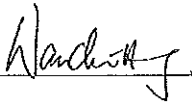
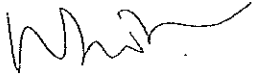


Drainage Services Department

Agreement No. DP 04/2007  
Independent Environmental Checker  
for the River Improvement Works in  
Upper Lam Tsuen River, She Shan  
River and Upper Tai Po River (Post-  
Construction Stage):  
*Independent Environmental Checker's  
Quarterly Report No. 1*

May 2014

Reference 0076194

For and on behalf of ERM - Hong Kong	
Approved by:	Frank Wan
Signed:	
Position:	Partner
Verified by:	 (Key Checker - Winnie Ko)
Date:	19 May 2014

This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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# 1 INTRODUCTION

## 1.1 BACKGROUND

ERM-Hong Kong, Limited (ERM) has been appointed by the Drainage Services Department (DSD) as the Independent Environmental Checker (IEC) for the post-construction stage Environmental Monitoring and Audit (EM&A) programme of Contract No. DC/2007/06 - River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River (the Project). ERM had been the IEC for the construction stage EM&A programme of the Project from November 2007 to December 2013.

The construction stage of the Project and its EM&A programme for the three rivers terminated on 31 December 2013. Since January 2014, the Project had entered the post-construction stage. The Environmental Permit (EP) No. EP-223/2005/A issued on 18 November 2008 and the EM&A manual for Upper Tai Po River specify that two years of post-construction ecological monitoring is required for Upper Tai Po River. Indicated in the EM&A manuals for Upper Lam Tsuen River and She Shan River, monthly post-construction ecological monitoring is required for four years.

## 1.2 PURPOSE OF REPORT

This is the 1<sup>st</sup> quarterly IEC Report to summarise the status of the monthly ecological monitoring at the three rivers during the reporting period from 22 January 2014 to 21 April 2014.

## 2 *EM&A PROGRAMME*

### 2.1 *CONSTRUCTION ACTIVITIES DURING THE REPORTING PERIOD*

As the major construction works had substantially completed during the construction stage, there were minor works which had taken place during the reporting period.

#### 2.1.1 *Upper Tai Po River*

Minor construction activity conducted for the Upper Tai Po River during the reporting period is listed below:

- Erection of Warning Sign Post in Area L, Area N and Area P.

#### 2.1.2 *Upper Lam Tsuen River*

Minor construction activity conducted for the Upper Lam Tsuen River during the reporting period is listed below:

- Installation of Warning Signs in Area B, Area C, Area D, Area E, Area F, Area G, Area H, Area I and Area O.

#### 2.1.3 *She Shan River*

Minor construction activity conducted for the She Shan River during the reporting period is listed below:

- Application of J-Crete on Retaining Wall in Area M.

### 2.2 *IMPLEMENTATION OF ECOLOGICAL MONITORING DURING THE POST-CONSTRUCTION STAGE*

The implementation status of the EM&A programme during the post-construction stage is summarised in *Table 2.1*.

**Table 2.1** *Implementation Status of Ecological Monitoring during the Post-Construction Stage EM&A Programme*

Documentation/ Aspects	Responsible Parties		
	Contractor /The Ecologist	The Engineer	IEC
Monthly Ecological Monitoring Reports for Upper Lam Tsuen River, She Shan River and Upper Tai Po River	<ul style="list-style-type: none"> <li>Monthly ecological impact monitoring for the three rivers had been conducted in January, February and March 2014.</li> </ul>	-	<ul style="list-style-type: none"> <li>Comments on the monthly ecological impact monitoring reports had been issued to the Contractor / the Ecologist. The reports for January 2014, February 2014 and March 2014 are still under revision of the Ecologist and have not been submitted to EPD and AFCD.</li> </ul>

**2.3** *MONTHLY ECOLOGICAL IMPACT MONITORING*

**Table 2.2** *Schedule of Monthly Ecological Impact Monitoring*

Locations	Date
Upper Tai Po River	16 January 2014; 24 February 2014 and 19 March 2014
Upper Lam Tsuen River	17 January 2014; 25 February 2014 and 20 March 2014
She Shan River	16 January 2014; 24 February 2014 and 19 March 2014

The Specific Conditions 2.2(a) of EP No. EP-223/2005/A stipulates a two-year post-construction ecological monitoring programme for Upper Tai Po River. Though the EP does not specify any requirements of post-construction ecological monitoring for She Shan and Upper Lam Tsuen River, the EM&A manuals require monthly ecological monitoring to be conducted for four years after the substantial completion of the Project. The foci of post-construction ecological monitoring lie on water quality, sediment characteristics, water flow, avifauna, aquatic macro-invertebrate, Newt, fish, adult odonate, aquatic, emergent and riparian vegetation as indicated in the EM&A manuals for the three rivers.

**2.4** *PERFORMANCE OF THE ECOLOGIST AND CONTRACTOR*

The Contractor had appointed a qualified Ecologist to undertake monthly ecological impact monitoring at the three rivers in accordance with the requirements and parameters set out in the EM&A manuals for Upper Lam Tsuen River, She Shan River and Upper Tai Po River from January 2014 through March 2014. Based upon the reports submitted to the IEC for review, it is recommended that the Ecologist should focus on the comparisons between the baseline ecological survey, impact monitoring during the construction stage and post-construction stages of the Project to identify any

trends of ecological recovery. Data collected in the post-construction stage should not be interpreted in an isolated manner from the data garnered from the baseline survey and impact monitoring during the construction stage as comparison between the three phases of ecological monitoring would offer a more comprehensive insight into any changes / trends over a broader temporal scale.

## 2.5

### *FUTURE KEY ISSUES*

As the construction works at Upper Tai Po River, She Shan River and Upper Lam Tsuen River had substantially completed and the post-construction stage of the Project commenced in January 2014, there would be no major works carried out at the three rivers in the coming reporting quarter. Minor outstanding works in the following quarter at the three rivers include, but are not limited to:

- Construction of footpaths, maintenance staircases, u-channels, catch pits, railings, fencings, gates, irrigation systems, utilities, chainage markers and warning signs along both sides of the three rivers;
- Construction of footbridges, emergency vehicular access, retaining walls, dwarf walls, gabion walls and box culverts for structures of the three rivers;
- Construction of maintenance access roads;
- Removal of unauthorised C&D materials and construction waste within or adjacent to the works areas of the three rivers;
- Completion of landscape soft works such as planting of trees;
- Reinstating areas affected by the works by trimming, backfilling and/ or other appropriate methods;
- Reinstating damage to existing structures and facilities affected by the Works; and
- Rectifying, repairing any defect, imperfection and other fault identified by the maintenance authorities.

## 2.6

### *POTENTIAL ENVIRONMENTAL IMPACTS*

Though the Project had entered the post-construction stage since January 2014, the Contractor should pay close attention to the environmental performance of the aforementioned activities and maintain satisfactory environmental performance during the minor outstanding works.