

Annex G

Laboratory Results for  
NMVOCs and VOCs  
(including methane) for  
CHP 1 & CHP 2



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### CERTIFICATE OF ANALYSIS

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CLIENT:	Oscar Bioenergy Joint Venture	WORK ORDER:	HK1916679
CONTACT:	Mr Edwin wong	LABORATORY:	Hong Kong
ADDRESS:	No. 5, Sham Fung Road, Siu Ho Wan, Lantau Island, NT, Hong Kong	SUB-BATCH:	0
PROJECT:	Stack Gas Sampling	DATE RECEIVED:	18 April, 2019
SITE:	ORRC1, Siu Ho Wan, Lantau Island	DATE OF ISSUE:	29 April, 2019
PO: ---		SAMPLE TYPE:	Air
		NO OF SAMPLES:	1

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### COMMENTS

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One (1) stack gas sample was collected by ALS Technichem (HK) staff on 18<sup>th</sup> April, 2019 at the Organic Resources Recovery Centre (Phase 1) in Lantau Island.

The sample(s) were analysed and reported on an as received basis.

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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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PP   
Richard Fung  
General Manager - Hong Kong



## 1. Summary of Work

The document is the final report for the stack gas sampling and testing event for Oscar Bioenergy Joint Venture at Siu Ho Wan, North Lantau Island.

Sampling Period: 18<sup>th</sup> April, 2019  
Location of Stack: ORRC1, Siu Ho Wan  
No. of Stack: 1  
Name of Stack: CHP-1

### Methods for Stack Sampling and Analysis:

Parameter	Method Reference	Sampling Time (minutes)
Volatile Organic Compounds (VOCs) <sup>[1]</sup>	US EPA Method 18	60
Non-Methane Volatile Organic Compounds (NMCOCs) <sup>[1]</sup>	US EPA Method 18	60

Note:

[1]: Results expressed as carbon

[2]: Results reported as at 273K, 101.325kPa, 6% Oxygen content and dry gas basis.

## 2. Sampling Summary

### Volatile Organic Compounds (VOCs)

Sample gas was collected by using a stainless steel sampling probe, from the centroid of the stack, into the Tedlar bag by passive sampling technique.

The measurement of total volatile organic compounds (VOCs) content in the sample was conducted in references to BS EN 12619. VOCs content was determined by measuring the methane and non-methane volatile organic compounds of the sample by Gas Chromatograph-Flame Ionisation Detector (GC-FID).

VOCs was reported as the sum of methane and non-methane organics content in the sample.

## 3. Sampling Period

Test Parameters	Sampling Period
Volatile Organic Compounds (VOCs)	18 April 2019 15:00 - 16:00



#### 4. Result

Parameter	Unit	Reporting Limit	Result <sup>[1]</sup>
Gaseous & vaporous organic substances (VOCs) <sup>[2]</sup>	mg/m <sup>3</sup>	0.7	919
Methane (CH <sub>4</sub> ) <sup>[2]</sup>	mg/m <sup>3</sup>	0.5	911
Non-Methane Organic Carbon (NMOC) <sup>[2]</sup>	mg/m <sup>3</sup>	0.2	8.0

Note:

[1]: Results expressed as dry, at 0 degree Celsius temperature, 101.325 kilopascal pressure and 6% O<sub>2</sub> content conditions.

[2]: Results expressed as carbon.

[3]: The average Oxygen content in the flue gas was 9.8% during the sampling period.



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### CERTIFICATE OF ANALYSIS

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CLIENT:	Oscar Bioenergy Joint Venture	WORK ORDER:	HK1915304
CONTACT:	Mr Edwin wong	LABORATORY:	Hong Kong
ADDRESS:	No. 5, Sham Fung Road, Siu Ho Wan, Lantau Island, NT, Hong Kong	SUB-BATCH:	0
PROJECT:	Stack Gas Sampling	DATE RECEIVED:	10 April, 2019
SITE:	ORRC1, Siu Ho Wan, Lantau Island	DATE OF ISSUE:	29 April, 2019
PO: ---		SAMPLE TYPE:	Air
		NO OF SAMPLES:	1

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### COMMENTS

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One (1) stack gas sample was collected by ALS Technichem (HK) staff on 10<sup>th</sup> April, 2019 at the Organic Resources Recovery Centre (Phase 1) in Lantau Island.

The sample(s) were analysed and reported on an as received basis.

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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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PP   
Richard Fung  
General Manager - Hong Kong



## 1. Summary of Work

The document is the final report for the stack gas sampling and testing event for Oscar Bioenergy Joint Venture at Siu Ho Wan, North Lantau Island.

Sampling Period: 10<sup>th</sup> April, 2019  
Location of Stack: ORRC1, Siu Ho Wan  
No. of Stack: 1  
Name of Stack: CHP-2

### Methods for Stack Sampling and Analysis:

Parameter	Method Reference	Sampling Time (minutes)
Volatile Organic Compounds (VOCs) <sup>[1]</sup>	US EPA Method 18	60
Non-Methane Volatile Organic Compounds (NMCOCs) <sup>[1]</sup>	US EPA Method 18	60

Note:

[1]: Results expressed as carbon

[2]: Results reported as at 273K, 101.325kPa, 6% Oxygen content and dry gas basis.

## 2. Sampling Summary

### Volatile Organic Compounds (VOCs)

Sample gas was collected by using a stainless steel sampling probe, from the centroid of the stack, into the Tedlar bag by passive sampling technique.

The measurement of total volatile organic compounds (VOCs) content in the sample was conducted in references to BS EN 12619. VOCs content was determined by measuring the methane and non-methane volatile organic compounds of the sample by Gas Chromatograph-Flame Ionisation Detector (GC-FID).

VOCs was reported as the sum of methane and non-methane organics content in the sample.

## 3. Sampling Period

Test Parameters	Sampling Period
Volatile Organic Compounds (VOCs)	10 April 2019 11:25 - 12:25



#### 4. Result

Parameter	Unit	Reporting Limit	Result <sup>[1]</sup>
Gaseous & vaporous organic substances (VOCs) <sup>[2]</sup>	mg/m <sup>3</sup>	0.7	871
Methane (CH <sub>4</sub> ) <sup>[2]</sup>	mg/m <sup>3</sup>	0.5	858
Non-Methane Organic Carbon (NMOC) <sup>[2]</sup>	mg/m <sup>3</sup>	0.2	13.0

Note:

[1]: Results expressed as dry, at 0 degree Celsius temperature, 101.325 kilopascal pressure and 6% O<sub>2</sub> content conditions.

[2]: Results expressed as carbon.

[3]: The average Oxygen content in the flue gas was 10.0% during the sampling period.