



**CONTRACT NO. DE/2005/03**

**SUPPLY AND INSTALLATION OF ELECTRICAL AND MECHANICAL EQUIPMENT FOR  
EXPANSION OF SHEK WU HUI SEWAGE TREATMENT WORKS**

***ENVIRONMENTAL MONITORING AND AUDIT***

**MONTHLY EM&A REPORT NO. 30**

**NOVEMBER 2008**

*for*

**Biwater Man Lee Limited**

*Submitted by*

**Kingsford Environmental (H.K.) Ltd.**

**CONTROLLED DOCUMENT**

Revision: B  
Approved by: SL

Revision Date: 6/12/08  
Distribution Date: 6/12/08

CUSTOMER: **Biwater Man Lee Limited**

PROJECT NAME: **Supply and Installation of Electrical and Mechanical Equipment for Expansion of Shek Wu Hui Sewage Treatment Works**

PROJECT NO.: **81869**

Author: T. Y. Yeung  
(Signature)

Mr. Tony Yeung  
(Name)

Date: 6/12/2008

Review and Approved by: [Signature]  
(Signature)

Mr. Stanley Lau  
(Name)

Date: 6/12/2008

### CONTROLLED DOCUMENT DISTRIBUTION

Document Title : Monthly EM&A Report No. 30

Controlled Copy No.: \_\_\_\_\_

Document No. : RPT:MRPTNo.30/RevB/81869

Distributed to : Biwater Man Lee Limited

Date : 6/12/2008

REVISION RECORD				
Rev. No.	Revision Notification	Date	Approved By	Signature
A	Report issued to Client	25/11/2008	Stanley Lau	<u>[Signature]</u>
B	Report issued to Client	6/12/2008	Stanley Lau	

## TABLE OF CONTENTS

Approval & Distribution Sheet  
Executive Summary

- 1 Introduction
- 2 Work Activities during the Month
- 3 Status of Environmental Protection
- 4 Site Inspections
- 5 Summary of Deficiencies and Remedial Actions
- 6 Summary of Complaints and Remedial Actions
- 7 Summary of Summons and Prosecutions
- 8 Monthly Environmental Auditing for the Coming Months
- 9 Conclusions and Comments

Tables:

- Table 1 Work Activities for November 2008  
Table 2 Status of Permits and Licenses  
Table 3 Type and Quantity of Waste Disposed of in November 2008

Appendices :

- 1 Contact Information of Key Environmental Personnel
- 2 Sensitive Receivers, Locations of Monitoring and Control Stations, Action and Limited Levels and Event/Action Plan
- 3 Construction Programme
- 4 Environmental Requirements and Implementation Status
- 5 Site layout plan and Site Inspection Checklists
- 6 Deficiency Investigation Reports
- 7 Complaint Reports
- 8 Summons and Prosecutions Records
- 9 Permits

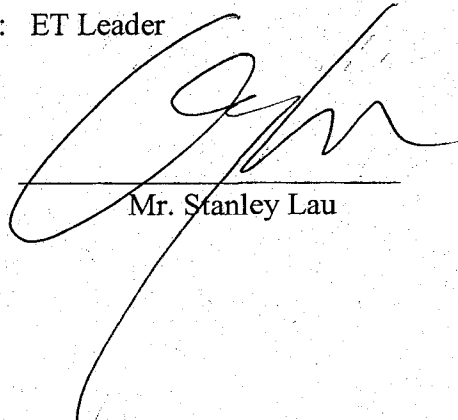
## APPROVAL & DISTRIBUTION SHEET

DOCUMENT DATE: 6 December 2008

### APPROVAL

Certified by : ET Leader

Signature:



Mr. Stanley Lau

Date:

6/12/2008

### DISTRIBUTION LIST

Title	Name	No. of Copies
Engineer's Representative (Drainage Services Department)	Mr. K.K. Cheung	8
E&M Contractor (Biwater Man Lee Limited)	Mr. Frankie Chan	1
Independent Environmental Checker (CH2M HILL Hong Kong Limited)	Mr. Y. T. Tang	1

## EXECUTIVE SUMMARY

This is the thirtieth monthly Environmental Monitoring and Audit (EM&A) Report for the Drainage Services Department Contract No. DE/2005/03 entitled "Supply and Installation of Electrical and Mechanical Equipment for Expansion of Shek Wu Hui Sewage Treatment Works". This report contains the results of the environmental monitoring for verification of mitigation implementation conducted by the Environmental Team (ET) of the E&M Contractor as required in the contract.

For the environmental monitoring activities, Action and Limit (A/L) Levels are defined levels of impact recorded which represent levels at which a prescribed response is required. Action Limit is an indication of a deteriorating ambient environment for which appropriate remedial actions are likely to be necessary to prevent environmental quality from falling outside the Limit Levels. If these are exceeded, construction works should not be preceded without appropriate remedial action, including critical review of the methods. Baseline monitoring was conducted by the Civil Contractor in December 2005 (Report No. 01284R0012).

The work activities in this month consisted of E&M equipment installation for Air Blower House No.2, Bioreactor No.5, Flow Division Pump Pit No.1 & 2, Switch Room for RAS/SAS Pumping Station No.2, RAS/SAS Pumping Station No.2, Final Sedimentation Tank No.9 & 10 and Sludge Press House Extension. In addition defects rectification of SAS thickening system in SAS Consolidation House was in progress.

Site inspections by an Environmental Team were carried out on 4, 10, 18, and 26 of November 2008 with the representatives of the Engineer. Joint site audit was conducted on 13 November 2008 with the representatives of Engineer, IEC, Civil and E&M Contractor and ET.

No deficiency was found during the site inspections in November 2008. Work activities and mitigation measures were in compliance with the environmental protection regulations, contract requirement and environmental permit.

The monthly EM&A meeting was held on 13 November 2008 with all of the parties (DSD, Civil and E&M contractors, ETs, and the IEC) involved.

There was no complaint received or notification of summons or successful prosecution in November 2008.

There was no reporting change during the reporting month.

The planned activities for December 2008 - February 2009 as regards E&M equipment are mainly the installation and T&C (if required) in i) new Air Blower House No.2, ii) Bioreactor No.5, iii) Flow Division Pump Pits No.1 & 2, iv) Final Sedimentation Tank Nos.9 and 10 and v) RAS/SAS Pumping Station No.2, vi) Switch Room for RAS/SAS Pumping Station No.2, vii) Sludge Press House Extension, viii) Sludge Conditioning Tank Nos.3 and 4, ix) Bunded Area for Ferric Chloride Storage Tank, and x) defects rectification of SAS Thickening System in SAS Consolidation House.

## **1 Introduction**

This is the thirtieth monthly Environmental Monitoring and Audit (EM&A) Report for the Drainage Services Department Contract No. DE/2005/03 entitled “Supply and Installation of Electrical and Mechanical Equipment for Expansion of Shek Wu Hui Sewage Treatment Works”. The report was prepared by the Environmental Team, Kingsford Environmental (H.K.) Ltd., of the E&M Contractor, Biwater Man Lee Limited. This report is submitted to the Client, the Drainage Services Department, and the Independent Environmental Checker, CH2M HILL Hong Kong Limited, for the project. In addition, this report will be submitted to EPD in accordance with the requirement of the environmental permit (EP218-2005) and EM&A manual of the project.

This report only presents the results of the environmental auditing of the project activities regarding the E&M equipment installation conducted in the month of November 2008. The auditing works include regular site inspections for verification of the mitigation measures implementation as recommended in the EM&A Manual and as detailed in the Project Profile for the project.

The contact information for the key personnel is shown in Appendix 1.

The job nature of the E&M contractor is mainly for installation of E&M equipment, all hand-held’s breakers, bulldozer, concrete lorry mixer, dump truck and hand-held’s poker, vibratory would not be frequently used so that the impact from noise and dust would be low. Also, the distance to the nearest sensitive receivers is long. Therefore, the potential environmental impact imposed to the sensitive receivers would be low. Routine environmental monitoring would be considered when deficiency is found or complaint is received.

The sensitive receivers, locations of monitoring and control stations, action and limited levels and event/action plan are shown in Appendix 2.

## 2 Work Activities during the Month

The work activities in this month consisted of E&M equipment installation for Air Blower House No.2, Bioreactor No.5, Flow Division Pump Pit No.1 & 2, RAS/SAS Pumping Station No.2 & its Switchroom, Final Sedimentation Tank No.9 & 10 and Sludge Press House Extension. Additionally the T&C of newly installed air blower system was conducted. Provision of training for air blower operation to ST1 was finished. Equipment test in BR5 was commenced & SOTR test for fine bubble diffuser was completely done. Finally defects rectification of SAS thickening system in SAS Consolidation House was in progress.

The activities and dates of occurrence of each activity are summarized below in Table 1. The Construction Program is shown in Appendix 3.

**Table 1: Work Activities for November 2008**

<b><i>SAS Consolidation House</i></b>	
Defects rectification of SAS thickening system	31 Jan 08 – 31 Jan 09*
<b><i>Air Blower House No.2</i></b>	
Installation of E&M equipment	1 Apr 08 – 3 Nov 08*
Testing and commissioning of Air Blowers	4 Nov 08 – 24 Nov 08*
<b><i>Bioreactor No.5</i></b>	
Installation of E&M equipment	18 Mar 08 – 30 Oct 08*
Testing and commissioning	1 Nov 08 – 31 Dec 08*
<b><i>Flow Division Pump Pit No.1</i></b>	
Installation of E&M equipment	18 Mar 08 – 30 Oct 08*
Testing and commissioning	1 Nov 08 – 31 Dec 08*
<b><i>Flow Division Pump Pit No.2</i></b>	
Installation of E&M equipment	8 Sept 08 – 15 Nov 08*
Testing and commissioning	16 Nov 08 – 31 Dec 08*
<b><i>Switch Room for RAS/SAS Pumping Station No. 2</i></b>	
Installation of E&M equipment	11 Apr 08 – 15 Nov 08*
Testing and commissioning	8 Nov 08 – 31 Dec 08*

<b><i>RAS/SAS Pumping Station No.2</i></b>	
Installation of E&M equipment	28 Apr 08 – 15 Nov 08*
Testing and commissioning	16 Nov 08 – 31 Dec 08*
<b><i>Final Sedimentation Tank Nos. 9 &amp; 10</i></b>	
Installation of E&M equipment	11 Apr 08 – 14 Dec 08*
Testing and commissioning	15 Dec 08 – 31 Dec 08*
<b><i>Sludge Press House Extension</i></b>	
Installation of E&M equipment	18 July 08 – 31 Jan '09*

\* *Scheduled dates only for completion of the activities*

### **3 Status of Environmental Protection**

#### *Air Quality*

Appropriate mitigation measures for the activities are in place. Plastic covers with stakes/weights are readily available and used for covering of exposed material for control of dust. Water spray is available for dust suppression, if necessary.

#### *Water Quality*

The plastic covers for exposed soil, etc. are available for minimization of silt in the run-off water during rainstorms, if necessary. Sandbags will be provided for preventing surface run-off discharging directly into public drain area. Note that wastewater generated from the off-site project office was collected in a storage tank and tanker-away regularly by a licensed collector.

Anti-mosquito preventive measures, e.g. regular removal of stagnant water (if possible) and/or spraying larvicide (if necessary) at any site area, are taken for mosquito control and prevention, particularly for control of Dengue Fever and Japanese Encephalitis diseases.

#### *Noise*

Plants with low noise emittance are preferred and are operated / maintained to reduce noise. In this reporting month, work was carried out during normal working hours (7am – 7pm Monday to Saturday) or otherwise specified in the contract. In the event of



a schedule change such that construction work would be performed during the restricted hours (11pm – 7am and during general public holidays including Sundays), a Construction Noise Permit would be required.

#### Waste / Chemical Management

The construction waste materials are preferred to be removed promptly from the site. Recyclable hard inert C&D materials should be taken to a public filling area (Tuen Mun Area 38) whereas the non-inert C&D waste should be disposed of to WENT landfill at Nim Wan or other disposal site approved by the control authority. Note that the inert C&D materials should be reduced, reused and recycled if possible, before disposal. Any substance identified as chemical waste would be disposed of properly by a licensed collector. A trip ticket system for the disposal of C&D waste should be conducted as required by the Waste Management Plan. Rubbish bins are provided on-site for collecting general refuses as necessary. The general refuse would be removed regularly and disposed to landfills by a licensed collector. A proper record of each waste disposal, including the new bar-coded disposal delivery form, would be kept to verify proper handling and disposal.

The status of permits and licenses is summarized in Table 2 and shown in Appendix 9.

**Table 2: Status of Permits and Licenses**

Description	Permit No.	Valid Period		Ref.	Status
		From	To		
Environmental Permit	EP-218/2005	16/06/05	End of Project	PS1.39*	Granted
Register as Chemical Waste Producer	WPN 5517-624-B1 039-02	14/06/07	End of Project	Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354)	Granted

\* Particular Specification of Contract No. DE/2005/03

The implementation status of mitigation measures from EM&A Manual is attached in Appendix 4.

## **4 Site Inspections**

Site inspections by an Environmental Team were carried out on 4, 10, 18 and 26 of November 2008 with the representatives of the Engineer. Joint site audit was conducted on 13 November 2008 with the representatives of Engineer, IEC, Civil and E&M Contractor and ET.

The inspected site locations were marked on a site layout plan and the location code was recorded on the checklist. The site layout plan is shown in Appendix 5.

The work activities in this month consisted of E&M equipment installation for Air Blower House No.2, Bioreactor No.5, Flow Division Pump Pit No.1 & 2, RAS/SAS Pumping Station No.2 & its Switchroom, Final Sedimentation Tank No.9 & 10 and Sludge Press House Extension. Additionally the T&C of newly installed air blower system was conducted. Provision of training for air blower operation to ST1 was finished. Functional test of equipment at BR5 was commenced & SOTR test for fine bubble diffuser was completely done. Finally defects rectification of SAS thickening system in SAS Consolidation House was in progress.

No deficiency was found during this month. Inspection checklists are annexed in Appendix 5. Whereas all of the environmental aspects were inspected in the work areas, the most applicable descriptions are addressed below.

### *Air Quality*

No dusty material was found from the site areas or activities this month.

### *Water Quality*

No surface run-off was observed during the site inspections this month. Note that the regular inspections and preventive measures for the mosquitoes are being conducted and recorded at least weekly by the Contractor.

### *Noise*

During this month, the work activities and equipment used did not generate significant noise. In this reporting month, no work was carried out during general public holidays including Sundays.

### Waste / Chemical Management

Refuse bins and waste storage/sorting area were provided for the collection of general refuse and sorting the C&D materials.

No packaging waste or construction waste was disposed of to landfill by the licensed waste collector this month.

The type and quantity of waste for final disposal during November 2008 is shown in Table 3. Note that a record of each disposal is being kept.

**Table 3: Type and Quantity of Waste Disposed of in November 2008**

<b>Types of Waste</b>	<b>Quantity</b>
Inert C&D Material	Nil
Non-inert C&D Waste	Nil
Chemical Waste	Nil
General Refuse*	1.32 m <sup>3</sup>

\* Included the site office

## **5 Summary of Deficiencies and Remedial Actions**

There was no deficiency noted from the site inspections in November 2008.

## **6 Summary of Complaints and Remedial Actions**

No Complaint was received in November 2008. In the event of complaints, the procedure for handling of the complaints is detailed in the EM&A Manual.

## **7 Summary of Summons and Prosecutions**

No notification of summons and prosecutions occurred in November 2008.

## **8 Monthly Environmental Auditing for the Coming Months**

The planned activities for the coming three months (December 2008 – February 2009) as regards E&M equipment are to carry out installation, testing and commissioning for the following system/area:-

- New Air Blower House No.2
- Bioreactor No.5

- Flow Division Pump Pits No.1 & 2
- Final Sedimentation Tank Nos. 9 and 10
- RAS/SAS Pumping Station No.2
- Switch Room for RAS/SAS Pumping Station No. 2
- Sludge Press House Extension
- Sludge Conditioning Tank Nos. 3 and 4
- Bunded Area for Ferric Chloride Storage Tank.
- Defects rectification of SAS Thickening System in SAS Consolidation House

The anticipated environmental issues for November 2008 – January 2009 will be as follows:-

- New Air Blower House No.2
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
- Bioreactor No.5
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
    - stagnant water since potential accumulation may occur in the tank during rainy days.
- Flow Division Pump Pits No.1 & 2
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
    - stagnant water since potential accumulation may occur in the flow division pump pits during rainy days.
- Final Sedimentation Tank Nos. 9 and 10
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
    - stagnant water since potential accumulation may occur in the flow division pump pits during rainy days.
- RAS/SAS Pumping Station No.2

- The anticipated environmental issues will be related to:-
  - the waste disposal from the E&M equipment installation.
- Switch Room for RAS/SAS Pumping Station No.2
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
- Sludge Press House Extension
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
- Sludge Conditioning Tank Nos. 3 and 4
  - The anticipated environmental issues will be related to:-
    - the waste disposal from the E&M equipment installation.
- Bunded Area for Ferric Chloride Storage Tank
  - The anticipated environmental issues will be related to:-
    - waste disposal from the E&M equipment installation.
- Defects rectification of SAS Thickening System in SAS Consolidation House
  - The anticipated environmental issues will be related to:-
    - waste disposal from the E&M equipment installation.

## **9 Conclusions and Comments**

The required weekly site inspections have been conducted. No deficiency was noted during the reporting month.