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. 8

BioEnviroLink Technologies Limited
January 2004

APPROVAL & DISTRIBUTION SHEET

DOCUMENT DATE: 31 January 2003

APPROVAL

Prepared by: ET Leader (BioEnviroLink Technologies Limited)

Signature: _____ Date: _____
Miss Patricia Chung

Audited by: _____ Date: _____
Mr. Ivan Ng

TABLE OF CONTENTS (PROPOSED)

EXECUTIVE SUMMARY

This is the eighth 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 January 2004.

The site activities in the reporting period mainly consisted of installation of centrifuge feed pumps and pipework at centrifuge pump area of Centrifuge Building, anionic polymer stock tanks, preparation unit and pipework at Chemical Building, building services, electrical equipment and HVAC system air ductwork at Administration Building, as well as bottom rails for scraper and drive chain for scraper motor at Primary Tanks.

Ponding water previously found in the hoppers of the Primary Tanks during the site inspections in December 2003 had been removed by pumping. C&D and Chemical waste storage facilities have been provided at site.

There were no complaints received or notifications of summons or successful prosecutions during January 2004.

The main planned activities for February 2004 with regard to E&M equipment installation consist of

1. Installation of centrifuge feed pumps and pipework at centrifuge pump area of Centrifuge Building
2. Installation of cationic polymer pipework for stock tanks and preparation unit at polyelectrolyte area of Centrifuge Building
3. Installation of anionic polymer pipework for stock tanks and preparation unit at Chemical Building
4. Installation of building services, electrical equipment and HVAC system air ductwork at Administration Building, Centrifuge Building and Chemical Building
5. Installation of flight scrapers at Primary Tanks

6. E&M installation of sludge transfer pump and associated equipment at Sludge Transfer Chamber
7. E&M installation of grit pump and associated equipment at Grit Pumping Station
8. Installation of odour duct at Odour Plant and Sludge Buffer Tanks
9. Installation of cable trays and accessories at Cable Trenches and all Buildings
10. E&M installation of return liquor pumps and associated equipment at Return Liquor P/S
11. Installation of panel support in Administration MCC Room, Chemical MCC Room and Centrifuge MCC & Control Room
12. Installation of centrifuge control panel on steel platform and LV & control panel in Centrifuge MCC & Control Room
13. E&M installation of rail train system and fast rolling doors
14. Installation of odour plant, including electrical installation & cable wiring
15. E&M installation of Detritor & Motor Bridge
16. Installation of runways for A-frame overhead crane on Mixing Tanks

1. BACKGROUND INFORMATION

1.1 Introduction

This is the eighth 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 January 2004. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the EM&A Manual.

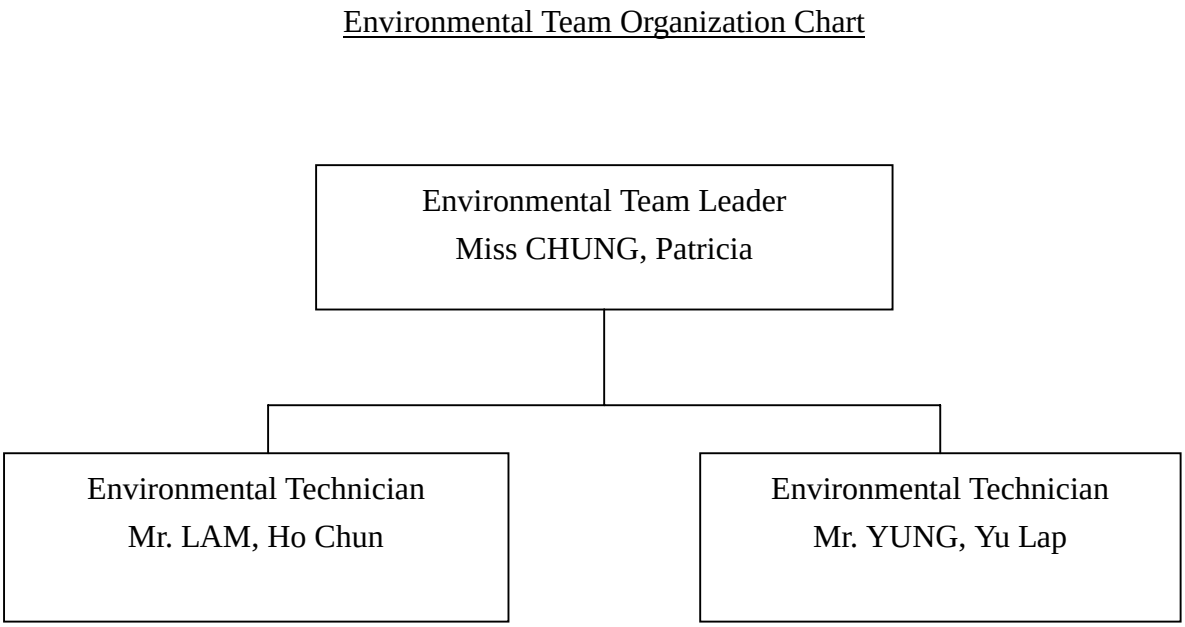
The E&M installation works has already commenced in June 2003 and is anticipated to be completed on 11 October 2004 .

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



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 January 2004

Item	Location	Work Activities	Date of Occurrence
1	Primary Tank	- Installation of bottom rails for scraper - Installation of drive chain for scraper motor - Setting out and installation of 3T overhead crane	2 – 31 January 2 – 31 January 8 – 31 January
2	Chemical Building	- Installation of electrical services equipment - Installation of Anionic Polymer Stock Tanks, Preparation Unit & Pipework - Installation of Anionic Polymer and Alum Pumps & associated pipework	6 – 31 January 6 – 31 January 6 – 31 January
3	Centrifuge Building	- Installation of centrifuge feed pumps and Pipework at centrifuge pump area - Installation of Cationic Polymer Stock Tanks, Preparation Unit & Pipework - Setting out and installation of electrical services - Installation of rail & baseplate set for Sludge rail train system - Installation of fast rolling doors	2 – 31 January 2 – 31 January 2 – 31 January 6 – 31 January 6 – 31 January
4	Administration Building	- Installation of building services and electrical equipment - Installation of chiller unit & associated pipework - Installation of HVAC system air ductwork - Installation of fire services system	2 – 31 January 8 – 31 January 2 – 31 January 2 – 31 January
5	Sludge Buffer Tanks	- Installation of Odour Duct & Cable Bridge	8 – 31 January
6	Detritor	- Installation of Detritor & Grit pump	8 – 31 January

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 January 2004

Information of Waste Management Plan	Implementation Status	Remarks
Municipal Solid Waste Management 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.
Construction & Demolition (C&D) Waste Management Waste sorting and classification by using a 100 m^2 sorting shed at site are required.	No inert C&D Wastes were produced at site up to January 2004. Waste dumper for temporary storage of C&D Waste are provided.	The non-inert portion of C&D Wastes has been appropriately handled since 14 October 2003.
Chemical Waste Management 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 wastes were generated in January 2004. The E&M Contractor has registered with EPD as chemical waste producer. Chemical waste storage enclosure was provided in September located near the site office.	The permit has been issued in September. Proper label and signage for Chemical waste storage enclosure and container(s) are provided.
Disposal and Recording 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 filed adequately.	C&D waste collector was arranged to collect the wastes on 17 November 2003. C&D wastes such as timbers are reused at site.

4 STATUS OF ENVIRONMENTAL PROTECTION AND SITE INSPECTIONS

4.1 Site Inspections

The Environmental Team conducted four site inspections on 2, 8, 15 and 21, 29 January 2004.

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 January 2004 are provided in Section 4.2.

4.2 Status of Environmental Protection

Air Dust

Stockpile of excavated material were accumulated at storage area in Portion G. The Contractor is required to cover the material with plastic sheets for dust suppression.

In order to comply with the Air Pollution (Construction Dust) Regulation, the contractor had arranged water truck to spray water for dust suppression at least twice a day. However, the frequency of watering was not maintained as scheduled and excessive dust was noted during very dry and windy days.

Surface Water Quality

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

Ponding water found at Primary during site inspections in December 2003 were removed in January 2004. The contractor should remove ponding water found during

site inspections on 15, 21 and 29 January 2004.

Two chemical toilets have 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.

A wastewater discharge permit has been issued effective since 29 November 2003.

Noise

All installation activities were being carried out within normal working hours during January 2004. 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. A designated waste storage area is provided for the storage of general wastes and C&D wastes, as specified in the waste management plan.

No chemical waste was produced at site up to January 2004. 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).

The follow-up work for proper handling of C&D Wastes has been carried out in January. No *inert C&D Wastes* were produced at site up to January 2004. A C&D waste dumper has been provided since October 2003 for the disposal of the non-inert portion of C&D waste.

Sorting and classification of municipal solid wastes have been carried out at work site during January 2004. 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 January 2004) are summarized as follows:

Types of wastes		Estimated quantity
Municipal	Paper	7.0 kg
Municipal	Aluminum Cans	162 pcs
Municipal	Plastic Bottles	53 pcs
Recycled C&D Waste	Timber	27 kg
C&D Waste	Non-inert Type	6.33 tonnes

The Municipal wastes are temporarily stored in the sorting bins at site whereas C&D wastes, such as timber, are reused on-site. Records of recycled and collected wastes are properly kept and filed at 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 Waste Recycler	Luen Hop Environment Dev. Ltd.	6083 3208
C&D wastes	Strong Base Environmental Services & Engineering Co. Ltd.	2797 9812
Chemical waste	Enviropace Ltd. Strong Base Environmental Services & Engineering Co. Ltd.	2435 7700 2797 9812

5 SUMMARY OF DEFICIENCY, NON-COMPLIANCES AND REMEDIAL ACTIONS

Deficiency	Action taken
• It was noted that ponding water and accumulated rainwater have been found at Detritor and Primary Tank in January.	• The Contractor has installed pumping facilities to pump away ponding water. However, the contractor only removed some of the ponding water • Mosquito drug was applied in the accumulated water to prevent mosquito breeding.
• It was noted that some wasted packaging materials were found at site, including the Centrifuge building and the temporary storage area.	• The contractor has disposed the packaging materials accordingly and properly. The timbers were re-used on-site.
• Stockpiles of excavated materials were accumulated at Storage Area in Portion G. It could possibly cause dust problem. • The open area of the Primary Tanks and site accesses were dusty in very dry and windy days	• The Contractor should apply dust suppression measures such as cover with plastic/canvas sheets or watering • The Contractor has provided watering but the frequency was not enough.
• The Wheel Washing Basin provided by the civil contractor was demolished	• The Contractor should provide an alternative washing facility for vehicles exiting the site.

6. CUMULATIVE LOG OF COMPLAINTS AND REMEDIAL ACTION

There is no complaint received in association with installation activities during January 2004. 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 January 2004.

8. FUTURE KEY ISSUES

The planned activities for the coming three months (February 2004 – April 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 & condensation 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 installation - Scum pumps & pipework installation - Electrical system installation	- Timber will be generated and should be re-used on site, or disposed properly. - Ponding water should be pumped away.
3	Chemical Building	- Electrical system installation - Polymer preparation system, Alum & Anionic Polymer Stock Tanks installation - Chemical pumps & pipework installation - Water pipe installation	- No environmental issue is anticipated
4	Centrifuge Building	- Open floorings for centrifuge steelwork platform installation - Centrifuge feed pumps and pipework installation - Cationic Polymer and	- Plastic & timber will be generated and should be re-used on site, or disposed properly.

		Preparation unit installation - Fast rolling door installation - Sludge rail train installation - LV & MCC panels installation	
5	Sludge Transfer Chamber	- Sludge transfer pump & pipework installation - Odour duct & cable bridge installation	- Timber will be generated and should be re-used on site, or disposed properly.
6	Detritor	- Grit pump & pipework installation - Electrical system installation - FRP cover installation	- Ponding water should be pumped away.
7	Chemical Pipe Trench	- Containment pipework 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	Odour Plant	- Odour scrubber & centrifugal fan installation - Odour duct installation - Chemical / water pipework installation - Electrical system installation	- Plastic & timber will be generated and should be re-used on site, or disposed properly.
10	Other Area	- Booster pump, pressure vessel and pipework installation - Electrical system installation - Installation of DN1400 EM Flowmeter in Flowmeter Chamber - Lamp Pole 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.
11	Open Area & Site Accesses	- Earthwork and vehicle movements	- Regular watering should be provided

The site inspection schedule for the next month (February 2004) is designated on 5, 12, 19 and 26 February 2004.

9. CONCLUSION

No non-compliances were found during the weekly site inspections being conducted. Also there is no summon nor prosecutions reported during January 2004.

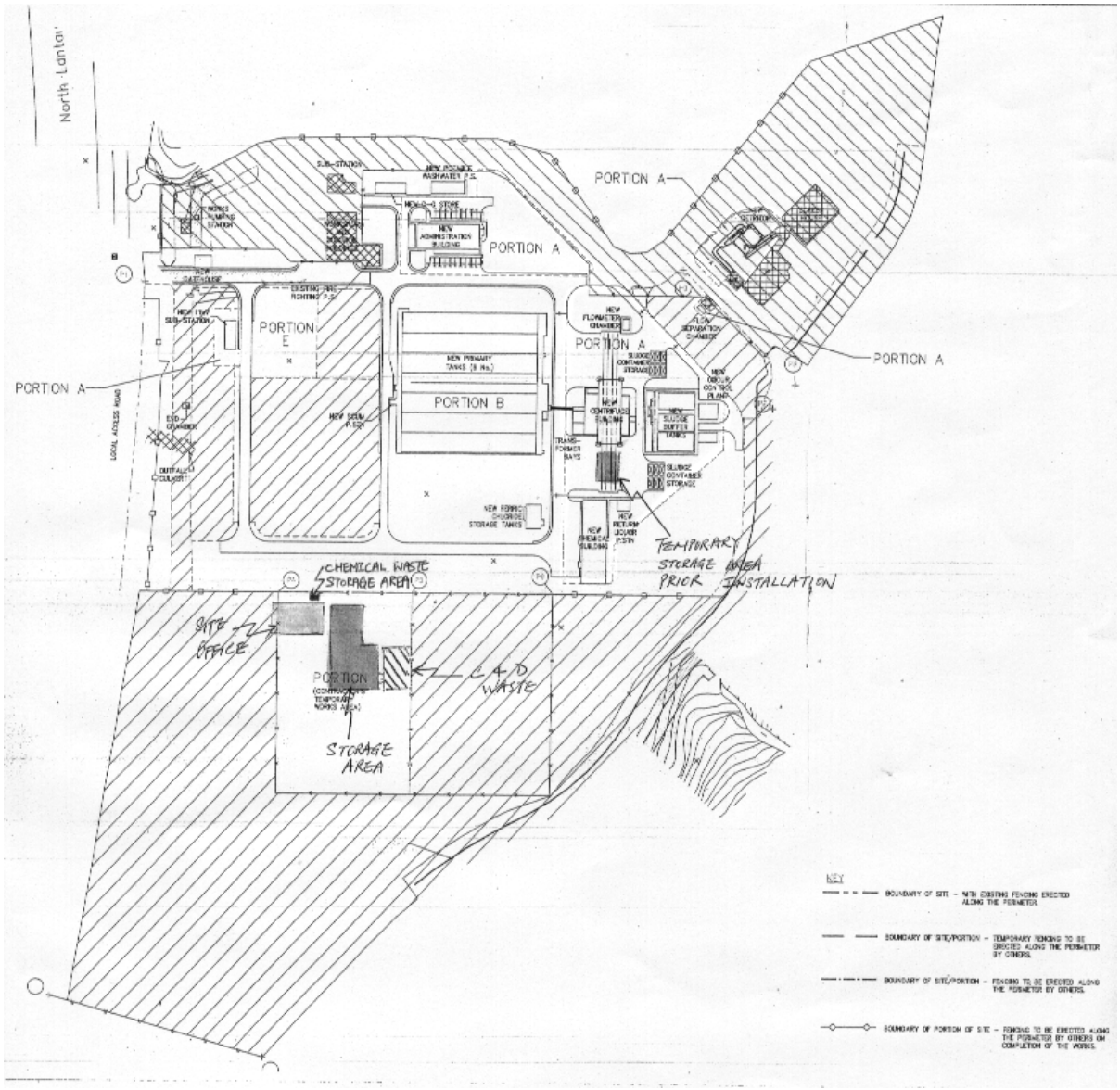
The contractor has taken some actions to meet environmental requirements such as applying pumping facilities to pump out stagnant water, proper sorting out and disposal of municipal wastes, reusing C&D wastes (timbers) at site, provision of chemical waste storage facility, and C&D waste dumper, and application of relevant environmental permits. However, some deficiencies were found in certain areas including ponding water in the hoppers of the Primary Tanks, inadequate covering of the excavated material at storage area in Portion G and the watering of open area and site accesses.

The contractor was reminded to pay more efforts on environmental concerns and awareness such as removal of ponding water; proper action taken on disposal of wasted packaging material; full implementation of dust suppression measures for open site areas as well as stockpiles of soil, and proper management of site activities which may lead to any possible environmental impacts.

The environmental condition at site has been improved in January 2004, though the contractor should make more effort to rectify the deficiencies in future.

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 January 2004	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 Compliant received	Location	Complainant /Date	Details of Complaint	Investigation /Mitigation Action	Investigated by/ Date
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