within the Project shall be	Implemented	Not required
	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		
	Land-based plant shall be employed and site run-off shall be directed	Implemented	Not required
	towards regularly cleaned and maintained silt traps and oil / grease		
	separators to minimize leakage and loss of sediments during excavation		
	Large boulders removed from the Tai Po River within the Project during	Implemented	Not required
	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		
	The excavation area shall be enclosed with bunds or barriers and	Non-compliance	Ongoing
	dewatered prior to excavation to minimize the impacts upon the	identified	
	downstream of the Tai Po River		

Implementation status of environmental protection and mitigation

1			
	Provide silt trap and oil interceptor to remove the oil, lubricants, grease,	Non-compliance	Ongoing
	silt, grit and debris from the wastewater before pumped to the public	identified	
	storm water drainage system		
	Provide site toilet facilities	Implemented	Not required
Waste	Reuse excavated material as far as possible	Implemented	Not required
Management			
	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	Implemented	Not required
	compaction units		
Vibration	Percussive piling is to be replaced by bore-hole piling to minimize	Not applicable at this	Not required
	vibration impacts to the two identified Declared monuments	stage	
	Carrying out of vibration monitoring to ensure that vibration associated	Not applicable at this	Not required
	with the construction phase do not exceed the threshold limit otherwise	stage	
	contractor have to review the work method and construction activities		
	have to be slow down or rescheduled to reduce the impacts		
	Close monitoring and measurement on the cracks of the external wall of	Not Applicable at this	Not required
	Fan Sin Temple during construction works will be carried out. Any	stage	
	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		
	•		

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

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

Appendix H: Cumulative waste flow table

Type of waste		Inert Waste			Non-Inert Waste	9	Chemica	al Waste
	Amount generated	Amount reused	Amount disposed	Amount generated	Amount reused	Amount disposed	Amount generated	Amount disposed*
Year 2008 to 2009	36.9m ³	0	36.9m ³	2.000 tonnes	0	2.000 tonnes	20kg	20kg
Year 2010	1955m ³	1955m ³	0	0.192 tonnes	0	0.192 tonnes	0	0
January 2011	117m ³	117m ³	0	0.040 tonnes	0	0.040 tonnes	0	0
February 2011	581m ³	581m ³	0	0.045 tonnes	0	0.045 tonnes	0	0
March 2011	927m ³	927m ³	0	0.047 tonnes	0	0.047 tonnes	0	0
April 2011	467m ³	467m ³	0	0.050 tonnes	0	0.050 tonnes	0	0
Total	4083.9m ³	4047m ³	36.9m ³	2.374 tonnes	0	2.374 tonnes	20kg	20kg

Cumulative waste flow table showing amount of wastes generated, reused and disposed since 15th September 2008

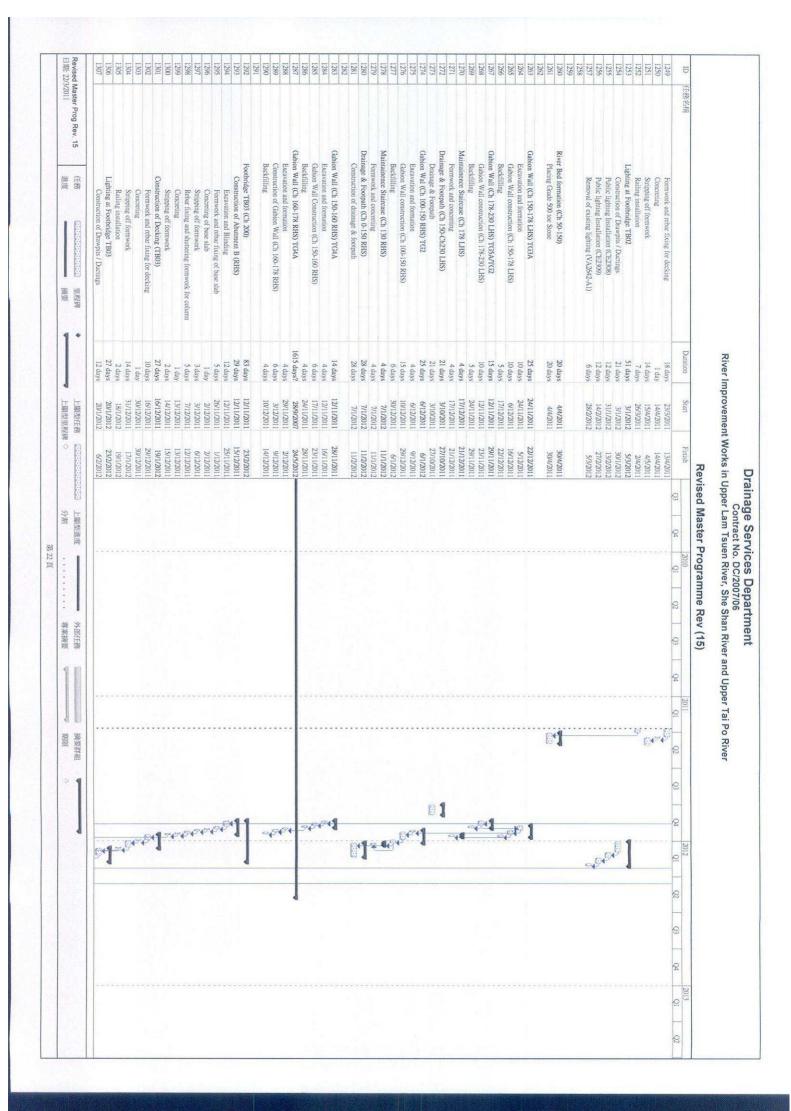
Remark*: Chemical wastes generated from the project sites including Upper Tai Po River, Lam Tsuen River and She Shan River were centralized for disposal.

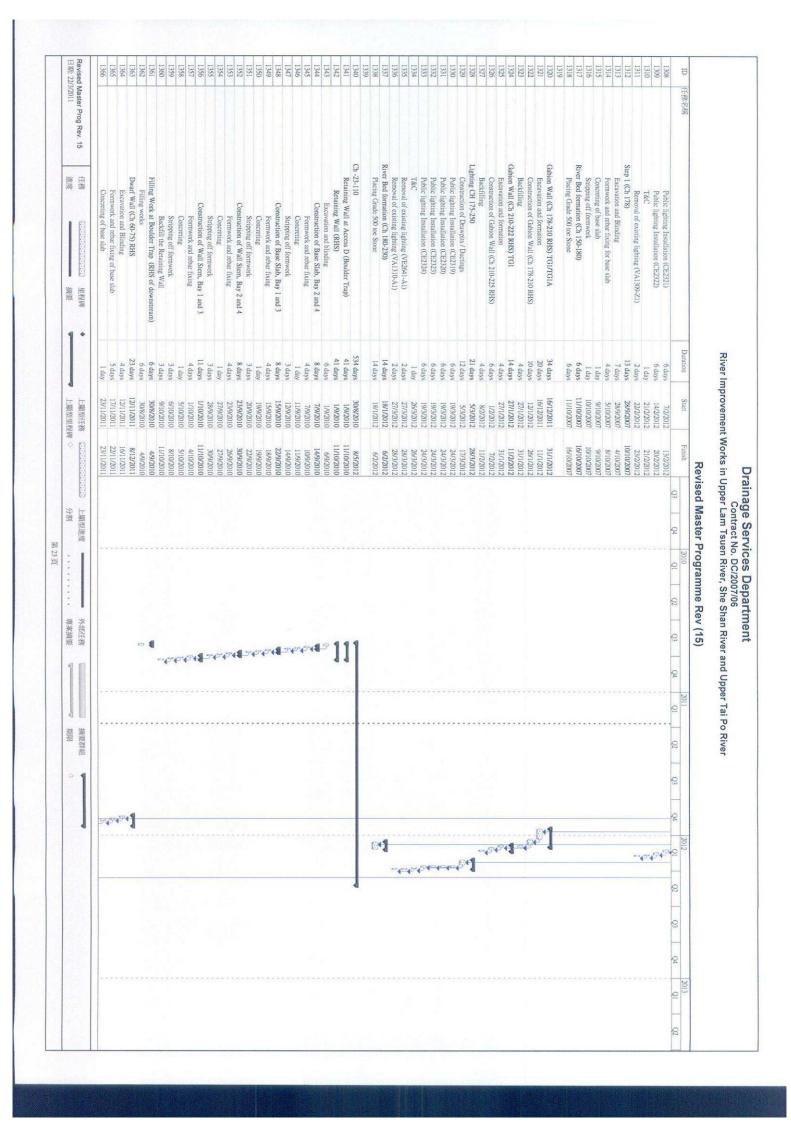
Appendix I: Construction programme (Rev. No. 15)

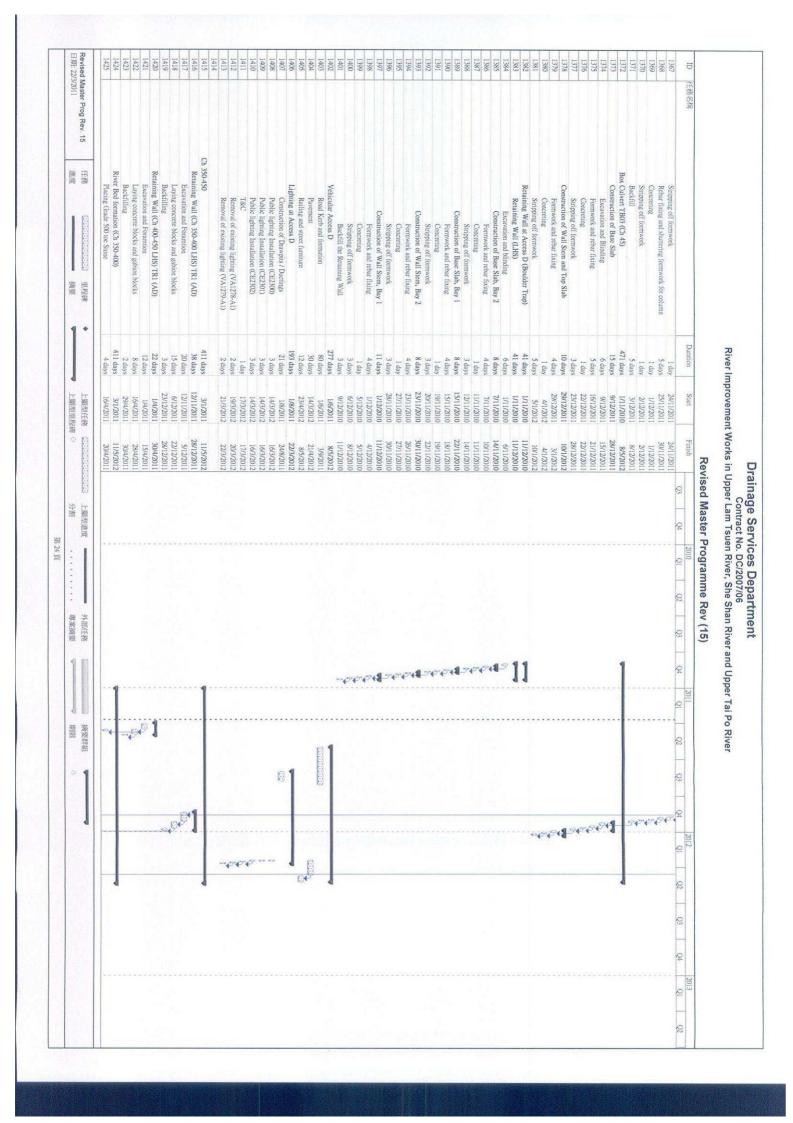
	109 110 1110 1110 1112 1113 1113 1114 1115 1115	10087 10087 1090 1090 1090 1090 1092 1093 1094 1095 1095 1095 1095 1095 1095 1095 1095	1072 1073 1073 1075 1076 1077 1077 1077 1077 1077 1077 1077	ID ff
Gabion Wall Construction (Ch 230-257 LHS) Backfilling Maintainence Staircase (Ch 242 LHS) Formwork and concerting Gabion Wall (Ch 257-270 LHS) TG4 Exceeding and Formation Gabion Wall Construction (Ch 257-270 LHS) Backfilling Retaining Wall (Ch 275-315 LHS) TR1 (replaced by AD1) Exceeding Wall (Ch 275-315 LHS) TR1 (re	Temp Utility and Pedestrian Diversion at Ch230 Temp UU diversion near Ch230 Temp Pedestrian diversion Demolition of Interim Footbridge at Ch230 Demolition of Interim Footbridge Gabion Wall (Ch 230-257 LHS) TG2/TG2/ATG2B	 Gabion Wall (Ch 239.275 RHS) TG1/TG1A Excervation and Formation Gabion Wall Construction (Ch 235-275 LHS) Backfiling Retaining Wall (Ch 275-330 RHS) TR1 (replaced by AD1) Excervation and Formation Laying Concrete block and gabion units (Ch275-320 RHS) Backfiling Excervation and Formation Laying Concrete block and gabion units (Ch320-330 RHS) Backfiling Drainage & Footpath (CH 275-320 RHS) Backfiling Construction of drainage & footpath Gabion Wall Construction (Ch 315-330 LHS) Backfiling Maintainence Staticsase (Ch 315 LHS) Formwork and concreting Drainage & Footpath (Ch 307-330 LHS) Construction of drainage & footpath 	Install Store Fecing Reinstatement of river bed Variation Order No. 178 Temp. Haul Rd/Dyvesion Excavation Fornwork Re-BAR Concrete Pogramme of Upper Tai Po River Wet Season of 2010 Wet Season of 2010 Wet Season of 2011 Wet Season of 2012 Works Supperded Due to Villager's Rall Ch 230-350	任務名稱
7 days 4 days 4 days 11 days 5 days 3 days 3 days 3 days 21 days 18 days 21 days 18 days 6 days 21 days	171 days 39 days 119 days 7 days 7 days 1615 days?	20 days 20 days 20 days 220 days? 220 days? 12 days 12 days 7 days 21 days 22 days 22 days 22 days 22 days 23 days 22 days 23 days 23 days 23 days 23 days 23 days 23 days 24	3 days 3 days 37 days 14 days 7 days 7 days 7 days 7 days 2 days 2 days 1147 days? 184 days 184 days 184 days 184 days?	Duration
7/122011 15/122011 19/122011 19/122011 19/122011 23/122011 23/122011 23/122011 31/122011 31/122011 31/122011 9/12012 9/12012 9/12012 9/12012	29/8/2011 29/8/2011 1/11/2011 12/11/2011 12/11/2011 12/11/2011	288/2011 17/22011 3/3/2011 3/3/2011 3/3/2011 3/3/2011 17/3/2011 17/3/2011 12/11/2011 12/11/2011 22/11/2011 22/11/2011 23/10/2011 10/22012 10/22012 10/22012 27/22012 27/22012 27/22012 27/22012 27/22012 27/22012	2/6/2011 20/6/2011 23/6/2011 23/6/2011 23/6/2011 23/6/2011 19/7/2011 1/4/2011 1/4/2010 1/4/2010 1/4/2011 1/9/2010 7/11/2010 28/9/2007	Start
14/12/2011 17/12/2011 22/12/2011 22/12/2011 7/11/2012 30/12/2011 4/12/012 2/5/2012 2/5/2012 2/5/2012 2/5/2012 2/5/2012 2/5/2012	24/3/2012 15/10/2011 24/3/2012 19/11/2011 19/11/2011 19/11/2011	9/32011 16/22011 2/3/2011 2/3/2011 2/3/2011 2/3/2011 16/3/2011 3/0/2011 3/0/2011 3/0/2011 3/1/2011 2/1/1/2011 2/1/1/2011 2/1/1/2011 2/1/1/2011 2/1/1/2011 2/1/1/2011 2/1/1/2011 2/1/2/2012 2/1/2/2012 2/2/2012	18462011 22/62011 5/8/2011 18/7/2011 18/7/2011 18/7/2011 26/7/2011 28/2011 28/2011 31/10/2012 11/11/2011 31/10/2010 11/11/2011 31/10/2010 11/11/2011	Finish
				Revised Master Programme Rev (15) 2010 2011 02 03 04 2012 03 04 2013

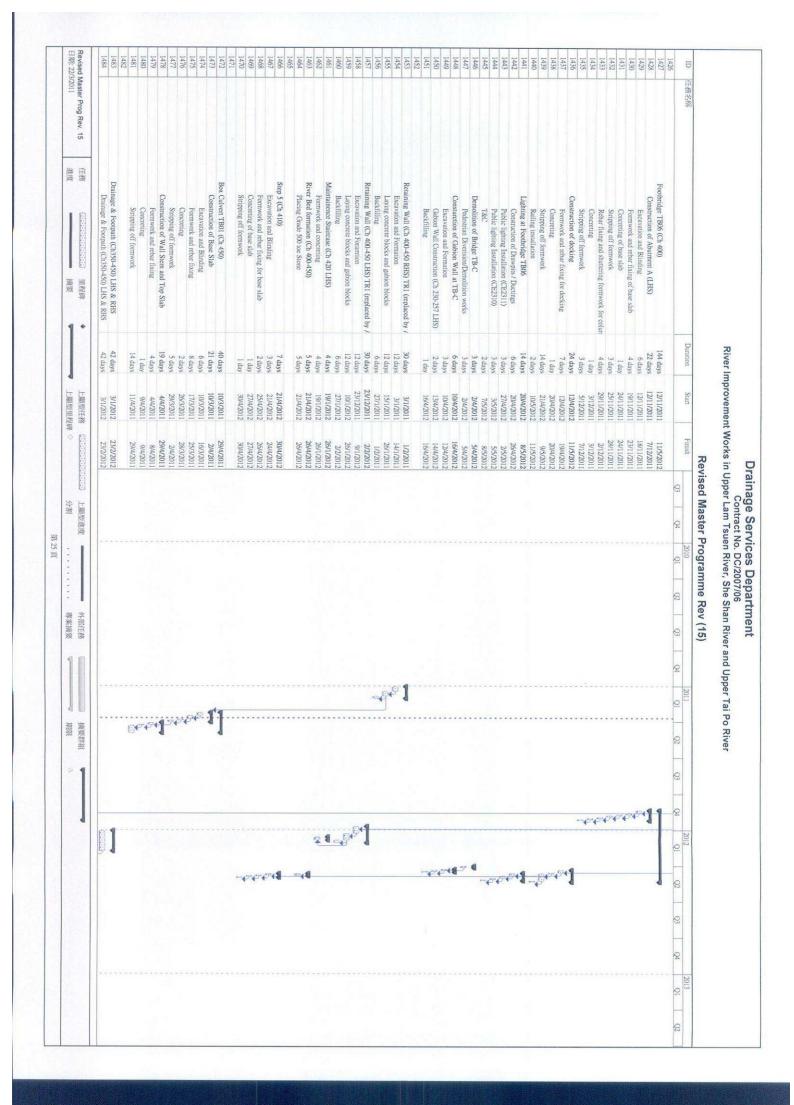
Revised Master Prog Rev. 15 日期: 22/3/2011	-	1189	118/	0811	1185	1184	1183	1182	1811	1180	6/11	8/11	1111	0/11	C/11	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1511	1149	1148	1147	1143 1146	1144	1143	1142	1141	1139	0011	113/	1136	1135	1134	1133	1132	ID 任務名稱			
rog Rev. 15 任務 印度日本1993年1993日 里程碑 維修 January Janua		Stripping off formwork	Converting of column	Stripping off formwork	Concreting of base slab	Formwork and rebar fixing for base slab	Excavation and Blinding	Construction of Abutment A (LHS)	Footbridge TB05 (ch 350)		Backhiling	Gabion Wall Construction (Ch 230-257 LHS)	Excavation and Formation	Constuction of Gabion Wall at TB-A		Public lighting Installation (CE2316)	Public lighting Installation (CE2315)	Construction of Drawpits / Ductings	Lighting at Footbridge TB04	Demolition works	Demolition of Bridge TB-A	Railing installation	Stripping off formwork	Concreting	Formwork and rebar fixing for decking	Construction of decking	Stripping off formwork	Concreting of base slab	Rebar fixing and shuttering formwork for column	Stripping off formwork	Concreting of base slab	Formwork and rebar fixing for base slab	Excavation and Blinding	Construction of Abutment B (RHS)	Stripping off formwork	Concreting of column	Rebar fixing and shuttering formwork for column	Stripping of formwork	Convertine of base sizh	Excavation and Blinding	Construction of Abutment A (LHS)	Footbridge TB04 (Ch 330)	Removal of existing lighting (VA1311-Z1)	T&C	Public lighting Installation (CE2317)	Public lighting Installation (CE2318)	Construction of Drawoits / Ductines	Lighting of CH 250-320	Kiver Bed formation (Ch 230-330)	Construction of Step 3 (Ch307)	Step 3 (Ch 307)	Construction of Cascade (Ch 275)	Cascade (Ch 275)	Construction of Step 2 (Ch 236)	Construction of drainage & footpain (Cn 200-307 LHS) Step 2 (Ch 236)	38)			
1	in fame a	J uay 3 days	4 days	3 days	l day	4 days	5 days	21 days	129 days		1 day	2 days	2 days	5 days	I day	3 days	3 days	7 days	11 days	1 day	1 day	2 days	14 days	1 day	10 days	27 days	3 days	1 day	5 days	3 days	1 day	5 days	5 days	23 days	2 days	1 day	5 days	3 days	D days	5 days	22 days	113 days	6 days	6 days	12 days	12 days	21 days	20 days	20 days	8 days	8 days	8 days	8 days	8 days	8 days	 Duration		KIVET IN	2
上願型任務		16/3/2012	10/3/2012	7/3/2012	6/3/2012	1/3/2012	24/2/2012	24/2/2012	21/11/2011		11/4/2012	5/4/2012	2/4/2012	2/4/2012	30/3/2012	27/3/2012	27/3/2012	19/3/2012	19/3/2012	31/3/2012	31/3/2012	10/4/2012	20/3/2012	19/3/2012	7/3/2012	7/3/2012	14/12/2011	13/12/2011	7/12/2011	3/12/2011	2/12/2011	26/11/2011	21/11/2011	21/11/2011	13/3/2012	12/3/2012	6/3/2012	C10Ch/C	24/2/2012	18/2/2012	18/2/2012	21/11/2011	24/4/2012	17/4/2012	29/3/2012	29/3/2012	C10C/L/S	16/3/2012	16/3/2012	7/3/2012	7/3/2012	27/2/2012	27/2/2012	15/12/2011	1100/01/51	 Start		nprovement	
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15 任務 進度	Constructic	Strippi	Concre	Rehar	Stringi	Conorr	EALAY	Constructiv	Construction of Abute	Ch 45-230		Stripping off formwork	Concreting of base slab	Formwork and re	Step 4 (Ch 350) Excavation and Blinding		Placing Grade 500 toe Stone		Construction of a	Backfilling	Gabion Wall Co	Excavation and Formation	Gabion Wall (Ch 330-345 RHS) TG2	Construction of a	rainage & Footnati	Gabion Wall Co	Excavation and Formation	abion Wall (Ch 33		Backfilling	Gabion Wa	Excavation	T&C	Public light	Public light	Construction of Drawpits	Demolition works	Demolition of Bridge TB-B	Railing installation	Concreting Strinning off formwork	Formwork a	Construction of decking	Stripping off formwork	Concreting of column	Rebar fixing and shutte	Concreting	Formwork :	Excavation	Construction of			
(1111111111111111111111111111111111111	Construction of decking	Stripping off formwork	Concreting of column	Rehar fixing and shuttering formwork for column	Stringing off formwork	Conception of base slab	Excavation and pathor factor for boost of the	Evenuation and Blinding	a of Abutmont A (1 US)	0 /CL 150V		nwork	se slab	Formwork and rebar fixing for base slab	linding		(Ch 330-330) 0 loe Stone		Construction of drainage & footpath	17% 320 330 DHEV	Gabion Wall Construction (Ch 330-345 RHS)	ormation)-345 RHS) TG2	Construction of drainage & footpath	Drainage & Footnath (Ch 335-345 LHS)	Gabion Wall Construction (Ch 335-345 LHS)	ormation	Gabion Wall (Ch 335-345 LHS) TG2/TG2A			Gabion Wall Construction (Ch 230-257 LHS)	Excavation and Formation	Colore Wall as TRD D	Public lighting Installation (CE2314)	ing Installation (CE2313)	Construction of Drawpits / Ductings	Works	iridge TB-B	allation	Formwork	Formwork and rebar fixing for decking	decking	l formwork	of column	surpping out formwork Rebar fixing and shuttering formwork for column	Concreting of base slab	Formwork and rebar fixing for base slab	Excavation and Blinding	Construction of Abutmont B (BHS)			
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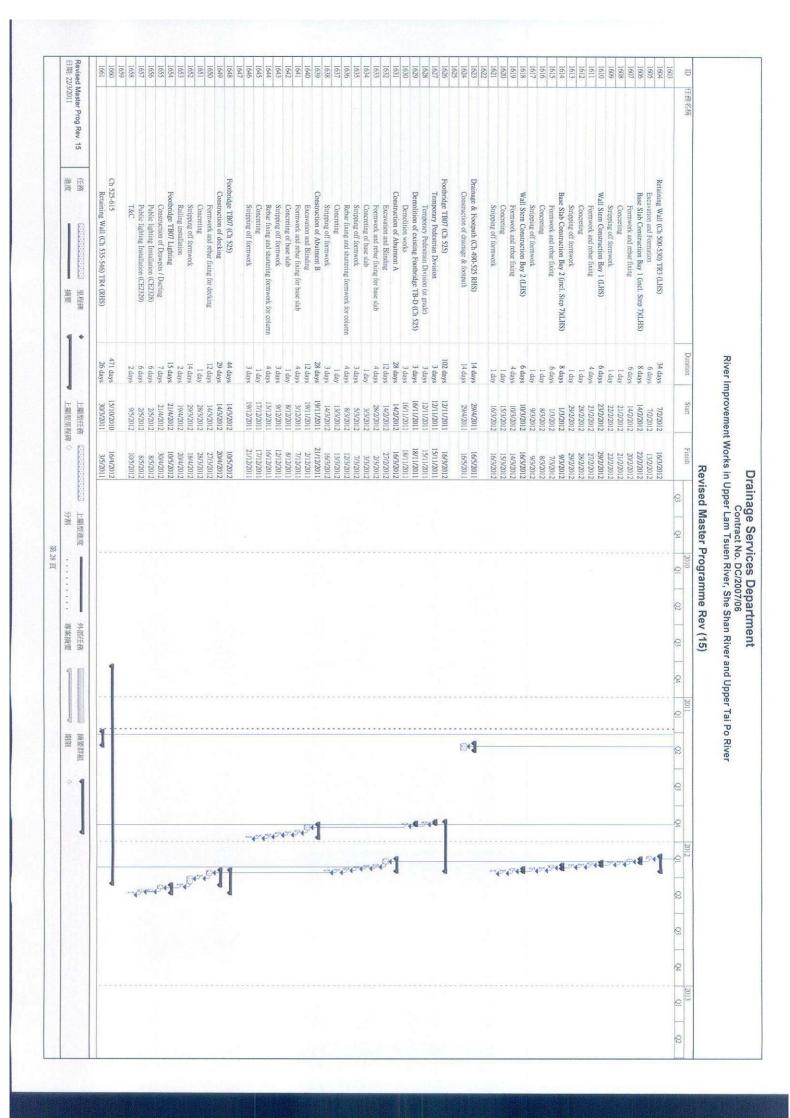


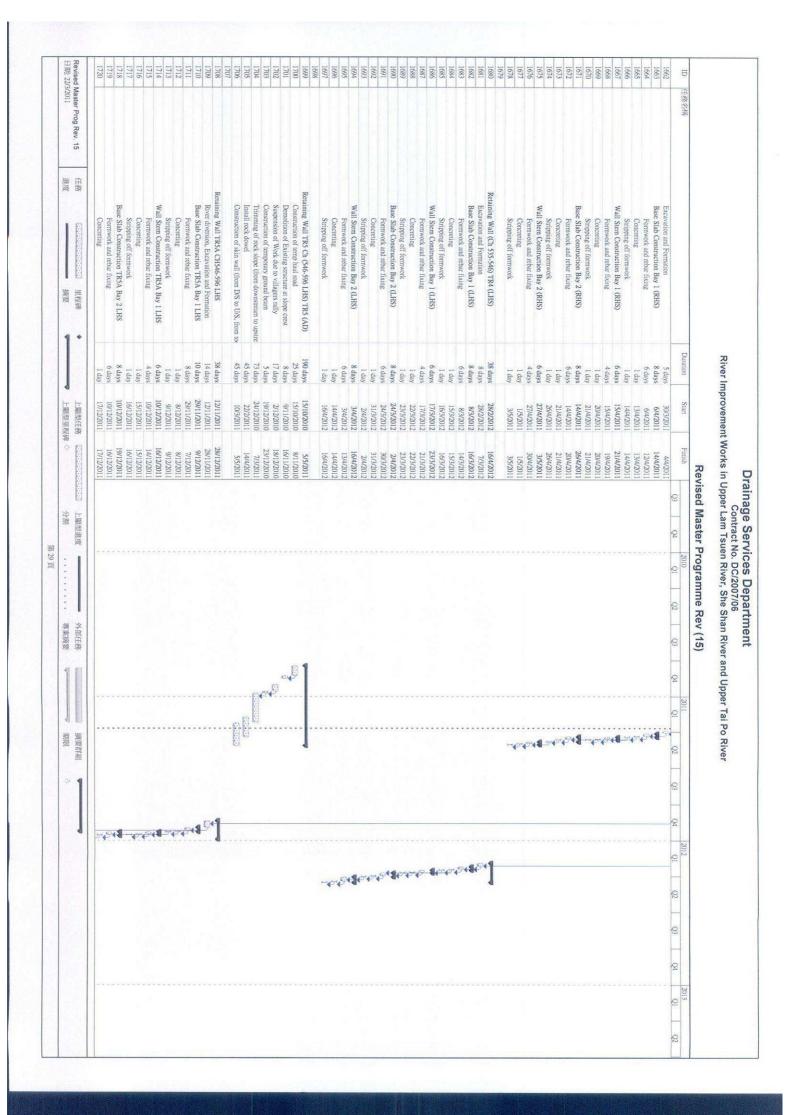


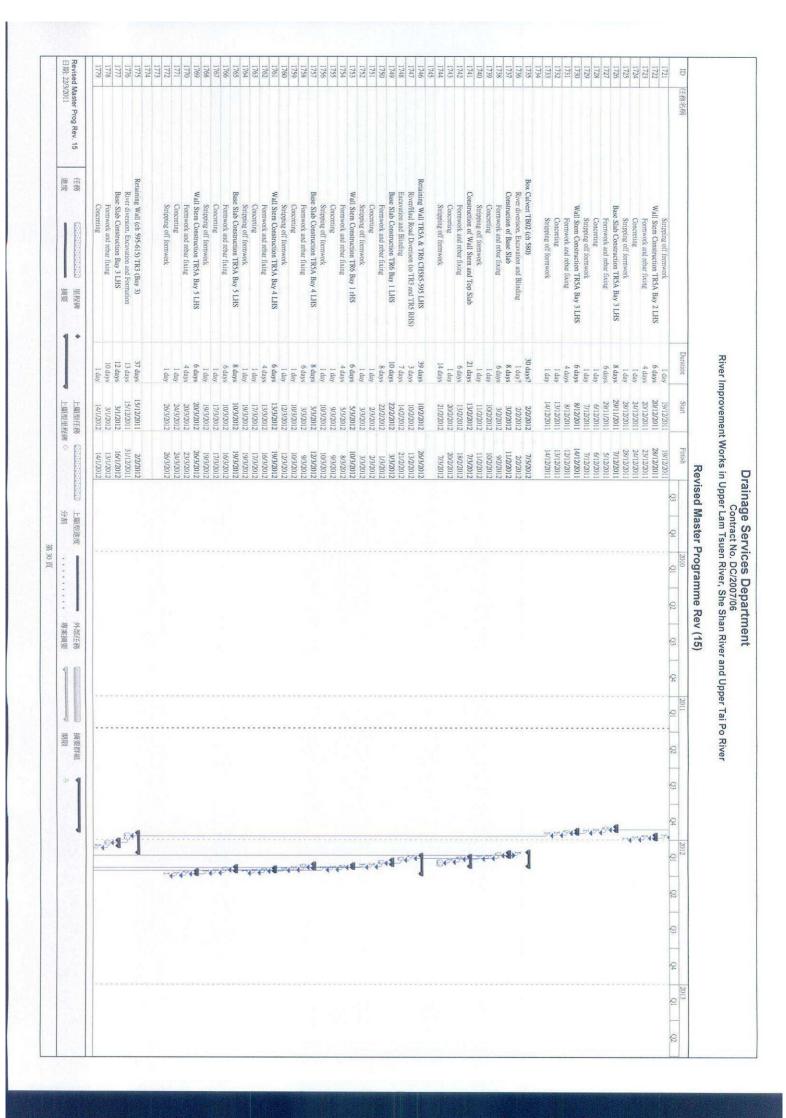


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進度 预要		Formwork and rebar fixing	Wall Stem Construction Bay 1 (LHS)	Stripping off formwork	Concreting	Formwork and rehar fixing	Excavation and Formation	Eventeen and Economics	Retaining Wall (ch 450-500) TK2 (LHS)		Stripping off formwork	Concreting	Formwork and rebar fixing	Wall Stem Construction Bay 5 RHS)	Stripping off formwork	Concreting	Base Slab Construction Bay 5 (incl. Step 6) (RHS)	Stripping off formwork	Concreting	Wall Stem Construction Bay 4 (RHS) Formwork and rehar fixing	Stripping off formwork	Concreting	Formwork and rehar fixing	Stripping off formwork	Concreting	Formwork and rebar fixing	Wall Stem Construction Bay 3 (RHS)	Concreting Stripping off formwork	Formwork and rebar fixing	Base Slab Construction Bay 3 (RHS)	Stripping off formwork	Concreting	Wall Stern Construction Bay 2 (KHS) Formwork and rebar fixing	Stripping off formwork	Concreting	Formwork and rebar fixing	Base Slab Construction Bay 2 (RHS)	Concreting Stransise off Formuode	Formwork and rebar fixing	Wall Stem Construction Bay 1 (RHS)	Stripping off formwork	Comming	Base Slab Construction Bay 1 (RHS)	Excavation and Formation	Retaining Wall (ch 450-500)) TR2 (RHS)	Ch 450-525	T&C	Public lighting Installation (CE2312)	Construction of Drawpits / Ductings	Lighting at CH 350-380			
		4 days	5 days	1 day	1 day	& dave	15 days	/ days	70 days		1 day	1 day	4 days	6 days	4 days	8 days	13 days	l day	I day	6 days	I day	l day	10 days	1 day	l day	4 days	6 days	1 day	6 days	8 days	l day	1 day	6 days	1 day	1 day	6 days	8 days	1 day	4 days	6 days	l day	b days	8 days	15 days	57 days	1615 days?	2 days	7 days	14 days	23 days		Durstion	River Im
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Revised Master Prog Rev. 15 日期: 22/3/2011	Submission of Tree Survey	Landscaping Hardworks Landscaping Softworks	Submission Approval	Material Submission	Commencement of Works	Section 5 Landscape Works	Section 5 - Landscape	Completion o	Section 4 - box Cuiveri (Area A)	Section 4 - Box Culvert at Ping Long																																					住物名称	a handle beer stand t		
任務 建度 摘要	e Survey	vorks	val	on	r Works	pe Works	Section 5 - Landscape Establishemnt Works (Portion B, C, D, E, F, G, H & I)	completion of work at seculoi 4	uiveri (Area A)	rt at Ping Long	•	Removal of existing lighting (CE1600-B2)	T&C	Public lighting Installation (CE2327)	Public lighting Installation (CE2325)	Construction of Drawpits / Ducting	Lighting at CH 550-610	Construction of footpath & drainage works	Drainage and Footpath (Ch525-615 LHS & RHS)	Stripping off formwork	Concreting	Formwork and rebar fixing	Bay 3 Frequestion/Rlinding	Stripping off formwork	Concreting	Excavanon bunning Formwork and rebar fixing	Bay 4	Stripping off formwork	Concreting	Excavation/Blinding	Bay 3	Concreting Stripping off formwork	Formwork and rebar fixing	Excavation/Blinding	Stripping off formwork Bay 2	Concreting	Formwork and rebar fixing	Bay 1	Concrete Slab (Ch546 - Ch596)	Stripping off formwork	Concreting	Formwork and rebar fixing	Stripping off formwork Wall Stem Construction TR3 Ray 3 I HS	Concreting	Formwork and rebar fixing	Supping off formwork Wall Stem Construction TR3 Bay 3 RHS				
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