



**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. 23**

**APRIL 2008**

*for*

**Biwater Man Lee Limited**

*Submitted by*

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

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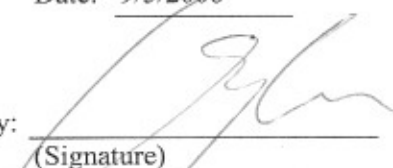
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PROJECT NAME: **Supply and Installation of Electrical and Mechanical Equipment for Expansion of Shek Wu Hui Sewage Treatment Works**

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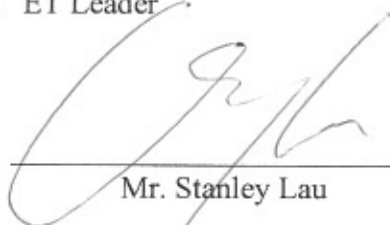
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## EXECUTIVE SUMMARY

This is the twenty-third 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 and Flow Division Pump Pit No.1, where the overhead crane installation and testing and commissioning in SAS Consolidation House were in progress. Besides, possession of E&M equipment installations for Final Sedimentation Tank Nos. 9 and 10 and Switch Room for RAS/SAS Pumping Station No. 2 have been taken on 11 April 2008 and RAS/SAS Pumping Station No.2 has been taken on 28 April 2008.

Site inspections by an Environmental Team were carried out on 8, 16, 22 and 29 of April 2008 with the representatives of the Engineer.

No deficiency was found during the site inspections for April 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 10 April 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 during April 2008.

There was no reporting change during the reporting month.

The planned activities for May – July 2008 as regards E&M equipment are mainly the installation and T&C (if required) in 1) existing SAS Consolidation House, 2) new Air Blower House No. 2, 3) Bioreactor No.5, 4) Flow Division Pump Pits, 5) Final Sedimentation Tank Nos.9 and 10 and 6) RAS/SAS Pumping Station No.2, 7) Switch Room for RAS/SAS Pumping Station No. 2, 8) Sludge Press House Extension, 9) Sludge Conditioning Tank Nos. 3 and 4, and 10) Bunded Area for Ferric Chloride Storage Tank.

## **1 Introduction**

This is the twenty-third 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 her Independent Environmental Checker, CH2M HILL Hong Kong Limited, for the project. In addition, this report is to 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 April 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 large. 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 and Flow Division Pump Pit No.1, where the overhead crane installation and testing and commissioning in SAS Consolidation House were in progress. Besides, possession of E&M equipment installations for Final Sedimentation Tank Nos. 9 and 10 and Switch Room for RAS/SAS Pumping Station No. 2 have been taken on 11 April 2008 and RAS/SAS Pumping Station No.2 has been taken on 28 April 2008.

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

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

<i>SAS Consolidation House</i>	
Testing and commissioning	5 Jan '08 – 15 May '08*
<i>Air Blower House No.2</i>	
Installation of E&M equipment	1 Apr '08 – 31 Aug '08*
<i>Bioreactor No.5</i>	
Installation of E&M equipment	18 Mar '08 – 31 Aug '08*
<i>Flow Division Pump Pit No.1</i>	
Installation of E&M equipment	18 Mar '08 – 31 July '08*

\* *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 NENT landfill at Ta Kwu Ling 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 8, 16, 22 and 29 of April 2008 with the representatives of the Engineer.

The site locations inspected 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 and Flow Division Pump Pit No.1, where the overhead crane installation and testing and commissioning in SAS Consolidation House were in progress. Besides, possession of E&M equipment installations for Final Sedimentation Tank Nos. 9 and 10 and Switch Room for RAS/SAS Pumping Station No. 2 have been taken on 11 April 2008 and RAS/SAS Pumping Station No.2 has been taken on 28 April 2008.

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

Due to the rains in this month, accumulations of rainwater were observed in the Bioreactor No.5 and Final Sedimentation Tank Nos. 9 and 10. The accumulated water should be drained away regularly, if possible, while mosquito larvicide is only applied when it is not feasible to drain away the water immediately.

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 April 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 April 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*	1.32m <sup>3</sup>

\* Included the site office

**5 Summary of Deficiencies and Remedial Actions**

There were no deficiencies noted from the site inspections of April 2008.

**6 Summary of Complaints and Remedial Actions**

No complaints were received in April 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 no prosecutions occurred in April 2008.

## 8 Monthly Environmental Auditing for the Coming Months

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

- SAS Consolidation House
- new Blower House No.2
- Bioreactor No.5
- Flow Division Pump Pits
- 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.

The anticipated environmental issues for May – July 2008 will be as follows:-

- SAS Consolidation House
  - The anticipated environmental issues will be related to:-
    - Stagnant water, as testing/commissioning of equipment/system will be involved and the chemical handling (if any) during the T&C period.
- 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.

- New Flow Division Pump Pits
  - 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.

## **9 Conclusions and Comments**

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