

Figure 1
Combustion Gas and VOC Emissions from Rotoman 2, Lower
Wyndeham Heron, Maldon (01/09/2009)

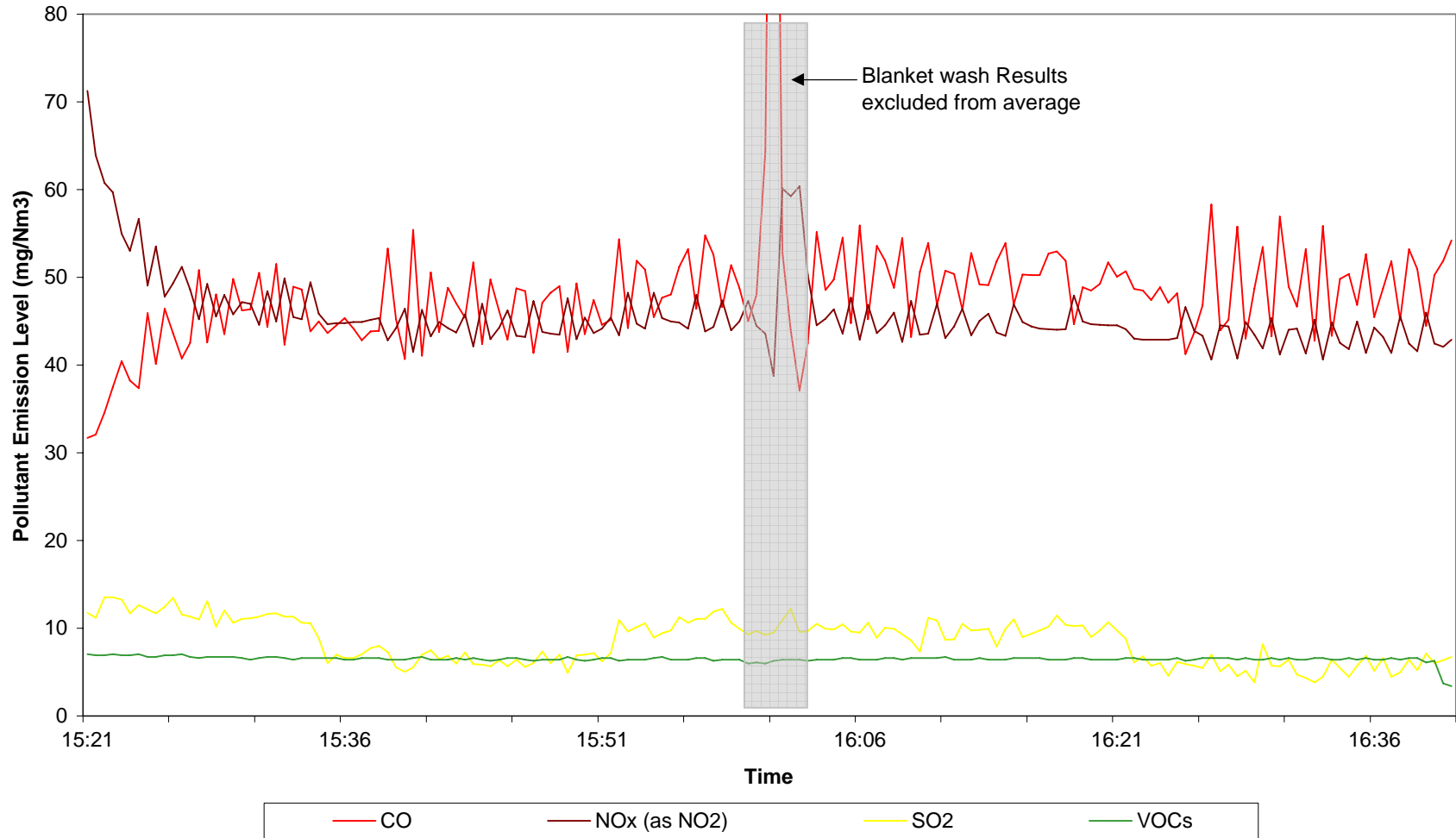


Figure 2
Combustion Gas and VOC Emissions from Rotoman 2, Upper
Wyndeham Heron, Maldon (01/09/2009)



TABLE 1a
Gaseous Analysis using Horiba (Model PG 250) Analyser
 Wyndeham Heron, Maldon
Combustion Gas and VOC Emissions from Rotoman 2, Lower and Upper (01/09/09)

Job no: 4029
 Data entered by: DF

Rotoman 2 LOWER

	Carbon Monoxide CO (ppm)	Oxides of Nitrogen NOx (ppm)	Sulphur Dioxide SO2 (ppm)	VOCs (ppm)	Conversion from ppm to mg/Nm ³			
					CO (mg/Nm ³)	NOx (as NO ₂) (mg/Nm ³)	SO2 (mg/Nm ³)	VOCs (mg/Nm ³)
Average	38.1	22.2	2.9	4.0	47.6	45.5	8.4	6.5
Maximum	46.7	34.7	4.7	4.4	58.3	71.2	13.5	7.1
Minimum	25.3	19.8	1.3	2.1	31.7	40.6	3.9	3.4

Rotoman 2 UPPER

	Carbon Monoxide CO (ppm)	Oxides of Nitrogen NOx (ppm)	Sulphur Dioxide SO2 (ppm)	VOCs (ppm)	Conversion from ppm to mg/Nm ³			
					CO (mg/Nm ³)	NOx (as NO ₂) (mg/Nm ³)	SO2 (mg/Nm ³)	VOCs (mg/Nm ³)
Average	43.5	28.3	2.8	3.4	54.4	58.1	8.1	5.4
Maximum	95.3	39.1	4.1	5.1	119.1	80.3	11.6	8.2
Minimum	20.6	22.2	1.7	2.0	25.8	45.5	4.8	3.2

**TABLE 1b
ANALYSER CALIBRATIONS**

Client Name: Wyndeham Heron, Maldon

Combustion Gas and VOC Emissions from Rotoman 2, Lower and Upper (01/09/09)

Job no: 4029

Data entered by: DF

Analyser:

1

Type of Gas	CO		NO		SO2		VOCs		
Certified Calibration Values	118.6	ppm +/-2%	209.0	ppm +/-2%	156.0	ppm +/-2%	7.97	ppm +/-2%	
Period									
Span PreCal direct to analyser	118.9	ppm	209.3	ppm	155.4	ppm	7.8	ppm	
Zero PreCal through sample line	0.7	ppm	0.1	ppm	1.9	ppm	0.0	ppm	
Span PreCal through sample line	118.7	ppm	208.9	ppm	150.0	ppm	8.3	ppm	
Zero PostCal through sample line	1.2	ppm	0.4	ppm	0.6	ppm	2.2	ppm	
Span PostCal through sample line	117.2	ppm	205.2	ppm	149.2	ppm	7.9	ppm	
Span Drift	1.3	%	1.7	%	0.5	%			
Zero Drift	-0.4	%	-0.2	%	0.8	%			
Is data valid without adjustment	YES		YES		YES				
Does data require adjustment	NO		NO		NO				
Is data invalid	NO		NO		NO				

F10

F11

H10

H11

ng cells shor

D12

D13

D14

D15

Table 1c
Combustion Gas Emissions from Rotoman 2 Lower (01/09/09)

UNCERTAINTY OF CARBON MONOXIDE BY HORIBA 1

Reading =

38.1

 ppm
Span Gas Certified Value =

118.6

 ppm +/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.3810	0.1452
Zero Drift/Lower limit of detection	0.1ppm	0.1000	0.0100
Span Drift	2% of value	0.7620	0.5806
Linearity	1.2% of value	1.2000	1.4400
Setting Gas Divider	0.25% of value	0.0953	0.0091
Interference	2.9% of value	1.1049	1.2208
Span Gas	1% of span gas certified value	1.1860	1.4066

Sum U ²	4.81
Total U	2.19 ppm
95% confidence	4.39 ppm
or	5.48 mg/Nm³

UNCERTAINTY OF OXIDES OF NITROGEN BY HORIBA 1

Reading =

22.2

 ppm
Span Gas Certified Value =

209

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.2220	0.0493
Zero Drift/Lower limit of detection	0.4ppm	0.4000	0.1600
Span Drift	1.9% of value	0.4218	0.1779
Linearity	0.63% of value	0.6300	0.3969
Setting Gas Divider	0.25% of value	0.0555	0.0031
Interference	1.2% of value	0.2664	0.0710
Span Gas	1% of span gas certified value	2.0900	4.3681

Sum U ²	5.23
Total U	2.29 ppm
95% confidence	4.57 ppm
or	9.39 mg/Nm³

UNCERTAINTY OF SULPHUR DIOXIDE BY HORIBA 1

Reading =

2.9

 ppm
Span Gas Certified Value =

156

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.0290	0.0008
Zero Drift/Lower limit of detection	1.2ppm	1.2000	1.4400
Span Drift	1.9% of value	0.0551	0.0030
Linearity	1.44% of value	0.0418	0.0017
Setting Gas Divider	0.25% of value	0.0073	0.0001
Interference	1.2% of value	0.0348	0.0012
Span Gas	1% of span gas certified value	1.5600	2.4336

Sum U ²	3.88
Total U	1.97 ppm
95% confidence	3.94 ppm
or	11.25 mg/Nm³

Table 2a
Combustion Gas Emissions from Rotoman 2, Upper (01/09/09)

UNCERTAINTY OF CARBON MONOXIDE BY HORIBA 1

Reading =

43.5

 ppm
Span Gas Certified Value =

118.6

 ppm +/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.4350	0.1892
Zero Drift/Lower limit of detection	0.1ppm	0.1000	0.0100
Span Drift	2% of value	0.8700	0.7569
Linearity	1.2% of value	1.2000	1.4400
Setting Gas Divider	0.25% of value	0.1088	0.0118
Interference	2.9% of value	1.2615	1.5914
Span Gas	1% of span gas certified value	1.1860	1.4066

Sum U ²	5.41
Total U	2.33 ppm
95% confidence	4.65 ppm
or	5.81 mg/Nm³

UNCERTAINTY OF OXIDES OF NITROGEN BY HORIBA 1

Reading =

28.3

 ppm
Span Gas Certified Value =

209

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.2830	0.0801
Zero Drift/Lower limit of detection	0.4ppm	0.4000	0.1600
Span Drift	1.9% of value	0.5377	0.2891
Linearity	0.63% of value	0.6300	0.3969
Setting Gas Divider	0.25% of value	0.0708	0.0050
Interference	1.2% of value	0.3396	0.1153
Span Gas	1% of span gas certified value	2.0900	4.3681

Sum U ²	5.41
Total U	2.33 ppm
95% confidence	4.65 ppm
or	9.55 mg/Nm³

UNCERTAINTY OF SULPHUR DIOXIDE BY HORIBA 1

Reading =

2.8

 ppm
Span Gas Certified Value =

156

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.0280	0.0008
Zero Drift/Lower limit of detection	1.2ppm	1.2000	1.4400
Span Drift	1.9% of value	0.0532	0.0028
Linearity	1.44% of value	0.0403	0.0016
Setting Gas Divider	0.25% of value	0.0070	0.0000
Interference	1.2% of value	0.0336	0.0011
Span Gas	1% of span gas certified value	1.5600	2.4336

Sum U ²	3.88
Total U	1.97 ppm
95% confidence	3.94 ppm
or	11.25 mg/Nm³

TABLE 1d

UNCERTAINTY OF VOC BY SIGNAL2

Client Name: Wyndeham Heron

Job No: 4029

Reading = 4.0 ppm as C3H8
 Span Gas= 7.97 ppm+/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.04	0.002
Zero Drift/ Detection	0.2ppm	0.2	0.040
Noise	0.1 ppm	0.1	0.010
Linearity	1.0% of value	0.04	0.002
Setting Gas Divider	0.25% of value	0.01	0.000
Temperature Drift	1% of value	0.04	0.002
Span Gas	1% of Value	0.0797	0.006

Sum U ²	0.06
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Total U	0.25 ppm
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95% confidence	0.49 ppm as C3H8
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or **0.80** mg/Nm³ as carbon

TABLE 2b

UNCERTAINTY OF VOC BY SIGNAL2

Client Name: Wyndeham Heron

Job No: 4029

Reading = 3.4 ppm as C3H8
 Span Gas= 7.97 ppm+/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.034	0.001
Zero Drift/ Detection	0.2ppm	0.2	0.040
Noise	0.1 ppm	0.1	0.010
Linearity	1.0% of value	0.034	0.001
Setting Gas Divider	0.25% of value	0.0085	0.000
Temperature Drift	1% of value	0.034	0.001
Span Gas	1% of Value	0.0797	0.006

Sum U ²	0.06
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Total U	0.24	ppm
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95% confidence	0.49	ppm as C3H8
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or **0.79** mg/Nm³ as carbon