EM&A Report

EcoPark Operation

Annual EM&A Compliance

January to December 2012

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EM&A Report

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Annual EM&A Compliance Report

January to December 2012

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Project/Deliverable No:	J494A | D02/ 04
Project Name:	EcoPark Operation EM&A
Report Name:	Annual EM&A Compliance Report – January to December 2012
Report Date:	July 2013
Report for:	Serco Guardian JV

PREPARATION, REVIEW AND AUTHORISATION

Revision #	Date	Prepared by	Reviewed by	Approved for Issue by
1	April 2013	Winnie MA	Antony WONG	Alexi BHANJA
2	June 2013	Winnie MA	Antony WONG	Alexi BHANJA
3	July 2013	Winnie MA	Antony WONG	Alexi BHANJA
4	July 2013	Winnie MA	Antony WONG	Alexi BHANJA

ISSUE REGISTER

Distribution List	Date Issued	Number of Copies
Serco Guardian JV – Noel AU		1 hardcopy
EPD (EIAO Office)		3 hardcopies + 1 CD
EPD – Dr Lawrence WONG		1 hardcopy
IEC – Sharifah OR		1 hardcopy
SMEC Project File:		1 electronic

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EXECUTIVE SUMMARY

General

EcoPark is a key element in the 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. 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 Joint Venture (SGJV) by EPD in November 2006.

SGJV ("the Operator") appointed SMEC Asia Ltd (SMEC) as the Environmental Team (ET) for the Environmental Monitoring and Audit (EM&A) works. Atkins China Ltd is the Independent Environmental Checker (IEC) for the EM&A works. The ET and the IEC carry out the EM&A works for the operation of EcoPark as required by the EM&A Manual and in accordance with the conditions of the Environmental Permit.

This is the sixth annual EM&A report prepared for the operation phase of EcoPark and covers January to December 2012.

As of end-December 2012, there were 14 tenants in EcoPark (Phase 1 and Phase 2). Seven tenants (Champway, Shiu Wing, Hung Wai, Li Tong, Yan Oi Tong, Telford and St. James' Settlement) have commenced out full recycling activities within their lots. Cosmos and six new tenants (K. Wah, E. Tech, On Fat Lung, Chung Yue, SSK and South China) awarded lots in August 2011 and August 2012, respectively, were carrying out their plant design, the planning of construction works and installation of machinery.

Throughout the year, site inspections were conducted by the ET whilst quarterly joint site inspections were carried out by the Operator, the IEC and the ET. Observations and recommendations were made during site inspections.

Throughput of Materials / Waste Generated

The throughputs during 2012 are summarised below. Please note that product output plus waste disposal does not necessarily equal the waste input, due to material losses during processing and material retained within the lot.

Tenant	Waste Materials	Waste Input (tonnes)	Product Output (tonnes)	Product Output (pieces)	Waste Disposal (tonnes)
Champway	Waste Oil	9,693	2082	-	3,881
Hung Wai [Note 1]	Waste Wood	-	-	-	-
Li Tong	WEEE	859	573	-	7
Shiu Wing	Waste Metals	32,737	32737	-	-
Telford	Waste Plastic	2,353	1,514	-	-
Yan Oi Tong	Waste Plastic	1,855	1,348	-	153
St James' Settlement	WEEE	305	205	7,851	25

Note: 1. The plant operation has been suspended and stopped receiving wood since October 2011, with a view to modifying the operation modes.

Exceedances of Any Measured Action / Limit Levels

The northern part of EcoPark is located within the 250m Landfill Gas (LFG) Consultation Zone of Shiu Lang Shui Landfill. LFG monitoring was carried out at five locations (three in Phase 1 and two in Phase 2). The LFG monitoring carried out in Phase 2 (EP2-1 and EP2-2) commenced in January 2011. In 2012, LFG monitoring was undertaken on 16 January, 19 April, 20 June, 26 September and 19 December, at five locations (three in Phase 1 and two in Phase 2). No Action/Limit Level exceedances were recorded.

Summary of Complaints, Summons and Prosecutions

- **Complaints:** Zero
- **Summons:** Zero
- **Successful Prosecutions:** Zero

Reporting Changes

The previously adopted Nov-Jan, Feb-Apr, May-Jul, Aug-Oct quarters now correspond to calendar quarters (i.e. Jan-Mar, Apr-Jun, Jul-Sep and Oct-Dec) to align the quarterly reporting period with calendar quarters, the data from April 2012 reported in the previous Feb-Apr Quarterly EM&A Report has been repeated in Apr-Jun Quarterly EM&A Report.

Future Key Issues

The tenants of Phase 2 may operate their recycling activities in the coming year of 2013. And operation phase LFG monitoring for Phase 1 and Phase 2 will continue to be carried out by the ET, although no exceedances are anticipated.

Conclusions of Annual Review

In terms of interpretation of EM&A data, the outcome of quarterly monitoring is considered as sufficient and effective according to Section 8.7.11 of the EIA Report and Section 6.4.4 of the EM&A Manual.

In terms of the environmental acceptability of EcoPark, no critical environmental deficiencies were identified at various tenant lots in EcoPark in 2012. The operation of EcoPark in environmental terms is therefore considered to be of an acceptable level.

In terms of the practicality and effectiveness of EIA process and the EM&A programme, the mitigation measures proposed in the EIA Study are effective and efficient. The use of the Process Review mechanism to assess incoming processes, processes not assessed in the EIA, or greater throughputs than were assumed in the EIA, is considered to work well and is fully in accordance with the recommendations of the EIA, requirements of the EM&A programme and EP conditions.

1 PROJECT DESCRIPTION

1.1 Overview

1.1.1 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 to realise the full potential of the local recycling industry and alleviate the heavy reliance on the export of recyclable materials recovered from Hong Kong.

1.1.2 EcoPark has been developed in Tuen Mun Area 38 (see ***Figure 1-1***) in two phases (Phase 1 and Phase 2) under construction contract *EP/SP/52/06 Development of EcoPark in Tuen Mun Area 38*, which was awarded to Kaden Construction by the Environmental Protection Department (EPD) in June 2006. Phase 1 construction was completed in July 2009 and Phase 2 construction was completed in November 2010. 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 Joint Venture (SGJV) by EPD in November 2006.

1.1.3 SGJV ("the Operator") appointed SMEC Asia Ltd (SMEC) as the Environmental Team (ET) for the Environmental Monitoring and Audit (EM&A) works. Atkins China Ltd (Atkins) has been appointed as the Independent Environmental Checker (IEC) for the EM&A works. The ET and the IEC carry out the EM&A works for EcoPark as required by the EM&A Manual and in accordance with the conditions of the Environmental Permit (EP).

1.2 Operation Programme

1.2.1 By end-December 2012, there were a total of 14 tenants in EcoPark comprising:

- Six tenants (Champway, Shiu Wing, Li Tong, Telford, Yan Oi Tong (YOT) and St. James' Settlement) carrying out recycling operations.
- One tenant (Hung Wai) that has suspended the operation since October 2011.
- One tenant (Cosmos) that has substantially completed the civil and structural works and machinery installation was in progress.
- Six new tenants (K. Wah, E. Tech, On Fat Lung, Chung Yue, SSK and South China) that were carrying out application for variation of environmental permit, plant design and/or the planning of construction works.

1.3 EM&A Organisation

1.3.1 The EM&A which is verified by the IEC is carried out by the ET. The key personnel contact details are summarised in ***Table 1-1***. The organisation of SGJV is shown in ***Figure 1-2*** and the current EM&A organisation is illustrated in ***Figure 1-3***.

Table 1-1 EM&A Personnel Contact Details

Position	Name	Email Address	Telephone No.
Project Proponent – EPD			
Principal EPO	Lawrence WONG	lawrwong@epd.gov.hk	2872 1700
Operator – SGJV			
Project Manager	Noel AU	nkfau@ecopark-mgnt.com	2496 7633
Park Manager	Morgan CHIU (to 18/11/2012) Mabel YUNG (from 18/11/2012)	morganchiu@ecopark-mgnt.com mabelyung@ecopark-mgnt.com	2212 5910
IEC – Atkins			
IEC	Sharifah OR	sharifah.or@atkinsglobal.com	2972 1802
IEC Site Inspector	Keith CHAU	keith.chau@atkinsglobal.com	2972 1721
ET – SMEC			
ET Leader	Antony WONG	antony.wong@smec.com	3995 8120
ET Site Inspector	Winnie MA	winnie.ma@smec.com	3995 8138

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

Source: EPD Records (May 2012)

Figure 1-2 Organisation Chart of SGJV

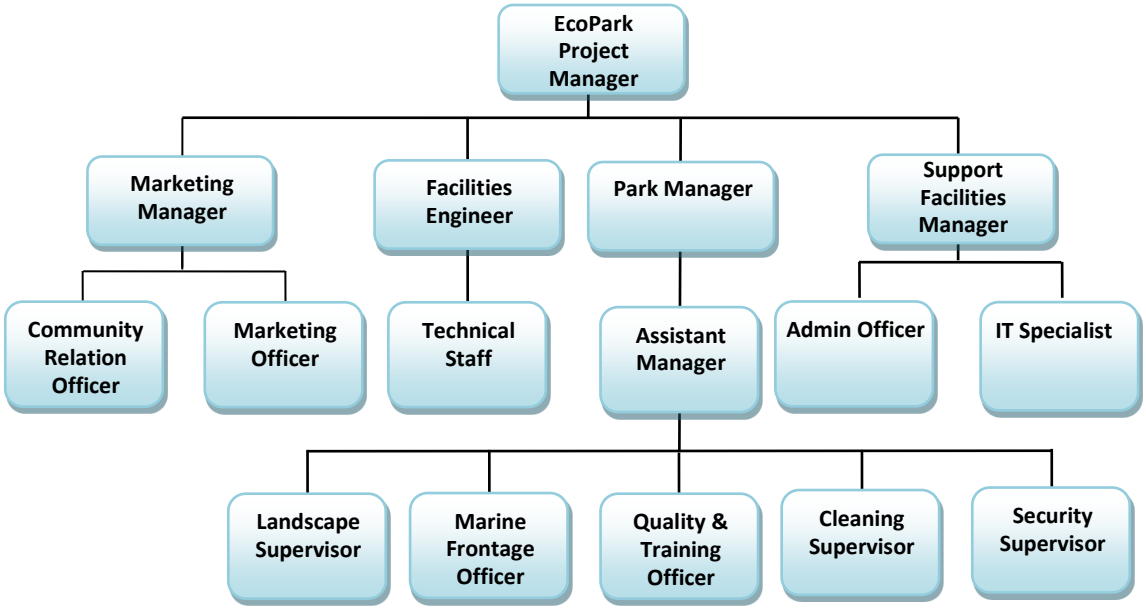
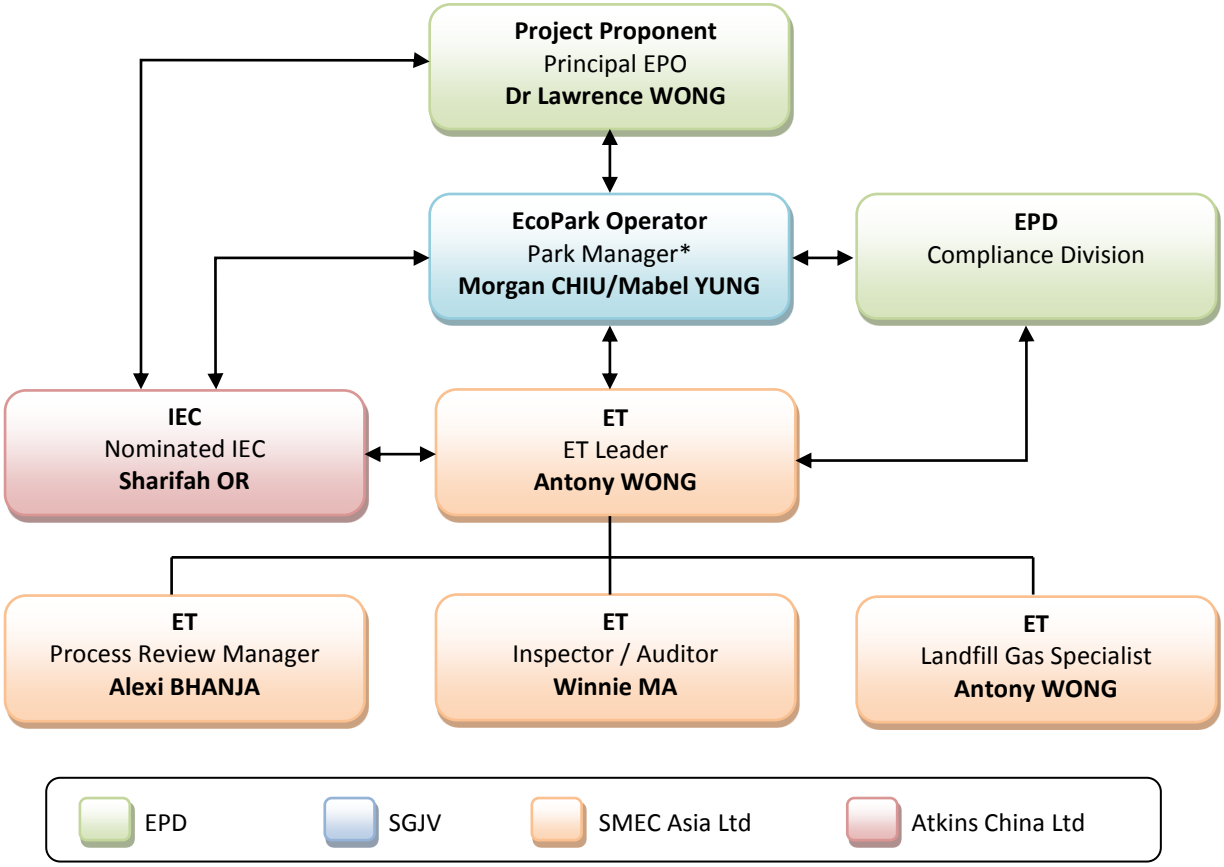


Figure 1-3 Organisation Chart of EM&A Works (Operation)



Note: * Mabel YUNG replaced Morgan CHIU as Park Manager from 19 November 2012

2 SUMMARY OF EM&A REQUIREMENTS

2.1 Monitoring Parameters

2.1.1 Landfill Gas (LFG) is required to be monitored quarterly at service voids and utility boxes within EcoPark because the northern part of EcoPark lies within the 250m LFG Consultation Zone for Siu Lang Shui Landfill, which is located to the north of EcoPark.

2.1.2 LFG monitoring has been carried out at Phase 1 and Phase 2 of EcoPark since the quarter August to October 2009 and the quarter November 2010 to January 2011, respectively, after completion of Phase 1 construction in July 2009 and completion of Phase 2 construction in November 2010.

2.1.3 The location for LFG monitoring was not specified in the EM&A Manual since the final design of EcoPark was not available when the EM&A Manual was approved. Therefore, during the joint site inspection on 27 July 2009, three monitoring locations were identified and agreed as suitable monitoring locations by the ET Leader, IEC and SGJV. Subsequently, two more monitoring locations in Phase 2 were proposed by the ET Leader and agreed by the IEC and the Operator *via* email in January 2011. These five monitoring locations are listed in ***Table 2-1*** and shown in ***Figure 2-1***.

Table 2-1 Operation Phase LFG Monitoring Locations in EcoPark

Monitoring Station ID	Type	Locations
EP1-1	LFG vent pipe	Inside the landscaping area of Administration Building
EP1-2	Service void	PCCW below-ground chamber outside Lot EP08-01
EP1-3	Service void	HGC Broadband below-ground chamber outside Lot EP08-03
EP2-1	Service void	HGC Broadband below-ground chamber outside Lot P1
EP2-2	Service void	HGC Broadband below-ground chamber outside Lot P3

2.1.4 ***Figure 2-2*** is a replacement figure for the EM&A Manual, in accordance with footnote to Figure 6.1 in the approved EM&A Manual, and shall be deemed to be included in the EM&A Manual.

2.1.5 Routine LFG monitoring has been carried out on a quarterly basis. Should EPD alert the Operator that high LFG levels have been detected during monthly monitoring under the Siu Lang Shui Landfill restoration contract, 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. To-date, EPD has not alerted the Operator.

2.2 Environmental Quality Performance Limits and EAP

2.2.1 The Action / Limit Levels and Event Action Plan (EAP) for LFG are shown in ***Table 2-2*** below. These refer to LFG detected in excavations, utilities and any enclosed on-site areas. No other A/L Levels or EAPs are specified in the EM&A Manual for the operation phase EM&A.

Table 2-2 Action Levels, Limit Levels and Event and Action Plan for LFG

Parameter	Level	Action
Oxygen (O_2)	Action Level <19% O_2	• Ventilate trench/void to restore O_2 to > 19%
	Limit Level <18% O_2	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore O_2 to > 19%
Methane (CH_4)	Action Level >10% LEL	• Post "No Smoking" signs • Prohibit hot works • Increase ventilation to restore CH_4 to <10% LEL
	Limit Level >20% LEL	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore CH_4 to <10% LEL
Carbon Dioxide (CO_2)	Action Level >0.5% CO_2	• Ventilate to restore CO_2 to < 0.5%
	Limit Level >1.5% CO_2	• Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore CO_2 to <0.5%

2.3 Environmental Audit of Non-Monitored Parameters

2.3.1 Site inspections provide a direct means to trigger and enforce the environmental protection and pollution control measures specified in the Environmental Impact Assessment (EIA) Report. To examine operational practice, site inspections are to be undertaken regularly by the ET once per month, and joint site inspections are to be carried out by the ET and IEC once per quarter. Ad hoc site inspections are also carried out if significant environmental problems are identified. In addition, inspections may be required subsequent to receipt of an environmental complaint, or as part of the investigation work, as specified in the EAP.

2.3.2 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.

2.4 Environmental Mitigation Measures

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

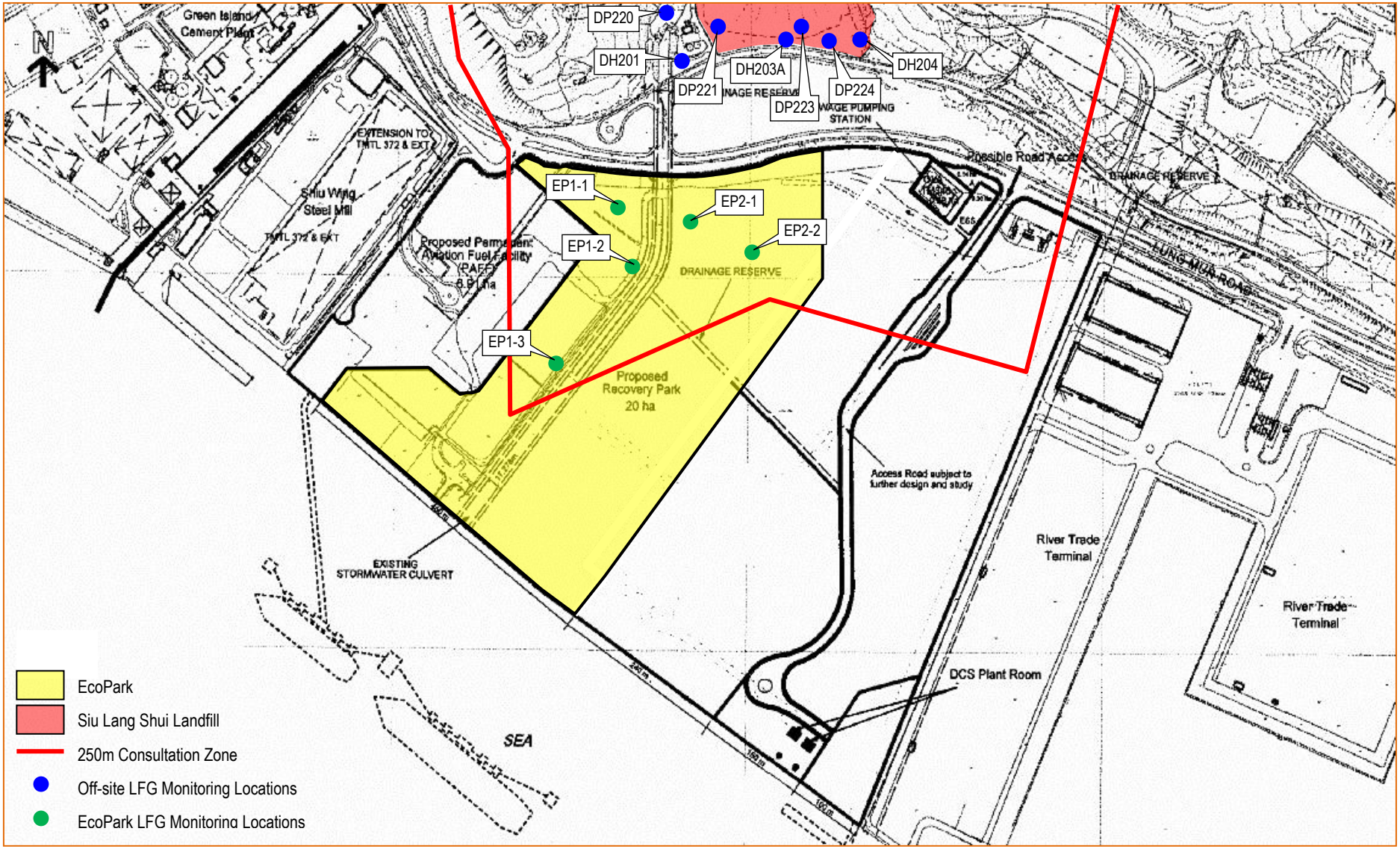
2.5 Environmental Requirements in Tenancy Agreements

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

Figure 2-1 LFG Monitoring Locations within EcoPark

Area Within the Shiu Lang Shui Landfill Gas Consultation Zone

Figure 2-2 Replacement Figure for EM&A Manual Figure 6.1



3 OPERATION STATUS

3.1 General

3.1.1 The locations of lots within EcoPark, the tenancy numbers and tenant names are shown in ***Figure 3-1***.

3.1.2 Six Phase 2 lots were awarded to new tenants in August 2011 and August 2012 and the preparation works are being carried out. Site formation works were being carried out in K.Wah and Chung Yue. Therefore, none of the new tenants are yet on-site and there is no operation status to be discussed in this section. The new tenants are indicated in ***Figure 3-1.***

3.1.3 A summary of waste throughputs for all active tenants is provided in ***Section 3.10***.

3.2 Champway Technology Ltd.

- **Tenancy No.:** EP07-03 (Phase 1)
- **Lot Size:** Approx. 6,000m^2
- **Activity:** Recycling of Organic Waste (Waste Cooking Oil)
- **Recycling Process:** waste cooking oil and grease trap waste processing

3.2.1 Recycling activities commenced in July 2010. In 2012, some 2,228 tonnes product was produced.

3.3 Shiu Wing Steel Ltd.

- **Tenancy No.:** EP08-03 (Phase 1)
- **Lot Size:** Approx. 9,500m^2
- **Activity:** Recycling of Waste Metals
- **Recycling Process:** Turn waste metals into light ferrous scrap and heavy ferrous scrap by sorting, baling and shearing

3.3.1 In 2012, large amount of waste metal/steel scrap have been processed.

3.4 Hong Kong Hung Wai Wooden Board Co.

- **Tenancy No.:** EP06-034 (Phase 1)
- **Lot Size:** Approx. 5,000m^2
- **Activity:** Recycling of Waste Wood
- **Recycling Process:** Shred waste wood into wooden chips for further processing in Mainland China. Ferrous metals will be separated by magnets.

3.4.1 The plant operation has been suspended and stopped receiving wood since October 2011, with a view to modifying the operation modes.

3.5 Li Tong Group

- **Tenancy No. :** EP07-02 (Phase 1)
- **Lot Size:** Approx. 6,500m^2
- **Activity:** Recycling of WEEE
- **Recycling Process:** Manually dismantling of WEEE, particularly CRT glass and LCD panels into metals (ferrous materials, aluminium, etc.) and non-metals (fibres, plastics, etc.).

3.5.1 As end of December 2012, this reporting quarter, large amounts of WEEE have been processed.

3.6 Hong Kong Telford Envirotech Group Ltd.

- **Tenancy No. :** EP08-01 (Phase 1)
- **Lot Size:** Approx. 5,000m^2
- **Activity:** Recycling of Waste Plastics
- **Recycling Process:** Sorting, shredding and extrusion of waste plastics

3.6.1 As of end-December 2012, plastic stockpiled in the lot, the recycling equipment has been installed and operated.

3.7 Cosmos Star Holdings Co. Ltd.

- **Tenancy No.** EP08-04 (Phase 1)
- **Lot Size:** Approx. 4,000 m^2
- **Activity:** Recycling of materials arising from industrial and commercial activities
- **Recycling Process:** Separate waste lead-acid and lithium batteries by mechanical / physical means. The battery acid will be drained and treated by the on-site wastewater treatment system.

3.7.1 As of end-December 2012, installation of machinery was completed and building works were still in progress.

3.8 YOT EcoPark Plastic Resources Recycling Centre

- **Tenancy No. :** EP10-01 (Phase 2)
- **Lot Size:** Approx. 5,000 m^2
- **Activity:** Recycling of waste plastics
- **Recycling Process:** Convert mixed waste plastics into pellets / flakes / baled materials by pre-washing, sorting, flaking, secondary washing, drying, extrusion and chip-forming.

3.8.1 In 2012, large amount of waste plastics have been sorted.

3.9 St. James' Settlement "WEEE GO GREEN" EcoPark

- **Tenancy No.:** EP10-02 (Phase 2)
- **Lot Size:** Approx. 5,000 m^2
- **Activity:** Recycling of WEEE
- **Recycling Process:** WEEE will be sorted on site first. The WEEEs suitable for reuse will be repaired and refurbished, whilst those irreparable / not suitable for repair will be manually dismantled to recover the reusable parts and recyclable materials.

3.9.1 As end of December 2012, large amounts of WEEE have been processed.

3.10 Throughput Statistics

3.10.1 Six Phase 2 lots were awarded to new tenants in August 2011 and August 2012, but none of the new tenants are yet on-site and so there are no throughput statistics to discuss in this section.

3.10.2 For the active recyclers, most of the waste materials and products were delivered by land transportation and the wood chips generated by Hung Wai were delivered by marine transportation but their operation has been suspended since Oct 2011.

3.10.3 The throughputs in 2012 are summarised in ***Table 3-1***, below. Please note that product output plus waste disposal does not necessarily equal the waste input, due to material losses during processing and material retained within the lot.

Table 3-1 Throughput Statistics for 2012

Tenant	Waste Materials	Waste Input (tonnes)	Product Output (tonnes)	Product Output (pieces)	Waste Disposal (tonnes)
Champway	Waste Oil	9,693	2082	-	3,881
Hung Wai [Note 1]	Waste Wood	-	-	-	-
Li Tong	WEEE	859	573	-	7
Shiu Wing	Waste Metals	32,737	32737	-	-
Telford	Waste Plastic	2,353	1,514	-	-
Yan Oi Tong	Waste Plastic	1,855	1,348	-	153
St James' Settlement	WEEE	305	205	7,851	25

Note: 1. The plant operation has been suspended and stopped receiving wood since October 2011, with a view to modifying the operation modes.

3.10.4 Detailed throughput figures are provided in ***Appendix 3***.

Figure 3-1 Current Lot Usage Within EcoPark

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL PROTECTION MEASURES

4.1.1 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***.

4.1.2 As of end-December 2012, six tenants (Champway, Shiu Wing, Li Tong, Yan Oi Tong, Telford and St. James' Settlement) have commenced recycling activities within their lots, while Hung Wai has suspended operations since October 2011. Appropriate environmental protection measures are in place.

5 MONITORING RESULTS

5.1 Monitoring Date, Time, Frequency and Duration

5.1.1 LFG measurement was conducted on quarterly basis at five monitoring locations: three monitoring locations in Phase 1 and two monitoring locations in Phase 2[Ref.#1]. Measurements were undertaken during the joint IEC site inspections on 16 January, 19 April, 20 June, 26 September and 19 December 2012. Monitoring details are shown in ***Table 5-1***.

Table 5-1 Sampling Schedule of LFG Monitoring

Station ID	Sampling Date	Time	Duration	Ambient Air Temp.	Weather
EP1-1	16 January 2012	10:26 – 10:29	3 minutes	14°C	Cloudy
EP1-2		10:06 – 10:09			
EP1-3		10:00 – 10:03			
EP2-1		10:10 – 10:13			
EP2-2		10:14 – 10:17			
EP1-1	19 April 2012	10:35– 10:38	3 minutes	20°C	Cloudy
EP1-2		10:17– 10:20			
EP1-3		10:10– 10:13			
EP2-1		10:22– 10:25			
EP2-2		10:26– 10:29			
EP1-1	20 June 2012	10:08 – 10:11	3 minutes	30°C	Sunny
EP1-2		10:36 – 10:39			
EP1-3		10:25 – 10:28			
EP2-1		10:44 – 10:47			
EP2-2		10:50 – 10:53			
EP1-1	26 September 2012	10:50 – 10:53	3 minutes	27°C	Sunny
EP1-2		10:40 – 10:43			
EP1-3		10:25 – 10:28			
EP2-1		10:14 – 10:17			
EP2-2		10:28 – 10:31			
EP1-1	19 December 2012	10:15 – 10:18	3 minutes	14°C	Cloudy
EP1-2		10:23 – 10:26			
EP1-3		10:29 – 10:32			
EP1-1		10:42 – 10:45			
EP1-2		10:38 – 10:41			

1. Two monitoring locations in Phase 2 were proposed by ET and agreed by IEC and SGJV via email in January 2011.

5.2 Monitoring Methodology, Parameters and Equipment

5.2.1 The LFG monitoring requirement and methodology are stipulated in Section 6 of the EM&A Manual. The LFG monitoring parameters and their measurement ranges are detailed in ***Table 5-2***.

Table 5-2 Parameters and Measurement Ranges of LFG Monitoring

Parameters	Measurement Ranges
Methane (CH4)	0-100% LEL & 0-100% v/v
Oxygen (O_2)	0-25% v/v
Carbon Dioxide (CO_2)	0-100% v/v
Barometric Pressure	mBar (absolute)

5.2.2 LFG monitoring shall be carried out using intrinsically-safe, portable multi-gas monitoring instruments. The gas monitoring equipment shall:

1. Where possible, comply with BS 6020 and be approved by BASEEFA as intrinsically safe, suitable for use in a Zone 2 are to BS 5345.
2. Be capable of continuous monitoring of methane, oxygen and carbon dioxide.
3. Be capable of continuous barometric pressure and gas pressure measurements.
4. Normally operate in diffusion mode unless required for spot sampling, when it should be capable of operating by means of an aspirator or pump.
5. Have low battery, fault and over range indication incorporated.
6. Store monitoring data, and shall be capable of being down-loaded directly to a PC.
7. Measure in the following ranges:
   - Methane 0-100% LEL & 0-100% v/v
   - Oxygen 0-25% v/v
   - Carbon dioxide 0-100% v/v
   - Barometric pressure mBar (absolute)

5.2.3 The monitoring equipment shall alarm (both audibly and visually) in the event that the concentrations of the following are exceeded:

1. Methane – rise to 10% LEL.
2. Oxygen – fall to 18% by volume.
3. Carbon monoxide – maximum short term (1-hour) exposure of 300ppm with long term average (8-hours) not to exceed 50ppm.

5.3 Types of Equipment Used and Calibration Details

5.3.1 One Infra Red Gas Analyser Model GA94A (serial number GA3385) was used for LFG measurements. The gas analyser is calibrated every 18 months. ***Appendix 4*** presents the calibration records of the monitoring equipment.

5.4 Results and Graphical Plots of Monitoring Parameters

5.4.1 LFG monitoring results are summarised in ***Table 5-3*** and compared with the Action and Limit Levels tabulated in ***Table 2-2***. Graphical plots of the monitoring results are also provided in ***Appendix 5***.

Table 5-3 LFG Monitoring Results

Station ID	Date	Monitoring Results				
		CH4 (% v/v)	CH4 (% LEL)	O_2 (% v/v)	CO_2 (% v/v)	Barometric Pressure (mBar)
EP1-1	16 Jan 2012	0.0	0	21	0.0	1009
EP1-2		0.0	0	21	0.0	1009
EP1-3		0.0	0	21	0.0	1009
EP2-1		0.0	0	21	0.0	1009
EP2-2		0.0	0	21	0.0	1009
EP1-1	19 Apr 2012	0.0	0	21	0.0	996
EP1-2		0.0	0	21	0.0	996
EP1-3		0.0	0	21	0.0	996
EP2-1		0.0	0	21	0.0	996
EP2-2		0.0	0	20	0.0	996
EP1-1	20 Jun 2012	0.3	6	21	0.0	995
EP1-2		0.2	4	20	0.2	995
EP1-3		0.2	4	20	0.0	995
EP2-1		0.3	6	21	0.0	995
EP2-2		0.2	4	20	0.0	994
EP1-1	26 Sep 2012	0.4	8	21	0.0	1007
EP1-2		0.3	6	21	0.0	1007
EP1-3		0.3	6	21	0.0	1007
EP2-1		0.4	8	21	0.0	1006
EP2-2		0.4	8	21	0.0	1006
EP1-1	19 Dec 2012	0.0	0	21	0.0	1020
EP1-2		0.0	0	21	0.0	1020
EP1-3		0.0	0	21	0.0	1020
EP2-1		0.0	0	21	0.0	1020
EP2-2		0.0	0	21	0.0	1020

5.4.2 With reference to the monitoring results, no Action or Limit Level exceedance was recorded.

6 SUMMARY OF TENANT AUDITS

6.1 General

6.1.1 Cosmos and the new Phase 2 tenants were carrying out site preparation work and building work. As such, site audits for the new tenants were not carried out in reporting period.

6.1.2 Tenant audits were conducted monthly based on the approved site inspection checklist. Please refer to the Quarterly EM&A Compliance Reports for the completed audit checklists of EcoPark.

6.2 January 2012

6.2.1 Environmental audits of active tenants were carried out by the ET and the IEC in a joint inspection on 16 January 2012. Audit observations for the audited tenants are summarised in ***Table 6-1***, below.

Table 6-1 Environmental Audit Findings for January 2012

Item	Status
Champway	
Oil leakage from containers was observed.	The damaged containers and leaked oil were cleared by the Tenant during site audit on 22/02/12.
Grease was observed near the new oil water mixture storage tank.	No grease near the oil water mixture storage tank was observed during site audit on 21/03/2012.
Oil was observed near the processed tank.	No grease near the oil water mixture tank was observed during site audit on 21/03/2012.
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
Non chemical wastes were found in chemical waste storage room.	No non-chemical wastes were observed in chemical waste storage room during site audit on 22/02/2012.
Telford	
Oil Stains was observed.	Preventive measures for residual oil runoff were observed in 22/02/2012 site audit.
Yan Oi Tong	
General refuse was observed near surface channel near 3-colour recycle bins.	General refuses had been removed before site audit on 22/02/2012.
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.3 February 2012

6.3.1 Environmental audits of active tenants were carried out by the ET on 22 February 2012. Audit observations for the audited tenants are summarised in ***Table 6-2***, below.

Table 6-2 Environmental Audit Findings for February 2012

Item	Status
Champway	
Oil leakage from containers was observed.	No damaged oil container was observed in 19/04/2012 site audit.
The oil containers at Lot R1 have been removed by the Tenant. However, some soil surfaces of the lot were found to be oil contaminated.	No oil stains were observed in 21/03/2012 site audit.
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
General refuse was observed near surface channels along site boundary. The Tenant should properly collect and dispose of the refuse.	General refuses had been cleared before site audit on 21/03/2012.
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.4 March 2012

6.4.1 Environmental audits of active tenants were carried out by the ET on 21 March 2012. Audit observations for the audited tenants are summarised in ***Table 6-3***, below.

Table 6-3 Environmental Audit Findings for March 2012

Item	Status
Champway	
The oil containers at Lot R1 have been removed by the Tenant. However, some soil surfaces of the lot were found to be oil contaminated.	SGJV sent a reminder to the tenant on 11/05/2012 and 11/07/2012 to implement the recommended environmental measures. Oil contaminated soil surface was not observed during site audit on 25/07/2012.
Shiu Wing	
No critical environmental deficiencies were observed.	

Item	Status
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.5 April 2012

6.5.1 Environmental audits of active tenants were carried out by the ET and the IEC in a joint inspection on 19 April 2012. Audit observations for the audited tenants are summarised in ***Table 6-4***, below.

Table 6-4 Environmental Audit Findings for April 2012

Item	Status
Champway	
An outlet of the odour removal device was found to be collapsed.	The outlet of the odour removal device was fixed in site audit on 23/05/2012.
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
Rubbish was observed inside a catch pit of Lot P6.	No rubbish observed inside catch pit during 23/05/2012 site audit.
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.6 May 2012

6.6.1 Environmental audits of active tenants were carried out by the ET on 23 May 2012. Audit observations for the audited tenants are summarised in ***Table 6-5***, below.

Table 6-5 Environmental Audit Findings for May 2012

Item	Status
Champway	
Grease was observed in the surface channel.	Oil stains and contaminated soil were cleaned up prior to the audit on 25/07/12.
Oily water on the ground surface was observed in the site.	Oily water was not observed in 20/06/2012 site audit.
Some soil was found to be contaminated after the removal of oil containers.	Oil stains and contaminated soil were cleaned up prior to the audit on 19/12/12.
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.7 June 2012

6.7.1 Environmental audits of active tenants were carried out by the ET and the IEC in a joint inspection on 20 June 2012. Audit observations are summarised in ***Table 6-6***, below.

Table 6-6 Environmental Audit Findings for June 2012

Item	Status
Champway	
No critical environmental deficiencies were observed.	
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.8 July 2012

6.8.1 Environmental audits of active tenants were carried out by the ET on 25 July 2012. Audit observations for the audited tenants are summarised in ***Table 6-7***, below.

Table 6-7 Environmental Audit Findings for July 2012

Item	Status
Champway	
No critical environmental deficiencies were observed.	
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.9 August 2012

6.9.1 Environmental audits of active tenants were carried out by the ET on 23 August 2012. Audit observations for the audited tenants are summarised in ***Table 6-8***, below.

Table 6-8 Environmental Audit Findings for August 2012

Item	Status
Champway	
The Tenant was reminded by SGJV and ET to investigate odour sources, as the strength of offensive smell was getting stronger with regard to the feedback of tenants' in the vicinity and implement appropriate measures including activated carbon for abating odour.	
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.10 September 2012

6.10.1 Environmental audits of active tenants were carried out by the ET and the IEC in a joint inspection on 26 September 2012. Audit observations for the audited tenants are summarised in ***Table 6-9***, below.

Table 6-9 Environmental Audit Findings for September 2012

Item	Status
Champway	
The Tenant was reminded by SGJV and ET to investigate the odour sources as the strength of offensive smell was getting stronger with regard to the feedback of tenants' in the vicinity and implement appropriate measures including activated carbon for abating odour.	
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
Stockpile was observed without proper cover.	No stockpile was observed during site audit on 23/11/2012.
Some soil /debris were observed deposited in the drainage channel.	No soil/debris were observed in the drainage channel during audit on 23/11/2012.
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
Stagnant water was observed.	No stagnant water was observed during site audit on 29/10/2012.
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.11 October 2012

6.11.1 Environmental audits of active tenants were carried out by the ET on 29 October 2012. Audit observations for the audited tenants are summarised in ***Table 6-10***, below.

Table 6-10 Environmental Audit Findings for October 2012

Item	Status
Champway	
Oily water was observed inside surface channel and a catchpit.	Oily water was not observed inside surface the surface channel and a catchpit during site audit on 23/11/2012.
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	

Item	Status
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.12 November 2012

6.12.1 Environmental audits of active tenants were carried out by the ET on 23 November 2012. Audit observations for the audited tenants are summarised in ***Table 6-11***, below.

Table 6-11 Environmental Audit Findings for November 2012

Item	Status
Champway	
Transferring waste cooking oil from portable containers to storage tank was identified as one of potential odour sources. The Tenant was reminded to relocate the transferring process to enclosed areas with proper ventilation system and odour pollution devices. The Tenant was also reminded to investigate other suspected odour sources. SGJV sent a letter to the tenant on 6/12/2012 reminding them to implement ET recommendations to rectify odour nuisance to the nearby tenants.	
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

6.13 December 2012

6.13.1 Environmental audits of active tenants were carried out by the ET and the IEC in a joint inspection on 19 December 2012. Audit observations for the audited tenants are summarised in ***Table 6-12***, below.

Table 6-12 Environmental Audit Findings for December 2012

Item	Status
Champway	
Some activated carbon was observed in surface channel near the air scrubber.	The observation would be followed in January 2013.
The Tenant was reminded to relocate the transferring process to enclosed areas with proper ventilation system and odour pollution devices. The Tenant was also reminded to investigate other suspected odour sources.	
Shiu Wing	
No critical environmental deficiencies were observed.	
Hung Wai	
No critical environmental deficiencies were observed.	
Li Tong	
No critical environmental deficiencies were observed.	
Telford	
No critical environmental deficiencies were observed.	
Yan Oi Tong	
No critical environmental deficiencies were observed.	
St. James' Settlement	
No critical environmental deficiencies were observed.	

7 SUMMARY OF GENERAL ECOPARK AUDITS

7.1 January 2012

7.1.1 The general EcoPark audit was carried out by the ET and the IEC in a joint inspection on 16 January 2012.

7.1.2 No critical environmental deficiencies were observed.

7.2 February 2012

7.2.1 The general EcoPark audit was carried out by the ET on 22 February 2012.

7.2.2 No critical environmental deficiencies were observed.

7.3 March 2012

7.3.1 The general EcoPark audit was carried out by the ET on 21 March 2012.

7.3.2 No critical environmental deficiencies were observed.

7.4 April 2012

7.4.1 The general EcoPark audit was carried out by the ET and the IEC in a joint inspection on 19 April 2012.

7.4.2 No critical environmental deficiencies were observed.

7.5 May 2012

7.5.1 The general EcoPark audit was carried out by the ET on 23 May 2012.

7.5.2 No critical environmental deficiencies were observed.

7.6 June 2012

7.6.1 The general EcoPark audit was carried out by the ET and the IEC in a joint inspection on 20 June 2012.

7.6.2 No critical environmental deficiencies were observed.

7.7 July 2012

7.7.1 The general EcoPark audit was carried out by the ET on 25 July 2012.

7.7.2 No critical environmental deficiencies were observed.

7.8 August 2012

7.8.1 The general EcoPark audit was carried out by the ET on 23 August 2012. Audit observations are summarised in ***Table 7-1***, below.

Table 7-1 General EcoPark Audit Findings for August 2012

Item	Status
Site formation work was carried out in K.Wah during site audit. Muddy trails were observed on public road and site entrances.	No muddy trails were observed on public roads and site entrances during site audit on 23/11/2012.

7.9 September 2012

7.9.1 The general EcoPark audit was carried out by the ET and the IEC in a joint inspection on 26 September 2012. Audit observations are summarised in ***Table 7-2***, below.

Table 7-2 General EcoPark Audit Findings for September 2012

Item	Status
Site formation work was carried out at Chung Yue during site audit. Muddy trails were observed on public road and site entrances.	During site audit on 29/10/2012, entrance had been paved and muddy trails were not observed on public roads and site entrance.

7.10 October 2012

7.10.1 The general EcoPark audit was carried out by the ET on 29 October 2012.

7.10.2 No critical environmental deficiencies were observed.

7.11 November 2012

7.11.1 Environmental audits of active tenants and the general EcoPark audit were carried out by the ET on 23 November 2012.

7.11.2 No critical environmental deficiencies were observed.

7.12 December 2012

7.12.1 Environmental audits of active tenants and the general EcoPark audit were carried out by the ET and the IEC in a joint inspection on 19 December 2012. Audit observations are summarised in ***Table 7-3***, below.

Table 7-3 General EcoPark Audit Findings for December 2012

Item	Status
Site formation work was carried out in K.Wah during site audit. Muddy trails were observed on public road and site entrances.	The observation would be followed in January 2013.
Site formation work was carried out at Chung Yue during site audit. Muddy trails were observed on public road and site entrances.	The observation would be followed in January 2013.

8 COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

8.1 General

8.1.1 As of end-December 2012, seven tenants (Champway, Shiu Wing, Hung Wai, Li Tong, Yan Oi Tong and St. James' Settlement) have commenced recycling activities within their lots. No complaints related to recycling activities have been received in this reporting period.

9 ANNUAL REVIEW

9.1 Interpretation of EM&A Data

9.1.1 As mentioned in ***Section 2.1***, the only parameter to be monitored as part of the operation phase EM&A programme is LFG. Quarterly LFG monitoring has been carried out by the ET since October 2009 following the completion of Phase 1 construction of EcoPark, as stipulated in Clauses 6.4.3 and 6.4.4 of the Final EM&A Manual. The outcome of quarterly monitoring is considered as sufficient and effective according to Section 8.7.11 of the EIA Report and Section 6.4.4 of the EM&A Manual.

9.2 Environmental Acceptability of EcoPark

9.2.1 As of end-December 2012, seven tenants (Champway, Shiu Wing, Hung Wai, Li Tong, Yan Oi Tong, Telford and St. James' Settlement) have commenced recycling activities within their lots. Referring to ***Section 1.2*** and ***Section 6***, no critical environmental deficiencies were identified at various tenant lots in EcoPark in 2012. The operation of EcoPark in environmental terms is therefore considered to be of an acceptable level.

9.3 Monitoring Methodology

9.3.1 As mentioned in ***Section 9.1***, quarterly LFG monitoring has been carried out by the ET since October 2009. No Action/Limit Level exceedances were recorded in 2012. The quarterly monitoring of LFG adopted is therefore considered as sufficient and effective according to Section 8.7.11 of the EIA Report and Section 6.4.4 of the EM&A Manual.

9.3.2 There has never been any LFG detected within EcoPark, either during the construction phase, which commenced in 2006, or during the operation to-date. The ET Leader therefore recommends that LFG monitoring is discontinued with immediate effect. However, should EPD alert the Operator that high LFG levels have been detected during monthly monitoring under the Siu Lang Shui Landfill restoration contract, then LFG monitoring shall immediately recommence on a monthly basis until such time as EPD inform the Operator that quarterly monitoring can be resumed.

9.4 Practicality and Effectiveness of EIA Process and EM&A Programme

9.4.1 As of end-December 2012, seven tenants (Champway, Shiu Wing, Hung Wai, Li Tong, Yan Oi Tong and St. James' Settlement) had commenced recycling activities in their lots.

9.4.2 The EM&A programme has been fully utilised throughout 2012, which was practical and effective to monitor the operation status of tenants. The mitigation measures proposed in the EIA Study are effective and efficient.

9.4.3 The use of the Process Review mechanism to assess incoming processes, processes not assessed in the EIA, or greater throughputs than were assumed in the EIA, is considered to work well and is fully in accordance with the recommendations of the EIA, the requirements of the EM&A programme and with EP conditions.

9.4.4 Other than discontinuing LFG monitoring, no improvements to the EM&A programme are recommended.

10 CONCLUSIONS

10.1.1 This is the sixth annual EM&A report prepared for the operation phase of EcoPark and covers January to December 2012. The tenants' recycling activities are audited on a monthly basis and an annual summary is provided in this report. In the reporting period, there were eight tenants in EcoPark Phase 1 and Phase 2.

10.1.2 As of end-December 2012, there were fourteen tenants in EcoPark Phase 1 and Phase 2. Seven tenants (Champway, Shiu Wing, Hung Wai, Li Tong, Yan Oi Tong, Telford and St. James' Settlement) have commenced carried out full recycling activities within their lots. Seven new tenants (Cosmos, K. Wah, E. Tech, On Fat Lung, Chung Yue, SSK and South China) were carrying out their plant design, the planning of construction works and installation of machinery.

10.1.3 Throughout the year, 12 monthly site inspections were conducted by the ET whilst five quarterly joint site inspections were carried out by the Operator, the IEC and the ET. Observations and recommendations were made during site inspections.

10.1.4 No critical environmental deficiencies were identified at various tenant lots in EcoPark in 2012. The operation of EcoPark in environmental terms is therefore considered to be of an acceptable level.

10.1.5 The throughputs during 2012 are summarized in ***Table 10-1***, below. Please note that product output plus waste disposal does not necessarily equal the waste input, due to material losses during processing and material retained within the lot.

Table 10-1 Throughput Statistics for 2012

Tenant	Waste Materials	Waste Input (tonnes)	Product Output (tonnes)	Product Output (pieces)	Waste Disposal (tonnes)
Champway	Waste Oil	9,693	2082	-	3,881
Hung Wai [Note 1]	Waste Wood	-	-	-	-
Li Tong	WEEE	859	573	-	7
Shiu Wing	Waste Metals	32,737	32737	-	-
Telford	Waste Plastic	2,353	1,514	-	-
Yan Oi Tong	Waste Plastic	1,855	1,348	-	153
St James' Settlement	WEEE	305	205	7,851	25

Note: 1. The plant operation has been suspended and stopped receiving wood since October 2011, with a view to modifying the operation modes

10.1.6 LFG monitoring was undertaken on 16 January, 19 April, 20 June, 26 September and 19 December 2012. No Action/Limit Level exceedances were recorded. The outcome of quarterly monitoring is considered as sufficient and effective according to Section 8.7.11 of the EIA Report and Section 6.4.4 of the EM&A Manual.

10.1.7 Having said that, there has never been any LFG detected within EcoPark, either during the construction stage, which commenced in 2006, or during the operation to-date. The ET Leader therefore recommends that LFG monitoring is discontinued with immediate effect.

10.1.8 Environmental deficiencies and general observations noted during the monthly site inspections were detailed in ***Section 6***. Remedial actions were recommended to tenants where appropriate.

10.1.9 The EM&A programme has been fully utilised throughout 2012, which was practical and effective to monitor the operation status of tenants. The mitigation measures proposed in the EIA Study are effective and efficient.

10.1.10 The use of the Process Review mechanism to assess incoming processes, processes not assessed in the EIA, or greater throughputs than were assumed in the EIA, is considered to work well and is fully in accordance with the recommendations of the EIA, the requirements of the EM&A programme and with EP conditions.

10.1.11 Other than discontinuing LFG monitoring, no improvements to the EM&A programme are recommended.

APPENDIX 1

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
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
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 & 6 of IMO Code of Practice for the Safe Loading/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 landfills & 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 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
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	During operation, the greatest risk of land contamination will come from storage of chemical wastes, therefore the measures should be followed :	Within EcoPark throughout the life of the facility.	Operator	
		• 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.			
		• 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.			
		• 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.			Waste Disposal (Chemical Waste) (General) Regulation
		• 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.			Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes & Chemical Waste (General) Regulation
	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
Landfill Gas					
8.7.10 & 8.7.11	6.1.2	• Alert workers and visitors of possible LFG hazards • Prohibit smoking and open fires on site • Conduct regular (quarterly) LFG monitoring at mobile offices, equipment stores, etc.	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
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	

APPENDIX 2

Environmental Requirements in Tenancy Agreement

APPENDIX 2-1

Environmental Requirements in Tenancy Agreements

Phase 1

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 (EP-226/2005/A) (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 (EP-226/2005/A) 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 ongoing 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 (EP-226/2005/A) 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 (EP-226/2005/A) 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 (EP-226/2005/A) (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 (EP-226/2005/A) (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 (EP-226/2005/A) (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 (EP-226/2005/A) (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 herein below).

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 herein below) 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 (EP-226/2005/A) 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 (EP-226/2005/A) 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 (EP-226/2005/A) (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 (EP-226/2005/A) (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 (EP-226/2005/A) 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 (EP-226/2005/A) 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).

APPENDIX 2-2

Environmental Requirements in Tenancy Agreements

Phase 2

Compliance of Environmental Legislation

5. The Tenant shall comply with and observe all Ordinances, by-laws, regulations and rules for the time being in force in Hong Kong governing the control of any form of pollution, including air, noise, water and waste pollution, and for the protection of the environment.

Air Pollution

6. Save with an appropriate exemption under the Air Pollution Control Ordinance (Cap. 311) 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), which exists or which is imminent, without the prior written approval of the Director.

Water Pollution

7.(a) 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) any regulations made thereunder and any amending legislation, the Tenant shall apply to the Director for a licence and comply with the terms and conditions stipulated in the 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, the Tenant shall at its own cost(s) separate, collect, and discharge all process or industrial wastewater which comply with 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.

(b) 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 standard required for discharge into a sewer leading to the sewage treatment works at Pillar Point or other treatment works specified in the licence. 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.

(c) 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) good practices and relevant provisions of the EIA Report and Final EM&A Manual.

Waste Management

8.(a) The Tenant shall at its own cost(s) comply with relevant provisions of the Waste Disposal Ordinance (Cap. 354).

(b) 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 materials arising from recycling activities, chemical materials arising from maintenance of plant and equipment, sewage sludge (from wastewater treatment facilities, if any) 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 Landlord and/or the Director.

Noise Pollution

9.(a) The Tenant shall take all necessary measures as may be required by and to the satisfaction of the Landlord and/or 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) any regulations made thereunder and any amending legislation.

(b) The decision of the Landlord or 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.

Landfill Gas Hazard

10. 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/A 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).

EcoPark Being Within the 250m Consultation Zone of Siu Lang Shui Landfill

11.(a) The Tenant acknowledges that the EcoPark is within the 250m Consultation Zone of the Siu Lang Shui Landfill and that the Premises may be affected by problems associated with migrating landfill gas and undertakes to provide suitable precautionary or protection measures at his own expense to control these potential hazards.

(b) The Tenant shall ensure all personnel entering the Premises and all visitors to the Premises are aware of the potential hazards of the landfill gas by posting suitable warning notices of the potential hazards at his own expense.

(c) All buildings and enclosed structures, including temporary offices, temporary stores and the administration building, within the 250m Consultation Zone of the Siu Lang Shui Landfill shall be provided with the following measure(s):

(i) buildings shall be raised clear of the ground with a clear separation distance (as measured from the highest point on the ground surface to the underside of the lowest floor joist) of at least 500mm; or

(ii) a low-gas permeability membrane shall be applied to the surface of any wall or floor slab that rests on or is below ground. A gravel-fill vent system shall be provided such that passive venting is achieved around the perimeter of the structure. In addition, other building materials, such as dense well-compacted concrete or steel shuttering which provide a measure of resistance to gas permeation, shall be used to achieve gas protection.

(d) The Tenant shall ensure that the electrical equipment used on the Premises shall be intrinsically safe. Welding, flame-cutting or other hot works shall be confined to the open areas of the Premises and shall be at least 15m away from any ground-level confined space.

(e) No drilling, trenching and excavation shall be allowed on the Premises. During any construction work, the Tenant shall observe the guidelines recommended in Chapter 8 of the "Landfill Gas Hazard Assessment Guidance Note" published by the Department of Environmental Protection. In particular, no smoking, naked flames and all other sources of ignition shall be allowed within 15m of any ground-level confined space.

Hazard to Life Impact

12. 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/A (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/A (including any updated Permit, amended permit and further permit).

Landscape and Visual Impacts

13. 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/A 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).

ENVIRONMENTAL RESPONSIBILITIES

14.(a) 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 including air, noise, water and waste pollution, and for the protection of the environment). The Tenant 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.

(b) 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 Landlord and/or the Director relating to any of the matters mentioned in Clause 14(a) hereinabove.

ENVIRONMENTAL IMPACT ASSESSMENT

15. (a) 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:-

(i) All information, conditions, mitigation measures, prohibitions, restrictions, recommendations and requirements under the Environmental Impact Assessment Report for Development of an EcoPark in Tuen Mun Area 38 ("the Project") with Appendices, i.e. the EIA Report and EM&A Manual (EIAO Register No.: AEIAR-086/2005), the Environmental Permit

(ii) No. EP-266/2005/A (and future variations), and other relevant documents in the EIAO Register (or in any other places, any internet websites or by any other means as specified by the Director).

(ii) All information, conditions, submissions, mitigation measures, orders, notices and requirements under ongoing surveillance and monitoring activities during all stages of the Project and during the lease hereunder (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).

(iii) For the purposes of this Clause 15(a), "EIAO Register" shall mean the register kept by the Director pursuant to Section 15 of the Environmental Impact Assessment Ordinance (Cap.499).

(b) Further to Clauses 2(k) and 10 above, 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/A (and future variations).

(c) 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/A (and future variations), 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/A (and future variations), 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/A (and future variations) are complied with and shall immediately cease to continue the offending part of the operations or activity in question.

APPENDIX 3

Material and Waste Throughputs

A3.1 CHAMPWAY TECHNOLOGY LIMITED (EP07-03)

Date	Waste Input (tonnes)	Product Output (tonnes)	Waste Disposal[Note 2] (tonnes)
Oct-Dec 08[Note 1]	130	-	-
Jan-Dec 09	2,003	1,863	140
Jan-Dec 10	2,494	4,254	337
Jan-Dec 11	9,492	2,453	5,564
Jan-12	586	62	293
Feb-12	697	113	380
Mar-12	745	193	359
Apr-12	938	255	512
May-12	994	320	646
Jun-12	930	284	635
Jul-12	818	206	489
Aug-12	713	297	410
Sep-12	826	59	51
Oct-12[Note 3]	882	0	26
Nov-12[Note 3]	1,024	0	42
Dec-12[Note 3]	539	0	38

Notes:

1. The plant operation commenced in October 2008.
2. Water waste includes slurry and semi-solid waste and is disposed of at landfill.
3. Updated throughout data as advised by Tenant after the corresponding Quarterly EM&A Report was submitted.

A3.2 SHIU WING STEEL LIMITED (EP08-03)

Date	Waste Input (tonnes)	Product Output (tonnes)	Waste Disposal (tonnes)
Apr-Dec 10 [Note 1]	4,562	4,562	-
Jan-Dec11 [Note 2]	18,069	18,069	-
Jan-12	2,172	2,172	-
Feb-12	5,019	5,019	-
Mar-12	3,783	3,783	-
Apr-12	3,215	3,215	-
May-12	4,566	4,566	-
Jun-12	2,452	2,452	-
Jul-12	2,558	2,558	-
Aug-12	3,911	3,911	-
Sep-12	2,033	2,033	-
Oct-12	836	836	-
Nov-12	1,085	1,085	-
Dec-12	1,107	1,107	-

Notes:

1. Plant operation commenced since April 2010.
2. Updated throughout data as advised by Tenant after the corresponding Quarterly EM&A Report was submitted.

A3.3 HONG KONG HUNG WAI WOODEN BOARD COMPANY (EP06-034)

Date	Waste Input (tonnes)	Product Output (tonnes)	Waste Disposal (tonnes)
Jun-Dec 08[Note 1]	38	-	-
Jan-Dec 09	0.12	-	-
Jan-Dec 10	4,492	1,072	-
Jan-Dec 11[Note 2]	1,610	5,788	-
Jan-12	-	-	-
Feb-12	-	-	-
Mar-12	-	-	-
Apr-12	-	-	-
May-12	-	-	-
Jun-12	-	-	-
Jul-12	-	-	-
Aug-12	-	-	-
Sep-12	-	-	-
Oct-12	-	-	-
Nov-12	-	-	-
Dec-12	-	-	-

Notes:

1. The plant operation commenced since June 2008.
2. The plant operation has been suspended and it has stopped receiving wood since October 2011.

A3.4 LI TONG GROUP (EP07-02)

Date	Waste Input (tonnes)	Product Output (tonnes)	Waste Disposal (tonnes)
Sep-Dec 10[Note 1]	85	44	-
Jan-Dec 11	540,483	1,913	8
Jan-12	30	11	
Feb-12	44	27	-
Mar-12[Note 2]	48	20	-
Apr-12[Note 2]	48	28	-
May-12[Note 2]	77	18	7
Jun-12[Note 2]	102	23	-
Jul-12 [Note 2]	100	27	-
Aug-12	105	31	-
Sep-12	88	159	-
Oct-12[Note 2]	53	53	-
Nov-12[Note 2]	100	19	-
Dec-12	64	68	-

Notes:

1. The plant operation commenced since September 2010.
2. Updated throughout data as advised by Tenant after the corresponding Quarterly EM&A Reports were submitted.

A3.5 HONG KONG TELFORD ENVIROTECH GROUP LIMITED (EP08-01)

Date	Waste Input (tonnes)	Product Output (tonnes)	Waste Disposal (tonnes)
	Waste Plastic	PO, PE, PET, PWC	General Refuse
Jul-Dec 09	20	-	-
Jan-Dec 10	124	-	-
Jan-Dec 11[Note 1,2]	641	229	-
Jan-12	62	-	-
Feb-12	100	-	-
Mar-12	150	154	-
Apr-12	104	63	-
May-12	166	95	-
Jun-12	244	157	-
Jul-12	297	220	-
Aug-12	304	198	-
Sep-12	105	67	-
Oct-12	100	105	-
Nov-12	285	75	-
Dec-12	436	379	-

Notes:

1. Formal recycling activities commenced since November 2011.
2. Updated throughout data as advised by Tenant after the corresponding Quarterly EM&A Reports were submitted

A3.6 YOT ECOPARK PLASTIC RESOURCES RECYCLING CENTRE (EP10-01)

Date	Waste Input (tonnes)	Product Output (tonnes)	Waste Disposal (tonnes)
	Waste Plastic	Processed Plastic	General Refuse
Apr-Dec 10[Note 1]	615	417	111
Jan-Dec 11[Note 2]	1,092	1,012	149
Jan-12 [Note 2]	109	96	3
Feb-12[Note 2]	126	115	9
Mar-12 [Note 2]	142	117	19
Apr-12 [Note 2]	116	106	16
May-12 [Note 2]	149	122	10
Jun-12 [Note 2]	174	124	13
Jul-12 [Note 2]	173	117	8
Aug-12[Note 2]	182	114	20
Sep-12[Note 2]	170	112	13
Oct-12	177	101	15
Nov-12	169	113	16
Dec-12	166	110	11

Notes:

1. The plant operation commenced since April 2010.
2. Updated throughout data as advised by Tenant after the corresponding Quarterly EM&A Reports were submitted.

A3.7 ST. JAMES' SETTLEMENT (EP10-02)

Date	Waste Input (tonnes)	Product Output (pieces)	Product Output (tonnes)	Waste Disposal (tonnes)
Oct-Dec 10 [Note 1]	52	1,021	1	2
Jan-Dec11 [Note 2]	291	5,412	134	19
Jan-12 [Note 2]	18	434	16	28
Feb-12 [Note 2]	22	473	31	29
Mar-12 [Note 2]	30	506	57	32
Apr-12 [Note 2]	19	437	61	34
May-12[Note 2]	25	1,022	89	35
Jun-12[Note 2]	21	805	102	35
Jul-12[Note 2]	31	656	113	37
Aug-12[Note 2]	33	870	130	38
Sep-12[Note 2]	34	622	149	40
Oct-12[Note 2]	28	439	161	41
Nov-12[Note 2]	22	972	184	43
Dec-12[Note 2]	22	615	205	46

Notes:

1. The plant operation commenced since October 2010.
2. The data were updated as advised by the Tenant after the corresponding Quarterly EM&A Report was submitted.

APPENDIX 4

Calibration Certificate of Infrared Gas Analyser

FUGRO TECHNICAL SERVICES LIMITED
MateriaLab Division,
Fugro Development Centre,
5 Lok Yi Street, 17 M.S. Castle Peak Road,
Tai Lam, Tuen Mun, N.T., Hong Kong.

Tel : +852-2450 8233
Fax : +852-2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

REPORT ON CALIBRATION OF INFRA RED GAS ANALYSER

Client : Fugro Technical Services Limited – MateriaLab Division

Sample description : One sample of Infra Red Gas Analyser (GA94A)

Sample identification : E / 084 / 1

Serial number : GA3385

Test required : Calibration

Date of calibration : 23/12/2011

Next calibration date : 23/06/2012

Method used : In-house method (Comparison with Standard Gas)

Results :

Parameters	Standard Gas Concentration, % volume	Infra Red Gas Analyser Reading, % volume	Deviation, % volume
Methane (CH_4)	1.02	0.9	-0.12
Carbon dioxide (CO_2)	15.0	15.0	0.0
Oxygen (O_2)	1.03	0.9	-0.13

Calibrated by : C. F. Leung

Certified by : Raymond K. F. Wong
Approved Signatory : Raymond K. F. Wong
Assistant Manager – Chemical & Environmental

Date : 23/12/2011

** End of Report **

23/12/11

Note : This report refers only to the sample(s) tested.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

REPORT ON CALIBRATION OF INFRA RED GAS ANALYSER

Client : Fugro Technical Services Limited – MateriaLab Division

Sample description : One sample of Infra Red Gas Analyser (GA94A)

Sample identification : E / 084 / 1

Serial number : GA3385

Test required : Calibration

Date of calibration : 22/06/2012

Next calibration date : 22/12/2012

Method used : In-house method (Comparison with Standard Gas)

Results :

Parameters	Standard Gas Concentration, % volume	Infra Red Gas Analyser Reading, % volume	Deviation, % volume
Methane (CH_4)	1.02	0.9	-0.12
Carbon dioxide (CO_2)	15.0	15.0	0.0
Oxygen (O_2)	1.03	1.1	0.07

Calibrated by : C. F. Leung

Certified by :

Approved Signatory : Raymond K. F. Wong
Manager – Chemical & Environmental

Date : 22/06/2012

** End of Report **

Note : This report refers only to the sample(s) tested.

APPENDIX 5

Graphical Plots of LFG Monitoring

EP1-1

Date	Methane (% LEL)			Oxygen (% v/v)			Carbon Dioxide (% v/v)			Barometric Pressure (mBar)
	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement
16 Jan 12	0	10	20	21	19	18	0.0	0.5	1.5	1009
19 Apr 12	0	10	20	21	19	18	0.0	0.5	1.5	996
20 Jun 12	6	10	20	21	19	18	0.0	0.5	1.5	995
26 Sep 12	8	10	20	21	19	18	0.0	0.5	1.5	1007
19 Dec 12	0	10	20	21	19	18	0.0	0.5	1.5	1020

EP1-2

Date	Methane (% LEL)			Oxygen (% v/v)			Carbon Dioxide (% v/v)			Barometric Pressure (mBar)
	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement
16 Jan 12	0	10	20	21	19	18	0.0	0.5	1.5	1009
19 Apr 12	0	10	20	21	19	18	0.0	0.5	1.5	996
20 Jun 12	4	10	20	20	19	18	0.2	0.5	1.5	995
26 Sep 12	6	10	20	21	19	18	0.0	0.5	1.5	1007
19 Dec 12	0	10	20	21	19	18	0.0	0.5	1.5	1020

EP1-3

Date	Methane (% LEL)			Oxygen (% v/v)			Carbon Dioxide (% v/v)			Barometric Pressure (mBar)
	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement
16 Jan 12	0	10	20	21	19	18	0.0	0.5	1.5	1009
19 Apr 12	0	10	20	21	19	18	0.0	0.5	1.5	996
20 Jun 12	4	10	20	20	19	18	0.0	0.5	1.5	995
26 Sep 12	6	10	20	21	19	18	0.0	0.5	1.5	1007
19 Dec 12	0	10	20	21	19	18	0.0	0.5	1.5	1020

EP2-1

Date	Methane (% LEL)			Oxygen (% v/v)			Carbon Dioxide (% v/v)			Barometric Pressure (mBar)
	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement
16 Jan 12	0	10	20	21	19	18	0.0	0.5	1.5	1009
19 Apr 12	0	10	20	21	19	18	0.0	0.5	1.5	996
20 Jun 12	6	10	20	21	19	18	0.0	0.5	1.5	995
26 Sep 12	8	10	20	21	19	18	0.0	0.5	1.5	1006
19 Dec 12	0	10	20	21	19	18	0.0	0.5	1.5	1020

EP2-2

Date	Methane (% LEL)			Oxygen (% v/v)			Carbon Dioxide (% v/v)			Barometric Pressure (mBar)
	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement	Action Level	Limit Level	Measurement
16 Jan 12	0	10	20	21	19	18	0.0	0.5	1.5	1009
19 Apr 12	0	10	20	20	19	18	0.0	0.5	1.5	996
20 Jun 12	4	10	20	20	19	18	0.0	0.5	1.5	994
26 Sep 12	8	10	20	21	19	18	0.0	0.5	1.5	1006
19 Dec 12	0	10	20	21	19	18	0.0	0.5	1.5	1020

Contract No. EP/SP/53/06
Provision of Management Services for EcoPark in Tuen Mun Area 38
EM&A Services

Landfill Gas Monitoring Results - Jan-2012

Monitoring Station ID	Monitoring Locations	Date	Weather Conditions	Temperature (degree)	Start Time	End Time	Measurement Results					Action Level			Limit Level			Remarks
							Methane		Oxygen	Carbon Dioxide	Barometric Pressure	Methane	Oxygen	Carbon Dioxide	Methane	Oxygen	Carbon Dioxide	
							% v/v	% LEL	% v/v	% v/v	mBar (absolute)	% LEL	% v/v	% v/v	% LEL	% v/v	% v/v	
EP1-1	Inside the landscaping area of Administration Building	16 Jan 12	Cloudy	14	10:26	10:29	0.0	0	21	0.0	1009	> 10	< 19	> 0.5	> 20	< 18	> 1.5	Nil
EP1-2	PCCW below-ground chamber outside Lot EP08-01			14	10:06	10:09	0.0	0	21	0.0	1009							Nil
EP1-3	HGC Broadband below-ground chamber outside Lot EP08-03			14	10:00	10:03	0.0	0	21	0.0	1009							Nil
EP2-1	HGC Broadband below-ground chamber outside Lot P1			14	10:10	10:13	0.0	0	21	0.0	1009							Nil
EP2-2	HGC Broadband below-ground chamber outside Lot P3			14	10:14	10:17	0.0	0	21	0.0	1009							Nil

Landfill Gas Monitoring Results - Apr-2012

Monitoring Station ID	Monitoring Locations	Date	Weather Conditions	Temperature (degree)	Start Time	End Time	Measurement Results					Action Level			Limit Level			Remarks
							Methane		Oxygen	Carbon Dioxide	Barometric Pressure	Methane	Oxygen	Carbon Dioxide	Methane	Oxygen	Carbon Dioxide	
							% v/v	% LEL	% v/v	% v/v	mBar (absolute)	% LEL	% v/v	% v/v	% LEL	% v/v	% v/v	
EP1-1	Inside the landscaping area of Administration Building	19 Apr 12	Cloudy	20	10:35	10:38	0.0	0	21	0.0	996	> 10	< 19	> 0.5	> 20	< 18	> 1.5	Nil
EP1-2	PCCW below-ground chamber outside Lot EP08-01			20	10:17	10:20	0.0	0	21	0.0	996							Nil
EP1-3	HGC Broadband below-ground chamber outside Lot EP08-03			20	10:10	10:13	0.0	0	21	0.0	996							Nil
EP2-1	HGC Broadband below-ground chamber outside Lot P1			20	10:22	10:25	0.0	0	21	0.0	996							Nil
EP2-2	HGC Broadband below-ground chamber outside Lot P3			20	10:26	10:29	0.0	0	20	0.0	996							Nil

Landfill Gas Monitoring Results - Jun-2012

Monitoring Station ID	Monitoring Locations	Date	Weather Conditions	Temperature (degree)	Start Time	End Time	Measurement Results					Action Level			Limit Level			Remarks
							Methane		Oxygen	Carbon Dioxide	Barometric Pressure	Methane	Oxygen	Carbon Dioxide	Methane	Oxygen	Carbon Dioxide	
							% v/v	% LEL	% v/v	% v/v	mBar (absolute)	% LEL	% v/v	% v/v	% LEL	% v/v	% v/v	
EP1-1	Inside the landscaping area of Administration Building	20 Jun 12	Sunny	30	10:08	10:11	0.3	6	21	0.0	995	> 10	< 19	> 0.5	> 20	< 18	> 1.5	Nil
EP1-2	PCCW below-ground chamber outside Lot EP08-01			30	10:36	10:39	0.2	4	20	0.2	995							Nil
EP1-3	HGC Broadband below-ground chamber outside Lot EP08-03			30	10:25	10:28	0.2	4	20	0.0	995							Nil
EP2-1	HGC Broadband below-ground chamber outside Lot P1			30	10:44	10:47	0.3	6	21	0.0	995							Nil
EP2-2	HGC Broadband below-ground chamber outside Lot P3			30	10:50	10:53	0.2	4	20	0.0	994							Nil

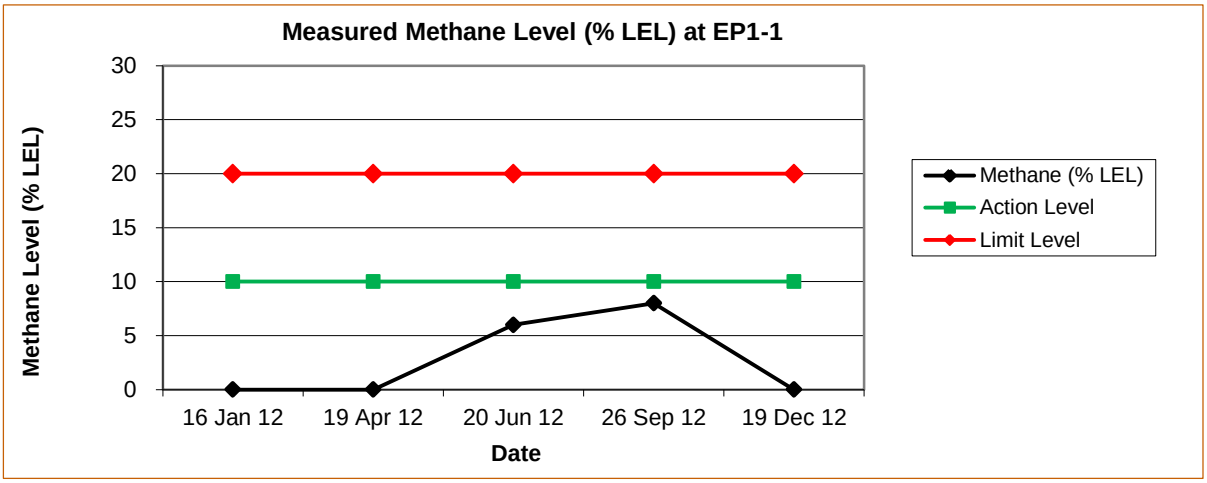
Landfill Gas Monitoring Results - Sep-2012

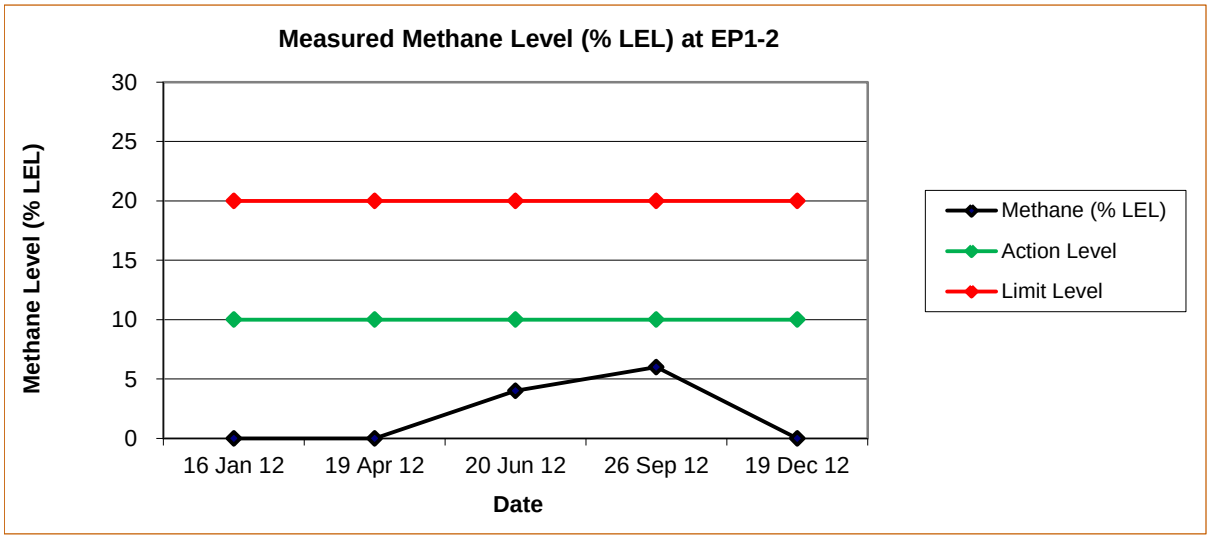
Monitoring Station ID	Monitoring Locations	Date	Weather Conditions	Temperature (degree)	Start Time	End Time	Measurement Results					Action Level			Limit Level			Remarks
							Methane		Oxygen	Carbon Dioxide	Barometric Pressure	Methane	Oxygen	Carbon Dioxide	Methane	Oxygen	Carbon Dioxide	
							% v/v	% LEL	% v/v	% v/v	mBar (absolute)	% LEL	% v/v	% v/v	% LEL	% v/v	% v/v	
EP1-1	Inside the landscaping area of Administration Building	26 Sep 12	Sunny	27	10:50	10:53	0.4	8	21	0.0	1007	> 10	< 19	> 0.5	> 20	< 18	> 1.5	Nil
EP1-2	PCCW below-ground chamber outside Lot EP08-01			27	10:40	10:43	0.3	6	21	0.0	1007							Nil
EP1-3	HGC Broadband below-ground chamber outside Lot EP08-03			27	10:25	10:28	0.3	6	21	0.0	1007							Nil
EP2-1	HGC Broadband below-ground chamber outside Lot P1			27	10:14	10:17	0.4	8	21	0.0	1006							Nil
EP2-2	HGC Broadband below-ground chamber outside Lot P3			27	10:28	10:31	0.4	8	21	0.0	1006							Nil

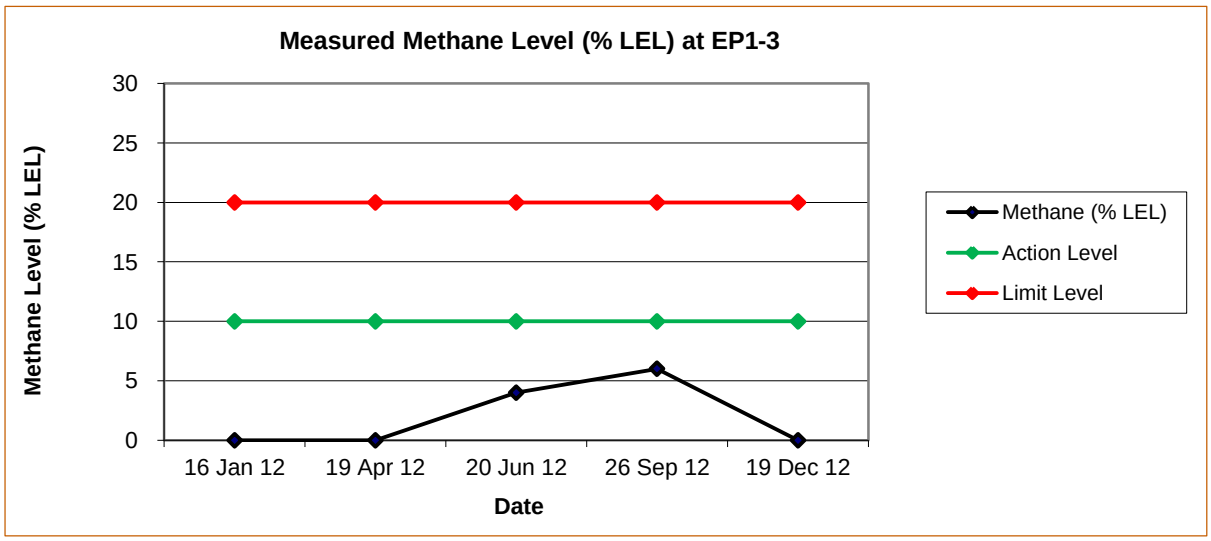
Landfill Gas Monitoring Results - Dec-12

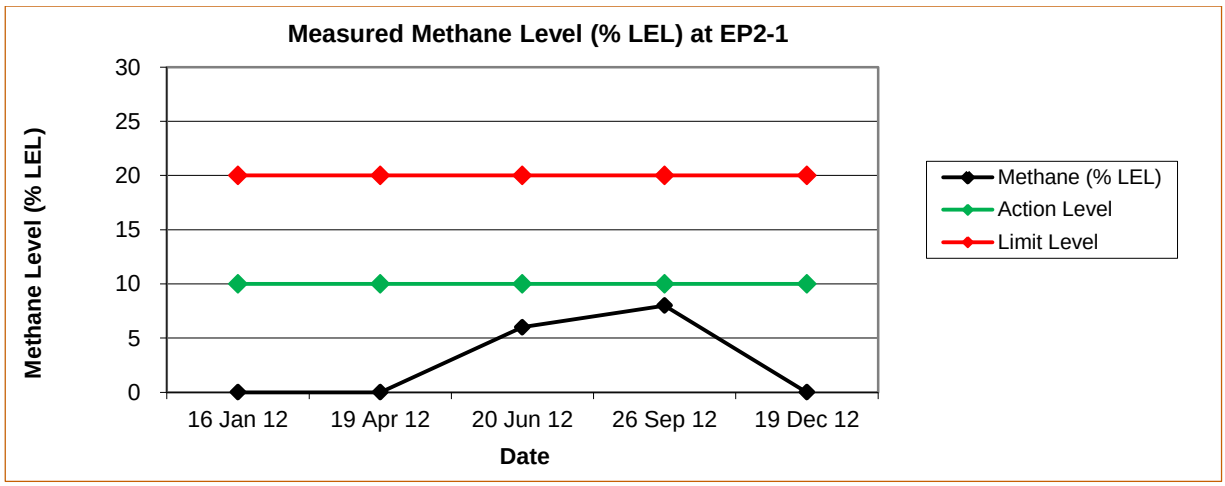
Monitoring Station ID	Monitoring Locations	Date	Weather Conditions	Temperature (degree)	Start Time	End Time	Measurement Results					Action Level			Limit Level			Remarks
							Methane		Oxygen	Carbon Dioxide	Barometric Pressure	Methane	Oxygen	Carbon Dioxide	Methane	Oxygen	Carbon Dioxide	
							% v/v	% LEL	% v/v	% v/v	mBar (absolute)	% LEL	% v/v	% v/v	% LEL	% v/v	% v/v	
EP1-1	Inside the landscaping area of Administration Building	19 Dec 12	Cloudy	14	10:15	10:18	0.0	0	21	0.0	1020	> 10	< 19	> 0.5	> 20	< 18	> 1.5	Nil
EP1-2	PCCW below-ground chamber outside Lot EP08-01			14	10:23	10:26	0.0	0	21	0.0	1020							Nil
EP1-3	HGC Broadband below-ground chamber outside Lot EP08-03			14	10:29	10:32	0.0	0	21	0.0	1020							Nil
EP2-1	HGC Broadband below-ground chamber outside Lot P1			14	10:42	10:45	0.0	0	21	0.0	1020							Nil
EP2-2	HGC Broadband below-ground chamber outside Lot P3			14	10:38	10:41	0.0	0	21	0.0	1020							Nil

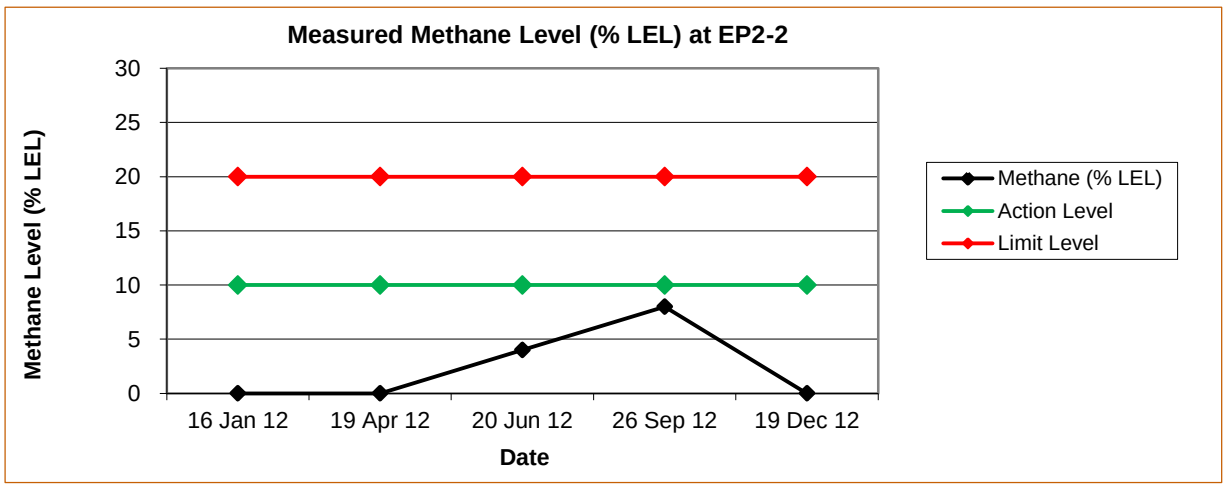
Note:
(1) Underlined figure indicates an exceedance of Action Level
(2) Shaded area indicates an exceedance of Limit Level

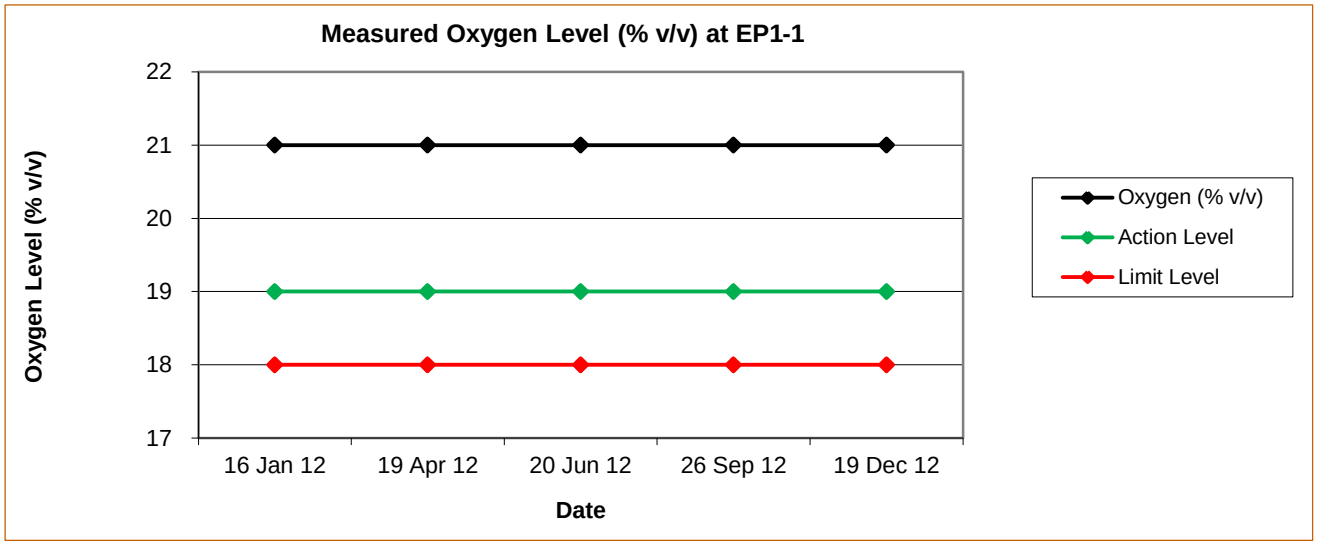

Measured Methane Level (% LEL) at EP1-1
Methane Level (% LEL)
30
25
20
15
10
5
0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Methane (% LEL)
Action Level
Limit Level

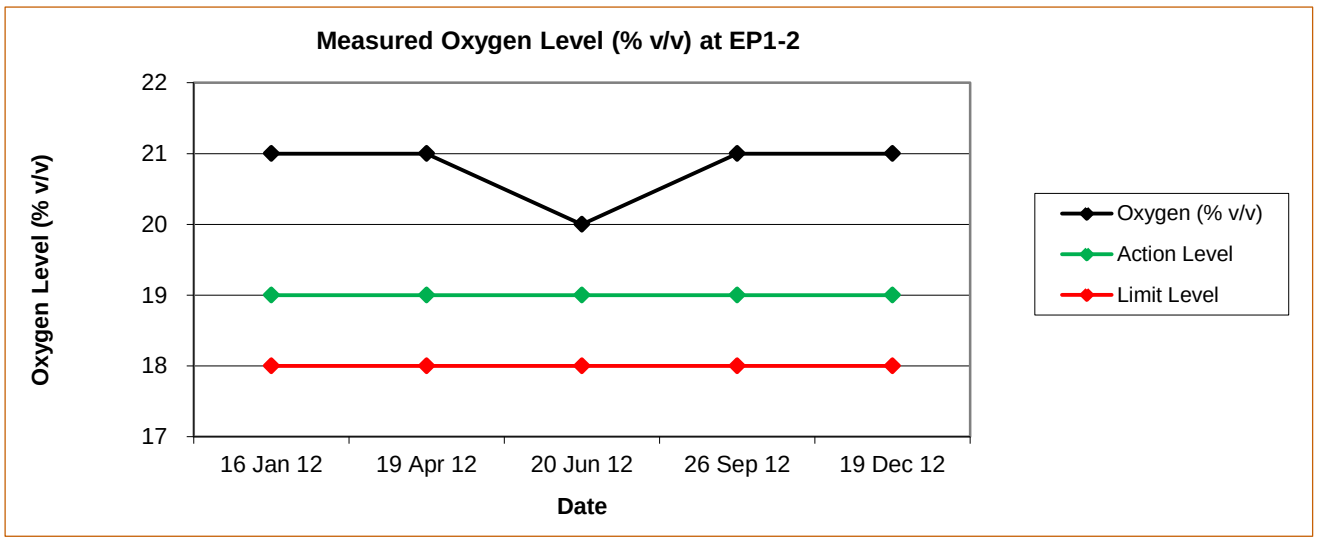

Measured Methane Level (% LEL) at EP1-2
Methane Level (% LEL)
30
25
20
15
10
5
0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Methane (% LEL)
Action Level
Limit Level

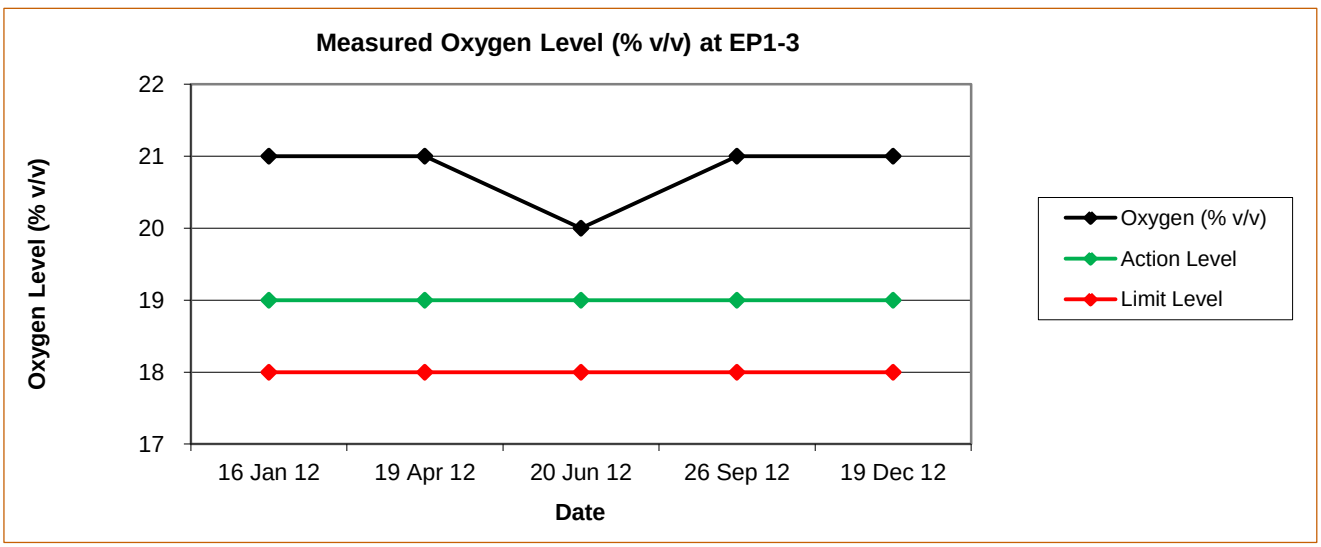

Measured Methane Level (% LEL) at EP1-3
Methane Level (% LEL)
30
25
20
15
10
5
0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Methane (% LEL)
Action Level
Limit Level

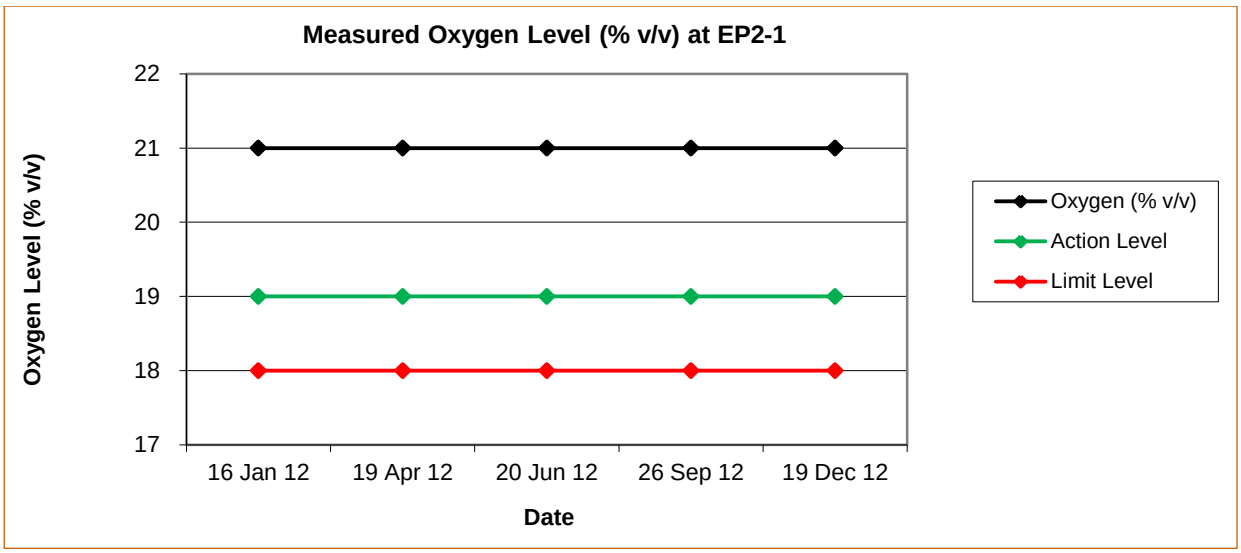

Measured Methane Level (% LEL) at EP2-1
Methane Level (% LEL)
30
25
20
15
10
5
0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Methane (% LEL)
Action Level
Limit Level

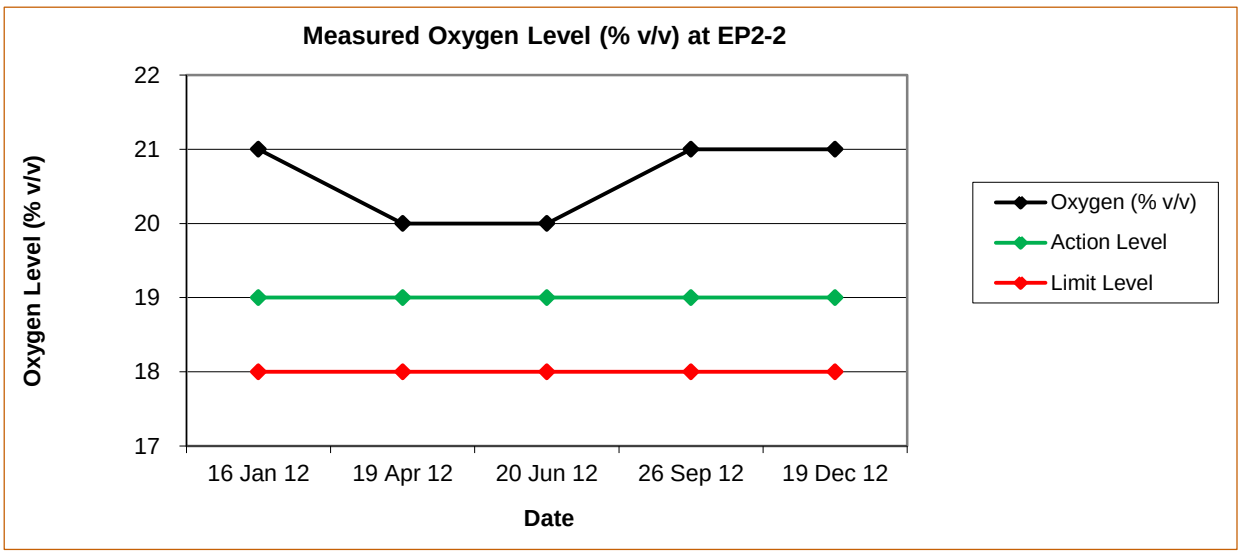

Measured Methane Level (% LEL) at EP2-2
Methane Level (% LEL)
30
25
20
15
10
5
0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Methane (% LEL)
Action Level
Limit Level

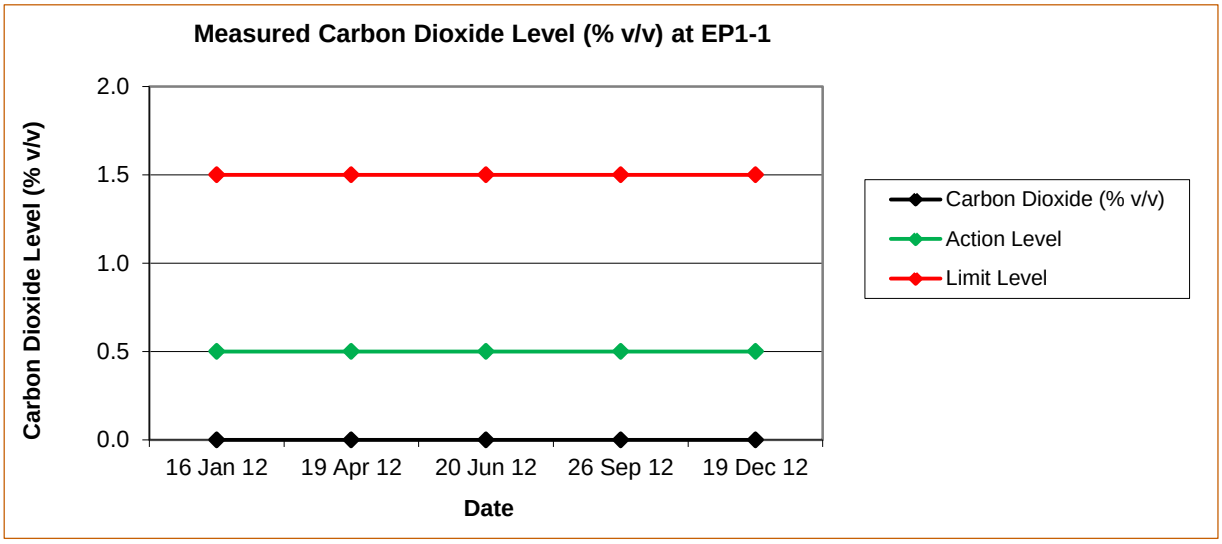

Measured Oxygen Level (% v/v) at EP1-1
Oxygen Level (% v/v)
22
21
20
19
18
17
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Oxygen (% v/v)
Action Level
Limit Level

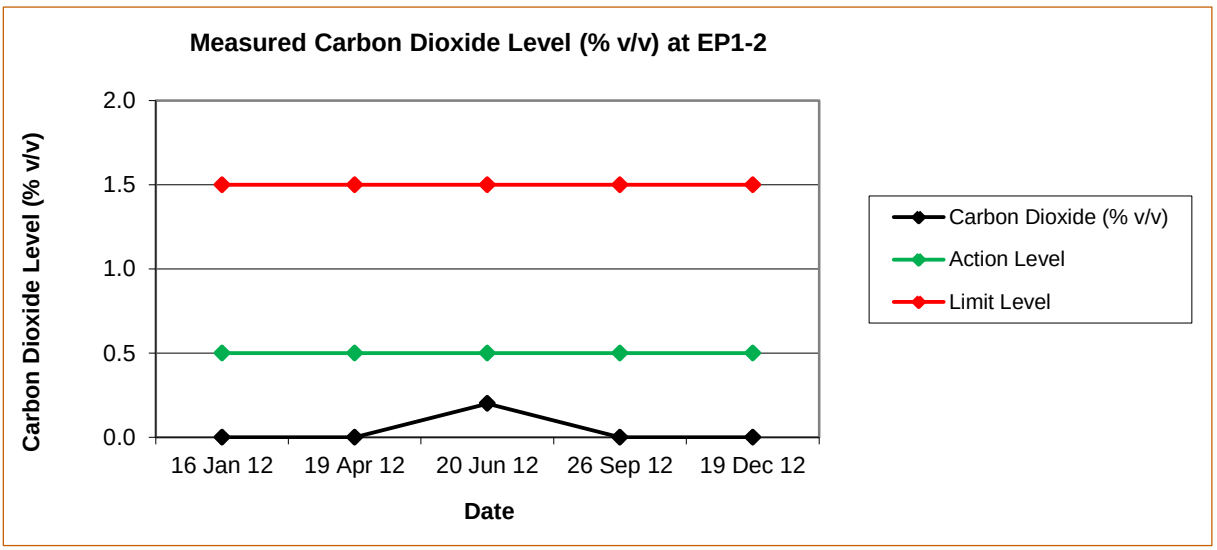

Measured Oxygen Level (% v/v) at EP1-2
Oxygen Level (% v/v)
22
21
20
19
18
17
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Oxygen (% v/v)
Action Level
Limit Level

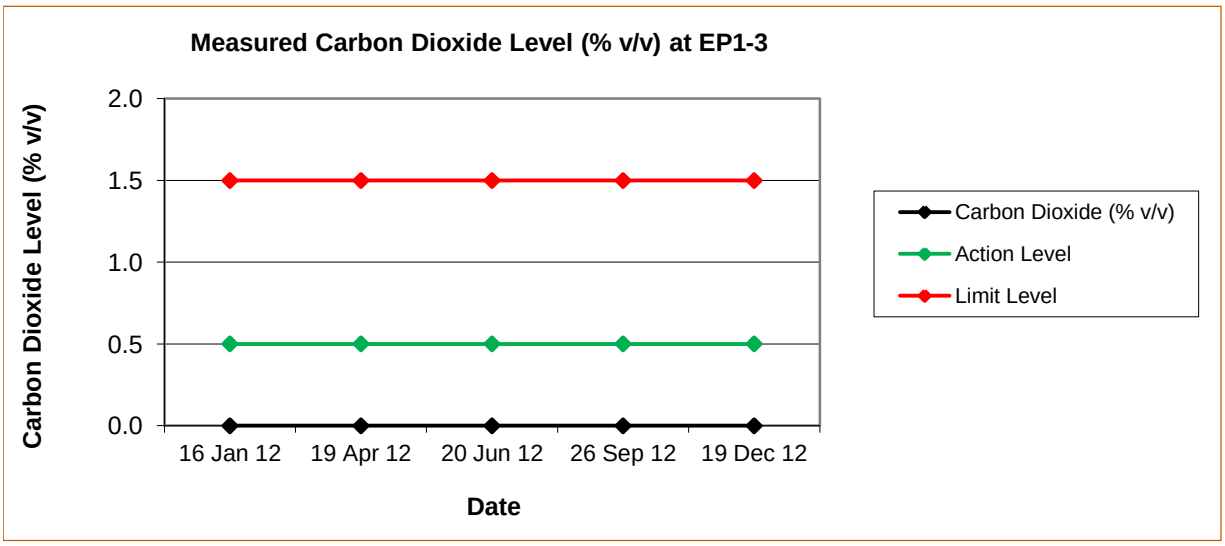

Measured Oxygen Level (% v/v) at EP1-3
Oxygen Level (% v/v)
22
21
20
19
18
17
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Oxygen (% v/v)
Action Level
Limit Level

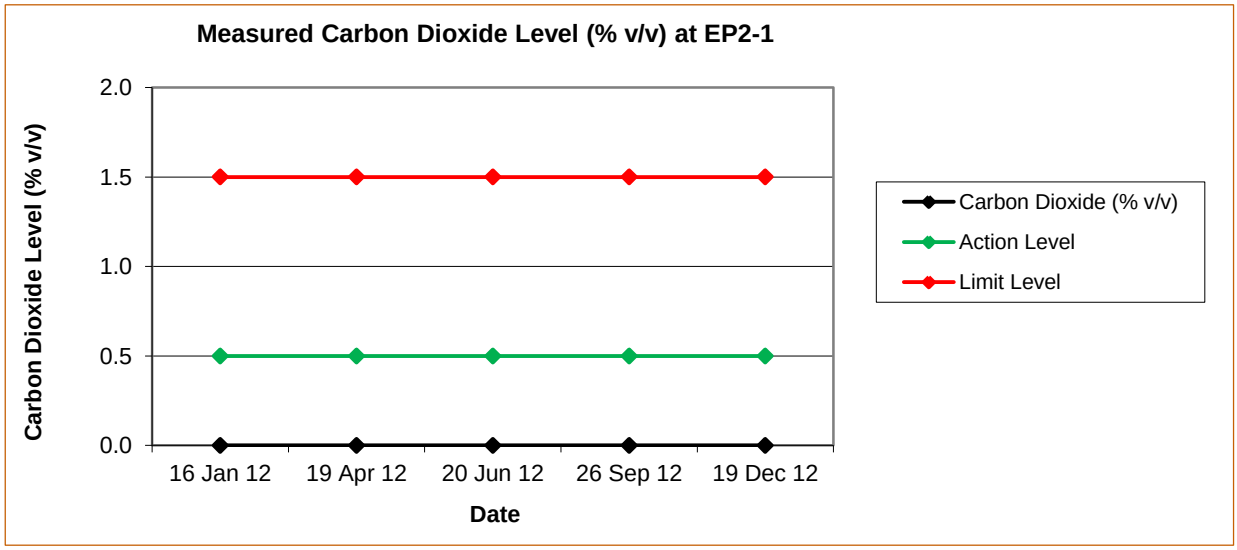

Measured Oxygen Level (% v/v) at EP2-1
Oxygen Level (% v/v)
22
21
20
19
18
17
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Oxygen (% v/v)
Action Level
Limit Level

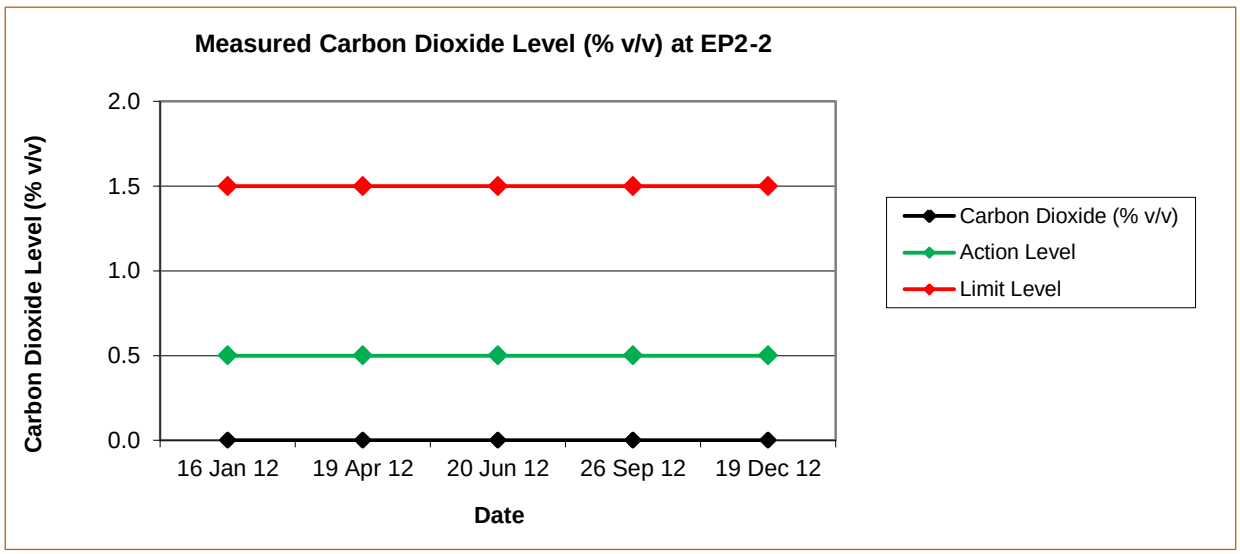

Measured Oxygen Level (% v/v) at EP2-2
Oxygen Level (% v/v)
22
21
20
19
18
17
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Oxygen (% v/v)
Action Level
Limit Level

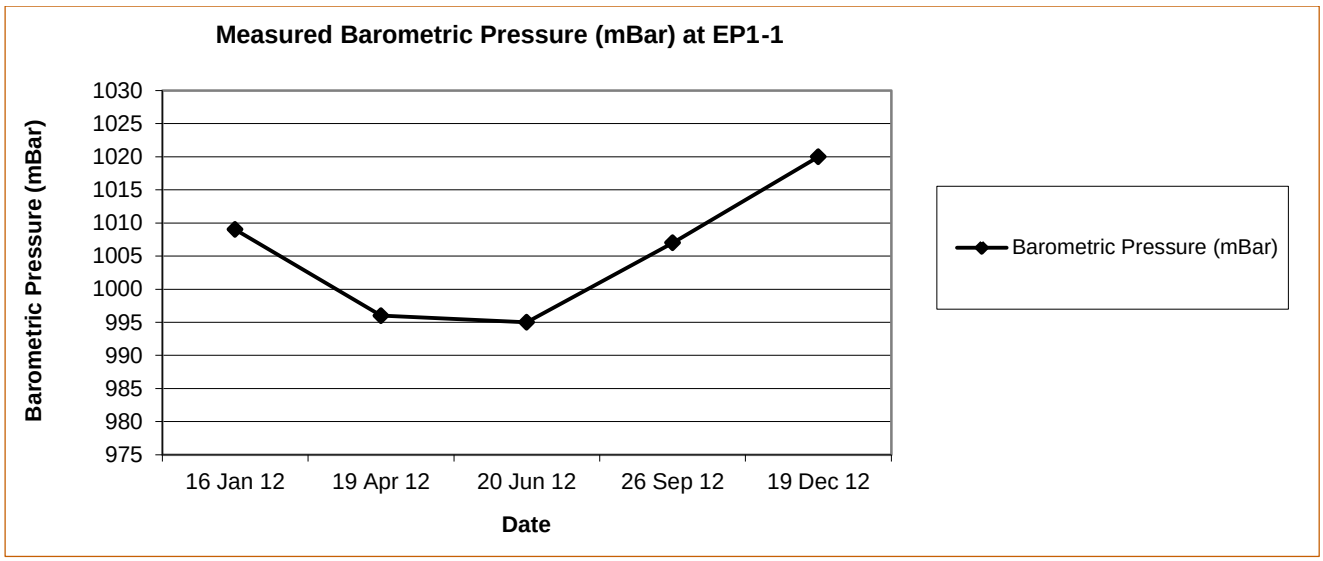

Measured Carbon Dioxide Level (% v/v) at EP1-1
Carbon Dioxide Level (% v/v)
2.0
1.5
1.0
0.5
0.0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Carbon Dioxide (% v/v)
Action Level
Limit Level

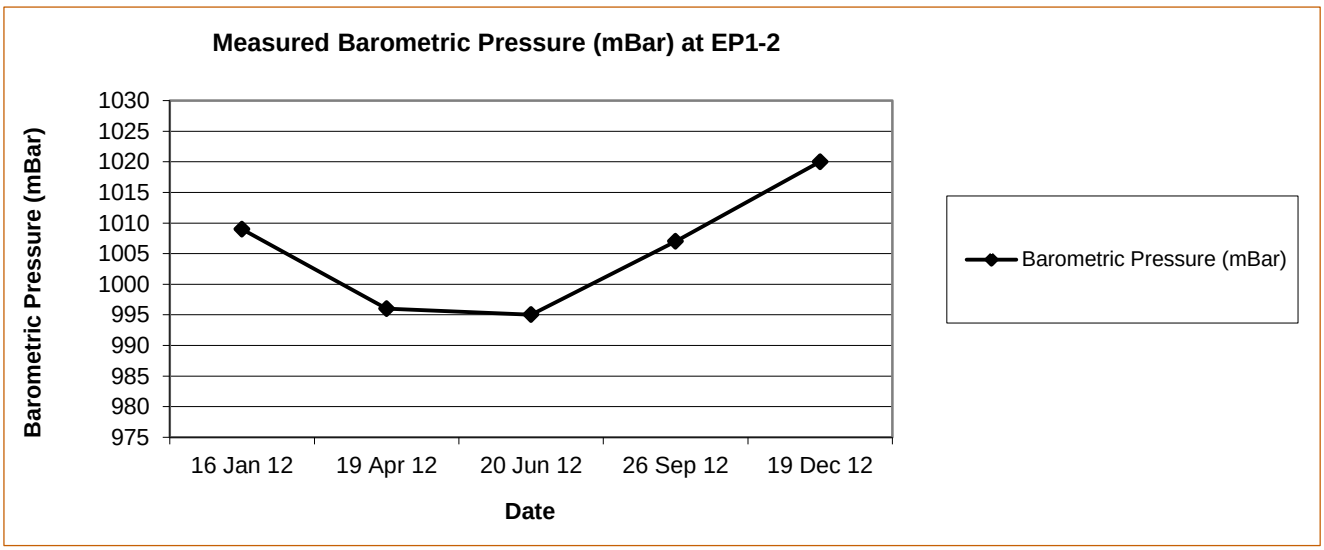

Measured Carbon Dioxide Level (% v/v) at EP1-2
Carbon Dioxide Level (% v/v)
2.0
1.5
1.0
0.5
0.0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Carbon Dioxide (% v/v)
Action Level
Limit Level

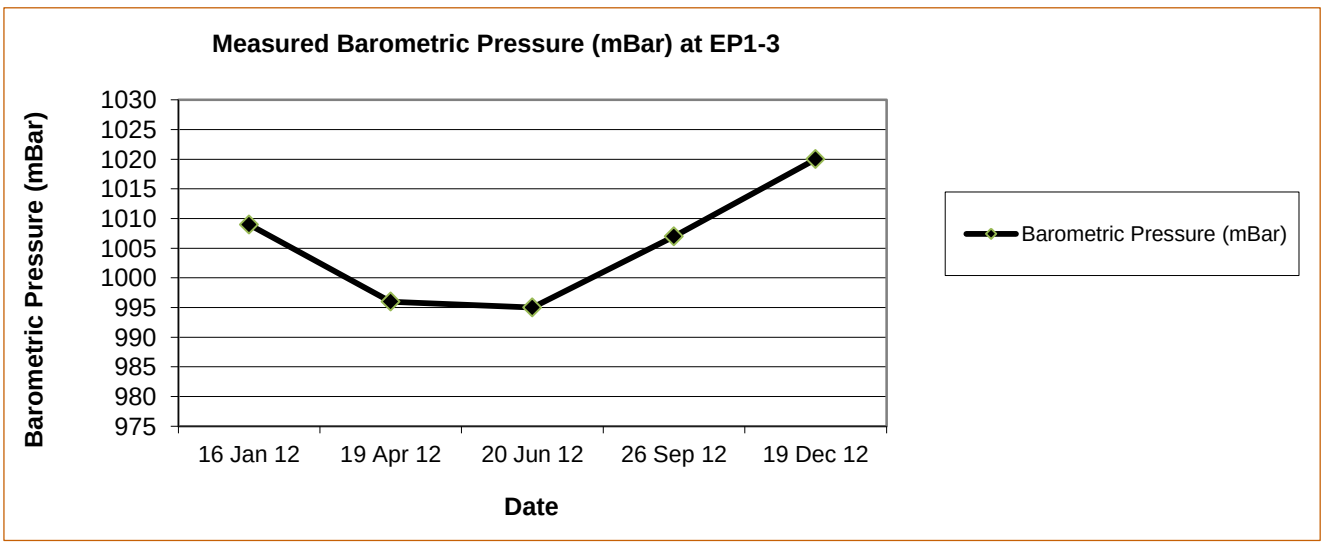

Measured Carbon Dioxide Level (% v/v) at EP1-3
Carbon Dioxide Level (% v/v)
2.0
1.5
1.0
0.5
0.0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Carbon Dioxide (% v/v)
Action Level
Limit Level

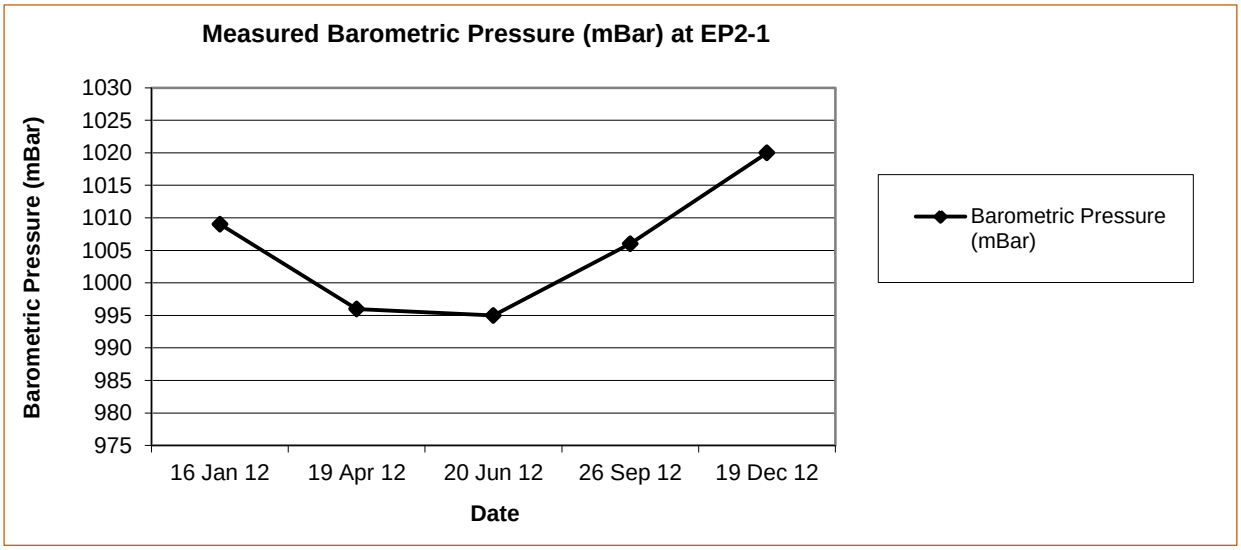

Measured Carbon Dioxide Level (% v/v) at EP2-1
Carbon Dioxide Level (% v/v)
2.0
1.5
1.0
0.5
0.0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Carbon Dioxide (% v/v)
Action Level
Limit Level

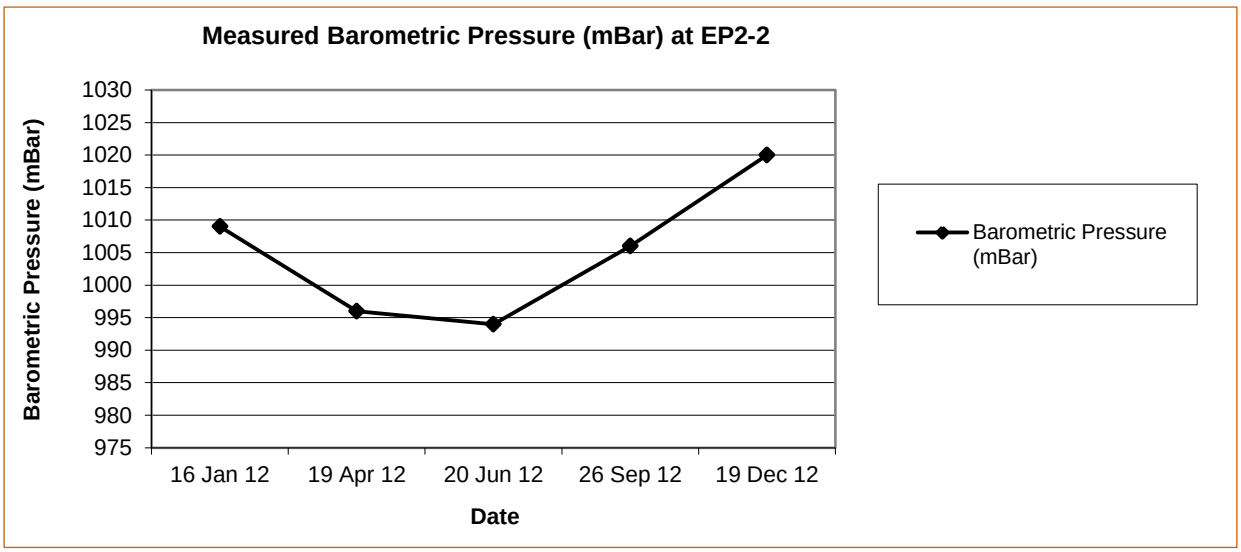

Measured Carbon Dioxide Level (% v/v) at EP2-2
Carbon Dioxide Level (% v/v)
2.0
1.5
1.0
0.5
0.0
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Carbon Dioxide (% v/v)
Action Level
Limit Level


Measured Barometric Pressure (mBar) at EP1-1
Barometric Pressure (mBar)
1030
1025
1020
1015
1010
1005
1000
995
990
985
980
975
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Barometric Pressure (mBar)


Measured Barometric Pressure (mBar) at EP1-2
Barometric Pressure (mBar)
1030
1025
1020
1015
1010
1005
1000
995
990
985
980
975
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Barometric Pressure (mBar)


Measured Barometric Pressure (mBar) at EP1-3
Barometric Pressure (mBar)
1030
1025
1020
1015
1010
1005
1000
995
990
985
980
975
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Barometric Pressure (mBar)


Measured Barometric Pressure (mBar) at EP2-1
Barometric Pressure (mBar)
1030
1025
1020
1015
1010
1005
1000
995
990
985
980
975
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Barometric Pressure (mBar)


Measured Barometric Pressure (mBar) at EP2-2
Barometric Pressure (mBar)
1030
1025
1020
1015
1010
1005
1000
995
990
985
980
975
16 Jan 12
19 Apr 12
20 Jun 12
26 Sep 12
19 Dec 12
Date
Barometric Pressure (mBar)