

Annex I

# Investigation Report for Environmental Complaint

**Investigation Report of Environmental Complaint**

Ref. No.: ORRC-EC-001-20180907

Project	ORRC1
Date	7 September 2018
Time	3:30 p.m.
EPD Reference No	N/A
Description of the Complaint	<p>During the odour patrol conducted by the Employer (EPD Project Team, ER (AECOM) and OSCAR at about 3 pm on 7 September 2018 (Friday), the patrol team received a verbal complaint from a police officer (Mr Cho who works at the Hong Kong Police Siu Ho Wan Vehicle Examination Centre and Weigh Station next to ORRC1, hereafter referred to as the Compound) regarding odour nuisance, flies and mosquitos at the Compound. It is understood that the complainant has also notified the FEHD.</p> <p>ER notified the ET in the in the morning of 8 September 2018 (Saturday).</p>
Site Activity Summary	<p>Based on the site information on 7 September 2018, finishing work, BS installation, electrical installation (cable trays, Local Control panels/switch installation, general cabling works, instrumentation and control installation, lighting , ELV and SCADA installation) and process commissioning (waste reception, pre-treatment, CAPCS extraction, the digesters, the centrifuge, the composting tunnels, the desulphurisation, the emergency flare, the CHPs, the ASP and the biological waste water treatment plant) were conducted at the area next to the Compound.</p>
Actions taken/ to be taken	<p>The following actions have been taken/will be taken:</p> <ol style="list-style-type: none"> <li>1. Further to the scheduled joint odour patrol conducted by OSCAR, ER(AECOM) and Employer (EPD Project Team Team) on 7 September 2018, an extra joint odour patrol was conducted by OSCAR, ER (AECOM), ET (ERM), Employer (EPD Project Team Team) and the Independent Odour Patrol Team (ALS) on 10 September 2018. The odour patrol results and photographic records are shown in <b>Appendix A</b>.</li> <li>2. The construction waste skip (which was identified as the</li> </ol>

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	<p>potential source of the odour nuisance and flies) was moved away from the site boundary next to the Compound on 11 September 2018, and the storage area next to the original location of the construction waste skip had been properly cleaned. The photographic records are shown in <b>Appendix B</b>.</p> <p>3. An investigation of the potential mosquito generation locations was conducted on 11 September 2018 by OSCAR, ER (AECOM) and ET (ERM). The photographs of the surveyed potential mosquito generation locations are shown in <b>Appendix C</b>.</p> <p>4. The frequency pest control at the Facility will be increased from twice a week to three times a week.</p>
Remarks	-

Prepared by: Leah Pak, ET Representative

Date: 5-October-2018

Appendix A

## Odour Patrol

Appendix A1

## Odour Patrol Result

6. Appendix

Organic Resources Recovery Centre (Phase 1)

Odour Patrol Record Log Sheet

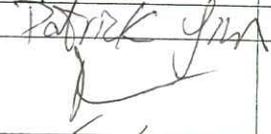
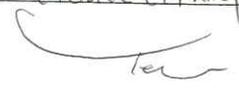
Parameter	Observations
Date	7/9/2018
Start & End Time (24hr)	From 15:05 To 15:30
Type of Patrol	Weekly / Monthly / Ad hoc / Follow-up / T&C Period Patrol
Weather Condition	Sunny / <u>Cloudy</u> / Windy / Humid / Foggy /
Temperature (°C)	33°C
Relative Humidity (%)	76%
Monitoring Point	① / 2 / 3 / 4 / 5 / 6 / 7 / 8
Intensity of Odour	① / 1 / 2 / 3 / 4
Characteristic of Odour	
Possible Source of Odour	
Monitoring Point	1 / ② / 3 / 4 / 5 / 6 / 7 / 8
Intensity of Odour	0 / ① / 2 / 3 / 4
Characteristic of Odour	Intermittent - Hot Plastic Smell
Possible Source of Odour	PRV of Rigour Holder -
Monitoring Point	1 / 2 / ③ / 4 / 5 / 6 / 7 / 8
Intensity of Odour	① / 1 / 2 / 3 / 4
Characteristic of Odour	
Possible Source of Odour	
Monitoring Point	1 / 2 / 3 / ④ / 5 / 6 / 7 / 8
Intensity of Odour	① / 1 / 2 / 3 / 4
Characteristic of Odour	
Possible Source of Odour	
Monitoring Point	1 / 2 / 3 / 4 / ⑤ / 6 / 7 / 8
Intensity of Odour	0 / ① / 2 / 3 / 4
Characteristic of Odour	Intermittent smell of digestate.
Possible Source of Odour	Duct at Bld 2.
Monitoring Point	1 / 2 / 3 / 4 / 5 / ⑥ / 7 / 8
Intensity of Odour	① / 1 / 2 / 3 / 4
Characteristic of Odour	
Possible Source of Odour	
Follow-up Actions	Remarks
Lower hear centrifuge Bld 2, digestate smell.	

	EPD Representative	Employer Representative	Independent Odour Patrol Team	OSCAR Bioenergy JV
Name	Fiona Lam	Rafaela Yim		Terence Chan
Signature			N/A	
Date	7/9/2018	7/9/18		7/9/2018

6. Appendix

Organic Resources Recovery Centre (Phase 1)  
Odour Patrol Record Log Sheet

Parameter	Observations	
Date	7/19/2018	
Start & End Time (24hr)	From	To 15:30
Type of Patrol	Weekly / Monthly / Ad hoc / Follow up / T&C Period Patrol	
Weather Condition	Sunny / <u>Cloudy</u> / Windy / Humid / Foggy /	
Temperature (°C)	33°C	
Relative Humidity (%)	76%	
Monitoring Point	1 / 2 / 3 / 4 / 5 / 6 / <u>7</u> / 8	
Intensity of Odour	0 / <u>1</u> / 2 / 3 / 4	
Characteristic of Odour	Intermittent minor smell of saw	
Possible Source of Odour	Bld 1 Pretreatment	
Monitoring Point	1 / 2 / <u>3</u> / 4 / 5 / 6 / 7 / 8	
Intensity of Odour	<u>0</u> / 1 / 2 / 3 / 4	
Characteristic of Odour		
Possible Source of Odour		
Monitoring Point	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	
Intensity of Odour	0 / 1 / 2 / 3 / 4	
Characteristic of Odour		
Possible Source of Odour		
Monitoring Point	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	
Intensity of Odour	0 / 1 / 2 / 3 / 4	
Characteristic of Odour		
Possible Source of Odour		
Monitoring Point	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	
Intensity of Odour	0 / 1 / 2 / 3 / 4	
Characteristic of Odour		
Possible Source of Odour		
Monitoring Point	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	
Intensity of Odour	0 / 1 / 2 / 3 / 4	
Characteristic of Odour		
Possible Source of Odour		
Follow-up Actions	Remarks	

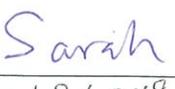
	EPD Representative	Employer Representative	Independent Odour Patrol Team	OSCAR Bioenergy JV
Name	Fiona LAM	Patrick Yin		Terence CHAN
Signature			N/A	
Date	7/19/2018	7/19/18		7/19/2018

6. Appendix

**Organic Resources Recovery Centre (Phase 1)**

**Odour Patrol Record Log Sheet**

Parameter	Observations
Date	10/9/2018
Start & End Time (24hr)	From 16:15 To 16:36
Type of Patrol	Weekly / Monthly / <u>Ad hoc</u> / Follow-up /
Weather Condition	Sunny / <u>Cloudy</u> / Windy / Humid / Foggy /
Temperature (°C)	28.7
Relative Humidity (%)	77.9
Monitoring Point	① / 2 / 3 / 4 / 5 / 6 / 7 / 8
Intensity of Odour	0 / ① / 2 / 3 / 4
Characteristic of Odour	Grassy
Possible Source of Odour	Grass & Tree
Monitoring Point	1 / ② / 3 / 4 / 5 / 6 / 7 / 8
Intensity of Odour	① / 1 / 2 / 3 / 4
Characteristic of Odour	
Possible Source of Odour	
Monitoring Point	1 / 2 / ③ / 4 / 5 / 6 / 7 / 8
Intensity of Odour	0 / 1 / 2 / 3 / 4
Characteristic of Odour	P1 = 0
Possible Source of Odour	P2 = 1 Grassy Grass & Tree
Monitoring Point	1 / 2 / 3 / ④ / 5 / 6 / 7 / 8
Intensity of Odour	0 / ① / 2 / 3 / 4
Characteristic of Odour	Concrete & refuse
Possible Source of Odour	Waste container, construction waste
Monitoring Point	1 / 2 / 3 / 4 / ⑤ / 6 / 7 / 8
Intensity of Odour	0 / ① / 2 / 3 / 4
Characteristic of Odour	Musty of construction material
Possible Source of Odour	Construction material
Monitoring Point	1 / 2 / 3 / 4 / 5 / ⑥ / 7 / 8
Intensity of Odour	① / 1 / 2 / 3 / 4
Characteristic of Odour	
Possible Source of Odour	
<b>Follow-up Actions</b> - Remark	
Refer to the attachment for the monitoring point.	

	EPD Representative	Employer Representative	Independent Odour Patrol Team	OSCAR Bioenergy JV
Name	Daniel Choi	Patrick Yip	Pan Tuen / Allen Pan	Sarah Ho
Signature				
Date	10/9/2018	10/9/18	10/9/2018	10/9/2018



### Odour Patrol Survey

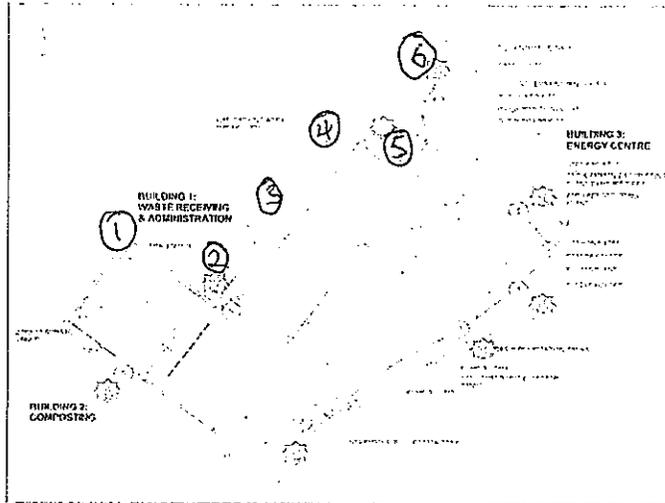
Date: 10-9-18

Weather: Sunny / Fine / Cloudy / Rainy

ALS Work Order: \_\_\_\_\_

No.	Location ID	Time	Temp (C)	RH (%)	Wind Speed (m/s)	Wind Direction	Odour Intensity	Odour Characteristics	Potential Odour Source	Duration	Direction from the Odour Source
-		09:00	22.0	69	11.1	N	0 / 1 / 2 / 3 / 4	sewage / rotten-egg smell, decayed vegetables / ammoniacal / dischargeable odour / putrefaction / sharp / pungent / fishy / irritating / furt / vinegar	Sediment / Water sewage / floating debris / material / others	Intermittent / Continuous	Downwind / Upwind / Sidewind
1		16:15	28.7	77.9	0.8	309	P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4	Grassy	Grass & tree	Intermittent / Continuous	Downwind / Upwind / Sidewind
2		16:19	29.2	77.4	0.9	324	P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4			Intermittent / Continuous	Downwind / Upwind / Sidewind
3		16:22	28.9	77.4	0	NA	P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4	Grassy	Grass & tree	Intermittent / Continuous	Downwind / Upwind / Sidewind
4		16:25	28.9	75.4	1.1	253	P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4	concrete & refuse	Waste / Contaminated construction waste	Intermittent / Continuous	Downwind / Upwind / Sidewind
5		16:30	28.9	81.6	0	NA	P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4	Mixture of Construction Material		Intermittent / Continuous	Downwind / Upwind / Sidewind
6		16:36	29.1	76.8	0	NA	P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4			Intermittent / Continuous	Downwind / Upwind / Sidewind
7							P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4			Intermittent / Continuous	Downwind / Upwind / Sidewind
8							P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4			Intermittent / Continuous	Downwind / Upwind / Sidewind
							P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4			Intermittent / Continuous	Downwind / Upwind / Sidewind
							P1: 0 / 1 / 2 / 3 / 4 P2: 0 / 1 / 2 / 3 / 4			Intermittent / Continuous	Downwind / Upwind / Sidewind

**Location Plan:**



**Remark for Odour Intensity:**

- 0 - Not detected
- 1 - Slight
- 2 - Moderate
- 3 - Strong
- 4 - Extreme

No odour perceived or an odour so weak that it cannot be readily characterized or described  
 Identifiable odour, slight  
 Identifiable odour, moderate  
 Identifiable odour, strong  
 Severe odour

- Proposed Patrol Route
- Possible Odour Sources (No.) / Checkpoint
- Assumed Odour Potential (normal operation)

**Odour Patrol Team:**

ALS Representative: Pan Yuen ( )

P1: Allen Poon  
 P2: Pan Yuen



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### CERTIFICATE OF ANALYSIS

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CLIENT:	Oscar Bioenergy Joint Venture	WORK ORDER:	HK1849200
CONTACT:	Edwin Wong	LABORATORY:	Hong Kong
ADDRESS:	No. 5, Sham Fung Road, Siu Ho Wan, North Lantau Island, NT, Hong Kong	SUB-BATCH:	0
		DATE OF PATROL:	10 September 2018
		DATE OF ISSUE:	18 September 2018
PROJECT:	Ad Hoc Odour Patrol for the Organic Resources Recovery Centre Phase 1 in Siu Ho Wan		
SITE:	Organic Resources Recovery Centre Phase 1 (ORRC1)		

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### COMMENTS

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Ad hoc Odour Patrol was conducted by ALS Technichem (HK) Pty Ltd staff during 16:15 - 16:38 on 10<sup>th</sup> September 2018.

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### NOTES

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This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

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Richard Fung  
General Manager - Hong Kong

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## 1. Summary of Work

Ad hoc odour patrol service was conducted on 10<sup>th</sup> September 2018.

## 2. Odour Patrol

Odour patrolling is a process to make use of the calibrated olfactory senses (ie the nasal sense) of the patrol members to evaluate the odour and its intensity during a patrol exercise at the site.

Two odour patrol team members from ALS Technichem (HK) Pty Ltd were conducted the ad hoc patrol work and the patrol route was guided by the client. All members were free from any respiratory diseases during patrol day. None of the members has been working or living in the area in the vicinity of the inspection area.

The patrol team was required to move slowly from one to the other monitoring locations and used their olfactory senses to detect odour at each location. The location of odour sources and the areas to be affected by the odour nuisance were identified as much as possible.

During the patrolling, the meteorological and surrounding information were recorded:

- the prevailing weather condition;
- the wind direction;
- the wind speed;
- location where odour is spotted;
- possible source of odour;
- perceived intensity of the odour;
- duration of odour; and
- characteristics of the odour detected

The perceived intensity is to be divided into 5 levels which are ranked in an ascending order as follows:

0	Not detected	No odour perceives or an odour so weak that it cannot be easily characterised or described
1	Slight	Identifiable odour, slight
2	Moderate	Identifiable odour, moderate
3	Strong	Identifiable odour, strong
4	Extreme	Severe odour

The ad hoc odour patrol locations were shown in Appendix 1.



**3. Result:**

Location	Panellist	Weather	Time	T (°C)	RH (%)	WS (m/s)	WD (Deg)	Odour Intensity	Duration of Odour	Direction from Source	On-Site Observation	
											Odour Characteristics	Potential Odour Source
1	1	Cloudy	16:15	28.7	77.9	0.8	309	1	Intermittent	Downwind	Grassy	Trees and grass
	2							1				
2	1	Cloudy	16:19	29.2	77.4	0.9	324	0	NA	NA	NA	NA
	2							0				
3	1	Cloudy	16:22	28.9	77.4	0.0	NA	0	NA	NA	Grassy	Trees and grass
	2							1	Intermittent			
4	1	Cloudy	16:25	28.9	75.4	1.1	253	1	Intermittent	Downwind	Smell of concrete and garbage	Construction waste container
	2							1				
5	1	Cloudy	16:30	28.9	81.6	0.0	NA	1	Intermittent	NA	Musty smell of construction material	Construction material storage zone
	2							1				
6	1	Cloudy	16:36	29.1	76.8	0.0	NA	0	NA	NA	NA	NA
	2							0				

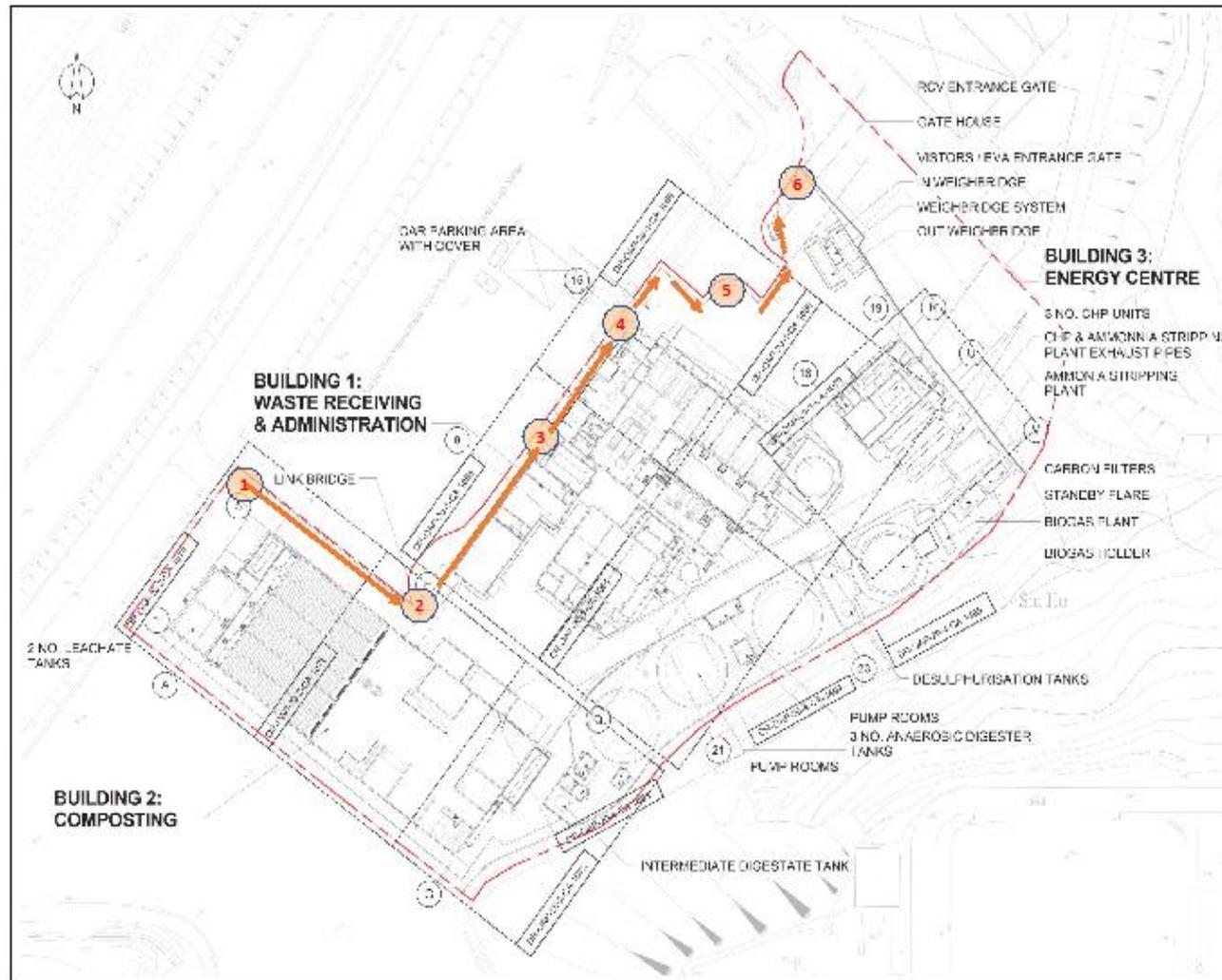
Remark:

- T: Air Temperature;
- RH: Relative Humidity;
- WD: Wind Direction;
- WS: Wind Speed.



# APPENDIX 1

## Ad hoc Odour Patrol Route



→ Proposed Patrol Route

10 Possible Odour Sources (No.) / Checkpoint

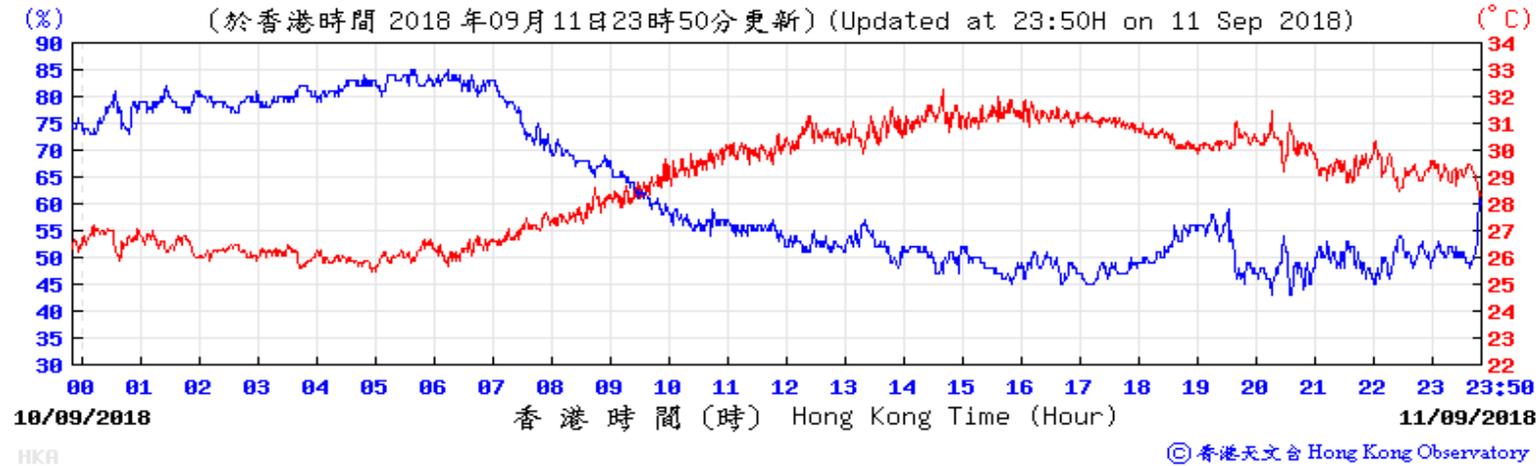
1 Estimated Odour Intensity  
From 1 (min.) to 3 (max.)



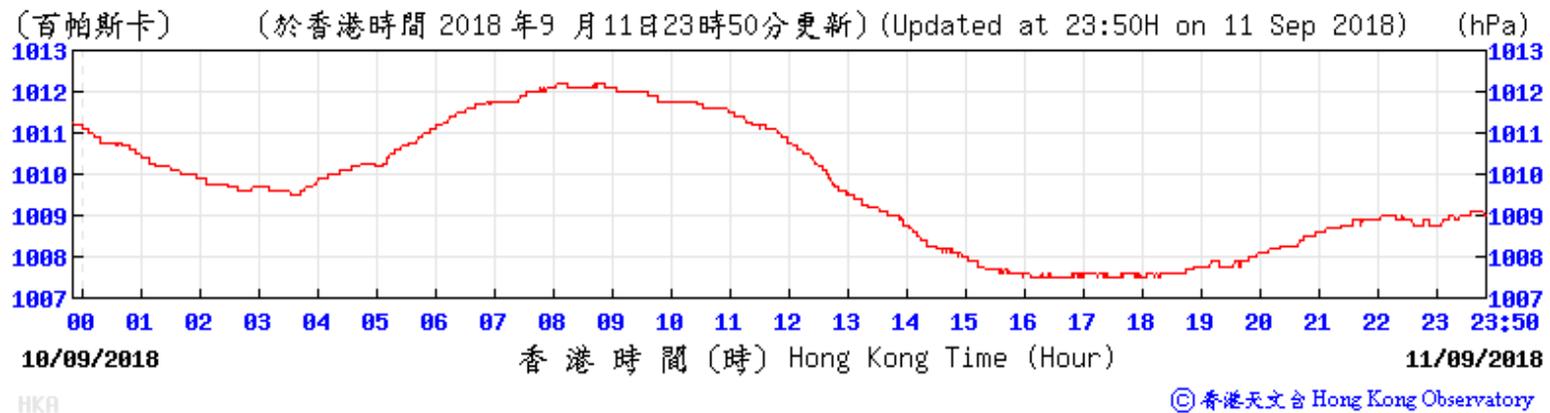
### APPENDIX 2

#### Extract of Meteorological Observations from the Hong Kong Airport Observatory Station

Temperature/Humidity:

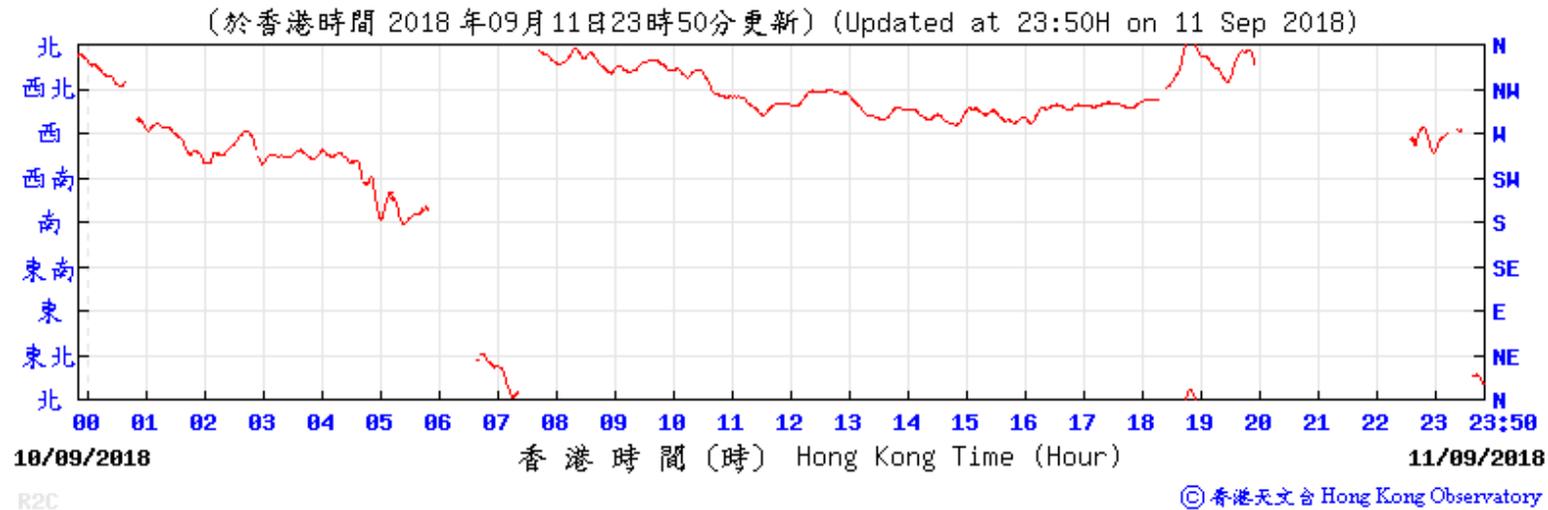


Pressure:

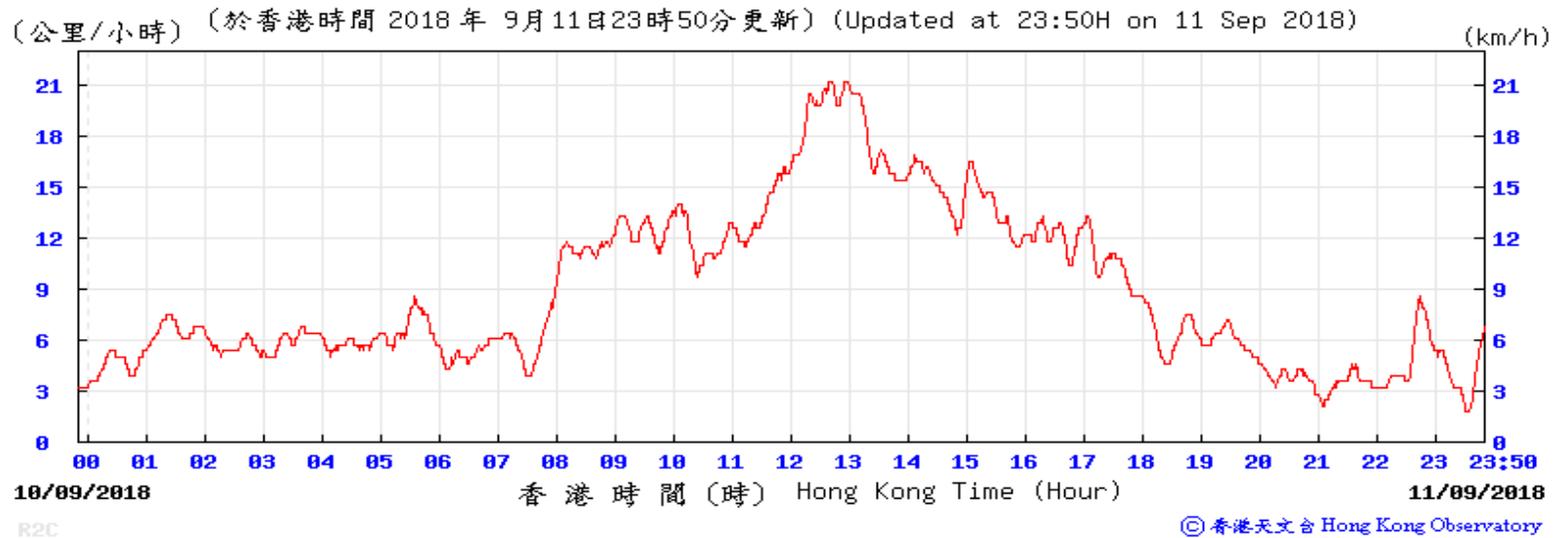




Wind Direction:



Wind Speed:



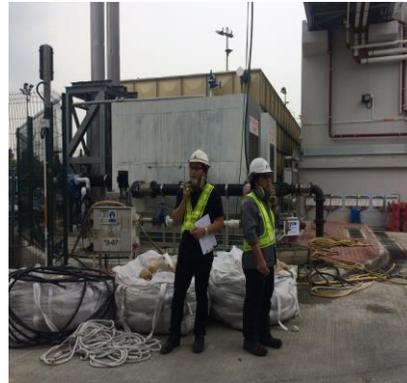


### APPENDIX 3

#### Photos for the Odour Patrol Locations



Location: 1



Location: 2



Location: 3



Location: 4



Location: 5



Location: 6

Appendix A2

## Odour Patrol Photo Record













Appendix B

## Photo Record

Before



After



Construction waste skip was relocated.



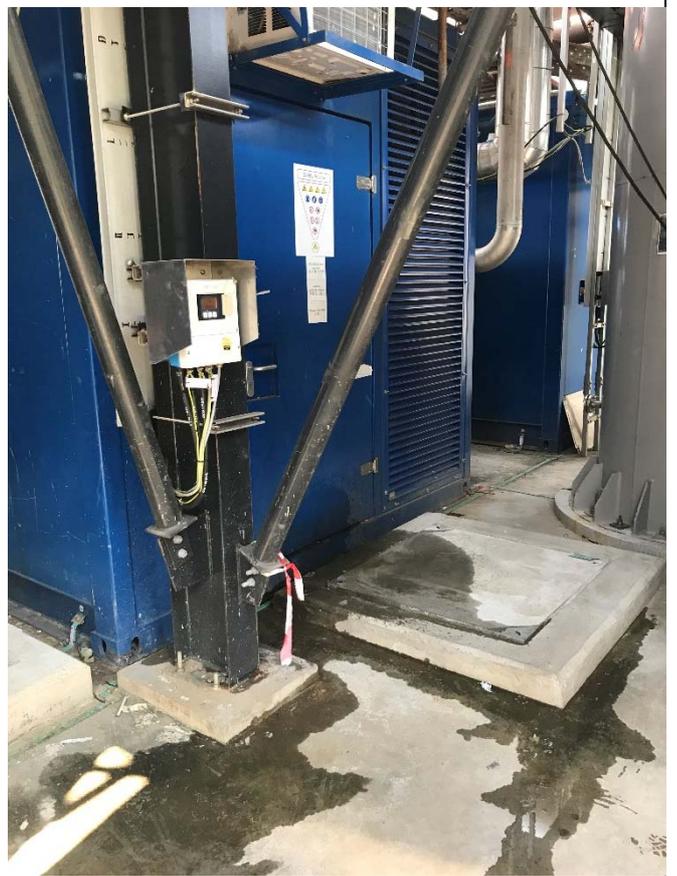
Storage area was properly cleaned up.

Appendix C

## Mosquito Control Points



Near Building 1



Near CHP



Link Bridge



Building 1 Roof



All surface channel