EMISSIONS TESTS

on the

FCC CREMATORS

at

CANLEY CREMATORIUM
Coventry

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INTRODUCTION

Coventry Council has appointed NIFES Consulting Group to carry out Annual Compliance Tests on the cremators at Canley Crematorium, Coventry.

Four FCC Newton cremators are installed and each has natural gas fired primary and secondary zone burners. The cremators have been designed to comply with the standards given in the Secretary of State's Guidance Note PG5/2(95).

The tests were carried out on the cremators during the week ending 24th May 2003 to monitor emissions of prescribed pollutants, as follows:-

1. Particulate Matter.
2. Hydrogen Chloride
3. Carbon Monoxide
4. Organic Compounds, excluding Particulate Matter and expressed as total carbon.

Pollutant concentrations in mg/m^3 are expressed at reference conditions of 0°C, 1013 mbar, 11% oxygen and dry gas throughout this report.

SUMMARY

The results obtained from the tests carried out on the cremators are shown below:-

Concentration

Pollutant	Test Results (mg/m^3)				Emission Limit (mg/m^3)
	Cremator No.1	Cremator No.2	Cremator No.3	Cremator No.4	
Particulate Matter	91	57	84	44	80
Hydrogen Chloride	46	47	127	27	200
Carbon Monoxide	24	11	19	13	100
Organic Compounds	1	<1	1	4	20

All of the above concentrations are expressed at reference conditions of 0°C, 1013 mbar, 11% oxygen and dry gas.

Mass Emission

Pollutant	Test Results (g/h)				Emission Limit (g/h)
	Cremator No.1	Cremator No.2	Cremator No.3	Cremator No.4	
Particulate Matter	137	55	119	63	120
Hydrogen Chloride	71	45	180	40	300
Carbon Monoxide	36	11	27	19	150
Organic Compounds	2	<1	2	5	30

It can be seen from the concentration emission results that all four cremators complied with the prescribed emission limits for hydrogen chloride, carbon monoxide and organic compounds.

However, only cremators No.2 and No.4 complied with the particulate emission limit.

Cremators No.1 and No.3 failed to meet the required limit, although in the case of cremator No.3 it was within the ±10% error associated with the test procedures. In both cases, it can be seen from the individual test results that only one of the two tests performed on each cremator failed to comply. A review of the chloride emissions for cremators No.1 and No.3 also indicates high emissions and suggests that materials associated with the coffin and its contents may have been inappropriate.

84 mg is within ±10 % error.
would be useful to see chlorine emission to back up theory of inappropriate coffin
what action has been taken to investigate with funeral directors ?

1.0 TEST PROCEDURES AND EQUIPMENT

The test procedures used for monitoring the performance of the cremators were as follows:-

1.	Particulate Matter	-	In accordance with BS.6069, using the Zambelli automatic isokinetic sampling system. Silica micro-fibre thimbles were used as the filtration medium (collection efficiency > 98% at 0.3 micron).
2.	Hydrogen Chloride	-	Absorption in purified water and subsequent laboratory analysis by Ion Chromatography.
3.	Carbon Monoxide	-	Servomex Xentra 4900 Non-Dispersive Infra-Red Analyser.
4.	Organic Compounds	-	Signal flame ionisation detector with heated sampling line.
5.	Flue Gas Oxygen Levels	-	Servomex Xentra 4900 Paramagnetic Analyser.
6.	Flue Gas Temperatures	-	Type K thermocouples.
7.	Flue Gas Flow Rates	-	NPL and S-type pitot tubes and electronic micromanometers.

2.0 EMISSION TEST RESULTS

2.1 Particulate Matter

The detailed results for the particulate emission tests are given in Appendix 1. A summary of the results is shown below:-

2.1.1 Cremator No.1

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 4**	**Test 2** **21/5/03** **Cycle 1**	**Average** -
Flue Gas Temperature	°C	800	819	810
Flue Gas Velocity at Sampling	m/sec	9.6	12.2	10.9
Gas Flow Rate in Duct at Sampling Points (at ref.conditions 11% O_2, 0°C, 1013 mbar)	Nm^3/h	1313	1829	1571
Reference Oxygen Level	%	11.0	11.0	11.0
Measured Oxygen Level	%	10.3	8.8	9.6
Gas Moisture Level	%	12.1	13.8	12.9
Mass Emission of Particulates	**g/h**	**149**	**125**	**137**
Concentration at Reference Conditions	**mg/m^3**	**113**	**68**	**91**

2.1.2 Cremator No.2

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 1**	**Test 2** **20/5/03** **Cycle 2**	**Average** -
Flue Gas Temperature	°C	791	814	803
Flue Gas Velocity at Sampling	m/sec	7.4	7.3	7.4
Gas Flow Rate in Duct at Sampling Points (at ref.conditions 11% O_2, 0°C, 1013 mbar)	Nm^3/h	958	973	966
Reference Oxygen Level	%	11.0	11.0	11.0
Measured Oxygen Level	%	11.1	10.4	10.8
Gas Moisture Level	%	11.2	11.9	11.6
Mass Emission of Particulates	**g/h**	**33**	**77**	**55**
Concentration at Reference Conditions	**mg/m^3**	**35**	**79**	**57**

2.1.3 Cremator No.3

Date Cremation Ref.		Test 1 21/5/03 Cycle 1	Test 2 21/5/03 Cycle 2	Average -
Flue Gas Temperature	°C	778	801	790
Flue Gas Velocity at Sampling	m/sec	11.2	11.5	11.3
Gas Flow Rate in Duct at Sampling Points (at ref.conditions 11% 0_2, 0°C, 1013 mbar)	Nm^3/h	1450	1366	1408
Reference Oxygen Level	%	11.0	11.0	11.0
Measured Oxygen Level	%	11.2	11.9	11.5
Gas Moisture Level	%	11.1	10.3	10.7
Mass Emission of Particulates	**g/h**	**144**	**94**	**119**
Concentration at Reference Conditions	**mg/m^3**	**99**	**69**	**84**

2.1.4 Cremator No.4

Date Cremation Ref.		Test 1 21/5/03 Cycle 1	Test 2 22/5/03 Cycle 1	Average -
Flue Gas Temperature	°C	862	870	866
Flue Gas Velocity at Sampling	m/sec	11.1	11.1	11.1
Gas Flow Rate in Duct at Sampling Points (at ref.conditions 11% 0_2, 0°C, 1013 mbar)	Nm^3/h	1348	1528	1438
Reference Oxygen Level	%	11.0	11.0	11.0
Measured Oxygen Level	%	11.0	9.4	10.2
Gas Moisture Level	%	11.3	13.1	12.2
Mass Emission of Particulates	**g/h**	**73**	**53**	**63**
Concentration at Reference Conditions	**mg/m^3**	**54**	**34**	**44**

2.2 Hydrogen Chloride

The detailed test results for hydrogen chloride are given in Appendix 2. A summary of the results is shown below:-

2.2.1 Cremator No.1

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 4**	**Test 2** **21/5/03** **Cycle 1**	**Average** -
Gas Sampling Rate	l/min	2.6	2.4	-
Sampled Gas Volume at Reference Conditions	m^3	0.1975	0.2750	-
Mass of HCl collected	mg	9.8	11.5	-
Mass Emission of HCl	**g/h**	**65**	**77**	**71**
Concentration at Reference Conditions	**mg/m^3**	**50**	**42**	**46**

2.2.2 Cremator No.2

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 1**	**Test 2** **20/5/03** **Cycle 2**	**Average** -
Gas Sampling Rate	l/min	1.8	1.9	-
Sampled Gas Volume at Reference Conditions	m^3	0.1377	0.1712	-
Mass of HCl collected	mg	2.2	13.2	-
Mass Emission of HCl	**g/h**	**15**	**75**	**45**
Concentration at Reference Conditions	**mg/m^3**	**16**	**77**	**47**

2.2.3 Cremator No.3

Date **Cremation Ref.**		**Test 1** **21/5/03** **Cycle 1**	**Test 2** **21/5/03** **Cycle 2**	**Average** -
Gas Sampling Rate	l/min	2.0	1.3	-
Sampled Gas Volume at Reference Conditions	m^3	0.1631	0.0997	-
Mass of HCl collected	mg	27	8.8	-
Mass Emission of HCl	**g/h**	**240**	**121**	**180**
Concentration at Reference Conditions	**mg/m^3**	**165**	**89**	**127**

2.2.4 Cremator No.4

Date **Cremation Ref.**		**Test 1** **21/5/03** **Cycle 1**	**Test 2** **22/5/03** **Cycle 1**	**Average** -
Gas Sampling Rate	l/min	1.8	2.0	-
Sampled Gas Volume at Reference Conditions	m^3	0.1217	0.1617	-
Mass of HCl collected	mg	2.6	5.4	-
Mass Emission of HCl	**g/h**	**29**	**51**	40
Concentration at Reference Conditions	**mg/m^3**	**21**	**33**	**27**

2.3 Carbon Monoxide

The detailed test results for carbon monoxide are given in Appendix 3. Average emissions data were recorded for complete cremation cycles on a one-minute mean concentration basis. Cycle average data are summarised below:-

2.3.1 Cremator No.1

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 4**	**Test 2** **21/5/03** **Cycle 1**	**Average** -
Flue Gas Oxygen	%	10.3	8.8	9.6
Carbon Monoxide	ppm	32	22	27
Mass Emission of CO	**g/h**	**38**	**33**	**36**
Concentration at Reference Conditions	**mg/m^3**	**29**	**18**	**24**

2.3.2 Cremator No.2

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 1**	**Test 2** **20/5/03** **Cycle 2**	**Average** -
Flue Gas Oxygen	%	11.1	10.4	10.8
Carbon Monoxide	ppm	6	14	10
Mass Emission of CO	**g/h**	**7**	**15**	**11**
Concentration at Reference Conditions	**mg/m^3**	**7**	**15**	**11**

2.3.3 Cremator No.3

Date **Cremation Ref.**		**Test 1** **21/5/03** **Cycle 1**	**Test 2** **21/5/03** **Cycle 2**	**Average** -
Flue Gas Oxygen	%	11.2	11.9	11.5
Carbon Monoxide	ppm	18	13	16
Mass Emission of CO	**g/h**	**31**	**22**	**27**
Concentration at Reference Conditions	**mg/m^3**	**21**	**16**	**19**

2.3.4 Cremator No.4

Date **Cremation Ref.**		**Test 1** **21/5/03** **Cycle 1**	**Test 2** **22/5/03** **Cycle 1**	**Average** -
Flue Gas Oxygen	%	11.0	9.4	10.2
Carbon Monoxide	ppm	7	22	15
Mass Emission of CO	**g/h**	**11**	**27**	**19**
Concentration at Reference Conditions	**mg/m^3**	**8**	**18**	**13**

2.4 Organic Compounds

The detailed test results for volatile organic compounds are given in Appendix 3. Average emissions data were recorded for complete cremation cycles on a one-minute mean concentration basis. Cycle average data are summarised below:-

2.4.1 Cremator No.1

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 4**	**Test 2** **21/5/03** **Cycle 1**	**Average** **-**
Flue Gas Oxygen	%	10.3	8.8	9.6
Organic Compounds	ppm	<1	1	<1
Mass Emission of Organic Compounds	**g/h**	**1**	**3**	**2**
Concentration at Reference Conditions	**mg/m^3**	**<1**	**2**	**1**

2.4.2 Cremator No.2

Date **Cremation Ref.**		**Test 1** **20/5/03** **Cycle 1**	**Test 2** **20/5/03** **Cycle 2**	**Average** **-**
Flue Gas Oxygen	%	11.1	10.4	10.8
Organic Compounds	ppm	<1	<1	<1
Mass Emission of Organic Compounds	**g/h**	**<1**	**<1**	**<1**
Concentration at Reference Conditions	**mg/m^3**	**<1**	**1**	**<1**

2.4.3 Cremator No.3

Date **Cremation Ref.**		**Test 1** **21/5/03** **Cycle 1**	**Test 2** **21/5/03** **Cycle 2**	**Average** **-**
Flue Gas Oxygen	%	11.2	11.9	11.5
Organic Compounds	ppm	1	1	1
Mass Emission of Organic Compounds	**g/h**	**2**	**1**	**2**
Concentration at Reference Conditions	**mg/m^3**	**1**	**1**	**1**

2.4.4 Cremator No.4

Date Cremation Ref.		Test 1 21/5/03 Cycle 1	Test 2 22/5/03 Cycle 1	Average -
Flue Gas Oxygen	%	11.0	9.4	10.2
Organic Compounds	ppm	1	3	2
Mass Emission of Organic Compounds	**g/h**	**2**	**7**	**5**
Concentration at Reference Conditions	**mg/m^3**	**2**	**5**	**4**

3.0 DISCUSSION

Under the terms of the Environmental Protection Act, all cremators must comply with the pollutant emission limits given in the Secretary of State's Guidance Note PG5/2(95).

The pollutant concentrations recorded during the tests are shown below, together with the specified limits:-

Concentration

Pollutant	Test Results (mg/m^3)				Emission Limit (mg/m^3)
	Cremator No.1	Cremator No.2	Cremator No.3	Cremator No.4	
Particulate Matter	91	57	84	44	80
Hydrogen Chloride	46	47	127	27	200
Carbon Monoxide	24	11	19	13	100
Organic Compounds	1	<1	1	4	20

All of the above concentrations are expressed at reference conditions of 0°C, 1013 mbar, 11% oxygen and dry gas.

Mass Emission

Pollutant	Test Results (g/h)				Emission Limit (g/h)
	Cremator No.1	Cremator No.2	Cremator No.3	Cremator No.4	
Particulate Matter	137	55	119	63	120
Hydrogen Chloride	71	45	180	40	300
Carbon Monoxide	36	11	27	19	150
Organic Compounds	2	<1	2	5	30

It can be seen from the concentration emission results that all four cremators complied with the prescribed emission limits for hydrogen chloride, carbon monoxide and organic compounds.

However, only cremators No.2 and No.4 complied with the particulate emission limit.

Cremators No.1 and No.3 failed to meet the required limit, although in the case of cremator No.3 it was within the $\pm$10% error associated with the test procedures. In both cases, it can be seen from the individual test results that only one of the two tests performed on each cremator failed to comply. This may have been due to unsuitable material within the charges, a supposition supported by the high chloride emissions also recorded on these cremators.

APPENDIX 1

DETAILED TEST RESULTS
PARTICULATE EMISSIONS

COVENTRY CREMATORIUM

PARTICULATE MATTER
Cremator No. 1

Date	Cycle 4 20/05/2003	Cycle 1 21/05/2003	
AVERAGE FLUE GAS CONDITIONS			**Average**
Oxygen (% dry)	10.3	8.8	9.6
Water Vapour (%)	12.1	13.8	12.9
Temperature (°C)	800	819	810
Velocity (m/s)	9.6	12.2	10.9
Duct Diameter (mm)	450	450	
Duct Area (m^2)	0.159	0.159	
Volume at Duct Conditions (m^3/s)	1.53	1.94	
Volume at 0°C (Nm^3/s)	0.39	0.48	
Volume at 0°C (Nm^3/hr)	1398	1742	1570
Volume at Ref. Conds. (m^3/hr)	1313	1829	1571
SAMPLING DETAILS			
Sampling Plane	Plane A	Plane B	
Number of Sample Points	2	2	
Time at Each Sample Point (mins)	40.0	45.0	
Diameter of Sampling Nozzle (mm)	10	10	
% of Isokinetic Sampling Velocity	99.80%	99.56%	
Time @ Start of Test	15:37	09:40	
Gas Meter @ Start of Test (m^3)	769.943	770.789	
Time @ End of Test	16:52	11:14	
Gas Meter @ End of Test (m^3)	770.7890	772.0616	
Dry Gas Volume Sampled (m^3)	0.8460	1.2726	
Temperature of Gas @ Meter (°C)	22	19	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11.0	11.0	
Moisture (%)	0.0	0.0	
RESULTS			
Filter ID Number	16	17	
Weight of Filter @ Start of Test (g)	3.3326	3.4666	
Weight of Filter @ End of Test (g)	3.4274	3.5655	
Weight of Particulates Collected (mg)	94.8	98.9	
Sampled Gas Volume @ Ref. Conds. (m^3)	0.8363	1.4479	
Particulate Conc. @ Duct Conds. (mg/m^3)	27.1	17.9	22.5
Mass Emission of Particulates (g/hr)	**149**	**125**	**137**
Particulate Conc. @ Ref. Conds. (mg/m^3)	**113**	**68**	**91**

COVENTRY CREMATORIUM

PARTICULATE MATTER
Cremator No. 2

Date	**Cycle 1 20/05/2003**	**Cycle 2 20/05/2003**	
AVERAGE FLUE GAS CONDITIONS			**Average**
Oxygen (% dry)	11.1	10.4	10.8
Water Vapour (%)	11.2	11.9	11.6
Temperature (°C)	791	814	803
Velocity (m/s)	7.4	7.3	7.4
Duct Diameter (mm)	450	450	
Duct Area (m^2)	0.159	0.159	
Volume at Duct Conditions (m^3/s)	1.18	1.16	
Volume at 0°C (Nm^3/s)	0.30	0.29	
Volume at 0°C (Nm^3/hr)	1091	1045	1068
Volume at Ref. Conds. (m^3/hr)	958	973	966
SAMPLING DETAILS			
Sampling Plane	Plane A	Plane B	
Number of Sample Points	2	2	
Time at Each Sample Point (mins)	40.0	45.0	
Diameter of Sampling Nozzle (mm)	10	10	
% of Isokinetic Sampling Velocity	99.39%	99.68%	
Time @ Start of Test	11:04	12:40	
Gas Meter @ Start of Test (m^3)	768.482	769.1920	
Time @ End of Test	12:27	14:12	
Gas Meter @ End of Test (m^3)	769.1920	769.9430	
Dry Gas Volume Sampled (m^3)	0.7100	0.7510	
Temperature of Gas @ Meter (°C)	20	22	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11.0	11.0	
Moisture (%)	0.0	0.0	
RESULTS			
Filter ID Number	14	15	
Weight of Filter @ Start of Test (g)	3.3973	3.3444	
Weight of Filter @ End of Test (g)	3.4200	3.4027	
Weight of Particulates Collected (mg)	22.7	58.3	
Sampled Gas Volume @ Ref. Conds. (m^3)	0.6541	0.7347	
Particulate Conc. @ Duct Conds. (mg/m^3)	7.8	18.5	13.2
Mass Emission of Particulates (g/hr)	**33**	**77**	**55**
Particulate Conc. @ Ref. Conds. (mg/m^3)	**35**	**79**	**57**

COVENTRY CREMATORIUM

PARTICULATE MATTER
Cremator No. 3

Date	Cycle 1 21/05/2003	Cycle 2 21/05/2003	
AVERAGE FLUE GAS CONDITIONS			**Average**
Oxygen (% dry)	11.2	11.9	11.5
Water Vapour (%)	11.1	10.3	10.7
Temperature (°C)	778	801	790
Velocity (m/s)	11.2	11.5	11.3
Duct Diameter (mm)	450	450	
Duct Area (m^2)	0.159	0.159	
Volume at Duct Conditions (m^3/s)	1.78	1.83	
Volume at 0°C (Nm^3/s)	0.46	0.47	
Volume at 0°C (Nm^3/hr)	1661	1674	1667
Volume at Ref. Conds. (m^3/hr)	1450	1366	1408
SAMPLING DETAILS			
Sampling Plane	Plane A	Plane B	
Number of Sample Points	2	2	
Time at Each Sample Point (mins)	45.0	45.0	
Diameter of Sampling Nozzle (mm)	10	10	
% of Isokinetic Sampling Velocity	99.79%	99.80%	
Time @ Start of Test	11:27	13:09	
Gas Meter @ Start of Test (m^3)	772.0616	773.2486	
Time @ End of Test	12:57	14:36	
Gas Meter @ End of Test (m^3)	773.2486	774.3926	
Dry Gas Volume Sampled (m^3)	1.1870	1.1440	
Temperature of Gas @ Meter (°C)	23	25	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11.0	11.0	
Moisture (%)	0.0	0.0	
RESULTS			
Filter ID Number	18	19	
Weight of Filter @ Start of Test (g)	3.3081	3.4442	
Weight of Filter @ End of Test (g)	3.4151	3.5100	
Weight of Particulates Collected (mg)	107.0	65.8	
Sampled Gas Volume @ Ref. Conds. (m^3)	1.0756	0.9533	
Particulate Conc. @ Duct Conds. (mg/m^3)	22.6	14.3	18.4
Mass Emission of Particulates (g/hr)	**144**	**94**	**119**
Particulate Conc. @ Ref. Conds. (mg/m^3)	**99**	**69**	**84**

COVENTRY CREMATORIUM

PARTICULATE MATTER
Cremator No. 4

Date	**Cycle 1 21/05/2003**	**Cycle 1 22/05/2003**	
AVERAGE FLUE GAS CONDITIONS			**Average**
Oxygen (% dry)	11.0	9.4	10.2
Water Vapour (%)	11.3	13.1	12.2
Temperature (°C)	862	870	866
Velocity (m/s)	11.1	11.1	11.1
Duct Diameter (mm)	450	450	
Duct Area (m^2)	0.159	0.159	
Volume at Duct Conditions (m^3/s)	1.76	1.76	
Volume at 0°C (Nm^3/s)	0.42	0.42	
Volume at 0°C (Nm^3/hr)	1523	1514	1518
Volume at Ref. Conds. (m^3/hr)	1348	1528	1438
SAMPLING DETAILS			
Sampling Plane	Plane A	Plane B	
Number of Sample Points	2	2	
Time at Each Sample Point (mins)	35.0	35.0	
Diameter of Sampling Nozzle (mm)	10	10	
% of Isokinetic Sampling Velocity	99.86%	99.94%	
Time @ Start of Test	14:49	09:25	
Gas Meter @ Start of Test (m^3)	774.3926	775.2488	
Time @ End of Test	16:01	10:36	
Gas Meter @ End of Test (m^3)	775.2488	776.0970	
Dry Gas Volume Sampled (m^3)	0.8562	0.8482	
Temperature of Gas @ Meter (°C)	22	17	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11.0	11.0	
Moisture (%)	0.0	0.0	
RESULTS			
Filter ID Number	26	22	
Weight of Filter @ Start of Test (g)	3.3111	3.4076	
Weight of Filter @ End of Test (g)	3.3540	3.4395	
Weight of Particulates Collected (mg)	42.9	31.9	
Sampled Gas Volume @ Ref. Conds. (m^3)	0.7906	0.9275	
Particulate Conc. @ Duct Conds. (mg/m^3)	11.6	8.3	9.9
Mass Emission of Particulates (g/hr)	**73**	**53**	**63**
Particulate Conc. @ Ref. Conds. (mg/m^3)	**54**	**34**	**44**

APPENDIX 2

DETAILED TEST RESULTS
HYDROGEN CHLORIDE

COVENTRY CREMATORIUM

HYDROGEN CHLORIDE
Cremator No. 1

Date	Cycle 4 20/05/2003	Cycle 1 21/05/2003	
SAMPLING DETAILS			
Time @ start of test	15:35	09:40	
Gas meter @ start of test (m^3)	78.2282	78.4280	
Time @ end of test	16:52	11:14	
Gas meter @ end of test (m^3)	78.4280	78.6540	
Gas sample rate (litre/min)	2.6	2.4	
Sampled gas volume (m^3)	0.1998	0.2260	
Temperature of gas @ meter (°C)	22		
Moisture content of gas @ meter (%)	0	0	
Oxygen content of gas (%)	10.3	8.8	
LABORATORY ANALYSIS DETAILS			
Sample			
Volume of absorber (ml)	490	480	
Hydrogen chloride content (mg/l)	20.0	24.0	
Blank Absorber Solution			
Volume of absorber (ml)	530	530	
Hydrogen chloride content (mg/l)	<0.3	<0.3	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11	11	
Moisture (%)	0	0	
RESULTS			
Sampled Gas Volume @ Ref. Conds. (m^3)	0.1975	0.2750	
Mass of HCl in absorber (mg)	9.8	11.5	
Volume at Ref. Conds. (m^3/hr)	1313	1829	**Average**
HCL Mass Emission @ Ref. Conds. (g/hr)	**65**	**77**	**71**
HCl Concentration @ Ref. Conds. (mg/m^3)	**50**	**42**	**46**

COVENTRY CREMATORIUM

HYDROGEN CHLORIDE
Cremator No. 2

	Cycle 1	Cycle 2	
Date	20/05/2003	20/05/2003	
SAMPLING DETAILS			
Time @ start of test	11:02	12:38	
Gas meter @ start of test (m^3)	77.9632	78.1132	
Time @ end of test	12:27	14:12	
Gas meter @ end of test (m^3)	78.1132	78.2882	
Gas sample rate (litre/min)	1.8	1.9	
Sampled gas volume (m^3)	0.1500	0.1750	
Temperature of gas @ meter (°C)	21	22	
Moisture content of gas @ meter (%)	0	0	
Oxygen content of gas (%)	11.1	10.4	
LABORATORY ANALYSIS DETAILS			
Sample			
Volume of absorber (ml)	490	440	
Hydrogen chloride content (mg/l)	4.5	30.0	
Blank Absorber Solution			
Volume of absorber (ml)	530	530	
Hydrogen chloride content (mg/l)	<0.3	<0.3	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11	11	
Moisture (%)	0	0	
RESULTS			
Sampled Gas Volume @ Ref. Conds. (m^3)	0.1377	0.1712	
Mass of HCl in absorber (mg)	2.2	13.2	
Volume at Ref. Conds. (m^3/hr)	958	973	**Average**
HCL Mass Emission @ Ref. Conds. (g/hr)	**15**	**75**	**45**
HCl Concentration @ Ref. Conds. (mg/m^3)	**16**	**77**	**47**

COVENTRY CREMATORIUM

HYDROGEN CHLORIDE
Cremator No. 3

	Cycle 1	Cycle 2	
Date	21/05/2003	21/05/2003	
SAMPLING DETAILS			
Time @ start of test	11:25	13:07	
Gas meter @ start of test (m^3)	78.6540	78.8340	
Time @ end of test	12:57	14:36	
Gas meter @ end of test (m^3)	78.8340	78.9536	
Gas sample rate (litre/min)	2.0	1.3	
Sampled gas volume (m^3)	0.1800	0.1196	
Temperature of gas @ meter (°C)	23	25	
Moisture content of gas @ meter (%)	0	0	
Oxygen content of gas (%)	11.2	11.9	
LABORATORY ANALYSIS DETAILS			
Sample			
Volume of absorber (ml)	490	490	
Hydrogen chloride content (mg/l)	55.0	18.0	
Blank Absorber Solution			
Volume of absorber (ml)	530	530	
Hydrogen chloride content (mg/l)	<0.3	<0.3	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11	11	
Moisture (%)	0	0	
RESULTS			
Sampled Gas Volume @ Ref. Conds. (m^3)	0.1631	0.0997	
Mass of HCl in absorber (mg)	27.0	8.8	
Volume at Ref. Conds. (m^3/hr)	1450	1366	**Average**
HCL Mass Emission @ Ref. Conds. (g/hr)	**240**	**121**	**180**
HCl Concentration @ Ref. Conds. (mg/m^3)	**165**	**89**	**127**

COVENTRY CREMATORIUM

HYDROGEN CHLORIDE
Cremator No. 4

Date	Cycle 1 21/05/2003	Cycle 1 22/05/2003	
SAMPLING DETAILS			
Time @ start of test	14:48	09:23	
Gas meter @ start of test (m^3)	78.9536	79.0832	
Time @ end of test	16:01	10:36	
Gas meter @ end of test (m^3)	79.0832	79.2306	
Gas sample rate (litre/min)	1.8	2.0	
Sampled gas volume (m^3)	0.1296	0.1474	
Temperature of gas @ meter (°C)	17	16	
Moisture content of gas @ meter (%)	0	0	
Oxygen content of gas (%)	11.0	9.4	
LABORATORY ANALYSIS DETAILS			
Sample			
Volume of absorber (ml)	540	490	
Hydrogen chloride content (mg/l)	4.8	11.0	
Blank Absorber Solution			
Volume of absorber (ml)	530	530	
Hydrogen chloride content (mg/l)	<0.3	<0.3	
STANDARD REFERENCE CONDITIONS			
Temperature (°C)	0	0	
Oxygen (%)	11	11	
Moisture (%)	0	0	
RESULTS			
Sampled Gas Volume @ Ref. Conds. (m^3)	0.1217	0.1617	
Mass of HCl in absorber (mg)	2.6	5.4	
Volume at Ref. Conds. (m^3/hr)	1348	1528	**Average**
HCL Mass Emission @ Ref. Conds. (g/hr)	**29**	**51**	**40**
HCl Concentration @ Ref. Conds. (mg/m^3)	**21**	**33**	**27**

APPENDIX 3

DETAILED TEST RESULTS
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN AND TEMPERATURE

COVENTRY CREMATORIUM
Cremator No. 1
Test No. 1
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date 20/05/2003
Cycle Ref. Cycle 4
Start 15:35
Finish 16:52

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.000	4.020	13.890	0.0	0.5	15.5	0	1.4	727
2	4.000	4.020	13.950	0.0	0.5	15.5	0	1.5	730
3	4.310	4.020	13.330	9.7	0.5	14.6	19	1.3	772
4	6.750	4.020	7.930	85.9	0.5	6.1	72	0.5	822
5	24.000	4.020	6.830	625.0	0.5	4.4	471	0.5	846
6	4.450	4.020	10.890	14.1	0.5	10.8	17	0.8	835
7	4.230	4.020	11.420	7.2	0.5	11.6	10	0.9	817
8	4.230	4.020	12.800	7.2	0.5	13.8	12	1.1	801
9	4.260	4.020	11.800	8.1	0.5	12.2	12	0.9	796
10	4.310	4.020	11.600	9.7	0.5	11.9	13	0.9	793
11	4.270	4.020	11.450	8.4	0.5	11.6	11	0.9	790
12	4.260	4.020	10.760	8.1	0.5	10.6	10	0.8	794
13	4.270	4.020	9.330	8.4	0.5	8.3	8	0.6	809
14	24.000	4.020	6.640	625.0	0.5	4.1	463	0.5	846
15	24.000	4.020	9.930	625.0	0.5	9.3	666	0.7	840
16	5.000	4.020	11.270	31.3	0.5	11.4	41	0.8	824
17	4.380	4.020	10.920	11.9	0.5	10.8	15	0.8	816
18	4.290	4.020	11.210	9.1	0.5	11.3	12	0.8	809
19	4.250	4.020	10.920	7.8	0.5	10.8	10	0.8	807
20	4.210	4.020	9.370	6.6	0.5	8.4	7	0.6	814
21	4.160	4.020	9.430	5.0	0.5	8.5	5	0.6	817
22	4.120	4.020	9.790	3.6	0.5	9.0	4	0.7	816
23	4.120	4.020	9.920	3.8	0.5	9.3	4	0.7	814
24	4.140	4.020	9.970	4.4	0.5	9.3	5	0.7	812
25	4.140	4.020	9.990	4.4	0.5	9.4	5	0.7	810
26	4.150	4.020	10.040	4.7	0.5	9.4	5	0.7	809
27	4.170	4.010	10.120	5.3	0.2	9.6	6	0.4	809
28	4.190	4.010	10.180	5.9	0.2	9.7	7	0.4	808
29	4.200	4.010	9.940	6.3	0.2	9.3	7	0.3	806
30	4.210	4.010	8.940	6.6	0.2	7.7	6	0.3	803
31	4.200	4.020	9.190	6.3	0.5	8.1	6	0.6	803
32	4.200	4.020	9.380	6.3	0.5	8.4	6	0.6	803
33	4.200	4.010	9.220	6.3	0.2	8.2	6	0.3	802
34	4.200	4.020	9.120	6.3	0.5	8.0	6	0.6	801
35	4.210	4.010	9.070	6.6	0.2	7.9	6	0.3	801
36	4.230	4.010	9.360	7.2	0.2	8.4	7	0.3	801
37	4.230	4.010	9.370	7.2	0.2	8.4	7	0.3	800
38	4.220	4.010	9.190	6.9	0.2	8.1	7	0.3	799
39	4.230	4.010	9.310	7.2	0.2	8.3	7	0.3	799
40	4.220	4.010	9.230	6.9	0.2	8.2	7	0.3	799
41	4.220	4.010	9.290	6.9	0.2	8.3	7	0.3	798
42	4.220	4.010	9.390	6.9	0.2	8.4	7	0.3	798
43	4.220	4.010	9.420	6.9	0.2	8.5	7	0.3	798
44	4.220	4.010	9.610	6.9	0.2	8.8	7	0.3	797
45	4.200	4.010	9.760	6.3	0.2	9.0	7	0.3	796
46	4.200	4.010	9.950	6.3	0.2	9.3	7	0.3	796
47	4.210	4.010	10.140	6.6	0.2	9.6	7	0.4	795
48	4.210	4.010	10.340	6.6	0.2	9.9	7	0.4	794
49	4.190	4.010	10.600	5.9	0.2	10.3	7	0.4	793
50	4.160	4.010	10.820	5.0	0.2	10.7	6	0.4	792
51	4.150	4.010	11.010	4.7	0.2	11.0	6	0.4	791
52	4.140	4.010	10.950	4.4	0.2	10.9	5	0.4	789
53	4.130	4.010	10.690	4.1	0.2	10.5	5	0.4	788
54	4.200	4.010	10.500	6.3	0.2	10.2	7	0.4	790
55	4.310	4.010	10.430	9.7	0.2	10.0	11	0.4	790
56	4.340	4.000	10.540	10.6	0.0	10.2	12	0.0	791
57	4.300	4.010	10.630	9.4	0.2	10.4	11	0.4	791
58	4.250	4.010	10.710	7.8	0.2	10.5	9	0.4	791
59	4.240	4.000	10.710	7.5	0.0	10.5	9	0.0	792
60	4.230	4.000	10.840	7.2	0.0	10.7	9	0.0	791
61	4.210	4.000	10.930	6.6	0.0	10.8	8	0.0	791
62	4.160	4.000	11.030	5.0	0.0	11.0	6	0.0	791
63	4.160	4.000	11.260	5.0	0.0	11.3	6	0.0	791
64	4.130	4.000	11.310	4.1	0.0	11.4	5	0.0	791
65	4.110	4.000	11.270	3.4	0.0	11.4	4	0.0	791
66	4.110	4.000	11.290	3.4	0.0	11.4	4	0.0	792
67	4.110	4.000	11.530	3.4	0.0	11.8	5	0.0	792
68	4.100	4.000	11.930	3.1	0.0	12.4	5	0.0	792
69	4.040	4.000	11.990	1.3	0.0	12.5	2	0.0	791
70	4.000	4.000	11.960	0.0	0.0	12.4	0	0.0	792
71	4.000	4.000	12.150	0.0	0.0	12.7	0	0.0	791
72	4.000	4.000	12.480	0.0	0.0	13.3	0	0.0	793
73	4.000	4.000	12.830	0.0	0.0	13.8	0	0.0	794
74	4.000	4.000	13.060	0.0	0.0	14.2	0	0.0	794
75	4.000	4.000	13.390	0.0	0.0	14.7	0	0.0	792
76	4.000	4.000	13.740	0.0	0.0	15.2	0	0.0	790
77	4.000	4.000	14.010	0.0	0.0	15.6	0	0.0	789
78	4.000	4.000	14.220	0.0	0.0	16.0	0	0.0	787
CYCLE AVERAGES (excluding first two minutes)			:	32	0.3	10.3	29	0.4	800
				Averages for Particulates Test :		10.3			800
				Flue Gas Volume at Ref. Conds. (m³/hr):		1313			
				Mass Emission (g/hr):			38	0.5	

COVENTRY CREMATORIUM
Cremator No. 1
Test No. 2
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date : 21/05/2003
Cycle Ref. : Cycle 1
Start 09:40
Finish 11:14

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.010	4.000	9.440	0.3	0.0	8.5	0	0.0	799
2	4.020	4.050	10.880	0.6	1.5	10.8	1	2.4	789
3	5.610	4.030	9.910	56.6	0.8	9.2	60	1.0	814
4	24.000	4.020	5.580	625.0	0.5	2.5	422	0.4	673
5	24.000	4.160	7.840	625.0	4.0	5.7	510	4.2	656
6	4.850	4.140	10.230	20.3	3.5	9.7	23	5.0	823
7	4.860	4.060	10.210	20.6	2.0	9.7	23	2.8	803
8	4.720	4.050	10.030	22.5	1.2	9.4	24	1.7	810
9	4.820	4.040	9.260	25.6	1.0	8.2	25	1.3	818
10	4.630	4.040	9.320	19.7	1.0	8.3	19	1.3	818
11	4.550	4.040	9.270	17.2	1.0	8.2	17	1.3	821
12	4.520	4.030	8.820	16.2	0.8	7.5	15	0.9	823
13	4.490	4.020	8.420	15.3	0.5	6.9	14	0.6	826
14	4.530	4.040	9.020	16.5	1.0	8.3	14	1.1	818
15	4.560	4.110	7.530	17.5	2.8	5.5	14	2.9	817
16	4.490	4.140	8.620	15.3	3.5	7.2	14	4.1	812
17	4.470	4.110	10.420	14.7	2.8	10.0	17	4.0	799
18	4.630	4.080	10.210	19.7	2.0	9.7	22	2.8	793
19	4.560	4.040	8.690	17.5	1.0	7.3	18	1.2	809
20	4.500	4.040	7.880	15.6	1.0	6.1	13	1.1	823
21	4.500	4.060	8.660	15.6	1.5	7.3	14	1.8	812
22	4.450	4.060	8.010	14.1	1.5	7.7	13	1.8	803
23	4.490	4.060	8.790	14.4	1.5	7.5	13	1.8	800
24	4.530	4.050	9.030	16.6	1.2	7.9	16	1.5	799
25	4.540	4.050	8.550	16.9	1.2	7.1	15	1.4	803
26	4.580	4.050	8.490	17.5	1.2	7.0	16	1.4	809
27	4.600	4.060	8.710	18.8	1.5	7.4	17	1.8	812
28	4.570	4.050	8.740	17.8	1.2	7.4	16	1.5	814
29	4.560	4.070	6.910	17.5	1.8	7.2	16	2.1	834
30	4.500	4.070	9.340	15.6	1.8	8.3	15	2.2	840
31	4.240	4.060	8.640	7.5	1.5	7.3	7	1.8	829
32	4.170	4.070	8.820	5.3	1.8	7.5	5	2.1	823
33	4.180	4.070	9.090	5.6	1.8	8.0	5	2.2	820
34	4.240	4.070	9.290	7.5	1.8	8.3	7	2.2	817
35	4.250	4.060	9.440	8.1	1.5	8.5	9	1.9	814
36	4.320	4.070	9.410	10.0	1.8	8.5	10	2.2	813
37	4.350	4.070	9.060	10.9	1.8	7.9	10	2.1	821
38	4.320	4.060	8.800	10.0	2.0	7.5	9	2.4	838
39	4.230	4.060	8.870	7.2	2.0	7.6	7	2.4	847
40	4.210	4.060	8.590	6.6	2.2	7.2	6	2.6	859
41	4.200	4.100	8.790	6.3	2.5	7.5	6	3.0	869
42	4.150	4.100	9.180	4.7	2.5	8.1	5	3.1	868
43	4.150	4.060	9.190	4.7	2.2	8.1	5	2.8	864
44	4.140	4.080	9.310	4.4	2.0	8.3	4	2.5	859
45	4.130	4.080	8.870	4.1	2.0	7.6	4	2.4	859
46	4.130	4.070	8.720	4.1	1.8	7.4	4	2.1	862
47	4.130	4.070	9.070	4.1	1.8	7.9	4	2.2	861
48	4.140	4.070	8.730	4.4	1.8	7.4	4	2.1	862
49	4.160	4.060	8.770	5.0	1.5	7.5	5	1.8	861
50	4.190	4.060	8.750	5.9	1.5	7.4	5	1.8	862
51	4.210	4.050	8.700	6.6	1.2	7.3	6	1.5	861
52	4.230	4.050	8.530	7.2	1.2	7.1	6	1.4	861
53	4.270	4.050	8.440	8.4	1.2	6.9	7	1.4	862
54	4.360	4.040	8.660	11.3	1.0	7.3	10	1.2	860
55	4.400	4.030	8.690	12.5	0.8	7.3	11	0.9	854
56	4.340	4.020	8.570	10.6	0.5	7.1	10	0.6	848
57	4.250	4.020	8.540	7.8	0.5	7.1	7	0.6	845
58	4.240	4.030	8.570	7.5	0.8	7.1	7	0.9	840
59	4.180	4.030	8.690	5.6	0.8	7.6	5	0.9	835
60	4.140	4.020	8.630	4.4	0.5	7.5	4	0.6	831
61	4.140	4.020	8.890	4.4	0.5	7.8	4	0.6	827
62	4.150	4.030	8.930	4.7	0.8	7.7	4	0.9	824
63	4.140	4.040	9.120	4.4	1.0	8.0	4	1.2	820
64	4.130	4.040	9.350	4.1	1.0	8.4	4	1.3	817
65	4.130	4.040	9.350	4.1	1.0	8.4	4	1.3	815
66	4.150	4.040	9.470	4.7	1.0	8.5	5	1.3	813
67	4.160	4.040	9.610	5.0	1.0	8.8	5	1.3	811
68	4.180	4.040	9.900	5.0	1.0	9.2	5	1.4	809
69	4.100	4.030	9.600	3.1	0.8	8.8	3	1.0	808
70	4.100	4.030	9.540	3.1	0.8	8.7	3	1.0	807
71	4.120	4.030	9.620	3.8	0.8	8.8	4	1.0	806
72	4.120	4.030	9.650	3.8	0.8	8.1	4	1.0	805
73	4.080	4.020	10.210	2.8	0.5	9.7	3	0.7	804
74	4.080	4.020	10.260	2.5	0.5	9.8	3	0.7	801
75	4.080	4.010	10.380	1.9	0.2	10.0	2	0.4	799
76	4.030	4.010	10.430	0.9	0.2	10.0	1	0.4	799
77	4.040	4.010	10.520	1.3	0.2	10.2	1	0.4	797
78	4.050	4.010	10.770	1.6	0.2	10.6	2	0.4	795
79	4.040	4.010	11.080	1.3	0.2	11.1	2	0.4	794
80	4.040	4.020	11.380	1.3	0.5	11.5	2	0.6	792
81	4.030	4.010	11.430	0.9	0.2	11.6	1	0.4	790
82	4.030	4.020	11.780	0.9	0.5	12.2	1	0.9	789
83	4.020	4.030	12.080	0.6	0.8	12.6	1	1.4	788
84	4.010	4.030	12.260	0.3	0.8	12.9	0	1.5	784
85	4.000	4.040	12.560	0.0	1.0	13.4	0	2.1	782
86	4.010	4.050	12.700	0.3	1.2	13.5	1	2.7	782
87	4.000	4.040	13.090	0.0	1.0	14.2	0	2.4	779
88	4.010	4.040	12.780	0.3	1.0	13.7	1	2.2	777
89	4.000	4.040	12.750	0.0	1.0	13.7	0	2.2	777
90	4.000	4.140	13.030	0.0	3.5	14.1	0	8.2	774
91	4.000	4.050	12.770	0.0	1.2	13.7	0	2.6	775
92	4.000	4.000	11.980	0.0	0.0	12.5	0	0.0	778
93	4.010	4.000	12.740	0.3	0.0	13.7	1	0.0	772
94	4.010	4.000	13.770	0.3	0.0	15.3	1	0.0	770
CYCLE AVERAGES (excluding first two minutes)				2.2	1.3	8.8	12	1.7	819
Averages for Particulates Test						8.8			819
Flue Gas Volume at Ref. Concs. (m³/hr)							1829		
Mass Emission (g/hr)							33	3.1	

COVENTRY CREMATORIUM
Cremator No. 2
Test No. 1
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date	20/05/2003
Cycle Ref.	Cycle 1
Start	11:02
Finish	12.27

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.010	4.010	12.110	0.3	0.2	12.7	0	0.5	774
2	4.000	4.010	9.680	0.0	0.2	8.9	0	0.3	788
3	4.830	4.000	12.080	25.9	0.0	12.6	39	0.0	790
4	6.850	4.010	10.380	82.8	0.2	10.0	94	0.4	853
5	6.150	4.000	6.670	67.2	0.0	4.2	50	0.0	894
6	4.660	4.000	8.840	20.6	0.0	7.6	19	0.0	865
7	4.440	4.000	10.340	13.8	0.0	9.9	15	0.0	846
8	4.470	4.000	8.640	14.7	0.0	7.3	13	0.0	856
9	4.570	4.000	11.080	17.8	0.0	11.1	22	0.0	840
10	4.610	4.000	10.840	19.1	0.0	10.7	23	0.0	836
11	4.810	4.000	9.960	25.3	0.0	9.3	27	0.0	858
12	4.820	4.000	8.570	25.6	0.0	7.1	23	0.0	872
13	4.550	4.000	10.680	17.2	0.0	10.4	20	0.0	859
14	4.400	4.000	9.900	12.5	0.0	9.2	13	0.0	851
15	4.470	4.000	10.220	14.7	0.0	9.7	16	0.0	849
16	4.490	4.000	8.080	15.3	0.0	6.4	13	0.0	866
17	4.410	4.000	10.160	12.8	0.0	9.6	14	0.0	844
18	4.200	4.000	10.600	6.3	0.0	10.3	7	0.0	825
19	4.250	4.000	9.460	7.8	0.0	8.5	8	0.0	830
20	4.420	4.000	10.600	13.1	0.0	10.6	16	0.0	811
21	4.330	4.000	11.360	10.3	0.0	11.5	14	0.0	798
22	4.350	4.000	11.420	10.9	0.0	11.6	15	0.0	796
23	4.340	4.000	9.530	10.6	0.0	8.6	11	0.0	810
24	4.210	4.000	12.160	6.6	0.0	12.8	10	0.0	792
25	4.090	4.000	11.660	2.8	0.0	12.0	4	0.0	785
26	4.100	4.000	10.410	3.1	0.0	10.0	4	0.0	802
27	4.080	4.000	11.010	2.5	0.0	11.0	3	0.0	795
28	4.070	4.000	11.880	2.2	0.0	12.3	3	0.0	784
29	4.070	4.000	11.860	2.2	0.0	12.3	3	0.0	777
30	4.050	4.000	11.110	1.6	0.0	11.1	2	0.0	787
31	4.000	4.000	9.310	0.0	0.0	8.3	0	0.0	796
32	4.000	4.000	12.100	0.0	0.0	12.7	0	0.0	777
33	4.000	4.000	11.910	0.0	0.0	12.4	0	0.0	771
34	4.000	4.000	11.580	0.0	0.0	11.8	0	0.0	770
35	4.000	4.000	10.270	0.0	0.0	9.8	0	0.0	792
36	4.000	4.000	11.160	0.0	0.0	11.2	0	0.0	777
37	4.010	4.000	12.800	0.3	0.0	13.8	1	0.0	766
38	4.000	4.000	10.200	0.0	0.0	9.7	0	0.0	783
39	4.000	4.000	10.620	0.0	0.0	10.3	0	0.0	783
40	4.000	4.000	11.330	0.0	0.0	11.5	0	0.0	772
41	4.000	4.000	11.900	0.0	0.0	12.3	0	0.0	766
42	4.000	4.000	9.940	0.0	0.0	9.3	0	0.0	790
43	4.010	4.000	10.470	0.3	0.0	10.1	0	0.0	781
44	4.030	4.000	11.800	0.9	0.0	12.2	1	0.0	773
45	4.010	4.000	10.960	0.3	0.0	10.9	0	0.0	769
46	4.000	4.000	11.850	0.0	0.0	12.3	0	0.0	776
47	4.000	4.000	8.900	0.0	0.0	7.7	0	0.0	793
48	4.000	4.000	12.480	0.0	0.0	13.3	0	0.0	777
49	4.000	4.000	11.300	0.0	0.0	11.4	0	0.0	775
50	4.000	4.000	12.170	0.0	0.0	12.8	0	0.0	770
51	4.000	4.000	11.900	0.0	0.0	12.3	0	0.0	770
52	4.000	4.000	12.250	0.0	0.0	12.9	0	0.0	768
53	4.000	4.000	10.990	0.0	0.0	10.9	0	0.0	791
54	4.000	4.000	11.890	0.0	0.0	12.0	0	0.0	783
55	4.000	4.000	13.620	0.0	0.0	15.0	0	0.0	772
56	4.010	4.000	12.610	0.3	0.0	13.5	1	0.0	770
57	4.070	4.000	13.690	2.2	0.0	15.1	5	0.0	764
58	4.180	4.000	12.070	5.6	0.0	12.6	8	0.0	785
59	4.320	4.000	12.770	10.0	0.0	13.7	17	0.0	774
60	4.550	4.000	14.410	17.2	0.0	16.3	45	0.0	762
61	4.230	4.000	10.660	7.2	0.0	10.4	8	0.0	764
62	4.030	4.000	10.900	0.9	0.0	10.8	1	0.0	761
63	4.000	4.000	10.930	0.0	0.0	10.8	0	0.0	768
64	4.000	4.000	8.210	0.0	0.0	6.6	0	0.0	788
65	4.000	4.000	10.490	0.0	0.0	10.1	0	0.0	775
66	4.000	4.000	10.850	0.0	0.0	10.9	0	0.0	769
67	4.000	4.000	11.060	0.0	0.0	11.0	0	0.0	766
68	4.000	4.000	11.010	0.0	0.0	11.0	0	0.0	765
69	4.000	4.000	11.700	0.0	0.0	12.0	0	0.0	763
70	4.000	4.000	12.680	0.0	0.0	13.6	0	0.0	766
71	4.000	4.000	10.580	0.0	0.0	10.3	0	0.0	788
72	4.000	4.000	11.500	0.0	0.0	11.7	0	0.0	780
73	4.000	4.000	10.760	0.0	0.0	10.6	0	0.0	774
74	4.000	4.000	11.460	0.0	0.0	11.7	0	0.0	769
75	4.000	4.000	11.520	0.0	0.0	11.8	0	0.0	767
76	4.000	4.000	11.550	0.0	0.0	11.8	0	0.0	765
77	4.000	4.000	11.180	0.0	0.0	11.2	0	0.0	777
78	4.000	4.000	9.260	0.0	0.0	8.2	0	0.0	788
79	4.000	4.000	11.650	0.0	0.0	12.0	0	0.0	775
80	4.000	4.000	11.840	0.0	0.0	12.3	0	0.0	770
81	4.000	4.000	11.950	0.0	0.0	12.4	0	0.0	768
82	4.000	4.000	12.280	0.0	0.0	12.9	0	0.0	764
83	4.000	4.000	14.050	0.0	0.0	15.7	0	0.0	760
84	4.070	4.000	13.200	2.2	0.0	14.4	4	0.0	759
85	4.080	4.000	12.140	2.5	0.0	12.7	4	0.0	760
CYCLE AVERAGES (excluding first two minutes)			:	6	0.0	11.1	7	0.0	791
			Averages for Particulates Test :			11.1			791
			Flue Gas Volume at Ref. Conds. (m³/hr):			958			
			Mass Emission (g/hr):				7	0.0	

COVENTRY CREMATORIUM
Cremator No. 2
Test No. 2
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date : 20/05/2003
Cycle Ref. : Cycle 2
Start 12.36
Finish 14.12

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.070	4.000	9.580	2.2	0.0	8.7	2	0.0	751
2	4.090	4.000	11.360	2.8	0.0	11.5	4	0.0	767
3	6.240	4.000	11.210	70.0	0.0	11.3	90	0.0	834
4	7.670	4.000	7.020	114.7	0.0	4.7	88	0.0	903
5	5.780	4.000	7.890	55.6	0.0	5.6	45	0.0	895
6	4.570	4.000	9.670	17.8	0.0	8.7	18	0.0	870
7	4.510	4.000	10.120	15.6	0.0	9.6	17	0.0	852
8	4.490	4.000	10.850	15.3	0.0	10.7	19	0.0	845
9	4.510	4.000	11.540	15.9	0.0	11.8	22	0.0	840
10	4.610	4.000	10.910	19.1	0.0	10.8	25	0.0	844
11	4.710	4.000	10.880	22.2	0.0	10.8	27	0.0	855
12	4.700	4.000	9.120	21.8	0.0	8.0	21	0.0	879
13	4.640	4.000	8.470	20.0	0.0	7.0	18	0.0	879
14	4.760	4.000	8.440	23.6	0.0	6.9	21	0.0	882
15	4.690	4.000	8.650	21.6	0.0	7.3	20	0.0	881
16	4.580	4.000	9.560	18.4	0.0	8.7	19	0.0	867
17	4.470	4.000	10.810	14.7	0.0	10.6	18	0.0	857
18	4.450	4.000	8.890	14.1	0.0	7.8	13	0.0	858
19	4.450	4.000	8.740	14.1	0.0	7.4	13	0.0	859
20	4.430	4.000	8.610	13.4	0.0	7.2	12	0.0	859
21	4.490	4.000	8.740	15.3	0.0	7.4	14	0.0	861
22	4.540	4.000	8.610	16.8	0.0	7.5	16	0.0	862
23	4.600	4.000	9.060	18.8	0.0	7.9	18	0.0	860
24	4.620	4.000	9.310	19.4	0.0	8.3	19	0.0	857
25	4.710	4.010	9.310	22.2	0.2	8.3	22	0.3	854
26	4.760	4.000	9.430	23.8	0.0	8.5	24	0.0	849
27	4.730	4.000	9.500	22.8	0.0	8.6	23	0.0	848
28	4.680	4.000	9.610	21.5	0.0	8.6	22	0.0	846
29	4.700	4.000	9.520	21.9	0.0	8.6	22	0.0	844
30	4.790	4.000	9.640	24.7	0.0	8.8	25	0.0	843
31	4.850	4.000	9.620	25.9	0.0	8.8	27	0.0	840
32	4.850	4.000	9.680	26.6	0.0	8.9	27	0.0	836
33	4.820	4.000	9.840	25.6	0.0	9.1	27	0.0	831
34	4.790	4.000	9.950	24.7	0.0	9.3	26	0.0	827
35	4.830	4.010	9.900	25.9	0.2	9.2	28	0.3	822
36	4.820	4.010	9.770	25.6	0.2	9.0	27	0.3	819
37	4.710	4.010	9.670	22.2	0.2	8.9	23	0.3	816
38	4.590	4.010	9.580	18.4	0.2	8.7	19	0.3	814
39	4.600	4.010	9.610	18.8	0.2	8.8	19	0.3	811
40	4.650	4.010	9.780	20.3	0.2	9.0	21	0.3	807
41	4.590	4.010	10.110	18.4	0.2	9.5	20	0.4	803
42	4.500	4.010	11.300	15.6	0.2	11.4	20	0.4	796
43	4.460	4.010	10.800	14.4	0.2	10.8	17	0.4	792
44	4.390	4.010	11.430	12.2	0.2	11.6	16	0.4	788
45	4.420	4.010	9.420	13.1	0.2	8.5	13	0.3	784
46	4.390	4.010	9.190	12.2	0.2	8.1	12	0.3	786
47	4.400	4.010	9.200	12.5	0.2	8.1	12	0.3	787
48	4.420	4.010	9.160	13.1	0.2	8.1	13	0.3	788
49	4.450	4.010	9.320	14.1	0.2	8.3	14	0.3	789
50	4.440	4.020	9.420	13.8	0.5	8.5	14	0.6	789
51	4.380	4.010	9.680	11.9	0.2	8.9	12	0.3	789
52	4.320	4.010	9.810	10.0	0.2	9.1	10	0.3	789
53	4.270	4.010	9.820	8.4	0.2	9.1	9	0.3	789
54	4.260	4.010	9.920	7.8	0.2	9.3	8	0.3	790
55	4.250	4.010	10.080	7.8	0.2	9.5	8	0.3	790
56	4.240	4.010	10.080	7.5	0.2	9.5	8	0.3	790
57	4.260	4.010	10.090	8.1	0.2	9.5	9	0.3	790
58	4.250	4.010	10.260	7.8	0.2	9.8	9	0.4	790
59	4.260	4.010	10.450	8.1	0.2	10.1	9	0.4	790
60	4.260	4.010	10.580	8.1	0.2	10.3	9	0.4	790
61	4.270	4.010	10.720	8.4	0.2	10.5	10	0.4	797
62	4.250	4.010	10.600	7.8	0.2	10.6	9	0.4	797
63	4.240	4.010	10.910	7.5	0.2	10.8	9	0.4	796
64	4.260	4.010	11.080	8.1	0.2	11.0	10	0.4	794
65	4.220	4.010	11.170	6.9	0.2	11.2	9	0.4	793
66	4.200	4.010	11.290	6.3	0.2	11.4	8	0.4	792
67	4.190	4.020	11.310	5.9	0.5	11.4	8	0.8	792
68	4.200	4.020	11.500	6.3	0.5	11.7	8	0.9	790
69	4.180	4.020	11.650	5.6	0.5	12.0	8	0.9	789
70	4.130	4.020	11.640	4.1	0.5	12.3	6	0.9	788
71	4.100	4.020	12.030	3.1	0.5	12.5	5	1.0	787
72	4.090	4.020	12.250	1.9	0.5	12.9	3	1.0	786
73	4.080	4.020	12.900	0.9	0.5	13.3	2	1.0	785
74	4.080	4.020	12.980	0.9	0.5	13.4	2	1.1	784
75	4.080	4.010	12.290	1.9	0.2	13.0	3	0.5	783
76	4.160	4.010	12.120	5.0	0.2	12.7	8	0.5	782
77	4.370	4.010	12.230	11.6	0.2	12.9	18	0.5	780
78	4.330	4.020	12.100	10.3	0.5	12.7	15	1.0	780
79	4.300	4.020	12.000	10.9	0.5	12.5	16	0.9	780
80	4.520	4.020	12.080	16.2	0.5	12.6	24	1.0	780
81	4.270	4.020	12.120	8.4	0.5	12.7	13	1.0	780
82	4.130	4.020	12.350	4.1	0.5	13.0	6	1.0	780
83	4.020	4.020	12.500	0.6	0.5	13.3	1	1.0	782
84	4.000	4.020	12.010	0.0	0.5	12.5	0	0.9	785
85	4.000	4.020	13.300	0.0	0.5	14.5	0	1.2	781
86	4.000	4.020	13.600	0.0	0.5	15.0	0	1.3	780
87	4.000	4.020	13.060	0.0	0.5	14.2	0	1.2	783
88	4.000	4.020	13.770	0.0	0.5	15.3	0	1.4	781
89	4.000	4.020	14.160	0.0	0.5	15.9	0	1.6	780
90	4.010	4.020	13.180	0.3	0.5	14.3	1	1.2	785
91	4.000	4.020	14.400	0.0	0.5	16.3	0	1.7	779
92	4.000	4.020	14.570	0.0	0.5	16.5	0	1.8	778
93	4.060	4.020	14.100	1.9	0.5	15.8	4	1.5	775
94	4.140	4.020	13.110	4.4	0.5	14.2	8	1.2	778
CYCLE AVERAGES (excluding first two minutes)				14	0.2	10.4	16	0.5	814
Averages for Particulates Test :						10.4			814
Flue Gas Volume at Ref. Conds. (m³/hr)						973			
Mass Emission (g/hr)							16	0.4	

COVENTRY CREMATORIUM
Cremator No. 3
Test No. 1
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date 21/05/2003
Cycle Ref. Cycle 1
Start 11:25
Finish 12:57

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.380	4.000	10.780	12.2	0.0	10.6	15	0.0	791
2	4.270	4.040	12.960	8.4	1.0	14.0	15	2.3	779
3	7.350	4.050	11.810	104.7	1.2	12.2	149	2.3	792
4	6.100	4.060	8.910	65.8	2.0	7.7	62	2.4	811
5	4.980	4.170	10.340	30.6	4.3	9.9	35	6.2	815
6	5.000	4.140	11.470	31.3	3.5	11.7	42	6.0	801
7	5.180	4.090	11.770	37.2	2.2	12.1	52	4.1	786
8	5.530	4.060	12.160	47.8	1.5	12.8	72	2.9	781
9	5.910	4.030	10.260	59.7	0.8	9.6	67	1.1	808
10	5.010	4.100	10.460	31.6	2.5	10.1	38	3.7	809
11	4.690	4.120	11.350	27.8	3.0	11.5	37	5.1	800
12	5.020	4.120	11.240	31.9	3.0	11.3	41	5.0	797
13	5.120	4.120	10.930	35.0	3.0	10.8	43	4.7	798
14	5.740	4.140	10.060	54.4	3.5	9.5	59	4.9	809
15	5.490	4.140	9.510	46.6	3.5	8.6	47	4.5	828
16	4.910	4.120	9.900	28.4	3.0	9.2	30	4.1	833
17	4.800	4.080	10.480	25.0	2.0	10.1	29	3.0	826
18	4.860	4.070	10.110	20.8	1.8	9.5	23	2.5	824
19	4.620	4.060	10.100	19.4	1.5	9.5	21	2.1	821
20	4.570	4.060	10.170	17.8	1.5	9.6	20	2.1	817
21	4.560	4.050	10.370	18.1	1.2	10.0	21	1.8	814
22	4.570	4.060	10.390	17.8	1.5	10.0	20	2.2	811
23	4.570	4.050	10.750	17.8	1.2	10.5	21	1.8	805
24	4.570	4.050	10.810	17.8	1.2	10.6	21	1.9	798
25	4.730	4.050	10.790	22.8	1.2	10.6	27	1.9	793
26	4.960	4.040	10.840	30.0	1.0	10.7	36	1.6	789
27	5.100	4.040	10.800	34.4	1.0	10.6	41	1.5	786
28	5.190	4.030	10.780	37.2	0.8	10.6	45	1.2	783
29	5.240	4.010	10.280	38.8	0.2	9.8	43	0.4	780
30	5.170	4.020	10.470	36.8	0.5	10.1	42	0.7	777
31	5.120	4.010	10.400	35.0	0.2	10.0	40	0.4	775
32	5.180	4.000	10.270	36.3	0.0	9.8	40	0.0	773
33	4.730	4.000	10.400	22.8	0.0	10.0	26	0.0	770
34	4.500	4.000	10.220	15.6	0.0	9.7	17	0.0	768
35	4.270	4.000	10.270	8.4	0.0	9.8	9	0.0	768
36	4.240	4.000	10.360	7.5	0.0	10.0	8	0.0	766
37	4.260	4.000	10.390	8.1	0.0	10.0	9	0.0	765
38	4.290	4.000	10.580	9.1	0.0	10.3	11	0.0	763
39	4.490	4.000	10.120	15.3	0.0	9.8	17	0.0	771
40	4.520	4.000	9.040	16.2	0.0	7.9	15	0.0	783
41	4.800	4.000	10.440	18.8	0.0	10.1	21	0.0	771
42	4.570	4.000	10.480	17.8	0.0	10.1	20	0.0	783
43	4.520	4.000	10.530	16.2	0.0	10.2	18	0.0	756
44	4.520	4.000	9.890	16.2	0.0	9.4	17	0.0	766
45	5.020	4.000	9.190	31.9	0.0	8.1	31	0.0	780
46	5.090	4.000	10.620	34.1	0.0	10.3	40	0.0	767
47	4.780	4.000	10.370	24.4	0.0	10.0	28	0.0	781
48	4.550	4.000	10.400	17.2	0.0	10.0	20	0.0	759
49	4.780	4.000	9.030	23.8	0.0	7.9	23	0.0	778
50	4.860	4.000	9.760	26.9	0.0	9.0	28	0.0	776
51	4.640	4.000	10.460	20.0	0.0	10.1	23	0.0	786
52	4.500	4.000	10.390	15.6	0.0	10.0	18	0.0	761
53	4.570	4.000	10.380	17.8	0.0	10.0	20	0.0	759
54	4.540	4.000	10.510	16.9	0.0	10.2	19	0.0	761
55	4.660	4.000	8.470	20.8	0.0	7.0	18	0.0	782
56	4.680	4.000	10.540	21.3	0.0	10.2	25	0.0	772
57	4.530	4.000	11.040	16.6	0.0	11.0	21	0.0	764
58	4.430	4.000	11.150	13.4	0.0	11.2	17	0.0	761
59	4.490	4.000	11.110	15.3	0.0	11.1	19	0.0	767
60	4.520	4.000	8.890	16.2	0.0	7.6	15	0.0	785
61	4.480	4.000	11.090	15.0	0.0	11.1	19	0.0	774
62	4.370	4.000	11.460	11.6	0.0	11.7	15	0.0	766
63	4.320	4.000	11.800	10.0	0.0	12.2	14	0.0	762
64	4.190	4.000	11.770	5.9	0.0	12.1	8	0.0	761
65	4.140	4.000	10.210	4.4	0.0	9.7	5	0.0	782
66	4.230	4.000	11.250	7.2	0.0	11.3	9	0.0	777
67	4.210	4.000	11.940	6.6	0.0	12.4	10	0.0	768
68	4.170	4.000	12.070	5.3	0.0	12.6	8	0.0	763
69	4.140	4.000	11.780	4.4	0.0	12.2	6	0.0	773
70	4.100	4.000	10.360	3.1	0.0	10.0	4	0.0	787
71	4.040	4.020	12.560	1.3	0.5	13.4	2	1.1	773
72	4.010	4.040	12.820	0.3	1.0	13.8	1	2.2	768
73	4.020	4.050	12.910	0.6	1.2	13.9	1	2.8	763
74	4.010	4.010	12.080	0.3	0.2	12.6	0	0.5	781
75	4.010	4.040	12.260	0.3	1.0	12.9	0	2.0	778
76	4.010	4.050	13.540	0.3	1.2	14.9	1	3.3	765
77	4.020	4.030	13.610	0.6	0.8	15.0	1	2.0	763
78	4.010	4.010	12.060	0.3	0.2	12.6	0	0.5	783
79	4.010	4.030	14.090	0.3	0.8	15.6	1	2.3	764
80	4.030	4.000	13.610	0.9	0.0	15.0	2	0.0	755
81	4.060	4.000	12.150	1.9	0.0	12.7	3	0.0	752
82	4.010	4.000	13.480	0.3	0.0	14.8	1	0.0	753
83	4.010	4.000	10.450	0.3	0.0	10.1	0	0.0	778
84	4.000	4.000	12.550	0.0	0.0	13.4	0	0.0	771
85	4.010	4.000	13.250	0.3	0.0	14.5	1	0.0	764
86	4.010	4.000	13.430	0.3	0.0	14.7	1	0.0	759
87	4.000	4.000	13.510	0.0	0.0	14.9	0	0.0	757
88	4.010	4.000	13.570	0.3	0.0	15.0	1	0.0	754
89	4.000	4.000	13.540	0.0	0.0	14.9	0	0.0	759
90	4.000	4.000	11.540	0.0	0.0	11.8	0	0.0	777
91	4.000	4.000	13.480	0.0	0.0	14.8	0	0.0	765
92	4.000	4.000	13.700	0.0	0.0	15.2	0	0.0	757
93	4.000	4.000	13.760	0.0	0.0	15.3	0	0.0	752
CYCLE AVERAGES (excluding first two minutes)			:	18	0.7	11.2	21	1.1	778
				Averages for Particulates Test :		11.2			778
				Flue Gas Volume at Ref. Conds. (m³/hr):		1450			
				Mass Emission (g/hr):			31	1.6	

COVENTRY CREMATORIUM
Cremator No. 3
Test No. 2
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date : 21/05/2003
Cycle Ref. : Cycle 2
Start 13:07
Finish 14:36

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	5.300	4.000	15.030	40.6	0.0	17.2	135	0.0	646
2	4.090	4.000	10.590	2.8	0.0	10.3	3	0.0	730
3	6.030	4.000	11.070	63.4	0.0	11.0	80	0.0	790
4	11.180	4.000	7.570	224.4	0.0	5.6	182	0.0	819
5	5.660	4.160	9.360	52.5	4.0	8.4	52	5.1	835
6	4.640	4.110	10.730	20.0	2.6	10.5	24	4.2	824
7	4.630	4.050	11.370	19.7	1.2	11.5	26	2.1	805
8	4.670	4.020	11.440	20.9	0.5	11.6	28	0.9	790
9	4.660	4.020	11.380	20.6	0.5	11.5	27	0.8	782
10	4.700	4.060	10.510	21.9	1.5	10.2	25	2.2	790
11	5.020	4.100	9.600	31.8	2.5	8.8	33	3.3	821
12	5.060	4.100	9.060	33.1	2.5	7.9	32	3.1	871
13	4.930	4.070	8.050	29.1	1.8	6.3	25	1.9	898
14	4.640	4.020	7.660	26.3	0.5	6.1	22	0.5	906
15	4.710	4.030	8.430	22.2	0.8	6.9	20	0.9	899
16	4.500	4.020	10.850	15.6	0.5	10.4	18	0.8	877
17	4.220	4.030	12.120	6.9	0.8	12.7	10	1.5	857
18	4.140	4.030	13.010	4.4	0.8	14.1	8	1.7	841
19	4.170	4.030	13.400	5.3	0.8	14.7	11	1.9	828
20	4.250	4.030	13.120	7.8	0.8	14.3	14	1.8	820
21	4.340	4.030	13.160	10.6	0.8	14.3	20	1.8	814
22	4.420	4.030	13.190	13.1	0.8	14.4	25	1.8	809
23	4.470	4.030	13.110	14.7	0.8	14.2	27	1.8	805
24	4.540	4.040	13.170	16.9	1.0	14.3	32	2.4	802
25	4.590	4.040	13.520	18.4	1.0	14.9	38	2.6	799
26	5.760	4.060	14.270	55.0	1.5	16.0	139	4.9	777
27	5.050	4.020	11.650	32.8	0.5	12.0	45	0.9	802
28	4.470	4.050	11.970	14.7	1.2	12.5	21	2.4	804
29	4.420	4.050	11.960	13.1	1.2	12.4	19	2.3	806
30	4.330	4.050	11.240	10.3	1.2	11.3	13	2.1	813
31	4.270	4.060	10.920	8.4	1.5	10.8	10	2.4	824
32	4.210	4.060	10.640	6.6	1.5	10.4	8	2.3	831
33	4.170	4.060	10.690	5.3	1.5	10.5	6	2.3	834
34	4.150	4.060	10.620	4.7	1.5	10.3	5	2.3	835
35	4.150	4.060	10.900	4.7	1.5	10.8	6	2.4	830
36	4.170	4.070	11.810	5.3	1.8	12.2	8	3.2	822
37	4.200	4.070	10.880	6.3	1.8	10.8	8	2.7	828
38	4.240	4.060	10.420	7.5	1.5	10.0	9	2.2	832
39	4.190	4.050	10.210	5.9	1.2	9.7	7	1.8	831
40	4.180	4.040	10.020	5.9	1.0	9.4	6	1.4	832
41	4.190	4.050	10.120	5.9	1.2	9.6	6	1.8	831
42	4.190	4.050	10.380	5.9	1.2	10.0	7	1.8	828
43	4.200	4.050	10.560	6.3	1.2	10.3	7	1.9	827
44	4.210	4.050	10.730	6.6	1.2	10.5	8	1.9	826
45	4.220	4.040	10.960	6.9	1.0	10.8	8	1.6	823
46	4.210	4.030	10.790	6.6	0.8	10.6	8	1.2	819
47	4.210	4.020	11.770	6.6	0.5	12.1	9	0.9	810
48	4.270	4.010	11.300	8.4	0.2	11.4	11	0.4	807
49	4.270	4.000	12.150	8.4	0.0	12.7	13	0.0	798
50	4.280	4.000	10.840	8.6	0.0	10.7	11	0.0	802
51	4.280	4.000	10.930	8.6	0.0	10.8	11	0.0	802
52	4.220	4.000	10.920	6.9	0.0	10.8	8	0.0	801
53	4.210	4.000	10.860	6.6	0.0	10.7	8	0.0	801
54	4.190	4.000	10.770	5.9	0.0	10.6	7	0.0	801
55	4.210	4.000	10.880	6.6	0.0	10.8	8	0.0	801
56	4.230	4.000	10.960	7.2	0.0	10.9	9	0.0	799
57	4.230	4.000	11.000	7.2	0.0	10.9	9	0.0	795
58	4.220	4.000	11.010	6.9	0.0	11.0	9	0.0	793
59	4.200	4.000	11.010	6.3	0.0	11.0	8	0.0	791
60	4.190	4.000	11.240	5.9	0.0	11.3	8	0.0	789
61	4.220	4.000	11.810	6.9	0.0	12.2	10	0.0	783
62	4.340	4.000	10.870	10.6	0.0	10.7	13	0.0	785
63	4.270	4.000	10.970	8.4	0.0	10.9	10	0.0	785
64	4.250	4.000	11.000	7.8	0.0	10.9	10	0.0	783
65	4.260	4.000	10.990	8.1	0.0	10.9	10	0.0	781
66	4.220	4.000	11.050	6.9	0.0	11.0	9	0.0	779
67	4.160	4.000	11.000	5.0	0.0	10.9	6	0.0	777
68	4.110	4.000	11.090	3.4	0.0	11.1	4	0.0	774
69	4.090	4.000	10.990	2.8	0.0	10.9	3	0.0	773
70	4.060	4.000	11.060	1.9	0.0	11.1	2	0.0	771
71	4.040	4.000	11.730	1.3	0.0	12.1	2	0.0	769
72	4.020	4.000	12.130	0.6	0.0	12.7	1	0.0	765
73	4.030	4.000	11.890	0.9	0.0	12.3	1	0.0	766
74	4.010	4.000	11.870	0.3	0.0	12.5	0	0.0	766
75	4.000	4.000	11.980	0.0	0.0	12.5	0	0.0	766
76	4.000	4.000	12.240	0.0	0.0	12.9	0	0.0	766
77	4.000	4.000	12.420	0.0	0.0	13.2	0	0.0	766
78	4.000	4.000	12.840	0.0	0.0	13.8	0	0.0	765
79	4.000	4.000	13.210	0.0	0.0	14.4	0	0.0	763
80	4.000	4.000	13.800	0.0	0.0	15.0	0	0.0	762
81	4.000	4.000	13.870	0.0	0.0	15.4	0	0.0	760
82	4.000	4.000	14.140	0.0	0.0	15.8	0	0.0	759
83	4.010	4.000	14.410	0.3	0.0	16.3	1	0.0	757
84	4.050	4.000	15.040	1.6	0.0	17.3	5	0.0	754
85	4.090	4.000	14.840	2.6	0.0	16.9	9	0.0	752
86	4.140	4.000	11.920	4.4	0.0	12.4	6	0.0	781
87	4.010	4.000	13.280	0.3	0.0	14.5	1	0.0	766
88	4.000	4.000	15.510	0.0	0.0	18.0	0	0.0	752
89	4.040	4.000	15.380	1.3	0.0	17.8	5	0.0	733
90	4.090	4.000	16.900	2.8	0.0	20.2	42	0.0	697
CYCLE AVERAGES (excluding first two minutes)			:	13	0.6	11.9	18	1.0	801
				Averages for Particulates Test :		11.9			801
				Flue Gas Volume at Ref. Conds. (m³/hr):			1366		
				Mass Emission (g/hr):			22	1.4	

COVENTRY CREMATORIUM
Cremator No. 4
Test No. 1
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date 21/05/2003
Cycle Ref. Cycle 1
Start 14:48
Finish 16:01

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.080	4.000	9.950	2.5	0.0	9.3	3	0.0	846
2	4.180	4.000	13.330	5.6	0.0	14.6	11	0.0	826
3	6.260	4.000	11.020	70.6	0.0	11.0	88	0.0	901
4	8.970	4.000	7.700	155.3	0.0	5.8	128	0.0	1011
5	4.960	4.000	10.400	30.0	0.0	10.0	34	0.0	976
6	4.640	4.000	10.350	20.0	0.0	9.9	23	0.0	950
7	4.640	4.000	10.800	20.0	0.0	10.6	24	0.0	917
8	4.540	4.680	11.470	16.9	17.0	11.7	23	29.3	883
9	4.380	4.020	12.220	11.9	0.5	12.8	18	1.0	854
10	4.270	4.030	11.180	8.4	0.8	11.2	11	1.2	869
11	4.250	4.040	11.720	7.8	1.0	12.1	11	1.8	858
12	4.250	4.040	11.040	7.8	1.0	11.0	10	1.6	875
13	4.270	4.050	9.510	8.4	1.2	8.6	9	1.6	903
14	4.500	4.050	9.670	15.6	1.2	8.9	16	1.7	899
15	4.550	4.050	10.360	17.2	1.2	9.9	19	1.8	872
16	4.370	4.040	9.410	11.6	1.0	8.5	12	1.3	877
17	4.330	4.030	9.030	10.3	0.8	7.9	10	0.9	881
18	4.380	4.000	10.780	11.9	0.0	10.6	14	0.0	850
19	4.280	4.000	10.700	8.8	0.0	10.5	10	0.0	854
20	4.160	4.000	11.730	5.0	0.0	12.1	7	0.0	843
21	4.110	4.010	11.000	3.4	0.2	10.9	4	0.4	858
22	4.090	4.010	11.750	2.8	0.2	12.1	4	0.5	847
23	4.090	4.010	11.500	2.8	0.2	11.7	4	0.4	855
24	4.090	4.010	11.680	2.8	0.2	12.0	4	0.4	851
25	4.080	4.010	11.450	2.5	0.2	11.6	3	0.4	856
26	4.070	4.010	11.810	2.2	0.2	12.2	3	0.5	851
27	4.090	4.020	11.430	2.8	0.5	11.6	4	0.9	856
28	4.080	4.010	11.980	2.5	0.2	12.5	4	0.5	850
29	4.090	4.020	11.630	2.8	0.5	11.9	4	0.9	855
30	4.090	4.020	12.250	2.8	0.5	12.9	4	1.0	850
31	4.090	4.020	11.870	2.8	0.5	12.3	4	0.9	855
32	4.090	4.020	12.450	2.8	0.5	13.2	5	1.0	850
33	4.100	4.020	12.290	3.1	0.5	13.0	5	1.0	853
34	4.130	4.020	9.990	4.1	0.5	9.4	4	0.7	858
35	4.100	4.020	9.960	3.1	0.5	9.3	3	0.7	850
36	4.060	4.020	8.980	1.9	0.5	7.8	2	0.6	862
37	4.070	4.020	10.210	2.2	0.5	9.7	2	0.7	850
38	4.060	4.020	9.130	1.9	0.5	8.0	2	0.6	858
39	4.070	4.020	9.870	2.2	0.5	9.2	2	0.7	856
40	4.060	4.020	9.610	1.9	0.5	8.8	2	0.7	856
41	4.060	4.020	11.460	1.9	0.5	11.7	3	0.9	852
42	4.070	4.020	9.470	2.2	0.5	8.5	2	0.6	858
43	4.060	4.030	10.950	1.9	0.8	10.9	2	1.2	852
44	4.060	4.030	10.520	1.9	0.8	10.2	2	1.1	854
45	4.050	4.030	10.030	1.6	0.8	9.4	2	1.0	858
46	4.050	4.030	10.970	1.6	0.8	10.9	2	1.2	849
47	4.040	4.030	10.510	1.3	0.8	10.2	1	1.1	860
48	4.040	4.030	10.320	1.3	0.8	9.9	1	1.1	853
49	4.040	4.030	10.830	1.3	0.8	10.7	2	1.2	851
50	4.040	4.030	11.400	1.3	0.8	11.6	2	1.3	853
51	4.020	4.030	10.320	0.6	0.8	9.9	1	1.1	858
52	4.030	4.030	10.600	0.9	0.8	10.3	1	1.1	848
53	4.030	4.030	11.630	0.9	0.8	11.9	1	1.3	855
54	4.030	4.030	10.500	0.9	0.8	10.2	1	1.1	852
55	4.020	4.040	10.610	0.6	1.0	10.3	1	1.5	856
56	4.040	4.040	10.730	1.3	1.0	10.5	1	1.5	850
57	4.040	4.040	12.020	1.3	1.0	12.5	2	1.9	854
58	4.040	4.040	10.500	1.3	1.0	10.2	1	1.5	858
59	4.040	4.040	11.370	1.3	1.0	11.5	2	1.7	846
60	4.040	4.040	10.220	1.3	1.0	9.7	1	1.4	860
61	4.040	4.040	12.810	1.3	1.0	13.5	2	2.1	838
62	4.050	4.040	13.070	1.6	1.0	14.2	3	2.4	857
63	4.080	4.040	11.260	2.5	1.0	11.3	3	1.7	848
64	4.050	4.030	10.800	1.6	0.8	10.6	2	1.2	856
65	4.040	4.040	11.450	1.3	1.0	11.6	2	1.7	844
66	4.030	4.040	13.680	0.9	1.0	15.1	2	2.7	846
67	4.060	4.040	11.840	1.9	1.0	12.3	3	1.8	850
68	4.060	4.040	11.650	1.9	1.0	12.0	3	1.8	849
69	4.030	4.040	11.240	0.9	1.0	11.3	1	1.7	858
70	4.030	4.040	12.390	0.9	1.0	13.1	1	2.0	842
71	4.040	4.040	13.780	1.3	1.0	15.3	3	2.8	846
72	4.070	4.040	12.190	2.2	1.0	12.8	3	2.0	857
73	4.090	4.040	12.370	2.8	1.0	13.1	4	2.0	843
74	4.030	4.040	12.650	0.9	1.0	13.5	2	2.1	847
CYCLE AVERAGES (excluding first two minutes)			:	7	0.9	11.0	8	1.5	852
				Averages for Particulates Test :		11.0			862
				Flue Gas Volume at Ref. Conds. (m³/hr):		1348			
				Mass Emission (g/hr):			11	2.0	

COVENTRY CREMATORIUM
Cremator No. 4
Test No. 2
CARBON MONOXIDE, ORGANIC COMPOUNDS, OXYGEN & TEMPERATURE

CREMATION DETAILS :-

Date : 22/05/2003
Cycle Ref. : Cycle 1
Start 09:23
Finish 10:36

REFERENCE O2 = 11%

	LOGGER READING			POLLUTANTS		MAIN FLUE	REF'CE	REF'CE	FLUE
	CO	VOC	O2	CO	VOC	O2	CO	VOC	TEMP
	mA	mA	mA	ppm	ppm	%	mg/m³	mg/m³	deg C
TIME									
1	4.500	4.190	10.580	15.6	4.8	10.3	18	7.1	846
2	4.410	4.160	10.290	12.8	4.0	9.8	14	5.8	845
3	4.530	4.190	8.660	16.6	4.8	7.3	15	5.6	867
4	4.720	4.160	8.110	22.5	4.0	6.4	19	4.4	878
5	4.590	4.150	8.910	18.4	3.8	7.7	17	4.5	870
6	24.000	4.280	6.940	625.0	7.0	4.6	476	6.9	920
7	8.560	4.260	7.350	142.5	6.5	5.2	113	6.6	954
8	9.650	4.230	7.110	176.6	5.8	4.9	137	5.7	985
9	8.300	4.240	8.100	134.4	6.0	6.4	115	6.6	973
10	5.940	4.240	8.930	60.6	6.0	7.7	57	7.3	952
11	5.050	4.250	8.720	32.8	6.3	7.4	30	7.4	928
12	4.340	4.270	9.020	10.6	6.7	7.8	10	8.2	909
13	4.300	4.220	8.320	9.4	5.5	6.8	8	6.2	912
14	4.390	4.200	8.610	12.2	5.0	7.2	11	5.8	901
15	4.440	4.150	9.180	13.8	3.8	8.1	13	4.7	885
16	4.230	4.140	9.690	7.2	3.5	8.9	7	4.6	868
17	4.200	4.130	9.670	6.3	3.3	8.9	6	4.3	867
18	4.210	4.120	9.360	6.6	3.0	8.4	6	3.8	863
19	4.320	4.090	9.450	10.0	2.2	8.5	10	2.9	867
20	4.280	4.100	9.990	8.8	2.5	9.4	9	3.5	856
21	4.290	4.100	8.990	9.1	2.5	7.8	9	3.0	867
22	4.380	4.110	10.920	11.9	2.8	10.8	15	4.3	851
23	4.380	4.110	9.690	11.9	2.8	8.9	12	3.6	864
24	4.190	4.120	10.810	5.9	3.0	10.6	7	4.7	855
25	4.080	4.130	10.370	2.5	3.3	10.0	3	4.7	861
26	4.030	4.130	11.150	0.9	3.3	11.2	1	5.3	857
27	4.000	4.130	10.780	0.0	3.3	10.6	0	5.0	860
28	4.000	4.130	11.160	0.0	3.3	11.2	0	5.3	858
29	4.000	4.130	11.040	0.0	3.3	11.0	0	5.2	857
30	4.000	4.130	11.100	0.0	3.3	11.1	0	5.3	860
31	4.000	4.130	11.440	0.0	3.3	11.6	0	5.6	855
32	4.000	4.100	10.560	0.0	2.5	10.3	0	3.7	866
33	4.000	4.100	8.660	0.0	2.5	7.3	0	2.9	855
34	4.110	4.130	10.330	3.4	3.3	9.9	4	4.7	858
35	4.080	4.150	10.260	2.5	3.8	9.8	3	5.4	855
36	4.000	4.150	11.080	0.0	3.8	11.1	0	6.1	854
37	4.000	4.110	9.770	0.0	2.8	9.0	0	3.7	863
38	4.000	4.140	10.450	0.0	3.5	10.1	0	5.2	853
39	4.000	4.120	10.390	0.0	3.0	10.0	0	4.4	860
40	4.000	4.100	9.510	0.0	2.5	8.6	0	3.2	857
41	4.000	4.120	10.650	0.0	3.0	10.4	0	4.6	859
42	4.000	4.100	9.400	0.0	2.5	8.4	0	3.2	859
43	4.000	4.130	10.940	0.0	3.3	10.8	0	5.1	856
44	4.000	4.100	9.480	0.0	2.5	8.6	0	3.2	858
45	4.000	4.090	9.900	0.0	2.2	9.2	0	3.1	860
46	4.000	4.130	10.400	0.0	3.3	10.0	0	4.7	849
47	4.000	4.100	11.170	0.0	2.5	11.2	0	4.1	857
48	4.000	4.100	10.300	0.0	2.5	9.6	0	3.6	853
49	4.000	4.090	10.680	0.0	2.2	10.4	0	3.4	856
50	4.000	4.100	10.100	0.0	2.5	9.5	0	3.5	858
51	4.000	4.080	10.940	0.0	2.0	10.8	0	3.2	854
52	4.000	4.090	10.390	0.0	2.2	10.0	0	3.3	855
53	4.000	4.080	10.680	0.0	2.0	10.4	0	3.0	859
54	4.000	4.100	10.970	0.0	2.5	10.9	0	4.0	851
55	4.000	4.080	10.620	0.0	2.0	10.3	0	3.0	861
56	4.000	4.080	11.210	0.0	2.0	11.3	0	3.3	849
57	4.000	4.060	10.520	0.0	1.5	10.2	0	2.2	860
58	4.000	4.450	11.420	0.0	11.3	11.6	0	19.2	849
59	4.000	4.170	10.530	0.0	4.3	10.2	0	6.3	858
60	4.000	4.000	11.610	0.0	0.0	11.9	0	0.0	845
61	4.000	4.000	10.300	0.0	0.0	9.8	0	0.0	859
62	4.000	4.000	11.650	0.0	0.0	12.0	0	0.0	847
63	4.000	4.000	10.790	0.0	0.0	10.6	0	0.0	852
64	4.000	4.000	11.120	0.0	0.0	11.1	0	0.0	856
CYCLE AVERAGES (excluding first two minutes)			:	22	3.3	9.4	18	4.5	870
			Averages for Particulates Test :			9.4			870
			Flue Gas Volume at Ref. Conds. (m³/hr):				1528		
			Mass Emission (g/hr):				27	6.8	