

Figure 3
Combustion Gas and VOC Emissions from Rotoman 3, Lower
Wyndeham Heron, Maldon (02/09/2009)

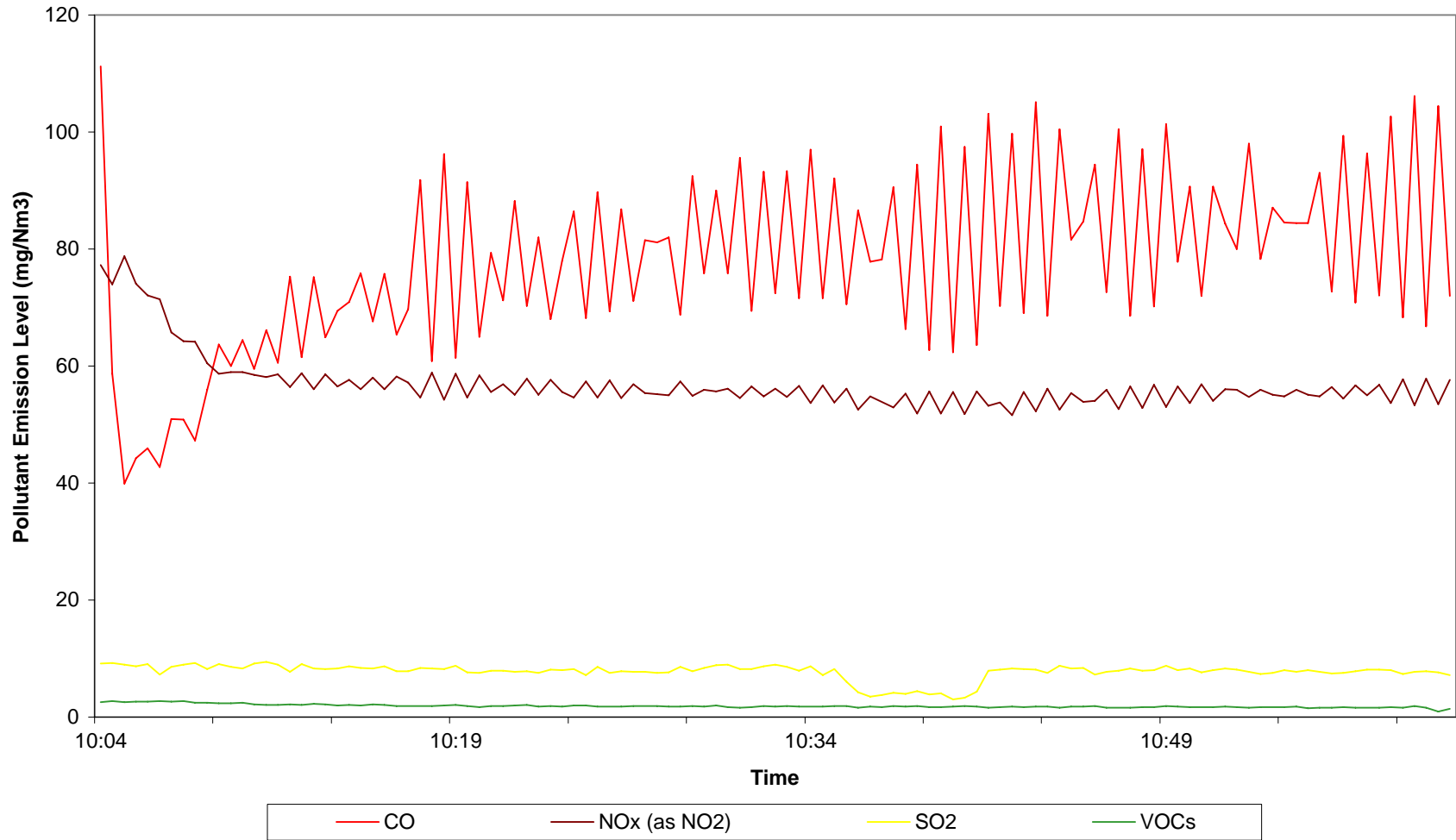


Figure 4
Combustion Gas and VOC Emissions from Rotoman 3, Upper
Wyndeham Heron, Maldon (02/09/2009)

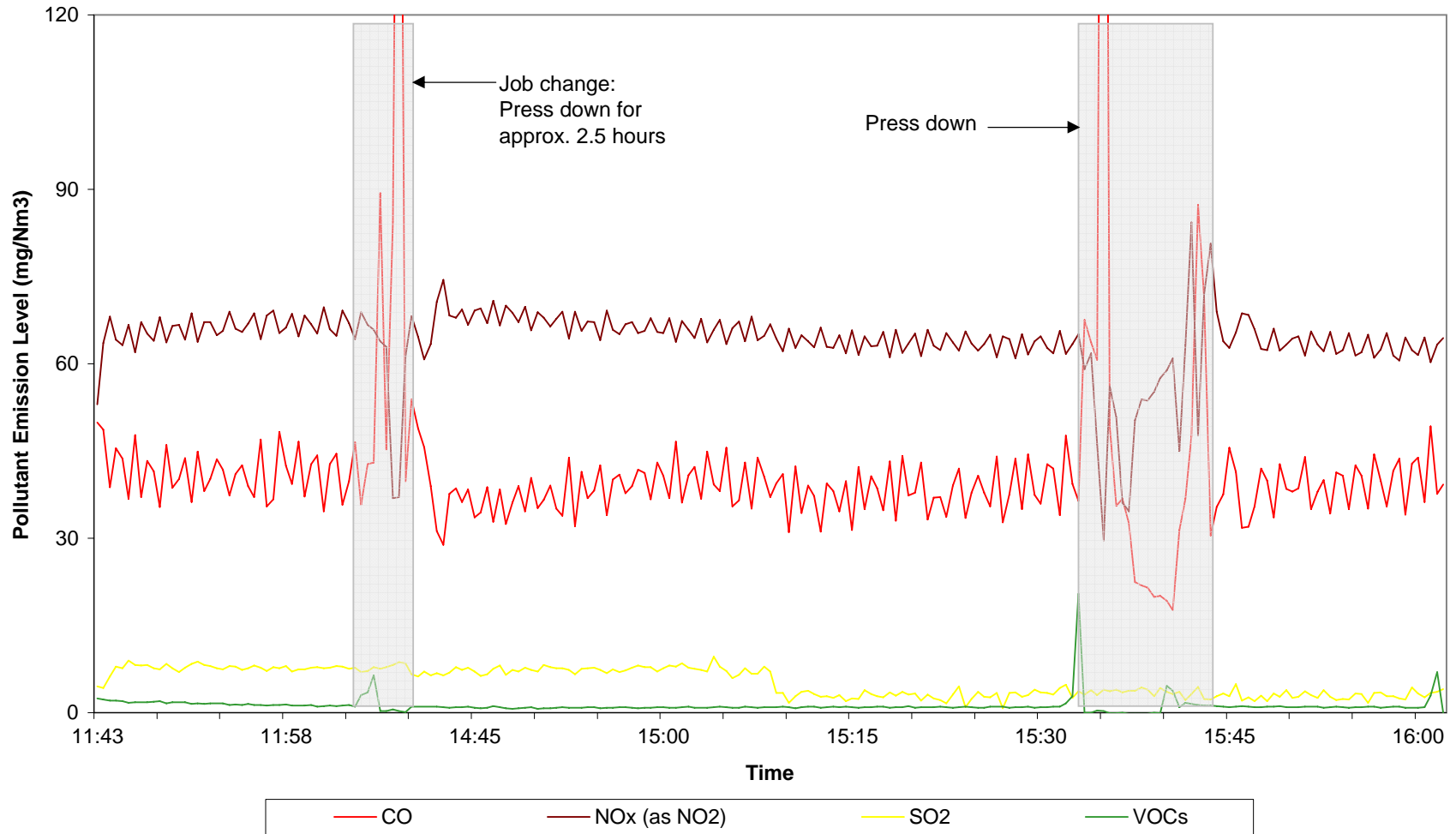


TABLE 3a
Gaseous Analysis using Horiba (Model PG 250) Analyser
 Wyndeham Heron, Maldon
Combustion Gas and VOC Emissions from Rotoman 3, Lower and Upper (02/09/09)

Job no: 4029
 Data entered by: DF

Rotoman 3 LOWER

	Carbon Monoxide CO (ppm)	Oxides of Nitrogen NOx (ppm)	Sulphur Dioxide SO2 (ppm)	VOCs (ppm)	Results Adjusted for Span and Zero Drift				Conversion from ppm to mg/Nm ³			
					CO (ppm)	NOx (ppm)	SO2 (ppm)	VOCs (ppm)	CO (mg/Nm ³)	NOx (as NO ₂) (mg/Nm ³)	SO2 (mg/Nm ³)	VOCs (mg/Nm ³)
					Average	61.6	27.7	2.8	1.2	62.2	27.7	2.7
Maximum	88.2	38.4	3.5	1.7	89.0	38.4	3.3	1.7	111.2	78.8	9.4	2.8
Minimum	31.9	25.1	1.1	0.6	31.9	25.1	1.1	0.6	39.9	51.6	3.0	1.0

Rotoman 3 UPPER

	Carbon Monoxide CO (ppm)	Oxides of Nitrogen NOx (ppm)	Sulphur Dioxide SO2 (ppm)	VOCs (ppm)	Results Adjusted for Span and Zero Drift				Conversion from ppm to mg/Nm ³			
					CO (ppm)	NOx (ppm)	SO2 (ppm)	VOCs (ppm)	CO (mg/Nm ³)	NOx (as NO ₂) (mg/Nm ³)	SO2 (mg/Nm ³)	VOCs (mg/Nm ³)
					Average	30.3	31.7	2.0	0.8	31.3	31.7	1.9
Maximum	39.3	36.3	3.5	12.8	39.9	36.3	3.4	12.8	49.9	74.4	9.7	20.5
Minimum	22.2	25.9	0.3	0.0	23.1	25.9	0.3	0.0	28.8	53.1	0.8	0.0

**TABLE 3b
ANALYSER CALIBRATIONS**

Client Name: Wyndeham Heron, Maldon

Combustion Gas and VOC Emissions from Rotoman 3, Lower and Upper (02/09/09)

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	119.1	ppm	209.1	ppm	155.9	ppm	8.0	ppm	
Zero PreCal through sample line	-0.4	ppm	0.1	ppm	1.9	ppm	1.1	ppm	
Span PreCal through sample line	117.2	ppm	207.4	ppm	149.2	ppm	8.1	ppm	
Zero PostCal through sample line	0.4	ppm	0.4	ppm	0.1	ppm	0.4	ppm	
Span PostCal through sample line	114.2	ppm	205.4	ppm	146.1	ppm	7.7	ppm	
Span Drift	2.5	%	1.0	%	2.0	%			
Zero Drift	-0.7	%	-0.1	%	1.2	%			
Is data valid without adjustment	NO		YES		NO				
Does data require adjustment	YES		NO		YES				
Is data invalid	NO		NO		NO				

F10

F11

H10

H11

ng cells shor

D12

D13

D14

D15

Table 3c
Combustion Gas Emissions from Rotoman 3 Lower (02/09/09)

UNCERTAINTY OF CARBON MONOXIDE BY HORIBA 1

Reading =

62.2

 ppm
Span Gas Certified Value =

118.6

 ppm +/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.6220	0.3869
Zero Drift/Lower limit of detection	0.1ppm	0.1000	0.0100
Span Drift	2% of value	1.2440	1.5475
Linearity	1.2% of value	1.2000	1.4400
Setting Gas Divider	0.25% of value	0.1555	0.0242
Interference	2.9% of value	1.8038	3.2537
Span Gas	1% of span gas certified value	1.1860	1.4066

Sum U ²	8.07	
Total U	2.84	ppm
95% confidence	5.68	ppm
or	7.10	mg/Nm³

UNCERTAINTY OF OXIDES OF NITROGEN BY HORIBA 1

Reading =

27.7

 ppm
Span Gas Certified Value =

209

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.2770	0.0767
Zero Drift/Lower limit of detection	0.4ppm	0.4000	0.1600
Span Drift	1.9% of value	0.5263	0.2770
Linearity	0.63% of value	0.6300	0.3969
Setting Gas Divider	0.25% of value	0.0693	0.0048
Interference	1.2% of value	0.3324	0.1105
Span Gas	1% of span gas certified value	2.0900	4.3681

Sum U ²	5.39	
Total U	2.32	ppm
95% confidence	4.64	ppm
or	9.53	mg/Nm³

UNCERTAINTY OF SULPHUR DIOXIDE BY HORIBA 1

Reading =

2.7

 ppm
Span Gas Certified Value =

156

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.0270	0.0007
Zero Drift/Lower limit of detection	1.2ppm	1.2000	1.4400
Span Drift	1.9% of value	0.0513	0.0026
Linearity	1.44% of value	0.0389	0.0015
Setting Gas Divider	0.25% of value	0.0068	0.0000
Interference	1.2% of value	0.0324	0.0010
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 4a
Combustion Gas Emissions from Rotoman 3 Upper (02/09/09)

UNCERTAINTY OF CARBON MONOXIDE BY HORIBA 1

Reading =

31.3

 ppm
Span Gas Certified Value =

118.6

 ppm +/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.3130	0.0980
Zero Drift/Lower limit of detection	0.1ppm	0.1000	0.0100
Span Drift	2% of value	0.6260	0.3919
Linearity	1.2% of value	1.2000	1.4400
Setting Gas Divider	0.25% of value	0.0783	0.0061
Interference	2.9% of value	0.9077	0.8239
Span Gas	1% of span gas certified value	1.1860	1.4066

Sum U ²	4.18
Total U	2.04 ppm
95% confidence	4.09 ppm
or	5.11 mg/Nm ³

UNCERTAINTY OF OXIDES OF NITROGEN BY HORIBA 1

Reading =

31.7

 ppm
Span Gas Certified Value =

209

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.3170	0.1005
Zero Drift/Lower limit of detection	0.4ppm	0.4000	0.1600
Span Drift	1.9% of value	0.6023	0.3628
Linearity	0.63% of value	0.6300	0.3969
Setting Gas Divider	0.25% of value	0.0793	0.0063
Interference	1.2% of value	0.3804	0.1447
Span Gas	1% of span gas certified value	2.0900	4.3681

Sum U ²	5.54
Total U	2.35 ppm
95% confidence	4.71 ppm
or	9.66 mg/Nm ³

UNCERTAINTY OF SULPHUR DIOXIDE BY HORIBA 1

Reading =

1.9

 ppm
Span Gas Certified Value =

156

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.0190	0.0004
Zero Drift/Lower limit of detection	1.2ppm	1.2000	1.4400
Span Drift	1.9% of value	0.0361	0.0013
Linearity	1.44% of value	0.0274	0.0007
Setting Gas Divider	0.25% of value	0.0048	0.0000
Interference	1.2% of value	0.0228	0.0005
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	11.24 mg/Nm ³

TABLE 3d

UNCERTAINTY OF VOC BY SIGNAL2

Client Name: Wyndeham Heron

Job No: 4029

Reading = 1.2 ppm as C3H8
 Span Gas= 7.97 ppm+/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.012	0.000
Zero Drift/ Detection	0.2ppm	0.2	0.040
Noise	0.1 ppm	0.1	0.010
Linearity	1.0% of value	0.012	0.000
Setting Gas Divider	0.25% of value	0.003	0.000
Temperature Drift	1% of value	0.012	0.000
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	0.48	ppm as C3H8
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or **0.77** mg/Nm³ as carbon

TABLE 4b

UNCERTAINTY OF VOC BY SIGNAL2

Client Name: Wyndeham Heron

Job No: 4029

Reading = 0.8 ppm as C3H8
 Span Gas= 7.97 ppm+/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.008	0.000
Zero Drift/ Detection	0.2ppm	0.2	0.040
Noise	0.1 ppm	0.1	0.010
Linearity	1.0% of value	0.008	0.000
Setting Gas Divider	0.25% of value	0.002	0.000
Temperature Drift	1% of value	0.008	0.000
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	0.48	ppm as C3H8
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or **0.76** mg/Nm³ as carbon