

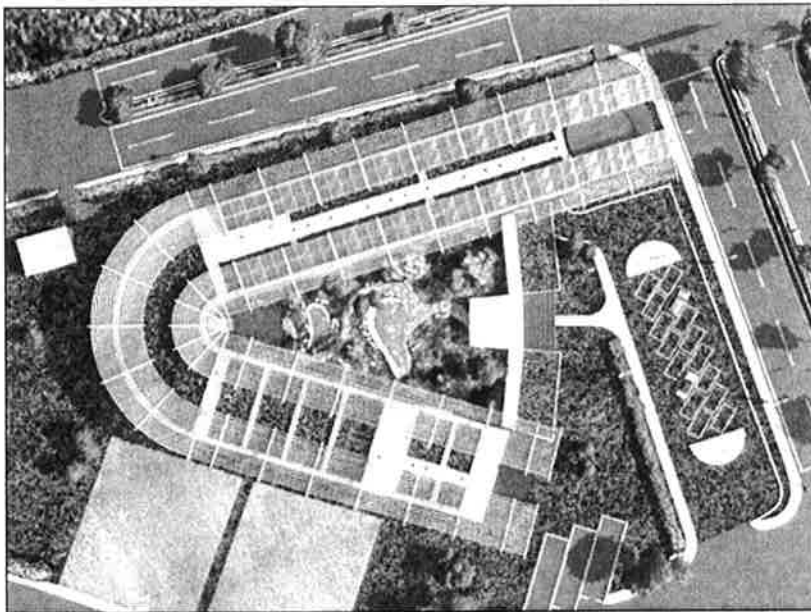
Serco Guardian JV

**serco**



# EcoPark Operation EM&A Annual Report 2007

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Report no: 01464R032



# EcoPark Operation EM&A Annual Report 2007

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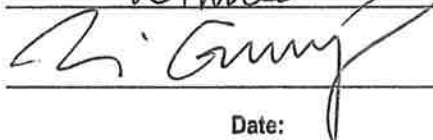
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Report no: 01464R032

Date: 24 January 2008

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# 1 Executive Summary

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EcoPark is a key element in Government's waste management policy that aims to promote the local recycling industry and jump-start a circular economy to provide a sustainable solution to our waste problems. EcoPark is being developed in two phases at a site in Tuen Mun Area 38 (see **Figure 1-1**). In November 2006, the seven-year contract for the operation of EcoPark – *EP/SP/53/06 Provision of Management Services for EcoPark in Tuen Mun Area 38* – was awarded to Serco Guardian JV (SGJV) by the Environmental Protection Department (EPD). SGJV, the "Operator" of EcoPark have engaged Hyder Consulting as their Environmental Team (ET) to carry out the Environmental Monitoring and Audit (EM&A) required by the EM&A Manual in accordance with the conditions of the Environmental Permit.

This is the first annual EM&A report prepared for the operation phase of EcoPark and covers year 2007, the first year of operation (specifically, May to December 2007). During 2007 there have been no complaints received; no notifications of summons; and no successful prosecutions.

In terms of monitoring, only quarterly monitoring of landfill gas (LFG) is required during operation phase EM&A and this only required "following construction". As construction was not completed by the end of 2007, operation phase LFG monitoring was not required.

In terms of auditing, all of the tenants' recycling activities are to be audited on a monthly basis, and the results are to be summarised in this report. At present, however, EcoPark is still under construction and while a number of tenancies were awarded during 2007, no recyclers actually commenced recycling activities during the year. As such, there is nothing significant to report at this time. Notwithstanding, the ET have made monthly site inspections and some general observations have been made.

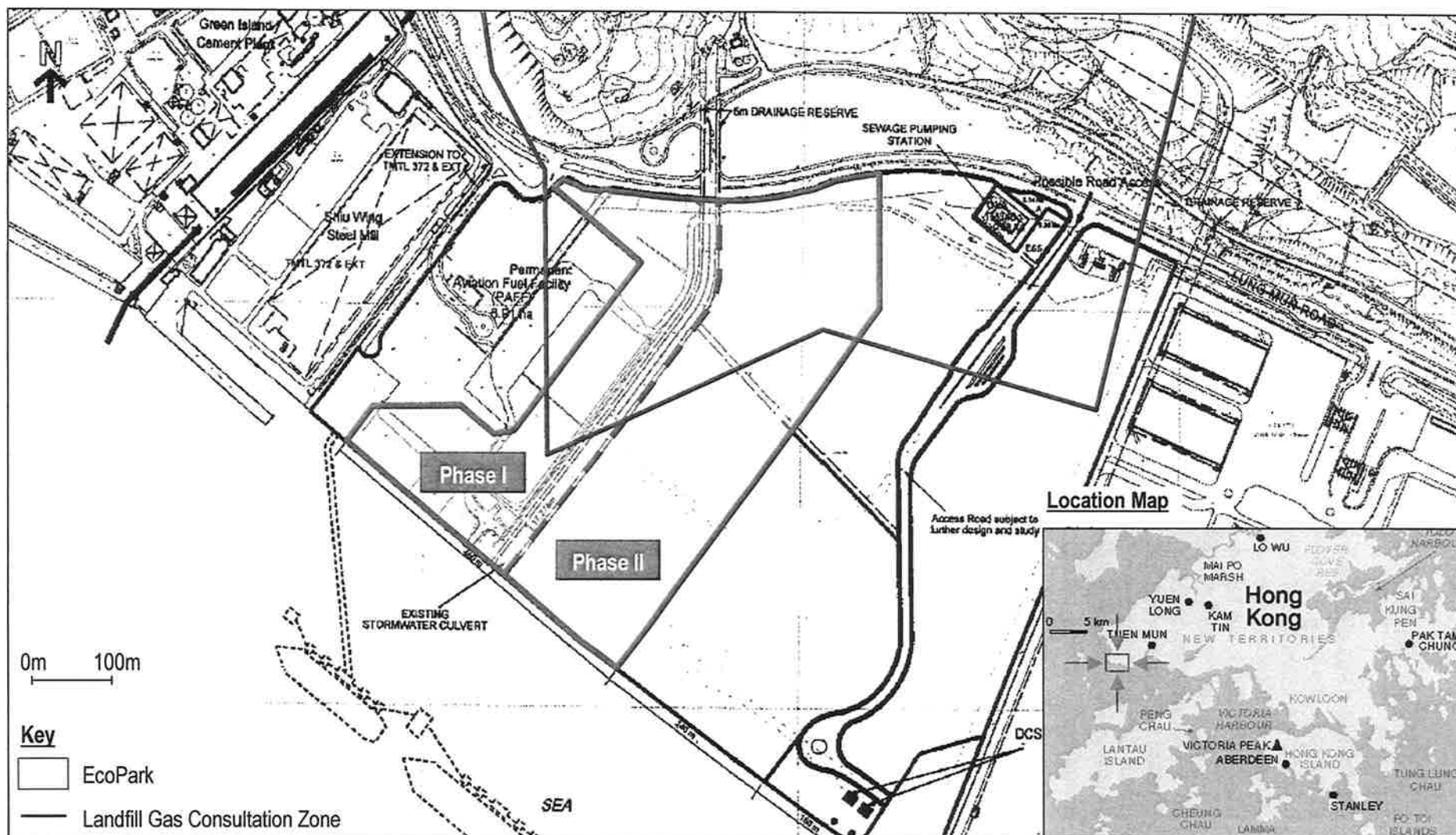


Figure 1-1 Location of EcoPark in Tuen Mun Area 38

## 2 Basic Project Information

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### 2.1 Overview

In the document "A Policy Framework for the Management of Municipal Solid Waste (2005-2014)" the Government set out a comprehensive policy to support the recycling industry. This included allocating suitable land, encouraging research and development, introducing environmental legislation and providing effective support measures. To this end, EcoPark is a key element that aims to promote the local recycling industry and jump-start a circular economy to provide a sustainable solution to our waste problems. By encouraging and promoting the reuse, recovery and recycling of our waste resources and returning them to the consumption loop, EcoPark will help realize the full potential of the local recycling industry and alleviate the heavy reliance on the export of recyclable materials recovered from Hong Kong.

EcoPark is to be developed in two phases at a site in Tuen Mun Area 38 (see **Figure 1-1**). The construction contract for EcoPark – *EP/SP/52/06 Development of EcoPark in Tuen Mun Area 38* – was awarded to Kaden Construction in June 2006 by the Environmental Protection Department (EPD). This contract covers development of Phase I (ongoing) and extends to Phase II, anticipated to be developed in 2009.

In November 2006, the seven-year contract for the operation of EcoPark – *EP/SP/53/06 Provision of Management Services for EcoPark in Tuen Mun Area 38* – was awarded to Serco Guardian JV (SGJV) by EPD. SGJV, the "Operator" of EcoPark have engaged Hyder Consulting as their Environmental Team (ET) to carry out the Environmental Monitoring and Audit (EM&A) required by the EM&A Manual in accordance with the conditions of the Environmental Permit.

### 2.2 SGJV Organisation

Organisation of SGJV is shown in **Figure 2-1**, below.

### 2.3 Operation Programme

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so there is no operation programme to report at this time. One tenant from the first batch, Hong Kong Hung Wai Wooden Board Company, has commenced preparatory works within their lot but have not yet commenced recycling activities.

### 2.4 EM&A Organisation

The EM&A is carried out predominantly by the ET, but SCJV and the Independent Environmental Checker (IEC) are also involved. **Figure 2-2**, below, illustrates the EM&A organisation:

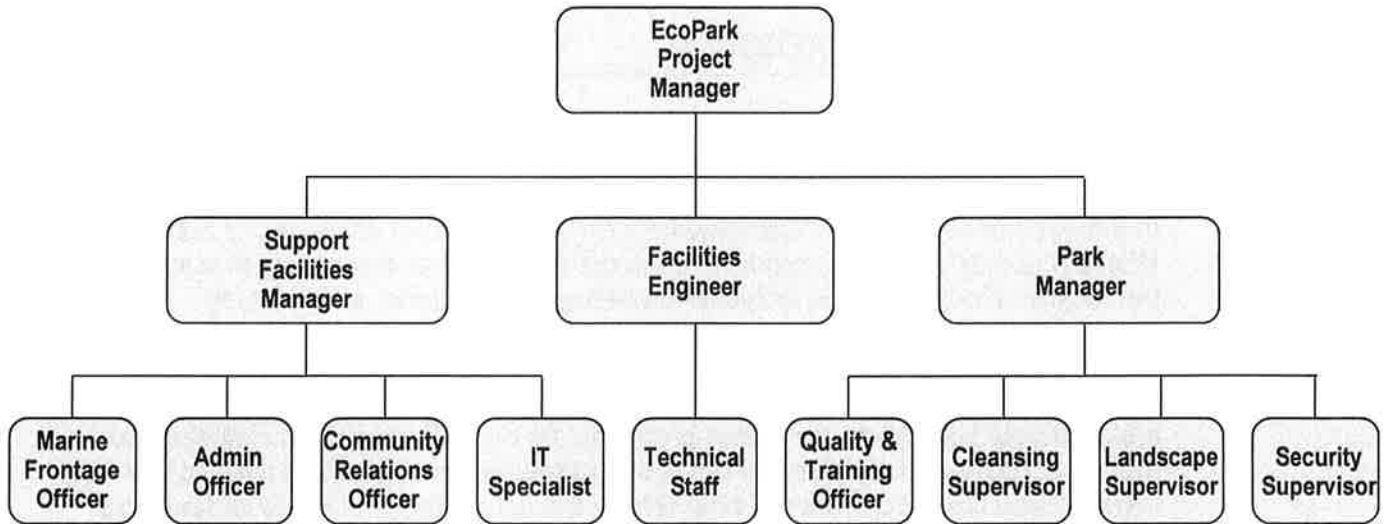


Figure 2-1 SGJV Organisation

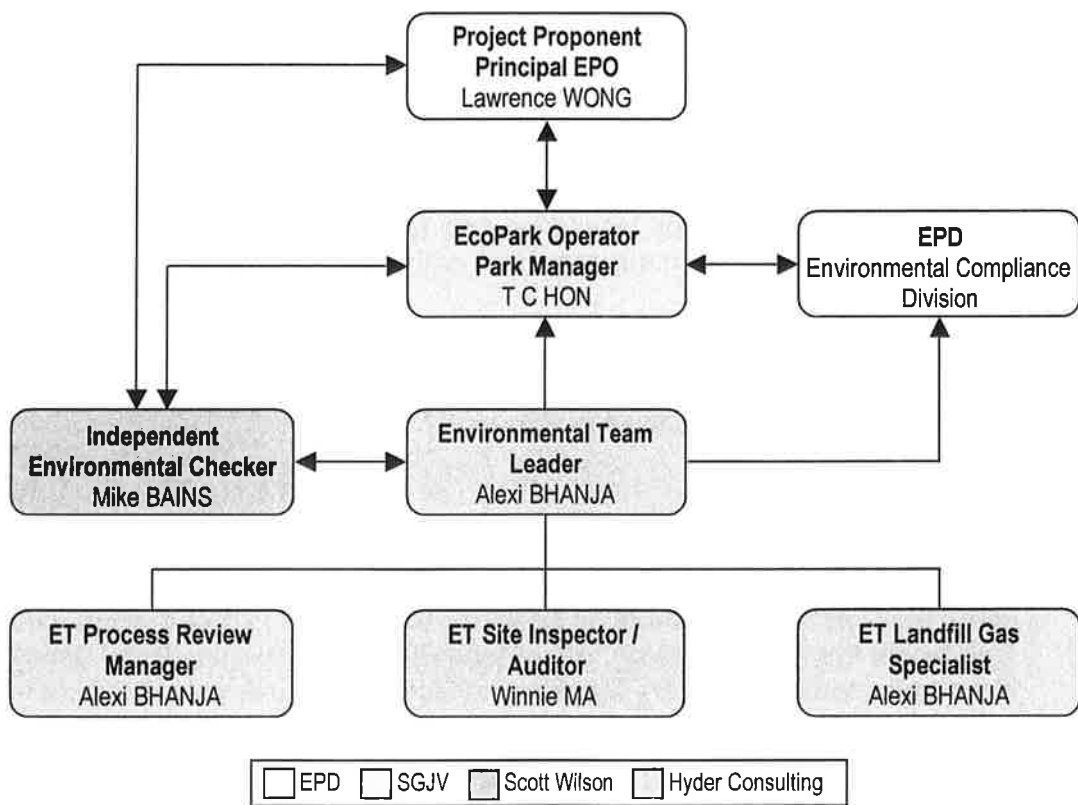


Figure 2-2 EM&A Organisation



## 3 Summary of EM&A Requirements

### 3.1 Monitoring Parameters

The following parameters are required to be monitored as part of the operation phase EM&A programme:

- **Landfill Gas (LFG).** Following construction, routine monitoring is required at service voids and utility boxes (locations to be agreed). Routine monitoring shall be carried out on a quarterly basis, however, should EPD alert the Operator that high LFG levels had been detected during monthly monitoring under the Siu Lang Shui Landfill restoration contract, then the Operator may be required to increase LFG monitoring to monthly until such time as EPD inform the Operator that quarterly monitoring can be resumed.

Since operation phase LFG monitoring is required "following construction" and construction is not yet completed, operation phase LFG monitoring is not yet required to be carried out. It should be noted that construction phase LFG monitoring is ongoing and is reported in the Monthly EM&A Reports prepared by the construction contractor's ET. These reports can be downloaded from:

[http://www.epd.gov.hk/eia/english/register/index8/vcp2212006\\_content.html](http://www.epd.gov.hk/eia/english/register/index8/vcp2212006_content.html)

### 3.2 Environmental Quality Performance Limits and EAP

The Action/Limit Levels and Event Action Plan (EAP) for LFG are shown below in **Table 3-1**, below. These refer to LFG detected in excavations, utilities and any enclosed on-site areas.

Parameter	Level	Action
Oxygen (O <sub>2</sub> )	Action Level <19% O <sub>2</sub>	Ventilate trench/void to restore O <sub>2</sub> to > 19%
	Limit Level <18% O <sub>2</sub>	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore O <sub>2</sub> to > 19%
Methane (CH <sub>4</sub> )	Action Level >10% LEL	Post "No Smoking" signs Prohibit hot works Increase ventilation to restore CH <sub>4</sub> to <10% LEL
	Limit Level >20% LEL	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CH <sub>4</sub> to <10% LEL
Carbon Dioxide (CO <sub>2</sub> )	Action Level >0.5% CO <sub>2</sub>	Ventilate to restore CO <sub>2</sub> to < 0.5%
	Limit Level >1.5% CO <sub>2</sub>	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore CO <sub>2</sub> to <0.5%

**Table 3-1 Action Levels, Limit Levels and Event and Action Plan for LFG**

No other A/L Levels or EAPs are specified in the EM&A Manual for operation phase EM&A.

### 3.3 Environmental Audit of Non-monitored Parameters

Site inspections provide a direct means to trigger and enforce the specified environmental protection and pollution control measures and shall be undertaken routinely by the ET to inspect operational practice to ensure appropriate environmental protection and pollution control mitigation measures are implemented.

Regular site inspections shall be carried out by the ET once per month, and he shall be accompanied by the IEC once per quarter (on the same inspection). *Ad hoc* site inspections shall also be carried out if significant environmental problems are identified. Inspections may also be required subsequent to receipt of an environmental complaint, or as part of the investigation work, as specified in the EAP.

The following parameters are required to be audited as part of the operation phase EM&A programme:

- Air Quality
- Water Quality
- Waste Management
- Land Contamination

### 3.4 Environmental Mitigation Measures

Environmental mitigation measures applicable to the operation phase EM&A as stated in the Implementation Schedule are summarised in **Appendix 1**.

### 3.5 Environmental Requirements in Tenancy Agreements

Environmental requirements specified in tenancy agreements are summarised in **Appendix 2**.

## 4 Operation Status

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### 4.1 Tenants and Processes – First Batch

On 7 May 2007 the Director of Environmental Protection signed tenancy agreements with the successful bidders of the three lots in the first batch of the EcoPark Phase I. The successful bidders were:

- Hong Kong Telford Envirotech Group Limited
- Jets Technics Limited
- Hong Kong Hung Wai Wooden Board Company

The tenancy agreement provides for the possession of the lot to be given to the tenant within three months and that the tenant shall commence waste recovery and/or recycling and/or reprocessing within their lot within twelve months from the date on which possession of the lot was given. Possession of lots was given on 14 May 2007 and so recycling activities must commence by 14 May 2008.

As of 31 December 2007, however, no tenants have yet commenced recycling activities within their lots.

**Figure 4-1** shows the location of the first batch of lots within EcoPark, as of 31 December 2007, and the names of the tenants and the processes to be carried out within these lots.

#### 4.1.1 Tenancy EP06-032

- Lot Size: Approx. 5,000m<sup>2</sup>
- Activity: Recycling of Waste Plastics
- Tenant: None

In December 2007, EPD terminated the tenancy with the incumbent tenant, Hong Kong Telford Envirotech Group Limited, because of its failure to submit the performance bond required in the tenancy agreement. Re-tendering of this site will be arranged in due course.

#### 4.1.2 Tenancy EP06-033

- Lot Size: Approx. 9,500m<sup>2</sup>
- Activity: Recycling of Waste Vehicle Tyres
- Tenant: Jets Technics Limited

The tenant has not commenced any activities within the lot.

#### 4.1.3 Tenancy EP06-034

- Lot Size: Approx. 5,000m<sup>2</sup>
- Activity: Recycling of Waste Wood
- Tenant: Hong Kong Hung Wai Wooden Board Company

The tenant has commenced preparatory works within their lot but have not yet commenced recycling activities.

### 4.2 Tenants and Processes – Second Batch

Tender invitation for the tenancies of the second batch of lots for recycling of designated materials in EcoPark Phase I closed on 9 October 2007. The designated materials for the three lots comprised organic waste, waste electrical and electronic equipment (WEEE) and waste plastics.

Two of the tenancies (for recycling of organic waste and WEEE) were announced on 21 December 2007. No conforming bid was received for the third lot specified for the recycling of plastic and this will be re-tendered in due course.

**Figure 4-1** shows the location of the second batch of lots within EcoPark, as of 31 December 2007, and the names of the tenants and the processes to be carried out within these lots.

#### 4.2.1 Tenancy EP07-01

- Lot Size: Approx. 4,000m<sup>2</sup>
- Activity: Recycling of Waste Plastics
- Tenant: None

No conforming bid was received and so this lot will be re-tendered in due course.

#### 4.2.2 Tenancy EP07-02

- Lot Size: Approx. 6,500m<sup>2</sup>
- Activity: Recycling of WEEE
- Tenant: Li Tong Group

The tenant has not yet commenced any activities within the lot.

#### 4.2.3 Tenancy EP07-03

- Lot Size: Approx. 6,000m<sup>2</sup>
- Activity: Recycling of Organic Waste (Waste Cooking Oil)
- Tenant: Champway Technology Limited

The tenant has not yet commenced any activities within the lot.

### 4.3 Throughput Statistics

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so there are no throughput statistics to report at this time.

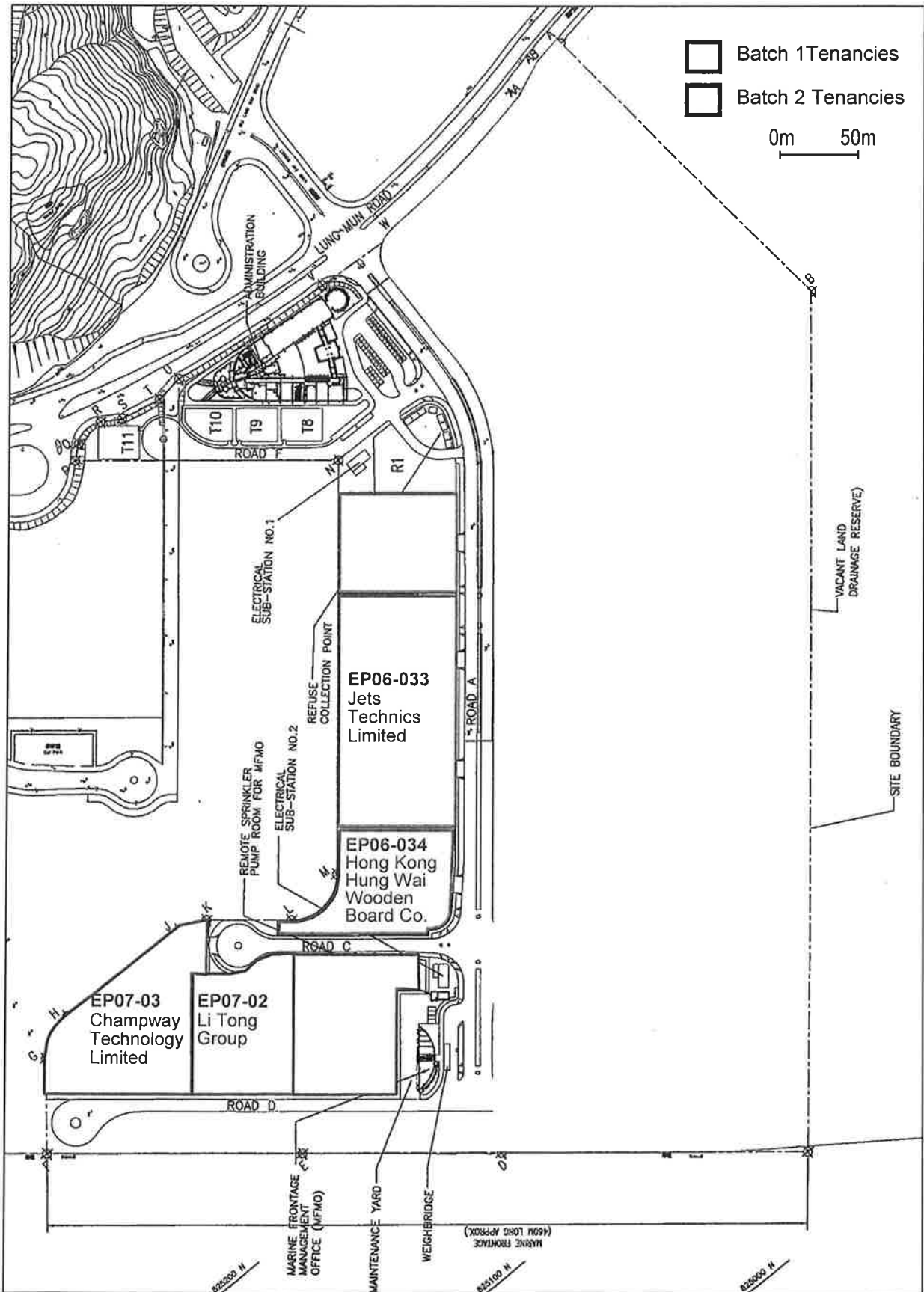


Figure 4-1 Lot Usage Within EcoPark

## 5 Implementation Status of Environmental Protection Measures

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Environmental mitigation measures applicable to the operation phase EM&A as stated in the Implementation Schedule are summarised in **Appendix 1**. Environmental requirements specified in Tenancy Agreements are summarised in **Appendix 2**.

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so no environmental protection measures yet need to be implemented.

## 6 Monitoring Results

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Only LFG is required to be monitored on a quarterly basis. However, since operation phase LFG monitoring is only required "following construction" and construction is not yet completed, operation phase LFG monitoring is not yet required to be carried out.

## 7 Waste Generation Statistics

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As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so there are no waste generation statistics to be reported at this time.

## 8 Summary of Environmental Audit

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### 8.1 May 2007

The environmental inspection for May 2007 was carried out by the ET Leader and the ET Site Inspector/Auditor on 28 May 2007. At this time, construction of EcoPark Phase I was ongoing and no tenants were present within EcoPark. As such, there were no processes to be audited. However, the following was observed during inspection:

*"Stop-logs" do not appear to have been installed in the perimeter drainage system of each lot, as required by the EIA Report (Figure 2.4b and paras.5.5.19 and 5.6.4) and the EM&A Manual (para.4.2.3). This is a key environmental protection feature of EcoPark.*

*Instead of installing stop-logs in the perimeter drainage of each lot, it appears that 3 no. penstocks have been located in or adjacent to the 4-cell box culvert. While such an arrangement can prevent contamination from*

*entering the sea, it does not isolate contamination within the lot in which it occurs. Instead, it may result in the entire upstream stormwater drainage system becoming contaminated and so will make removing and treating the contaminated liquid difficult if not practically impossible.*

The ET recommended that this issue is urgently addressed by the designer and works contractor prior to the first tenants commencing their operations within their lots and that stop-logs are retrofitted to the perimeter drainage systems of each existing lot as a matter of urgency. Lots yet to be constructed should also have stop-logs installed.

## 8.2 June 2007

The environmental audit was carried out by the ET Leader and the ET Site Inspector/Auditor on 28 June 2007. At this time, construction of EcoPark Phase I was ongoing and no tenants were present within EcoPark. As such, there were no processes to be audited. No significant observations were made.

## 8.3 July 2007

The environmental audit was carried out by the ET Leader on 27 July 2007. The ET were accompanied by the IEC. At this time, construction of EcoPark Phase I was ongoing and no tenants were present within EcoPark. As such, there were no processes to be audited. No significant observations were made.

## 8.4 August 2007

The environmental audit was carried out by the ET Leader on 24 August 2007. At this time, construction of EcoPark Phase I was ongoing and no tenants were carrying out recycling activities within EcoPark. As such, there were no processes to be audited. No significant observations were made.

## 8.5 September 2007

The environmental audit was carried out by the ET Leader on 28 September 2007. At this time, construction of EcoPark Phase I was ongoing and no tenants were carrying out recycling activities within EcoPark. As such, there were no processes to be audited. No significant observations were made.

## 8.6 October 2007

The environmental audit was carried out by the ET Leader on 31 October 2007. The ET Leader was accompanied by the IEC's Representative. At this time, construction of EcoPark Phase I was ongoing and no tenants were carrying out recycling activities within EcoPark. As such, there were no processes to be audited.

However, the following observation was made in relation to stop-logs:

In the event of a spillage of contaminating liquid within a lot, a stop-log is to be installed in the perimeter drainage system to contain the spillage within the U-channel and to prevent it from escaping into the stormwater drainage system, and from there into the sea. The stop-log must therefore be designed in such a manner as to prevent contaminated liquid within the U-channel from entering the stormwater drain, i.e. it should provide an effective seal to prevent leakage.

The following photographs show the currently proposed stop-log in place in each of the Phase I lots. The effectiveness of the stop log in preventing leakage into the stormwater drain is self evident – it is suggested that further improvements to the stop-log may be necessary to achieve an effective seal and thereby comply with the requirements of the EIA Report and the Environmental Permit.

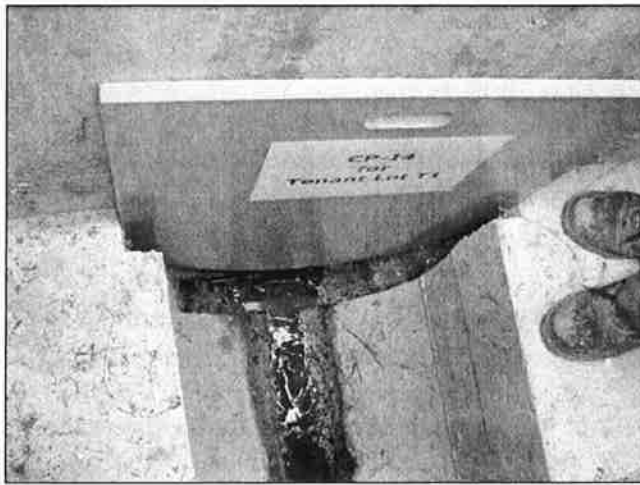


Figure 8-1 Stop-log in Place in Lot Occupied by Tenancy EP06-032

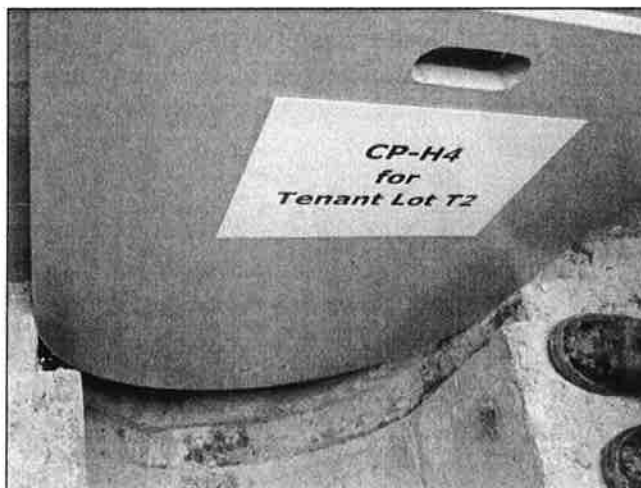


Figure 8-2 Stop-log in Place in Lot Occupied by Tenancy EP06-033 (1 of 2)





Figure 8-3 Stop-log in Place in Lot Occupied by Tenancy EP06-033 (2 of 2)

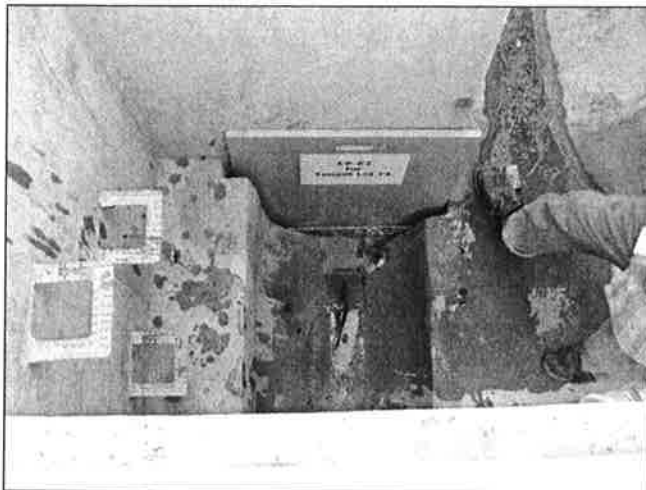


Figure 8-4 Stop-log in Place in Lot Occupied by Tenancy EP06-034

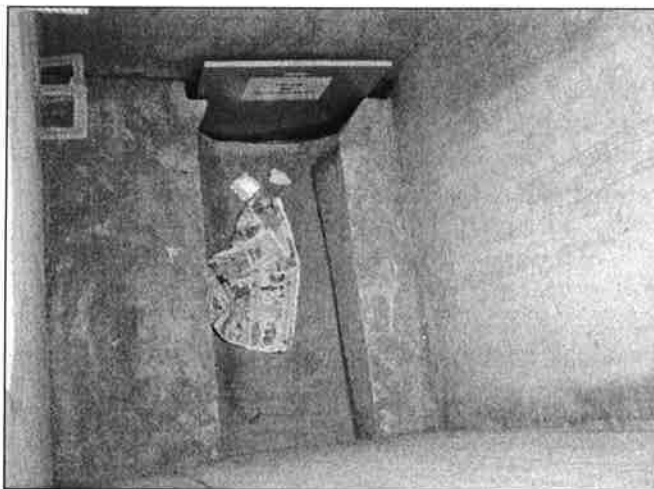


Figure 8-5 Stop-log in Place in Lot Occupied by Tenancy EP07-01

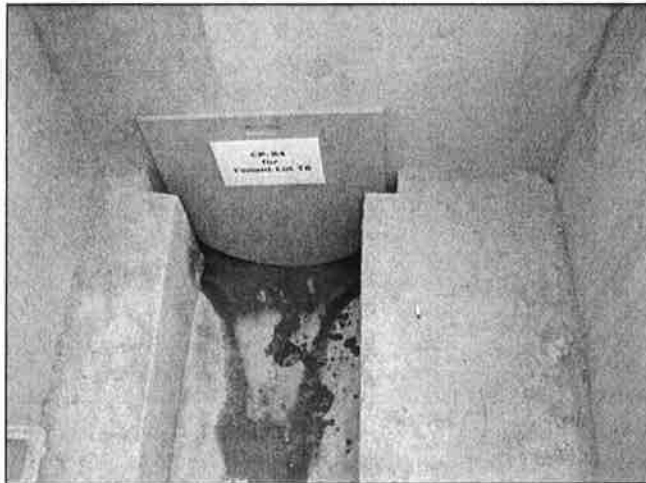


Figure 8-6 Stop-log in Place in Lot Occupied by Tenancy EP07-02

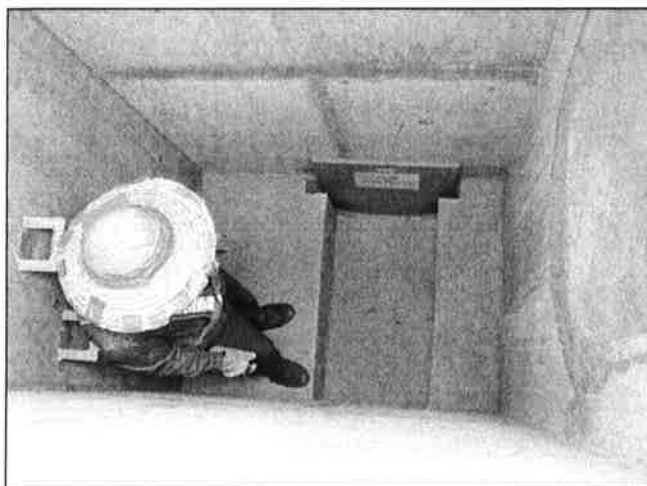


Figure 8-7 Stop-log in Place in Lot Occupied by Tenancy EP07-03

## 8.7 November 2007

The environmental audit was carried out by the ET Leader on 29 November 2007. At this time, construction of EcoPark Phase I was ongoing and no tenants were present within EcoPark. As such, there were no processes to be audited. No significant observations were made.

## 8.8 December 2007

The environmental audit was carried out by the ET Leader on 27 December 2007. At this time, construction of EcoPark Phase I was ongoing and no tenants were present within EcoPark. As such, there were no processes to be audited. No significant observations were made.

## 9 Complaints

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As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and no complaints have been received related to recycling activities.

## 10 Annual Review

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### 10.1 Comparison of EM&A Data with EIA Predictions

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so there is no EM&A data that can be compared and contrasted with EIA predictions.

### 10.2 Environmental Acceptability of EcoPark

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so it is not possible to assess the environmental acceptability of EcoPark

### 10.3 Monitoring Methodology

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and as no monitoring has been undertaken it is not possible to review the monitoring methodology.

### 10.4 Practicality and Effectiveness of EIA Process and EM&A Programme

As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so the EM&A programme has not yet been fully utilised. As such, the cost-effectiveness of operational auditing EcoPark, while it is still under construction and without any tenants carrying out recycling activities, is questionable. No improvements to the EM&A programme are recommended.

## 11 Conclusions

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As of 31 December 2007, no tenants have yet commenced recycling activities within their lots and so there are no conclusions to draw relating to the operation of the operation phase EM&A programme at this time.

## Appendix 1

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# Environmental Mitigation Measures (from the Implementation Schedule)

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
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**General**

5.5.23 to 5.5.25, 10.2.24 & 10.2.37	4.2.5 to 4.2.8	The Operator shall develop and implement an Emergency Response Plan (ERP) that lists the procedures to be followed in case of fire, fuel or chemical spillage or other emergency within the EcoPark.	Throughout the duration of the operation.	Operator	
12.2	7.2	No process shall be allowed to operate within EcoPark without approval from WFBU. Approval will be based on the ten-step Process Review, which may include a Design Audit if deemed to be necessary.	Throughout the duration of the operation.	ET IEC Project Proponent	
	8.1.2	All reports (including Process Review Checklists and any Design Audits) shall be prepared and certified by the ET, verified by the IEC and approved by the Project Proponent.	Throughout the duration of construction works until construction is substantially completed. Throughout the duration of the operation.	ET IEC Project Proponent	
12.3	7.3	The Operator shall prepare and implement an Environmental Management Plan (EMP) to define mechanisms for achieving the environmental requirements specified in the EIA, EP and in statutory regulations.	Throughout the duration of the operation.	Operator	

**Air Quality**

13.2		The Operator shall ensure that the EcoPark "base case" assumptions for air quality shown in Table 13.1 of the Final EIA Report are met by tenants, as a whole.	Throughout the duration of the operation.	Operator	Table 13.1 of the Final EIA Report
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**Water Quality**

5.4.11 & 5.6.7		To minimise the chance of accidental spillage during loading and unloading, and thereby reduce marine water quality impacts, well established cargo handling guidelines should be followed.	Adjacent to EcoPark marine frontage when loading or unloading goods.	Operator Operators of bulk carriers	Sections 5 and 6 of IMO Code of Practice for the Safe Loading and Unloading of Bulk Carriers
5.5.19		Contaminated water collected in the surface drainage systems shall be treated at the WTF or other appropriate treatment facility.	Within EcoPark throughout the life of the facility.	Operator	

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
5.5.23 to 5.5.25	4.2.5 to 4.2.7	An Emergency Response Plan (ERP) will be formulated to address various accident scenarios. The ERP will be certified by the Environmental Team (ET) and verified by the Independent Environmental Checker (IEC) under the operation EM&A programme.	Within EcoPark throughout the life of the facility.	Operator	
5.6.4		For uncovered areas where recovery process identified as causing potentially high level of contamination are located, stop-logs will be installed in the perimeter drainage system to isolate contamination.	Within EcoPark throughout the life of the facility.	Operator	
	4.2.2	The ET should develop an audit checklist, with the agreement of the IEC, to ensure that each mitigation measure is implemented when appropriate and operated correctly when implemented.	Within EcoPark throughout the life of the facility.	ET with IEC	

#### Waste Management

6.8.7	5.2.4	The Operator should register with EPD as a chemical waste producer.	Within EcoPark throughout the life of the facility.	Operator	Waste Disposal (Chemical Waste) (General) Regulation
6.8.16		The dust collected by any air pollution control equipment installed by tenants must be tested to ensure compliance for landfill disposal.	Within EcoPark throughout the life of the facility.	Operator	Practice Note for disposal of dusty waste at landfill sites and the Admission Ticket System
6.8.18 & 6.8.22	5.2.4	Sludge will be disposed of at WENT landfill, or at any future dedicated sludge treatment facility. Sludge will be collected by a Licensed collector at regular intervals, as determined by the operation of the WTF	Within EcoPark throughout the life of the facility.	Operator	
6.8.21	5.2.4	Chemical wastes shall be stored in appropriate containers in a covered area. "No Smoking" signs will be clearly displayed to prevent accidental ignition of any flammable materials. Drip trays capable of storing 110% of the volume of the largest container will be used to mitigate possible leakage.	Within EcoPark throughout the life of the facility.	Operator	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
	5.2.3 & 5.2.5	The ET should develop an audit checklist, with the agreement of the IEC, to ensure that each mitigation measure is implemented when appropriate and operated correctly when implemented.	Within EcoPark throughout the life of the facility.	ET with IEC	

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
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**Prevention of Contaminated Land**

7.3.1	5.3.2	Any spillages of contaminating material shall be cleaned up immediately through the use of an absorbent. Any such used material should then be considered chemical waste and disposed of appropriately.	Within EcoPark throughout the life of the facility.	Operator	
7.3.3		Any areas within the lot to be used for recycling processes shall be concrete paved before recycling activities commence.	Within EcoPark throughout the life of the facility.	Operator	
7.3.5	5.3.2	<p>During operation, the greatest risk of land contamination will come from the storage of chemical wastes, therefore the following measures should be followed :</p> <ul style="list-style-type: none"> <li>▪ All chemical storage areas shall be provided with locks and be sited on sealed areas. The storage areas shall be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil and chemicals from contaminating the ground.</li> <li>▪ Management of chemical waste is implemented through the control of waste storage, labelling of waste, transportation and treatment of chemical waste at an appropriate facility.</li> <li>▪ Chemical wastes will be collected, stored and disposed of in accordance with the Regulation. Disposal of other construction waste will be undertaken by Licensed contractors in accordance with applicable statutory requirements in the WDO.</li> <li>▪ Chemical wastes shall be handled according to the relevant code of practice. Spent chemicals shall be stored and collected by an approved operator for disposal at a licensed facility in accordance with the relevant regulation.</li> </ul>	Within EcoPark throughout the life of the facility.	Operator	<p>Waste Disposal (Chemical Waste) (General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chem Wastes</p> <p>Chemical Waste (General) Regulation</p>
	5.3.3	The ET should develop an audit checklist, with the agreement of the IEC, to ensure that each mitigation measure is implemented when appropriate and operated correctly when implemented.	Within EcoPark throughout the life of the facility.	ET with IEC	

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
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**Landfill Gas**

8.7.10 & 8.7.11	6.1.2	<ul style="list-style-type: none"> <li>▪ Alert workers and visitors of possible LFG hazards</li> <li>▪ Prohibit smoking and open fires on site</li> <li>▪ Conduct regular (quarterly) LFG monitoring at mobile offices, equipment stores, etc.</li> </ul>	Within EcoPark throughout the life of the facility.	Operator	
	6.4.3	Following construction, routine monthly monitoring may be required at service voids and utility boxes. The monitoring requirement and specific locations of monitoring points shall be established based on the findings of the monitoring carried out during construction (i.e. if no LFG is detected during construction then no routine monitoring is required). The need for continued monitoring shall, however, be reviewed through discussion with EPD.	Within EcoPark throughout the life of the facility.	Operator	

**Hazard to Life**

10.4.3		Building height limit within EcoPark shall be applied to structures within which people may work at elevated levels.	Within EcoPark throughout the life of the facility.	Operator	EIA Report Table 10.2
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**Landscape and Visual**

9.4.4		It recommended that this commonality be promoted throughout EcoPark by the Operator and adopted by tenants, if practicable.	Within EcoPark throughout the life of the facility.	Operator	
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## Appendix 2

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# Environmental Requirements in Tenancy Agreements

## GENERAL ENVIRONMENTAL RESPONSIBILITIES

- 9.1 The Tenant shall at its own cost(s) comply with and shall ensure that the Premises is used, designed, constructed, operated and maintained in accordance with:-
- (a) All relevant Ordinances, by-laws, regulations, statutory technical memorandums, codes of practice, rules, non-statutory guidance notes, schemes and abatement notices for the time being in force in Hong Kong including those relating to the environment and governing the control of any form of pollution (see specific Ordinances mentioned hereinbelow) and licensing requirements under relevant Ordinances and regulations.
  - (b) All information, mitigation measures, prohibitions, restrictions, recommendations and requirements under the Environmental Impact Assessment Report for Development of an EcoPark in Tuen Mun Area 38 with Appendices, i.e. the EIA Report (Register No.: AEIAR-086/2005) dated April 2005, the Final EM&A Manual dated April 2005, the application documents including all attachments (Application No. AEP-226/2005) and other relevant documents in the Register (or in any other places, any internet websites or by any other means as specified by the Director), including the prohibitions and mitigation measures for processes in Table 14.1 and the material throughputs, processes and remarks in Table B.1 of the EIA Report (in so far as applicable).
  - (c) All information, conditions, submissions, mitigation measures, orders, notices, requirements, prohibitions, restrictions and time limits under the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No. VEP-221/2006 (including updated information about the Permit, any amended permit and any further permit) and all mitigation measures recommended and to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No. VEP-221/2006 (including updated information about the Permit, any amended permit and any further permit). The Tenant shall refer to, inter alia, Conditions 4.1 to 4.14 (and Annexes A and B) and Conditions 3.7 and 3.8 (and Figures 2 and 3) of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No. VEP-221/2006 regarding measures to mitigate air quality impact, measures to mitigate hazard to life impact, measures to prevent land contamination, measures to mitigate landfill gas hazard, maintenance of landscape and visual measures (see also hereinbelow regarding Condition 5 of the Environmental Permit and specified Ordinances).
  - (d) All information, conditions, submissions, mitigation measures, orders, notices and requirements under on going surveillance and monitoring activities during all stages of the Project and during the tenancy under the Tenancy Agreement (e.g. any additional mitigation measures recommended and to be recommended under the Process Review and Design Audit (carried out and to be carried out in accordance with the EM&A Manual) for various environmental impacts including, but not limited to, noise pollution, air quality, hazard to life, landfill gas hazard, landscape and visual measures, waste management and land contamination).

- (e) All recommendations referred to in the documents of the EIAO Register which are not expressly referred to in Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 and any amended Environmental Permit (unless expressly excluded or impliedly amended in the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 and any amended Environmental Permit).
- 9.2 Further to Condition Nos. 6 and 8 hereinabove, the Tenant shall at its own cost provide relevant environmental monitoring data, information, documents and assistance to the Director and/or the Environmental Protection Department and shall permit authorised representatives of the Environmental Protection Department to access, inspect, take samples and monitor the Premises and operations for the Process Review and the Design Audit carried out and/or to be carried out pursuant to Conditions 4.1 and 5 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (and any updated Permit, amended permit and further permit).
- 9.3 If the Tenant's operations (i.e. activities and facilities for recovery and/or recycling and/or reprocessing) are not covered by the EIA Report and/or deviate from the development parameters mentioned in inter alia the EIA Report, the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including the parameters at Annex A) and/or any environmental licence (e.g. the Water Treatment Facility ("WTF") Discharge Licence), and if additional mitigation measures are not available or are not effective in the opinion of the Director, to ensure compliance with the EIA Report, the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including any updated Permit, amended permit and further permit) and the relevant environmental licence(s), the Tenant shall comply with any modified parameters and/or the Tenant shall immediately modify its operations in such a way that the findings and requirements of the EIA Report, the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including any updated Permit, amended permit and further permit) and the environmental licence(s) are complied with and shall immediately cease to continue the offending part of the operations or activity in question.
- 9.4 The Tenant shall at its own cost(s) apply for, obtain, renew, maintain and comply with all the relevant licences related to compliance with all relevant Ordinances, by-laws, regulations, statutory technical memorandums, codes of practice, rules, non-statutory guidance notes, schemes, abatement notices and the environmental permits for the time being in force in Hong Kong (including those relating to the environment and governing the control of any form of pollution). The Tenant shall obtain, renew and comply with all the said licences within the relevant time limits (in any event, within one (1) calendar month of the date of signing and/or execution of the Tenancy Agreement), shall comply with all abatement notices, orders, directions and requests of the relevant authorities and public officers and shall be responsible for paying all relevant fees, costs, fines and penalties.
- 9.5 The Tenant shall not do anything or omit to do anything which would cause, contribute to or involve a breach or potential breach by the Director relating to any of the matters mentioned in Conditions 9.1 to 9.4 hereinabove (and other Conditions hereinbelow).

- 9.6 The Tenant shall fully indemnify the Government and/or the Director for any fees, costs, damages, expenses, fines, penalties, losses and claims arising (a) out of any breach of any of the matters mentioned in inter alia Conditions 9.1 to 9.4 hereinabove (and other Conditions hereinbelow) or (b) from the use of the Premises or (c) out of any works carried out at any time during the term to or at the Premises or (d) out of anything now or during the term attached to or projecting from the Premises or (e) from any neglect or default by the Tenant or by its respective servants or agents or by any express licensee of the Tenant.

## **SPECIFIC ENVIRONMENTAL RESPONSIBILITIES**

### Air Pollution

10. Save with an appropriate exemption under the Air Pollution Control Ordinance (Cap. 311 of the Laws of Hong Kong) any regulations made thereunder and any amending legislation, the Tenant shall not install or permit or suffer to be installed upon the Premises or any part thereof or any building(s) or structure(s) or part of any building(s) or structure(s) erected or to be erected thereon any furnace, oven, chimney or flue or any other combustion equipment or use or permit or suffer to be used any fuel or any method or process of manufacture or treatment that might in any circumstance result in, cause or contribute to the discharge or emission of any pollutant or any noxious, harmful or corrosive matter, whether it be in the form of gas, smoke, liquid, solid or otherwise (including but not limited to air pollutant as defined in Section 2 of the Air Pollution Control Ordinance (Cap. 311 of the Laws of Hong Kong)), which exists or which is imminent, without the prior written approval of the Director.
11. No alteration to the installation and method of manufacture shall be made without the prior written consent of the Director. In any event, the Tenant shall at its own cost(s) comply with, inter alia, Conditions 4.2 to 4.7 and Annex A of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No. VEP-221/2006 regarding design, installation and operation of chimney, location of fresh air intakes and use of ultra-low sulphur or other cleaner fuel(s) as agreed by the Director (and the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate air quality impact), good practices and relevant provisions of the EIA Report and Final EM&A Manual.

### Noise Pollution

12. The Tenant shall take all necessary measures as may be required by and to the satisfaction of the Director to ensure that the operation of all plant and equipment, installed or used on the Premises or in any building(s) or structure(s) or any part of any building(s) or structure(s) erected or to be erected thereon, will not result, not cause and/or will not contribute any noise (which exists or which is imminent) which disturbs or annoys the residents or occupiers of any adjoining or neighbouring lot or lots or premises, or causes and/or contributes to disturbance to the general public under the Noise Control Ordinance (Cap. 400 of the Laws of Hong Kong) any regulations made thereunder and any amending legislation.
13. The decision of the Director as to whether any such plant and equipment are causing disturbance or annoyance as aforesaid shall be final and binding on the Tenant.

### Waste Management

14. The Tenant shall not permit, allow or suffer any fuel or chemical and any sewage, waste water or effluent containing sand, cement, silt or any suspended or dissolved material to flow, escape or run from the Premises onto any adjoining land or allow any waste matter which does not form part of the recovery and/or recycling and/or reprocessing operation or is not part of the final product of such operation to be deposited, kept, held or stored anywhere within the Premises and other areas of EcoPark. The Tenant shall at its own cost(s) have all such matters and all waste arising from recycling activities, chemical waste arising from maintenance of plant and equipment, sewage sludge (from WTF) and general daily waste from the operation removed from the Premises or any building(s) or structure(s) or any part of any building(s) or structure(s) erected or to be erected thereon in a proper manner to the satisfaction of the Director.
15. In any event, the Tenant shall at its own cost(s) comply with, inter alia, Conditions 4.11 and 4.12 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding paving all areas of the Premises with concrete/using concrete hardstanding and siting all fuel tanks and chemical storage areas on the specified sealed areas, respectively (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to prevent land contamination). The Tenant shall at its own cost(s) comply with relevant provisions of the Waste Disposal Ordinance (Cap.354 of the Laws of Hong Kong) good practices and relevant provisions of the EIA Report and Final EM&A Manual.

### Water Pollution

16. In the event that the Tenant produces, generates, permits, causes, allows or suffers any discharge which is subject to control under the Water Pollution Control Ordinance (Cap. 358 of the Laws of Hong Kong) any regulations made thereunder and any amending legislation, and is not covered by a WTF Discharge Licence issued under the Water Pollution Control Ordinance (Cap. 358 of the Laws of Hong Kong) the Tenant shall apply to the Director for a licence and comply with the terms and conditions stipulated in the licence and the WTF Discharge Licence at the Tenant's own cost(s). Otherwise, the Tenant is not allowed to discharge directly or indirectly or to produce, generate, permit, cause, allow or suffer any discharge into any public sewer, storm-water drain, channel, stream-course, sea or any area inside or outside the Premises any trade effluent or foul or contaminated water or cooling or hot water. Subject to the said licence from the Director and WTF Discharge Licence, the Tenant shall at its own cost(s) separate, collect, discharge and send all process or industrial wastewater to the WTF for treatment to the standard required for discharge into a sewer leading to the sewage treatment works at Pillar Point or other treatment works specified in the licence.
17. Subject to obtaining advance written approval of the Director, the Tenant shall at its own cost(s) provide, install, operate and maintain its own waste water pre-treatment plants within the Premises if such process or industrial wastewater could not meet the influent limits / exceeds the maximum influent criteria of the WTF (in accordance with paragraph 7.2.9 of the Final E&MA Manual). The Tenant shall at its own cost(s) separate, collect, discharge and send all domestic wastewater (i.e. other than process or industrial wastewater) to the Pillar Point Sewage Treatment Works directly for treatment or other treatment works specified in the licence.

18. In any event, the Tenant shall prevent any spilled materials from entering the surface water drainage system and prevent contamination of the sea at its own cost(s) by, inter alia, providing, installing, operating and maintaining stop-logs or interceptors in the surface water drainage system and at the marine frontage area, respectively, or as required by the licence. The Tenant shall at its own cost comply with relevant provisions of the Dumping at Sea Ordinance (Cap 466 of the Laws of Hong Kong) good practices and relevant provisions of the EIA Report and Final EM&A Manual.

#### Hazard to Life Impact

19. To mitigate hazard to life impact, the Tenant shall comply with, inter alia, Conditions 4.8 to 4.10 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate hazard to life impact) and shall not:-
- (a) Bring, keep, store or transport chlorine within the Premises and other areas of EcoPark;
  - (b) Bring, keep, store, locate or transport dangerous goods, substances and fuels supporting combustion including oxygen, acetylene, hydrogen peroxide, rubber tyres and diesel within 10 metres from the boundary of the site of EcoPark; and
  - (c) Exceed the building height restrictions for buildings on the Premises which are on/near the western boundary of the site of EcoPark as mentioned in Annex B to the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including any updated Permit, amended permit and further permit).

#### Landfill Gas Hazard

20. To mitigate landfill gas hazard, the Tenant shall at its own cost(s) comply with, inter alia, Condition 4.13 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding raising clear of the ground all buildings and enclosed structures as specified in inter alia Condition 3.7 (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate hazard to life impact).

#### Landscape and Visual Impacts

21. To mitigate landscape and visual impacts, the Tenant shall at its own cost(s) comply with, inter alia, Condition 4.14 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding maintaining landscape, planting, treatment and mitigation measures as specified in inter alia Condition 3.8 and Figure 3 (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate landscape and visual impacts).