

Contract No. : DE/99/12
Outlying Islands Sewerage – Stage 1 Phase 1
Upgrading of Siu Ho Wan Sewage Treatment Plant
– E&M Works

ENVIRONMENTAL MONITORING AND AUDIT
MONTHLY EM&A REPORT No. 5

BioEnviroLink Technologies Limited
October 2003

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EXECUTIVE SUMMARY

This is the fifth monthly Environmental Monitoring and Audit (EM&A) Report for the Drainage Services Department Contract No. DE/99/12 entitled “Upgrading of Siu Ho Wan STP – E&M Works Outlying Islands Sewerage – Stage 1 Phase 1C”. (Environmental Permit No. EP-076/2000)

This report contains the results and findings of site inspection activities and EM&A works carried out by the Environmental Team (ET) of the E&M Contractor as required in the contract during October 2003.

The site activities in the reporting period mainly consisted of installation of return rail and idler wheel, drive shaft unit and scum collector pipe for sludge scrapers at the Primary Tank, installation of overhead Crane and Alum & Anionic Polymer Stock Tanks at Chemical Building, installation of crane, feed pumps and motors at Centrifuge Building, as well as electrical and HVAC system installation at Administration Building.

Ponding rainwater was found in some locations at site during the site inspections of 2, 9, 16, and 23 October 2003, appropriate corrective actions had been applied such as installation of pumping facilities. C&D and Chemical waste storage facilities have been provided at site. The majority of work activities and site mitigation measures were in compliance with environmental protection regulations and contract requirements. Only minor deficiencies were found during the site inspections of October 2003.

There were no complaints received or notifications of summons or successful prosecutions during October 2003.

The main planned activities for November 2003 with regard to E&M equipment installation consist of

1. Installation of building services, electrical equipment and HVAC pipework at Administration Building
2. Installation of scum collector pipe and sludge scrapers of Primary Tank
3. Installation of electrical system, Polymer preparation and Stock Tanks, as well as Chemical pump at Chemical Building

4. Installation of steelwork platform, Centrifuge machine, motors, and Cationic Polymer Preparation unit at Centrifuge Building
5. Installation of Sludge transfer pump and pipework at Sludge Transfer Chamber
6. Installation of grit pump and pipework at Detritor
7. Installation of Containment pipe at Chemical Pipe Trench
8. Installation of Electrical power cable at Cable Trench

1. BACKGROUND INFORMATION

1.1 Introduction

This is the fifth monthly Environmental Monitoring and Audit (EM&A) Report for the Drainage Services Department Contract No. DE/99/12 entitled “Upgrading of Siu Ho Wan STP – E&M Works Outlying Islands Sewerage – Stage 1 Phase 1C”. The site layout plan, with the indication of a temporary storage of installation items as well as the designated waste storage area, is shown in Appendix 1. The report was prepared by the Environmental Team, BioEnviroLink Technologies Limited, of the E&M Contractor, Mitsubishi Corporation (Hong Kong) Limited. The report is to be submitted to the Contractor, the Engineer and the Environmental Protection Department.

This report presents the results of the environmental monitoring of the project activities conducted during the month of October 2003. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the EM&A Manual.

The E&M installation works has already commenced in June 2003 and is anticipated to be completed on 11 October 2004.

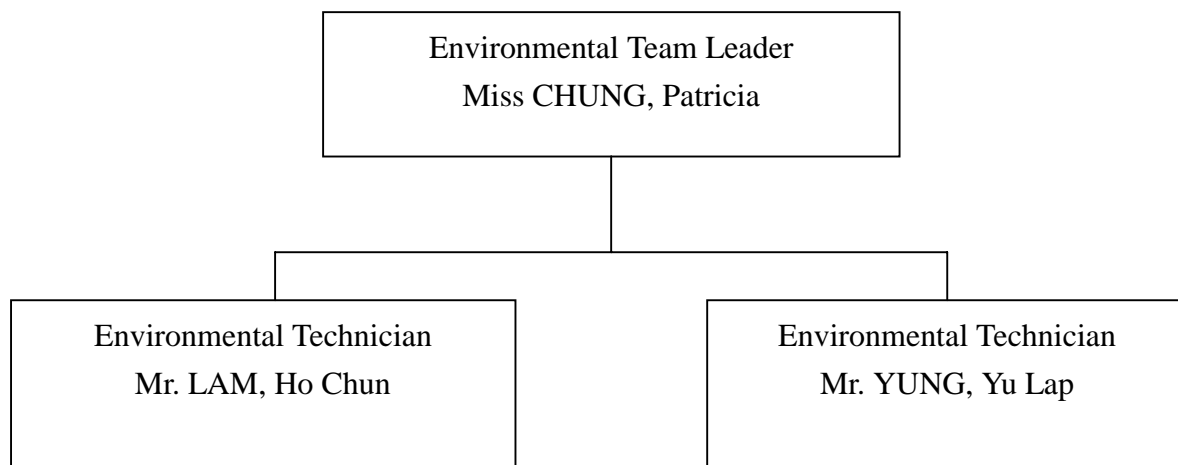
The contact persons and telephone number of key personnel for the captioned project are shown in Appendix 2.

1.2 Project Organization and Management

The Environmental Team, which comprises the environmental team leader and the environmental technicians to undertake the environmental monitoring and audit work for this project, has commissioned BioEnviroLink Technologies Limited. The project Organization Chart of Environmental Team is shown in Figure 1.2.

Figure 1.2 Organization Chart of Environmental Team

Environmental Team Organization Chart



2. SUMMARY OF WORK ACTIVITIES

A summary of the site works in this month, with the information of locations, details of each activity, equipment/materials and dates of occurrence, is listed in Table 1.

Table 1: Work Activities for October 2003

Item	Location	Work Activities	Date of Occurrence
1	11 kV Substation (CLP Room)	- Rectification of defects in CLP Switchroom	1- 11 October 03
2	Primary Tank	- Dimensional Checking for Civil Works - Checking of civil work requirement for 3T A-frame crane - Installation of return rail and idler wheel for sludge scrapers - Checking of Civil Works for Tank bottom profile - Installation of drive shaft unit and scum collector pipe for sludge scrapers - Installation of return rails at tank top	1 – 18 October 03 1 – 4 October 03 1 – 18 October 03 20 – 31 October 03 20 – 31 October 03 27 – 31 October 03
3	Chemical Building	- 0.5T overhead Crane Installation - Setting out of electrical installation - Equipment delivery – Cationic Polymer Stock Tanks - Installation of Alum & Anionic Polymer Stock Tanks - Installation of 1/2T overhead crane	1 – 4 October 03 6 – 27 October 03 20 – 25 October 03 27 – 31 October 03 27 – 31 October 03
4	Centrifuge Building	- Electrical Installation, functional test & surveyor test of 10T overhead traveling crane and lifting hoist at Centrifuge Hall - Installation of 0.5T traveling crane at Pump Basement - Installation of centrifuge steelwork platform cantilever, access ladder and chequer plate - Primer painting of centrifuge steelwork platform - Equipment delivery – Transformers and Ring Main Units - Installation & inspection of 0.5T traveling gantry crane at Pump Basement - Removal of scaffolding for 0.5T traveling crane at Centrifuge Pump Basement - Weld test of centrifuge steelwork platform cantilever set & structural I-beam - Installation of centrifuge feed pumps at Centrifuge Pump Area - Setting out and cutting of centrifuge outlets and stand supports	1 – 18 October 03 1 – 4 October 03 1 – 31 October 03 1 – 18 October 03 1 – 4 October 03 6 – 11 October 03 6 – 11 October 03 6 – 11 October 03 13 – 31 October 03 20 – 31 October 03

		- Installation of centrifuge machine and motors	20 – 31 October 03
		- Installation of Cationic Polymer Stock Tanks	27 –31 October 03
5	Administration Building	- Setting out of electrical installation	1 – 31 October 03
		- Setting out and installation of HVAC system installation	1 – 31 October 03
		- Equipment delivery – FRP water tank	1 – 4 October 03
6	Sludge Buffer Tanks	- Setting out of mechanical installation	1 – 4 October 03
7	Detritor	- Equipment delivery – Grit pumps	1 – 4 October 03
		- Setting out and installation of grit pump	1 – 31 October 03
8	CEPT Mixing Tanks	- Installation of guide bar for flash & flocculation mixers	1 – 18 October 03
9	Sludge Transfer Chamber	- Setting out of sludge transfer pump & pipework installation	20 –31 October 03
10	Other Area	- Civil Works inspection and Dimensional checking	1 – 31 October 03

3 IMPLEMENTATION OF WASTE MANAGEMENT PLAN

A Waste Management Plan has been prepared for governing a good waste management, which is essential to avoid, minimize, salvage for reuse, recycle, dispose of waste and reduce the load on landfills to improve the standards of environmental protection.

The information and the implementation status of waste management are summarized in Table 2.

Table 2: Information and the implementation status of
 Waste Management in October 2003

Information of Waste Management Plan	Implementation Status	Remarks
<u>Municipal Solid Waste Management</u> Sorting and classification of aluminum cans, plastics are required at site. Paper and cardboard generated from site office should be reused or recycled.	Sorting and classification of municipal solid waste are available at work site. Waste sorting facilities (bins) are provided.	Collection of municipal solid waste has been carried out since September 2003.
<u>Construction & Demolition (C&D) Waste Management</u> Waste sorting and classification by using a 100 m ² sorting shed at site are required.	Waste dumper has been provided for temporary storage of C&D Waste	C&D Waste dumper has been provided since 14 October 2003
<u>Chemical Waste Management</u> A licensed chemical waste collector is engaged for collecting the chemical wastes generated from this project. Storage facilities must follow the Code of Practice.	No chemical waste was generated in October 2003. The E&M Contractor has registered with EPD as chemical waste producer. Chemical storage enclosure was provided in September located near the site office	The permit has been issued in September. Chemical waste storage enclosure with container(s) has been provided in October.
<u>Disposal and Recording</u> A complete record, in the format of compiled logbook is maintained for every vehicle trip transporting C&D materials. Adequate record of recycled and reused waste materials must be well kept.	Adequate record forms for recycled & reused waste materials for municipal waste are available and are in proper use. C&D wastes generated at site have been recorded and filled adequately.	C&D waste collector was arranged to collect the wastes on 17, 18 and 25 October 2003. C&D wastes such as timbers are reused at site

4 STATUS OF ENVIRONMENTAL PROTECTION AND SITE INSPECTIONS

4.1 Site Inspections

The ET leader and the ET technician conducted five site inspections on 2, 9, 16, 23 and 30 October 2003.

All environmental aspects in the work areas were inspected during the weekly site walk, including air dust, surface water quality, waste management, site tidiness and hygiene.

A detailed checklist of each site inspection together with comments, relevant photos and maps have been filed and kept in site office.

The findings and results of site inspections in October 2003 are provided in Section 4.2.

4.2 Status of Environmental Protection

Air Dust

There are no main activities, which will create air dust and there is no existing sensitive receivers identified in the vicinity of the proposed Siu Ho Wan work.

Surface Water Quality

In general, the E&M installation work does not cause significant environmental impact on surface water.

Pumping facilities have been installed to remove accumulated rainwater found in uneven surface & pits at site. Besides, the said water was directed and discharged at a sedimentation channel with silt removal facilities. Also, the stagnant water located in the Return Liquor Pumping Station has been cleared up. Furthermore, the application for a license of wastewater discharge at site has been submitted to Environmental Protection Department and is now in progress.

A chemical toilet has been provided by a licensed contractor, of which sewage

generated is collected weekly without causing contamination on surface water. Weekly records are kept properly for each sewage collection.

Noise

All installation activities were being carried out within normal working hours during October 2003. There are no existing sensitive receivers identified in the vicinity of Siu Ho Wan works. A noise permit for working during restricted hours has been issued effective since 26 September 2003.

Waste / Chemical Waste

Site activity has started in June 2003. No chemical waste was produced at site up to October 2003.

A designated waste storage area is provided for the storage of general wastes and C&D wastes, as specified in the waste management plan. An adequate chemical waste storage enclosure and containers for storage of chemical wastes in accordance with WMP have already been provided on-site (See Appendix 1). A C&D waste dumper has been provided in October 2003 for the disposal of C&D waste. The follow-up work for proper handling of chemical wastes has been carried out in October.

Sorting and classification of municipal solid wastes have been carried out at work site during October 2003. Properly labeled waste collection bins are available for sorting and collecting aluminum cans, waste paper and plastic bottles.

Information of recycled and collected wastes (for the month of October 2003) are summarized as follows:

Types of wastes		Estimated quantity
Municipal	Paper	1.8 kg
Municipal	Aluminum Cans	120 pcs
Municipal	Plastic Bottles	36 pcs
C&D Waste	Timber	4.76 tonnes

The Municipal wastes are temporarily stored in the sorting bins at site whereas C&D wastes, such as timber, are reused on-site.

Registered waste collectors, as listed in the following table, have been arranged to collect and transport the wastes whenever necessary.

Type of Wastes	Collector Company Name	Tel No.
Municipal wastes	Luen Hop Environment Dev. Ltd.	6083 3208
C&D wastes	Strong Base Environmental Services & Engineering Co. Ltd.	2797 9812
Chemical waste	Enviropace Ltd.	2435 7700
	Strong Base Environmental Services & Engineering Co. Ltd.	2797 9812

5 SUMMARY OF DEFICIENCY, NON-COMPLIANCES AND REMEDIAL ACTIONS

Deficiency	Action taken
<ul style="list-style-type: none">It was noted that ponding water and accumulated rainwater have been found on the uneven surface & pits within site area including portion G, detritor, hopper and inlet trench of Primary Tank in October 2003.	<ul style="list-style-type: none">The Contractor has installed pumping facilities to pump away water from large rainwater ponds.Mosquito drug was applied in the accumulated water to prevent mosquito breeding.
<ul style="list-style-type: none">It was noted that some wasted packaging materials were found at site, including the chemical building and the storage area.	<ul style="list-style-type: none">The contractor has disposed the packaging materials accordingly and properly. The timbers were re-used on-site.

6. CUMULATIVE LOG OF COMPLAINTS AND REMEDIAL ACTION

There is no complaint received in association with installation activities during October 2003. The cumulative of complaints is referred in Appendix 3.

7. CUMULATIVE LOG OF NOTIFICATION OF SUMMONS AND PROSECUTIONS

No notification of summons and no prosecutions occurred during October 2003.

8. FUTURE KEY ISSUES

The planned activities for the coming three months (November 2003 – January 2004) and anticipated environmental issues with regard to E&M equipment are summarized as follows:

Item	Location	Works	Anticipated Environmental Issues
1	Administrative Building	- Building services and electrical equipment installation - HVAC air ductwork & chilled water pipework installation	- Plastic packaging material will be generated and should be re-used on site or disposed properly.
2	Primary Tank	- Sludge scraper and scum collector pipe installation	- Timber will be generated and should be re-used on site, or disposed properly.
3	Chemical Building	- Electrical system installation - Polymer preparation system, Alum & Anionic Polymer Stock Tanks installation - 1/2T overhead crane installation - Chemical pump installation	- No environmental issue is anticipated
4	Centrifuge Building	- Chequer plate supports for centrifuge steelwork platform installation - Centrifuge machine and motors installation - Centrifuge feed pumps and pipework installation - Cationic Polymer and Preparation unit	- Timber will be generated and should be re-used on site, or disposed properly.

		installation	
5	Sludge Transfer Chamber	- Sludge transfer pump & pipework installation	- Timber will be generated and should be re-used on site, or disposed properly.
6	Detritor	- Grit pump & pipework installation	- No environmental issue is anticipated
7	Chemical Pipe Trench	- Containment pipe installation	- Plastic packaging material will be generated and should be re-used on site or disposed properly.
8	Cable Trench	- Electrical power cable installation	- Timber will be generated and should be re-used on site, or disposed properly.
9	Other Area	- Overhead crane in portable water P/S Installation - Booster pump and pressure vessel installation	- Timber will be generated and should be re-used on site, or disposed properly. - Plastic & timber will be generated and should be re-used on site, or disposed properly.

The site inspection schedule for the next month (November 2003) is designated on 6, 13, 20, and 27 November 2003.

9. CONCLUSION

No non-compliances were found during the weekly site inspections being conducted. Also there is no summon nor prosecutions reported during November 2003.

The contractor has taken actions to meet environmental requirements such as applying pumping facilities to pump out stagnant water, proper sorting out and disposal of municipal wastes, reusing C&D wastes (timbers) at site, provision of chemical waste storage facility, and C&D waste dumper, and application of relevant environmental permits.

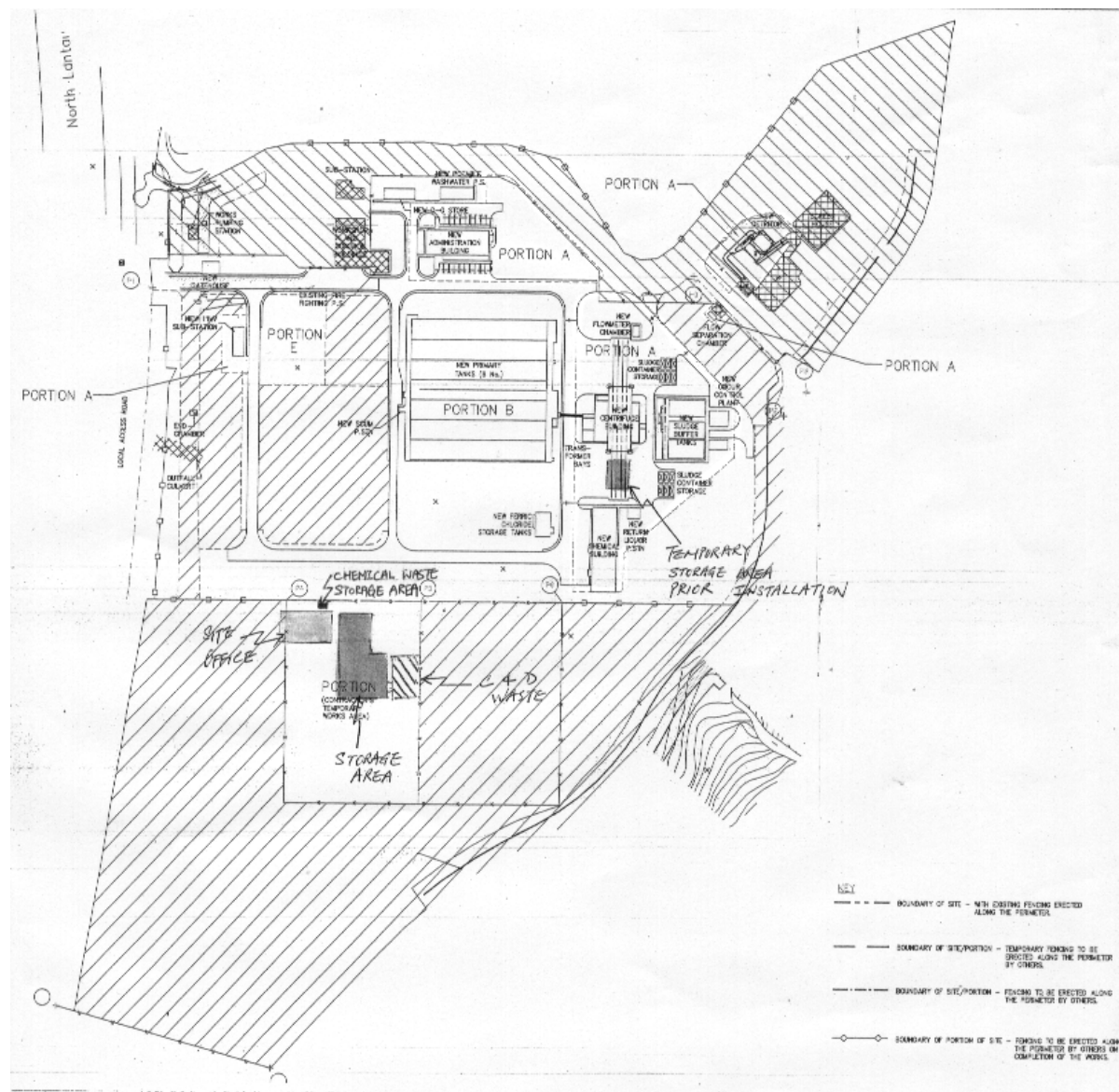
The contractor was reminded to pay more efforts on environmental concerns and awareness such as the discharge of accumulated rainwater at site; proper action taken on disposal of wasted packaging material, and proper management of site activities which may lead to any possible environmental impacts.

In order to ensure that all vehicles must pass through the wheel washing facility when exiting the site, the environmental team has conducted a spot-check programme on the vehicles' activities. The programme has been started in August 2003 and completed in September 2003. The findings from the spot-check exercise indicates that there was no non-compliance identified in the spot-check periods.

In general, the environmental condition at site is satisfactory in November 2003. The contractor has made progress in implementation of the environmental requirements.

Appendix 1

SITE INSPECTION CHECKLISTS AND SITE INSPECTION LAYOUT PLAN



Appendix 2

**THE CONTACT PERSONS, TELEPHONE NUMBERS OF KEY PERSONNEL
FOR UPGRADE OF SIU HO WAN SEWAGE TREATMENT WORKS**

Company/Department	Name	Position	Telephone
Maunsell Environmental Management Consultants Limited	Mr. Ivan Ng	Independent Environmental Checker	61917256
Maunsell Environmental Management Consultants Limited	Mr. Titus Yeung	Resident Site Engineer	90209585
Mitsubishi Corporation (Hong Kong) Limited	Mr. W B Chu	Site Agent	29840779
Mitsubishi Corporation (Hong Kong) Limited	Mr. Stephen Gu	Site Engineer	29840779
BioEnviroLink Technologies Limited	Miss. Patricia Chung	Environmental Team Leader	2185 0123
BioEnviroLink Technologies Limited	Mr. Ho-Chun Lam	Environmental Technician	2185 0154

Appendix 3

CUMULATIVE LOG OF COMPLAINTS

Environmental Parameters	Cumulative no. Brought forward	No. of complaint October 2003	Overall Total
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

DETAILS OF COMPLAINTS AND REMEDIAL ACTIONS

Log Ref.	Date of Complaint received	Location	Complainant /Date	Details of Complaint	Investigation /Mitigation Action	Investigated by/ Date
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