Report No. 21707

ORTECH

Report:

Covanta
Diagnostic Emission Testing
at the Durham York Energy Centre
(September 19 to September 30 and November 4, 2016)

Date: December 22, 2016

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Report No.: 21707
25 pages, 16 Appendices

Revision History

Version	Date	Summary Changes/Purpose of Revision
1	October 13, 2016	None
2	November 1, 2016	Revised to include PCB results
3	December 22, 2016	Revised to include results from November 4, 2016 tests

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EXECUTIVE SUMMARY

At the request of Covanta, ORTECH Consulting Inc. (ORTECH) completed a dioxin and furan, and PCB diagnostic testing program at the Durham York Energy Centre (DYEC). The emission testing program was performed to determine emission data during three operating conditions identified as: (1) High Carbon Feed Rate and VLN on Air Mode, (2) Medium Carbon Feed Rate and VLN on Air Mode and (3) Medium Carbon Feed Rate and VLN on Gas Mode. Testing for all operating conditions was conducted at the Quench Inlet and Air Pollution Control (APC) Outlet on each of the two boilers. Dispersion modelling analysis of the results was not included in the scope of work for the diagnostic test program.

Dioxin, furan and PCB tests were performed at the Quench Inlet and APC Outlet on Boiler No. 1 and Boiler No. 2 during the three operating conditions. The semi-volatile organic compounds testing was conducted in accordance with Environment Canada Method EPS 1/RM/2.

At the request of Covanta triplicate particulate emission tests were also conducted at the APC Outlet on Boiler No. 1 during the Medium Carbon Feed Rate operating condition. These particulate emission tests were performed concurrently with the dioxin and furan tests performed at the Boiler No. 1 APC Outlet. The particulate testing was conducted following the procedures detailed in Ontario Source Testing Code Method 5.

Testing during the High Carbon Feed Rate and Medium Carbon Feed Rate operating conditions, while VLN was on air mode, was conducted between September 19 and September 30, 2016. During the two week period six dioxin, furan and PCB tests were conducted at the Quench Inlet and APC Outlet on Unit No. 1 and seven dioxin, furan and PCB tests were conducted at the Quench Inlet and APC Outlet on Unit No. 2. An additional two tests were conducted at the Quench Inlet and APC Outlet of both units while the VLN was operating on gas mode with a Medium Carbon Feed Rate on November 4, 2016.

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A summary of the dioxin and furan results is provided below. The dioxin and furan stack emission limit stated in the facility's Environmental Compliance Approval (ECA No. 7306-8FDKNX) is 60 pg TEQ/Rm^3, adjusted to 11% oxygen. Note the O. Reg. 419/05 WHO (2005) TEFs emission data provided includes the 12 dioxin-like PCBs.

Boiler No.	Operating Condition	Test No.	Sampling Date	NATO/CCMS (1989) TEFs**		O. Reg. 419/05 WHO (2005) TEFs**			
				Dry Adjusted Conc. (pg TEQ/Rm^3)*		Dry Adjusted Conc. (pg TEQ/Rm^3)*		Emission Rate (ng TEQ/s)	
				Quench Inlet	APC Outlet	Quench Inlet	APC Outlet	Quench Inlet	APC Outlet
Boiler No. 1	High Carbon VLN Air	1	26 Sept 2016	1249	<11.8	1158	<12.5	22.7	<0.25
		2	26 Sept 2016	1112	<11.7	1029	<12.0	20.4	<0.24
		3	27 Sept 2016	1259	<6.24	1147	<6.73	23.1	<0.13
		Average		**1207**	**<9.93**	**1112**	**<10.4**	**22.1**	**<0.21**
	Medium Carbon VLN Air	4	29 Sept 2016	1586	<9.89	1456	<10.6	28.6	<0.21
		5	29 Sept 2016	1569	<7.47	1454	<7.94	28.7	<0.16
		6	30 Sept 2016	1425	<8.42	1301	<8.98	25.8	<0.17
		Average		**1527**	**<8.59**	**1404**	**<9.17**	**27.7**	**<0.18**
	Medium Carbon VLN Gas	7	4 Nov 2016	767	<5.49	<689	<6.25	<14.0	<0.12
		8	4 Nov 2016	1415	<5.47	<1273	<5.88	<25.6	<0.11
		Average		**1091**	**<5.48**	**<981**	**<6.06**	**<19.8**	**<0.12**
Boiler No. 2	High Carbon VLN Air	1	19 Sept 2016	1618	<23.5	1450	<24.0	28.8	<0.48
		2	20 Sept 2016	1003	<22.0	<899	<22.4	<17.8	<0.45
		3	20 Sept 2016	1155	<21.7	1045	<22.5	20.4	<0.45
		7	27 Sept 2016	1239	<12.5	1153	<13.5	23.1	<0.27
		Average		**1254**	**<19.9**	**<1137**	**<20.6**	**<22.5**	**<0.41**
	Medium Carbon VLN Air	4	22 Sept 2016	1841	<18.9	1663	<19.8	32.3	<0.40
		5	23 Sept 2016	2009	<15.5	1803	<16.9	35.5	<0.33
		6	23 Sept 2016	2156	<13.8	<1942	<15.3	<38.3	<0.30
		Average		**2002**	**<16.1**	**<1803**	**<17.3**	**<35.4**	**<0.34**
	Medium Carbon VLN Gas	8	4 Nov 2016	646	<8.03	<583	<9.69	<11.6	<0.19
		9	4 Nov 2016	696	<8.53	<637	<9.44	<12.7	<0.18
		Average		**671**	**<8.28**	**<610**	**<9.56**	**<12.1**	**<0.18**

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

** calculated using the full detection limit for those isomers not detected.

A summary of the total PCB results is provided below. There is no total PCB stack emission limit stated in ECA No. 7306-8FDKNX.

Boiler No.	Operating Condition	Test No.	Sampling Date	Dry Adjusted Conc. (pg/Rm^3)*		Emission Rate (ng/s)	
				Quench Inlet	APC Outlet	Quench Inlet	APC Outlet
Boiler No. 1	High Carbon VLN Air	1	26 Sept 2016	68686	5430	1346	110
		2	26 Sept 2016	20466	6355	406	127
		3	27 Sept 2016	63612	4647	1281	92.4
		Average		**50921**	**5477**	**1011**	**110**
	Medium Carbon VLN Air	4	29 Sept 2016	6920	84633	136	1646
		5	29 Sept 2016	12059	76958	238	1526
		6	30 Sept 2016	7871	15550	156	302
		Average		**8950**	**59047**	**177**	**1158**
	Medium Carbon VLN Gas	7	4 Nov 2016	81219	41916	1649	813
		8	4 Nov 2016	14532	4107	292	79.7
		Average		**47876**	**23012**	**970**	**446**
Boiler No. 2	High Carbon VLN Air	1	19 Sept 2016	32908	5529	654	110
		2	20 Sept 2016	38524	3444	764	68.9
		3	20 Sept 2016	21531	6526	420	132
		7	27 Sept 2016	20723	6139	415	123
		Average		**28422**	**5410**	**563**	**108**
	Medium Carbon VLN Air	4	22 Sept 2016	31150	8710	605	176
		5	23 Sept 2016	12630	9108	249	178
		6	23 Sept 2016	10080	2780	199	54.3
		Average		**17953**	**6866**	**351**	**136**
	Medium Carbon VLN Gas	8	4 Nov 2016	8431	1775	168	33.9
		9	4 Nov 2016	8066	1160	161	22.4
		Average		**8249**	**1467**	**164**	**28.1**

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

A summary of the particulate matter results for the three tests conducted on Unit No. 1 are provided below. The particulate matter stack emission limit stated in ECA No. 7306-8FDKNX is 9 mg/Rm^3, adjusted to 11% oxygen.

Boiler No.	Operating Condition	Test No.	Sampling Date	Dry Adjusted Conc. (mg /Rm^3)*	Emission Rate (g /s)
				APC Outlet	APC Outlet
Boiler No. 1	Medium Carbon VLN Air	4	29 Sept 2016	7.77	0.15
		5	29 Sept 2016	4.18	0.083
		6	30 Sept 2016	4.54	0.089
		Average		5.49	0.11

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

1. INTRODUCTION

At the request of Covanta, ORTECH Consulting Inc. (ORTECH) completed a dioxin and furan, and PCB diagnostic testing program at the Durham York Energy Centre (DYEC). The emission testing program was performed to determine emission data during three operating conditions identified as: (1) High Carbon Feed Rate and VLN on Air Mode, (2) Medium Carbon Feed Rate and VLN on Air Mode and (3) Medium Carbon Feed Rate and VLN on Gas Mode. Testing for all operating conditions was conducted at the Quench Inlet and Air Pollution Control (APC) Outlet on each of the two boilers. Dispersion modelling analysis of the results was not included in the scope of work for the diagnostic test program.

Dioxin, furan and PCB tests were performed at the Quench Inlet and APC Outlet on Boiler No. 1 and Boiler No. 2 during the three operating conditions. The semi-volatile organic compounds testing was conducted in accordance with Environment Canada Method EPS 1/RM/2.

At the request of Covanta, triplicate particulate emission tests were also conducted at the APC Outlet on Boiler No. 1 during the Medium Carbon Feed Rate and VLN on Air Mode operating condition. These particulate emission tests were performed concurrently with the dioxin and furan tests performed at the Boiler No. 1 APC Outlet. The particulate testing was conducted following the procedures detailed in Ontario Source Testing Code Method 5.

Testing during the High Carbon Feed Rate and Medium Carbon Feed Rate operating conditions, while VLN was on air mode, was conducted between September 19 and September 30, 2016. During the two week period six dioxin, furan and PCB tests were conducted at the Quench Inlet and APC Outlet on Unit No. 1 and seven dioxin, furan and PCB tests were conducted at the Quench Inlet and APC Outlet on Unit No. 2. An additional two tests were conducted at the Quench Inlet and APC Outlet of both units while the VLN was operating on gas mode with a Medium Carbon Feed Rate on November 4, 2016.

The data tables for Boiler No. 1 – High Carbon Feed Rate (VLN Air Mode) and Boiler No. 1 – Medium Carbon Feed Rate (VLN Air Mode) and Boiler No. 1 – Medium Carbon Feed Rate (VLN Gas Mode) are provided in Appendix 1, Appendix 2 and Appendix 3, respectively.

The data tables for Boiler No. 2 – High Carbon Feed Rate (VLN Air Mode) and Boiler No. 2 – Medium Carbon Feed Rate (VLN Air Mode) and Boiler No. 2 – Medium Carbon Feed Rate (VLN Gas Mode) are provided in Appendix 4, Appendix 5 and Appendix 6, respectively.

2. SAMPLING LOCATIONS

The Quench Inlet sampling ports are located on the circular ductwork between the Boiler Outlet and the Recirculating Type Dry Scrubber Inlet. There are two 6-inch ports, located 90 degrees apart, at the same height. The Quench Inlet duct has a diameter of 1.37 meters (54 inches) at the sampling ports. The ports are located approximately 3.8 duct diameters (5.2 meters) downstream and 4.7 duct diameters (6.4 meters) upstream from the nearest flow disturbances.

The APC Outlet sampling ports are located on the circular ductwork between the baghouse outlet and the ID Fan inlet. There are two 6-inch ports, located 90 degrees apart, at the same height. The APC Outlet duct has an inside diameter of 1.37 meters (54 inches) at the sampling ports. The two six inch ports are approximately 4.4 duct diameters (6.1 meters) downstream and 0.7 duct diameters (0.94 meters) upstream from the nearest flow disturbances.

The sampling ports are located at a “non-ideal” location as defined by the Ontario Source Testing Code. An “ideal” location is defined as being at least eight stack diameters downstream and at least two stack diameters upstream of flow disturbances.

3. SAMPLING AND ANALYTICAL PROCEDURES

3.1 Semi-Volatile Organic Compounds

Semi-volatile organic compounds (SVOC), including dioxins, furans, and polychlorinated biphenyls (PCBs) were sampled using the sampling train and sampling procedures outlined in Environment Canada Report EPS 1/RM/2. Major components of the sampling train were as follows:

- A glass nozzle and probe liner assembly
- A clean and proven glass fiber filter was used
- Amberlite XAD-2 sorbent resin was used in a trap to collect semi-volatile organics
- The first impinger was initially empty
- The second impinger contained 100 mL of ethylene glycol
- The third impinger was initially empty
- The fourth impinger contained silica gel

All test train and auxiliary glassware were initially cleaned according to the methods as outlined in Environment Canada EPS 1/RM/2 prior to commencing the test program except that the methods were modified by combining proofing extracts prior to analysis for the target analytes. The glassware was rinsed and a proof sample taken where train components were reused during the test program.

Each test for semi-volatile organic compounds at the Quench Inlet involved the collection of stack gas sampled isokinetically at twelve points centered on equal areas along each of two traverses (at 90° to each other) of the duct. The actual sampling time for the first three tests conducted at Boiler No. 2 was two hundred and forty minutes. Due to the high particulate loading and the expected high concentration of dioxins and furans at the Quench Inlet, the sampling time for the remaining tests was reduced to one hundred and eighty minutes. This reduction allowed for the sampling of an entire traverse (90 minutes) before the filter was plugged and needed to be changed.

Each test for semi-volatile organic compounds at the APC Outlet involved the collection of stack gas sampled isokinetically at twelve points centered on equal areas along each of two traverses (at 90° to each other) of the duct. The actual sampling time for all of the tests was two hundred and forty minutes.

At either two and a half or five minute time increments throughout each test the following information was measured and recorded on field data sheets:

- Elapsed sampling time
- Dry gas meter volume
- Pitot tube pressure
- Stack gas temperature
- Probe, oven and impinger outlet temperatures
- XAD-2 trap outlet temperature
- Dry gas meter temperatures
- Control module orifice pressure
- Sampling pump vacuum

Field data sheets for the SVOC tests conducted at Unit No. 1 and Unit No. 2 are provided in Appendix 7 and Appendix 8, respectively.

At the start and finish of sampling each traverse the sampling train was leak-checked. A valid leak-check as specified by the sampling method is a leakage rate of less than 0.00057 m^3/min or 4% of the estimated average sampling rate, whichever is less. All of the leak-checks for the tests reported, as detailed on the field data sheets, were acceptable.

A blank train was prepared in a manner identical to the test trains for each Boiler; a single blank train was also prepared for the testing conducted on November 4, 2016. The blank trains were assembled, transported and left at the sampling site for a period of time equal to the test trains. The blank trains were treated at the sampling site in the same manner as the test trains and a gas volume of ambient air was drawn through the blank trains approximately equal to the leak-check volume for the test trains.

Prior to loading the field test trains, recovery data sheets were prepared to record initial weights of the test train components. These sheets were also used during sample recovery to record final weights and determine moisture gains and sample volumes. The train recovery data sheets are provided in Appendix 9.

Following the conclusion of each test performed with the semi-volatile organics train, the probe was disconnected and all openings sealed with Teflon tape. The test trains, including the probes, were taken to the on-site ORTECH mobile laboratory for sample recovery. The train recovery procedure is briefly described as follows.

The condition of the test train was noted. Filter, XAD-2 trap and impinger content colours were recorded. The filter housing was disassembled and the filter carefully transferred, with the use of Teflon coated tweezers, to a piece of pre-cleaned aluminum foil. The filter was then folded in half onto itself within the foil, the foil ends crimped, then placed in a pre-cleaned glass petri dish. Both the foil containing the filter(s) and the glass Petri dish were labeled.

All of the impingers were wiped dry on the outside then weighed and the results used to determine the stack gas moisture content.

The front half of the sampling train, up to but not including the trap, was brushed and rinsed thoroughly with acetone. A Teflon probe brush was used to assist in dislodging particulate material that may have adhered to the inside surfaces of the cyclone bypass and filter top assembly. This front half rinse was then repeated using hexane, with no brushing, and all rinsing was combined with the probe rinse sample.

The XAD-2 trap was drained of excess cooling water and weighed. The ends were then sealed with Teflon tape and the trap was labeled and wrapped in aluminum foil.

The contents of the first three impingers were combined in a pre-cleaned amber glass sample bottle. Triplicate rinses of the impingers and connecting glassware back to and including the trap bottom u-tube were performed first with HPLC water, which was added to the impinger solution sample, and then with acetone followed by hexane. The acetone and hexane rinses were combined in a separate sample bottle from the impinger solutions.

Due to the design of ORTECH's glassware, the filter bottom, filter bottom u-tube and trap inlet stem were not soaked for five minutes in each of acetone and hexane. Instead, these pieces of glassware were given extra rinses with each of the solvents. Also, since ORTECH uses a one piece trap and condenser, the five minute soak of this component was performed by the analytical laboratory.

Each sample container was sealed and labeled once that portion of the recovery was completed. The samples were then checked against the master sample log/chain of custody form then refrigerated until they were delivered to Maxxam for analysis.

Semi-volatile organic analyses were performed on single composite extracts for each test according to EPS 1/RM/3 and EPS 1/RM/23.

The SVOC analytical reports, along with the master sample log/chain of custody forms, are provided in Appendix 10.

3.2 Particulate Matter

Particulate matter was sampled using the sampling procedures outlined in Ontario Source Testing Code Method 5. Major components of the sampling train were as follows:

- A stainless steel nozzle and probe liner assembly
- A glass fiber filter
- The first and second impingers initially contained 100 mL each of DI water
- The third impinger was initially empty
- The fourth impinger contained silica gel

Each test for particulate matter at Boiler No. 1 APC Outlet involved the collection of stack gas sampled isokinetically at twelve points centered on equal areas along each of two traverses (at 90° to each other) of the duct. Each of the twenty-four points was sampled for eight minutes for a total actual sampling time of one hundred and ninety-two minutes.

At four minute time increments throughout each test the following information was measured and recorded on field data sheets:

- Elapsed sampling time
- Dry gas meter volume
- Pitot tube pressure
- Stack gas temperature
- Probe, oven and impinger temperatures
- Dry gas meter temperatures
- Control module orifice pressure
- Sampling pump vacuum

The particulate field data sheets are provided in Appendix 11.

At the start and finish of sampling each traverse the sampling train was leak-checked. A valid leak-check as specified by the sampling method is a leakage rate of less than 0.00057 cubic meters per minute (m^3/min) or 4% of the estimated sampling rate, whichever is less. All of the leak-checks, as detailed on the field data sheets, were acceptable.

Before loading of the field test trains commenced, recovery data sheets were prepared to record initial weights of the test train components. These sheets were also used during sample recovery to record final weights and determine moisture gains and sample volumes. The particulate train recovery data sheets are provided in Appendix 12.

Following the conclusion of each test performed with the particulate train, the probe was disconnected and all openings sealed with Teflon tape. The test trains, including the probes, were taken to the on-site ORTECH mobile laboratory for sample recovery. The train recovery procedure is briefly described as follows.

The test trains were visually inspected to ensure that no damage occurred during transportation. The condition of the test train was noted. Filter and impinger content colors were recorded. The filter housing was disassembled and the filter carefully transferred to its pre-test petri dish with the use of Teflon coated tweezers.

All the impingers were wiped dry on the outside then weighed and the results used to determine the stack gas moisture content.

The front half of the sampling train was brushed and rinsed thoroughly with acetone. A nylon bristle probe brush was used to assist in dislodging particulate material which may have adhered to the inside surfaces of the nozzle and probe assembly.

The contents of the first four impingers were combined. Triplicate rinses of the impingers and connecting glassware back to and including the Teflon filter support was performed with DI water and combined with the impinger solution sample.

Particulate samples (front half acetone rinse and filter) collected from the Particulate Trains were weighed by ORTECH following the procedures outlined in Method 5 of the Ontario Source Testing Code. The gravimetric analysis required measuring the weight gain on the particulate filter and the residue remaining from evaporation of the acetone probe rinse. The gravimetric analysis also required desiccation of the samples prior to weight determination. Samples were weighed to a constant weight of ±0.5 milligrams.

4. INTERNAL AND EXTERNAL QA/QC PROGRAM

4.1 General

As with other emission testing programs conducted by ORTECH, a comprehensive internal quality assurance/quality control (QA/QC) program was included.

4.2 Pre-Test Activities

Prior to the commencement of the emission testing program, the following activities were performed:

- Preparation, pre-cleaning and proofing of the manual stack sampling trains and sample containers.
- Preparation and quality checks of chemicals, reagents, filters and XAD-2 adsorbent resin.
- Calibration of all sampling and monitoring equipment.
- Development (and review) of data acquisition, data reduction and summary procedures.
- Development of internal QA/QC field data sheets.
- Review of equipment calibration logs.
- Review of proposed field and laboratory procedures.

All test train and auxiliary SVOC glassware were initially cleaned according to the methods as outlined in Environment Canada EPS 1/RM/2 prior to commencing the test program except that the methods were modified by combining proofing extracts prior to analysis for the target analytes. The glassware was rinsed and a proof sample taken where train components were reused during the test program.

All equipment used in the field testing program was calibrated and checked prior to the field testing program. Pertinent equipment calibration data is supplied in Appendix 13.

As part of ORTECH's internal QA/QC, data acquisition, data reduction and summary procedures were already in place and periodic spot checks of the computer programs were performed using known data sets.

4.3 Emission Testing QA/QC Results

Prior to the field testing program, preliminary testing was completed. Preliminary testing involved collecting data necessary to perform the required calculations for choosing a nozzle size to permit isokinetic sampling.

The internal diameter of each duct was measured and the appropriate number of sampling points was marked on each sampling probe.

The following general QA/QC criteria were satisfied for each of the test trains where applicable:

- All sampling equipment was cleaned and proven clean (where applicable) prior to the commencement of the field testing program.
- All sampling equipment passed a visual and operational check prior to use in the field.
- Oil filled manometer gauges which had been properly leveled and zeroed were used to measure the velocity pressure.
- All sampling data was recorded in ink on preformatted data sheets.
- Any unusual occurrences were noted during each test on the appropriate data form.
- The field team leader reviewed all calibration and sampling data forms daily.
- Only tapered edge sampling nozzles and S-type pitot tubes that had been visually inspected and caliper measured, and deemed acceptable, were used for sampling.
- Each leg of the S-type pitot was leak-checked before the start of testing. The leak-checks were all acceptable (no leak detected).
- Each entire sampling train met acceptable leak-check criteria before and after each test, and during any move from one sampling traverse to another.
- The S-type pitot tube and sampling nozzle were maintained parallel to the flow during testing and care was taken to ensure that they did not scrape the ports when being inserted and removed from the stack.
- The probe and filter components were maintained at 120°C ± 14°C during testing. If the probe or filter temperature was outside of the acceptable range the test was halted until the temperature could be brought back into the acceptable range.

The average percent isokineticity for all tests performed were within the 90 to 110% specified in the sampling method.

Leak-check data for all leak-checks performed on the manual sampling trains are shown on the field data sheets. All of the leak-checks for the analyzed test trains met the acceptance criteria stated in the sampling method.

4.4 Sample Recovery, Handling and Custody

ORTECH's sample identification scheme and system for handling and processing samples was initiated as part of ORTECH's sample tracking system for stack emission samples. All samples were identified by a unique sample number comprised of a series of numbers and letters. A master sample log/chain of custody form was maintained by the QA/QC designate and was made available to the ORTECH personnel designated to perform the sample recovery for a specific sampling train. Once a sample was collected it was labeled and checked against the sample log by the QA/QC designate.

The information contained within the sample number and the sample log enabled the sampling, recovery, data reduction and report writing personnel to easily determine the test date, test number, test type and train sample identification for a given sample. To ensure continuity, the analytical laboratory was requested to use the ORTECH number for sample identification.

The ORTECH personnel responsible for delivering samples used the master sample log/chain of custody form to document the transfer of the samples to the appropriate analytical laboratory. Appropriate care was taken when shipping the samples in order to maintain sample integrity. Once the samples and master sample log/chain of custody forms were received by the analytical laboratory, the laboratory personnel verified that all samples had been received and their integrity maintained. The laboratory personnel then signed the master log and made a photocopy which ORTECH personnel received as a record of the chain of custody for the samples.

4.5 Analytical Results

It should be noted that due to the design of ORTECH's semi-volatile organic sampling train glassware, the filter bottom, filter bottom u-tube and trap inlet stems are not soaked with each of the required solvents (acetone and hexane) during test train recovery. Instead, these components of the test train were given additional rinses with each of the required solvents. Also, because ORTECH uses a one piece condenser and XAD-2 trap, this component of the test train was Teflon sealed and wrapped with foil prior to being transported to the laboratory where it was given the required five minute soaking with each of acetone and hexane.

Analyses for the present emission testing program were performed using acceptable laboratory procedures in accordance with the specified analytical protocols. Adherence to the prescribed QA/QC procedures ensured data of consistent and measurable quality. Analytical quality control focused on the use of control standards to provide a measure of analytical accuracy. Replicate analysis (usually duplicate analysis) of the same sample was used as a means of determining precision of the various analytical procedures. Also, specific acceptance criteria were defined for various analytical operations including calibrations, control standard analysis, drift checks, blanks, etc.

ORTECH conducted the gravimetric analysis of the particulate test samples. Laboratories at ORTECH are certified by Measurement Canada and the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific analytical procedures but are not specifically certified for particulate analysis. ORTECH follows the reference methods for particulate determination, and these results (when required) have historically been acceptable to the MOECC.

The following general QA/QC procedures were incorporated into the analytical effort:

- the on-site Field Supervisor reviewed all data and QA/QC data on a daily basis for completeness and acceptability
- master sample logs were maintained for all samples collected
- analytical QA/QC data was tabulated by the analytical laboratories using appropriate charts or forms
- all hard copy raw data was maintained in organized files

Specific analytical QA/QC procedures are presented in the analytical report and are briefly summarized below.

After extraction of the SVOC train samples, staff at Maxxam added internal standards to all samples prior to analysis and surrogate standards were added to the filters and XAD resin prior to extraction. The analytical report includes the lists of the analytical surrogate standards and internal standards used. The analysis of samples involved complex sample extraction and cleanup, followed by HRMS/MS analysis.

Recovery of the dioxin and furan and dioxin-like PCB surrogate standards were between 55-168%. The second column confirmation results were used for 2378-tetrachlorodibenzofuran for all tests except for Test No. 3 at Boiler No. 2 due to a matrix interference identified by the analytical laboratory.

If the target analyte for a sample had a less than ("<") before the result in the analytical report, the amount was prefaced by a less than symbol in the emission data tables. The less than results are based on the estimated detection limit (EDL) reported by the analytical laboratory for each test sample. A description of estimated detection limit (EDL), method detection limit (MDL) and reporting detection limit provided by the analytical laboratory is given in Appendix 10 along with the analytical reports.

The emission data was calculated using the analytical results provided by Maxxam. It was noted that the APC Outlet PCB results were higher than the APC Inlet for the tests (Test No. 4 to Test No. 6) conducted while Boiler No. 1 was operating at a Medium Carbon Feed Rate with VLN on Air Mode. This is unusual when compared to other results for Boiler No. 1 and Boiler No. 2. However, when Maxxam was asked to verify the PCB results for Boiler No. 1, they could not say for certain based on current information available that the samples had been switched and thus have reaffirmed the results as reported.

5. RESULTS

Dioxin, furan and PCB tests were performed at the Quench Inlet and the APC Outlet on Boiler No. 1 and Boiler No. 2 during three process operating conditions identified as: (1) High Carbon Feed Rate and VLN on Air Mode, (2) High Carbon Feed Rate and VLN on Air Mode and (3) Medium Carbon Feed Rate and VLN on Gas Mode.

At the request of Covanta, three particulate tests were also conducted on the APC Outlet of Unit No. 1 during the Medium Carbon Feed Rate and VLN on Air Mode operating scenario.

The data tables for Boiler No. 1 – High Carbon Feed Rate (VLN Air Mode) and Boiler No. 1 – Medium Carbon Feed Rate (VLN Air Mode) and Boiler No. 1 – Medium Carbon Feed Rate (VLN Gas Mode) are provided in Appendix 1, Appendix 2 and Appendix 3, respectively.

The data tables for Boiler No. 2 – High Carbon Feed Rate (VLN Air Mode) and Boiler No. 2 – Medium Carbon Feed Rate (VLN Air Mode) and Boiler No. 2 – Medium Carbon Feed Rate (VLN Gas Mode) are provided in Appendix 4, Appendix 5 and Appendix 6, respectively.

A detailed test schedule is provided in Table 1 (Appendix 1 to Appendix 6).

5.1 Stack Gas Sampling Parameters

Emission test calculations for the semi-volatile organic compounds (SVOC) tests conducted at the Quench Inlet and APC Outlet of Boiler No. 1 are provided in Appendix 14. Emission test calculations for the SVOC tests conducted at the Quench Inlet and APC Outlet of Boiler No. 2 are provided in Appendix 15.

Emission test calculations for the particulate tests conducted at the APC Outlet of Boiler No. 1 are provided in Appendix 16.

Stack gas sampling parameters for each test are summarized in Table 2 (Appendix 1 to Appendix 6). These parameters include calibration data, nozzle diameter, dry gas volume sampled and average percentage of isokineticity for each test.

5.2 Stack Gas Physical Parameters and Volumetric Flowrates

The stack gas physical parameters for each test are presented in Table 3 (Appendix 1 to Appendix 6), and the stack gas volumetric flowrates for each test are presented in Table 4 (Appendix 1 to Appendix 6).

The average combustion gases for the Quench Inlet and APC Outlet were measured by the DYEC CEMS. The average combustion gas concentrations for each test were used to determine the molecular weight of the gas stream. The average oxygen values for each test were also used to adjust the concentration data to 11% oxygen.

5.3 Semi-Volatile Organic Compounds Emission Data

The combined filter and probe rinse, and combined Amberlite XAD-2 cartridge and impinger solutions for each of the semi-volatile organics trains were analyzed together (one analysis per test) for semi-volatile organic compounds including select dioxins, furans, dioxin-like PCBs and total PCBs.

Dioxins and furans are groups of chemically related chlorinated organic compounds or congeners. There are seventy-five dioxin congeners and one hundred and thirty five furan congeners. The individual congeners all have different molecular structures and they may also have different molecular formulae. Individual congeners, which have the same molecular formula but different molecular structure, are referred to as isomers. Groups of isomers are referred to as congener groups or homologues. The basic dioxin and furan molecules have the molecular formulae $C_{12}H_8O_2$ and $C_{12}H_8O$, respectively. In chlorinated dioxin and furans, between one and eight chlorine atoms may replace an equal number of hydrogen atoms in the basic molecule.

The following table lists the chlorinated dioxin and furan congener groups, and the number of isomers present in each group:

Congener Group Abbreviation	Number of Chlorine Atoms Per Molecule	Molecular Formula	Number of Isomers Per Congener Group
Dioxins			
M1CDD	1	$C_{12}H_7ClO_2$	2
D2CDD	2	$C_{12}H_6Cl_2O_2$	10
T3CDD	3	$C_{12}H_5Cl_3O_2$	14
T4CDD	4	$C_{12}H_4Cl_4O_2$	22
P5CDD	5	$C_{12}H_3Cl_5O_2$	14
H6CDD	6	$C_{12}H_2Cl_6O_2$	10
H7CDD	7	$C_{12}H_1Cl_7O_2$	2
O8CDD	8	$C_{12}Cl_8O_2$	1
Furans			
M1CDF	1	$C_{12}H_7ClO$	4
D2CDF	2	$C_{12}H_6Cl_2O$	16
T3CDF	3	$C_{12}H_5Cl_3O$	28
T4CDF	4	$C_{12}H_4Cl_4O$	38
P5CDF	5	$C_{12}H_3Cl_5O$	28
H6CDF	6	$C_{12}H_2Cl_6O$	16
H7CDF	7	$C_{12}H_1Cl_7O$	4
O8CDF	8	$C_{12}Cl_8O$	1

In Ontario, the Ministry of Environment and Climate Change (MOECC) normally requires that only the higher tetra to octa (T4CDD to O8CDD) dioxin congeners and the higher tetra to octa (T4CDF to O8CDF) furan congeners are included in air emission testing. This is because the lower mono to tri congener groups (M1CDD to T3CDD and M1CDF to T3CDF) are considered to be generally less toxic than the higher congener groups and the test procedures have not been validated for these lower groups. In addition, it is acceptable to the MOECC to use only specific isomers in the higher congener groups to compare emission data with the MOECC guideline for dioxin and furan emissions.

Dioxin and furan congener group analytical results and emission data are given in Table 5 to Table 23 for the Boiler No. 1 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 1), the Boiler No. 1 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 2) and the Boiler No. 2 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 5). Dioxin and furan congener group analytical results and emission data are given in Table 5 to Table 21 for the Boiler No. 1 – Medium Carbon Feed Rate (VLN Gas Mode) and Boiler No. 2 – Medium Carbon Feed Rate (VLN Gas Mode) operating conditions (Appendix 3 and Appendix 6, respectively). Dioxin and furan congener group analytical results and emission data are given in Table 5 to Table 25 for the Boiler No. 2 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 4).

Amounts collected were assumed to be equivalent to the detection limit, where the analytical results were below the estimated detection limits (<EDL).

The total dioxin and furan congener dry adjusted concentrations and emission rates, as requested by Covanta, are summarized below:

Boiler No.	Operating Condition	Test No.	Sampling Date	Dry Adjusted Conc. (ng/Rm^3)*		Emission Rate (ng/s)	
				Quench Inlet	APC Outlet	Quench Inlet	APC Outlet
Boiler No. 1	High Carbon VLN Air	1	26 Sept 2016	70.4	1.33	1378	26.9
		2	26 Sept 2016	59.0	1.08	1173	21.5
		3	27 Sept 2016	74.2	0.70	1494	14.1
		Average		**67.8**	**1.04**	**1348**	**20.8**
	Medium Carbon VLN Air	4	29 Sept 2016	83.6	1.02	1644	19.8
		5	29 Sept 2016	86.3	0.74	1701	14.7
		6	30 Sept 2016	80.1	0.93	1587	17.9
		Average		**83.4**	**0.90**	**1644**	**17.4**
	Medium Carbon VLN Gas	7	4 Nov 16	45.7	<0.36	928	<7.16
		8	4 Nov 16	75.8	<0.29	1524	<5.62
		Average		**60.8**	**<0.33**	**1226**	**<6.39**
Boiler No. 2	High Carbon VLN Air	1	19 Sept 2016	77.1	1.59	1531	31.5
		2	20 Sept 2016	52.6	1.42	1041	28.2
		3	20 Sept 2016	55.8	1.36	1090	27.5
		7	27 Sept 2016	68.3	0.93	1368	18.6
		Average		**63.5**	**1.33**	**1257**	**26.4**
	Medium Carbon VLN Air	4	22 Sept 2016	96.7	1.22	1879	24.6
		5	23 Sept 2016	104	1.05	2040	20.5
		6	23 Sept 2016	103	0.97	2038	19.0
		Average		**101**	**1.08**	**1986**	**21.3**
	Medium Carbon VLN Gas	8	4 Nov 16	38.6	<0.63	768	<12.1
		9	4 Nov 16	40.9	<0.66	814	<12.8
		Average		**39.7**	**<0.65**	**791**	**<12.5**

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

Dioxin and furan specific isomer analytical results and emission data are given in Table 24 to Table 32 for the Quench Inlet and Table 41 to Table 49 for the APC Outlet for the Boiler No. 1 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 1), the Boiler No. 1 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 2) and the Boiler No. 2 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 5). Dioxin and furan specific isomer analytical results and emission data are given in Table 22 to Table 29 for the Quench Inlet and Table 38 to Table 45 for the APC Outlet for the Boiler No. 1 – Medium Carbon Feed Rate (VLN Gas Mode) operating condition (Appendix 3) and the Boiler No. 2 – Medium Carbon Feed Rate (VLN Gas Mode) operating condition (Appendix 6). Dioxin and furan specific isomer analytical results and emission data are given in Table 26 to Table 35 for the Quench Inlet and Table 44 to Table 53 for the APC Outlet for the Boiler No. 2 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 4).

The isomers included in these tables are considered the most toxic of all the dioxin and furan isomers. They are characterized by having chlorine atoms located at the 2, 3, 7 and 8 positions of the basic dioxin and furan molecules.

Several schemes have been proposed for calculating dioxin and furan toxic equivalents (TEQ's) in which different factors have been assigned to the various isomers and congener groups. Calculations in this report are based on the method preferred by the MOECC, which uses International Toxicity Equivalency Factors (I-TEFs).

The purpose in calculating dioxin and furan emission rates as toxic equivalents is to provide a means of assessing and comparing the effects of dioxin and furan emission rates for different emission sources. In these calculations, 2,3,7,8-T4CDD, the most toxic of all the dioxin and furan isomers, is assigned an arbitrary value of 1.0 for a toxic equivalency factor. Then, other dioxin and furan isomers are assigned toxic equivalency factors which are based on their relative toxicity compared with 2,3,7,8-T4CDD. Emission rates for each isomer are multiplied by their assigned factor and the products are summed to provide the toxic equivalency emission rate.

Dioxin and furan TEQ emission data, calculated using the WHO toxic equivalency factors (TEQ), is given in Table 33 to Table 40 for the Quench Inlet and Table 50 to Table 57 for the APC Outlet for the Boiler No. 1 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 1), the Boiler No. 1 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 2), and the Boiler No. 2 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 5). Dioxin and furan TEQ emission data are given in Table 30 to Table 37 for the Quench Inlet and Table 46 to Table 53 for the APC Outlet for the Boiler No. 1 – Medium Carbon Feed Rate (VLN Gas Mode) operating condition (Appendix 3) and the Boiler No. 2 – Medium Carbon Feed Rate (VLN Gas Mode) operating condition (Appendix 6). Dioxin and furan TEQ emission data are given in Table 36 to Table 43 for the Quench Inlet and Table 54 to Table 61 for the APC Outlet for the Boiler No. 2 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 4).

Dioxin and furan TEQ dry reference adjusted concentration data, calculated using the NATO/CCMS (1989) toxic equivalency factors (TEQ), is given in Table 36 for the Quench Inlet and Table 53 for the APC Outlet for the Boiler No. 1 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 1), the Boiler No. 1 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 2) and the Boiler No. 2 - Medium Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 5). Dioxin and furan TEQ emission data are given in Table 33 for the Quench Inlet and Table 49 for the APC Outlet for the Boiler No. 1 – Medium Carbon Feed Rate (VLN Gas Mode) operating condition (Appendix 3) and the Boiler No. 2 – Medium Carbon Feed Rate (VLN Gas Mode) operating condition (Appendix 6). Dioxin and furan TEQ emission data are given in Table 39 for the Quench Inlet and Table 57 for the APC Outlet for the Boiler No. 2 - High Carbon Feed Rate (VLN Air Mode) operating condition (Appendix 4).

A summary of the dioxin and furan results is provided below. The dioxin and furan stack emission limit stated in the facility's Environmental Compliance Approval (ECA No. 7306-8FDKNX) is 60 pg TEQ/Rm^3, adjusted to 11% oxygen. Note the O. Reg. 419/05 WHO (2005) TEFs emission data includes the 12 dioxin-like PCBs.

Boiler No.	Operating Condition	Test No.	Sampling Date	NATO/CCMS (1989) TEFs**		O. Reg. 419/05 WHO (2005) TEFs**			
				Dry Adjusted Conc. (pg TEQ/Rm^3)*		Dry Adjusted Conc. (pg TEQ/Rm^3)*		Emission Rate (ng TEQ/s)	
				Quench Inlet	APC Outlet	Quench Inlet	APC Outlet	Quench Inlet	APC Outlet
Boiler No. 1	High Carbon VLN Air	1	26 Sept 2016	1249	<11.8	1158	<12.5	22.7	<0.25
		2	26 Sept 2016	1112	<11.7	1029	<12.0	20.4	<0.24
		3	27 Sept 2016	1259	<6.24	1147	<6.73	23.1	<0.13
		Average		**1207**	**<9.93**	**1112**	**<10.4**	**22.1**	**<0.21**
	Medium Carbon VLN Air	4	29 Sept 2016	1586	<9.89	1456	<10.6	28.6	<0.21
		5	29 Sept 2016	1569	<7.47	1454	<7.94	28.7	<0.16
		6	30 Sept 2016	1425	<8.42	1301	<8.98	25.8	<0.17
		Average		**1527**	**<8.59**	**1404**	**<9.17**	**27.7**	**<0.18**
	Medium Carbon VLN Gas	7	4 Nov 2016	767	<5.49	<689	<6.25	<14.0	<0.12
		8	4 Nov 2016	1415	<5.47	<1273	<5.88	<25.6	<0.11
		Average		**1091**	**<5.48**	**<981**	**<6.06**	**<19.8**	**<0.12**
Boiler No. 2	High Carbon VLN Air	1	19 Sept 2016	1618	<23.5	1450	<24.0	28.8	<0.48
		2	20 Sept 2016	1003	<22.0	<899	<22.4	<17.8	<0.45
		3	20 Sept 2016	1155	<21.7	1045	<22.5	20.4	<0.45
		7	27 Sept 2016	1239	<12.5	1153	<13.5	23.1	<0.27
		Average		**1254**	**<19.9**	**<1137**	**<20.6**	**<22.5**	**<0.41**
	Medium Carbon VLN Air	4	22 Sept 2016	1841	<18.9	1663	<19.8	32.3	<0.40
		5	23 Sept 2016	2009	<15.5	1803	<16.9	35.5	<0.33
		6	23 Sept 2016	2156	<13.8	<1942	<15.3	<38.3	<0.30
		Average		**2002**	**<16.1**	**<1803**	**<17.3**	**<35.4**	**<0.34**
	Medium Carbon VLN Gas	8	4 Nov 2016	646	<8.03	<583	<9.69	<11.6	<0.19
		9	4 Nov 2016	696	<8.53	<637	<9.44	<12.7	<0.18
		Average		**671**	**<8.28**	**<610**	**<9.56**	**<12.1**	**<0.18**

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

** calculated using the full detection limit for those isomers not detected.

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The total PCB analytical results and emission data are given on the bottom of the dioxin and furan specific isomer tables. The total PCB dry adjusted concentrations and emission rates are summarized below:

Boiler No.	Operating Condition	Test No.	Sampling Date	Dry Adjusted Conc. (pg/Rm^3)*		Emission Rate (ng/s)	
				Quench Inlet	APC Outlet	Quench Inlet	APC Outlet
Boiler No. 1	High Carbon VLN Air	1	26 Sept 2016	68686	5430	1346	110
		2	26 Sept 2016	20466	6355	406	127
		3	27 Sept 2016	63612	4647	1281	92.4
		Average		**50921**	**5477**	**1011**	**110**
	Medium Carbon VLN Air	4	29 Sept 2016	6920	84633	136	1646
		5	29 Sept 2016	12059	76958	238	1526
		6	30 Sept 2016	7871	15550	156	302
		Average		**8950**	**59047**	**177**	**1158**
	Medium Carbon VLN Gas	7	4 Nov 2016	81219	41916	1649	813
		8	4 Nov 2016	14532	4107	292	79.7
		Average		**47876**	**23012**	**970**	**446**
Boiler No. 2	High Carbon VLN Air	1	19 Sept 2016	32908	5529	654	110
		2	20 Sept 2016	38524	3444	764	68.9
		3	20 Sept 2016	21531	6526	420	132
		7	27 Sept 2016	20723	6139	415	123
		Average		**28422**	**5410**	**563**	**108**
	Medium Carbon VLN Air	4	22 Sept 2016	31150	8710	605	176
		5	23 Sept 2016	12630	9108	249	178
		6	23 Sept 2016	10080	2780	199	54.3
		Average		**17953**	**6866**	**351**	**136**
	Medium Carbon VLN Gas	8	4 Nov 2016	8431	1775	168	33.9
		9	4 Nov 2016	8066	1160	161	22.4
		Average		**8249**	**1467**	**164**	**28.1**

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

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5.4 Particulate Matter Emission Data

At the request of Covanta triplicate particulate emission tests were also conducted at the APC Outlet on Boiler No. 1 during the Medium Carbon Feed Rate (VLN Air Mode) operating condition. Particulate testing was conducted following the procedures detailed in Ontario Source Testing Code Method 5. The particulate matter emission limit stated in the facility's Environmental Compliance Approval (ECA No. 7306-8FDKNX) is 9 mg/Rm^3, adjusted to 11% oxygen. The particulate matter emission data for each test is provided in Table 59 of Appendix 2, and is summarized as follows:

Boiler No.	Operating Condition	Test No.	Sampling Date	Dry Adjusted Conc. (mg /Rm^3)*	Emission Rate (g /s)
				APC Outlet	APC Outlet
Boiler No. 1	Medium Carbon VLN Air	4	29 Sept 2016	7.77	0.15
		5	29 Sept 2016	4.18	0.083
		6	30 Sept 2016	4.54	0.089
		Average		5.49	0.11

* at 25°C and 1 atmosphere, adjusted to 11% oxygen

Prior to conducting the first test the sampling probe and nozzle was brushed and rinsed thoroughly with acetone. A sample of the acetone was collected and brought to dryness with the test samples. The particulate matter present in the probe rinse proof sample was 4.5 mg.

An acetone solution blank and a filter blank also underwent gravimetric analysis with the test samples. The results of the gravimetric analysis were 0.0 mg for the acetone and 0.4 mg for the filter. The test results were not corrected for the amounts collected in any of the blank samples.

6. FACILITY PROCESS DATA

Continuous Emission Monitoring (CEM) data was supplied by DYEC personnel for the emission test program. 1-minute CEM data provided by DYEC was used to calculate the average oxygen, carbon dioxide and carbon monoxide concentrations for each isokinetic test period. The average oxygen, carbon dioxide and carbon monoxide concentrations were used to calculate the molecular weight of the gas stream. The average oxygen concentrations were also used to adjust the dry reference concentration data to 11% oxygen. The 1-minute data for the isokinetic test periods has been retained by ORTECH and can be provided upon request.

ORTECH

Facility process data was also supplied by DYEC personnel for each test day. The process data is summarized below:

Test Date	Power Output* (MWh/d)	Aux. Fuel Combusted (m^3/d)		Avg. Combustion Zone Temp. (°C)		Steam (tonnes/d)		MSW Combusted (tonnes/d)		NO_X Reagent Inj. Rate (liters/d)		Carbon Inj. Rate (kg/d)		Lime Inj. Rate (kg/d)	
		Boiler No. 1	Boiler No. 2	Boiler No. 1	Boiler No. 2	Boiler No. 1	Boiler No. 2	Boiler No. 1	Boiler No. 2	Boiler No. 1	Boiler No. 2	Boiler No. 1	Boiler No. 2	Boiler No. 1	Boiler No. 2
19 Sept 16	367		0		1214		797		220		1028		179		4917
20 Sept 16	344		0		1213		796		219		1348		173		4968
22 Sept 16	363		0		1186		790		236		1230		125		4927
23 Sept 16	386		0		1178		801		211		1340		136		4456
26 Sept 16	384	0		1195		801		220		1035		181		4710	
27 Sept 16	393	0	0	1191	1247	793	800	222	221	1031	1385	156	165	4813	4981
2- Sept 16	389	0		1221		803		216		1390		129		4565	
30 Sept 16	303	0		1222		802		226		1454		131		4435	
4 Nov 16	403	0	0	1227	1218	796	798	232	239	814	1616	126	125	4490	4876

* Gross turbine output

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APPENDIX 1

Data Tables for Boiler No. 1
with High Carbon Feed Rate and VLN on Air Mode
(58 pages)

TABLE 1
Covanta
Durham York Energy Centre
Boiler No. 1 - High Carbon Feed Rate and VLN on Air Mode
Test Schedule

Quench Inlet - Dioxin and Furan Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	September 26, 2016	8:22	12:25	180
2	September 26, 2016	13:31	17:12	180
3	September 27, 2016	7:45	11:22	180

APC Outlet - Dioxin and Furan Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	September 26, 2016	8:19	12:40	240
2	September 26, 2016	13:30	17:38	240
3	September 27, 2016	7:44	11:50	240

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Covanta - Durham York Energy Centre
Boiler No. 1 - High Carbon Feed Rate and VLN on Air Mode
Stack Gas Sampling Parameters

Quench Inlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
1	0.848	0.979	6.39	3.730	98.2
2	0.848	0.979	5.97	3.282	98.6
3	0.848	0.979	5.97	3.336	99.1

APC Outlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
1	0.842	0.993	6.24	5.042	97.5
2	0.842	0.993	6.24	4.909	97.9
3	0.842	0.993	6.24	4.890	98.1

* Dry at 25°C and 1 atmosphere

TABLE 3
Covanta - Durham York Energy Centre
Boiler No. 1 - High Carbon Feed Rate and VLN on Air Mode
Stack Gas Physical Parameters

Quench Inlet

Test No.	Gas Temp.	Moisture by Volume	Gas Velocity	Static Pressure	Absolute Pressure	Carbon Dioxide by Volume	Oxygen by Volume
	°C	%	m/s	kPa	kPa	% *	% *
1	172	14.9	19.7	-0.70	98.9	10.1	8.92
2	172	15.0	19.8	-0.72	98.6	10.2	8.81
3	169	14.6	19.9	-0.70	98.6	10.3	8.77
Average	171	14.8	19.8	-0.71	98.7	10.2	8.83

APC Outlet

Test No.	Gas Temp.	Moisture by Volume	Gas Velocity	Static Pressure	Absolute Pressure	Carbon Dioxide by Volume	Oxygen by Volume
	°C	%	m/s	kPa	kPa	% *	% *
1	144	15.4	20.4	-2.81	96.8	10.1	9.33
2	143	15.8	19.8	-2.86	96.5	10.2	9.16
3	140	15.3	19.5	-2.79	96.5	10.3	9.14
Average	142	15.5	19.9	-2.82	96.6	10.2	9.21

* Dry basis, measured by the DYEC CEMS

TABLE 4
Covanta - Durham York Energy Centre
Boiler No. 1 - High Carbon Feed Rate and VLN on Air Mode
Stack Gas Volumetric Flowrates

Quench Inlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	29.1	16.2	19.6	19.0
2	29.3	16.3	19.9	19.1
3	29.3	16.4	20.1	19.3
Average	29.2	16.3	19.9	19.1

APC Outlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	30.1	17.4	20.3	20.5
2	29.2	16.8	20.0	20.0
3	28.8	16.7	19.9	19.8
Average	29.4	17.0	20.0	20.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 1 - High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	11200	1.67	3.00	2.48	2.55	48.6
Pentachlorodibenzo-p-dioxins	8500	1.27	2.28	1.88	1.94	36.9
Hexachlorodibenzo-p-dioxins	7690	1.15	2.06	1.70	1.75	33.4
Heptachlorodibenzo-p-dioxins	6010	0.90	1.61	1.33	1.37	26.1
Octachlorodibenzo-p-dioxin	10200	1.52	2.73	2.26	2.33	44.3
Total	43600	6.51	11.7	9.66	9.94	189

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	154000	23.0	41.3	34.1	35.1	668
Pentachlorodibenzofurans	71700	10.7	19.2	15.9	16.3	311
Hexachlorodibenzofurans	32800	4.90	8.79	7.27	7.48	142
Heptachlorodibenzofurans	13600	2.03	3.65	3.01	3.10	59.0
Octachlorodibenzofuran	1880	0.28	0.50	0.42	0.43	8.16
Total	273980	40.9	73.5	60.7	62.5	1189

Dry Gas Volume Sampled (Rm^3*) :	3.730
Actual Flowrate (m^3/s) :	29.1
Dry Reference Flowrate (Rm^3/s*) :	16.2
Dry Adjusted Flowrate (Rm^3/s**) :	19.6
Wet Reference Flowrate (Rm^3/s*) :	19.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 2 - High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	8950	1.51	2.73	2.23	2.32	44.3
Pentachlorodibenzo-p-dioxins	6570	1.11	2.00	1.64	1.70	32.5
Hexachlorodibenzo-p-dioxins	6470	1.09	1.97	1.61	1.68	32.1
Heptachlorodibenzo-p-dioxins	4640	0.78	1.41	1.16	1.20	23.0
Octachlorodibenzo-p-dioxin	5590	0.95	1.70	1.40	1.45	27.7
Total	32220	5.45	9.82	8.04	8.34	160

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	110000	18.6	33.5	27.5	28.5	545
Pentachlorodibenzofurans	57400	9.71	17.5	14.3	14.9	284
Hexachlorodibenzofurans	25400	4.29	7.74	6.34	6.58	126
Heptachlorodibenzofurans	10100	1.71	3.08	2.52	2.62	50.0
Octachlorodibenzofuran	1470	0.25	0.45	0.37	0.38	7.28
Total	204370	34.6	62.3	51.0	52.9	1013

Dry Gas Volume Sampled (Rm^3*) :	3.282
Actual Flowrate (m^3/s) :	29.3
Dry Reference Flowrate (Rm^3/s*) :	16.3
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	19.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 7
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 3 - High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	9060	1.52	2.72	2.22	2.32	44.6
Pentachlorodibenzo-p-dioxins	7190	1.21	2.16	1.76	1.84	35.4
Hexachlorodibenzo-p-dioxins	7650	1.28	2.29	1.87	1.96	37.7
Heptachlorodibenzo-p-dioxins	6090	1.02	1.83	1.49	1.56	30.0
Octachlorodibenzo-p-dioxin	8480	1.42	2.54	2.07	2.17	41.8
Total	38470	6.46	11.5	9.41	9.84	189

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	153000	25.7	45.9	37.4	39.1	754
Pentachlorodibenzofurans	70900	11.9	21.3	17.3	18.1	349
Hexachlorodibenzofurans	28100	4.72	8.42	6.88	7.19	138
Heptachlorodibenzofurans	11200	1.88	3.36	2.74	2.87	55.2
Octachlorodibenzofuran	1680	0.28	0.50	0.41	0.43	8.27
Total	264880	44.5	79.4	64.8	67.8	1305

Dry Gas Volume Sampled (Rm^3*) :	3.336
Actual Flowrate (m^3/s) :	29.3
Dry Reference Flowrate (Rm^3/s*) :	16.4
Dry Adjusted Flowrate (Rm^3/s**) :	20.1
Wet Reference Flowrate (Rm^3/s*) :	19.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 8
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Actual Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	1.67	1.51	1.52	1.57	5.7
Pentachlorodibenzo-p-dioxins	1.27	1.11	1.21	1.20	6.7
Hexachlorodibenzo-p-dioxins	1.15	1.09	1.28	1.18	8.4
Heptachlorodibenzo-p-dioxins	0.90	0.78	1.02	0.90	13.2
Octachlorodibenzo-p-dioxin	1.52	0.95	1.42	1.30	23.8
Total	6.51	5.45	6.46	6.14	9.8

Furans

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	23.0	18.6	25.7	22.4	16.0
Pentachlorodibenzofurans	10.7	9.71	11.9	10.8	10.2
Hexachlorodibenzofurans	4.90	4.29	4.72	4.64	6.7
Heptachlorodibenzofurans	2.03	1.71	1.88	1.87	8.6
Octachlorodibenzofuran	0.28	0.25	0.28	0.27	7.0
Total	40.9	34.6	44.5	40.0	12.6

TABLE 9
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Dry Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	3.00	2.73	2.72	2.82	5.8
Pentachlorodibenzo-p-dioxins	2.28	2.00	2.16	2.15	6.5
Hexachlorodibenzo-p-dioxins	2.06	1.97	2.29	2.11	7.9
Heptachlorodibenzo-p-dioxins	1.61	1.41	1.83	1.62	12.7
Octachlorodibenzo-p-dioxin	2.73	1.70	2.54	2.33	23.6
Total	11.7	9.82	11.5	11.0	9.4

Furans

Congener Group	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	41.3	33.5	45.9	40.2	15.5
Pentachlorodibenzofurans	19.2	17.5	21.3	19.3	9.7
Hexachlorodibenzofurans	8.79	7.74	8.42	8.32	6.4
Heptachlorodibenzofurans	3.65	3.08	3.36	3.36	8.5
Octachlorodibenzofuran	0.50	0.45	0.50	0.49	6.7
Total	73.5	62.3	79.4	71.7	12.1

* At 25°C and 1 atmosphere

TABLE 10
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	2.48	2.23	2.22	2.31	6.4
Pentachlorodibenzo-p-dioxins	1.88	1.64	1.76	1.76	6.9
Hexachlorodibenzo-p-dioxins	1.70	1.61	1.87	1.73	7.5
Heptachlorodibenzo-p-dioxins	1.33	1.16	1.49	1.33	12.5
Octachlorodibenzo-p-dioxin	2.26	1.40	2.07	1.91	23.8
Total	9.66	8.04	9.41	9.04	9.6

Furans

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	34.1	27.5	37.4	33.0	15.4
Pentachlorodibenzofurans	15.9	14.3	17.3	15.9	9.5
Hexachlorodibenzofurans	7.27	6.34	6.88	6.83	6.8
Heptachlorodibenzofurans	3.01	2.52	2.74	2.76	8.9
Octachlorodibenzofuran	0.42	0.37	0.41	0.40	6.8
Total	60.7	51.0	64.8	58.8	12.0

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 11
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Wet Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	2.55	2.32	2.32	2.40	5.7
Pentachlorodibenzo-p-dioxins	1.94	1.70	1.84	1.83	6.5
Hexachlorodibenzo-p-dioxins	1.75	1.68	1.96	1.80	8.1
Heptachlorodibenzo-p-dioxins	1.37	1.20	1.56	1.38	13.0
Octachlorodibenzo-p-dioxin	2.33	1.45	2.17	1.98	23.6
Total	9.94	8.34	9.84	9.38	9.5

Furans

Congener Group	Wet Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	35.1	28.5	39.1	34.2	15.7
Pentachlorodibenzofurans	16.3	14.9	18.1	16.5	10.0
Hexachlorodibenzofurans	7.48	6.58	7.19	7.08	6.5
Heptachlorodibenzofurans	3.10	2.62	2.87	2.86	8.5
Octachlorodibenzofuran	0.43	0.38	0.43	0.41	6.8
Total	62.5	52.9	67.8	61.1	12.3

* At 25°C and 1 atmosphere

TABLE 12
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Rates
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	48.6	44.3	44.6	45.9	5.2
Pentachlorodibenzo-p-dioxins	36.9	32.5	35.4	35.0	6.3
Hexachlorodibenzo-p-dioxins	33.4	32.1	37.7	34.4	8.6
Heptachlorodibenzo-p-dioxins	26.1	23.0	30.0	26.4	13.3
Octachlorodibenzo-p-dioxin	44.3	27.7	41.8	37.9	23.6
Total	189	160	189	179	9.6

Furans

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	668	545	754	656	16.0
Pentachlorodibenzofurans	311	284	349	315	10.3
Hexachlorodibenzofurans	142	126	138	136	6.4
Heptachlorodibenzofurans	59.0	50.0	55.2	54.7	8.2
Octachlorodibenzofuran	8.16	7.28	8.27	7.91	6.9
Total	1189	1013	1305	1169	12.6

TABLE 13
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Congener Group Emission Data
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	1.57	2.82	2.31	2.40	45.9
Pentachlorodibenzo-p-dioxins	1.20	2.15	1.76	1.83	35.0
Hexachlorodibenzo-p-dioxins	1.18	2.11	1.73	1.80	34.4
Heptachlorodibenzo-p-dioxins	0.90	1.62	1.33	1.38	26.4
Octachlorodibenzo-p-dioxin	1.30	2.33	1.91	1.98	37.9
Total	6.14	11.0	9.04	9.38	179

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	22.4	40.2	33.0	34.2	656
Pentachlorodibenzofurans	10.8	19.3	15.9	16.5	315
Hexachlorodibenzofurans	4.64	8.32	6.83	7.08	136
Heptachlorodibenzofurans	1.87	3.36	2.76	2.86	54.7
Octachlorodibenzofuran	0.27	0.49	0.40	0.41	7.91
Total	40.0	71.7	58.8	61.1	1169

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 14
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 1 - High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	210	0.024	0.042	0.036	0.035	0.72
Pentachlorodibenzo-p-dioxins	420	0.048	0.083	0.071	0.070	1.45
Hexachlorodibenzo-p-dioxins	1550	0.18	0.31	0.26	0.26	5.33
Heptachlorodibenzo-p-dioxins	1830	0.21	0.36	0.31	0.31	6.30
Octachlorodibenzo-p-dioxin	2070	0.24	0.41	0.35	0.35	7.12
Total	6080	0.70	1.21	1.03	1.02	20.9

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	326	0.037	0.065	0.055	0.055	1.12
Pentachlorodibenzofurans	266	0.030	0.053	0.045	0.045	0.92
Hexachlorodibenzofurans	334	0.038	0.066	0.057	0.056	1.15
Heptachlorodibenzofurans	525	0.060	0.10	0.089	0.088	1.81
Octachlorodibenzofuran	299	0.034	0.059	0.051	0.050	1.03
Total	1750	0.20	0.35	0.30	0.29	6.02

Dry Gas Volume Sampled (Rm^3*) :	5.042
Actual Flowrate (m^3/s) :	30.1
Dry Reference Flowrate (Rm^3/s*) :	17.4
Dry Adjusted Flowrate (Rm^3/s**) :	20.3
Wet Reference Flowrate (Rm^3/s*) :	20.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 15
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 2 - High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	169	0.020	0.034	0.029	0.029	0.58
Pentachlorodibenzo-p-dioxins	335	0.039	0.068	0.058	0.057	1.15
Hexachlorodibenzo-p-dioxins	1290	0.15	0.26	0.22	0.22	4.42
Heptachlorodibenzo-p-dioxins	1370	0.16	0.28	0.24	0.24	4.69
Octachlorodibenzo-p-dioxin	1400	0.16	0.29	0.24	0.24	4.80
Total	4564	0.53	0.93	0.78	0.78	15.6

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	380	0.045	0.077	0.065	0.065	1.30
Pentachlorodibenzofurans	339	0.040	0.069	0.058	0.058	1.16
Hexachlorodibenzofurans	358	0.042	0.073	0.061	0.061	1.23
Heptachlorodibenzofurans	437	0.051	0.089	0.075	0.075	1.50
Octachlorodibenzofuran	210	0.025	0.043	0.036	0.036	0.72
Total	1724	0.20	0.35	0.30	0.30	5.91

Dry Gas Volume Sampled (Rm^3*) :	4.909
Actual Flowrate (m^3/s) :	29.2
Dry Reference Flowrate (Rm^3/s*) :	16.8
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	20.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 16
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 3 - High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	105	0.012	0.021	0.018	0.018	0.36
Pentachlorodibenzo-p-dioxins	212	0.025	0.043	0.036	0.037	0.73
Hexachlorodibenzo-p-dioxins	935	0.11	0.19	0.16	0.16	3.20
Heptachlorodibenzo-p-dioxins	960	0.11	0.20	0.17	0.17	3.28
Octachlorodibenzo-p-dioxin	1060	0.13	0.22	0.18	0.18	3.63
Total	3272	0.39	0.67	0.56	0.57	11.2

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	149	0.018	0.030	0.026	0.026	0.51
Pentachlorodibenzofurans	119	0.014	0.024	0.020	0.021	0.41
Hexachlorodibenzofurans	148	0.018	0.030	0.025	0.026	0.51
Heptachlorodibenzofurans	275	0.033	0.056	0.047	0.048	0.94
Octachlorodibenzofuran	150	0.018	0.031	0.026	0.026	0.51
Total	841	0.10	0.17	0.14	0.15	2.88

Dry Gas Volume Sampled (Rm^3*) :	4.890
Actual Flowrate (m^3/s) :	28.8
Dry Reference Flowrate (Rm^3/s*) :	16.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	19.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 17
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Actual Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.024	0.020	0.012	0.019	31.1
Pentachlorodibenzo-p-dioxins	0.048	0.039	0.025	0.038	30.7
Hexachlorodibenzo-p-dioxins	0.18	0.15	0.11	0.15	22.7
Heptachlorodibenzo-p-dioxins	0.21	0.16	0.11	0.16	29.5
Octachlorodibenzo-p-dioxin	0.24	0.16	0.13	0.18	32.1
Total	0.70	0.53	0.39	0.54	28.4

Furans

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	0.037	0.045	0.018	0.033	41.8
Pentachlorodibenzofurans	0.030	0.040	0.014	0.028	46.0
Hexachlorodibenzofurans	0.038	0.042	0.018	0.033	40.2
Heptachlorodibenzofurans	0.060	0.051	0.033	0.048	29.1
Octachlorodibenzofuran	0.034	0.025	0.018	0.026	32.2
Total	0.20	0.20	0.10	0.17	34.9

TABLE 18
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Dry Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.042	0.034	0.021	0.033	31.4
Pentachlorodibenzo-p-dioxins	0.083	0.068	0.043	0.065	31.1
Hexachlorodibenzo-p-dioxins	0.31	0.26	0.19	0.25	23.1
Heptachlorodibenzo-p-dioxins	0.36	0.28	0.20	0.28	29.8
Octachlorodibenzo-p-dioxin	0.41	0.29	0.22	0.30	32.3
Total	1.21	0.93	0.67	0.93	28.7

Furans

Congener Group	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.065	0.077	0.030	0.058	42.2
Pentachlorodibenzofurans	0.053	0.069	0.024	0.049	46.5
Hexachlorodibenzofurans	0.066	0.073	0.030	0.056	40.6
Heptachlorodibenzofurans	0.10	0.089	0.056	0.083	29.5
Octachlorodibenzofuran	0.059	0.043	0.031	0.044	32.5
Total	0.35	0.35	0.17	0.29	35.3

* At 25°C and 1 atmosphere

TABLE 19
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.036	0.029	0.018	0.028	32.2
Pentachlorodibenzo-p-dioxins	0.071	0.058	0.036	0.055	31.8
Hexachlorodibenzo-p-dioxins	0.26	0.22	0.16	0.22	23.9
Heptachlorodibenzo-p-dioxins	0.31	0.24	0.17	0.24	30.7
Octachlorodibenzo-p-dioxin	0.35	0.24	0.18	0.26	33.2
Total	1.03	0.78	0.56	0.79	29.6

Furans

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.055	0.065	0.026	0.049	42.3
Pentachlorodibenzofurans	0.045	0.058	0.020	0.041	46.4
Hexachlorodibenzofurans	0.057	0.061	0.025	0.048	40.8
Heptachlorodibenzofurans	0.089	0.075	0.047	0.070	30.1
Octachlorodibenzofuran	0.051	0.036	0.026	0.038	33.4
Total	0.30	0.30	0.14	0.25	35.6

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 20
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Wet Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.035	0.029	0.018	0.027	31.4
Pentachlorodibenzo-p-dioxins	0.070	0.057	0.037	0.055	31.0
Hexachlorodibenzo-p-dioxins	0.26	0.22	0.16	0.21	23.0
Heptachlorodibenzo-p-dioxins	0.31	0.24	0.17	0.24	29.8
Octachlorodibenzo-p-dioxin	0.35	0.24	0.18	0.26	32.3
Total	1.02	0.78	0.57	0.79	28.7

Furans

Congener Group	Wet Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.055	0.065	0.026	0.049	42.0
Pentachlorodibenzofurans	0.045	0.058	0.021	0.041	46.3
Hexachlorodibenzofurans	0.056	0.061	0.026	0.048	40.5
Heptachlorodibenzofurans	0.088	0.075	0.048	0.070	29.4
Octachlorodibenzofuran	0.050	0.036	0.026	0.037	32.5
Total	0.29	0.30	0.15	0.24	35.1

* At 25°C and 1 atmosphere

TABLE 21
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Rates
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.72	0.58	0.36	0.55	33.1
Pentachlorodibenzo-p-dioxins	1.45	1.15	0.73	1.11	32.7
Hexachlorodibenzo-p-dioxins	5.33	4.42	3.20	4.32	24.8
Heptachlorodibenzo-p-dioxins	6.30	4.69	3.28	4.76	31.7
Octachlorodibenzo-p-dioxin	7.12	4.80	3.63	5.18	34.3
Total	20.9	15.6	11.2	15.9	30.6

Furans

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	1.12	1.30	0.51	0.98	42.5
Pentachlorodibenzofurans	0.92	1.16	0.41	0.83	46.5
Hexachlorodibenzofurans	1.15	1.23	0.51	0.96	41.2
Heptachlorodibenzofurans	1.81	1.50	0.94	1.41	31.0
Octachlorodibenzofuran	1.03	0.72	0.51	0.75	34.4
Total	6.02	5.91	2.88	4.94	36.1

TABLE 22
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Congener Group Emission Data
High Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.019	0.033	0.028	0.027	0.55
Pentachlorodibenzo-p-dioxins	0.038	0.065	0.055	0.055	1.11
Hexachlorodibenzo-p-dioxins	0.15	0.25	0.22	0.21	4.32
Heptachlorodibenzo-p-dioxins	0.16	0.28	0.24	0.24	4.76
Octachlorodibenzo-p-dioxin	0.18	0.30	0.26	0.26	5.18
Total	0.54	0.93	0.79	0.79	15.9

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	0.033	0.058	0.049	0.049	0.98
Pentachlorodibenzofurans	0.028	0.049	0.041	0.041	0.83
Hexachlorodibenzofurans	0.033	0.056	0.048	0.048	0.96
Heptachlorodibenzofurans	0.048	0.083	0.070	0.070	1.41
Octachlorodibenzofuran	0.026	0.044	0.038	0.037	0.75
Total	0.17	0.29	0.25	0.24	4.94

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 23
Covanta - Durham York Energy Centre
Boiler No. 1 - High Carbon Feed Rate and VLN on Air Mode
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<9.0	<6.2
Pentachlorodibenzo-p-dioxins	<6.4	<3.3
Hexachlorodibenzo-p-dioxins	<13	<9.5
Heptachlorodibenzo-p-dioxins	9.5	4.9
Octachlorodibenzo-p-dioxin	19.3	47.6
Total	<57.2	<71.5

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	16.7	<2.8
Pentachlorodibenzofurans	40.4	<3.6
Hexachlorodibenzofurans	48.5	<3.3
Heptachlorodibenzofurans	17.1	6.6
Octachlorodibenzofuran	5.6	6.9
Total	128	<23.2

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 24
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 1 - High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	822	123	220	182	187	3.57
12378-pentachlorodibenzo-p-dioxin	1030	154	276	228	235	4.47
123478-hexachlorodibenzo-p-dioxin	448	66.9	120	99.3	102	1.94
123678-hexachlorodibenzo-p-dioxin	677	101	182	150	154	2.94
123789-hexachlorodibenzo-p-dioxin	564	84.2	151	125	129	2.45
1234678-heptachlorodibenzo-p-dioxin	2920	436	783	647	666	12.7
Octachlorodibenzo-p-dioxin	10200	1523	2735	2260	2325	44.3
2378-tetrachlorodibenzofuran	5010	748	1343	1110	1142	21.7
12378-pentachlorodibenzofuran	5130	766	1375	1137	1169	22.3
23478-pentachlorodibenzofuran	4360	651	1169	966	994	18.9
123478-hexachlorodibenzofuran	3940	588	1056	873	898	17.1
123678-hexachlorodibenzofuran	4110	614	1102	911	937	17.8
234678-hexachlorodibenzofuran	2250	336	603	499	513	9.77
123789-hexachlorodibenzofuran	197	29.4	52.8	43.6	44.9	0.86
1234678-heptachlorodibenzofuran	9430	1408	2528	2089	2150	40.9
1234789-heptachlorodibenzofuran	739	110	198	164	168	3.21
Octachlorodibenzofuran	1880	281	504	417	429	8.16
PCB 81	260	38.8	69.7	57.6	59.3	1.13
PCB 77	910	136	244	202	207	3.95
PCB 123	270	40.3	72.4	59.8	61.6	1.17
PCB 118	9000	1344	2413	1994	2052	39.1
PCB 114	320	47.8	85.8	70.9	72.9	1.39
PCB 105	2600	388	697	576	593	11.3
PCB 126	540	80.6	145	120	123	2.34
PCB 167	280	41.8	75.1	62.0	63.8	1.22
PCB 156 + PCB 157	640	95.6	172	142	146	2.78
PCB 169	200	29.9	53.6	44.3	45.6	0.87
PCB 189	310	46.3	83.1	68.7	70.7	1.35
Total Dioxins & Furans Only	53707	8019	14399	11900	12243	233
Dioxin-Like PCBs	15330	2289	4110	3397	3495	66.5
Total Dioxins & Furans and PCBs	69037	10308	18509	15296	15738	300
Total PCBs	310000	46287	83110	68686	70670	1346

Dry Gas Volume Sampled (Rm³*) :	3.730
Actual Flowrate (m³/s) :	29.1
Dry Reference Flowrate (Rm³/s*) :	16.2
Dry Adjusted Flowrate (Rm³/s**) :	19.6
Wet Reference Flowrate (Rm³/s*) :	19.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 25
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 2 - High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	640	108	195	160	166	3.17
12378-pentachlorodibenzo-p-dioxin	795	134	242	198	206	3.94
123478-hexachlorodibenzo-p-dioxin	355	60.0	108	88.6	91.9	1.76
123678-hexachlorodibenzo-p-dioxin	606	102	185	151	157	3.00
123789-hexachlorodibenzo-p-dioxin	528	89.3	161	132	137	2.62
1234678-heptachlorodibenzo-p-dioxin	2260	382	689	564	585	11.2
Octachlorodibenzo-p-dioxin	5590	945	1703	1395	1448	27.7
2378-tetrachlorodibenzofuran	3570	604	1088	891	925	17.7
12378-pentachlorodibenzofuran	3790	641	1155	946	982	18.8
23478-pentachlorodibenzofuran	3480	588	1060	869	901	17.2
123478-hexachlorodibenzofuran	3220	544	981	804	834	16.0
123678-hexachlorodibenzofuran	3290	556	1002	821	852	16.3
234678-hexachlorodibenzofuran	2080	352	634	519	539	10.3
123789-hexachlorodibenzofuran	140	23.7	42.7	34.9	36.3	0.69
1234678-heptachlorodibenzofuran	7260	1228	2212	1812	1880	36.0
1234789-heptachlorodibenzofuran	556	94.0	169	139	144	2.75
Octachlorodibenzofuran	1470	249	448	367	381	7.28
PCB 81	180	30.4	54.8	44.9	46.6	0.89
PCB 77	620	105	189	155	161	3.07
PCB 123	150	25.4	45.7	37.4	38.8	0.74
PCB 118	2800	473	853	699	725	13.9
PCB 114	150	25.4	45.7	37.4	38.8	0.74
PCB 105	910	154	277	227	236	4.51
PCB 126	430	72.7	131	107	111	2.13
PCB 167	190	32.1	57.9	47.4	49.2	0.94
PCB 156 + PCB 157	430	72.7	131	107	111	2.13
PCB 169	160	27.1	48.8	39.9	41.4	0.79
PCB 189	230	38.9	70.1	57.4	59.6	1.14
Total Dioxins & Furans Only	39630	6701	12075	9891	10263	196
Dioxin-Like PCBs	6250	1057	1904	1560	1619	31.0
Total Dioxins & Furans and PCBs	45880	7758	13979	11451	11882	227
Total PCBs	82000	13865	24985	20466	21236	406

Dry Gas Volume Sampled (Rm^3*) :	3.282
Actual Flowrate (m^3/s) :	29.3
Dry Reference Flowrate (Rm^3/s*) :	16.3
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	19.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 26
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 3 - High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	661	111	198	162	169	3.26
12378-pentachlorodibenzo-p-dioxin	891	150	267	218	228	4.39
123478-hexachlorodibenzo-p-dioxin	356	59.8	107	87.1	91.1	1.75
123678-hexachlorodibenzo-p-dioxin	679	114	204	166	174	3.34
123789-hexachlorodibenzo-p-dioxin	613	103	184	150	157	3.02
1234678-heptachlorodibenzo-p-dioxin	3140	527	941	768	803	15.5
Octachlorodibenzo-p-dioxin	8480	1424	2542	2075	2170	41.8
2378-tetrachlorodibenzofuran	4770	801	1430	1167	1220	23.5
12378-pentachlorodibenzofuran	4910	824	1472	1201	1256	24.2
23478-pentachlorodibenzofuran	4270	717	1280	1045	1092	21.0
123478-hexachlorodibenzofuran	3220	541	965	788	824	15.9
123678-hexachlorodibenzofuran	3620	608	1085	886	926	17.8
234678-hexachlorodibenzofuran	1840	309	552	450	471	9.06
123789-hexachlorodibenzofuran	174	29.2	52.2	42.6	44.5	0.86
1234678-heptachlorodibenzofuran	8410	1412	2521	2058	2152	41.4
1234789-heptachlorodibenzofuran	661	111	198	162	169	3.26
Octachlorodibenzofuran	1680	282	504	411	430	8.27
PCB 81	180	30.2	54.0	44.0	46.1	0.89
PCB 77	550	92.4	165	135	141	2.71
PCB 123	210	35.3	62.9	51.4	53.7	1.03
PCB 118	4800	806	1439	1174	1228	23.6
PCB 114	240	40.3	71.9	58.7	61.4	1.18
PCB 105	1800	302	540	440	461	8.87
PCB 126	520	87.3	156	127	133	2.56
PCB 167	650	109	195	159	166	3.20
PCB 156 + PCB 157	1800	302	540	440	461	8.87
PCB 169	160	26.9	48.0	39.1	40.9	0.79
PCB 189	490	82.3	147	120	125	2.41
Total Dioxins & Furans Only	48375	8123	14501	11836	12377	238
Dioxin-Like PCBs	11400	1914	3417	2789	2917	56.1
Total Dioxins & Furans and PCBs	59775	10037	17918	14625	15293	294
Total PCBs	260000	43659	77938	63612	66520	1281

Dry Gas Volume Sampled (Rm^3*) :	3.336
Actual Flowrate (m^3/s) :	29.3
Dry Reference Flowrate (Rm^3/s*) :	16.4
Dry Adjusted Flowrate (Rm^3/s**) :	20.1
Wet Reference Flowrate (Rm^3/s*) :	19.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 27
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Actual Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	123	108	111	114	6.8
12378-pentachlorodibenzo-p-dioxin	154	134	150	146	7.0
123478-hexachlorodibenzo-p-dioxin	66.9	60.0	59.8	62.2	6.5
123678-hexachlorodibenzo-p-dioxin	101	102	114	106	6.7
123789-hexachlorodibenzo-p-dioxin	84.2	89.3	103	92.1	10.5
1234678-heptachlorodibenzo-p-dioxin	436	382	527	448	16.4
Octachlorodibenzo-p-dioxin	1523	945	1424	1297	23.8
2378-tetrachlorodibenzofuran	748	604	801	718	14.2
12378-pentachlorodibenzofuran	766	641	824	744	12.6
23478-pentachlorodibenzofuran	651	588	717	652	9.9
123478-hexachlorodibenzofuran	588	544	541	558	4.7
123678-hexachlorodibenzofuran	614	556	608	593	5.3
234678-hexachlorodibenzofuran	336	352	309	332	6.5
123789-hexachlorodibenzofuran	29.4	23.7	29.2	27.4	11.9
1234678-heptachlorodibenzofuran	1408	1228	1412	1349	7.8
1234789-heptachlorodibenzofuran	110	94.0	111	105	9.2
Octachlorodibenzofuran	281	249	282	270	7.0
PCB 81	38.8	30.4	30.2	33.2	14.8
PCB 77	136	105	92.4	111	20.2
PCB 123	40.3	25.4	35.3	33.6	22.6
PCB 118	1344	473	806	874	50.2
PCB 114	47.8	25.4	40.3	37.8	30.2
PCB 105	388	154	302	281	42.1
PCB 126	80.6	72.7	87.3	80.2	9.1
PCB 167	41.8	32.1	109	61.0	68.7
PCB 156 + PCB 157	95.6	72.7	302	157	80.6
PCB 169	29.9	27.1	26.9	27.9	6.0
PCB 189	46.3	38.9	82.3	55.8	41.6
Total Dioxins & Furans Only	8019	6701	8123	7614	10.4
Dioxin-Like PCBs	2289	1057	1914	1753	36.0
Total Dioxins & Furans and PCBs	10308	7758	10037	9368	15.0
Total PCBs	46287	13865	43659	34604	52.0

TABLE 28
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	220	195	198	205	6.8
12378-pentachlorodibenzo-p-dioxin	276	242	267	262	6.7
123478-hexachlorodibenzo-p-dioxin	120	108	107	112	6.6
123678-hexachlorodibenzo-p-dioxin	182	185	204	190	6.3
123789-hexachlorodibenzo-p-dioxin	151	161	184	165	10.1
1234678-heptachlorodibenzo-p-dioxin	783	689	941	804	15.9
Octachlorodibenzo-p-dioxin	2735	1703	2542	2327	23.6
2378-tetrachlorodibenzofuran	1343	1088	1430	1287	13.8
12378-pentachlorodibenzofuran	1375	1155	1472	1334	12.2
23478-pentachlorodibenzofuran	1169	1060	1280	1170	9.4
123478-hexachlorodibenzofuran	1056	981	965	1001	4.9
123678-hexachlorodibenzofuran	1102	1002	1085	1063	5.0
234678-hexachlorodibenzofuran	603	634	552	596	7.0
123789-hexachlorodibenzofuran	52.8	42.7	52.2	49.2	11.6
1234678-heptachlorodibenzofuran	2528	2212	2521	2420	7.5
1234789-heptachlorodibenzofuran	198	169	198	189	8.8
Octachlorodibenzofuran	504	448	504	485	6.7
PCB 81	69.7	54.8	54.0	59.5	14.9
PCB 77	244	189	165	199	20.4
PCB 123	72.4	45.7	62.9	60.3	22.4
PCB 118	2413	853	1439	1568	50.2
PCB 114	85.8	45.7	71.9	67.8	30.0
PCB 105	697	277	540	505	42.0
PCB 126	145	131	156	144	8.7
PCB 167	75.1	57.9	195	109	68.3
PCB 156 + PCB 157	172	131	540	281	80.2
PCB 169	53.6	48.8	48.0	50.1	6.1
PCB 189	83.1	70.1	147	100	41.1
Total Dioxins & Furans Only	14399	12075	14501	13658	10.0
Dioxin-Like PCBs	4110	1904	3417	3144	35.9
Total Dioxins & Furans and PCBs	18509	13979	17918	16802	14.7
Total PCBs	83110	24985	77938	62011	51.9

* At 25°C and 1 atmosphere

TABLE 29
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	182	160	162	168	7.4
12378-pentachlorodibenzo-p-dioxin	228	198	218	215	7.0
123478-hexachlorodibenzo-p-dioxin	99.3	88.6	87.1	91.7	7.2
123678-hexachlorodibenzo-p-dioxin	150	151	166	156	5.8
123789-hexachlorodibenzo-p-dioxin	125	132	150	136	9.5
1234678-heptachlorodibenzo-p-dioxin	647	564	768	660	15.6
Octachlorodibenzo-p-dioxin	2260	1395	2075	1910	23.8
2378-tetrachlorodibenzofuran	1110	891	1167	1056	13.8
12378-pentachlorodibenzofuran	1137	946	1201	1095	12.1
23478-pentachlorodibenzofuran	966	869	1045	960	9.2
123478-hexachlorodibenzofuran	873	804	788	821	5.5
123678-hexachlorodibenzofuran	911	821	886	872	5.3
234678-hexachlorodibenzofuran	499	519	450	489	7.2
123789-hexachlorodibenzofuran	43.6	34.9	42.6	40.4	11.8
1234678-heptachlorodibenzofuran	2089	1812	2058	1986	7.6
1234789-heptachlorodibenzofuran	164	139	162	155	9.0
Octachlorodibenzofuran	417	367	411	398	6.8
PCB 81	57.6	44.9	44.0	48.9	15.5
PCB 77	202	155	135	164	21.0
PCB 123	59.8	37.4	51.4	49.5	22.8
PCB 118	1994	699	1174	1289	50.8
PCB 114	70.9	37.4	58.7	55.7	30.4
PCB 105	576	227	440	415	42.4
PCB 126	120	107	127	118	8.5
PCB 167	62.0	47.4	159	89.5	67.8
PCB 156 + PCB 157	142	107	440	230	79.7
PCB 169	44.3	39.9	39.1	41.1	6.8
PCB 189	68.7	57.4	120	82.0	40.6
Total Dioxins & Furans Only	11900	9891	11836	11209	10.2
Dioxin-Like PCBs	3397	1560	2789	2582	36.2
Total Dioxins & Furans and PCBs	15296	11451	14625	13791	14.9
Total PCBs	68686	20466	63612	50921	52.0

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 30
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Wet Reference Concentration				Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	187	166	169	174	6.7
12378-pentachlorodibenzo-p-dioxin	235	206	228	223	6.8
123478-hexachlorodibenzo-p-dioxin	102	91.9	91.1	95.0	6.5
123678-hexachlorodibenzo-p-dioxin	154	157	174	162	6.5
123789-hexachlorodibenzo-p-dioxin	129	137	157	141	10.3
1234678-heptachlorodibenzo-p-dioxin	666	585	803	685	16.1
Octachlorodibenzo-p-dioxin	2325	1448	2170	1981	23.6
2378-tetrachlorodibenzofuran	1142	925	1220	1096	14.0
12378-pentachlorodibenzofuran	1169	982	1256	1136	12.4
23478-pentachlorodibenzofuran	994	901	1092	996	9.6
123478-hexachlorodibenzofuran	898	834	824	852	4.7
123678-hexachlorodibenzofuran	937	852	926	905	5.1
234678-hexachlorodibenzofuran	513	539	471	507	6.8
123789-hexachlorodibenzofuran	44.9	36.3	44.5	41.9	11.7
1234678-heptachlorodibenzofuran	2150	1880	2152	2061	7.6
1234789-heptachlorodibenzofuran	168	144	169	161	8.9
Octachlorodibenzofuran	429	381	430	413	6.8
PCB 81	59.3	46.6	46.1	50.6	14.8
PCB 77	207	161	141	170	20.2
PCB 123	61.6	38.8	53.7	51.4	22.4
PCB 118	2052	725	1228	1335	50.2
PCB 114	72.9	38.8	61.4	57.7	30.0
PCB 105	593	236	461	430	42.0
PCB 126	123	111	133	123	8.9
PCB 167	63.8	49.2	166	93.1	68.5
PCB 156 + PCB 157	146	111	461	239	80.4
PCB 169	45.6	41.4	40.9	42.7	6.0
PCB 189	70.7	59.6	125	85.2	41.3
Total Dioxins & Furans Only	12243	10263	12377	11628	10.2
Dioxin-Like PCBs	3495	1619	2917	2677	35.9
Total Dioxins & Furans and PCBs	15738	11882	15293	14304	14.7
Total PCBs	70670	21236	66520	52809	51.9

* At 25°C and 1 atmosphere

TABLE 31
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Rates
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Emission Rate Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	3.57	3.17	3.26	3.33	6.3
12378-pentachlorodibenzo-p-dioxin	4.47	3.94	4.39	4.27	6.7
123478-hexachlorodibenzo-p-dioxin	1.94	1.76	1.75	1.82	6.0
123678-hexachlorodibenzo-p-dioxin	2.94	3.00	3.34	3.09	7.0
123789-hexachlorodibenzo-p-dioxin	2.45	2.62	3.02	2.69	10.9
1234678-heptachlorodibenzo-p-dioxin	12.7	11.2	15.5	13.1	16.5
Octachlorodibenzo-p-dioxin	44.3	27.7	41.8	37.9	23.6
2378-tetrachlorodibenzofuran	21.7	17.7	23.5	21.0	14.2
12378-pentachlorodibenzofuran	22.3	18.8	24.2	21.7	12.6
23478-pentachlorodibenzofuran	18.9	17.2	21.0	19.1	10.0
123478-hexachlorodibenzofuran	17.1	16.0	15.9	16.3	4.2
123678-hexachlorodibenzofuran	17.8	16.3	17.8	17.3	5.1
234678-hexachlorodibenzofuran	9.77	10.3	9.06	9.71	6.4
123789-hexachlorodibenzofuran	0.86	0.69	0.86	0.80	11.7
1234678-heptachlorodibenzofuran	40.9	36.0	41.4	39.4	7.6
1234789-heptachlorodibenzofuran	3.21	2.75	3.26	3.07	9.0
Octachlorodibenzofuran	8.16	7.28	8.27	7.91	6.9
PCB 81	1.13	0.89	0.89	0.97	14.3
PCB 77	3.95	3.07	2.71	3.24	19.7
PCB 123	1.17	0.74	1.03	0.98	22.3
PCB 118	39.1	13.9	23.6	25.5	49.8
PCB 114	1.39	0.74	1.18	1.10	29.9
PCB 105	11.3	4.51	8.87	8.22	41.8
PCB 126	2.34	2.13	2.56	2.35	9.2
PCB 167	1.22	0.94	3.20	1.79	69.1
PCB 156 + PCB 157	2.78	2.13	8.87	4.59	80.9
PCB 169	0.87	0.79	0.79	0.82	5.5
PCB 189	1.35	1.14	2.41	1.63	41.9
Total Dioxins & Furans Only	233	196	238	223	10.3
Dioxin-Like PCBs	66.5	31.0	56.1	51.2	35.7
Total Dioxins & Furans and PCBs	300	227	294	274	14.7
Total PCBs	1346	406	1281	1011	51.9

TABLE 32
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Specific Isomer Emission Data
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	114	205	168	174	3.33
12378-pentachlorodibenzo-p-dioxin	146	262	215	223	4.27
123478-hexachlorodibenzo-p-dioxin	62.2	112	91.7	95.0	1.82
123678-hexachlorodibenzo-p-dioxin	106	190	156	162	3.09
123789-hexachlorodibenzo-p-dioxin	92.1	165	136	141	2.69
1234678-heptachlorodibenzo-p-dioxin	448	804	660	685	13.1
Octachlorodibenzo-p-dioxin	1297	2327	1910	1981	37.9
2378-tetrachlorodibenzofuran	718	1287	1056	1096	21.0
12378-pentachlorodibenzofuran	744	1334	1095	1136	21.7
23478-pentachlorodibenzofuran	652	1170	960	996	19.1
123478-hexachlorodibenzofuran	558	1001	821	852	16.3
123678-hexachlorodibenzofuran	593	1063	872	905	17.3
234678-hexachlorodibenzofuran	332	596	489	507	9.71
123789-hexachlorodibenzofuran	27.4	49.2	40.4	41.9	0.80
1234678-heptachlorodibenzofuran	1349	2420	1986	2061	39.4
1234789-heptachlorodibenzofuran	105	189	155	161	3.07
Octachlorodibenzofuran	270	485	398	413	7.91
PCB 81	33.2	59.5	48.9	50.6	0.97
PCB 77	111	199	164	170	3.24
PCB 123	33.6	60.3	49.5	51.4	0.98
PCB 118	874	1568	1289	1335	25.5
PCB 114	37.8	67.8	55.7	57.7	1.10
PCB 105	281	505	415	430	8.22
PCB 126	80.2	144	118	123	2.35
PCB 167	61.0	109	89.5	93.1	1.79
PCB 156 + PCB 157	157	281	230	239	4.59
PCB 169	27.9	50.1	41.1	42.7	0.82
PCB 189	55.8	100	82.0	85.2	1.63
Total Dioxins & Furans Only	7614	13658	11209	11628	223
Dioxin-Like PCBs	1753	3144	2582	2677	51.2
Total Dioxins & Furans and PCBs	9368	16802	13791	14304	274
Total PCBs	34604	62011	50921	52809	1011

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 33
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 1 pg TEQ/m³	Test No. 2 pg TEQ/m³	Test No. 3 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	123	108	111	114
12378-pentachlorodibenzo-p-dioxin	1.000	154	134	150	146
123478-hexachlorodibenzo-p-dioxin	0.100	6.69	6.00	5.98	6.22
123678-hexachlorodibenzo-p-dioxin	0.100	10.1	10.2	11.4	10.6
123789-hexachlorodibenzo-p-dioxin	0.100	8.42	8.93	10.3	9.21
1234678-heptachlorodibenzo-p-dioxin	0.010	4.36	3.82	5.27	4.48
Octachlorodibenzo-p-dioxin	0.0003	0.46	0.28	0.43	0.39
2378-tetrachlorodibenzofuran	0.100	74.8	60.4	80.1	71.8
12378-pentachlorodibenzofuran	0.030	23.0	19.2	24.7	22.3
23478-pentachlorodibenzofuran	0.300	195	177	215	196
123478-hexachlorodibenzofuran	0.100	58.8	54.4	54.1	55.8
123678-hexachlorodibenzofuran	0.100	61.4	55.6	60.8	59.3
234678-hexachlorodibenzofuran	0.100	33.6	35.2	30.9	33.2
123789-hexachlorodibenzofuran	0.100	2.94	2.37	2.92	2.74
1234678-heptachlorodibenzofuran	0.010	14.1	12.3	14.1	13.5
1234789-heptachlorodibenzofuran	0.010	1.10	0.94	1.11	1.05
Octachlorodibenzofuran	0.0003	0.084	0.075	0.085	0.081
PCB 81	0.0003	0.012	0.0091	0.0091	0.0099
PCB 77	0.0001	0.014	0.010	0.0092	0.011
PCB 123	0.00003	0.0012	0.00076	0.0011	0.0010
PCB 118	0.00003	0.040	0.014	0.024	0.026
PCB 114	0.00003	0.0014	0.00076	0.0012	0.0011
PCB 105	0.00003	0.012	0.0046	0.0091	0.0084
PCB 126	0.100	8.06	7.27	8.73	8.02
PCB 167	0.00003	0.0013	0.00096	0.0033	0.0018
PCB 156 + PCB 157	0.00003	0.0029	0.0022	0.0091	0.0047
PCB 169	0.030	0.90	0.81	0.81	0.84
PCB 189	0.00003	0.0014	0.0012	0.0025	0.0017
Total Dioxins & Furans Only		772	689	778	746
Dioxin-Like PCBs		9.04	8.13	9.61	8.93
Total Dioxins & Furans and PCBs		781	697	788	755

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 34
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	220	195	198	205
12378-pentachlorodibenzo-p-dioxin	1.000	276	242	267	262
123478-hexachlorodibenzo-p-dioxin	0.100	12.0	10.8	10.7	11.2
123678-hexachlorodibenzo-p-dioxin	0.100	18.2	18.5	20.4	19.0
123789-hexachlorodibenzo-p-dioxin	0.100	15.1	16.1	18.4	16.5
1234678-heptachlorodibenzo-p-dioxin	0.010	7.83	6.89	9.41	8.04
Octachlorodibenzo-p-dioxin	0.0003	0.82	0.51	0.76	0.70
2378-tetrachlorodibenzofuran	0.100	134	109	143	129
12378-pentachlorodibenzofuran	0.030	41.3	34.6	44.2	40.0
23478-pentachlorodibenzofuran	0.300	351	318	384	351
123478-hexachlorodibenzofuran	0.100	106	98.1	96.5	100
123678-hexachlorodibenzofuran	0.100	110	100	109	106
234678-hexachlorodibenzofuran	0.100	60.3	63.4	55.2	59.6
123789-hexachlorodibenzofuran	0.100	5.28	4.27	5.22	4.92
1234678-heptachlorodibenzofuran	0.010	25.3	22.1	25.2	24.2
1234789-heptachlorodibenzofuran	0.010	1.98	1.69	1.98	1.89
Octachlorodibenzofuran	0.0003	0.15	0.13	0.15	0.15
PCB 81	0.0003	0.021	0.016	0.016	0.018
PCB 77	0.0001	0.024	0.019	0.016	0.020
PCB 123	0.00003	0.0022	0.0014	0.0019	0.0018
PCB 118	0.00003	0.072	0.026	0.043	0.047
PCB 114	0.00003	0.0026	0.0014	0.0022	0.0020
PCB 105	0.00003	0.021	0.0083	0.016	0.015
PCB 126	0.100	14.5	13.1	15.6	14.4
PCB 167	0.00003	0.0023	0.0017	0.0058	0.0033
PCB 156 + PCB 157	0.00003	0.0051	0.0039	0.016	0.0084
PCB 169	0.030	1.61	1.46	1.44	1.50
PCB 189	0.00003	0.0025	0.0021	0.0044	0.0030
Total Dioxins & Furans Only		1386	1241	1389	1339
Dioxin-Like PCBs		16.2	14.6	17.1	16.0
Total Dioxins & Furans and PCBs		1402	1256	1406	1355

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 35
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	182	160	162	168
12378-pentachlorodibenzo-p-dioxin	1.000	228	198	218	215
123478-hexachlorodibenzo-p-dioxin	0.100	9.93	8.86	8.71	9.17
123678-hexachlorodibenzo-p-dioxin	0.100	15.0	15.1	16.6	15.6
123789-hexachlorodibenzo-p-dioxin	0.100	12.5	13.2	15.0	13.6
1234678-heptachlorodibenzo-p-dioxin	0.010	6.47	5.64	7.68	6.60
Octachlorodibenzo-p-dioxin	0.0003	0.68	0.42	0.62	0.57
2378-tetrachlorodibenzofuran	0.100	111	89.1	117	106
12378-pentachlorodibenzofuran	0.030	34.1	28.4	36.0	32.8
23478-pentachlorodibenzofuran	0.300	290	261	313	288
123478-hexachlorodibenzofuran	0.100	87.3	80.4	78.8	82.1
123678-hexachlorodibenzofuran	0.100	91.1	82.1	88.6	87.2
234678-hexachlorodibenzofuran	0.100	49.9	51.9	45.0	48.9
123789-hexachlorodibenzofuran	0.100	4.36	3.49	4.26	4.04
1234678-heptachlorodibenzofuran	0.010	20.9	18.1	20.6	19.9
1234789-heptachlorodibenzofuran	0.010	1.64	1.39	1.62	1.55
Octachlorodibenzofuran	0.0003	0.12	0.11	0.12	0.12
PCB 81	0.0003	0.017	0.013	0.013	0.015
PCB 77	0.0001	0.020	0.015	0.013	0.016
PCB 123	0.00003	0.0018	0.0011	0.0015	0.0015
PCB 118	0.00003	0.060	0.021	0.035	0.039
PCB 114	0.00003	0.0021	0.0011	0.0018	0.0017
PCB 105	0.00003	0.017	0.0068	0.013	0.012
PCB 126	0.100	12.0	10.7	12.7	11.8
PCB 167	0.00003	0.0019	0.0014	0.0048	0.0027
PCB 156 + PCB 157	0.00003	0.0043	0.0032	0.013	0.0069
PCB 169	0.030	1.33	1.20	1.17	1.23
PCB 189	0.00003	0.0021	0.0017	0.0036	0.0025
Total Dioxins & Furans Only		1145	1017	1133	1098
Dioxin-Like PCBs		13.4	12.0	14.0	13.1
Total Dioxins & Furans and PCBs		1158	1029	1147	1112

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 36
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	182	160	162	168
12378-pentachlorodibenzo-p-dioxin	0.500	114	99.2	109	107
123478-hexachlorodibenzo-p-dioxin	0.100	9.93	8.86	8.71	9.17
123678-hexachlorodibenzo-p-dioxin	0.100	15.0	15.1	16.6	15.6
123789-hexachlorodibenzo-p-dioxin	0.100	12.5	13.2	15.0	13.6
1234678-heptachlorodibenzo-p-dioxin	0.010	6.47	5.64	7.68	6.60
Octachlorodibenzo-p-dioxin	0.001	2.26	1.40	2.07	1.91
2378-tetrachlorodibenzofuran	0.100	111	89.1	117	106
12378-pentachlorodibenzofuran	0.050	56.8	47.3	60.1	54.7
23478-pentachlorodibenzofuran	0.500	483	434	522	480
123478-hexachlorodibenzofuran	0.100	87.3	80.4	78.8	82.1
123678-hexachlorodibenzofuran	0.100	91.1	82.1	88.6	87.2
234678-hexachlorodibenzofuran	0.100	49.9	51.9	45.0	48.9
123789-hexachlorodibenzofuran	0.100	4.36	3.49	4.26	4.04
1234678-heptachlorodibenzofuran	0.010	20.9	18.1	20.6	19.9
1234789-heptachlorodibenzofuran	0.010	1.64	1.39	1.62	1.55
Octachlorodibenzofuran	0.001	0.42	0.37	0.41	0.40
Total Dioxins & Furans		1249	1112	1259	1207

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

TABLE 37
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	187	166	169	174
12378-pentachlorodibenzo-p-dioxin	1.000	235	206	228	223
123478-hexachlorodibenzo-p-dioxin	0.100	10.2	9.19	9.11	9.50
123678-hexachlorodibenzo-p-dioxin	0.100	15.4	15.7	17.4	16.2
123789-hexachlorodibenzo-p-dioxin	0.100	12.9	13.7	15.7	14.1
1234678-heptachlorodibenzo-p-dioxin	0.010	6.66	5.85	8.03	6.85
Octachlorodibenzo-p-dioxin	0.0003	0.70	0.43	0.65	0.59
2378-tetrachlorodibenzofuran	0.100	114	92.5	122	110
12378-pentachlorodibenzofuran	0.030	35.1	29.4	37.7	34.1
23478-pentachlorodibenzofuran	0.300	298	270	328	299
123478-hexachlorodibenzofuran	0.100	89.8	83.4	82.4	85.2
123678-hexachlorodibenzofuran	0.100	93.7	85.2	92.6	90.5
234678-hexachlorodibenzofuran	0.100	51.3	53.9	47.1	50.7
123789-hexachlorodibenzofuran	0.100	4.49	3.63	4.45	4.19
1234678-heptachlorodibenzofuran	0.010	21.5	18.8	21.5	20.6
1234789-heptachlorodibenzofuran	0.010	1.68	1.44	1.69	1.61
Octachlorodibenzofuran	0.0003	0.13	0.11	0.13	0.12
PCB 81	0.0003	0.018	0.014	0.014	0.015
PCB 77	0.0001	0.021	0.016	0.014	0.017
PCB 123	0.00003	0.0018	0.0012	0.0016	0.0015
PCB 118	0.00003	0.062	0.022	0.037	0.040
PCB 114	0.00003	0.0022	0.0012	0.0018	0.0017
PCB 105	0.00003	0.018	0.0071	0.014	0.013
PCB 126	0.100	12.3	11.1	13.3	12.3
PCB 167	0.00003	0.0019	0.0015	0.0050	0.0028
PCB 156 + PCB 157	0.00003	0.0044	0.0033	0.014	0.0072
PCB 169	0.030	1.37	1.24	1.23	1.28
PCB 189	0.00003	0.0021	0.0018	0.0038	0.0026
Total Dioxins & Furans Only		1178	1055	1185	1140
Dioxin-Like PCBs		13.8	12.4	14.6	13.6
Total Dioxins & Furans and PCBs		1192	1068	1200	1153

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 38
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Emission Rates
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 1 ng TEQ/s	Test No. 2 ng TEQ/s	Test No. 3 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	3.57	3.17	3.26	3.33
12378-pentachlorodibenzo-p-dioxin	1.000	4.47	3.94	4.39	4.27
123478-hexachlorodibenzo-p-dioxin	0.100	0.19	0.18	0.18	0.18
123678-hexachlorodibenzo-p-dioxin	0.100	0.29	0.30	0.33	0.31
123789-hexachlorodibenzo-p-dioxin	0.100	0.24	0.26	0.30	0.27
1234678-heptachlorodibenzo-p-dioxin	0.010	0.13	0.11	0.15	0.13
Octachlorodibenzo-p-dioxin	0.0003	0.013	0.0083	0.013	0.011
2378-tetrachlorodibenzofuran	0.100	2.17	1.77	2.35	2.10
12378-pentachlorodibenzofuran	0.030	0.67	0.56	0.73	0.65
23478-pentachlorodibenzofuran	0.300	5.68	5.17	6.31	5.72
123478-hexachlorodibenzofuran	0.100	1.71	1.60	1.59	1.63
123678-hexachlorodibenzofuran	0.100	1.78	1.63	1.78	1.73
234678-hexachlorodibenzofuran	0.100	0.98	1.03	0.91	0.97
123789-hexachlorodibenzofuran	0.100	0.086	0.069	0.086	0.080
1234678-heptachlorodibenzofuran	0.010	0.41	0.36	0.41	0.39
1234789-heptachlorodibenzofuran	0.010	0.032	0.028	0.033	0.031
Octachlorodibenzofuran	0.0003	0.0024	0.0022	0.0025	0.0024
PCB 81	0.0003	0.00034	0.00027	0.00027	0.00029
PCB 77	0.0001	0.00039	0.00031	0.00027	0.00032
PCB 123	0.00003	0.000035	0.000022	0.000031	0.000029
PCB 118	0.00003	0.0012	0.00042	0.00071	0.00077
PCB 114	0.00003	0.000042	0.000022	0.000035	0.000033
PCB 105	0.00003	0.00034	0.00014	0.00027	0.00025
PCB 126	0.100	0.23	0.21	0.26	0.23
PCB 167	0.00003	0.000036	0.000028	0.000096	0.000054
PCB 156 + PCB 157	0.00003	0.000083	0.000064	0.00027	0.00014
PCB 169	0.030	0.026	0.024	0.024	0.024
PCB 189	0.00003	0.000040	0.000034	0.000072	0.000049
Total Dioxins & Furans Only		22.4	20.2	22.8	21.8
Dioxin-Like PCBs		0.26	0.24	0.28	0.26
Total Dioxins & Furans and PCBs		22.7	20.4	23.1	22.1

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 39
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	114	205	168	174	3.33
12378-pentachlorodibenzo-p-dioxin	146	262	215	223	4.27
123478-hexachlorodibenzo-p-dioxin	6.22	11.2	9.17	9.50	0.18
123678-hexachlorodibenzo-p-dioxin	10.6	19.0	15.6	16.2	0.31
123789-hexachlorodibenzo-p-dioxin	9.21	16.5	13.6	14.1	0.27
1234678-heptachlorodibenzo-p-dioxin	4.48	8.04	6.60	6.85	0.13
Octachlorodibenzo-p-dioxin	0.39	0.70	0.57	0.59	0.011
2378-tetrachlorodibenzofuran	71.8	129	106	110	2.10
12378-pentachlorodibenzofuran	22.3	40.0	32.8	34.1	0.65
23478-pentachlorodibenzofuran	196	351	288	299	5.72
123478-hexachlorodibenzofuran	55.8	100	82.1	85.2	1.63
123678-hexachlorodibenzofuran	59.3	106	87.2	90.5	1.73
234678-hexachlorodibenzofuran	33.2	59.6	48.9	50.7	0.97
123789-hexachlorodibenzofuran	2.74	4.92	4.04	4.19	0.080
1234678-heptachlorodibenzofuran	13.5	24.2	19.9	20.6	0.39
1234789-heptachlorodibenzofuran	1.05	1.89	1.55	1.61	0.031
Octachlorodibenzofuran	0.081	0.15	0.12	0.12	0.0024
PCB 81	0.0099	0.018	0.015	0.015	0.00029
PCB 77	0.011	0.020	0.016	0.017	0.00032
PCB 123	0.0010	0.0018	0.0015	0.0015	0.000029
PCB 118	0.026	0.047	0.039	0.040	0.00077
PCB 114	0.0011	0.0020	0.0017	0.0017	0.000033
PCB 105	0.0084	0.015	0.012	0.013	0.00025
PCB 126	8.02	14.4	11.8	12.3	0.23
PCB 167	0.0018	0.0033	0.0027	0.0028	0.000054
PCB 156 + PCB 157	0.0047	0.0084	0.0069	0.0072	0.00014
PCB 169	0.84	1.50	1.23	1.28	0.024
PCB 189	0.0017	0.0030	0.0025	0.0026	0.000049
Total Dioxins & Furans Only	746	1339	1098	1140	21.8
Dioxin-Like PCBs	8.93	16.0	13.1	13.6	0.26
Total Dioxins & Furans and PCBs	755	1355	1112	1153	22.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 40
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	114	205	168	174	3.33
12378-pentachlorodibenzo-p-dioxin	146	262	215	223	4.27
123478-hexachlorodibenzo-p-dioxin	6.22	11.2	9.17	9.50	0.18
123678-hexachlorodibenzo-p-dioxin	10.6	19.0	15.6	16.2	0.31
123789-hexachlorodibenzo-p-dioxin	9.21	16.5	13.6	14.1	0.27
1234678-heptachlorodibenzo-p-dioxin	4.48	8.04	6.60	6.85	0.13
Octachlorodibenzo-p-dioxin	0.39	0.70	0.57	0.59	0.011
2378-tetrachlorodibenzofuran	71.8	129	106	110	2.10
12378-pentachlorodibenzofuran	22.3	40.0	32.8	34.1	0.65
23478-pentachlorodibenzofuran	196	351	288	299	5.72
123478-hexachlorodibenzofuran	55.8	100	82.1	85.2	1.63
123678-hexachlorodibenzofuran	59.3	106	87.2	90.5	1.73
234678-hexachlorodibenzofuran	33.2	59.6	48.9	50.7	0.97
123789-hexachlorodibenzofuran	2.74	4.92	4.04	4.19	0.080
1234678-heptachlorodibenzofuran	13.5	24.2	19.9	20.6	0.39
1234789-heptachlorodibenzofuran	1.05	1.89	1.55	1.61	0.031
Octachlorodibenzofuran	0.081	0.15	0.12	0.12	0.0024
PCB 81	0.0099	0.018	0.015	0.015	0.00029
PCB 77	0.011	0.020	0.016	0.017	0.00032
PCB 123	0.0010	0.0018	0.0015	0.0015	0.000029
PCB 118	0.026	0.047	0.039	0.040	0.00077
PCB 114	0.0011	0.0020	0.0017	0.0017	0.000033
PCB 105	0.0084	0.015	0.012	0.013	0.00025
PCB 126	8.02	14.4	11.8	12.3	0.23
PCB 167	0.0018	0.0033	0.0027	0.0028	0.000054
PCB 156 + PCB 157	0.0047	0.0084	0.0069	0.0072	0.00014
PCB 169	0.84	1.50	1.23	1.28	0.024
PCB 189	0.0017	0.0030	0.0025	0.0026	0.000049
Total Dioxins & Furans Only	746	1339	1098	1140	21.8
Dioxin-Like PCBs	8.93	16.0	13.1	13.6	0.26
Total Dioxins & Furans and PCBs	755	1355	1112	1153	22.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 41
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 1 - High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	3.5	0.40	0.69	0.59	0.59	0.012
12378-pentachlorodibenzo-p-dioxin	10.7	1.22	2.12	1.82	1.79	0.037
123478-hexachlorodibenzo-p-dioxin	28.6	3.27	5.67	4.85	4.79	0.098
123678-hexachlorodibenzo-p-dioxin	81.2	9.30	16.1	13.8	13.6	0.28
123789-hexachlorodibenzo-p-dioxin	70.0	8.01	13.9	11.9	11.7	0.24
1234678-heptachlorodibenzo-p-dioxin	818	93.6	162	139	137	2.81
Octachlorodibenzo-p-dioxin	2070	237	411	351	347	7.12
2378-tetrachlorodibenzofuran	9.0	1.03	1.79	1.53	1.51	0.031
12378-pentachlorodibenzofuran	14.2	1.63	2.82	2.41	2.38	0.049
23478-pentachlorodibenzofuran	28.1	3.22	5.57	4.77	4.71	0.097
123478-hexachlorodibenzofuran	33.3	3.81	6.60	5.65	5.58	0.11
123678-hexachlorodibenzofuran	34.3	3.93	6.80	5.82	5.75	0.12
234678-hexachlorodibenzofuran	56.5	6.47	11.2	9.59	9.47	0.19
123789-hexachlorodibenzofuran	<5.7	<0.65	<1.13	<0.97	<0.96	<0.020
1234678-heptachlorodibenzofuran	335	38.3	66.4	56.8	56.2	1.15
1234789-heptachlorodibenzofuran	36.7	4.20	7.28	6.23	6.15	0.13
Octachlorodibenzofuran	299	34.2	59.3	50.7	50.1	1.03
PCB 81	<44	<5.04	<8.73	<7.47	<7.37	<0.15
PCB 77	<56	<6.41	<11.1	<9.50	<9.39	<0.19
PCB 123	<49	<5.61	<9.72	<8.31	<8.21	<0.17
PCB 118	1300	149	258	221	218	4.47
PCB 114	<43	<4.92	<8.53	<7.30	<7.21	<0.15
PCB 105	430	49.2	85.3	73.0	72.1	1.48
PCB 126	<45	<5.15	<8.93	<7.64	<7.54	<0.15
PCB 167	<44	<5.04	<8.73	<7.47	<7.37	<0.15
PCB 156 + PCB 157	54	6.18	10.7	9.16	9.05	0.19
PCB 169	<44	<5.04	<8.73	<7.47	<7.37	<0.15
PCB 189	<25	<2.86	<4.96	<4.24	<4.19	<0.086
Total Dioxins & Furans Only	<3934	<450	<780	<667	<659	<13.5
Dioxin-Like PCBs	<2134	<244	<423	<362	<358	<7.34
Total Dioxins & Furans and PCBs	<6068	<695	<1203	<1030	<1017	<20.9
Total PCBs	32000	3663	6347	5430	5364	110

Dry Gas Volume Sampled (Rm^3*) :	5.042
Actual Flowrate (m^3/s) :	30.1
Dry Reference Flowrate (Rm^3/s*) :	17.4
Dry Adjusted Flowrate (Rm^3/s**) :	20.3
Wet Reference Flowrate (Rm^3/s*) :	20.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 2 - High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<2.9	<0.34	<0.59	<0.50	<0.50	<0.0099
12378-pentachlorodibenzo-p-dioxin	11.0	1.29	2.24	1.89	1.89	0.038
123478-hexachlorodibenzo-p-dioxin	23.4	2.74	4.77	4.02	4.01	0.080
123678-hexachlorodibenzo-p-dioxin	68.6	8.04	14.0	11.8	11.8	0.24
123789-hexachlorodibenzo-p-dioxin	56.9	6.67	11.6	9.77	9.76	0.19
1234678-heptachlorodibenzo-p-dioxin	626	73.4	128	108	107	2.14
Octachlorodibenzo-p-dioxin	1400	164	285	240	240	4.80
2378-tetrachlorodibenzofuran	13.0	1.52	2.65	2.23	2.23	0.045
12378-pentachlorodibenzofuran	20.0	2.34	4.07	3.43	3.43	0.069
23478-pentachlorodibenzofuran	34.2	4.01	6.97	5.87	5.87	0.12
123478-hexachlorodibenzofuran	45.9	5.38	9.35	7.88	7.88	0.16
123678-hexachlorodibenzofuran	43.5	5.10	8.86	7.47	7.46	0.15
234678-hexachlorodibenzofuran	49.4	5.79	10.1	8.48	8.48	0.17
123789-hexachlorodibenzofuran	<5.4	<0.63	<1.10	<0.93	<0.93	<0.019
1234678-heptachlorodibenzofuran	288	33.7	58.7	49.5	49.4	0.99
1234789-heptachlorodibenzofuran	28.2	3.30	5.74	4.84	4.84	0.097
Octachlorodibenzofuran	210	24.6	42.8	36.1	36.0	0.72
PCB 81	<38	<4.45	<7.74	<6.53	<6.52	<0.13
PCB 77	40	4.69	8.15	6.87	6.86	0.14
PCB 123	<39	<4.57	<7.94	<6.70	<6.69	<0.13
PCB 118	1000	117	204	172	172	3.43
PCB 114	<34	<3.98	<6.93	<5.84	<5.83	<0.12
PCB 105	340	39.8	69.3	58.4	58.3	1.16
PCB 126	<35	<4.10	<7.13	<6.01	<6.01	<0.12
PCB 167	43	5.04	8.76	7.39	7.38	0.15
PCB 156 + PCB 157	120	14.1	24.4	20.6	20.6	0.41
PCB 169	<36	<4.22	<7.33	<6.18	<6.18	<0.12
PCB 189	<23	<2.70	<4.69	<3.95	<3.95	<0.079
Total Dioxins & Furans Only	<2926	<343	<596	<503	<502	<10.0
Dioxin-Like PCBs	<1748	<205	<356	<300	<300	<5.99
Total Dioxins & Furans and PCBs	<4674	<548	<952	<803	<802	<16.0
Total PCBs	37000	4336	7537	6355	6348	127

Dry Gas Volume Sampled (Rm^3*) :	4.909
Actual Flowrate (m^3/s) :	29.2
Dry Reference Flowrate (Rm^3/s*) :	16.8
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	20.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 43
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 3 - High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<2.8	<0.33	<0.57	<0.48	<0.48	<0.0096
12378-pentachlorodibenzo-p-dioxin	5.4	0.64	1.10	0.93	0.93	0.018
123478-hexachlorodibenzo-p-dioxin	17.7	2.11	3.62	3.05	3.06	0.061
123678-hexachlorodibenzo-p-dioxin	48.6	5.78	9.94	8.36	8.41	0.17
123789-hexachlorodibenzo-p-dioxin	24.0	2.86	4.91	4.13	4.16	0.082
1234678-heptachlorodibenzo-p-dioxin	467	55.6	95.5	80.4	80.9	1.60
Octachlorodibenzo-p-dioxin	1060	126	217	182	184	3.63
2378-tetrachlorodibenzofuran	<6.1	<0.73	<1.25	<1.05	<1.06	<0.021
12378-pentachlorodibenzofuran	<3.5	<0.42	<0.72	<0.60	<0.61	<0.012
23478-pentachlorodibenzofuran	12.8	1.52	2.62	2.20	2.22	0.044
123478-hexachlorodibenzofuran	16.9	2.01	3.46	2.91	2.93	0.058
123678-hexachlorodibenzofuran	<18	<2.14	<3.68	<3.10	<3.12	<0.062
234678-hexachlorodibenzofuran	29.2	3.47	5.97	5.03	5.06	0.10
123789-hexachlorodibenzofuran	<4.2	<0.50	<0.86	<0.72	<0.73	<0.014
1234678-heptachlorodibenzofuran	166	19.7	33.9	28.6	28.7	0.57
1234789-heptachlorodibenzofuran	19.4	2.31	3.97	3.34	3.36	0.066
Octachlorodibenzofuran	150	17.8	30.7	25.8	26.0	0.51
PCB 81	<32	<3.81	<6.54	<5.51	<5.54	<0.11
PCB 77	52	6.19	10.6	8.95	9.00	0.18
PCB 123	<28	<3.33	<5.73	<4.82	<4.85	<0.096
PCB 118	1500	178	307	258	260	5.13
PCB 114	35	4.16	7.16	6.02	6.06	0.12
PCB 105	480	57.1	98.2	82.6	83.1	1.64
PCB 126	<26	<3.09	<5.32	<4.47	<4.50	<0.089
PCB 167	<42	<5.00	<8.59	<7.23	<7.27	<0.14
PCB 156 + PCB 157	150	17.8	30.7	25.8	26.0	0.51
PCB 169	<31	<3.69	<6.34	<5.33	<5.37	<0.11
PCB 189	<18	<2.14	<3.68	<3.10	<3.12	<0.062
Total Dioxins & Furans Only	<2052	<244	<420	<353	<355	<7.02
Dioxin-Like PCBs	<2394	<285	<490	<412	<414	<8.19
Total Dioxins & Furans and PCBs	<4446	<529	<909	<765	<770	<15.2
Total PCBs	27000	3212	5521	4647	4675	92.4

Dry Gas Volume Sampled (Rm^3*) :	4.890
Actual Flowrate (m^3/s) :	28.8
Dry Reference Flowrate (Rm^3/s*) :	16.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	19.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 44
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Actual Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	0.40	<0.34	<0.33	<0.36	10.4
12378-pentachlorodibenzo-p-dioxin	1.22	1.29	0.64	1.05	33.9
123478-hexachlorodibenzo-p-dioxin	3.27	2.74	2.11	2.71	21.6
123678-hexachlorodibenzo-p-dioxin	9.30	8.04	5.78	7.71	23.1
123789-hexachlorodibenzo-p-dioxin	8.01	6.67	2.86	5.85	45.8
1234678-heptachlorodibenzo-p-dioxin	93.6	73.4	55.6	74.2	25.7
Octachlorodibenzo-p-dioxin	237	164	126	176	32.1
2378-tetrachlorodibenzofuran	1.03	1.52	<0.73	<1.09	36.8
12378-pentachlorodibenzofuran	1.63	2.34	<0.42	<1.46	66.6
23478-pentachlorodibenzofuran	3.22	4.01	1.52	2.92	43.5
123478-hexachlorodibenzofuran	3.81	5.38	2.01	3.73	45.1
123678-hexachlorodibenzofuran	3.93	5.10	<2.14	<3.72	40.0
234678-hexachlorodibenzofuran	6.47	5.79	3.47	5.24	29.9
123789-hexachlorodibenzofuran	<0.65	<0.63	<0.50	<0.59	14.0
1234678-heptachlorodibenzofuran	38.3	33.7	19.7	30.6	31.6
1234789-heptachlorodibenzofuran	4.20	3.30	2.31	3.27	29.0
Octachlorodibenzofuran	34.2	24.6	17.8	25.6	32.2
PCB 81	<5.04	<4.45	<3.81	<4.43	13.9
PCB 77	<6.41	4.69	6.19	<5.76	16.3
PCB 123	<5.61	<4.57	<3.33	<4.50	25.3
PCB 118	149	117	178	148	20.7
PCB 114	<4.92	<3.98	4.16	<4.36	11.4
PCB 105	49.2	39.8	57.1	48.7	17.7
PCB 126	<5.15	<4.10	<3.09	<4.12	25.0
PCB 167	<5.04	5.04	<5.00	<5.02	0.5
PCB 156 + PCB 157	6.18	14.1	17.8	12.7	46.9
PCB 169	<5.04	<4.22	<3.69	<4.31	15.8
PCB 189	<2.86	<2.70	<2.14	<2.57	14.7
Total Dioxins & Furans Only	<450	<343	<244	<346	29.8
Dioxin-Like PCBs	<244	<205	<285	<245	16.3
Total Dioxins & Furans and PCBs	<695	<548	<529	<590	15.4
Total PCBs	3663	4336	3212	3737	15.1

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	0.69	<0.59	<0.57	<0.62	10.6
12378-pentachlorodibenzo-p-dioxin	2.12	2.24	1.10	1.82	34.3
123478-hexachlorodibenzo-p-dioxin	5.67	4.77	3.62	4.69	22.0
123678-hexachlorodibenzo-p-dioxin	16.1	14.0	9.94	13.3	23.5
123789-hexachlorodibenzo-p-dioxin	13.9	11.6	4.91	10.1	46.0
1234678-heptachlorodibenzo-p-dioxin	162	128	95.5	128	26.0
Octachlorodibenzo-p-dioxin	411	285	217	304	32.3
2378-tetrachlorodibenzofuran	1.79	2.65	<1.25	<1.89	37.3
12378-pentachlorodibenzofuran	2.82	4.07	<0.72	<2.54	66.9
23478-pentachlorodibenzofuran	5.57	6.97	2.62	5.05	44.0
123478-hexachlorodibenzofuran	6.60	9.35	3.46	6.47	45.6
123678-hexachlorodibenzofuran	6.80	8.86	<3.68	<6.45	40.4
234678-hexachlorodibenzofuran	11.2	10.1	5.97	9.08	30.3
123789-hexachlorodibenzofuran	<1.13	<1.10	<0.86	<1.03	14.4
1234678-heptachlorodibenzofuran	66.4	58.7	33.9	53.0	32.0
1234789-heptachlorodibenzofuran	7.28	5.74	3.97	5.66	29.3
Octachlorodibenzofuran	59.3	42.8	30.7	44.3	32.5
PCB 81	<8.73	<7.74	<6.54	<7.67	14.3
PCB 77	<11.1	8.15	10.6	<9.96	16.0
PCB 123	<9.72	<7.94	<5.73	<7.80	25.7
PCB 118	258	204	307	256	20.1
PCB 114	<8.53	<6.93	7.16	<7.54	11.5
PCB 105	85.3	69.3	98.2	84.2	17.2
PCB 126	<8.93	<7.13	<5.32	<7.12	25.3
PCB 167	<8.73	8.76	<8.59	<8.69	1.0
PCB 156 + PCB 157	10.7	24.4	30.7	21.9	46.6
PCB 169	<8.73	<7.33	<6.34	<7.47	16.1
PCB 189	<4.96	<4.69	<3.68	<4.44	15.1
Total Dioxins & Furans Only	<780	<596	<420	<599	30.1
Dioxin-Like PCBs	<423	<356	<490	<423	15.8
Total Dioxins & Furans and PCBs	<1203	<952	<909	<1022	15.6
Total PCBs	6347	7537	5521	6468	15.7

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	0.59	<0.50	<0.48	<0.52	11.5
12378-pentachlorodibenzo-p-dioxin	1.82	1.89	0.93	1.54	34.6
123478-hexachlorodibenzo-p-dioxin	4.85	4.02	3.05	3.97	22.8
123678-hexachlorodibenzo-p-dioxin	13.8	11.8	8.36	11.3	24.2
123789-hexachlorodibenzo-p-dioxin	11.9	9.77	4.13	8.59	46.6
1234678-heptachlorodibenzo-p-dioxin	139	108	80.4	109	26.9
Octachlorodibenzo-p-dioxin	351	240	182	258	33.2
2378-tetrachlorodibenzofuran	1.53	2.23	<1.05	<1.60	37.1
12378-pentachlorodibenzofuran	2.41	3.43	<0.60	<2.15	66.7
23478-pentachlorodibenzofuran	4.77	5.87	2.20	4.28	44.0
123478-hexachlorodibenzofuran	5.65	7.88	2.91	5.48	45.5
123678-hexachlorodibenzofuran	5.82	7.47	<3.10	<5.46	40.4
234678-hexachlorodibenzofuran	9.59	8.48	5.03	7.70	30.9
123789-hexachlorodibenzofuran	<0.97	<0.93	<0.72	<0.87	15.0
1234678-heptachlorodibenzofuran	56.8	49.5	28.6	45.0	32.6
1234789-heptachlorodibenzofuran	6.23	4.84	3.34	4.80	30.1
Octachlorodibenzofuran	50.7	36.1	25.8	37.5	33.4
PCB 81	<7.47	<6.53	<5.51	<6.50	15.1
PCB 77	<9.50	6.87	8.95	<8.44	16.4
PCB 123	<8.31	<6.70	<4.82	<6.61	26.5
PCB 118	221	172	258	217	20.0
PCB 114	<7.30	<5.84	6.02	<6.39	12.4
PCB 105	73.0	58.4	82.6	71.3	17.1
PCB 126	<7.64	<6.01	<4.47	<6.04	26.2
PCB 167	<7.47	7.39	<7.23	<7.36	1.6
PCB 156 + PCB 157	9.16	20.6	25.8	18.5	46.0
PCB 169	<7.47	<6.18	<5.33	<6.33	17.0
PCB 189	<4.24	<3.95	<3.10	<3.76	15.8
Total Dioxins & Furans Only	<667	<503	<353	<508	31.0
Dioxin-Like PCBs	<362	<300	<412	<358	15.6
Total Dioxins & Furans and PCBs	<1030	<803	<765	<866	16.5
Total PCBs	5430	6355	4647	5477	15.6

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Wet Reference Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	0.59	<0.50	<0.48	<0.52	10.6
12378-pentachlorodibenzo-p-dioxin	1.79	1.89	0.93	1.54	34.1
123478-hexachlorodibenzo-p-dioxin	4.79	4.01	3.06	3.96	21.9
123678-hexachlorodibenzo-p-dioxin	13.6	11.8	8.41	11.3	23.4
123789-hexachlorodibenzo-p-dioxin	11.7	9.76	4.16	8.55	46.0
1234678-heptachlorodibenzo-p-dioxin	137	107	80.9	108	25.9
Octachlorodibenzo-p-dioxin	347	240	184	257	32.3
2378-tetrachlorodibenzofuran	1.51	2.23	<1.06	<1.60	37.1
12378-pentachlorodibenzofuran	2.38	3.43	<0.61	<2.14	66.8
23478-pentachlorodibenzofuran	4.71	5.87	2.22	4.26	43.8
123478-hexachlorodibenzofuran	5.58	7.88	2.93	5.46	45.4
123678-hexachlorodibenzofuran	5.75	7.46	<3.12	<5.44	40.2
234678-hexachlorodibenzofuran	9.47	8.48	5.06	7.67	30.2
123789-hexachlorodibenzofuran	<0.96	<0.93	<0.73	<0.87	14.3
1234678-heptachlorodibenzofuran	56.2	49.4	28.7	44.8	31.9
1234789-heptachlorodibenzofuran	6.15	4.84	3.36	4.78	29.2
Octachlorodibenzofuran	50.1	36.0	26.0	37.4	32.5
PCB 81	<7.37	<6.52	<5.54	<6.48	14.2
PCB 77	<9.39	6.86	9.00	<8.42	16.2
PCB 123	<8.21	<6.69	<4.85	<6.58	25.6
PCB 118	218	172	260	216	20.4
PCB 114	<7.21	<5.83	6.06	<6.37	11.6
PCB 105	72.1	58.3	83.1	71.2	17.4
PCB 126	<7.54	<6.01	<4.50	<6.02	25.3
PCB 167	<7.37	7.38	<7.27	<7.34	0.8
PCB 156 + PCB 157	9.05	20.6	26.0	18.5	46.6
PCB 169	<7.37	<6.18	<5.37	<6.31	16.0
PCB 189	<4.19	<3.95	<3.12	<3.75	15.0
Total Dioxins & Furans Only	<659	<502	<355	<506	30.1
Dioxin-Like PCBs	<358	<300	<414	<357	16.0
Total Dioxins & Furans and PCBs	<1017	<802	<770	<863	15.6
Total PCBs	5364	6348	4675	5462	15.4

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Rates
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Emission Rate Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	0.012	<0.0099	<0.0096	<0.011	12.7
12378-pentachlorodibenzo-p-dioxin	0.037	0.038	0.018	0.031	35.0
123478-hexachlorodibenzo-p-dioxin	0.098	0.080	0.061	0.080	23.8
123678-hexachlorodibenzo-p-dioxin	0.28	0.24	0.17	0.23	25.1
123789-hexachlorodibenzo-p-dioxin	0.24	0.19	0.082	0.17	47.3
1234678-heptachlorodibenzo-p-dioxin	2.81	2.14	1.60	2.19	27.9
Octachlorodibenzo-p-dioxin	7.12	4.80	3.63	5.18	34.3
2378-tetrachlorodibenzofuran	0.031	0.045	<0.021	<0.032	37.0
12378-pentachlorodibenzofuran	0.049	0.069	<0.012	<0.043	66.6
23478-pentachlorodibenzofuran	0.097	0.12	0.044	0.086	44.1
123478-hexachlorodibenzofuran	0.11	0.16	0.058	0.11	45.4
123678-hexachlorodibenzofuran	0.12	0.15	<0.062	<0.11	40.5
234678-hexachlorodibenzofuran	0.19	0.17	0.10	0.15	31.7
123789-hexachlorodibenzofuran	<0.020	<0.019	<0.014	<0.017	15.8
1234678-heptachlorodibenzofuran	1.15	0.99	0.57	0.90	33.4
1234789-heptachlorodibenzofuran	0.13	0.097	0.066	0.096	31.1
Octachlorodibenzofuran	1.03	0.72	0.51	0.75	34.4
PCB 81	<0.15	<0.13	<0.11	<0.13	16.1
PCB 77	<0.19	0.14	0.18	<0.17	17.0
PCB 123	<0.17	<0.13	<0.096	<0.13	27.4
PCB 118	4.47	3.43	5.13	4.34	19.8
PCB 114	<0.15	<0.12	0.12	<0.13	13.5
PCB 105	1.48	1.16	1.64	1.43	17.0
PCB 126	<0.15	<0.12	<0.089	<0.12	27.2
PCB 167	<0.15	0.15	<0.14	<0.15	2.6
PCB 156 + PCB 157	0.19	0.41	0.51	0.37	45.3
PCB 169	<0.15	<0.12	<0.11	<0.13	18.0
PCB 189	<0.086	<0.079	<0.062	<0.075	16.6
Total Dioxins & Furans Only	<13.5	<10.0	<7.02	<10.2	32.0
Dioxin-Like PCBs	<7.34	<5.99	<8.19	<7.17	15.5
Total Dioxins & Furans and PCBs	<20.9	<16.0	<15.2	<17.4	17.7
Total PCBs	110	127	92.4	110	15.7

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 49
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Specific Isomer Emission Data
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.36	<0.62	<0.52	<0.52	<0.011
12378-pentachlorodibenzo-p-dioxin	1.05	1.82	1.54	1.54	0.031
123478-hexachlorodibenzo-p-dioxin	2.71	4.69	3.97	3.96	0.080
123678-hexachlorodibenzo-p-dioxin	7.71	13.3	11.3	11.3	0.23
123789-hexachlorodibenzo-p-dioxin	5.85	10.1	8.59	8.55	0.17
1234678-heptachlorodibenzo-p-dioxin	74.2	128	109	108	2.19
Octachlorodibenzo-p-dioxin	176	304	258	257	5.18
2378-tetrachlorodibenzofuran	<1.09	<1.89	<1.60	<1.60	<0.032
12378-pentachlorodibenzofuran	<1.46	<2.54	<2.15	<2.14	<0.043
23478-pentachlorodibenzofuran	2.92	5.05	4.28	4.26	0.086
123478-hexachlorodibenzofuran	3.73	6.47	5.48	5.46	0.11
123678-hexachlorodibenzofuran	<3.72	<6.45	<5.46	<5.44	<0.11
234678-hexachlorodibenzofuran	5.24	9.08	7.70	7.67	0.15
123789-hexachlorodibenzofuran	<0.59	<1.03	<0.87	<0.87	<0.017
1234678-heptachlorodibenzofuran	30.6	53.0	45.0	44.8	0.90
1234789-heptachlorodibenzofuran	3.27	5.66	4.80	4.78	0.096
Octachlorodibenzofuran	25.6	44.3	37.5	37.4	0.75
PCB 81	<4.43	<7.67	<6.50	<6.48	<0.13
PCB 77	<5.76	<9.96	<8.44	<8.42	<0.17
PCB 123	<4.50	<7.80	<6.61	<6.58	<0.13
PCB 118	148	256	217	216	4.34
PCB 114	<4.36	<7.54	<6.39	<6.37	<0.13
PCB 105	48.7	84.2	71.3	71.2	1.43
PCB 126	<4.12	<7.12	<6.04	<6.02	<0.12
PCB 167	<5.02	<8.69	<7.36	<7.34	<0.15
PCB 156 + PCB 157	12.7	21.9	18.5	18.5	0.37
PCB 169	<4.31	<7.47	<6.33	<6.31	<0.13
PCB 189	<2.57	<4.44	<3.76	<3.75	<0.075
Total Dioxins & Furans Only	<346	<599	<508	<506	<10.2
Dioxin-Like PCBs	<245	<423	<358	<357	<7.17
Total Dioxins & Furans and PCBs	<590	<1022	<866	<863	<17.4
Total PCBs	3737	6468	5477	5462	110

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 50
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 1 pg TEQ/m³	Test No. 2 pg TEQ/m³	Test No. 3 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	0.40	<0.34	<0.33	<0.36
12378-pentachlorodibenzo-p-dioxin	1.000	1.22	1.29	0.64	1.05
123478-hexachlorodibenzo-p-dioxin	0.100	0.33	0.27	0.21	0.27
123678-hexachlorodibenzo-p-dioxin	0.100	0.93	0.80	0.58	0.77
123789-hexachlorodibenzo-p-dioxin	0.100	0.80	0.67	0.29	0.58
1234678-heptachlorodibenzo-p-dioxin	0.010	0.94	0.73	0.56	0.74
Octachlorodibenzo-p-dioxin	0.0003	0.071	0.049	0.038	0.053
2378-tetrachlorodibenzofuran	0.100	0.10	0.15	<0.073	<0.11
12378-pentachlorodibenzofuran	0.030	0.049	0.070	<0.012	<0.044
23478-pentachlorodibenzofuran	0.300	0.97	1.20	0.46	0.87
123478-hexachlorodibenzofuran	0.100	0.38	0.54	0.20	0.37
123678-hexachlorodibenzofuran	0.100	0.39	0.51	<0.21	<0.37
234678-hexachlorodibenzofuran	0.100	0.65	0.58	0.35	0.52
123789-hexachlorodibenzofuran	0.100	<0.065	<0.063	<0.050	<0.059
1234678-heptachlorodibenzofuran	0.010	0.38	0.34	0.20	0.31
1234789-heptachlorodibenzofuran	0.010	0.042	0.033	0.023	0.033
Octachlorodibenzofuran	0.0003	0.010	0.0074	0.0054	0.0077
PCB 81	0.0003	<0.0015	<0.0013	<0.0011	<0.0013
PCB 77	0.0001	<0.00064	0.00047	0.00062	<0.00058
PCB 123	0.00003	<0.00017	<0.00014	<0.00010	<0.00014
PCB 118	0.00003	0.0045	0.0035	0.0054	0.0044
PCB 114	0.00003	<0.00015	<0.00012	0.00012	<0.00013
PCB 105	0.00003	0.0015	0.0012	0.0017	0.0015
PCB 126	0.100	<0.52	<0.41	<0.31	<0.41
PCB 167	0.00003	<0.00015	0.00015	<0.00015	<0.00015
PCB 156 + PCB 157	0.00003	0.00019	0.00042	0.00054	0.00038
PCB 169	0.030	<0.15	<0.13	<0.11	<0.13
PCB 189	0.00003	<0.000086	<0.000081	<0.000064	<0.000077
Total Dioxins & Furans Only		<7.73	<7.65	<4.22	<6.53
Dioxin-Like PCBs		<0.68	<0.54	<0.43	<0.55
Total Dioxins & Furans and PCBs		<8.40	<8.19	<4.65	<7.08

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 51
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	0.69	<0.59	<0.57	<0.62
12378-pentachlorodibenzo-p-dioxin	1.000	2.12	2.24	1.10	1.82
123478-hexachlorodibenzo-p-dioxin	0.100	0.57	0.48	0.36	0.47
123678-hexachlorodibenzo-p-dioxin	0.100	1.61	1.40	0.99	1.33
123789-hexachlorodibenzo-p-dioxin	0.100	1.39	1.16	0.49	1.01
1234678-heptachlorodibenzo-p-dioxin	0.010	1.62	1.28	0.96	1.28
Octachlorodibenzo-p-dioxin	0.0003	0.12	0.086	0.065	0.091
2378-tetrachlorodibenzofuran	0.100	0.18	0.26	<0.12	<0.19
12378-pentachlorodibenzofuran	0.030	0.084	0.12	<0.021	<0.076
23478-pentachlorodibenzofuran	0.300	1.67	2.09	0.79	1.52
123478-hexachlorodibenzofuran	0.100	0.66	0.94	0.35	0.65
123678-hexachlorodibenzofuran	0.100	0.68	0.89	<0.37	<0.64
234678-hexachlorodibenzofuran	0.100	1.12	1.01	0.60	0.91
123789-hexachlorodibenzofuran	0.100	<0.11	<0.11	<0.086	<0.10
1234678-heptachlorodibenzofuran	0.010	0.66	0.59	0.34	0.53
1234789-heptachlorodibenzofuran	0.010	0.073	0.057	0.040	0.057
Octachlorodibenzofuran	0.0003	0.018	0.013	0.0092	0.013
PCB 81	0.0003	<0.0026	<0.0023	<0.0020	<0.0023
PCB 77	0.0001	<0.0011	0.00081	0.0011	<0.0010
PCB 123	0.00003	<0.00029	<0.00024	<0.00017	<0.00023
PCB 118	0.00003	0.0077	0.0061	0.0092	0.0077
PCB 114	0.00003	<0.00026	<0.00021	0.00021	<0.00023
PCB 105	0.00003	0.0026	0.0021	0.0029	0.0025
PCB 126	0.100	<0.89	<0.71	<0.53	<0.71
PCB 167	0.00003	<0.00026	0.00026	<0.00026	<0.00026
PCB 156 + PCB 157	0.00003	0.00032	0.00073	0.00092	0.00066
PCB 169	0.030	<0.26	<0.22	<0.19	<0.22
PCB 189	0.00003	<0.00015	<0.00014	<0.00011	<0.00013
Total Dioxins & Furans Only		<13.4	<13.3	<7.26	<11.3
Dioxin-Like PCBs		<1.17	<0.95	<0.74	<0.95
Total Dioxins & Furans and PCBs		<14.6	<14.2	<8.00	<12.3

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 52
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	0.59	<0.50	<0.48	<0.52
12378-pentachlorodibenzo-p-dioxin	1.000	1.82	1.89	0.93	1.54
123478-hexachlorodibenzo-p-dioxin	0.100	0.49	0.40	0.30	0.40
123678-hexachlorodibenzo-p-dioxin	0.100	1.38	1.18	0.84	1.13
123789-hexachlorodibenzo-p-dioxin	0.100	1.19	0.98	0.41	0.86
1234678-heptachlorodibenzo-p-dioxin	0.010	1.39	1.08	0.80	1.09
Octachlorodibenzo-p-dioxin	0.0003	0.11	0.072	0.055	0.077
2378-tetrachlorodibenzofuran	0.100	0.15	0.22	<0.10	<0.16
12378-pentachlorodibenzofuran	0.030	0.072	0.10	<0.018	<0.064
23478-pentachlorodibenzofuran	0.300	1.43	1.76	0.66	1.28
123478-hexachlorodibenzofuran	0.100	0.57	0.79	0.29	0.55
123678-hexachlorodibenzofuran	0.100	0.58	0.75	<0.31	<0.55
234678-hexachlorodibenzofuran	0.100	0.96	0.85	0.50	0.77
123789-hexachlorodibenzofuran	0.100	<0.097	<0.093	<0.072	<0.087
1234678-heptachlorodibenzofuran	0.010	0.57	0.49	0.29	0.45
1234789-heptachlorodibenzofuran	0.010	0.062	0.048	0.033	0.048
Octachlorodibenzofuran	0.0003	0.015	0.011	0.0077	0.011
PCB 81	0.0003	<0.0022	<0.0020	<0.0017	<0.0019
PCB 77	0.0001	<0.00095	0.00069	0.00089	<0.00084
PCB 123	0.00003	<0.00025	<0.00020	<0.00014	<0.00020
PCB 118	0.00003	0.0066	0.0052	0.0077	0.0065
PCB 114	0.00003	<0.00022	<0.00018	0.00018	<0.00019
PCB 105	0.00003	0.0022	0.0018	0.0025	0.0021
PCB 126	0.100	<0.76	<0.60	<0.45	<0.60
PCB 167	0.00003	<0.00022	0.00022	<0.00022	<0.00022
PCB 156 + PCB 157	0.00003	0.00027	0.00062	0.00077	0.00056
PCB 169	0.030	<0.22	<0.19	<0.16	<0.19
PCB 189	0.00003	<0.00013	<0.00012	<0.000093	<0.00011
Total Dioxins & Furans Only		<11.5	<11.2	<6.11	<9.59
Dioxin-Like PCBs		<1.00	<0.80	<0.62	<0.81
Total Dioxins & Furans and PCBs		<12.5	<12.0	<6.73	<10.4

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 53
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	0.59	<0.50	<0.48	<0.52
12378-pentachlorodibenzo-p-dioxin	0.500	0.91	0.94	0.46	0.77
123478-hexachlorodibenzo-p-dioxin	0.100	0.49	0.40	0.30	0.40
123678-hexachlorodibenzo-p-dioxin	0.100	1.38	1.18	0.84	1.13
123789-hexachlorodibenzo-p-dioxin	0.100	1.19	0.98	0.41	0.86
1234678-heptachlorodibenzo-p-dioxin	0.010	1.39	1.08	0.80	1.09
Octachlorodibenzo-p-dioxin	0.001	0.35	0.24	0.18	0.26
2378-tetrachlorodibenzofuran	0.100	0.15	0.22	<0.10	<0.16
12378-pentachlorodibenzofuran	0.050	0.12	0.17	<0.030	<0.11
23478-pentachlorodibenzofuran	0.500	2.38	2.94	1.10	2.14
123478-hexachlorodibenzofuran	0.100	0.57	0.79	0.29	0.55
123678-hexachlorodibenzofuran	0.100	0.58	0.75	<0.31	<0.55
234678-hexachlorodibenzofuran	0.100	0.96	0.85	0.50	0.77
123789-hexachlorodibenzofuran	0.100	<0.097	<0.093	<0.072	<0.087
1234678-heptachlorodibenzofuran	0.010	0.57	0.49	0.29	0.45
1234789-heptachlorodibenzofuran	0.010	0.062	0.048	0.033	0.048
Octachlorodibenzofuran	0.001	0.051	0.036	0.026	0.038
Total Dioxins & Furans		<11.8	<11.7	<6.24	<9.93
In-Stack Emission Limit					60

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 54
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	0.59	<0.50	<0.48	<0.52
12378-pentachlorodibenzo-p-dioxin	1.000	1.79	1.89	0.93	1.54
123478-hexachlorodibenzo-p-dioxin	0.100	0.48	0.40	0.31	0.40
123678-hexachlorodibenzo-p-dioxin	0.100	1.36	1.18	0.84	1.13
123789-hexachlorodibenzo-p-dioxin	0.100	1.17	0.98	0.42	0.86
1234678-heptachlorodibenzo-p-dioxin	0.010	1.37	1.07	0.81	1.08
Octachlorodibenzo-p-dioxin	0.0003	0.10	0.072	0.055	0.077
2378-tetrachlorodibenzofuran	0.100	0.15	0.22	<0.11	<0.16
12378-pentachlorodibenzofuran	0.030	0.071	0.10	<0.018	<0.064
23478-pentachlorodibenzofuran	0.300	1.41	1.76	0.66	1.28
123478-hexachlorodibenzofuran	0.100	0.56	0.79	0.29	0.55
123678-hexachlorodibenzofuran	0.100	0.57	0.75	<0.31	<0.54
234678-hexachlorodibenzofuran	0.100	0.95	0.85	0.51	0.77
123789-hexachlorodibenzofuran	0.100	<0.096	<0.093	<0.073	<0.087
1234678-heptachlorodibenzofuran	0.010	0.56	0.49	0.29	0.45
1234789-heptachlorodibenzofuran	0.010	0.062	0.048	0.034	0.048
Octachlorodibenzofuran	0.0003	0.015	0.011	0.0078	0.011
PCB 81	0.0003	<0.0022	<0.0020	<0.0017	<0.0019
PCB 77	0.0001	<0.00094	0.00069	0.00090	<0.00084
PCB 123	0.00003	<0.00025	<0.00020	<0.00015	<0.00020
PCB 118	0.00003	0.0065	0.0051	0.0078	0.0065
PCB 114	0.00003	<0.00022	<0.00018	0.00018	<0.00019
PCB 105	0.00003	0.0022	0.0018	0.0025	0.0021
PCB 126	0.100	<0.75	<0.60	<0.45	<0.60
PCB 167	0.00003	<0.00022	0.00022	<0.00022	<0.00022
PCB 156 + PCB 157	0.00003	0.00027	0.00062	0.00078	0.00056
PCB 169	0.030	<0.22	<0.19	<0.16	<0.19
PCB 189	0.00003	<0.00013	<0.00012	<0.000093	<0.00011
Total Dioxins & Furans Only		<11.3	<11.2	<6.15	<9.55
Dioxin-Like PCBs		<0.99	<0.80	<0.63	<0.80
Total Dioxins & Furans and PCBs		<12.3	<12.0	<6.77	<10.4

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 55
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Emission Rates
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 1 ng TEQ/s	Test No. 2 ng TEQ/s	Test No. 3 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	0.012	<0.0099	<0.0096	<0.011
12378-pentachlorodibenzo-p-dioxin	1.000	0.037	0.038	0.018	0.031
123478-hexachlorodibenzo-p-dioxin	0.100	0.0098	0.0080	0.006	0.0080
123678-hexachlorodibenzo-p-dioxin	0.100	0.028	0.024	0.017	0.023
123789-hexachlorodibenzo-p-dioxin	0.100	0.024	0.019	0.0082	0.017
1234678-heptachlorodibenzo-p-dioxin	0.010	0.028	0.021	0.016	0.022
Octachlorodibenzo-p-dioxin	0.0003	0.0021	0.0014	0.0011	0.0016
2378-tetrachlorodibenzofuran	0.100	0.0031	0.0045	<0.0021	<0.0032
12378-pentachlorodibenzofuran	0.030	0.0015	0.0021	<0.00036	<0.0013
23478-pentachlorodibenzofuran	0.300	0.029	0.035	0.013	0.026
123478-hexachlorodibenzofuran	0.100	0.011	0.016	0.0058	0.011
123678-hexachlorodibenzofuran	0.100	0.012	0.015	<0.0062	<0.011
234678-hexachlorodibenzofuran	0.100	0.019	0.017	0.010	0.015
123789-hexachlorodibenzofuran	0.100	<0.0020	<0.0019	<0.0014	<0.0017
1234678-heptachlorodibenzofuran	0.010	0.012	0.0099	0.0057	0.0090
1234789-heptachlorodibenzofuran	0.010	0.0013	0.00097	0.00066	0.00096
Octachlorodibenzofuran	0.0003	0.00031	0.00022	0.00015	0.00023
PCB 81	0.0003	<0.000045	<0.000039	<0.000033	<0.000039
PCB 77	0.0001	<0.000019	0.000014	0.000018	<0.000017
PCB 123	0.00003	<0.0000051	<0.0000040	<0.0000029	<0.0000040
PCB 118	0.00003	0.00013	0.00010	0.00015	0.00013
PCB 114	0.00003	<0.0000044	<0.0000035	0.0000036	<0.0000038
PCB 105	0.00003	0.000044	0.000035	0.000049	0.000043
PCB 126	0.100	<0.015	<0.012	<0.0089	<0.012
PCB 167	0.00003	<0.0000045	0.0000044	<0.0000043	<0.0000044
PCB 156 + PCB 157	0.00003	0.0000056	0.000012	0.000015	0.000011
PCB 169	0.030	<0.0045	<0.0037	<0.0032	<0.0038
PCB 189	0.00003	<0.0000026	<0.0000024	<0.0000018	<0.0000023
Total Dioxins & Furans Only		<0.23	<0.22	<0.12	<0.19
Dioxin-Like PCBs		<0.020	<0.016	<0.012	<0.016
Total Dioxins & Furans and PCBs		<0.25	<0.24	<0.13	<0.21

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 56
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.36	<0.62	<0.52	<0.52	<0.011
12378-pentachlorodibenzo-p-dioxin	1.05	1.82	1.54	1.54	0.031
123478-hexachlorodibenzo-p-dioxin	0.27	0.47	0.40	0.40	0.0080
123678-hexachlorodibenzo-p-dioxin	0.77	1.33	1.13	1.13	0.023
123789-hexachlorodibenzo-p-dioxin	0.58	1.01	0.86	0.86	0.017
1234678-heptachlorodibenzo-p-dioxin	0.74	1.28	1.09	1.08	0.022
Octachlorodibenzo-p-dioxin	0.053	0.091	0.077	0.077	0.0016
2378-tetrachlorodibenzofuran	<0.11	<0.19	<0.16	<0.16	<0.0032
12378-pentachlorodibenzofuran	<0.044	<0.076	<0.064	<0.064	<0.0013
23478-pentachlorodibenzofuran	0.87	1.52	1.28	1.28	0.026
123478-hexachlorodibenzofuran	0.37	0.65	0.55	0.55	0.011
123678-hexachlorodibenzofuran	<0.37	<0.64	<0.55	<0.54	<0.011
234678-hexachlorodibenzofuran	0.52	0.91	0.77	0.77	0.015
123789-hexachlorodibenzofuran	<0.059	<0.10	<0.087	<0.087	<0.0017
1234678-heptachlorodibenzofuran	0.31	0.53	0.45	0.45	0.0090
1234789-heptachlorodibenzofuran	0.033	0.057	0.048	0.048	0.00096
Octachlorodibenzofuran	0.0077	0.013	0.011	0.011	0.00023
PCB 81	<0.0013	<0.0023	<0.0019	<0.0019	<0.000039
PCB 77	<0.00058	<0.0010	<0.00084	<0.00084	<0.000017
PCB 123	<0.00014	<0.00023	<0.00020	<0.00020	<0.0000040
PCB 118	0.0044	0.0077	0.0065	0.0065	0.00013
PCB 114	<0.00013	<0.00023	<0.00019	<0.00019	<0.0000038
PCB 105	0.0015	0.0025	0.0021	0.0021	0.000043
PCB 126	<0.41	<0.71	<0.60	<0.60	<0.012
PCB 167	<0.00015	<0.00026	<0.00022	<0.00022	<0.0000044
PCB 156 + PCB 157	0.00038	0.00066	0.00056	0.00056	0.000011
PCB 169	<0.13	<0.22	<0.19	<0.19	<0.0038
PCB 189	<0.000077	<0.00013	<0.00011	<0.00011	<0.0000023
Total Dioxins & Furans Only	<6.53	<11.3	<9.59	<9.55	<0.19
Dioxin-Like PCBs	<0.55	<0.95	<0.81	<0.80	<0.016
Total Dioxins & Furans and PCBs	<7.08	<12.3	<10.4	<10.4	<0.21

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 57
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	0.25	0.42	0.36	0.36	0.0073
12378-pentachlorodibenzo-p-dioxin	1.05	1.82	1.54	1.54	0.031
123478-hexachlorodibenzo-p-dioxin	0.27	0.47	0.40	0.40	0.0080
123678-hexachlorodibenzo-p-dioxin	0.77	1.33	1.13	1.13	0.023
123789-hexachlorodibenzo-p-dioxin	0.58	1.01	0.86	0.86	0.017
1234678-heptachlorodibenzo-p-dioxin	0.74	1.28	1.09	1.08	0.022
Octachlorodibenzo-p-dioxin	0.053	0.091	0.077	0.077	0.0016
2378-tetrachlorodibenzofuran	0.097	0.17	0.14	0.14	0.0029
12378-pentachlorodibenzofuran	0.042	0.072	0.061	0.061	0.0012
23478-pentachlorodibenzofuran	0.87	1.52	1.28	1.28	0.026
123478-hexachlorodibenzofuran	0.37	0.65	0.55	0.55	0.011
123678-hexachlorodibenzofuran	0.34	0.58	0.49	0.49	0.0099
234678-hexachlorodibenzofuran	0.52	0.91	0.77	0.77	0.015
123789-hexachlorodibenzofuran	0.030	0.051	0.044	0.043	0.00087
1234678-heptachlorodibenzofuran	0.31	0.53	0.45	0.45	0.0090
1234789-heptachlorodibenzofuran	0.033	0.057	0.048	0.048	0.00096
Octachlorodibenzofuran	0.0077	0.013	0.011	0.011	0.00023
PCB 81	0.00066	0.0011	0.00097	0.00097	0.000020
PCB 77	0.00047	0.00081	0.00069	0.00069	0.000014
PCB 123	0.000067	0.00012	0.000099	0.000099	0.0000020
PCB 118	0.0044	0.0077	0.0065	0.0065	0.00013
PCB 114	0.000086	0.00015	0.00013	0.00013	0.0000025
PCB 105	0.0015	0.0025	0.0021	0.0021	0.000043
PCB 126	0.21	0.36	0.30	0.30	0.0061
PCB 167	0.00010	0.00017	0.00015	0.00015	0.0000029
PCB 156 + PCB 157	0.00038	0.00066	0.00056	0.00056	0.000011
PCB 169	0.065	0.11	0.095	0.094	0.0019
PCB 189	0.000038	0.000067	0.000056	0.000056	0.0000011
Total Dioxins & Furans Only	6.34	11.0	9.31	9.27	0.19
Dioxin-Like PCBs	0.28	0.48	0.41	0.41	0.0082
Total Dioxins & Furans and PCBs	6.62	11.5	9.72	9.68	0.20

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 58
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Blank Dioxin and Furan Specific Isomer Analyses
High Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Blank Train pg	Laboratory Blank pg
2378-tetrachlorodibenzo-p-dioxin	<2.7	<3.5
12378-pentachlorodibenzo-p-dioxin	<3.6	<3.3
123478-hexachlorodibenzo-p-dioxin	<3.9	<3.3
123678-hexachlorodibenzo-p-dioxin	<3.9	<3.4
123789-hexachlorodibenzo-p-dioxin	<3.6	<3.1
1234678-heptachlorodibenzo-p-dioxin	5.5	4.9
Octachlorodibenzo-p-dioxin	19.3	47.6
2378-tetrachlorodibenzofuran	7.6	<2.8
12378-pentachlorodibenzofuran	<7.0	<3.6
23478-pentachlorodibenzofuran	7.1	<3.6
123478-hexachlorodibenzofuran	13.8	<3.2
123678-hexachlorodibenzofuran	9.3	<3.1
234678-hexachlorodibenzofuran	7.5	<3.4
123789-hexachlorodibenzofuran	<3.4	<3.5
1234678-heptachlorodibenzofuran	17.1	3.3
1234789-heptachlorodibenzofuran	<3.8	<2.8
Octachlorodibenzofuran	5.6	6.9
PCB 81	<38	<12
PCB 77	<37	<11
PCB 123	<24	<9.3
PCB 118	68	<8.4
PCB 114	<21	<8.1
PCB 105	29	<8.4
PCB 126	<22	<8.5
PCB 167	<17	<7.7
PCB 156 + PCB 157	<16	<7.2
PCB 169	<17	<7.6
PCB 189	<19	<10
Total Dioxins & Furans Only	<125	<105
Dioxin-Like PCBs	<308	<98.2
Total Dioxins & Furans and PCBs	<433	<204

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

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APPENDIX 2

Data Tables for Boiler No. 1
with Medium Carbon Feed Rate and VLN on Air Mode
(59 pages)

TABLE 1
Covanta
Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate and VLN on Air Mode
Test Schedule

Quench Inlet - Dioxin and Furan Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
4	September 29, 2016	8:22	12:01	180
5	September 29, 2016	13:34	17:14	180
6	September 30, 2016	7:40	11:19	180

APC Outlet - Dioxin and Furan Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
4	September 29, 2016	8:20	12:29	240
5	September 29, 2016	13:32	17:41	240
6	September 30, 2016	7:37	11:46	240

APC Outlet - Particulate Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
4	September 29, 2016	8:22	12:07	192
5	September 29, 2016	13:38	17:19	192
6	September 30, 2016	7:38	11:24	192

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate and VLN on Air Mode
Stack Gas Sampling Parameters

Quench Inlet - Dioxin and Furan Tests

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
4	0.848	0.979	5.97	3.281	100.4
5	0.848	0.979	5.97	3.313	100.6
6	0.848	0.979	5.97	3.319	100.2

APC Outlet - Dioxin and Furan Tests

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
4	0.842	0.993	6.24	4.753	97.9
5	0.842	0.993	6.24	4.948	98.9
6	0.842	0.993	6.24	4.803	97.8

APC Outlet - Particulate Tests

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
4	0.847	0.976	6.36	4.058	99.1
5	0.847	0.976	6.36	4.174	100.3
6	0.847	0.976	6.36	4.074	99.1

* Dry at 25°C and 1 atmosphere

TABLE 3
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate and VLN on Air Mode
Stack Gas Physical Parameters

Quench Inlet - Dioxin and Furan Tests

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
4	168	14.7	19.0	-0.77	100.3	10.4	8.69
5	171	15.0	19.2	-0.72	100.4	10.5	8.76
6	167	14.3	19.1	-0.67	100.4	10.4	8.77
Average	169	14.7	19.1	-0.72	100.4	10.4	8.74

APC Outlet - Dioxin and Furan Tests

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
4	142	15.4	18.7	-2.69	98.4	10.4	9.09
5	142	15.9	19.4	-2.84	98.2	10.5	9.20
6	142	15.0	18.9	-2.74	98.3	10.4	9.23
Average	142	15.4	19.0	-2.76	98.3	10.4	9.17

APC Outlet - Particulate Tests

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
4	136	14.9	18.6	-2.69	98.4	10.4	9.09
5	140	15.7	19.3	-2.84	98.2	10.5	9.20
6	141	15.0	18.9	-2.74	98.3	10.4	9.23
Average	139	15.2	18.9	-2.76	98.3	10.4	9.17

* Dry basis, measured by the DYEC CEMS

TABLE 4
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate and VLN on Air Mode
Stack Gas Volumetric Flowrates

Quench Inlet - Dioxin and Furan Tests

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
4	28.0	16.0	19.7	18.7
5	28.4	16.1	19.7	18.9
6	28.2	16.2	19.8	18.9
Average	28.2	16.1	19.7	18.8

APC Outlet - Dioxin and Furan Tests

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
4	27.7	16.3	19.5	19.3
5	28.7	16.8	19.8	20.0
6	27.9	16.5	19.4	19.4
Average	28.1	16.5	19.6	19.6

APC Outlet - Particulate Tests

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
4	27.5	16.5	19.7	19.5
5	28.5	16.8	19.8	19.9
6	27.9	16.6	19.6	19.5
Average	28.0	16.6	19.7	19.6

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 4 - Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	11200	1.95	3.41	2.77	2.91	54.4
Pentachlorodibenzo-p-dioxins	7340	1.27	2.24	1.81	1.91	35.7
Hexachlorodibenzo-p-dioxins	7190	1.25	2.19	1.78	1.87	35.0
Heptachlorodibenzo-p-dioxins	4160	0.72	1.27	1.03	1.08	20.2
Octachlorodibenzo-p-dioxin	6030	1.05	1.84	1.49	1.57	29.3
Total	35920	6.24	10.9	8.88	9.33	175

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	164000	28.5	50.0	40.5	42.6	797
Pentachlorodibenzofurans	81900	14.2	25.0	20.2	21.3	398
Hexachlorodibenzofurans	37500	6.51	11.4	9.27	9.74	182
Heptachlorodibenzofurans	16100	2.80	4.91	3.98	4.18	78.3
Octachlorodibenzofuran	2700	0.47	0.82	0.67	0.70	13.1
Total	302200	52.5	92.1	74.7	78.5	1469

Dry Gas Volume Sampled (Rm^3*) :	3.281
Actual Flowrate (m^3/s) :	28.0
Dry Reference Flowrate (Rm^3/s*) :	16.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.7
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 5 - Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	8850	1.51	2.67	2.18	2.27	42.9
Pentachlorodibenzo-p-dioxins	8500	1.45	2.57	2.09	2.18	41.2
Hexachlorodibenzo-p-dioxins	7110	1.21	2.15	1.75	1.82	34.5
Heptachlorodibenzo-p-dioxins	5070	0.87	1.53	1.25	1.30	24.6
Octachlorodibenzo-p-dioxin	6680	1.14	2.02	1.64	1.71	32.4
Total	36210	6.18	10.9	8.91	9.29	176

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	164000	28.0	49.5	40.4	42.1	795
Pentachlorodibenzofurans	86400	14.7	26.1	21.3	22.2	419
Hexachlorodibenzofurans	43100	7.35	13.0	10.6	11.1	209
Heptachlorodibenzofurans	18000	3.07	5.43	4.43	4.62	87.3
Octachlorodibenzofuran	2930	0.50	0.88	0.72	0.75	14.2
Total	314430	53.6	94.9	77.4	80.7	1525

Dry Gas Volume Sampled (Rm^3*) :	3.313
Actual Flowrate (m^3/s) :	28.4
Dry Reference Flowrate (Rm^3/s*) :	16.1
Dry Adjusted Flowrate (Rm^3/s**) :	19.7
Wet Reference Flowrate (Rm^3/s*) :	18.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 7
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 6 - Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	10100	1.75	3.04	2.48	2.61	49.2
Pentachlorodibenzo-p-dioxins	6280	1.09	1.89	1.54	1.62	30.6
Hexachlorodibenzo-p-dioxins	5660	0.98	1.71	1.39	1.46	27.6
Heptachlorodibenzo-p-dioxins	4150	0.72	1.25	1.02	1.07	20.2
Octachlorodibenzo-p-dioxin	7020	1.22	2.12	1.73	1.81	34.2
Total	33210	5.75	10.0	8.17	8.57	162

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	163000	28.2	49.1	40.1	42.1	795
Pentachlorodibenzofurans	79100	13.7	23.8	19.5	20.4	386
Hexachlorodibenzofurans	32600	5.65	9.82	8.02	8.41	159
Heptachlorodibenzofurans	14900	2.58	4.49	3.66	3.85	72.6
Octachlorodibenzofuran	2660	0.46	0.80	0.65	0.69	13.0
Total	292260	50.6	88.1	71.9	75.4	1425

Dry Gas Volume Sampled (Rm^3*) :	3.319
Actual Flowrate (m^3/s) :	28.2
Dry Reference Flowrate (Rm^3/s*) :	16.2
Dry Adjusted Flowrate (Rm^3/s**) :	19.8
Wet Reference Flowrate (Rm^3/s*) :	18.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 8
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	1.95	1.51	1.75	1.73	12.6
Pentachlorodibenzo-p-dioxins	1.27	1.45	1.09	1.27	14.3
Hexachlorodibenzo-p-dioxins	1.25	1.21	0.98	1.15	12.7
Heptachlorodibenzo-p-dioxins	0.72	0.87	0.72	0.77	10.8
Octachlorodibenzo-p-dioxin	1.05	1.14	1.22	1.13	7.4
Total	6.24	6.18	5.75	6.06	4.4

Furans

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	28.5	28.0	28.2	28.2	0.9
Pentachlorodibenzofurans	14.2	14.7	13.7	14.2	3.7
Hexachlorodibenzofurans	6.51	7.35	5.65	6.50	13.1
Heptachlorodibenzofurans	2.80	3.07	2.58	2.82	8.7
Octachlorodibenzofuran	0.47	0.50	0.46	0.48	4.3
Total	52.5	53.6	50.6	52.2	2.9

TABLE 9
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	3.41	2.67	3.04	3.04	12.2
Pentachlorodibenzo-p-dioxins	2.24	2.57	1.89	2.23	15.1
Hexachlorodibenzo-p-dioxins	2.19	2.15	1.71	2.01	13.3
Heptachlorodibenzo-p-dioxins	1.27	1.53	1.25	1.35	11.6
Octachlorodibenzo-p-dioxin	1.84	2.02	2.12	1.99	7.1
Total	10.9	10.9	10.0	10.6	5.1

Furans

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	50.0	49.5	49.1	49.5	0.9
Pentachlorodibenzofurans	25.0	26.1	23.8	25.0	4.5
Hexachlorodibenzofurans	11.4	13.0	9.82	11.4	14.0
Heptachlorodibenzofurans	4.91	5.43	4.49	4.94	9.6
Octachlorodibenzofuran	0.82	0.88	0.80	0.84	5.1
Total	92.1	94.9	88.1	91.7	3.8

* At 25°C and 1 atmosphere

TABLE 10
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	2.77	2.18	2.48	2.48	11.9
Pentachlorodibenzo-p-dioxins	1.81	2.09	1.54	1.82	15.1
Hexachlorodibenzo-p-dioxins	1.78	1.75	1.39	1.64	13.1
Heptachlorodibenzo-p-dioxins	1.03	1.25	1.02	1.10	11.7
Octachlorodibenzo-p-dioxin	1.49	1.64	1.73	1.62	7.4
Total	8.88	8.91	8.17	8.65	4.8

Furans

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	40.5	40.4	40.1	40.3	0.5
Pentachlorodibenzofurans	20.2	21.3	19.5	20.3	4.5
Hexachlorodibenzofurans	9.27	10.6	8.02	9.30	13.9
Heptachlorodibenzofurans	3.98	4.43	3.66	4.02	9.6
Octachlorodibenzofuran	0.67	0.72	0.65	0.68	5.2
Total	74.7	77.4	71.9	74.7	3.7

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 11
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	2.91	2.27	2.61	2.60	12.3
Pentachlorodibenzo-p-dioxins	1.91	2.18	1.62	1.90	14.7
Hexachlorodibenzo-p-dioxins	1.87	1.82	1.46	1.72	13.0
Heptachlorodibenzo-p-dioxins	1.08	1.30	1.07	1.15	11.3
Octachlorodibenzo-p-dioxin	1.57	1.71	1.81	1.70	7.3
Total	9.33	9.29	8.57	9.06	4.7

Furans

Congener Group	Wet Reference Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	42.6	42.1	42.1	42.2	0.7
Pentachlorodibenzofurans	21.3	22.2	20.4	21.3	4.1
Hexachlorodibenzofurans	9.74	11.1	8.41	9.74	13.6
Heptachlorodibenzofurans	4.18	4.62	3.85	4.21	9.2
Octachlorodibenzofuran	0.70	0.75	0.69	0.71	4.8
Total	78.5	80.7	75.4	78.2	3.4

* At 25°C and 1 atmosphere

TABLE 12
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	54.4	42.9	49.2	48.9	11.8
Pentachlorodibenzo-p-dioxins	35.7	41.2	30.6	35.8	14.8
Hexachlorodibenzo-p-dioxins	35.0	34.5	27.6	32.3	12.7
Heptachlorodibenzo-p-dioxins	20.2	24.6	20.2	21.7	11.6
Octachlorodibenzo-p-dioxin	29.3	32.4	34.2	32.0	7.8
Total	175	176	162	171	4.5

Furans

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	797	795	795	796	0.2
Pentachlorodibenzofurans	398	419	386	401	4.2
Hexachlorodibenzofurans	182	209	159	183	13.7
Heptachlorodibenzofurans	78.3	87.3	72.6	79.4	9.3
Octachlorodibenzofuran	13.1	14.2	13.0	13.4	5.0
Total	1469	1525	1425	1473	3.4

TABLE 13
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	1.73	3.04	2.48	2.60	48.9
Pentachlorodibenzo-p-dioxins	1.27	2.23	1.82	1.90	35.8
Hexachlorodibenzo-p-dioxins	1.15	2.01	1.64	1.72	32.3
Heptachlorodibenzo-p-dioxins	0.77	1.35	1.10	1.15	21.7
Octachlorodibenzo-p-dioxin	1.13	1.99	1.62	1.70	32.0
Total	6.06	10.6	8.65	9.06	171

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	28.2	49.5	40.3	42.2	796
Pentachlorodibenzofurans	14.2	25.0	20.3	21.3	401
Hexachlorodibenzofurans	6.50	11.4	9.30	9.74	183
Heptachlorodibenzofurans	2.82	4.94	4.02	4.21	79.4
Octachlorodibenzofuran	0.48	0.84	0.68	0.71	13.4
Total	52.2	91.7	74.7	78.2	1473

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 14
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 4 - Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	159	0.020	0.033	0.028	0.028	0.55
Pentachlorodibenzo-p-dioxins	326	0.040	0.069	0.057	0.058	1.12
Hexachlorodibenzo-p-dioxins	1190	0.15	0.25	0.21	0.21	4.08
Heptachlorodibenzo-p-dioxins	1290	0.16	0.27	0.23	0.23	4.42
Octachlorodibenzo-p-dioxin	1130	0.14	0.24	0.20	0.20	3.88
Total	4095	0.51	0.86	0.72	0.73	14.0

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	722	0.089	0.15	0.13	0.13	2.48
Pentachlorodibenzofurans	195	0.024	0.041	0.034	0.035	0.67
Hexachlorodibenzofurans	245	0.030	0.052	0.043	0.044	0.84
Heptachlorodibenzofurans	337	0.042	0.071	0.059	0.060	1.16
Octachlorodibenzofuran	177	0.022	0.037	0.031	0.031	0.61
Total	1676	0.21	0.35	0.30	0.30	5.75

Dry Gas Volume Sampled (Rm^3*) :	4.753
Actual Flowrate (m^3/s) :	27.7
Dry Reference Flowrate (Rm^3/s*) :	16.3
Dry Adjusted Flowrate (Rm^3/s**) :	19.5
Wet Reference Flowrate (Rm^3/s*) :	19.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 15
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 5 - Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	91.6	0.011	0.019	0.016	0.016	0.31
Pentachlorodibenzo-p-dioxins	182	0.022	0.037	0.031	0.031	0.62
Hexachlorodibenzo-p-dioxins	1050	0.12	0.21	0.18	0.18	3.56
Heptachlorodibenzo-p-dioxins	1000	0.12	0.20	0.17	0.17	3.39
Octachlorodibenzo-p-dioxin	953	0.11	0.19	0.16	0.16	3.23
Total	3277	0.39	0.66	0.56	0.56	11.1

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	296	0.035	0.060	0.051	0.050	1.00
Pentachlorodibenzofurans	144	0.017	0.029	0.025	0.024	0.49
Hexachlorodibenzofurans	195	0.023	0.039	0.033	0.033	0.66
Heptachlorodibenzofurans	269	0.032	0.054	0.046	0.046	0.91
Octachlorodibenzofuran	142	0.017	0.029	0.024	0.024	0.48
Total	1046	0.12	0.21	0.18	0.18	3.55

Dry Gas Volume Sampled (Rm^3*) :	4.948
Actual Flowrate (m^3/s) :	28.7
Dry Reference Flowrate (Rm^3/s*) :	16.8
Dry Adjusted Flowrate (Rm^3/s**) :	19.8
Wet Reference Flowrate (Rm^3/s*) :	20.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 16
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 6 - Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	150	0.018	0.031	0.027	0.027	0.51
Pentachlorodibenzo-p-dioxins	298	0.037	0.062	0.053	0.053	1.02
Hexachlorodibenzo-p-dioxins	1130	0.14	0.24	0.20	0.20	3.88
Heptachlorodibenzo-p-dioxins	1160	0.14	0.24	0.20	0.21	3.98
Octachlorodibenzo-p-dioxin	1320	0.16	0.27	0.23	0.23	4.53
Total	4058	0.50	0.84	0.72	0.72	13.9

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	274	0.034	0.057	0.048	0.048	0.94
Pentachlorodibenzofurans	210	0.026	0.044	0.037	0.037	0.72
Hexachlorodibenzofurans	200	0.025	0.042	0.035	0.035	0.69
Heptachlorodibenzofurans	301	0.037	0.063	0.053	0.053	1.03
Octachlorodibenzofuran	186	0.023	0.039	0.033	0.033	0.64
Total	1171	0.14	0.24	0.21	0.21	4.02

Dry Gas Volume Sampled (Rm^3*) :	4.803
Actual Flowrate (m^3/s) :	27.9
Dry Reference Flowrate (Rm^3/s*) :	16.5
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	19.4

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 17
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.020	0.011	0.018	0.016	29.4
Pentachlorodibenzo-p-dioxins	0.040	0.022	0.037	0.033	30.4
Hexachlorodibenzo-p-dioxins	0.15	0.12	0.14	0.14	8.6
Heptachlorodibenzo-p-dioxins	0.16	0.12	0.14	0.14	14.9
Octachlorodibenzo-p-dioxin	0.14	0.11	0.16	0.14	18.1
Total	0.51	0.39	0.50	0.47	14.5

Furans

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	0.089	0.035	0.034	0.053	60.3
Pentachlorodibenzofurans	0.024	0.017	0.026	0.022	21.0
Hexachlorodibenzofurans	0.030	0.023	0.025	0.026	14.8
Heptachlorodibenzofurans	0.042	0.032	0.037	0.037	13.5
Octachlorodibenzofuran	0.022	0.017	0.023	0.021	16.0
Total	0.21	0.12	0.14	0.16	27.6

TABLE 18
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.033	0.019	0.031	0.028	29.1
Pentachlorodibenzo-p-dioxins	0.069	0.037	0.062	0.056	30.1
Hexachlorodibenzo-p-dioxins	0.25	0.21	0.24	0.23	8.3
Heptachlorodibenzo-p-dioxins	0.27	0.20	0.24	0.24	14.6
Octachlorodibenzo-p-dioxin	0.24	0.19	0.27	0.24	17.5
Total	0.86	0.66	0.84	0.79	14.0

Furans

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.15	0.060	0.057	0.090	60.3
Pentachlorodibenzofurans	0.041	0.029	0.044	0.038	20.5
Hexachlorodibenzofurans	0.052	0.039	0.042	0.044	14.6
Heptachlorodibenzofurans	0.071	0.054	0.063	0.063	13.2
Octachlorodibenzofuran	0.037	0.029	0.039	0.035	15.5
Total	0.35	0.21	0.24	0.27	27.5

* At 25°C and 1 atmosphere

TABLE 19
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.028	0.016	0.027	0.023	28.8
Pentachlorodibenzo-p-dioxins	0.057	0.031	0.053	0.047	29.8
Hexachlorodibenzo-p-dioxins	0.21	0.18	0.20	0.20	7.8
Heptachlorodibenzo-p-dioxins	0.23	0.17	0.20	0.20	14.1
Octachlorodibenzo-p-dioxin	0.20	0.16	0.23	0.20	17.7
Total	0.72	0.56	0.72	0.67	13.8

Furans

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.13	0.051	0.048	0.075	59.5
Pentachlorodibenzofurans	0.034	0.025	0.037	0.032	20.5
Hexachlorodibenzofurans	0.043	0.033	0.035	0.037	14.0
Heptachlorodibenzofurans	0.059	0.046	0.053	0.053	12.7
Octachlorodibenzofuran	0.031	0.024	0.033	0.029	15.5
Total	0.30	0.18	0.21	0.23	26.8

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 20
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.028	0.016	0.027	0.023	29.4
Pentachlorodibenzo-p-dioxins	0.058	0.031	0.053	0.047	30.4
Hexachlorodibenzo-p-dioxins	0.21	0.18	0.20	0.20	8.6
Heptachlorodibenzo-p-dioxins	0.23	0.17	0.21	0.20	14.9
Octachlorodibenzo-p-dioxin	0.20	0.16	0.23	0.20	18.0
Total	0.73	0.56	0.72	0.67	14.4

Furans

Congener Group	Wet Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.13	0.050	0.048	0.076	60.3
Pentachlorodibenzofurans	0.035	0.024	0.037	0.032	21.0
Hexachlorodibenzofurans	0.044	0.033	0.035	0.037	14.7
Heptachlorodibenzofurans	0.060	0.046	0.053	0.053	13.5
Octachlorodibenzofuran	0.031	0.024	0.033	0.029	16.0
Total	0.30	0.18	0.21	0.23	27.6

* At 25°C and 1 atmosphere

TABLE 21
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.55	0.31	0.51	0.46	27.9
Pentachlorodibenzo-p-dioxins	1.12	0.62	1.02	0.92	28.9
Hexachlorodibenzo-p-dioxins	4.08	3.56	3.88	3.84	6.8
Heptachlorodibenzo-p-dioxins	4.42	3.39	3.98	3.93	13.2
Octachlorodibenzo-p-dioxin	3.88	3.23	4.53	3.88	16.8
Total	14.0	11.1	13.9	13.0	12.8

Furans

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	2.48	1.00	0.94	1.47	59.0
Pentachlorodibenzofurans	0.67	0.49	0.72	0.63	19.5
Hexachlorodibenzofurans	0.84	0.66	0.69	0.73	13.3
Heptachlorodibenzofurans	1.16	0.91	1.03	1.03	11.8
Octachlorodibenzofuran	0.61	0.48	0.64	0.58	14.4
Total	5.75	3.55	4.02	4.44	26.1

TABLE 22
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate and VLN on Air Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.016	0.028	0.023	0.023	0.46
Pentachlorodibenzo-p-dioxins	0.033	0.056	0.047	0.047	0.92
Hexachlorodibenzo-p-dioxins	0.14	0.23	0.20	0.20	3.84
Heptachlorodibenzo-p-dioxins	0.14	0.24	0.20	0.20	3.93
Octachlorodibenzo-p-dioxin	0.14	0.24	0.20	0.20	3.88
Total	0.47	0.79	0.67	0.67	13.0

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	0.053	0.090	0.075	0.076	1.47
Pentachlorodibenzofurans	0.022	0.038	0.032	0.032	0.63
Hexachlorodibenzofurans	0.026	0.044	0.037	0.037	0.73
Heptachlorodibenzofurans	0.037	0.063	0.053	0.053	1.03
Octachlorodibenzofuran	0.021	0.035	0.029	0.029	0.58
Total	0.16	0.27	0.23	0.23	4.44

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 23
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate and VLN on Air Mode
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<9.0	14.5
Pentachlorodibenzo-p-dioxins	<6.4	6.2
Hexachlorodibenzo-p-dioxins	<13	<21.0
Heptachlorodibenzo-p-dioxins	9.5	11.7
Octachlorodibenzo-p-dioxin	19.3	32.1
Total	<57.2	<85.5

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	16.7	<3.7
Pentachlorodibenzofurans	40.4	<2.8
Hexachlorodibenzofurans	48.5	3.5
Heptachlorodibenzofurans	17.1	3.9
Octachlorodibenzofuran	5.6	5.4
Total	128	<19.3

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 24
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 4 - Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	891	155	272	220	231	4.33
12378-pentachlorodibenzo-p-dioxin	1000	174	305	247	260	4.86
123478-hexachlorodibenzo-p-dioxin	427	74.2	130	106	111	2.08
123678-hexachlorodibenzo-p-dioxin	663	115	202	164	172	3.22
123789-hexachlorodibenzo-p-dioxin	1060	184	323	262	275	5.15
1234678-heptachlorodibenzo-p-dioxin	2020	351	616	499	525	9.82
Octachlorodibenzo-p-dioxin	6030	1047	1838	1490	1566	29.3
2378-tetrachlorodibenzofuran	5100	886	1554	1260	1324	24.8
12378-pentachlorodibenzofuran	5580	969	1701	1379	1449	27.1
23478-pentachlorodibenzofuran	4730	822	1442	1169	1228	23.0
123478-hexachlorodibenzofuran	7310	1270	2228	1807	1898	35.5
123678-hexachlorodibenzofuran	4790	832	1460	1184	1244	23.3
234678-hexachlorodibenzofuran	2730	474	832	675	709	13.3
123789-hexachlorodibenzofuran	233	40.5	71.0	57.6	60.5	1.13
1234678-heptachlorodibenzofuran	11300	1963	3444	2793	2934	54.9
1234789-heptachlorodibenzofuran	930	162	283	230	242	4.52
Octachlorodibenzofuran	2700	469	823	667	701	13.1
PCB 81	130	22.6	39.6	32.1	33.8	0.63
PCB 77	430	74.7	131	106	112	2.09
PCB 123	110	19.1	33.5	27.2	28.6	0.53
PCB 118	740	129	226	183	192	3.60
PCB 114	68	11.8	20.7	16.8	17.7	0.33
PCB 105	340	59.1	104	84.0	88.3	1.65
PCB 126	350	60.8	107	86.5	90.9	1.70
PCB 167	170	29.5	51.8	42.0	44.1	0.83
PCB 156 + PCB 157	320	55.6	97.5	79.1	83.1	1.56
PCB 169	130	22.6	39.6	32.1	33.8	0.63
PCB 189	180	31.3	54.9	44.5	46.7	0.88
Total Dioxins & Furans Only	57494	9986	17523	14209	14930	279
Dioxin-Like PCBs	2968	515	905	734	771	14.4
Total Dioxins & Furans and PCBs	60462	10501	18428	14943	15701	294
Total PCBs	28000	4863	8534	6920	7271	136

Dry Gas Volume Sampled (Rm^3*) :	3.281
Actual Flowrate (m^3/s) :	28.0
Dry Reference Flowrate (Rm^3/s*) :	16.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.7
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 25
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 5 - Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	721	123	218	177	185	3.50
12378-pentachlorodibenzo-p-dioxin	1100	188	332	271	282	5.34
123478-hexachlorodibenzo-p-dioxin	439	74.9	133	108	113	2.13
123678-hexachlorodibenzo-p-dioxin	679	116	205	167	174	3.29
123789-hexachlorodibenzo-p-dioxin	1030	176	311	253	264	5.00
1234678-heptachlorodibenzo-p-dioxin	2430	415	733	598	623	11.8
Octachlorodibenzo-p-dioxin	6680	1140	2016	1644	1713	32.4
2378-tetrachlorodibenzofuran	4500	768	1358	1107	1154	21.8
12378-pentachlorodibenzofuran	5720	976	1727	1408	1467	27.7
23478-pentachlorodibenzofuran	4710	804	1422	1159	1208	22.8
123478-hexachlorodibenzofuran	8070	1377	2436	1986	2070	39.1
123678-hexachlorodibenzofuran	5030	858	1518	1238	1290	24.4
234678-hexachlorodibenzofuran	2970	507	896	731	762	14.4
123789-hexachlorodibenzofuran	166	28.3	50.1	40.9	42.6	0.81
1234678-heptachlorodibenzofuran	13200	2252	3984	3248	3386	64.0
1234789-heptachlorodibenzofuran	922	157	278	227	237	4.47
Octachlorodibenzofuran	2930	500	884	721	752	14.2
PCB 81	140	23.9	42.3	34.5	35.9	0.68
PCB 77	510	87.0	154	126	131	2.47
PCB 123	120	20.5	36.2	29.5	30.8	0.58
PCB 118	1400	239	423	345	359	6.79
PCB 114	94	16.0	28.4	23.1	24.1	0.46
PCB 105	550	93.8	166	135	141	2.67
PCB 126	400	68.2	121	98.4	103	1.94
PCB 167	190	32.4	57.3	46.8	48.7	0.92
PCB 156 + PCB 157	430	73.4	130	106	110	2.09
PCB 169	170	29.0	51.3	41.8	43.6	0.82
PCB 189	220	37.5	66.4	54.1	56.4	1.07
Total Dioxins & Furans Only	61297	10458	18502	15085	15723	297
Dioxin-Like PCBs	4224	721	1275	1040	1083	20.5
Total Dioxins & Furans and PCBs	65521	11179	19777	16125	16807	318
Total PCBs	49000	8360	14790	12059	12569	238

Dry Gas Volume Sampled (Rm^3*) :	3.313
Actual Flowrate (m^3/s) :	28.4
Dry Reference Flowrate (Rm^3/s*) :	16.1
Dry Adjusted Flowrate (Rm^3/s**) :	19.7
Wet Reference Flowrate (Rm^3/s*) :	18.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 26
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 6 - Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	810	140	244	199	209	3.95
12378-pentachlorodibenzo-p-dioxin	893	155	269	220	230	4.35
123478-hexachlorodibenzo-p-dioxin	352	61.0	106	86.6	90.8	1.72
123678-hexachlorodibenzo-p-dioxin	537	93.0	162	132	139	2.62
123789-hexachlorodibenzo-p-dioxin	501	86.8	151	123	129	2.44
1234678-heptachlorodibenzo-p-dioxin	2020	350	609	497	521	9.85
Octachlorodibenzo-p-dioxin	7020	1216	2115	1727	1812	34.2
2378-tetrachlorodibenzofuran	4760	824	1434	1171	1228	23.2
12378-pentachlorodibenzofuran	5630	975	1696	1385	1453	27.4
23478-pentachlorodibenzofuran	4340	752	1308	1067	1120	21.2
123478-hexachlorodibenzofuran	6590	1141	1986	1621	1701	32.1
123678-hexachlorodibenzofuran	4210	729	1268	1035	1086	20.5
234678-hexachlorodibenzofuran	2330	404	702	573	601	11.4
123789-hexachlorodibenzofuran	152	26.3	45.8	37.4	39.2	0.74
1234678-heptachlorodibenzofuran	10500	1818	3164	2583	2710	51.2
1234789-heptachlorodibenzofuran	810	140	244	199	209	3.95
Octachlorodibenzofuran	2660	461	801	654	686	13.0
PCB 81	130	22.5	39.2	32.0	33.5	0.63
PCB 77	460	79.7	139	113	119	2.24
PCB 123	98	17.0	29.5	24.1	25.3	0.48
PCB 118	860	149	259	212	222	4.19
PCB 114	84	14.5	25.3	20.7	21.7	0.41
PCB 105	400	69.3	121	98.4	103	1.95
PCB 126	330	57.1	99.4	81.2	85.2	1.61
PCB 167	170	29.4	51.2	41.8	43.9	0.83
PCB 156 + PCB 157	320	55.4	96.4	78.7	82.6	1.56
PCB 169	130	22.5	39.2	32.0	33.5	0.63
PCB 189	190	32.9	57.2	46.7	49.0	0.93
Total Dioxins & Furans Only	54115	9372	16305	13310	13966	264
Dioxin-Like PCBs	3172	549	956	780	819	15.5
Total Dioxins & Furans and PCBs	57287	9921	17260	14090	14784	279
Total PCBs	32000	5542	9641	7871	8258	156

Dry Gas Volume Sampled (Rm^3*) :	3.319
Actual Flowrate (m^3/s) :	28.2
Dry Reference Flowrate (Rm^3/s*) :	16.2
Dry Adjusted Flowrate (Rm^3/s**) :	19.8
Wet Reference Flowrate (Rm^3/s*) :	18.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 27
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	155	123	140	139	11.4
12378-pentachlorodibenzo-p-dioxin	174	188	155	172	9.6
123478-hexachlorodibenzo-p-dioxin	74.2	74.9	61.0	70.0	11.2
123678-hexachlorodibenzo-p-dioxin	115	116	93.0	108	12.0
123789-hexachlorodibenzo-p-dioxin	184	176	86.8	149	36.2
1234678-heptachlorodibenzo-p-dioxin	351	415	350	372	10.0
Octachlorodibenzo-p-dioxin	1047	1140	1216	1134	7.4
2378-tetrachlorodibenzofuran	886	768	824	826	7.1
12378-pentachlorodibenzofuran	969	976	975	973	0.4
23478-pentachlorodibenzofuran	822	804	752	792	4.6
123478-hexachlorodibenzofuran	1270	1377	1141	1263	9.3
123678-hexachlorodibenzofuran	832	858	729	806	8.5
234678-hexachlorodibenzofuran	474	507	404	461	11.4
123789-hexachlorodibenzofuran	40.5	28.3	26.3	31.7	24.1
1234678-heptachlorodibenzofuran	1963	2252	1818	2011	11.0
1234789-heptachlorodibenzofuran	162	157	140	153	7.4
Octachlorodibenzofuran	469	500	461	476	4.3
PCB 81	22.6	23.9	22.5	23.0	3.4
PCB 77	74.7	87.0	79.7	80.5	7.7
PCB 123	19.1	20.5	17.0	18.9	9.4
PCB 118	129	239	149	172	34.1
PCB 114	11.8	16.0	14.5	14.1	15.2
PCB 105	59.1	93.8	69.3	74.1	24.1
PCB 126	60.8	68.2	57.1	62.1	9.1
PCB 167	29.5	32.4	29.4	30.5	5.6
PCB 156 + PCB 157	55.6	73.4	55.4	61.5	16.8
PCB 169	22.6	29.0	22.5	24.7	15.1
PCB 189	31.3	37.5	32.9	33.9	9.6
Total Dioxins & Furans Only	9986	10458	9372	9938	5.5
Dioxin-Like PCBs	515	721	549	595	18.5
Total Dioxins & Furans and PCBs	10501	11179	9921	10534	6.0
Total PCBs	4863	8360	5542	6255	29.6

TABLE 28
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	272	218	244	244	11.0
12378-pentachlorodibenzo-p-dioxin	305	332	269	302	10.5
123478-hexachlorodibenzo-p-dioxin	130	133	106	123	11.9
123678-hexachlorodibenzo-p-dioxin	202	205	162	190	12.7
123789-hexachlorodibenzo-p-dioxin	323	311	151	262	36.7
1234678-heptachlorodibenzo-p-dioxin	616	733	609	653	10.7
Octachlorodibenzo-p-dioxin	1838	2016	2115	1990	7.1
2378-tetrachlorodibenzofuran	1554	1358	1434	1449	6.8
12378-pentachlorodibenzofuran	1701	1727	1696	1708	1.0
23478-pentachlorodibenzofuran	1442	1422	1308	1390	5.2
123478-hexachlorodibenzofuran	2228	2436	1986	2216	10.2
123678-hexachlorodibenzofuran	1460	1518	1268	1416	9.2
234678-hexachlorodibenzofuran	832	896	702	810	12.2
123789-hexachlorodibenzofuran	71.0	50.1	45.8	55.6	24.2
1234678-heptachlorodibenzofuran	3444	3984	3164	3531	11.8
1234789-heptachlorodibenzofuran	283	278	244	269	8.0
Octachlorodibenzofuran	823	884	801	836	5.1
PCB 81	39.6	42.3	39.2	40.3	4.1
PCB 77	131	154	139	141	8.3
PCB 123	33.5	36.2	29.5	33.1	10.2
PCB 118	226	423	259	302	34.9
PCB 114	20.7	28.4	25.3	24.8	15.5
PCB 105	104	166	121	130	24.8
PCB 126	107	121	99.4	109	9.9
PCB 167	51.8	57.3	51.2	53.5	6.3
PCB 156 + PCB 157	97.5	130	96.4	108	17.6
PCB 169	39.6	51.3	39.2	43.4	15.9
PCB 189	54.9	66.4	57.2	59.5	10.2
Total Dioxins & Furans Only	17523	18502	16305	17443	6.3
Dioxin-Like PCBs	905	1275	956	1045	19.2
Total Dioxins & Furans and PCBs	18428	19777	17260	18488	6.8
Total PCBs	8534	14790	9641	10989	30.4

* At 25°C and 1 atmosphere

TABLE 29
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	220	177	199	199	10.7
12378-pentachlorodibenzo-p-dioxin	247	271	220	246	10.4
123478-hexachlorodibenzo-p-dioxin	106	108	86.6	100	11.7
123678-hexachlorodibenzo-p-dioxin	164	167	132	154	12.5
123789-hexachlorodibenzo-p-dioxin	262	253	123	213	36.5
1234678-heptachlorodibenzo-p-dioxin	499	598	497	531	10.9
Octachlorodibenzo-p-dioxin	1490	1644	1727	1620	7.4
2378-tetrachlorodibenzofuran	1260	1107	1171	1180	6.5
12378-pentachlorodibenzofuran	1379	1408	1385	1391	1.1
23478-pentachlorodibenzofuran	1169	1159	1067	1132	4.9
123478-hexachlorodibenzofuran	1807	1986	1621	1805	10.1
123678-hexachlorodibenzofuran	1184	1238	1035	1152	9.1
234678-hexachlorodibenzofuran	675	731	573	660	12.1
123789-hexachlorodibenzofuran	57.6	40.9	37.4	45.3	23.9
1234678-heptachlorodibenzofuran	2793	3248	2583	2875	11.8
1234789-heptachlorodibenzofuran	230	227	199	219	7.7
Octachlorodibenzofuran	667	721	654	681	5.2
PCB 81	32.1	34.5	32.0	32.9	4.2
PCB 77	106	126	113	115	8.5
PCB 123	27.2	29.5	24.1	26.9	10.1
PCB 118	183	345	212	246	35.0
PCB 114	16.8	23.1	20.7	20.2	15.8
PCB 105	84.0	135	98.4	106	25.0
PCB 126	86.5	98.4	81.2	88.7	10.0
PCB 167	42.0	46.8	41.8	43.5	6.4
PCB 156 + PCB 157	79.1	106	78.7	87.9	17.7
PCB 169	32.1	41.8	32.0	35.3	16.0
PCB 189	44.5	54.1	46.7	48.5	10.4
Total Dioxins & Furans Only	14209	15085	13310	14202	6.2
Dioxin-Like PCBs	734	1040	780	851	19.4
Total Dioxins & Furans and PCBs	14943	16125	14090	15053	6.8
Total PCBs	6920	12059	7871	8950	30.5

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 30
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Wet Reference Concentration				Coefficient of Variation
	Test No. 4	Test No. 5	Test No. 6	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	231	185	209	208	11.1
12378-pentachlorodibenzo-p-dioxin	260	282	230	257	10.1
123478-hexachlorodibenzo-p-dioxin	111	113	90.8	105	11.5
123678-hexachlorodibenzo-p-dioxin	172	174	139	162	12.4
123789-hexachlorodibenzo-p-dioxin	275	264	129	223	36.5
1234678-heptachlorodibenzo-p-dioxin	525	623	521	556	10.4
Octachlorodibenzo-p-dioxin	1566	1713	1812	1697	7.3
2378-tetrachlorodibenzofuran	1324	1154	1228	1236	6.9
12378-pentachlorodibenzofuran	1449	1467	1453	1456	0.7
23478-pentachlorodibenzofuran	1228	1208	1120	1186	4.9
123478-hexachlorodibenzofuran	1898	2070	1701	1890	9.8
123678-hexachlorodibenzofuran	1244	1290	1086	1207	8.8
234678-hexachlorodibenzofuran	709	762	601	691	11.8
123789-hexachlorodibenzofuran	60.5	42.6	39.2	47.4	24.1
1234678-heptachlorodibenzofuran	2934	3386	2710	3010	11.4
1234789-heptachlorodibenzofuran	242	237	209	229	7.6
Octachlorodibenzofuran	701	752	686	713	4.8
PCB 81	33.8	35.9	33.5	34.4	3.8
PCB 77	112	131	119	120	8.0
PCB 123	28.6	30.8	25.3	28.2	9.8
PCB 118	192	359	222	258	34.5
PCB 114	17.7	24.1	21.7	21.1	15.4
PCB 105	88.3	141	103	111	24.5
PCB 126	90.9	103	85.2	92.9	9.6
PCB 167	44.1	48.7	43.9	45.6	6.0
PCB 156 + PCB 157	83.1	110	82.6	92.0	17.2
PCB 169	33.8	43.6	33.5	37.0	15.5
PCB 189	46.7	56.4	49.0	50.7	10.0
Total Dioxins & Furans Only	14930	15723	13966	14873	5.9
Dioxin-Like PCBs	771	1083	819	891	18.9
Total Dioxins & Furans and PCBs	15701	16807	14784	15764	6.4
Total PCBs	7271	12569	8258	9366	30.1

* At 25°C and 1 atmosphere

TABLE 31
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Emission Rate Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	4.33	3.50	3.95	3.93	10.6
12378-pentachlorodibenzo-p-dioxin	4.86	5.34	4.35	4.85	10.1
123478-hexachlorodibenzo-p-dioxin	2.08	2.13	1.72	1.97	11.4
123678-hexachlorodibenzo-p-dioxin	3.22	3.29	2.62	3.04	12.2
123789-hexachlorodibenzo-p-dioxin	5.15	5.00	2.44	4.20	36.3
1234678-heptachlorodibenzo-p-dioxin	9.82	11.8	9.85	10.5	10.8
Octachlorodibenzo-p-dioxin	29.3	32.4	34.2	32.0	7.8
2378-tetrachlorodibenzofuran	24.8	21.8	23.2	23.3	6.4
12378-pentachlorodibenzofuran	27.1	27.7	27.4	27.4	1.1
23478-pentachlorodibenzofuran	23.0	22.8	21.2	22.3	4.6
123478-hexachlorodibenzofuran	35.5	39.1	32.1	35.6	9.9
123678-hexachlorodibenzofuran	23.3	24.4	20.5	22.7	8.8
234678-hexachlorodibenzofuran	13.3	14.4	11.4	13.0	11.8
123789-hexachlorodibenzofuran	1.13	0.81	0.74	0.89	23.5
1234678-heptachlorodibenzofuran	54.9	64.0	51.2	56.7	11.6
1234789-heptachlorodibenzofuran	4.52	4.47	3.95	4.31	7.4
Octachlorodibenzofuran	13.1	14.2	13.0	13.4	5.0
PCB 81	0.63	0.68	0.63	0.65	4.1
PCB 77	2.09	2.47	2.24	2.27	8.5
PCB 123	0.53	0.58	0.48	0.53	9.8
PCB 118	3.60	6.79	4.19	4.86	34.9
PCB 114	0.33	0.46	0.41	0.40	15.9
PCB 105	1.65	2.67	1.95	2.09	25.0
PCB 126	1.70	1.94	1.61	1.75	9.8
PCB 167	0.83	0.92	0.83	0.86	6.3
PCB 156 + PCB 157	1.56	2.09	1.56	1.73	17.6
PCB 169	0.63	0.82	0.63	0.70	15.9
PCB 189	0.88	1.07	0.93	0.96	10.4
Total Dioxins & Furans Only	279	297	264	280	6.0
Dioxin-Like PCBs	14.4	20.5	15.5	16.8	19.3
Total Dioxins & Furans and PCBs	294	318	279	297	6.6
Total PCBs	136	238	156	177	30.5

TABLE 32
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	139	244	199	208	3.93
12378-pentachlorodibenzo-p-dioxin	172	302	246	257	4.85
123478-hexachlorodibenzo-p-dioxin	70.0	123	100	105	1.97
123678-hexachlorodibenzo-p-dioxin	108	190	154	162	3.04
123789-hexachlorodibenzo-p-dioxin	149	262	213	223	4.20
1234678-heptachlorodibenzo-p-dioxin	372	653	531	556	10.5
Octachlorodibenzo-p-dioxin	1134	1990	1620	1697	32.0
2378-tetrachlorodibenzofuran	826	1449	1180	1236	23.3
12378-pentachlorodibenzofuran	973	1708	1391	1456	27.4
23478-pentachlorodibenzofuran	792	1390	1132	1186	22.3
123478-hexachlorodibenzofuran	1263	2216	1805	1890	35.6
123678-hexachlorodibenzofuran	806	1416	1152	1207	22.7
234678-hexachlorodibenzofuran	461	810	660	691	13.0
123789-hexachlorodibenzofuran	31.7	55.6	45.3	47.4	0.89
1234678-heptachlorodibenzofuran	2011	3531	2875	3010	56.7
1234789-heptachlorodibenzofuran	153	269	219	229	4.31
Octachlorodibenzofuran	476	836	681	713	13.4
PCB 81	23.0	40.3	32.9	34.4	0.65
PCB 77	80.5	141	115	120	2.27
PCB 123	18.9	33.1	26.9	28.2	0.53
PCB 118	172	302	246	258	4.86
PCB 114	14.1	24.8	20.2	21.1	0.40
PCB 105	74.1	130	106	111	2.09
PCB 126	62.1	109	88.7	92.9	1.75
PCB 167	30.5	53.5	43.5	45.6	0.86
PCB 156 + PCB 157	61.5	108	87.9	92.0	1.73
PCB 169	24.7	43.4	35.3	37.0	0.70
PCB 189	33.9	59.5	48.5	50.7	0.96
Total Dioxins & Furans Only	9938	17443	14202	14873	280
Dioxin-Like PCBs	595	1045	851	891	16.8
Total Dioxins & Furans and PCBs	10534	18488	15053	15764	297
Total PCBs	6255	10989	8950	9366	177

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 33
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 4 pg TEQ/m³	Test No. 5 pg TEQ/m³	Test No. 6 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	155	123	140	139
12378-pentachlorodibenzo-p-dioxin	1.000	174	188	155	172
123478-hexachlorodibenzo-p-dioxin	0.100	7.42	7.49	6.10	7.00
123678-hexachlorodibenzo-p-dioxin	0.100	11.5	11.6	9.30	10.8
123789-hexachlorodibenzo-p-dioxin	0.100	18.4	17.6	8.68	14.9
1234678-heptachlorodibenzo-p-dioxin	0.010	3.51	4.15	3.50	3.72
Octachlorodibenzo-p-dioxin	0.0003	0.31	0.34	0.36	0.34
2378-tetrachlorodibenzofuran	0.100	88.6	76.8	82.4	82.6
12378-pentachlorodibenzofuran	0.030	29.1	29.3	29.2	29.2
23478-pentachlorodibenzofuran	0.300	246	241	225	238
123478-hexachlorodibenzofuran	0.100	127	138	114	126
123678-hexachlorodibenzofuran	0.100	83.2	85.8	72.9	80.6
234678-hexachlorodibenzofuran	0.100	47.4	50.7	40.4	46.1
123789-hexachlorodibenzofuran	0.100	4.05	2.83	2.63	3.17
1234678-heptachlorodibenzofuran	0.010	19.6	22.5	18.2	20.1
1234789-heptachlorodibenzofuran	0.010	1.62	1.57	1.40	1.53
Octachlorodibenzofuran	0.0003	0.14	0.15	0.14	0.14
PCB 81	0.0003	0.0068	0.0072	0.0068	0.0069
PCB 77	0.0001	0.0075	0.0087	0.0080	0.0080
PCB 123	0.00003	0.00057	0.00061	0.00051	0.00057
PCB 118	0.00003	0.0039	0.0072	0.0045	0.0052
PCB 114	0.00003	0.00035	0.00048	0.00044	0.00042
PCB 105	0.00003	0.0018	0.0028	0.0021	0.0022
PCB 126	0.100	6.08	6.82	5.71	6.21
PCB 167	0.00003	0.00089	0.00097	0.00088	0.00091
PCB 156 + PCB 157	0.00003	0.0017	0.0022	0.0017	0.0018
PCB 169	0.030	0.68	0.87	0.68	0.74
PCB 189	0.00003	0.00094	0.0011	0.00099	0.0010
Total Dioxins & Furans Only		1017	1000	910	976
Dioxin-Like PCBs		6.78	7.73	6.42	6.97
Total Dioxins & Furans and PCBs		1023	1008	916	983

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 34
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	272	218	244	244
12378-pentachlorodibenzo-p-dioxin	1.000	305	332	269	302
123478-hexachlorodibenzo-p-dioxin	0.100	13.0	13.3	10.6	12.3
123678-hexachlorodibenzo-p-dioxin	0.100	20.2	20.5	16.2	19.0
123789-hexachlorodibenzo-p-dioxin	0.100	32.3	31.1	15.1	26.2
1234678-heptachlorodibenzo-p-dioxin	0.010	6.16	7.33	6.09	6.53
Octachlorodibenzo-p-dioxin	0.0003	0.55	0.60	0.63	0.60
2378-tetrachlorodibenzofuran	0.100	155	136	143	145
12378-pentachlorodibenzofuran	0.030	51.0	51.8	50.9	51.2
23478-pentachlorodibenzofuran	0.300	432	427	392	417
123478-hexachlorodibenzofuran	0.100	223	244	199	222
123678-hexachlorodibenzofuran	0.100	146	152	127	142
234678-hexachlorodibenzofuran	0.100	83.2	89.6	70.2	81.0
123789-hexachlorodibenzofuran	0.100	7.10	5.01	4.58	5.56
1234678-heptachlorodibenzofuran	0.010	34.4	39.8	31.6	35.3
1234789-heptachlorodibenzofuran	0.010	2.83	2.78	2.44	2.69
Octachlorodibenzofuran	0.0003	0.25	0.27	0.24	0.25
PCB 81	0.0003	0.012	0.013	0.012	0.012
PCB 77	0.0001	0.013	0.015	0.014	0.014
PCB 123	0.00003	0.0010	0.0011	0.00089	0.00099
PCB 118	0.00003	0.0068	0.013	0.0078	0.0091
PCB 114	0.00003	0.00062	0.00085	0.00076	0.00074
PCB 105	0.00003	0.0031	0.0050	0.0036	0.0039
PCB 126	0.100	10.7	12.1	9.94	10.9
PCB 167	0.00003	0.0016	0.0017	0.0015	0.0016
PCB 156 + PCB 157	0.00003	0.0029	0.0039	0.0029	0.0032
PCB 169	0.030	1.19	1.54	1.18	1.30
PCB 189	0.00003	0.0016	0.0020	0.0017	0.0018
Total Dioxins & Furans Only		1784	1770	1583	1712
Dioxin-Like PCBs		11.9	13.7	11.2	12.2
Total Dioxins & Furans and PCBs		1796	1783	1594	1724

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 35
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	220	177	199	199
12378-pentachlorodibenzo-p-dioxin	1.000	247	271	220	246
123478-hexachlorodibenzo-p-dioxin	0.100	10.6	10.8	8.66	10.0
123678-hexachlorodibenzo-p-dioxin	0.100	16.4	16.7	13.2	15.4
123789-hexachlorodibenzo-p-dioxin	0.100	26.2	25.3	12.3	21.3
1234678-heptachlorodibenzo-p-dioxin	0.010	4.99	5.98	4.97	5.31
Octachlorodibenzo-p-dioxin	0.0003	0.45	0.49	0.52	0.49
2378-tetrachlorodibenzofuran	0.100	126	111	117	118
12378-pentachlorodibenzofuran	0.030	41.4	42.2	41.5	41.7
23478-pentachlorodibenzofuran	0.300	351	348	320	340
123478-hexachlorodibenzofuran	0.100	181	199	162	180
123678-hexachlorodibenzofuran	0.100	118	124	104	115
234678-hexachlorodibenzofuran	0.100	67.5	73.1	57.3	66.0
123789-hexachlorodibenzofuran	0.100	5.76	4.09	3.74	4.53
1234678-heptachlorodibenzofuran	0.010	27.9	32.5	25.8	28.7
1234789-heptachlorodibenzofuran	0.010	2.30	2.27	1.99	2.19
Octachlorodibenzofuran	0.0003	0.20	0.22	0.20	0.20
PCB 81	0.0003	0.0096	0.010	0.0096	0.0099
PCB 77	0.0001	0.011	0.013	0.011	0.011
PCB 123	0.00003	0.00082	0.00089	0.00072	0.00081
PCB 118	0.00003	0.0055	0.010	0.0063	0.0074
PCB 114	0.00003	0.00050	0.00069	0.00062	0.00061
PCB 105	0.00003	0.0025	0.0041	0.0030	0.0032
PCB 126	0.100	8.65	9.84	8.12	8.87
PCB 167	0.00003	0.0013	0.0014	0.0013	0.0013
PCB 156 + PCB 157	0.00003	0.0024	0.0032	0.0024	0.0026
PCB 169	0.030	0.96	1.26	0.96	1.06
PCB 189	0.00003	0.0013	0.0016	0.0014	0.0015
Total Dioxins & Furans Only		1447	1443	1292	1394
Dioxin-Like PCBs		9.65	11.1	9.11	9.97
Total Dioxins & Furans and PCBs		1456	1454	1301	1404

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 36
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	220	177	199	199
12378-pentachlorodibenzo-p-dioxin	0.500	124	135	110	123
123478-hexachlorodibenzo-p-dioxin	0.100	10.6	10.8	8.66	10.0
123678-hexachlorodibenzo-p-dioxin	0.100	16.4	16.7	13.2	15.4
123789-hexachlorodibenzo-p-dioxin	0.100	26.2	25.3	12.3	21.3
1234678-heptachlorodibenzo-p-dioxin	0.010	4.99	5.98	4.97	5.31
Octachlorodibenzo-p-dioxin	0.001	1.49	1.64	1.73	1.62
2378-tetrachlorodibenzofuran	0.100	126	111	117	118
12378-pentachlorodibenzofuran	0.050	69.0	70.4	69.2	69.5
23478-pentachlorodibenzofuran	0.500	584	580	534	566
123478-hexachlorodibenzofuran	0.100	181	199	162	180
123678-hexachlorodibenzofuran	0.100	118	124	104	115
234678-hexachlorodibenzofuran	0.100	67.5	73.1	57.3	66.0
123789-hexachlorodibenzofuran	0.100	5.76	4.09	3.74	4.53
1234678-heptachlorodibenzofuran	0.010	27.9	32.5	25.8	28.7
1234789-heptachlorodibenzofuran	0.010	2.30	2.27	1.99	2.19
Octachlorodibenzofuran	0.001	0.67	0.72	0.65	0.68
Total Dioxins & Furans		1586	1569	1425	1527

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

TABLE 37
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	231	185	209	208
12378-pentachlorodibenzo-p-dioxin	1.000	260	282	230	257
123478-hexachlorodibenzo-p-dioxin	0.100	11.1	11.3	9.08	10.5
123678-hexachlorodibenzo-p-dioxin	0.100	17.2	17.4	13.9	16.2
123789-hexachlorodibenzo-p-dioxin	0.100	27.5	26.4	12.9	22.3
1234678-heptachlorodibenzo-p-dioxin	0.010	5.25	6.23	5.21	5.56
Octachlorodibenzo-p-dioxin	0.0003	0.47	0.51	0.54	0.51
2378-tetrachlorodibenzofuran	0.100	132	115	123	124
12378-pentachlorodibenzofuran	0.030	43.5	44.0	43.6	43.7
23478-pentachlorodibenzofuran	0.300	368	362	336	356
123478-hexachlorodibenzofuran	0.100	190	207	170	189
123678-hexachlorodibenzofuran	0.100	124	129	109	121
234678-hexachlorodibenzofuran	0.100	70.9	76.2	60.1	69.1
123789-hexachlorodibenzofuran	0.100	6.05	4.26	3.92	4.74
1234678-heptachlorodibenzofuran	0.010	29.3	33.9	27.1	30.1
1234789-heptachlorodibenzofuran	0.010	2.42	2.37	2.09	2.29
Octachlorodibenzofuran	0.0003	0.21	0.23	0.21	0.21
PCB 81	0.0003	0.010	0.011	0.010	0.010
PCB 77	0.0001	0.011	0.013	0.012	0.012
PCB 123	0.00003	0.00086	0.00092	0.00076	0.00085
PCB 118	0.00003	0.0058	0.011	0.0067	0.0077
PCB 114	0.00003	0.00053	0.00072	0.00065	0.00063
PCB 105	0.00003	0.0026	0.0042	0.0031	0.0033
PCB 126	0.100	9.09	10.3	8.52	9.29
PCB 167	0.00003	0.0013	0.0015	0.0013	0.0014
PCB 156 + PCB 157	0.00003	0.0025	0.0033	0.0025	0.0028
PCB 169	0.030	1.01	1.31	1.01	1.11
PCB 189	0.00003	0.0014	0.0017	0.0015	0.0015
Total Dioxins & Furans Only		1520	1504	1356	1460
Dioxin-Like PCBs		10.1	11.6	9.56	10.4
Total Dioxins & Furans and PCBs		1530	1515	1365	1470

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 38
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 4 ng TEQ/s	Test No. 5 ng TEQ/s	Test No. 6 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	4.33	3.50	3.95	3.93
12378-pentachlorodibenzo-p-dioxin	1.000	4.86	5.34	4.35	4.85
123478-hexachlorodibenzo-p-dioxin	0.100	0.21	0.21	0.17	0.20
123678-hexachlorodibenzo-p-dioxin	0.100	0.32	0.33	0.26	0.30
123789-hexachlorodibenzo-p-dioxin	0.100	0.52	0.50	0.24	0.42
1234678-heptachlorodibenzo-p-dioxin	0.010	0.098	0.12	0.098	0.10
Octachlorodibenzo-p-dioxin	0.0003	0.0088	0.0097	0.010	0.0096
2378-tetrachlorodibenzofuran	0.100	2.48	2.18	2.32	2.33
12378-pentachlorodibenzofuran	0.030	0.81	0.83	0.82	0.82
23478-pentachlorodibenzofuran	0.300	6.90	6.85	6.35	6.70
123478-hexachlorodibenzofuran	0.100	3.55	3.91	3.21	3.56
123678-hexachlorodibenzofuran	0.100	2.33	2.44	2.05	2.27
234678-hexachlorodibenzofuran	0.100	1.33	1.44	1.14	1.30
123789-hexachlorodibenzofuran	0.100	0.11	0.081	0.074	0.089
1234678-heptachlorodibenzofuran	0.010	0.55	0.64	0.51	0.57
1234789-heptachlorodibenzofuran	0.010	0.045	0.045	0.039	0.043
Octachlorodibenzofuran	0.0003	0.0039	0.0043	0.0039	0.0040
PCB 81	0.0003	0.00019	0.00020	0.00019	0.00019
PCB 77	0.0001	0.00021	0.00025	0.00022	0.00023
PCB 123	0.00003	0.000016	0.000017	0.000014	0.000016
PCB 118	0.00003	0.00011	0.00020	0.00013	0.00015
PCB 114	0.00003	0.0000099	0.000014	0.000012	0.000012
PCB 105	0.00003	0.000050	0.000080	0.000058	0.000063
PCB 126	0.100	0.17	0.19	0.16	0.18
PCB 167	0.00003	0.000025	0.000028	0.000025	0.000026
PCB 156 + PCB 157	0.00003	0.000047	0.000063	0.000047	0.000052
PCB 169	0.030	0.019	0.025	0.019	0.021
PCB 189	0.00003	0.000026	0.000032	0.000028	0.000029
Total Dioxins & Furans Only		28.5	28.4	25.6	27.5
Dioxin-Like PCBs		0.19	0.22	0.18	0.20
Total Dioxins & Furans and PCBs		28.6	28.7	25.8	27.7

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 39
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	139	244	199	208	3.93
12378-pentachlorodibenzo-p-dioxin	172	302	246	257	4.85
123478-hexachlorodibenzo-p-dioxin	7.00	12.3	10.0	10.5	0.20
123678-hexachlorodibenzo-p-dioxin	10.8	19.0	15.4	16.2	0.30
123789-hexachlorodibenzo-p-dioxin	14.9	26.2	21.3	22.3	0.42
1234678-heptachlorodibenzo-p-dioxin	3.72	6.53	5.31	5.56	0.10
Octachlorodibenzo-p-dioxin	0.34	0.60	0.49	0.51	0.0096
2378-tetrachlorodibenzofuran	82.6	145	118	124	2.33
12378-pentachlorodibenzofuran	29.2	51.2	41.7	43.7	0.82
23478-pentachlorodibenzofuran	238	417	340	356	6.70
123478-hexachlorodibenzofuran	126	222	180	189	3.56
123678-hexachlorodibenzofuran	80.6	142	115	121	2.27
234678-hexachlorodibenzofuran	46.1	81.0	66.0	69.1	1.30
123789-hexachlorodibenzofuran	3.17	5.56	4.53	4.74	0.089
1234678-heptachlorodibenzofuran	20.1	35.3	28.7	30.1	0.57
1234789-heptachlorodibenzofuran	1.53	2.69	2.19	2.29	0.043
Octachlorodibenzofuran	0.14	0.25	0.20	0.21	0.0040
PCB 81	0.0069	0.012	0.0099	0.010	0.00019
PCB 77	0.0080	0.014	0.011	0.012	0.00023
PCB 123	0.00057	0.00099	0.00081	0.00085	0.000016
PCB 118	0.0052	0.0091	0.0074	0.0077	0.00015
PCB 114	0.00042	0.00074	0.00061	0.00063	0.000012
PCB 105	0.0022	0.0039	0.0032	0.0033	0.000063
PCB 126	6.21	10.9	8.87	9.29	0.18
PCB 167	0.00091	0.0016	0.0013	0.0014	0.000026
PCB 156 + PCB 157	0.0018	0.0032	0.0026	0.0028	0.000052
PCB 169	0.74	1.30	1.06	1.11	0.021
PCB 189	0.0010	0.0018	0.0015	0.0015	0.000029
Total Dioxins & Furans Only	976	1712	1394	1460	27.5
Dioxin-Like PCBs	6.97	12.2	9.97	10.4	0.20
Total Dioxins & Furans and PCBs	983	1724	1404	1470	27.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

TABLE 40
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	139	244	199	208	3.93
12378-pentachlorodibenzo-p-dioxin	172	302	246	257	4.85
123478-hexachlorodibenzo-p-dioxin	7.00	12.3	10.0	10.5	0.20
123678-hexachlorodibenzo-p-dioxin	10.8	19.0	15.4	16.2	0.30
123789-hexachlorodibenzo-p-dioxin	14.9	26.2	21.3	22.3	0.42
1234678-heptachlorodibenzo-p-dioxin	3.72	6.53	5.31	5.56	0.10
Octachlorodibenzo-p-dioxin	0.34	0.60	0.49	0.51	0.0096
2378-tetrachlorodibenzofuran	82.6	145	118	124	2.33
12378-pentachlorodibenzofuran	29.2	51.2	41.7	43.7	0.82
23478-pentachlorodibenzofuran	238	417	340	356	6.70
123478-hexachlorodibenzofuran	126	222	180	189	3.56
123678-hexachlorodibenzofuran	80.6	142	115	121	2.27
234678-hexachlorodibenzofuran	46.1	81.0	66.0	69.1	1.30
123789-hexachlorodibenzofuran	3.17	5.56	4.53	4.74	0.089
1234678-heptachlorodibenzofuran	20.1	35.3	28.7	30.1	0.57
1234789-heptachlorodibenzofuran	1.53	2.69	2.19	2.29	0.043
Octachlorodibenzofuran	0.14	0.25	0.20	0.21	0.0040
PCB 81	0.0069	0.012	0.0099	0.010	0.00019
PCB 77	0.0080	0.014	0.011	0.012	0.00023
PCB 123	0.00057	0.00099	0.00081	0.00085	0.000016
PCB 118	0.0052	0.0091	0.0074	0.0077	0.00015
PCB 114	0.00042	0.00074	0.00061	0.00063	0.000012
PCB 105	0.0022	0.0039	0.0032	0.0033	0.000063
PCB 126	6.21	10.9	8.87	9.29	0.18
PCB 167	0.00091	0.0016	0.0013	0.0014	0.000026
PCB 156 + PCB 157	0.0018	0.0032	0.0026	0.0028	0.000052
PCB 169	0.74	1.30	1.06	1.11	0.021
PCB 189	0.0010	0.0018	0.0015	0.0015	0.000029
Total Dioxins & Furans Only	976	1712	1394	1460	27.5
Dioxin-Like PCBs	6.97	12.2	9.97	10.4	0.20
Total Dioxins & Furans and PCBs	983	1724	1404	1470	27.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 41
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 4 - Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.5	<0.43	<0.74	<0.62	<0.62	<0.012
12378-pentachlorodibenzo-p-dioxin	8.5	1.05	1.79	1.50	1.51	0.029
123478-hexachlorodibenzo-p-dioxin	22.1	2.74	4.65	3.90	3.93	0.076
123678-hexachlorodibenzo-p-dioxin	59.0	7.31	12.4	10.4	10.5	0.20
123789-hexachlorodibenzo-p-dioxin	51.7	6.41	10.9	9.12	9.20	0.18
1234678-heptachlorodibenzo-p-dioxin	583	72.3	123	103	104	2.00
Octachlorodibenzo-p-dioxin	1130	140	238	199	201	3.88
2378-tetrachlorodibenzofuran	17	2.11	3.58	3.00	3.02	0.058
12378-pentachlorodibenzofuran	14.1	1.75	2.97	2.49	2.51	0.048
23478-pentachlorodibenzofuran	21.9	2.71	4.61	3.86	3.90	0.075
123478-hexachlorodibenzofuran	54.1	6.71	11.4	9.54	9.62	0.19
123678-hexachlorodibenzofuran	<28	<3.47	<5.89	<4.94	<4.98	<0.096
234678-hexachlorodibenzofuran	37.3	4.62	7.85	6.58	6.63	0.13
123789-hexachlorodibenzofuran	<3.7	<0.46	<0.78	<0.65	<0.66	<0.013
1234678-heptachlorodibenzofuran	205	25.4	43.1	36.1	36.5	0.70
1234789-heptachlorodibenzofuran	23.0	2.85	4.84	4.06	4.09	0.08
Octachlorodibenzofuran	177	21.9	37.2	31.2	31.5	0.61
PCB 81	<42	<5.21	<8.84	<7.41	<7.47	<0.14
PCB 77	310	38.4	65.2	54.7	55.1	1.06
PCB 123	150	18.6	31.6	26.4	26.7	0.51
PCB 118	13000	1611	2735	2292	2312	44.6
PCB 114	300	37.2	63.1	52.9	53.4	1.03
PCB 105	2900	359	610	511	516	9.95
PCB 126	<40	<4.96	<8.42	<7.05	<7.11	<0.14
PCB 167	49	6.07	10.3	8.64	8.72	0.17
PCB 156 + PCB 157	140	17.4	29.5	24.7	24.9	0.48
PCB 169	<24	<2.97	<5.05	<4.23	<4.27	<0.082
PCB 189	<17	<2.11	<3.58	<3.00	<3.02	<0.058
Total Dioxins & Furans Only	<2439	<302	<513	<430	<434	<8.36
Dioxin-Like PCBs	<16972	<2104	<3571	<2992	<3019	<58.2
Total Dioxins & Furans and PCBs	<19411	<2406	<4084	<3423	<3453	<66.6
Total PCBs	480000	59491	100989	84633	85380	1646

Dry Gas Volume Sampled (Rm³*) :	4.753
Actual Flowrate (m³/s) :	27.7
Dry Reference Flowrate (Rm³/s*) :	16.3
Dry Adjusted Flowrate (Rm³/s**) :	19.5
Wet Reference Flowrate (Rm³/s*) :	19.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 5 - Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.6	<0.43	<0.73	<0.62	<0.61	<0.012
12378-pentachlorodibenzo-p-dioxin	6.3	0.74	1.27	1.08	1.07	0.021
123478-hexachlorodibenzo-p-dioxin	17.4	2.06	3.52	2.98	2.95	0.059
123678-hexachlorodibenzo-p-dioxin	47.4	5.60	9.58	8.11	8.05	0.16
123789-hexachlorodibenzo-p-dioxin	39.2	4.64	7.92	6.70	6.66	0.13
1234678-heptachlorodibenzo-p-dioxin	452	53.4	91.4	77.3	76.8	1.53
Octachlorodibenzo-p-dioxin	953	113	193	163	162	3.23
2378-tetrachlorodibenzofuran	<8.3	<0.98	<1.68	<1.42	<1.41	<0.028
12378-pentachlorodibenzofuran	9.2	1.09	1.86	1.57	1.56	0.031
23478-pentachlorodibenzofuran	15.7	1.86	3.17	2.68	2.67	0.053
123478-hexachlorodibenzofuran	43.4	5.13	8.77	7.42	7.37	0.15
123678-hexachlorodibenzofuran	<21	<2.48	<4.24	<3.59	<3.57	<0.071
234678-hexachlorodibenzofuran	31.7	3.75	6.41	5.42	5.38	0.11
123789-hexachlorodibenzofuran	<3.2	<0.38	<0.65	<0.55	<0.54	<0.011
1234678-heptachlorodibenzofuran	168	19.9	34.0	28.7	28.5	0.57
1234789-heptachlorodibenzofuran	14.5	1.71	2.93	2.48	2.46	0.049
Octachlorodibenzofuran	142	16.8	28.7	24.3	24.1	0.48
PCB 81	<28	<3.31	<5.66	<4.79	<4.75	<0.095
PCB 77	430	50.8	86.9	73.5	73.0	1.46
PCB 123	130	15.4	26.3	22.2	22.1	0.44
PCB 118	14000	1655	2829	2394	2377	47.5
PCB 114	300	35.5	61	51.3	50.9	1.02
PCB 105	3300	390	667	564	560	11.2
PCB 126	<24	<2.84	<4.85	<4.10	<4.08	<0.081
PCB 167	180	21.3	36.4	30.8	30.6	0.61
PCB 156 + PCB 157	520	61.5	105	88.9	88.3	1.76
PCB 169	<24	<2.84	<4.85	<4.10	<4.08	<0.081
PCB 189	37	4.38	7.48	6.33	6.28	0.13
Total Dioxins & Furans Only	<1976	<234	<399	<338	<336	<6.70
Dioxin-Like PCBs	<18973	<2243	<3834	<3245	<3222	<64.3
Total Dioxins & Furans and PCBs	<20949	<2477	<4234	<3583	<3558	<71.0
Total PCBs	450000	53210	90946	76958	76418	1526

Dry Gas Volume Sampled (Rm³*) :	4.948
Actual Flowrate (m³/s) :	28.7
Dry Reference Flowrate (Rm³/s*) :	16.8
Dry Adjusted Flowrate (Rm³/s**) :	19.8
Wet Reference Flowrate (Rm³/s*) :	20.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 43
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 6 - Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.9	<0.48	<0.81	<0.69	<0.69	<0.013
12378-pentachlorodibenzo-p-dioxin	8.5	1.05	1.77	1.50	1.50	0.029
123478-hexachlorodibenzo-p-dioxin	19.0	2.34	3.96	3.36	3.36	0.065
123678-hexachlorodibenzo-p-dioxin	55.7	6.86	11.6	9.84	9.85	0.19
123789-hexachlorodibenzo-p-dioxin	28.3	3.49	5.89	5.00	5.01	0.097
1234678-heptachlorodibenzo-p-dioxin	550	67.8	115	97.2	97.3	1.89
Octachlorodibenzo-p-dioxin	1320	163	275	233	233	4.53
2378-tetrachlorodibenzofuran	12.7	1.57	2.64	2.24	2.25	0.044
12378-pentachlorodibenzofuran	10.5	1.29	2.19	1.86	1.86	0.036
23478-pentachlorodibenzofuran	19.9	2.45	4.14	3.52	3.52	0.068
123478-hexachlorodibenzofuran	20.2	2.49	4.21	3.57	3.57	0.069
123678-hexachlorodibenzofuran	<25	<3.08	<5.21	<4.42	<4.42	<0.086
234678-hexachlorodibenzofuran	34.3	4.23	7.14	6.06	6.07	0.12
123789-hexachlorodibenzofuran	<3.7	<0.46	<0.77	<0.65	<0.65	<0.013
1234678-heptachlorodibenzofuran	190	23.4	39.6	33.6	33.6	0.65
1234789-heptachlorodibenzofuran	21.4	2.64	4.46	3.78	3.79	0.073
Octachlorodibenzofuran	186	22.9	38.7	32.9	32.9	0.64
PCB 81	<42	<5.18	<8.74	<7.42	<7.43	<0.14
PCB 77	100	12.3	20.8	17.7	17.7	0.34
PCB 123	<38	<4.68	<7.91	<6.71	<6.72	<0.13
PCB 118	2400	296	500	424	425	8.24
PCB 114	57	7.02	11.9	10.1	10.1	0.20
PCB 105	770	94.9	160	136	136	2.64
PCB 126	<35	<4.31	<7.29	<6.18	<6.19	<0.12
PCB 167	92	11.3	19.2	16.3	16.3	0.32
PCB 156 + PCB 157	260	32.0	54.1	45.9	46.0	0.89
PCB 169	<18	<2.22	<3.75	<3.2	<3.2	<0.062
PCB 189	59	7.27	12.3	10.4	10.4	0.20
Total Dioxins & Furans Only	<2509	<309	<522	<443	<444	<8.61
Dioxin-Like PCBs	<3871	<477	<806	<684	<685	<13.3
Total Dioxins & Furans and PCBs	<6380	<786	<1328	<1127	<1129	<21.9
Total PCBs	88000	10845	18322	15550	15566	302

Dry Gas Volume Sampled (Rm³*) :	4.803
Actual Flowrate (m³/s) :	27.9
Dry Reference Flowrate (Rm³/s*) :	16.5
Dry Adjusted Flowrate (Rm³/s**) :	19.4
Wet Reference Flowrate (Rm³/s*) :	19.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 44
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	<0.43	<0.43	<0.48	<0.45	6.6
12378-pentachlorodibenzo-p-dioxin	1.05	0.74	1.05	0.95	18.6
123478-hexachlorodibenzo-p-dioxin	2.74	2.06	2.34	2.38	14.4
123678-hexachlorodibenzo-p-dioxin	7.31	5.60	6.86	6.59	13.4
123789-hexachlorodibenzo-p-dioxin	6.41	4.64	3.49	4.84	30.4
1234678-heptachlorodibenzo-p-dioxin	72.3	53.4	67.8	64.5	15.2
Octachlorodibenzo-p-dioxin	140	113	163	138	18.1
2378-tetrachlorodibenzofuran	2.11	<0.98	1.57	<1.55	36.3
12378-pentachlorodibenzofuran	1.75	1.09	1.29	1.38	24.5
23478-pentachlorodibenzofuran	2.71	1.86	2.45	2.34	18.8
123478-hexachlorodibenzofuran	6.71	5.13	2.49	4.78	44.6
123678-hexachlorodibenzofuran	<3.47	<2.48	<3.08	<3.01	16.5
234678-hexachlorodibenzofuran	4.62	3.75	4.23	4.20	10.4
123789-hexachlorodibenzofuran	<0.46	<0.38	<0.46	<0.43	10.6
1234678-heptachlorodibenzofuran	25.4	19.9	23.4	22.9	12.3
1234789-heptachlorodibenzofuran	2.85	1.71	2.64	2.40	25.2
Octachlorodibenzofuran	21.9	16.8	22.9	20.5	16.0
PCB 81	<5.21	<3.31	<5.18	<4.56	23.8
PCB 77	38.4	50.8	12.3	33.9	58.1
PCB 123	18.6	15.4	<4.68	<12.9	56.5
PCB 118	1611	1655	296	1187	65.1
PCB 114	37.2	35.5	7.02	26.6	63.8
PCB 105	359	390	94.9	282	57.7
PCB 126	<4.96	<2.84	<4.31	<4.04	26.9
PCB 167	6.07	21.3	11.3	12.9	59.9
PCB 156 + PCB 157	17.4	61.5	32.0	37.0	60.8
PCB 169	<2.97	<2.84	<2.22	<2.68	15.1
PCB 189	<2.11	4.38	7.27	<4.58	56.5
Total Dioxins & Furans Only	<302	<234	<309	<282	14.8
Dioxin-Like PCBs	<2104	<2243	<477	<1608	61.1
Total Dioxins & Furans and PCBs	<2406	<2477	<786	<1890	50.6
Total PCBs	59491	53210	10845	41182	64.3

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Reference Concentration				Coefficient of Variation
	Test No. 4	Test No. 5	Test No. 6	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.74	<0.73	<0.81	<0.76	6.1
12378-pentachlorodibenzo-p-dioxin	1.79	1.27	1.77	1.61	18.1
123478-hexachlorodibenzo-p-dioxin	4.65	3.52	3.96	4.04	14.1
123678-hexachlorodibenzo-p-dioxin	12.4	9.58	11.6	11.2	13.0
123789-hexachlorodibenzo-p-dioxin	10.9	7.92	5.89	8.23	30.5
1234678-heptachlorodibenzo-p-dioxin	123	91.4	115	110	14.8
Octachlorodibenzo-p-dioxin	238	193	275	235	17.5
2378-tetrachlorodibenzofuran	3.58	<1.68	2.64	<2.63	36.1
12378-pentachlorodibenzofuran	2.97	1.86	2.19	2.34	24.3
23478-pentachlorodibenzofuran	4.61	3.17	4.14	3.97	18.4
123478-hexachlorodibenzofuran	11.4	8.77	4.21	8.12	44.7
123678-hexachlorodibenzofuran	<5.89	<4.24	<5.21	<5.11	16.2
234678-hexachlorodibenzofuran	7.85	6.41	7.14	7.13	10.1
123789-hexachlorodibenzofuran	<0.78	<0.65	<0.77	<0.73	10.1
1234678-heptachlorodibenzofuran	43.1	34.0	39.6	38.9	11.9
1234789-heptachlorodibenzofuran	4.84	2.93	4.46	4.08	24.8
Octachlorodibenzofuran	37.2	28.7	38.7	34.9	15.5
PCB 81	<8.84	<5.66	<8.74	<7.75	23.3
PCB 77	65.2	86.9	20.8	57.6	58.4
PCB 123	31.6	26.3	<7.91	<21.9	56.6
PCB 118	2735	2829	500	2021	65.2
PCB 114	63.1	61	11.9	45.2	63.9
PCB 105	610	667	160	479	57.9
PCB 126	<8.42	<4.85	<7.29	<6.85	26.6
PCB 167	10.3	36.4	19.2	21.9	60.4
PCB 156 + PCB 157	29.5	105	54.1	62.9	61.3
PCB 169	<5.05	<4.85	<3.75	<4.55	15.4
PCB 189	<3.58	7.48	12.3	<7.78	56.1
Total Dioxins & Furans Only	<513	<399	<522	<478	14.3
Dioxin-Like PCBs	<3571	<3834	<806	<2737	61.3
Total Dioxins & Furans and PCBs	<4084	<4234	<1328	<3215	50.9
Total PCBs	100989	90946	18322	70086	64.4

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.62	<0.62	<0.69	<0.64	6.6
12378-pentachlorodibenzo-p-dioxin	1.50	1.08	1.50	1.36	18.0
123478-hexachlorodibenzo-p-dioxin	3.90	2.98	3.36	3.41	13.6
123678-hexachlorodibenzo-p-dioxin	10.4	8.11	9.84	9.45	12.7
123789-hexachlorodibenzo-p-dioxin	9.12	6.70	5.00	6.94	29.8
1234678-heptachlorodibenzo-p-dioxin	103	77.3	97.2	92.4	14.5
Octachlorodibenzo-p-dioxin	199	163	233	198	17.7
2378-tetrachlorodibenzofuran	3.00	<1.42	2.24	<2.22	35.5
12378-pentachlorodibenzofuran	2.49	1.57	1.86	1.97	23.7
23478-pentachlorodibenzofuran	3.86	2.68	3.52	3.35	18.0
123478-hexachlorodibenzofuran	9.54	7.42	3.57	6.84	44.2
123678-hexachlorodibenzofuran	<4.94	<3.59	<4.42	<4.32	15.7
234678-hexachlorodibenzofuran	6.58	5.42	6.06	6.02	9.6
123789-hexachlorodibenzofuran	<0.65	<0.55	<0.65	<0.62	9.9
1234678-heptachlorodibenzofuran	36.1	28.7	33.6	32.8	11.5
1234789-heptachlorodibenzofuran	4.06	2.48	3.78	3.44	24.5
Octachlorodibenzofuran	31.2	24.3	32.9	29.5	15.5
PCB 81	<7.41	<4.79	<7.42	<6.54	23.2
PCB 77	54.7	73.5	17.7	48.6	58.4
PCB 123	26.4	22.2	<6.71	<18.5	56.3
PCB 118	2292	2394	424	1703	65.1
PCB 114	52.9	51.3	10.1	38.1	63.7
PCB 105	511	564	136	404	57.8
PCB 126	<7.05	<4.10	<6.18	<5.78	26.2
PCB 167	8.64	30.8	16.3	18.6	60.6
PCB 156 + PCB 157	24.7	88.9	45.9	53.2	61.5
PCB 169	<4.23	<4.10	<3.2	<3.84	14.9
PCB 189	<3.00	6.33	10.4	<6.58	56.5
Total Dioxins & Furans Only	<430	<338	<443	<404	14.2
Dioxin-Like PCBs	<2992	<3245	<684	<2307	61.2
Total Dioxins & Furans and PCBs	<3423	<3583	<1127	<2711	50.7
Total PCBs	84633	76958	15550	59047	64.1

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Wet Reference Concentration				Coefficient of Variation
	Test No. 4	Test No. 5	Test No. 6	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.62	<0.61	<0.69	<0.64	6.6
12378-pentachlorodibenzo-p-dioxin	1.51	1.07	1.50	1.36	18.6
123478-hexachlorodibenzo-p-dioxin	3.93	2.95	3.36	3.42	14.4
123678-hexachlorodibenzo-p-dioxin	10.5	8.05	9.85	9.47	13.4
123789-hexachlorodibenzo-p-dioxin	9.20	6.66	5.01	6.95	30.4
1234678-heptachlorodibenzo-p-dioxin	104	76.8	97.3	92.6	15.2
Octachlorodibenzo-p-dioxin	201	162	233	199	18.0
2378-tetrachlorodibenzofuran	3.02	<1.41	2.25	<2.23	36.3
12378-pentachlorodibenzofuran	2.51	1.56	1.86	1.98	24.5
23478-pentachlorodibenzofuran	3.90	2.67	3.52	3.36	18.7
123478-hexachlorodibenzofuran	9.62	7.37	3.57	6.86	44.6
123678-hexachlorodibenzofuran	<4.98	<3.57	<4.42	<4.32	16.5
234678-hexachlorodibenzofuran	6.63	5.38	6.07	6.03	10.4
123789-hexachlorodibenzofuran	<0.66	<0.54	<0.65	<0.62	10.5
1234678-heptachlorodibenzofuran	36.5	28.5	33.6	32.9	12.2
1234789-heptachlorodibenzofuran	4.09	2.46	3.79	3.45	25.1
Octachlorodibenzofuran	31.5	24.1	32.9	29.5	16.0
PCB 81	<7.47	<4.75	<7.43	<6.55	23.8
PCB 77	55.1	73.0	17.7	48.6	58.1
PCB 123	26.7	22.1	<6.72	<18.5	56.5
PCB 118	2312	2377	425	1705	65.1
PCB 114	53.4	50.9	10.1	38.1	63.8
PCB 105	516	560	136	404	57.7
PCB 126	<7.11	<4.08	<6.19	<5.79	26.9
PCB 167	8.72	30.6	16.3	18.5	59.9
PCB 156 + PCB 157	24.9	88.3	46.0	53.1	60.8
PCB 169	<4.27	<4.08	<3.2	<3.84	15.1
PCB 189	<3.02	6.28	10.4	<6.58	56.5
Total Dioxins & Furans Only	<434	<336	<444	<404	14.8
Dioxin-Like PCBs	<3019	<3222	<685	<2309	61.1
Total Dioxins & Furans and PCBs	<3453	<3558	<1129	<2713	50.6
Total PCBs	85380	76418	15566	59121	64.3

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Emission Rate Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	<0.012	<0.012	<0.013	<0.013	6.0
12378-pentachlorodibenzo-p-dioxin	0.029	0.021	0.029	0.027	17.0
123478-hexachlorodibenzo-p-dioxin	0.076	0.059	0.065	0.067	12.7
123678-hexachlorodibenzo-p-dioxin	0.20	0.16	0.19	0.18	11.7
123789-hexachlorodibenzo-p-dioxin	0.18	0.13	0.097	0.14	29.6
1234678-heptachlorodibenzo-p-dioxin	2.00	1.53	1.89	1.81	13.5
Octachlorodibenzo-p-dioxin	3.88	3.23	4.53	3.88	16.8
2378-tetrachlorodibenzofuran	0.058	<0.028	0.044	<0.043	34.8
12378-pentachlorodibenzofuran	0.048	0.031	0.036	0.039	22.9
23478-pentachlorodibenzofuran	0.075	0.053	0.068	0.066	17.1
123478-hexachlorodibenzofuran	0.19	0.15	0.069	0.13	44.2
123678-hexachlorodibenzofuran	<0.096	<0.071	<0.086	<0.084	14.8
234678-hexachlorodibenzofuran	0.13	0.11	0.12	0.12	8.7
123789-hexachlorodibenzofuran	<0.013	<0.011	<0.013	<0.012	8.8
1234678-heptachlorodibenzofuran	0.70	0.57	0.65	0.64	10.5
1234789-heptachlorodibenzofuran	0.08	0.049	0.073	0.067	23.6
Octachlorodibenzofuran	0.61	0.48	0.64	0.58	14.4
PCB 81	<0.14	<0.095	<0.14	<0.13	22.2
PCB 77	1.06	1.46	0.34	0.95	59.2
PCB 123	0.51	0.44	<0.13	<0.36	56.3
PCB 118	44.6	47.5	8.24	33.4	65.4
PCB 114	1.03	1.02	0.20	0.75	63.9
PCB 105	9.95	11.2	2.64	7.93	58.3
PCB 126	<0.14	<0.081	<0.12	<0.11	25.3
PCB 167	0.17	0.61	0.32	0.36	61.7
PCB 156 + PCB 157	0.48	1.76	0.89	1.05	62.7
PCB 169	<0.082	<0.081	<0.062	<0.075	15.4
PCB 189	<0.058	0.13	0.20	<0.13	56.1
Total Dioxins & Furans Only	<8.36	<6.70	<8.61	<7.89	13.2
Dioxin-Like PCBs	<58.2	<64.3	<13.3	<45.3	61.6
Total Dioxins & Furans and PCBs	<66.6	<71.0	<21.9	<53.2	51.1
Total PCBs	1646	1526	302	1158	64.2

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 49
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.45	<0.76	<0.64	<0.64	<0.013
12378-pentachlorodibenzo-p-dioxin	0.95	1.61	1.36	1.36	0.027
123478-hexachlorodibenzo-p-dioxin	2.38	4.04	3.41	3.42	0.067
123678-hexachlorodibenzo-p-dioxin	6.59	11.2	9.45	9.47	0.18
123789-hexachlorodibenzo-p-dioxin	4.84	8.23	6.94	6.95	0.14
1234678-heptachlorodibenzo-p-dioxin	64.5	110	92.4	92.6	1.81
Octachlorodibenzo-p-dioxin	138	235	198	199	3.88
2378-tetrachlorodibenzofuran	<1.55	<2.63	<2.22	<2.23	<0.043
12378-pentachlorodibenzofuran	1.38	2.34	1.97	1.98	0.039
23478-pentachlorodibenzofuran	2.34	3.97	3.35	3.36	0.066
123478-hexachlorodibenzofuran	4.78	8.12	6.84	6.86	0.13
123678-hexachlorodibenzofuran	<3.01	<5.11	<4.32	<4.32	<0.084
234678-hexachlorodibenzofuran	4.20	7.13	6.02	6.03	0.12
123789-hexachlorodibenzofuran	<0.43	<0.73	<0.62	<0.62	<0.012
1234678-heptachlorodibenzofuran	22.9	38.9	32.8	32.9	0.64
1234789-heptachlorodibenzofuran	2.40	4.08	3.44	3.45	0.067
Octachlorodibenzofuran	20.5	34.9	29.5	29.5	0.58
PCB 81	<4.56	<7.75	<6.54	<6.55	<0.13
PCB 77	33.9	57.6	48.6	48.6	0.95
PCB 123	<12.9	<21.9	<18.5	<18.5	<0.36
PCB 118	1187	2021	1703	1705	33.4
PCB 114	26.6	45.2	38.1	38.1	0.75
PCB 105	282	479	404	404	7.93
PCB 126	<4.04	<6.85	<5.78	<5.79	<0.11
PCB 167	12.9	21.9	18.6	18.5	0.36
PCB 156 + PCB 157	37.0	62.9	53.2	53.1	1.05
PCB 169	<2.68	<4.55	<3.84	<3.84	<0.075
PCB 189	<4.58	<7.78	<6.58	<6.58	<0.13
Total Dioxins & Furans Only	<282	<478	<404	<404	<7.89
Dioxin-Like PCBs	<1608	<2737	<2307	<2309	<45.3
Total Dioxins & Furans and PCBs	<1890	<3215	<2711	<2713	<53.2
Total PCBs	41182	70086	59047	59121	1158

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 50
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 4 pg TEQ/m³	Test No. 5 pg TEQ/m³	Test No. 6 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.43	<0.43	<0.48	<0.45
12378-pentachlorodibenzo-p-dioxin	1.000	1.05	0.74	1.05	0.95
123478-hexachlorodibenzo-p-dioxin	0.100	0.27	0.21	0.23	0.24
123678-hexachlorodibenzo-p-dioxin	0.100	0.73	0.56	0.69	0.66
123789-hexachlorodibenzo-p-dioxin	0.100	0.64	0.46	0.35	0.48
1234678-heptachlorodibenzo-p-dioxin	0.010	0.72	0.53	0.68	0.64
Octachlorodibenzo-p-dioxin	0.0003	0.042	0.034	0.049	0.042
2378-tetrachlorodibenzofuran	0.100	0.21	<0.098	0.16	<0.16
12378-pentachlorodibenzofuran	0.030	0.052	0.033	0.039	0.041
23478-pentachlorodibenzofuran	0.300	0.81	0.56	0.74	0.70
123478-hexachlorodibenzofuran	0.100	0.67	0.51	0.25	0.48
123678-hexachlorodibenzofuran	0.100	<0.35	<0.25	<0.31	<0.30
234678-hexachlorodibenzofuran	0.100	0.46	0.37	0.42	0.42
123789-hexachlorodibenzofuran	0.100	<0.046	<0.038	<0.046	<0.043
1234678-heptachlorodibenzofuran	0.010	0.25	0.20	0.23	0.23
1234789-heptachlorodibenzofuran	0.010	0.029	0.017	0.026	0.024
Octachlorodibenzofuran	0.0003	0.0066	0.0050	0.0069	0.0062
PCB 81	0.0003	<0.0016	<0.00099	<0.0016	<0.0014
PCB 77	0.0001	0.0038	0.0051	0.0012	0.0034
PCB 123	0.00003	0.00056	0.00046	<0.00014	<0.00039
PCB 118	0.00003	0.048	0.050	0.0089	0.036
PCB 114	0.00003	0.0011	0.0011	0.00021	0.00080
PCB 105	0.00003	0.011	0.012	0.0028	0.0084
PCB 126	0.100	<0.50	<0.28	<0.43	<0.40
PCB 167	0.00003	0.00018	0.00064	0.00034	0.00039
PCB 156 + PCB 157	0.00003	0.00052	0.0018	0.00096	0.0011
PCB 169	0.030	<0.089	<0.085	<0.067	<0.080
PCB 189	0.00003	<0.000063	0.00013	0.00022	<0.00014
Total Dioxins & Furans Only		<6.79	<5.05	<5.75	<5.86
Dioxin-Like PCBs		<0.65	<0.44	<0.51	<0.54
Total Dioxins & Furans and PCBs		<7.44	<5.49	<6.26	<6.40

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 51
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.74	<0.73	<0.81	<0.76
12378-pentachlorodibenzo-p-dioxin	1.000	1.79	1.27	1.77	1.61
123478-hexachlorodibenzo-p-dioxin	0.100	0.46	0.35	0.40	0.40
123678-hexachlorodibenzo-p-dioxin	0.100	1.24	0.96	1.16	1.12
123789-hexachlorodibenzo-p-dioxin	0.100	1.09	0.79	0.59	0.82
1234678-heptachlorodibenzo-p-dioxin	0.010	1.23	0.91	1.15	1.10
Octachlorodibenzo-p-dioxin	0.0003	0.071	0.058	0.082	0.071
2378-tetrachlorodibenzofuran	0.100	0.36	<0.17	0.26	<0.26
12378-pentachlorodibenzofuran	0.030	0.089	0.056	0.066	0.070
23478-pentachlorodibenzofuran	0.300	1.38	0.95	1.24	1.19
123478-hexachlorodibenzofuran	0.100	1.14	0.88	0.42	0.81
123678-hexachlorodibenzofuran	0.100	<0.59	<0.42	<0.52	<0.51
234678-hexachlorodibenzofuran	0.100	0.78	0.64	0.71	0.71
123789-hexachlorodibenzofuran	0.100	<0.078	<0.065	<0.077	<0.073
1234678-heptachlorodibenzofuran	0.010	0.43	0.34	0.40	0.39
1234789-heptachlorodibenzofuran	0.010	0.048	0.029	0.045	0.041
Octachlorodibenzofuran	0.0003	0.011	0.0086	0.012	0.010
PCB 81	0.0003	<0.0027	<0.0017	<0.0026	<0.0023
PCB 77	0.0001	0.0065	0.0087	0.0021	0.0058
PCB 123	0.00003	0.00095	0.00079	<0.00024	<0.00066
PCB 118	0.00003	0.082	0.085	0.015	0.061
PCB 114	0.00003	0.0019	0.0018	0.00036	0.0014
PCB 105	0.00003	0.018	0.020	0.0048	0.014
PCB 126	0.100	<0.84	<0.49	<0.73	<0.69
PCB 167	0.00003	0.00031	0.0011	0.00057	0.00066
PCB 156 + PCB 157	0.00003	0.00088	0.0032	0.0016	0.0019
PCB 169	0.030	<0.15	<0.15	<0.11	<0.14
PCB 189	0.00003	<0.00011	0.00022	0.00037	<0.00023
Total Dioxins & Furans Only		<11.5	<8.63	<9.71	<9.96
Dioxin-Like PCBs		<1.11	<0.75	<0.87	<0.91
Total Dioxins & Furans and PCBs		<12.6	<9.39	<10.6	<10.9

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 52
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.62	<0.62	<0.69	<0.64
12378-pentachlorodibenzo-p-dioxin	1.000	1.50	1.08	1.50	1.36
123478-hexachlorodibenzo-p-dioxin	0.100	0.39	0.30	0.34	0.34
123678-hexachlorodibenzo-p-dioxin	0.100	1.04	0.81	0.98	0.95
123789-hexachlorodibenzo-p-dioxin	0.100	0.91	0.67	0.50	0.69
1234678-heptachlorodibenzo-p-dioxin	0.010	1.03	0.77	0.97	0.92
Octachlorodibenzo-p-dioxin	0.0003	0.060	0.049	0.070	0.060
2378-tetrachlorodibenzofuran	0.100	0.30	<0.14	0.22	<0.22
12378-pentachlorodibenzofuran	0.030	0.075	0.047	0.056	0.059
23478-pentachlorodibenzofuran	0.300	1.16	0.81	1.05	1.01
123478-hexachlorodibenzofuran	0.100	0.95	0.74	0.36	0.68
123678-hexachlorodibenzofuran	0.100	<0.49	<0.36	<0.44	<0.43
234678-hexachlorodibenzofuran	0.100	0.66	0.54	0.61	0.60
123789-hexachlorodibenzofuran	0.100	<0.065	<0.055	<0.065	<0.062
1234678-heptachlorodibenzofuran	0.010	0.36	0.29	0.34	0.33
1234789-heptachlorodibenzofuran	0.010	0.041	0.025	0.038	0.034
Octachlorodibenzofuran	0.0003	0.0094	0.0073	0.0099	0.0088
PCB 81	0.0003	<0.0022	<0.0014	<0.0022	<0.0020
PCB 77	0.0001	0.0055	0.0074	0.0018	0.0049
PCB 123	0.00003	0.00079	0.00067	<0.00020	<0.00055
PCB 118	0.00003	0.069	0.072	0.013	0.051
PCB 114	0.00003	0.0016	0.0015	0.00030	0.0011
PCB 105	0.00003	0.015	0.017	0.0041	0.012
PCB 126	0.100	<0.71	<0.41	<0.62	<0.58
PCB 167	0.00003	0.00026	0.00092	0.00049	0.00056
PCB 156 + PCB 157	0.00003	0.00074	0.0027	0.0014	0.0016
PCB 169	0.030	<0.13	<0.12	<0.095	<0.12
PCB 189	0.00003	<0.000090	0.00019	0.00031	<0.00020
Total Dioxins & Furans Only		<9.66	<7.31	<8.24	<8.40
Dioxin-Like PCBs		<0.93	<0.64	<0.74	<0.77
Total Dioxins & Furans and PCBs		<10.6	<7.94	<8.98	<9.17

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 53
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.62	<0.62	<0.69	<0.64
12378-pentachlorodibenzo-p-dioxin	0.500	0.75	0.54	0.75	0.68
123478-hexachlorodibenzo-p-dioxin	0.100	0.39	0.30	0.34	0.34
123678-hexachlorodibenzo-p-dioxin	0.100	1.04	0.81	0.98	0.95
123789-hexachlorodibenzo-p-dioxin	0.100	0.91	0.67	0.50	0.69
1234678-heptachlorodibenzo-p-dioxin	0.010	1.03	0.77	0.97	0.92
Octachlorodibenzo-p-dioxin	0.001	0.20	0.16	0.23	0.20
2378-tetrachlorodibenzofuran	0.100	0.30	<0.14	0.22	<0.22
12378-pentachlorodibenzofuran	0.050	0.12	0.079	0.093	0.099
23478-pentachlorodibenzofuran	0.500	1.93	1.34	1.76	1.68
123478-hexachlorodibenzofuran	0.100	0.95	0.74	0.36	0.68
123678-hexachlorodibenzofuran	0.100	<0.49	<0.36	<0.44	<0.43
234678-hexachlorodibenzofuran	0.100	0.66	0.54	0.61	0.60
123789-hexachlorodibenzofuran	0.100	<0.065	<0.055	<0.065	<0.062
1234678-heptachlorodibenzofuran	0.010	0.36	0.29	0.34	0.33
1234789-heptachlorodibenzofuran	0.010	0.041	0.025	0.038	0.034
Octachlorodibenzofuran	0.001	0.031	0.024	0.033	0.029
Total Dioxins & Furans		<9.89	<7.47	<8.42	<8.59
In-Stack Emission Limit					60

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 54
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.62	<0.61	<0.69	<0.64
12378-pentachlorodibenzo-p-dioxin	1.000	1.51	1.07	1.50	1.36
123478-hexachlorodibenzo-p-dioxin	0.100	0.39	0.30	0.34	0.34
123678-hexachlorodibenzo-p-dioxin	0.100	1.05	0.80	0.99	0.95
123789-hexachlorodibenzo-p-dioxin	0.100	0.92	0.67	0.50	0.70
1234678-heptachlorodibenzo-p-dioxin	0.010	1.04	0.77	0.97	0.93
Octachlorodibenzo-p-dioxin	0.0003	0.060	0.049	0.070	0.060
2378-tetrachlorodibenzofuran	0.100	0.30	<0.14	0.22	<0.22
12378-pentachlorodibenzofuran	0.030	0.075	0.047	0.056	0.059
23478-pentachlorodibenzofuran	0.300	1.17	0.80	1.06	1.01
123478-hexachlorodibenzofuran	0.100	0.96	0.74	0.36	0.69
123678-hexachlorodibenzofuran	0.100	<0.50	<0.36	<0.44	<0.43
234678-hexachlorodibenzofuran	0.100	0.66	0.54	0.61	0.60
123789-hexachlorodibenzofuran	0.100	<0.066	<0.054	<0.065	<0.062
1234678-heptachlorodibenzofuran	0.010	0.36	0.29	0.34	0.33
1234789-heptachlorodibenzofuran	0.010	0.041	0.025	0.038	0.034
Octachlorodibenzofuran	0.0003	0.0094	0.0072	0.0099	0.0088
PCB 81	0.0003	<0.0022	<0.0014	<0.0022	<0.0020
PCB 77	0.0001	0.0055	0.0073	0.0018	0.0049
PCB 123	0.00003	0.00080	0.00066	<0.00020	<0.00055
PCB 118	0.00003	0.069	0.071	0.013	0.051
PCB 114	0.00003	0.0016	0.0015	0.00030	0.0011
PCB 105	0.00003	0.015	0.017	0.0041	0.012
PCB 126	0.100	<0.71	<0.41	<0.62	<0.58
PCB 167	0.00003	0.00026	0.00092	0.00049	0.00056
PCB 156 + PCB 157	0.00003	0.00075	0.0026	0.0014	0.0016
PCB 169	0.030	<0.13	<0.12	<0.096	<0.12
PCB 189	0.00003	<0.000091	0.00019	0.00031	<0.00020
Total Dioxins & Furans Only		<9.74	<7.25	<8.25	<8.42
Dioxin-Like PCBs		<0.94	<0.63	<0.74	<0.77
Total Dioxins & Furans and PCBs		<10.7	<7.89	<8.99	<9.19

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 55
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 4 ng TEQ/s	Test No. 5 ng TEQ/s	Test No. 6 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.012	<0.012	<0.013	<0.013
12378-pentachlorodibenzo-p-dioxin	1.000	0.029	0.021	0.029	0.027
123478-hexachlorodibenzo-p-dioxin	0.100	0.0076	0.0059	0.0065	0.0067
123678-hexachlorodibenzo-p-dioxin	0.100	0.020	0.016	0.019	0.018
123789-hexachlorodibenzo-p-dioxin	0.100	0.018	0.013	0.0097	0.014
1234678-heptachlorodibenzo-p-dioxin	0.010	0.020	0.015	0.019	0.018
Octachlorodibenzo-p-dioxin	0.0003	0.0012	0.00097	0.0014	0.0012
2378-tetrachlorodibenzofuran	0.100	0.0058	<0.0028	0.0044	<0.0043
12378-pentachlorodibenzofuran	0.030	0.0015	0.00094	0.0011	0.0012
23478-pentachlorodibenzofuran	0.300	0.023	0.016	0.020	0.020
123478-hexachlorodibenzofuran	0.100	0.019	0.015	0.0069	0.013
123678-hexachlorodibenzofuran	0.100	<0.0096	<0.0071	<0.0086	<0.0084
234678-hexachlorodibenzofuran	0.100	0.013	0.011	0.012	0.012
123789-hexachlorodibenzofuran	0.100	<0.0013	<0.0011	<0.0013	<0.0012
1234678-heptachlorodibenzofuran	0.010	0.0070	0.0057	0.0065	0.0064
1234789-heptachlorodibenzofuran	0.010	0.00079	0.00049	0.00073	0.00067
Octachlorodibenzofuran	0.0003	0.00018	0.00014	0.00019	0.00017
PCB 81	0.0003	<0.000043	<0.000028	<0.000043	<0.000038
PCB 77	0.0001	0.00011	0.00015	0.000034	0.000095
PCB 123	0.00003	0.000015	0.000013	<0.0000039	<0.000011
PCB 118	0.00003	0.0013	0.0014	0.00025	0.0010
PCB 114	0.00003	0.000031	0.000031	0.0000059	0.000022
PCB 105	0.00003	0.00030	0.00034	0.000079	0.00024
PCB 126	0.100	<0.014	<0.0081	<0.012	<0.011
PCB 167	0.00003	0.0000050	0.000018	0.0000095	0.000011
PCB 156 + PCB 157	0.00003	0.000014	0.000053	0.000027	0.000031
PCB 169	0.030	<0.0025	<0.0024	<0.0019	<0.0023
PCB 189	0.00003	<0.0000017	0.0000038	0.0000061	<0.0000039
Total Dioxins & Furans Only		<0.19	<0.14	<0.16	<0.16
Dioxin-Like PCBs		<0.018	<0.013	<0.014	<0.015
Total Dioxins & Furans and PCBs		<0.21	<0.16	<0.17	<0.18

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 56
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.45	<0.76	<0.64	<0.64	<0.013
12378-pentachlorodibenzo-p-dioxin	0.95	1.61	1.36	1.36	0.027
123478-hexachlorodibenzo-p-dioxin	0.24	0.40	0.34	0.34	0.0067
123678-hexachlorodibenzo-p-dioxin	0.66	1.12	0.95	0.95	0.018
123789-hexachlorodibenzo-p-dioxin	0.48	0.82	0.69	0.70	0.014
1234678-heptachlorodibenzo-p-dioxin	0.64	1.10	0.92	0.93	0.018
Octachlorodibenzo-p-dioxin	0.042	0.071	0.060	0.060	0.0012
2378-tetrachlorodibenzofuran	<0.16	<0.26	<0.22	<0.22	<0.0043
12378-pentachlorodibenzofuran	0.041	0.070	0.059	0.059	0.0012
23478-pentachlorodibenzofuran	0.70	1.19	1.01	1.01	0.020
123478-hexachlorodibenzofuran	0.48	0.81	0.68	0.69	0.013
123678-hexachlorodibenzofuran	<0.30	<0.51	<0.43	<0.43	<0.0084
234678-hexachlorodibenzofuran	0.42	0.71	0.60	0.60	0.012
123789-hexachlorodibenzofuran	<0.043	<0.073	<0.062	<0.062	<0.0012
1234678-heptachlorodibenzofuran	0.23	0.39	0.33	0.33	0.0064
1234789-heptachlorodibenzofuran	0.024	0.041	0.034	0.034	0.00067
Octachlorodibenzofuran	0.0062	0.010	0.0088	0.0088	0.00017
PCB 81	<0.0014	<0.0023	<0.0020	<0.0020	<0.000038
PCB 77	0.0034	0.0058	0.0049	0.0049	0.000095
PCB 123	<0.00039	<0.00066	<0.00055	<0.00055	<0.000011
PCB 118	0.036	0.061	0.051	0.051	0.0010
PCB 114	0.00080	0.0014	0.0011	0.0011	0.000022
PCB 105	0.0084	0.014	0.012	0.012	0.00024
PCB 126	<0.40	<0.69	<0.58	<0.58	<0.011
PCB 167	0.00039	0.00066	0.00056	0.00056	0.000011
PCB 156 + PCB 157	0.0011	0.0019	0.0016	0.0016	0.000031
PCB 169	<0.080	<0.14	<0.12	<0.12	<0.0023
PCB 189	<0.00014	<0.00023	<0.00020	<0.00020	<0.0000039
Total Dioxins & Furans Only	<5.86	<9.96	<8.40	<8.42	<0.16
Dioxin-Like PCBs	<0.54	<0.91	<0.77	<0.77	<0.015
Total Dioxins & Furans and PCBs	<6.40	<10.9	<9.17	<9.19	<0.18

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 57
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	0.22	0.38	0.32	0.32	0.0063
12378-pentachlorodibenzo-p-dioxin	0.95	1.61	1.36	1.36	0.027
123478-hexachlorodibenzo-p-dioxin	0.24	0.40	0.34	0.34	0.0067
123678-hexachlorodibenzo-p-dioxin	0.66	1.12	0.95	0.95	0.018
123789-hexachlorodibenzo-p-dioxin	0.48	0.82	0.69	0.70	0.014
1234678-heptachlorodibenzo-p-dioxin	0.64	1.10	0.92	0.93	0.018
Octachlorodibenzo-p-dioxin	0.042	0.071	0.060	0.060	0.0012
2378-tetrachlorodibenzofuran	0.14	0.24	0.20	0.20	0.0039
12378-pentachlorodibenzofuran	0.041	0.070	0.059	0.059	0.0012
23478-pentachlorodibenzofuran	0.70	1.19	1.01	1.01	0.020
123478-hexachlorodibenzofuran	0.48	0.81	0.68	0.69	0.013
123678-hexachlorodibenzofuran	0.15	0.26	0.22	0.22	0.0042
234678-hexachlorodibenzofuran	0.42	0.71	0.60	0.60	0.012
123789-hexachlorodibenzofuran	0.022	0.037	0.031	0.031	0.00060
1234678-heptachlorodibenzofuran	0.23	0.39	0.33	0.33	0.0064
1234789-heptachlorodibenzofuran	0.024	0.041	0.034	0.034	0.00067
Octachlorodibenzofuran	0.0062	0.010	0.0088	0.0088	0.00017
PCB 81	0.00068	0.0012	0.00098	0.00098	0.000019
PCB 77	0.0034	0.0058	0.0049	0.0049	0.000095
PCB 123	0.00036	0.00062	0.00052	0.00052	0.000010
PCB 118	0.036	0.061	0.051	0.051	0.0010
PCB 114	0.00080	0.0014	0.0011	0.0011	0.000022
PCB 105	0.0084	0.014	0.012	0.012	0.00024
PCB 126	0.20	0.34	0.29	0.29	0.0056
PCB 167	0.00039	0.00066	0.00056	0.00056	0.000011
PCB 156 + PCB 157	0.0011	0.0019	0.0016	0.0016	0.000031
PCB 169	0.040	0.068	0.058	0.058	0.0011
PCB 189	0.00013	0.00022	0.00018	0.00018	0.0000036
Total Dioxins & Furans Only	5.45	9.26	7.81	7.83	0.15
Dioxin-Like PCBs	0.29	0.50	0.42	0.42	0.0082
Total Dioxins & Furans and PCBs	5.74	9.75	8.23	8.25	0.16

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 58
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Blank Dioxin and Furan Specific Isomer Analyses
Medium Carbon Feed Rate and VLN on Air Mode

Specific Isomer	Blank Train	Laboratory Blank
	pg	pg
2378-tetrachlorodibenzo-p-dioxin	<2.7	<2.9
12378-pentachlorodibenzo-p-dioxin	<3.6	<3.4
123478-hexachlorodibenzo-p-dioxin	<3.9	<4.1
123678-hexachlorodibenzo-p-dioxin	<3.9	<4.2
123789-hexachlorodibenzo-p-dioxin	<3.6	<3.8
1234678-heptachlorodibenzo-p-dioxin	5.5	5.5
Octachlorodibenzo-p-dioxin	19.3	32.1
2378-tetrachlorodibenzofuran	7.6	<3.7
12378-pentachlorodibenzofuran	<7.0	<2.8
23478-pentachlorodibenzofuran	7.1	<2.8
123478-hexachlorodibenzofuran	13.8	3.5
123678-hexachlorodibenzofuran	9.3	<2.7
234678-hexachlorodibenzofuran	7.5	<2.9
123789-hexachlorodibenzofuran	<3.4	<3.0
1234678-heptachlorodibenzofuran	17.1	3.9
1234789-heptachlorodibenzofuran	<3.8	<3.4
Octachlorodibenzofuran	5.6	5.4
PCB 81	<38	<13
PCB 77	<37	<12
PCB 123	<24	<8.2
PCB 118	68	<7.4
PCB 114	<21	<7.1
PCB 105	29	<7.4
PCB 126	<22	<7.5
PCB 167	<17	<11
PCB 156 + PCB 157	<16	<10
PCB 169	<17	<11
PCB 189	<19	<20
Total Dioxins & Furans Only	<125	<90
Dioxin-Like PCBs	<308	<115
Total Dioxins & Furans and PCBs	<433	<205
Total PCBs	1200	-

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 59
Covanta
Durham York Energy Centre
Particulate Emission Data
Boiler No. 1 - Medium Carbon Feed Rate and VLN on Air Mode

APC Outlet

Test No.	Particulate Collected Probe Rinse mg	Main Filter mg	Total mg	Dry Gas Volume Sampled Rm^3*	Particulate Concentration Actual mg/m^3	Dry Reference mg/Rm^3*	Dry Adjusted mg/Rm^3**	Wet Reference mg/Rm^3*	Particulate Emission Rate g/s
4	17.4	20.2	37.6	4.058	5.57	9.27	7.77	7.88	0.15
5	3.4	17.2	20.6	4.174	2.91	4.94	4.18	4.16	0.083
6	2.6	19.2	21.8	4.074	3.18	5.35	4.54	4.55	0.089
Average					3.89	6.52	5.49	5.53	0.11
Blank Train	0	0.4							
Probe Proof	4.5								

* At 25 °C and 1 atmosphere

** At 25 °C and 1 atmosphere, adjusted to 11% oxygen by volume

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APPENDIX 3

Data Tables for Boiler No. 1
with Medium Carbon Feed Rate and VLN on Gas Mode
(54 pages)

TABLE 1
Covanta
Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate with VLN on Gas Mode
Test Schedule

Quench Inlet - Dioxin and Furan Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
7	November 4, 2016	8:35	12:13	180
8	November 4, 2016	13:44	17:26	180

APC Outlet - Dioxin and Furan Tests

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
7	November 4, 2016	8:30	12:40	240
8	November 4, 2016	13:42	17:54	240

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate with VLN on Gas Mode
Stack Gas Sampling Parameters

Quench Inlet - Dioxin and Furan Tests

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
7	0.840	1.019	6.01	3.163	102.2
8	0.840	1.019	6.01	3.237	100.4

APC Outlet - Dioxin and Furan Tests

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
7	0.847	0.993	6.41	4.796	101.9
8	0.847	0.993	6.41	4.926	100.1

* Dry at 25°C and 1 atmosphere

TABLE 3
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate with VLN on Gas Mode
Stack Gas Physical Parameters

Quench Inlet - Dioxin and Furan Tests

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
7	168	17.5	18.3	-0.66	100.3	11.3	7.45
8	168	15.2	18.6	-0.66	100.1	10.7	8.09
Average	168	16.4	18.4	-0.66	100.2	11.0	7.77

APC Outlet - Dioxin and Furan Tests

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
7	142	17.6	17.6	-2.52	98.5	11.3	8.07
8	140	16.1	18.0	-2.52	98.3	10.7	8.64
Average	141	16.9	17.8	-2.52	98.4	11.0	8.36

* Dry basis, measured by the DYEC CEMS

TABLE 4
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate with VLN on Gas Mode
Stack Gas Volumetric Flowrates

Quench Inlet - Dioxin and Furan Tests

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
7	27.0	14.9	20.3	18.1
8	27.4	15.5	20.1	18.3
Average	27.2	15.2	20.2	18.2

APC Outlet - Dioxin and Furan Tests

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
7	26.1	15.0	19.4	18.2
8	26.7	15.7	19.4	18.7
Average	26.4	15.3	19.4	18.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 7 - Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	4060	0.71	1.28	0.94	1.06	19.1
Pentachlorodibenzo-p-dioxins	4080	0.71	1.29	0.95	1.06	19.2
Hexachlorodibenzo-p-dioxins	2170	0.38	0.69	0.50	0.56	10.2
Heptachlorodibenzo-p-dioxins	2120	0.37	0.67	0.49	0.55	9.99
Octachlorodibenzo-p-dioxin	2460	0.43	0.78	0.57	0.64	11.6
Total	14890	2.60	4.71	3.46	3.88	70.1

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	114000	19.9	36.0	26.5	29.7	537
Pentachlorodibenzofurans	50800	8.86	16.1	11.8	13.2	239
Hexachlorodibenzofurans	12100	2.11	3.83	2.81	3.15	57.0
Heptachlorodibenzofurans	4560	0.80	1.44	1.06	1.19	21.5
Octachlorodibenzofuran	602	0.11	0.19	0.14	0.16	2.84
Total	182062	31.8	57.6	42.2	47.4	858

Dry Gas Volume Sampled (Rm^3*) :	3.163
Actual Flowrate (m^3/s) :	27.0
Dry Reference Flowrate (Rm^3/s*) :	14.9
Dry Adjusted Flowrate (Rm^3/s**) :	20.3
Wet Reference Flowrate (Rm^3/s*) :	18.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 8 - Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	6260	1.09	1.93	1.49	1.64	30.0
Pentachlorodibenzo-p-dioxins	7570	1.32	2.34	1.80	1.98	36.2
Hexachlorodibenzo-p-dioxins	4280	0.75	1.32	1.02	1.12	20.5
Heptachlorodibenzo-p-dioxins	3780	0.66	1.17	0.90	0.99	18.1
Octachlorodibenzo-p-dioxin	3000	0.52	0.93	0.71	0.78	14.4
Total	24890	4.35	7.69	5.93	6.51	119

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	152000	26.6	47.0	36.2	39.8	728
Pentachlorodibenzofurans	95400	16.7	29.5	22.7	25.0	457
Hexachlorodibenzofurans	31100	5.43	9.61	7.41	8.14	149
Heptachlorodibenzofurans	13300	2.32	4.11	3.17	3.48	63.7
Octachlorodibenzofuran	1590	0.28	0.49	0.38	0.42	7.61
Total	293390	51.3	90.6	69.9	76.8	1405

Dry Gas Volume Sampled (Rm^3*) :	3.237
Actual Flowrate (m^3/s) :	27.4
Dry Reference Flowrate (Rm^3/s*) :	15.5
Dry Adjusted Flowrate (Rm^3/s**) :	20.1
Wet Reference Flowrate (Rm^3/s*) :	18.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 7
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.71	1.09	0.90	30.3
Pentachlorodibenzo-p-dioxins	0.71	1.32	1.02	42.5
Hexachlorodibenzo-p-dioxins	0.38	0.75	0.56	46.4
Heptachlorodibenzo-p-dioxins	0.37	0.66	0.52	39.9
Octachlorodibenzo-p-dioxin	0.43	0.52	0.48	14.1
Total	2.60	4.35	3.47	35.7

Furans

Congener Group	Actual Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	19.9	26.6	23.2	20.3
Pentachlorodibenzofurans	8.86	16.7	12.8	43.2
Hexachlorodibenzofurans	2.11	5.43	3.77	62.3
Heptachlorodibenzofurans	0.80	2.32	1.56	69.3
Octachlorodibenzofuran	0.11	0.28	0.19	63.8
Total	31.8	51.3	41.5	33.2

TABLE 8
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	1.28	1.93	1.61	28.6
Pentachlorodibenzo-p-dioxins	1.29	2.34	1.81	40.9
Hexachlorodibenzo-p-dioxins	0.69	1.32	1.00	44.8
Heptachlorodibenzo-p-dioxins	0.67	1.17	0.92	38.3
Octachlorodibenzo-p-dioxin	0.78	0.93	0.85	12.4
Total	4.71	7.69	6.20	34.0

Furans

Congener Group	Dry Reference Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	36.0	47.0	41.5	18.6
Pentachlorodibenzofurans	16.1	29.5	22.8	41.7
Hexachlorodibenzofurans	3.83	9.61	6.72	60.9
Heptachlorodibenzofurans	1.44	4.11	2.78	68.0
Octachlorodibenzofuran	0.19	0.49	0.34	62.4
Total	57.6	90.6	74.1	31.6

* At 25°C and 1 atmosphere

TABLE 9
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.94	1.49	1.22	31.9
Pentachlorodibenzo-p-dioxins	0.95	1.80	1.38	44.0
Hexachlorodibenzo-p-dioxins	0.50	1.02	0.76	47.9
Heptachlorodibenzo-p-dioxins	0.49	0.90	0.70	41.5
Octachlorodibenzo-p-dioxin	0.57	0.71	0.64	15.8
Total	3.46	5.93	4.69	37.3

Furans

Congener Group	Dry Adjusted Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	26.5	36.2	31.3	22.0
Pentachlorodibenzofurans	11.8	22.7	17.3	44.8
Hexachlorodibenzofurans	2.81	7.41	5.11	63.7
Heptachlorodibenzofurans	1.06	3.17	2.11	70.6
Octachlorodibenzofuran	0.14	0.38	0.26	65.2
Total	42.2	69.9	56.1	34.9

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 10
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	1.06	1.64	1.35	30.5
Pentachlorodibenzo-p-dioxins	1.06	1.98	1.52	42.7
Hexachlorodibenzo-p-dioxins	0.56	1.12	0.84	46.6
Heptachlorodibenzo-p-dioxins	0.55	0.99	0.77	40.1
Octachlorodibenzo-p-dioxin	0.64	0.78	0.71	14.4
Total	3.88	6.51	5.19	35.9

Furans

Congener Group	Wet Reference Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	29.7	39.8	34.7	20.6
Pentachlorodibenzofurans	13.2	25.0	19.1	43.5
Hexachlorodibenzofurans	3.15	8.14	5.64	62.5
Heptachlorodibenzofurans	1.19	3.48	2.33	69.5
Octachlorodibenzofuran	0.16	0.42	0.29	64.0
Total	47.4	76.8	62.1	33.5

* At 25°C and 1 atmosphere

TABLE 11
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Emission Rate Test No. 7 ng/s	Test No. 8 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	19.1	30.0	24.6	31.2
Pentachlorodibenzo-p-dioxins	19.2	36.2	27.7	43.4
Hexachlorodibenzo-p-dioxins	10.2	20.5	15.4	47.3
Heptachlorodibenzo-p-dioxins	9.99	18.1	14.0	40.9
Octachlorodibenzo-p-dioxin	11.6	14.4	13.0	15.1
Total	70.1	119	94.7	36.6

Furans

Congener Group	Emission Rate Test No. 7 ng/s	Test No. 8 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	537	728	632	21.3
Pentachlorodibenzofurans	239	457	348	44.2
Hexachlorodibenzofurans	57.0	149	103	63.1
Heptachlorodibenzofurans	21.5	63.7	42.6	70.1
Octachlorodibenzofuran	2.84	7.61	5.22	64.7
Total	858	1405	1131	34.2

TABLE 12
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.90	1.61	1.22	1.35	24.6
Pentachlorodibenzo-p-dioxins	1.02	1.81	1.38	1.52	27.7
Hexachlorodibenzo-p-dioxins	0.56	1.00	0.76	0.84	15.4
Heptachlorodibenzo-p-dioxins	0.52	0.92	0.70	0.77	14.0
Octachlorodibenzo-p-dioxin	0.48	0.85	0.64	0.71	13.0
Total	3.47	6.20	4.69	5.19	94.7

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	23.2	41.5	31.3	34.7	632
Pentachlorodibenzofurans	12.8	22.8	17.3	19.1	348
Hexachlorodibenzofurans	3.77	6.72	5.11	5.64	103
Heptachlorodibenzofurans	1.56	2.78	2.11	2.33	42.6
Octachlorodibenzofuran	0.19	0.34	0.26	0.29	5.22
Total	41.5	74.1	56.1	62.1	1131

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 13
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 7 - Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	88.5	0.011	0.018	0.014	0.015	0.28
Pentachlorodibenzo-p-dioxins	200	0.024	0.042	0.032	0.034	0.63
Hexachlorodibenzo-p-dioxins	218	0.026	0.045	0.035	0.037	0.68
Heptachlorodibenzo-p-dioxins	743	0.089	0.15	0.12	0.13	2.32
Octachlorodibenzo-p-dioxin	580	0.070	0.12	0.094	0.10	1.81
Total	1830	0.22	0.38	0.29	0.31	5.72

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	51.1	0.0061	0.011	0.0082	0.0088	0.16
Pentachlorodibenzofurans	84.8	0.010	0.018	0.014	0.015	0.27
Hexachlorodibenzofurans	120	0.014	0.025	0.019	0.021	0.38
Heptachlorodibenzofurans	129	0.015	0.027	0.021	0.022	0.40
Octachlorodibenzofuran	<76	<0.0091	<0.016	<0.012	<0.013	<0.24
Total	<461	<0.055	<0.096	<0.074	<0.079	<1.44

Dry Gas Volume Sampled (Rm^3*) :	4.796
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	15.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	18.2

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 14
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 8 - Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	77.1	0.0092	0.016	0.013	0.013	0.25
Pentachlorodibenzo-p-dioxins	105	0.013	0.021	0.017	0.018	0.33
Hexachlorodibenzo-p-dioxins	142	0.017	0.029	0.023	0.024	0.45
Heptachlorodibenzo-p-dioxins	419	0.050	0.085	0.069	0.071	1.34
Octachlorodibenzo-p-dioxin	379	0.045	0.077	0.062	0.065	1.21
Total	1122	0.13	0.23	0.18	0.19	3.58

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	143	0.017	0.029	0.023	0.024	0.46
Pentachlorodibenzofurans	169	0.020	0.034	0.028	0.029	0.54
Hexachlorodibenzofurans	132	0.016	0.027	0.022	0.022	0.42
Heptachlorodibenzofurans	134	0.016	0.027	0.022	0.023	0.43
Octachlorodibenzofuran	<62	<0.0074	<0.013	<0.010	<0.011	<0.20
Total	<640	<0.076	<0.13	<0.11	<0.11	<2.04

Dry Gas Volume Sampled (Rm^3*) :	4.926
Actual Flowrate (m^3/s) :	26.7
Dry Reference Flowrate (Rm^3/s*) :	15.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume
Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 15
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.011	0.0092	0.0099	10.0
Pentachlorodibenzo-p-dioxins	0.024	0.013	0.018	44.3
Hexachlorodibenzo-p-dioxins	0.026	0.017	0.022	30.1
Heptachlorodibenzo-p-dioxins	0.089	0.050	0.070	39.7
Octachlorodibenzo-p-dioxin	0.070	0.045	0.057	29.9
Total	0.22	0.13	0.18	34.2

Furans

Congener Group	Actual Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	0.0061	0.017	0.012	66.7
Pentachlorodibenzofurans	0.010	0.020	0.015	46.7
Hexachlorodibenzofurans	0.014	0.016	0.015	6.5
Heptachlorodibenzofurans	0.015	0.016	0.016	2.4
Octachlorodibenzofuran	<0.0091	<0.0074	<0.0083	14.6
Total	<0.055	<0.076	<0.066	22.7

TABLE 16
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.018	0.016	0.017	11.6
Pentachlorodibenzo-p-dioxins	0.042	0.021	0.032	45.7
Hexachlorodibenzo-p-dioxins	0.045	0.029	0.037	31.7
Heptachlorodibenzo-p-dioxins	0.15	0.085	0.12	41.2
Octachlorodibenzo-p-dioxin	0.12	0.077	0.099	31.4
Total	0.38	0.23	0.30	35.7

Furans

Congener Group	Dry Reference Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.011	0.029	0.020	65.5
Pentachlorodibenzofurans	0.018	0.034	0.026	45.2
Hexachlorodibenzofurans	0.025	0.027	0.026	4.8
Heptachlorodibenzofurans	0.027	0.027	0.027	0.8
Octachlorodibenzofuran	<0.016	<0.013	<0.014	16.2
Total	<0.096	<0.13	<0.11	21.2

* At 25°C and 1 atmosphere

TABLE 17
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.014	0.013	0.013	8.4
Pentachlorodibenzo-p-dioxins	0.032	0.017	0.025	42.8
Hexachlorodibenzo-p-dioxins	0.035	0.023	0.029	28.6
Heptachlorodibenzo-p-dioxins	0.12	0.069	0.094	38.2
Octachlorodibenzo-p-dioxin	0.094	0.062	0.078	28.4
Total	0.29	0.18	0.24	32.6

Furans

Congener Group	Dry Adjusted Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.0082	0.023	0.016	68.0
Pentachlorodibenzofurans	0.014	0.028	0.021	48.1
Hexachlorodibenzofurans	0.019	0.022	0.021	8.1
Heptachlorodibenzofurans	0.021	0.022	0.021	4.0
Octachlorodibenzofuran	<0.012	<0.010	<0.011	13.0
Total	<0.074	<0.11	<0.090	24.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 18
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.015	0.013	0.014	10.3
Pentachlorodibenzo-p-dioxins	0.034	0.018	0.026	44.6
Hexachlorodibenzo-p-dioxins	0.037	0.024	0.031	30.4
Heptachlorodibenzo-p-dioxins	0.13	0.071	0.10	40.0
Octachlorodibenzo-p-dioxin	0.10	0.065	0.082	30.2
Total	0.31	0.19	0.25	34.4

Furans

Congener Group	Wet Reference Concentration Test No. 7 ng/Rm³*	Test No. 8 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.0088	0.024	0.017	66.5
Pentachlorodibenzofurans	0.015	0.029	0.022	46.4
Hexachlorodibenzofurans	0.021	0.022	0.022	6.2
Heptachlorodibenzofurans	0.022	0.023	0.023	2.1
Octachlorodibenzofuran	<0.013	<0.011	<0.012	14.9
Total	<0.079	<0.11	<0.094	22.4

* At 25°C and 1 atmosphere

TABLE 19
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Emission Rate Test No. 7 ng/s	Test No. 8 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.28	0.25	0.26	8.4
Pentachlorodibenzo-p-dioxins	0.63	0.33	0.48	42.8
Hexachlorodibenzo-p-dioxins	0.68	0.45	0.57	28.6
Heptachlorodibenzo-p-dioxins	2.32	1.34	1.83	38.2
Octachlorodibenzo-p-dioxin	1.81	1.21	1.51	28.4
Total	5.72	3.58	4.65	32.6

Furans

Congener Group	Emission Rate Test No. 7 ng/s	Test No. 8 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	0.16	0.46	0.31	68.0
Pentachlorodibenzofurans	0.27	0.54	0.40	48.1
Hexachlorodibenzofurans	0.38	0.42	0.40	8.1
Heptachlorodibenzofurans	0.40	0.43	0.42	4.0
Octachlorodibenzofuran	<0.24	<0.20	<0.22	13.0
Total	<1.44	<2.04	<1.74	24.3

TABLE 20
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate with VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.0099	0.017	0.013	0.014	0.26
Pentachlorodibenzo-p-dioxins	0.018	0.032	0.025	0.026	0.48
Hexachlorodibenzo-p-dioxins	0.022	0.037	0.029	0.031	0.57
Heptachlorodibenzo-p-dioxins	0.070	0.12	0.094	0.10	1.83
Octachlorodibenzo-p-dioxin	0.057	0.099	0.078	0.082	1.51
Total	0.18	0.30	0.24	0.25	4.65

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	0.012	0.020	0.016	0.017	0.31
Pentachlorodibenzofurans	0.015	0.026	0.021	0.022	0.40
Hexachlorodibenzofurans	0.015	0.026	0.021	0.022	0.40
Heptachlorodibenzofurans	0.016	0.027	0.021	0.023	0.42
Octachlorodibenzofuran	<0.0083	<0.014	<0.011	<0.012	<0.22
Total	<0.066	<0.11	<0.090	<0.094	<1.74

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 21
Covanta - Durham York Energy Centre
Boiler No. 1 - Medium Carbon Feed Rate with VLN on Gas Mode
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<4.5	<5.0
Pentachlorodibenzo-p-dioxins	<8.2	<3.6
Hexachlorodibenzo-p-dioxins	<17	<9.0
Heptachlorodibenzo-p-dioxins	<3.2	3.2
Octachlorodibenzo-p-dioxin	10.4	12.0
Total	<43.3	<32.8

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	<3.5	<3.3
Pentachlorodibenzofurans	<3.3	<3.2
Hexachlorodibenzofurans	<3.3	3.9
Heptachlorodibenzofurans	<3.2	4.3
Octachlorodibenzofuran	<3.4	4.7
Total	<16.7	<19.4

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 22
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 7 - Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	413	72.1	131	95.8	107	1.95
12378-pentachlorodibenzo-p-dioxin	561	97.9	177	130	146	2.64
123478-hexachlorodibenzo-p-dioxin	104	18.1	32.9	24.1	27.1	0.49
123678-hexachlorodibenzo-p-dioxin	223	38.9	70.5	51.7	58.0	1.05
123789-hexachlorodibenzo-p-dioxin	229	40.0	72.4	53.1	59.6	1.08
1234678-heptachlorodibenzo-p-dioxin	1030	180	326	239	268	4.85
Octachlorodibenzo-p-dioxin	2460	429	778	571	640	11.6
2378-tetrachlorodibenzofuran	3910	682	1236	907	1018	18.4
12378-pentachlorodibenzofuran	3490	609	1103	810	908	16.4
23478-pentachlorodibenzofuran	2920	509	923	678	760	13.8
123478-hexachlorodibenzofuran	2330	407	737	541	606	11.0
123678-hexachlorodibenzofuran	1690	295	534	392	440	7.96
234678-hexachlorodibenzofuran	754	132	238	175	196	3.55
123789-hexachlorodibenzofuran	58	10.1	18.3	13.5	15.1	0.27
1234678-heptachlorodibenzofuran	3220	562	1018	747	838	15.2
1234789-heptachlorodibenzofuran	258	45.0	81.6	59.9	67.1	1.22
Octachlorodibenzofuran	602	105	190	140	157	2.84
PCB 81	140	24.4	44.3	32.5	36.4	0.66
PCB 77	670	117	212	155	174	3.16
PCB 123	95	16.6	30.0	22.0	24.7	0.45
PCB 118	830	145	262	193	216	3.91
PCB 114	61	10.6	19.3	14.2	15.9	0.29
PCB 105	340	59.3	107	78.9	88.5	1.60
PCB 126	350	61.1	111	81.2	91.1	1.65
PCB 167	140	24.4	44.3	32.5	36.4	0.66
PCB 156 + PCB 157	270	47.1	85.4	62.7	70.3	1.27
PCB 169	<97	<16.9	<30.7	<22.5	<25.2	<0.46
PCB 189	110	19.2	34.8	25.5	28.6	0.52
Total Dioxins & Furans Only	24252	4231	7667	5628	6312	114
Dioxin-Like PCBs	<3103	<541	<981	<720	<808	<14.6
Total Dioxins & Furans and PCBs	<27355	<4773	<8648	<6348	<7119	<129
Total PCBs	350000	61065	110654	81219	91091	1649

Dry Gas Volume Sampled (Rm^3*) :	3.163
Actual Flowrate (m^3/s) :	27.0
Dry Reference Flowrate (Rm^3/s*) :	14.9
Dry Adjusted Flowrate (Rm^3/s**) :	20.3
Wet Reference Flowrate (Rm^3/s*) :	18.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 23
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 8 - Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	526	91.9	162	125	138	2.52
12378-pentachlorodibenzo-p-dioxin	1040	182	321	248	272	4.98
123478-hexachlorodibenzo-p-dioxin	299	52.3	92.4	71.2	78.2	1.43
123678-hexachlorodibenzo-p-dioxin	408	71.3	126	97.2	107	1.95
123789-hexachlorodibenzo-p-dioxin	472	82.5	146	112	124	2.26
1234678-heptachlorodibenzo-p-dioxin	1890	330	584	450	495	9.05
Octachlorodibenzo-p-dioxin	3000	524	927	715	785	14.4
2378-tetrachlorodibenzofuran	4670	816	1443	1113	1222	22.4
12378-pentachlorodibenzofuran	5900	1031	1823	1406	1544	28.3
23478-pentachlorodibenzofuran	5310	928	1640	1265	1389	25.4
123478-hexachlorodibenzofuran	5890	1029	1820	1403	1541	28.2
123678-hexachlorodibenzofuran	4130	722	1276	984	1081	19.8
234678-hexachlorodibenzofuran	2170	379	670	517	568	10.4
123789-hexachlorodibenzofuran	144	25.2	44.5	34.3	37.7	0.69
1234678-heptachlorodibenzofuran	9430	1648	2913	2246	2467	45.2
1234789-heptachlorodibenzofuran	762	133	235	182	199	3.65
Octachlorodibenzofuran	1590	278	491	379	416	7.61
PCB 81	170	29.7	52.5	40.5	44.5	0.81
PCB 77	840	147	259	200	220	4.02
PCB 123	160	28.0	49.4	38.1	41.9	0.77
PCB 118	2700	472	834	643	706	12.9
PCB 114	140	24.5	43.2	33.4	36.6	0.67
PCB 105	1200	210	371	286	314	5.75
PCB 126	620	108	192	148	162	2.97
PCB 167	330	57.7	102	78.6	86.3	1.58
PCB 156 + PCB 157	790	138	244	188	207	3.78
PCB 169	200	35.0	61.8	47.6	52.3	0.96
PCB 189	<230	<40.2	<71.1	<54.8	<60.2	<1.10
Total Dioxins & Furans Only	47631	8324	14715	11347	12463	228
Dioxin-Like PCBs	<7380	<1290	<2280	<1758	<1931	<35.3
Total Dioxins & Furans and PCBs	<55011	<9614	<16994	<13105	<14394	<263
Total PCBs	61000	10660	18845	14532	15961	292

Dry Gas Volume Sampled (Rm^3*) :	3.237
Actual Flowrate (m^3/s) :	27.4
Dry Reference Flowrate (Rm^3/s*) :	15.5
Dry Adjusted Flowrate (Rm^3/s**) :	20.1
Wet Reference Flowrate (Rm^3/s*) :	18.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 24
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	72.1	91.9	82.0	17.1
12378-pentachlorodibenzo-p-dioxin	97.9	182	140	42.4
123478-hexachlorodibenzo-p-dioxin	18.1	52.3	35.2	68.5
123678-hexachlorodibenzo-p-dioxin	38.9	71.3	55.1	41.6
123789-hexachlorodibenzo-p-dioxin	40.0	82.5	61.2	49.1
1234678-heptachlorodibenzo-p-dioxin	180	330	255	41.8
Octachlorodibenzo-p-dioxin	429	524	477	14.1
2378-tetrachlorodibenzofuran	682	816	749	12.6
12378-pentachlorodibenzofuran	609	1031	820	36.4
23478-pentachlorodibenzofuran	509	928	719	41.2
123478-hexachlorodibenzofuran	407	1029	718	61.3
123678-hexachlorodibenzofuran	295	722	508	59.4
234678-hexachlorodibenzofuran	132	379	255	68.6
123789-hexachlorodibenzofuran	10.1	25.2	17.6	60.3
1234678-heptachlorodibenzofuran	562	1648	1105	69.5
1234789-heptachlorodibenzofuran	45.0	133	89.1	70.0
Octachlorodibenzofuran	105	278	191	63.8
PCB 81	24.4	29.7	27.1	13.8
PCB 77	117	147	132	16.0
PCB 123	16.6	28.0	22.3	36.2
PCB 118	145	472	308	75.0
PCB 114	10.6	24.5	17.6	55.7
PCB 105	59.3	210	135	79.1
PCB 126	61.1	108	84.7	39.5
PCB 167	24.4	57.7	41.0	57.3
PCB 156 + PCB 157	47.1	138	92.6	69.5
PCB 169	<16.9	35.0	<25.9	49.1
PCB 189	19.2	<40.2	<29.7	50.0
Total Dioxins & Furans Only	4231	8324	6278	46.1
Dioxin-Like PCBs	<541	<1290	<916	57.8
Total Dioxins & Furans and PCBs	<4773	<9614	<7193	47.6
Total PCBs	61065	10660	35863	99.4

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 25
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Dry Reference Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	131	162	147	15.4
12378-pentachlorodibenzo-p-dioxin	177	321	249	40.8
123478-hexachlorodibenzo-p-dioxin	32.9	92.4	62.6	67.2
123678-hexachlorodibenzo-p-dioxin	70.5	126	98.3	40.0
123789-hexachlorodibenzo-p-dioxin	72.4	146	109	47.6
1234678-heptachlorodibenzo-p-dioxin	326	584	455	40.2
Octachlorodibenzo-p-dioxin	778	927	852	12.4
2378-tetrachlorodibenzofuran	1236	1443	1339	10.9
12378-pentachlorodibenzofuran	1103	1823	1463	34.8
23478-pentachlorodibenzofuran	923	1640	1282	39.6
123478-hexachlorodibenzofuran	737	1820	1278	59.9
123678-hexachlorodibenzofuran	534	1276	905	57.9
234678-hexachlorodibenzofuran	238	670	454	67.2
123789-hexachlorodibenzofuran	18.3	44.5	31.4	58.9
1234678-heptachlorodibenzofuran	1018	2913	1966	68.2
1234789-heptachlorodibenzofuran	81.6	235	158	68.6
Octachlorodibenzofuran	190	491	341	62.4
PCB 81	44.3	52.5	48.4	12.1
PCB 77	212	259	236	14.3
PCB 123	30.0	49.4	39.7	34.5
PCB 118	262	834	548	73.7
PCB 114	19.3	43.2	31.3	54.2
PCB 105	107	371	239	77.8
PCB 126	111	192	151	37.9
PCB 167	44.3	102	73.1	55.8
PCB 156 + PCB 157	85.4	244	165	68.1
PCB 169	<30.7	61.8	<46.2	47.6
PCB 189	34.8	<71.1	<52.9	48.5
Total Dioxins & Furans Only	7667	14715	11191	44.5
Dioxin-Like PCBs	<981	<2280	<1630	56.3
Total Dioxins & Furans and PCBs	<8648	<16994	<12821	46.0
Total PCBs	110654	18845	64750	100

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 26
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Dry Adjusted Concentration Test No. 7 pg/Rm³*	Test No. 8 pg/Rm³*	Average pg/Rm³*	Coefficient of Variation %
2378-tetrachlorodibenzo-p-dioxin	95.8	125	111	18.8
12378-pentachlorodibenzo-p-dioxin	130	248	189	44.0
123478-hexachlorodibenzo-p-dioxin	24.1	71.2	47.7	69.8
123678-hexachlorodibenzo-p-dioxin	51.7	97.2	74.5	43.2
123789-hexachlorodibenzo-p-dioxin	53.1	112	82.8	50.6
1234678-heptachlorodibenzo-p-dioxin	239	450	345	43.3
Octachlorodibenzo-p-dioxin	571	715	643	15.8
2378-tetrachlorodibenzofuran	907	1113	1010	14.4
12378-pentachlorodibenzofuran	810	1406	1108	38.0
23478-pentachlorodibenzofuran	678	1265	971	42.8
123478-hexachlorodibenzofuran	541	1403	972	62.7
123678-hexachlorodibenzofuran	392	984	688	60.8
234678-hexachlorodibenzofuran	175	517	346	69.9
123789-hexachlorodibenzofuran	13.5	34.3	23.9	61.7
1234678-heptachlorodibenzofuran	747	2246	1497	70.8
1234789-heptachlorodibenzofuran	59.9	182	121	71.3
Octachlorodibenzofuran	140	379	259	65.2
PCB 81	32.5	40.5	36.5	15.5
PCB 77	155	200	178	17.8
PCB 123	22.0	38.1	30.1	37.8
PCB 118	193	643	418	76.2
PCB 114	14.2	33.4	23.8	57.1
PCB 105	78.9	286	182	80.2
PCB 126	81.2	148	114	41.1
PCB 167	32.5	78.6	55.6	58.7
PCB 156 + PCB 157	62.7	188	125	70.8
PCB 169	<22.5	47.6	<35.1	50.7
PCB 189	25.5	<54.8	<40.2	51.5
Total Dioxins & Furans Only	5628	11347	8487	47.6
Dioxin-Like PCBs	<720	<1758	<1239	59.2
Total Dioxins & Furans and PCBs	<6348	<13105	<9727	49.1
Total PCBs	81219	14532	47876	98.5

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 27
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Wet Reference Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	107	138	123	17.4
12378-pentachlorodibenzo-p-dioxin	146	272	209	42.7
123478-hexachlorodibenzo-p-dioxin	27.1	78.2	52.7	68.7
123678-hexachlorodibenzo-p-dioxin	58.0	107	82.4	41.8
123789-hexachlorodibenzo-p-dioxin	59.6	124	91.6	49.4
1234678-heptachlorodibenzo-p-dioxin	268	495	381	42.0
Octachlorodibenzo-p-dioxin	640	785	713	14.4
2378-tetrachlorodibenzofuran	1018	1222	1120	12.9
12378-pentachlorodibenzofuran	908	1544	1226	36.7
23478-pentachlorodibenzofuran	760	1389	1075	41.4
123478-hexachlorodibenzofuran	606	1541	1074	61.6
123678-hexachlorodibenzofuran	440	1081	760	59.6
234678-hexachlorodibenzofuran	196	568	382	68.8
123789-hexachlorodibenzofuran	15.1	37.7	26.4	60.5
1234678-heptachlorodibenzofuran	838	2467	1653	69.7
1234789-heptachlorodibenzofuran	67.1	199	133	70.2
Octachlorodibenzofuran	157	416	286	64.0
PCB 81	36.4	44.5	40.5	14.1
PCB 77	174	220	197	16.3
PCB 123	24.7	41.9	33.3	36.4
PCB 118	216	706	461	75.2
PCB 114	15.9	36.6	26.3	55.9
PCB 105	88.5	314	201	79.2
PCB 126	91.1	162	127	39.7
PCB 167	36.4	86.3	61.4	57.5
PCB 156 + PCB 157	70.3	207	138	69.7
PCB 169	<25.2	52.3	<38.8	49.4
PCB 189	28.6	<60.2	<44.4	50.2
Total Dioxins & Furans Only	6312	12463	9387	46.3
Dioxin-Like PCBs	<808	<1931	<1369	58.0
Total Dioxins & Furans and PCBs	<7119	<14394	<10757	47.8
Total PCBs	91091	15961	53526	99.3

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 28
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Emission Rate Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	1.95	2.52	2.23	18.2
12378-pentachlorodibenzo-p-dioxin	2.64	4.98	3.81	43.4
123478-hexachlorodibenzo-p-dioxin	0.49	1.43	0.96	69.3
123678-hexachlorodibenzo-p-dioxin	1.05	1.95	1.50	42.5
123789-hexachlorodibenzo-p-dioxin	1.08	2.26	1.67	50.0
1234678-heptachlorodibenzo-p-dioxin	4.85	9.05	6.95	42.7
Octachlorodibenzo-p-dioxin	11.6	14.4	13.0	15.1
2378-tetrachlorodibenzofuran	18.4	22.4	20.4	13.7
12378-pentachlorodibenzofuran	16.4	28.3	22.3	37.4
23478-pentachlorodibenzofuran	13.8	25.4	19.6	42.1
123478-hexachlorodibenzofuran	11.0	28.2	19.6	62.2
123678-hexachlorodibenzofuran	7.96	19.8	13.9	60.2
234678-hexachlorodibenzofuran	3.55	10.4	6.97	69.4
123789-hexachlorodibenzofuran	0.27	0.69	0.48	61.2
1234678-heptachlorodibenzofuran	15.2	45.2	30.2	70.3
1234789-heptachlorodibenzofuran	1.22	3.65	2.43	70.7
Octachlorodibenzofuran	2.84	7.61	5.22	64.7
PCB 81	0.66	0.81	0.74	14.8
PCB 77	3.16	4.02	3.59	17.1
PCB 123	0.45	0.77	0.61	37.1
PCB 118	3.91	12.9	8.42	75.7
PCB 114	0.29	0.67	0.48	56.6
PCB 105	1.60	5.75	3.67	79.8
PCB 126	1.65	2.97	2.31	40.4
PCB 167	0.66	1.58	1.12	58.1
PCB 156 + PCB 157	1.27	3.78	2.53	70.3
PCB 169	<0.46	0.96	<0.71	50.1
PCB 189	0.52	<1.10	<0.81	50.9
Total Dioxins & Furans Only	114	228	171	47.0
Dioxin-Like PCBs	<14.6	<35.3	<25.0	58.7
Total Dioxins & Furans and PCBs	<129	<263	<196	48.5
Total PCBs	1649	292	970	98.9

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 29
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	82.0	147	111	123	2.23
12378-pentachlorodibenzo-p-dioxin	140	249	189	209	3.81
123478-hexachlorodibenzo-p-dioxin	35.2	62.6	47.7	52.7	0.96
123678-hexachlorodibenzo-p-dioxin	55.1	98.3	74.5	82.4	1.50
123789-hexachlorodibenzo-p-dioxin	61.2	109	82.8	91.6	1.67
1234678-heptachlorodibenzo-p-dioxin	255	455	345	381	6.95
Octachlorodibenzo-p-dioxin	477	852	643	713	13.0
2378-tetrachlorodibenzofuran	749	1339	1010	1120	20.4
12378-pentachlorodibenzofuran	820	1463	1108	1226	22.3
23478-pentachlorodibenzofuran	719	1282	971	1075	19.6
123478-hexachlorodibenzofuran	718	1278	972	1074	19.6
123678-hexachlorodibenzofuran	508	905	688	760	13.9
234678-hexachlorodibenzofuran	255	454	346	382	6.97
123789-hexachlorodibenzofuran	17.6	31.4	23.9	26.4	0.48
1234678-heptachlorodibenzofuran	1105	1966	1497	1653	30.2
1234789-heptachlorodibenzofuran	89.1	158	121	133	2.43
Octachlorodibenzofuran	191	341	259	286	5.22
PCB 81	27.1	48.4	36.5	40.5	0.74
PCB 77	132	236	178	197	3.59
PCB 123	22.3	39.7	30.1	33.3	0.61
PCB 118	308	548	418	461	8.42
PCB 114	17.6	31.3	23.8	26.3	0.48
PCB 105	135	239	182	201	3.67
PCB 126	84.7	151	114	127	2.31
PCB 167	41.0	73.1	55.6	61.4	1.12
PCB 156 + PCB 157	92.6	165	125	138	2.53
PCB 169	<25.9	<46.2	<35.1	<38.8	<0.71
PCB 189	<29.7	<52.9	<40.2	<44.4	<0.81
Total Dioxins & Furans Only	6278	11191	8487	9387	171
Dioxin-Like PCBs	<916	<1630	<1239	<1369	<25.0
Total Dioxins & Furans and PCBs	<7193	<12821	<9727	<10757	<196
Total PCBs	35863	64750	47876	53526	970

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 30
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 7 pg TEQ/m³	Test No. 8 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	72.1	91.9	82.0
12378-pentachlorodibenzo-p-dioxin	1.000	97.9	182	140
123478-hexachlorodibenzo-p-dioxin	0.100	1.81	5.23	3.52
123678-hexachlorodibenzo-p-dioxin	0.100	3.89	7.13	5.51
123789-hexachlorodibenzo-p-dioxin	0.100	4.00	8.25	6.12
1234678-heptachlorodibenzo-p-dioxin	0.010	1.80	3.30	2.55
Octachlorodibenzo-p-dioxin	0.0003	0.13	0.16	0.14
2378-tetrachlorodibenzofuran	0.100	68.2	81.6	74.9
12378-pentachlorodibenzofuran	0.030	18.3	30.9	24.6
23478-pentachlorodibenzofuran	0.300	153	278	216
123478-hexachlorodibenzofuran	0.100	40.7	103	71.8
123678-hexachlorodibenzofuran	0.100	29.5	72.2	50.8
234678-hexachlorodibenzofuran	0.100	13.2	37.9	25.5
123789-hexachlorodibenzofuran	0.100	1.01	2.52	1.76
1234678-heptachlorodibenzofuran	0.010	5.62	16.5	11.0
1234789-heptachlorodibenzofuran	0.010	0.45	1.33	0.89
Octachlorodibenzofuran	0.0003	0.032	0.083	0.057
PCB 81	0.0003	0.0073	0.0089	0.0081
PCB 77	0.0001	0.012	0.015	0.013
PCB 123	0.00003	0.00050	0.00084	0.00067
PCB 118	0.00003	0.0043	0.014	0.0092
PCB 114	0.00003	0.00032	0.00073	0.00053
PCB 105	0.00003	0.0018	0.0063	0.0040
PCB 126	0.100	6.11	10.8	8.47
PCB 167	0.00003	0.00073	0.0017	0.0012
PCB 156 + PCB 157	0.00003	0.0014	0.0041	0.0028
PCB 169	0.030	<0.51	1.05	<0.78
PCB 189	0.00003	0.00058	<0.0012	<0.00089
Total Dioxins & Furans Only		511	922	717
Dioxin-Like PCBs		<6.64	<11.9	<9.29
Total Dioxins & Furans and PCBs		<518	<934	<726

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 31
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	131	162	147
12378-pentachlorodibenzo-p-dioxin	1.000	177	321	249
123478-hexachlorodibenzo-p-dioxin	0.100	3.29	9.24	6.26
123678-hexachlorodibenzo-p-dioxin	0.100	7.05	12.6	9.83
123789-hexachlorodibenzo-p-dioxin	0.100	7.24	14.6	10.9
1234678-heptachlorodibenzo-p-dioxin	0.010	3.26	5.84	4.55
Octachlorodibenzo-p-dioxin	0.0003	0.23	0.28	0.26
2378-tetrachlorodibenzofuran	0.100	124	144	134
12378-pentachlorodibenzofuran	0.030	33.1	54.7	43.9
23478-pentachlorodibenzofuran	0.300	277	492	385
123478-hexachlorodibenzofuran	0.100	73.7	182	128
123678-hexachlorodibenzofuran	0.100	53.4	128	90.5
234678-hexachlorodibenzofuran	0.100	23.8	67.0	45.4
123789-hexachlorodibenzofuran	0.100	1.83	4.45	3.14
1234678-heptachlorodibenzofuran	0.010	10.2	29.1	19.7
1234789-heptachlorodibenzofuran	0.010	0.82	2.35	1.58
Octachlorodibenzofuran	0.0003	0.057	0.15	0.10
PCB 81	0.0003	0.013	0.016	0.015
PCB 77	0.0001	0.021	0.026	0.024
PCB 123	0.00003	0.00090	0.0015	0.0012
PCB 118	0.00003	0.0079	0.025	0.016
PCB 114	0.00003	0.00058	0.0013	0.00094
PCB 105	0.00003	0.0032	0.011	0.0072
PCB 126	0.100	11.1	19.2	15.1
PCB 167	0.00003	0.0013	0.0031	0.0022
PCB 156 + PCB 157	0.00003	0.0026	0.0073	0.0049
PCB 169	0.030	<0.92	1.85	<1.39
PCB 189	0.00003	0.0010	<0.0021	<0.0016
Total Dioxins & Furans Only		926	1630	1278
Dioxin-Like PCBs		<12.0	<21.1	<16.6
Total Dioxins & Furans and PCBs		<939	<1651	<1295

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 32
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	95.8	125	111
12378-pentachlorodibenzo-p-dioxin	1.000	130	248	189
123478-hexachlorodibenzo-p-dioxin	0.100	2.41	7.12	4.77
123678-hexachlorodibenzo-p-dioxin	0.100	5.17	9.72	7.45
123789-hexachlorodibenzo-p-dioxin	0.100	5.31	11.2	8.28
1234678-heptachlorodibenzo-p-dioxin	0.010	2.39	4.50	3.45
Octachlorodibenzo-p-dioxin	0.0003	0.17	0.21	0.19
2378-tetrachlorodibenzofuran	0.100	90.7	111	101
12378-pentachlorodibenzofuran	0.030	24.3	42.2	33.2
23478-pentachlorodibenzofuran	0.300	203	379	291
123478-hexachlorodibenzofuran	0.100	54.1	140	97.2
123678-hexachlorodibenzofuran	0.100	39.2	98.4	68.8
234678-hexachlorodibenzofuran	0.100	17.5	51.7	34.6
123789-hexachlorodibenzofuran	0.100	1.35	3.43	2.39
1234678-heptachlorodibenzofuran	0.010	7.47	22.5	15.0
1234789-heptachlorodibenzofuran	0.010	0.60	1.82	1.21
Octachlorodibenzofuran	0.0003	0.042	0.11	0.078
PCB 81	0.0003	0.0097	0.012	0.011
PCB 77	0.0001	0.016	0.020	0.018
PCB 123	0.00003	0.00066	0.0011	0.00090
PCB 118	0.00003	0.0058	0.019	0.013
PCB 114	0.00003	0.00042	0.0010	0.00071
PCB 105	0.00003	0.0024	0.0086	0.0055
PCB 126	0.100	8.12	14.8	11.4
PCB 167	0.00003	0.00097	0.0024	0.0017
PCB 156 + PCB 157	0.00003	0.0019	0.0056	0.0038
PCB 169	0.030	<0.68	1.43	<1.05
PCB 189	0.00003	0.00077	<0.0016	<0.0012
Total Dioxins & Furans Only		680	1257	969
Dioxin-Like PCBs		<8.84	<16.3	<12.6
Total Dioxins & Furans and PCBs		<689	<1273	<981

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 33
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	95.8	125	111
12378-pentachlorodibenzo-p-dioxin	0.500	65.1	124	94.5
123478-hexachlorodibenzo-p-dioxin	0.100	2.41	7.12	4.77
123678-hexachlorodibenzo-p-dioxin	0.100	5.17	9.72	7.45
123789-hexachlorodibenzo-p-dioxin	0.100	5.31	11.2	8.28
1234678-heptachlorodibenzo-p-dioxin	0.010	2.39	4.50	3.45
Octachlorodibenzo-p-dioxin	0.001	0.57	0.71	0.64
2378-tetrachlorodibenzofuran	0.100	90.7	111	101
12378-pentachlorodibenzofuran	0.050	40.5	70.3	55.4
23478-pentachlorodibenzofuran	0.500	339	632	486
123478-hexachlorodibenzofuran	0.100	54.1	140	97.2
123678-hexachlorodibenzofuran	0.100	39.2	98.4	68.8
234678-hexachlorodibenzofuran	0.100	17.5	51.7	34.6
123789-hexachlorodibenzofuran	0.100	1.35	3.43	2.39
1234678-heptachlorodibenzofuran	0.010	7.47	22.5	15.0
1234789-heptachlorodibenzofuran	0.010	0.60	1.82	1.21
Octachlorodibenzofuran	0.001	0.14	0.38	0.26
Total Dioxins & Furans		767	1415	1091

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 34
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	107	138	123
12378-pentachlorodibenzo-p-dioxin	1.000	146	272	209
123478-hexachlorodibenzo-p-dioxin	0.100	2.71	7.82	5.27
123678-hexachlorodibenzo-p-dioxin	0.100	5.80	10.7	8.24
123789-hexachlorodibenzo-p-dioxin	0.100	5.96	12.4	9.16
1234678-heptachlorodibenzo-p-dioxin	0.010	2.68	4.95	3.81
Octachlorodibenzo-p-dioxin	0.0003	0.19	0.24	0.21
2378-tetrachlorodibenzofuran	0.100	102	122	112
12378-pentachlorodibenzofuran	0.030	27.2	46.3	36.8
23478-pentachlorodibenzofuran	0.300	228	417	322
123478-hexachlorodibenzofuran	0.100	60.6	154	107
123678-hexachlorodibenzofuran	0.100	44.0	108	76.0
234678-hexachlorodibenzofuran	0.100	19.6	56.8	38.2
123789-hexachlorodibenzofuran	0.100	1.51	3.77	2.64
1234678-heptachlorodibenzofuran	0.010	8.38	24.7	16.5
1234789-heptachlorodibenzofuran	0.010	0.67	1.99	1.33
Octachlorodibenzofuran	0.0003	0.047	0.12	0.086
PCB 81	0.0003	0.011	0.013	0.012
PCB 77	0.0001	0.017	0.022	0.020
PCB 123	0.00003	0.00074	0.0013	0.0010
PCB 118	0.00003	0.0065	0.021	0.014
PCB 114	0.00003	0.00048	0.0011	0.00079
PCB 105	0.00003	0.0027	0.0094	0.0060
PCB 126	0.100	9.11	16.2	12.7
PCB 167	0.00003	0.0011	0.0026	0.0018
PCB 156 + PCB 157	0.00003	0.0021	0.0062	0.0042
PCB 169	0.030	<0.76	1.57	<1.16
PCB 189	0.00003	0.00086	<0.0018	<0.0013
Total Dioxins & Furans Only		763	1381	1072
Dioxin-Like PCBs		<9.91	<17.9	<13.9
Total Dioxins & Furans and PCBs		<773	<1399	<1086

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 35
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 7 ng TEQ/s	Test No. 8 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	1.95	2.52	2.23
12378-pentachlorodibenzo-p-dioxin	1.000	2.64	4.98	3.81
123478-hexachlorodibenzo-p-dioxin	0.100	0.049	0.14	0.096
123678-hexachlorodibenzo-p-dioxin	0.100	0.11	0.20	0.15
123789-hexachlorodibenzo-p-dioxin	0.100	0.11	0.23	0.17
1234678-heptachlorodibenzo-p-dioxin	0.010	0.049	0.091	0.070
Octachlorodibenzo-p-dioxin	0.0003	0.0035	0.0043	0.0039
2378-tetrachlorodibenzofuran	0.100	1.84	2.24	2.04
12378-pentachlorodibenzofuran	0.030	0.49	0.85	0.67
23478-pentachlorodibenzofuran	0.300	4.13	7.63	5.88
123478-hexachlorodibenzofuran	0.100	1.10	2.82	1.96
123678-hexachlorodibenzofuran	0.100	0.80	1.98	1.39
234678-hexachlorodibenzofuran	0.100	0.36	1.04	0.70
123789-hexachlorodibenzofuran	0.100	0.027	0.069	0.048
1234678-heptachlorodibenzofuran	0.010	0.15	0.45	0.30
1234789-heptachlorodibenzofuran	0.010	0.012	0.036	0.024
Octachlorodibenzofuran	0.0003	0.00085	0.0023	0.0016
PCB 81	0.0003	0.00020	0.00024	0.00022
PCB 77	0.0001	0.00032	0.00040	0.00036
PCB 123	0.00003	0.000013	0.000023	0.000018
PCB 118	0.00003	0.00012	0.00039	0.00025
PCB 114	0.00003	0.0000086	0.000020	0.000014
PCB 105	0.00003	0.000048	0.00017	0.00011
PCB 126	0.100	0.16	0.30	0.23
PCB 167	0.00003	0.000020	0.000047	0.000034
PCB 156 + PCB 157	0.00003	0.000038	0.00011	0.000076
PCB 169	0.030	<0.014	0.029	<0.021
PCB 189	0.00003	0.000016	<0.000033	<0.000024
Total Dioxins & Furans Only		13.8	25.3	19.5
Dioxin-Like PCBs		<0.18	<0.33	<0.25
Total Dioxins & Furans and PCBs		<14.0	<25.6	<19.8

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 36
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	82.0	147	111	123	2.23
12378-pentachlorodibenzo-p-dioxin	140	249	189	209	3.81
123478-hexachlorodibenzo-p-dioxin	3.52	6.26	4.77	5.27	0.096
123678-hexachlorodibenzo-p-dioxin	5.51	9.83	7.45	8.24	0.15
123789-hexachlorodibenzo-p-dioxin	6.12	10.9	8.28	9.16	0.17
1234678-heptachlorodibenzo-p-dioxin	2.55	4.55	3.45	3.81	0.070
Octachlorodibenzo-p-dioxin	0.14	0.26	0.19	0.21	0.0039
2378-tetrachlorodibenzofuran	74.9	134	101	112	2.04
12378-pentachlorodibenzofuran	24.6	43.9	33.2	36.8	0.67
23478-pentachlorodibenzofuran	216	385	291	322	5.88
123478-hexachlorodibenzofuran	71.8	128	97.2	107	1.96
123678-hexachlorodibenzofuran	50.8	90.5	68.8	76.0	1.39
234678-hexachlorodibenzofuran	25.5	45.4	34.6	38.2	0.70
123789-hexachlorodibenzofuran	1.76	3.14	2.39	2.64	0.048
1234678-heptachlorodibenzofuran	11.0	19.7	15.0	16.5	0.30
1234789-heptachlorodibenzofuran	0.89	1.58	1.21	1.33	0.024
Octachlorodibenzofuran	0.057	0.10	0.078	0.086	0.0016
PCB 81	0.0081	0.015	0.011	0.012	0.00022
PCB 77	0.013	0.024	0.018	0.020	0.00036
PCB 123	0.00067	0.0012	0.00090	0.0010	0.000018
PCB 118	0.0092	0.016	0.013	0.014	0.00025
PCB 114	0.00053	0.00094	0.00071	0.00079	0.000014
PCB 105	0.0040	0.0072	0.0055	0.0060	0.00011
PCB 126	8.47	15.1	11.4	12.7	0.23
PCB 167	0.0012	0.0022	0.0017	0.0018	0.000034
PCB 156 + PCB 157	0.0028	0.0049	0.0038	0.0042	0.000076
PCB 169	<0.78	<1.39	<1.05	<1.16	<0.021
PCB 189	<0.00089	<0.0016	<0.0012	<0.0013	<0.000024
Total Dioxins & Furans Only	717	1278	969	1072	19.5
Dioxin-Like PCBs	<9.29	<16.6	<12.6	<13.9	<0.25
Total Dioxins & Furans and PCBs	<726	<1295	<981	<1086	<19.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 37
Covanta - Durham York Energy Centre
Boiler No. 1 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	82.0	147	111	123	2.23
12378-pentachlorodibenzo-p-dioxin	140	249	189	209	3.81
123478-hexachlorodibenzo-p-dioxin	3.52	6.26	4.77	5.27	0.096
123678-hexachlorodibenzo-p-dioxin	5.51	9.83	7.45	8.24	0.15
123789-hexachlorodibenzo-p-dioxin	6.12	10.9	8.28	9.16	0.17
1234678-heptachlorodibenzo-p-dioxin	2.55	4.55	3.45	3.81	0.070
Octachlorodibenzo-p-dioxin	0.14	0.26	0.19	0.21	0.0039
2378-tetrachlorodibenzofuran	74.9	134	101	112	2.04
12378-pentachlorodibenzofuran	24.6	43.9	33.2	36.8	0.67
23478-pentachlorodibenzofuran	216	385	291	322	5.88
123478-hexachlorodibenzofuran	71.8	128	97.2	107	1.96
123678-hexachlorodibenzofuran	50.8	90.5	68.8	76.0	1.39
234678-hexachlorodibenzofuran	25.5	45.4	34.6	38.2	0.70
123789-hexachlorodibenzofuran	1.76	3.14	2.39	2.64	0.048
1234678-heptachlorodibenzofuran	11.0	19.7	15.0	16.5	0.30
1234789-heptachlorodibenzofuran	0.89	1.58	1.21	1.33	0.024
Octachlorodibenzofuran	0.057	0.10	0.078	0.086	0.0016
PCB 81	0.0081	0.015	0.011	0.012	0.00022
PCB 77	0.013	0.024	0.018	0.020	0.00036
PCB 123	0.00067	0.0012	0.00090	0.0010	0.000018
PCB 118	0.0092	0.016	0.013	0.014	0.00025
PCB 114	0.00053	0.00094	0.00071	0.00079	0.000014
PCB 105	0.0040	0.0072	0.0055	0.0060	0.00011
PCB 126	8.47	15.1	11.4	12.7	0.23
PCB 167	0.0012	0.0022	0.0017	0.0018	0.000034
PCB 156 + PCB 157	0.0028	0.0049	0.0038	0.0042	0.000076
PCB 169	0.65	1.16	0.88	0.97	0.018
PCB 189	0.00059	0.0011	0.00079	0.00088	0.000016
Total Dioxins & Furans Only	717	1278	969	1072	19.5
Dioxin-Like PCBs	9.16	16.3	12.4	13.7	0.25
Total Dioxins & Furans and PCBs	726	1295	981	1085	19.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 38
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 7 - Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.3	<0.40	<0.69	<0.53	<0.57	<0.010
12378-pentachlorodibenzo-p-dioxin	7.6	0.91	1.58	1.23	1.31	0.024
123478-hexachlorodibenzo-p-dioxin	10.3	1.23	2.15	1.66	1.77	0.032
123678-hexachlorodibenzo-p-dioxin	35.4	4.24	7.38	5.71	6.08	0.11
123789-hexachlorodibenzo-p-dioxin	19.7	2.36	4.11	3.18	3.39	0.062
1234678-heptachlorodibenzo-p-dioxin	368	44.1	76.7	59.3	63.2	1.15
Octachlorodibenzo-p-dioxin	580	69.5	121	93.5	99.7	1.81
2378-tetrachlorodibenzofuran	<6.2	<0.74	<1.29	<1.00	<1.07	<0.019
12378-pentachlorodibenzofuran	7.5	0.90	1.56	1.21	1.29	0.023
23478-pentachlorodibenzofuran	16.2	1.94	3.38	2.61	2.78	0.051
123478-hexachlorodibenzofuran	25.0	3.00	5.21	4.03	4.30	0.078
123678-hexachlorodibenzofuran	13.5	1.62	2.81	2.18	2.32	0.042
234678-hexachlorodibenzofuran	19.4	2.32	4.05	3.13	3.33	0.061
123789-hexachlorodibenzofuran	<3.3	<0.40	<0.69	<0.53	<0.57	<0.010
1234678-heptachlorodibenzofuran	71.9	8.62	15.0	11.6	12.4	0.22
1234789-heptachlorodibenzofuran	12.6	1.51	2.63	2.03	2.17	0.039
Octachlorodibenzofuran	<76	<9.11	<15.8	<12.3	<13.1	<0.24
PCB 81	<40	<4.79	<8.34	<6.45	<6.87	<0.13
PCB 77	120	14.4	25.0	19.3	20.6	0.38
PCB 123	78	9.35	16.3	12.6	13.4	0.24
PCB 118	5800	695	1209	935	997	18.1
PCB 114	150	18.0	31.3	24.2	25.8	0.47
PCB 105	1900	228	396	306	327	5.94
PCB 126	<31	<3.71	<6.46	<5.00	<5.33	<0.097
PCB 167	560	67.1	117	90.3	96.2	1.75
PCB 156 + PCB 157	1600	192	334	258	275	5.00
PCB 169	<44	<5.27	<9.17	<7.09	<7.56	<0.14
PCB 189	330	39.5	68.8	53.2	56.7	1.03
Total Dioxins & Furans Only	<1276	<153	<266	<206	<219	<3.99
Dioxin-Like PCBs	<10653	<1277	<2221	<1717	<1831	<33.3
Total Dioxins & Furans and PCBs	<11929	<1429	<2487	<1923	<2050	<37.3
Total PCBs	260000	31156	54212	41916	44680	813

Dry Gas Volume Sampled (Rm^3*) :	4.796
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	15.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	18.2

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 39
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 8 - Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.3	<0.39	<0.67	<0.54	<0.56	<0.011
12378-pentachlorodibenzo-p-dioxin	6.9	0.82	1.40	1.13	1.18	0.022
123478-hexachlorodibenzo-p-dioxin	8.7	1.04	1.77	1.43	1.48	0.028
123678-hexachlorodibenzo-p-dioxin	20.2	2.41	4.10	3.32	3.44	0.064
123789-hexachlorodibenzo-p-dioxin	16.3	1.95	3.31	2.68	2.78	0.052
1234678-heptachlorodibenzo-p-dioxin	204	24.4	41.4	33.5	34.8	0.65
Octachlorodibenzo-p-dioxin	379	45.2	76.9	62.3	64.6	1.21
2378-tetrachlorodibenzofuran	<7.4	<0.88	<1.50	<1.22	<1.26	<0.024
12378-pentachlorodibenzofuran	14.3	1.71	2.90	2.35	2.44	0.046
23478-pentachlorodibenzofuran	20.7	2.47	4.20	3.40	3.53	0.066
123478-hexachlorodibenzofuran	28.9	3.45	5.87	4.75	4.93	0.092
123678-hexachlorodibenzofuran	17.5	2.09	3.55	2.88	2.98	0.056
234678-hexachlorodibenzofuran	17.9	2.14	3.63	2.94	3.05	0.057
123789-hexachlorodibenzofuran	<3.6	<0.43	<0.73	<0.59	<0.61	<0.011
1234678-heptachlorodibenzofuran	80.9	9.66	16.4	13.3	13.8	0.26
1234789-heptachlorodibenzofuran	13.1	1.56	2.66	2.15	2.23	0.042
Octachlorodibenzofuran	<62	<7.40	<12.6	<10.2	<10.6	<0.20
PCB 81	<42	<5.01	<8.53	<6.90	<7.16	<0.13
PCB 77	<40	<4.77	<8.12	<6.57	<6.82	<0.13
PCB 123	<34	<4.06	<6.90	<5.59	<5.79	<0.11
PCB 118	900	107	183	148	153	2.87
PCB 114	<30	<3.58	<6.09	<4.93	<5.11	<0.096
PCB 105	280	33.4	56.8	46.0	47.7	0.89
PCB 126	<31	<3.70	<6.29	<5.09	<5.28	<0.099
PCB 167	<21	<2.51	<4.26	<3.45	<3.58	<0.067
PCB 156 + PCB 157	31	3.70	6.29	5.09	5.28	0.099
PCB 169	<21	<2.51	<4.26	<3.45	<3.58	<0.067
PCB 189	<31	<3.70	<6.29	<5.09	<5.28	<0.099
Total Dioxins & Furans Only	<905	<108	<184	<149	<154	<2.88
Dioxin-Like PCBs	<1461	<174	<297	<240	<249	<4.66
Total Dioxins & Furans and PCBs	<2366	<282	<480	<389	<403	<7.54
Total PCBs	25000	2984	5075	4107	4261	79.7

Dry Gas Volume Sampled (Rm^3*) :	4.926
Actual Flowrate (m^3/s) :	26.7
Dry Reference Flowrate (Rm^3/s*) :	15.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 40
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	<0.40	<0.39	<0.39	0.3
12378-pentachlorodibenzo-p-dioxin	0.91	0.82	0.87	7.1
123478-hexachlorodibenzo-p-dioxin	1.23	1.04	1.14	12.2
123678-hexachlorodibenzo-p-dioxin	4.24	2.41	3.33	38.9
123789-hexachlorodibenzo-p-dioxin	2.36	1.95	2.15	13.6
1234678-heptachlorodibenzo-p-dioxin	44.1	24.4	34.2	40.8
Octachlorodibenzo-p-dioxin	69.5	45.2	57.4	29.9
2378-tetrachlorodibenzofuran	<0.74	<0.88	<0.81	12.2
12378-pentachlorodibenzofuran	0.90	1.71	1.30	43.9
23478-pentachlorodibenzofuran	1.94	2.47	2.21	17.0
123478-hexachlorodibenzofuran	3.00	3.45	3.22	10.0
123678-hexachlorodibenzofuran	1.62	2.09	1.85	18.0
234678-hexachlorodibenzofuran	2.32	2.14	2.23	6.0
123789-hexachlorodibenzofuran	<0.40	<0.43	<0.41	5.9
1234678-heptachlorodibenzofuran	8.62	9.66	9.14	8.1
1234789-heptachlorodibenzofuran	1.51	1.56	1.54	2.5
Octachlorodibenzofuran	<9.11	<7.40	<8.25	14.6
PCB 81	<4.79	<5.01	<4.90	3.2
PCB 77	14.4	<4.77	<9.58	70.9
PCB 123	9.35	<4.06	<6.70	55.8
PCB 118	695	107	401	104
PCB 114	18.0	<3.58	<10.8	94.4
PCB 105	228	33.4	131	105
PCB 126	<3.71	<3.70	<3.71	0.3
PCB 167	67.1	<2.51	<34.8	131
PCB 156 + PCB 157	192	3.70	97.7	136
PCB 169	<5.27	<2.51	<3.89	50.3
PCB 189	39.5	<3.70	<21.6	117
Total Dioxins & Furans Only	<153	<108	<130	24.3
Dioxin-Like PCBs	<1277	<174	<725	107
Total Dioxins & Furans and PCBs	<1429	<282	<856	94.8
Total PCBs	31156	2984	17070	117

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 41
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Dry Reference Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.69	<0.67	<0.68	1.9
12378-pentachlorodibenzo-p-dioxin	1.58	1.40	1.49	8.7
123478-hexachlorodibenzo-p-dioxin	2.15	1.77	1.96	13.8
123678-hexachlorodibenzo-p-dioxin	7.38	4.10	5.74	40.4
123789-hexachlorodibenzo-p-dioxin	4.11	3.31	3.71	15.2
1234678-heptachlorodibenzo-p-dioxin	76.7	41.4	59.1	42.3
Octachlorodibenzo-p-dioxin	121	76.9	98.9	31.4
2378-tetrachlorodibenzofuran	<1.29	<1.50	<1.40	10.6
12378-pentachlorodibenzofuran	1.56	2.90	2.23	42.4
23478-pentachlorodibenzofuran	3.38	4.20	3.79	15.4
123478-hexachlorodibenzofuran	5.21	5.87	5.54	8.3
123678-hexachlorodibenzofuran	2.81	3.55	3.18	16.4
234678-hexachlorodibenzofuran	4.05	3.63	3.84	7.6
123789-hexachlorodibenzofuran	<0.69	<0.73	<0.71	4.3
1234678-heptachlorodibenzofuran	15.0	16.4	15.7	6.4
1234789-heptachlorodibenzofuran	2.63	2.66	2.64	0.9
Octachlorodibenzofuran	<15.8	<12.6	<14.2	16.2
PCB 81	<8.34	<8.53	<8.43	1.6
PCB 77	25.0	<8.12	<16.6	72.1
PCB 123	16.3	<6.90	<11.6	57.1
PCB 118	1209	183	696	104
PCB 114	31.3	<6.09	<18.7	95.3
PCB 105	396	56.8	227	106
PCB 126	<6.46	<6.29	<6.38	1.9
PCB 167	117	<4.26	<60.5	131
PCB 156 + PCB 157	334	6.29	170	136
PCB 169	<9.17	<4.26	<6.72	51.7
PCB 189	68.8	<6.29	<37.6	118
Total Dioxins & Furans Only	<266	<184	<225	25.9
Dioxin-Like PCBs	<2221	<297	<1259	108
Total Dioxins & Furans and PCBs	<2487	<480	<1484	95.6
Total PCBs	54212	5075	29643	117

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Dry Adjusted Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.53	<0.54	<0.54	1.3
12378-pentachlorodibenzo-p-dioxin	1.23	1.13	1.18	5.5
123478-hexachlorodibenzo-p-dioxin	1.66	1.43	1.54	10.6
123678-hexachlorodibenzo-p-dioxin	5.71	3.32	4.51	37.4
123789-hexachlorodibenzo-p-dioxin	3.18	2.68	2.93	12.0
1234678-heptachlorodibenzo-p-dioxin	59.3	33.5	46.4	39.3
Octachlorodibenzo-p-dioxin	93.5	62.3	77.9	28.4
2378-tetrachlorodibenzofuran	<1.00	<1.22	<1.11	13.8
12378-pentachlorodibenzofuran	1.21	2.35	1.78	45.3
23478-pentachlorodibenzofuran	2.61	3.40	3.01	18.6
123478-hexachlorodibenzofuran	4.03	4.75	4.39	11.6
123678-hexachlorodibenzofuran	2.18	2.88	2.53	19.6
234678-hexachlorodibenzofuran	3.13	2.94	3.03	4.4
123789-hexachlorodibenzofuran	<0.53	<0.59	<0.56	7.5
1234678-heptachlorodibenzofuran	11.6	13.3	12.4	9.7
1234789-heptachlorodibenzofuran	2.03	2.15	2.09	4.1
Octachlorodibenzofuran	<12.3	<10.2	<11.2	13.0
PCB 81	<6.45	<6.90	<6.67	4.8
PCB 77	19.3	<6.57	<13.0	69.7
PCB 123	12.6	<5.59	<9.08	54.4
PCB 118	935	148	541	103
PCB 114	24.2	<4.93	<14.6	93.5
PCB 105	306	46.0	176	104
PCB 126	<5.00	<5.09	<5.05	1.3
PCB 167	90.3	<3.45	<46.9	131
PCB 156 + PCB 157	258	5.09	132	136
PCB 169	<7.09	<3.45	<5.27	48.9
PCB 189	53.2	<5.09	<29.1	117
Total Dioxins & Furans Only	<206	<149	<177	22.8
Dioxin-Like PCBs	<1717	<240	<979	107
Total Dioxins & Furans and PCBs	<1923	<389	<1156	93.9
Total PCBs	41916	4107	23012	116

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 43
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Wet Reference Concentration Test No. 7	Test No. 8	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.57	<0.56	<0.56	0.6
12378-pentachlorodibenzo-p-dioxin	1.31	1.18	1.24	7.4
123478-hexachlorodibenzo-p-dioxin	1.77	1.48	1.63	12.5
123678-hexachlorodibenzo-p-dioxin	6.08	3.44	4.76	39.2
123789-hexachlorodibenzo-p-dioxin	3.39	2.78	3.08	13.9
1234678-heptachlorodibenzo-p-dioxin	63.2	34.8	49.0	41.1
Octachlorodibenzo-p-dioxin	99.7	64.6	82.1	30.2
2378-tetrachlorodibenzofuran	<1.07	<1.26	<1.16	11.9
12378-pentachlorodibenzofuran	1.29	2.44	1.86	43.6
23478-pentachlorodibenzofuran	2.78	3.53	3.16	16.7
123478-hexachlorodibenzofuran	4.30	4.93	4.61	9.7
123678-hexachlorodibenzofuran	2.32	2.98	2.65	17.7
234678-hexachlorodibenzofuran	3.33	3.05	3.19	6.3
123789-hexachlorodibenzofuran	<0.57	<0.61	<0.59	5.6
1234678-heptachlorodibenzofuran	12.4	13.8	13.1	7.7
1234789-heptachlorodibenzofuran	2.17	2.23	2.20	2.2
Octachlorodibenzofuran	<13.1	<10.6	<11.8	14.9
PCB 81	<6.87	<7.16	<7.02	2.9
PCB 77	20.6	<6.82	<13.7	71.1
PCB 123	13.4	<5.79	<9.60	56.1
PCB 118	997	153	575	104
PCB 114	25.8	<5.11	<15.4	94.6
PCB 105	327	47.7	187	105
PCB 126	<5.33	<5.28	<5.31	0.6
PCB 167	96.2	<3.58	<49.9	131
PCB 156 + PCB 157	275	5.28	140	136
PCB 169	<7.56	<3.58	<5.57	50.6
PCB 189	56.7	<5.28	<31.0	117
Total Dioxins & Furans Only	<219	<154	<187	24.6
Dioxin-Like PCBs	<1831	<249	<1040	108
Total Dioxins & Furans and PCBs	<2050	<403	<1227	94.9
Total PCBs	44680	4261	24471	117

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 44
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Emission Rate Test No. 7	Test No. 8	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	<0.010	<0.011	<0.010	1.3
12378-pentachlorodibenzo-p-dioxin	0.024	0.022	0.023	5.5
123478-hexachlorodibenzo-p-dioxin	0.032	0.028	0.030	10.6
123678-hexachlorodibenzo-p-dioxin	0.11	0.064	0.088	37.4
123789-hexachlorodibenzo-p-dioxin	0.062	0.052	0.057	12.0
1234678-heptachlorodibenzo-p-dioxin	1.15	0.65	0.90	39.3
Octachlorodibenzo-p-dioxin	1.81	1.21	1.51	28.4
2378-tetrachlorodibenzofuran	<0.019	<0.024	<0.021	13.8
12378-pentachlorodibenzofuran	0.023	0.046	0.035	45.3
23478-pentachlorodibenzofuran	0.051	0.066	0.058	18.6
123478-hexachlorodibenzofuran	0.078	0.092	0.085	11.6
123678-hexachlorodibenzofuran	0.042	0.056	0.049	19.6
234678-hexachlorodibenzofuran	0.061	0.057	0.059	4.4
123789-hexachlorodibenzofuran	<0.010	<0.011	<0.011	7.5
1234678-heptachlorodibenzofuran	0.22	0.26	0.24	9.7
1234789-heptachlorodibenzofuran	0.039	0.042	0.041	4.1
Octachlorodibenzofuran	<0.24	<0.20	<0.22	13.0
PCB 81	<0.13	<0.13	<0.13	4.8
PCB 77	0.38	<0.13	<0.25	69.7
PCB 123	0.24	<0.11	<0.18	54.4
PCB 118	18.1	2.87	10.5	103
PCB 114	0.47	<0.096	<0.28	93.5
PCB 105	5.94	0.89	3.42	104
PCB 126	<0.097	<0.099	<0.098	1.3
PCB 167	1.75	<0.067	<0.91	131
PCB 156 + PCB 157	5.00	0.099	2.55	136
PCB 169	<0.14	<0.067	<0.10	48.9
PCB 189	1.03	<0.099	<0.57	117
Total Dioxins & Furans Only	<3.99	<2.88	<3.44	22.8
Dioxin-Like PCBs	<33.3	<4.66	<19.0	107
Total Dioxins & Furans and PCBs	<37.3	<7.54	<22.4	93.9
Total PCBs	813	79.7	446	116

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.39	<0.68	<0.54	<0.56	<0.010
12378-pentachlorodibenzo-p-dioxin	0.87	1.49	1.18	1.24	0.023
123478-hexachlorodibenzo-p-dioxin	1.14	1.96	1.54	1.63	0.030
123678-hexachlorodibenzo-p-dioxin	3.33	5.74	4.51	4.76	0.088
123789-hexachlorodibenzo-p-dioxin	2.15	3.71	2.93	3.08	0.057
1234678-heptachlorodibenzo-p-dioxin	34.2	59.1	46.4	49.0	0.90
Octachlorodibenzo-p-dioxin	57.4	98.9	77.9	82.1	1.51
2378-tetrachlorodibenzofuran	<0.81	<1.40	<1.11	<1.16	<0.021
12378-pentachlorodibenzofuran	1.30	2.23	1.78	1.86	0.035
23478-pentachlorodibenzofuran	2.21	3.79	3.01	3.16	0.058
123478-hexachlorodibenzofuran	3.22	5.54	4.39	4.61	0.085
123678-hexachlorodibenzofuran	1.85	3.18	2.53	2.65	0.049
234678-hexachlorodibenzofuran	2.23	3.84	3.03	3.19	0.059
123789-hexachlorodibenzofuran	<0.41	<0.71	<0.56	<0.59	<0.011
1234678-heptachlorodibenzofuran	9.14	15.7	12.4	13.1	0.24
1234789-heptachlorodibenzofuran	1.54	2.64	2.09	2.20	0.041
Octachlorodibenzofuran	<8.25	<14.2	<11.2	<11.8	<0.22
PCB 81	<4.90	<8.43	<6.67	<7.02	<0.13
PCB 77	<9.58	<16.6	<13.0	<13.7	<0.25
PCB 123	<6.70	<11.6	<9.08	<9.60	<0.18
PCB 118	401	696	541	575	10.5
PCB 114	<10.8	<18.7	<14.6	<15.4	<0.28
PCB 105	131	227	176	187	3.42
PCB 126	<3.71	<6.38	<5.05	<5.31	<0.098
PCB 167	<34.8	<60.5	<46.9	<49.9	<0.91
PCB 156 + PCB 157	97.7	170	132	140	2.55
PCB 169	<3.89	<6.72	<5.27	<5.57	<0.10
PCB 189	<21.6	<37.6	<29.1	<31.0	<0.57
Total Dioxins & Furans Only	<130	<225	<177	<187	<3.44
Dioxin-Like PCBs	<725	<1259	<979	<1040	<19.0
Total Dioxins & Furans and PCBs	<856	<1484	<1156	<1227	<22.4
Total PCBs	17070	29643	23012	24471	446

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 7 pg TEQ/m³	Test No. 8 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.40	<0.39	<0.39
12378-pentachlorodibenzo-p-dioxin	1.000	0.91	0.82	0.87
123478-hexachlorodibenzo-p-dioxin	0.100	0.12	0.10	0.11
123678-hexachlorodibenzo-p-dioxin	0.100	0.42	0.24	0.33
123789-hexachlorodibenzo-p-dioxin	0.100	0.24	0.19	0.22
1234678-heptachlorodibenzo-p-dioxin	0.010	0.44	0.24	0.34
Octachlorodibenzo-p-dioxin	0.0003	0.021	0.014	0.017
2378-tetrachlorodibenzofuran	0.100	<0.074	<0.088	<0.081
12378-pentachlorodibenzofuran	0.030	0.027	0.051	0.039
23478-pentachlorodibenzofuran	0.300	0.58	0.74	0.66
123478-hexachlorodibenzofuran	0.100	0.30	0.34	0.32
123678-hexachlorodibenzofuran	0.100	0.16	0.21	0.19
234678-hexachlorodibenzofuran	0.100	0.23	0.21	0.22
123789-hexachlorodibenzofuran	0.100	<0.040	<0.043	<0.041
1234678-heptachlorodibenzofuran	0.010	0.086	0.097	0.091
1234789-heptachlorodibenzofuran	0.010	0.015	0.016	0.015
Octachlorodibenzofuran	0.0003	<0.0027	<0.0022	<0.0025
PCB 81	0.0003	<0.0014	<0.0015	<0.0015
PCB 77	0.0001	0.0014	<0.00048	<0.00096
PCB 123	0.00003	0.00028	<0.00012	<0.00020
PCB 118	0.00003	0.021	0.0032	0.012
PCB 114	0.00003	0.00054	<0.00011	<0.00032
PCB 105	0.00003	0.0068	0.0010	0.0039
PCB 126	0.100	<0.37	<0.37	<0.37
PCB 167	0.00003	0.0020	<0.000075	<0.0010
PCB 156 + PCB 157	0.00003	0.0058	0.00011	0.0029
PCB 169	0.030	<0.16	<0.075	<0.12
PCB 189	0.00003	0.0012	<0.00011	<0.00065
Total Dioxins & Furans Only		<4.07	<3.82	<3.95
Dioxin-Like PCBs		<0.57	<0.45	<0.51
Total Dioxins & Furans and PCBs		<4.64	<4.27	<4.46

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.69	<0.67	<0.68
12378-pentachlorodibenzo-p-dioxin	1.000	1.58	1.40	1.49
123478-hexachlorodibenzo-p-dioxin	0.100	0.21	0.18	0.20
123678-hexachlorodibenzo-p-dioxin	0.100	0.74	0.41	0.57
123789-hexachlorodibenzo-p-dioxin	0.100	0.41	0.33	0.37
1234678-heptachlorodibenzo-p-dioxin	0.010	0.77	0.41	0.59
Octachlorodibenzo-p-dioxin	0.0003	0.036	0.023	0.030
2378-tetrachlorodibenzofuran	0.100	<0.13	<0.15	<0.14
12378-pentachlorodibenzofuran	0.030	0.047	0.087	0.067
23478-pentachlorodibenzofuran	0.300	1.01	1.26	1.14
123478-hexachlorodibenzofuran	0.100	0.52	0.59	0.55
123678-hexachlorodibenzofuran	0.100	0.28	0.36	0.32
234678-hexachlorodibenzofuran	0.100	0.40	0.36	0.38
123789-hexachlorodibenzofuran	0.100	<0.069	<0.073	<0.071
1234678-heptachlorodibenzofuran	0.010	0.15	0.16	0.16
1234789-heptachlorodibenzofuran	0.010	0.026	0.027	0.026
Octachlorodibenzofuran	0.0003	<0.0048	<0.0038	<0.0043
PCB 81	0.0003	<0.0025	<0.0026	<0.0025
PCB 77	0.0001	0.0025	<0.00081	<0.0017
PCB 123	0.00003	0.00049	<0.00021	<0.00035
PCB 118	0.00003	0.036	0.0055	0.021
PCB 114	0.00003	0.00094	<0.00018	<0.00056
PCB 105	0.00003	0.012	0.0017	0.0068
PCB 126	0.100	<0.65	<0.63	<0.64
PCB 167	0.00003	0.0035	<0.00013	<0.0018
PCB 156 + PCB 157	0.00003	0.010	0.00019	0.0051
PCB 169	0.030	<0.28	<0.13	<0.20
PCB 189	0.00003	0.0021	<0.00019	<0.0011
Total Dioxins & Furans Only		<7.09	<6.50	<6.79
Dioxin-Like PCBs		<0.99	<0.77	<0.88
Total Dioxins & Furans and PCBs		<8.08	<7.27	<7.67

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.53	<0.54	<0.54
12378-pentachlorodibenzo-p-dioxin	1.000	1.23	1.13	1.18
123478-hexachlorodibenzo-p-dioxin	0.100	0.17	0.14	0.15
123678-hexachlorodibenzo-p-dioxin	0.100	0.57	0.33	0.45
123789-hexachlorodibenzo-p-dioxin	0.100	0.32	0.27	0.29
1234678-heptachlorodibenzo-p-dioxin	0.010	0.59	0.34	0.46
Octachlorodibenzo-p-dioxin	0.0003	0.028	0.019	0.023
2378-tetrachlorodibenzofuran	0.100	<0.10	<0.12	<0.11
12378-pentachlorodibenzofuran	0.030	0.036	0.070	0.053
23478-pentachlorodibenzofuran	0.300	0.78	1.02	0.90
123478-hexachlorodibenzofuran	0.100	0.40	0.47	0.44
123678-hexachlorodibenzofuran	0.100	0.22	0.29	0.25
234678-hexachlorodibenzofuran	0.100	0.31	0.29	0.30
123789-hexachlorodibenzofuran	0.100	<0.053	<0.059	<0.056
1234678-heptachlorodibenzofuran	0.010	0.12	0.13	0.12
1234789-heptachlorodibenzofuran	0.010	0.020	0.022	0.021
Octachlorodibenzofuran	0.0003	<0.0037	<0.0031	<0.0034
PCB 81	0.0003	<0.0019	<0.0021	<0.0020
PCB 77	0.0001	0.0019	<0.00066	<0.0013
PCB 123	0.00003	0.00038	<0.00017	<0.00027
PCB 118	0.00003	0.028	0.0044	0.016
PCB 114	0.00003	0.00073	<0.00015	<0.00044
PCB 105	0.00003	0.0092	0.0014	0.0053
PCB 126	0.100	<0.50	<0.51	<0.50
PCB 167	0.00003	0.0027	<0.00010	<0.0014
PCB 156 + PCB 157	0.00003	0.0077	0.00015	0.0039
PCB 169	0.030	<0.21	<0.10	<0.16
PCB 189	0.00003	0.0016	<0.00015	<0.00087
Total Dioxins & Furans Only		<5.48	<5.26	<5.37
Dioxin-Like PCBs		<0.77	<0.62	<0.69
Total Dioxins & Furans and PCBs		<6.25	<5.88	<6.06

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 49
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.53	<0.54	<0.54
12378-pentachlorodibenzo-p-dioxin	0.500	0.61	0.57	0.59
123478-hexachlorodibenzo-p-dioxin	0.100	0.17	0.14	0.15
123678-hexachlorodibenzo-p-dioxin	0.100	0.57	0.33	0.45
123789-hexachlorodibenzo-p-dioxin	0.100	0.32	0.27	0.29
1234678-heptachlorodibenzo-p-dioxin	0.010	0.59	0.34	0.46
Octachlorodibenzo-p-dioxin	0.001	0.094	0.062	0.078
2378-tetrachlorodibenzofuran	0.100	<0.10	<0.12	<0.11
12378-pentachlorodibenzofuran	0.050	0.060	0.12	0.089
23478-pentachlorodibenzofuran	0.500	1.31	1.70	1.50
123478-hexachlorodibenzofuran	0.100	0.40	0.47	0.44
123678-hexachlorodibenzofuran	0.100	0.22	0.29	0.25
234678-hexachlorodibenzofuran	0.100	0.31	0.29	0.30
123789-hexachlorodibenzofuran	0.100	<0.053	<0.059	<0.056
1234678-heptachlorodibenzofuran	0.010	0.12	0.13	0.12
1234789-heptachlorodibenzofuran	0.010	0.020	0.022	0.021
Octachlorodibenzofuran	0.001	<0.012	<0.010	<0.011
Total Dioxins & Furans		<5.49	<5.47	<5.48
In-Stack Emission Limit				60

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 50
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 7 pg TEQ/Rm³*	Test No. 8 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.57	<0.56	<0.56
12378-pentachlorodibenzo-p-dioxin	1.000	1.31	1.18	1.24
123478-hexachlorodibenzo-p-dioxin	0.100	0.18	0.15	0.16
123678-hexachlorodibenzo-p-dioxin	0.100	0.61	0.34	0.48
123789-hexachlorodibenzo-p-dioxin	0.100	0.34	0.28	0.31
1234678-heptachlorodibenzo-p-dioxin	0.010	0.63	0.35	0.49
Octachlorodibenzo-p-dioxin	0.0003	0.030	0.019	0.025
2378-tetrachlorodibenzofuran	0.100	<0.11	<0.13	<0.12
12378-pentachlorodibenzofuran	0.030	0.039	0.073	0.056
23478-pentachlorodibenzofuran	0.300	0.84	1.06	0.95
123478-hexachlorodibenzofuran	0.100	0.43	0.49	0.46
123678-hexachlorodibenzofuran	0.100	0.23	0.30	0.27
234678-hexachlorodibenzofuran	0.100	0.33	0.31	0.32
123789-hexachlorodibenzofuran	0.100	<0.057	<0.061	<0.059
1234678-heptachlorodibenzofuran	0.010	0.12	0.14	0.13
1234789-heptachlorodibenzofuran	0.010	0.022	0.022	0.022
Octachlorodibenzofuran	0.0003	<0.0039	<0.0032	<0.0035
PCB 81	0.0003	<0.0021	<0.0021	<0.0021
PCB 77	0.0001	0.0021	<0.00068	<0.0014
PCB 123	0.00003	0.00040	<0.00017	<0.00029
PCB 118	0.00003	0.030	0.0046	0.017
PCB 114	0.00003	0.00077	<0.00015	<0.00046
PCB 105	0.00003	0.0098	0.0014	0.0056
PCB 126	0.100	<0.53	<0.53	<0.53
PCB 167	0.00003	0.0029	<0.00011	<0.0015
PCB 156 + PCB 157	0.00003	0.0082	0.00016	0.0042
PCB 169	0.030	<0.23	<0.11	<0.17
PCB 189	0.00003	0.0017	<0.00016	<0.00093
Total Dioxins & Furans Only		<5.84	<5.45	<5.65
Dioxin-Like PCBs		<0.82	<0.65	<0.73
Total Dioxins & Furans and PCBs		<6.66	<6.10	<6.38

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 51
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 7 ng TEQ/s	Test No. 8 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.010	<0.011	<0.010
12378-pentachlorodibenzo-p-dioxin	1.000	0.024	0.022	0.023
123478-hexachlorodibenzo-p-dioxin	0.100	0.0032	0.0028	0.0030
123678-hexachlorodibenzo-p-dioxin	0.100	0.011	0.0064	0.0088
123789-hexachlorodibenzo-p-dioxin	0.100	0.0062	0.0052	0.0057
1234678-heptachlorodibenzo-p-dioxin	0.010	0.012	0.0065	0.0090
Octachlorodibenzo-p-dioxin	0.0003	0.00054	0.00036	0.00045
2378-tetrachlorodibenzofuran	0.100	<0.0019	<0.0024	<0.0021
12378-pentachlorodibenzofuran	0.030	0.00070	0.0014	0.0010
23478-pentachlorodibenzofuran	0.300	0.015	0.020	0.017
123478-hexachlorodibenzofuran	0.100	0.0078	0.0092	0.0085
123678-hexachlorodibenzofuran	0.100	0.0042	0.0056	0.0049
234678-hexachlorodibenzofuran	0.100	0.0061	0.0057	0.0059
123789-hexachlorodibenzofuran	0.100	<0.0010	<0.0011	<0.0011
1234678-heptachlorodibenzofuran	0.010	0.0022	0.0026	0.0024
1234789-heptachlorodibenzofuran	0.010	0.00039	0.00042	0.00041
Octachlorodibenzofuran	0.0003	<0.000071	<0.000059	<0.000065
PCB 81	0.0003	<0.000038	<0.000040	<0.000039
PCB 77	0.0001	0.000038	<0.000013	<0.000025
PCB 123	0.00003	0.0000073	<0.0000033	<0.0000053
PCB 118	0.00003	0.00054	0.000086	0.00032
PCB 114	0.00003	0.000014	<0.0000029	<0.0000085
PCB 105	0.00003	0.00018	0.000027	0.00010
PCB 126	0.100	<0.0097	<0.0099	<0.0098
PCB 167	0.00003	0.000053	<0.0000020	<0.000027
PCB 156 + PCB 157	0.00003	0.00015	0.0000030	0.000077
PCB 169	0.030	<0.0041	<0.0020	<0.0031
PCB 189	0.00003	0.000031	<0.0000030	<0.000017
Total Dioxins & Furans Only		<0.11	<0.10	<0.10
Dioxin-Like PCBs		<0.015	<0.012	<0.013
Total Dioxins & Furans and PCBs		<0.12	<0.11	<0.12

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 52
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.39	<0.68	<0.54	<0.56	<0.010
12378-pentachlorodibenzo-p-dioxin	0.87	1.49	1.18	1.24	0.023
123478-hexachlorodibenzo-p-dioxin	0.11	0.20	0.15	0.16	0.0030
123678-hexachlorodibenzo-p-dioxin	0.33	0.57	0.45	0.48	0.0088
123789-hexachlorodibenzo-p-dioxin	0.22	0.37	0.29	0.31	0.0057
1234678-heptachlorodibenzo-p-dioxin	0.34	0.59	0.46	0.49	0.0090
Octachlorodibenzo-p-dioxin	0.017	0.030	0.023	0.025	0.00045
2378-tetrachlorodibenzofuran	<0.081	<0.14	<0.11	<0.12	<0.0021
12378-pentachlorodibenzofuran	0.039	0.067	0.053	0.056	0.0010
23478-pentachlorodibenzofuran	0.66	1.14	0.90	0.95	0.017
123478-hexachlorodibenzofuran	0.32	0.55	0.44	0.46	0.0085
123678-hexachlorodibenzofuran	0.19	0.32	0.25	0.27	0.0049
234678-hexachlorodibenzofuran	0.22	0.38	0.30	0.32	0.0059
123789-hexachlorodibenzofuran	<0.041	<0.071	<0.056	<0.059	<0.0011
1234678-heptachlorodibenzofuran	0.091	0.16	0.12	0.13	0.0024
1234789-heptachlorodibenzofuran	0.015	0.026	0.021	0.022	0.00041
Octachlorodibenzofuran	<0.0025	<0.0043	<0.0034	<0.0035	<0.000065
PCB 81	<0.0015	<0.0025	<0.0020	<0.0021	<0.000039
PCB 77	<0.00096	<0.0017	<0.0013	<0.0014	<0.000025
PCB 123	<0.00020	<0.00035	<0.00027	<0.00029	<0.0000053
PCB 118	0.012	0.021	0.016	0.017	0.00032
PCB 114	<0.00032	<0.00056	<0.00044	<0.00046	<0.0000085
PCB 105	0.0039	0.0068	0.0053	0.0056	0.00010
PCB 126	<0.37	<0.64	<0.50	<0.53	<0.0098
PCB 167	<0.0010	<0.0018	<0.0014	<0.0015	<0.000027
PCB 156 + PCB 157	0.0029	0.0051	0.0039	0.0042	0.000077
PCB 169	<0.12	<0.20	<0.16	<0.17	<0.0031
PCB 189	<0.00065	<0.0011	<0.00087	<0.00093	<0.000017
Total Dioxins & Furans Only	<3.95	<6.79	<5.37	<5.65	<0.10
Dioxin-Like PCBs	<0.51	<0.88	<0.69	<0.73	<0.013
Total Dioxins & Furans and PCBs	<4.46	<7.67	<6.06	<6.38	<0.12

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 53
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	0.20	0.34	0.27	0.28	0.0052
12378-pentachlorodibenzo-p-dioxin	0.87	1.49	1.18	1.24	0.023
123478-hexachlorodibenzo-p-dioxin	0.11	0.20	0.15	0.16	0.0030
123678-hexachlorodibenzo-p-dioxin	0.33	0.57	0.45	0.48	0.0088
123789-hexachlorodibenzo-p-dioxin	0.22	0.37	0.29	0.31	0.0057
1234678-heptachlorodibenzo-p-dioxin	0.34	0.59	0.46	0.49	0.0090
Octachlorodibenzo-p-dioxin	0.017	0.030	0.023	0.025	0.00045
2378-tetrachlorodibenzofuran	0.041	0.070	0.055	0.058	0.0011
12378-pentachlorodibenzofuran	0.039	0.067	0.053	0.056	0.0010
23478-pentachlorodibenzofuran	0.66	1.14	0.90	0.95	0.017
123478-hexachlorodibenzofuran	0.32	0.55	0.44	0.46	0.0085
123678-hexachlorodibenzofuran	0.19	0.32	0.25	0.27	0.0049
234678-hexachlorodibenzofuran	0.22	0.38	0.30	0.32	0.0059
123789-hexachlorodibenzofuran	0.021	0.035	0.028	0.030	0.00054
1234678-heptachlorodibenzofuran	0.091	0.16	0.12	0.13	0.0024
1234789-heptachlorodibenzofuran	0.015	0.026	0.021	0.022	0.00041
Octachlorodibenzofuran	0.0012	0.0021	0.0017	0.0018	0.000033
PCB 81	0.00074	0.0013	0.0010	0.0011	0.000019
PCB 77	0.00084	0.0015	0.0011	0.0012	0.000022
PCB 123	0.00017	0.00030	0.00023	0.00024	0.0000045
PCB 118	0.012	0.021	0.016	0.017	0.00032
PCB 114	0.00030	0.00051	0.00040	0.00043	0.0000078
PCB 105	0.0039	0.0068	0.0053	0.0056	0.00010
PCB 126	0.19	0.32	0.25	0.27	0.0049
PCB 167	0.0010	0.0018	0.0014	0.0015	0.000027
PCB 156 + PCB 157	0.0029	0.0051	0.0039	0.0042	0.000077
PCB 169	0.058	0.10	0.079	0.084	0.0015
PCB 189	0.00062	0.0011	0.00084	0.00089	0.000016
Total Dioxins & Furans Only	3.69	6.34	5.01	5.28	0.097
Dioxin-Like PCBs	0.27	0.46	0.36	0.38	0.0070
Total Dioxins & Furans and PCBs	3.95	6.80	5.38	5.66	0.10

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 54
Covanta - Durham York Energy Centre
Boiler No. 1 APC Outlet
Blank Dioxin and Furan Specific Isomer Analyses
Medium Carbon Feed Rate with VLN on Gas Mode

Specific Isomer	Blank Train	Laboratory Blank
	pg	pg
2378-tetrachlorodibenzo-p-dioxin	<3.2	<3.4
12378-pentachlorodibenzo-p-dioxin	<3.6	<3.6
123478-hexachlorodibenzo-p-dioxin	<3.3	<3.4
123678-hexachlorodibenzo-p-dioxin	<3.4	<3.4
123789-hexachlorodibenzo-p-dioxin	<3.1	<3.1
1234678-heptachlorodibenzo-p-dioxin	<3.2	3.2
Octachlorodibenzo-p-dioxin	10.4	12.0
2378-tetrachlorodibenzofuran	<3.5	<3.3
12378-pentachlorodibenzofuran	<3.3	<3.2
23478-pentachlorodibenzofuran	<3.3	<3.2
123478-hexachlorodibenzofuran	<3.2	<3.1
123678-hexachlorodibenzofuran	<3.0	<2.9
234678-hexachlorodibenzofuran	<3.4	<3.2
123789-hexachlorodibenzofuran	<3.5	3.9
1234678-heptachlorodibenzofuran	<3.0	4.3
1234789-heptachlorodibenzofuran	<3.5	<3.4
Octachlorodibenzofuran	<3.4	4.7
PCB 81	<39	<37
PCB 77	<38	<36
PCB 123	<10	<29
PCB 118	110	<27
PCB 114	<8.8	<26
PCB 105	42	<27
PCB 126	<9.1	<27
PCB 167	<25	<18
PCB 156 + PCB 157	<23	<17
PCB 169	<24	<18
PCB 189	<31	<17
Total Dioxins & Furans Only	<63.3	<67.3
Dioxin-Like PCBs	<360	<279
Total Dioxins & Furans and PCBs	<423	<346
Total PCBs	800	-

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

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APPENDIX 4

Data Tables for Boiler No. 2
with High Carbon Feed Rate and VLN on Air Mode
(62 pages)

TABLE 1
Covanta
Durham York Energy Centre
Boiler No. 2 - High Carbon Feed Rate with VLN on Air Mode
Test Schedule

Quench Inlet

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	September 19, 2016	13:00	17:56	240
2	September 20, 2016	9:25	14:30	240
3	September 20, 2016	16:18	21:02	240
7	September 27, 2016	12:57	16:45	180

APC Outlet

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	September 19, 2016	13:00	17:56	240
2	September 20, 2016	9:25	14:30	240
3	September 20, 2016	16:18	21:02	240
7	September 27, 2016	12:50	17:02	240

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Covanta - Durham York Energy Centre
Boiler No. 2 - High Carbon Feed Rate with VLN on Air Mode
Stack Gas Sampling Parameters

Quench Inlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
1	0.848	0.998	6.39	4.578	97.9
2	0.848	0.998	6.39	4.740	100.5
3	0.848	0.998	6.39	4.543	98.9
7	0.848	0.979	6.39	3.559	99.5

APC Outlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
1	0.842	0.993	6.24	4.582	98.0
2	0.842	0.993	6.24	4.860	102.2
3	0.842	0.993	6.24	4.865	101.9
7	0.842	0.993	6.24	4.551	98.6

* Dry at 25°C and 1 atmosphere

TABLE 3
Covanta - Durham York Energy Centre
Boiler No. 2 - High Carbon Feed Rate with VLN on Air Mode
Stack Gas Physical Parameters

Quench Inlet

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
1	167	15.8	18.1	-0.62	99.3	11.0	7.76
2	167	16.8	18.4	-0.62	99.6	11.0	7.89
3	168	15.6	17.7	-0.62	99.8	11.1	7.74
7	167	15.7	18.6	-0.67	98.4	10.9	7.88
Average	167	16.0	18.2	-0.63	99.3	11.0	7.82

APC Outlet

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
1	137	16.5	18.2	-2.61	97.4	11.0	8.40
2	136	17.3	18.6	-2.49	97.7	11.0	8.48
3	135	16.2	18.4	-2.49	97.9	11.1	8.43
7	136	16.4	18.1	-2.52	96.6	10.9	8.14
Average	136	16.6	18.3	-2.53	97.4	11.0	8.36

* Dry basis, measured by the DYEC CEMS

TABLE 4
Covanta - Durham York Energy Centre
Boiler No. 2 - High Carbon Feed Rate with VLN on Air Mode
Stack Gas Volumetric Flowrates

Quench Inlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	26.8	15.0	19.9	17.8
2	27.2	15.1	19.8	18.1
3	26.1	14.7	19.5	17.4
7	27.5	15.2	20.0	18.1
Average	26.9	15.0	19.8	17.9

APC Outlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	26.9	15.7	19.8	18.8
2	27.5	16.0	20.0	19.3
3	27.1	16.0	20.2	19.1
7	26.7	15.5	20.0	18.5
Average	27.0	15.8	20.0	18.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 1 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	14900	1.82	3.25	2.45	2.74	48.7
Pentachlorodibenzo-p-dioxins	9600	1.17	2.10	1.58	1.76	31.4
Hexachlorodibenzo-p-dioxins	7580	0.92	1.66	1.25	1.39	24.8
Heptachlorodibenzo-p-dioxins	5400	0.66	1.18	0.89	0.99	17.6
Octachlorodibenzo-p-dioxin	5770	0.70	1.26	0.95	1.06	18.9
Total	43250	5.28	9.45	7.12	7.95	141

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	231000	28.2	50.5	38.0	42.5	755
Pentachlorodibenzofurans	120000	14.6	26.2	19.7	22.1	392
Hexachlorodibenzofurans	52600	6.42	11.5	8.65	9.67	172
Heptachlorodibenzofurans	19200	2.34	4.19	3.16	3.53	62.7
Octachlorodibenzofuran	2680	0.33	0.59	0.44	0.49	8.76
Total	425480	51.92	92.9	70.0	78.2	1390

Dry Gas Volume Sampled (Rm^3*) :	4.578
Actual Flowrate (m^3/s) :	26.8
Dry Reference Flowrate (Rm^3/s*) :	15.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	17.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 2 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	10800	1.26	2.28	1.73	1.90	34.4
Pentachlorodibenzo-p-dioxins	6570	0.77	1.39	1.05	1.15	20.9
Hexachlorodibenzo-p-dioxins	5760	0.67	1.22	0.92	1.01	18.3
Heptachlorodibenzo-p-dioxins	4300	0.50	0.91	0.69	0.75	13.7
Octachlorodibenzo-p-dioxin	6030	0.71	1.27	0.97	1.06	19.2
Total	33460	3.91	7.06	5.37	5.87	106

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	174000	20.4	36.7	27.9	30.5	554
Pentachlorodibenzofurans	79700	9.32	16.8	12.8	14.0	254
Hexachlorodibenzofurans	28300	3.31	5.97	4.54	4.97	90.0
Heptachlorodibenzofurans	10600	1.24	2.24	1.70	1.86	33.7
Octachlorodibenzofuran	1420	0.17	0.30	0.23	0.25	4.52
Total	294020	34.4	62.0	47.2	51.6	935

Dry Gas Volume Sampled (Rm^3*) :	4.740
Actual Flowrate (m^3/s) :	27.2
Dry Reference Flowrate (Rm^3/s*) :	15.1
Dry Adjusted Flowrate (Rm^3/s**) :	19.8
Wet Reference Flowrate (Rm^3/s*) :	18.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 7
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 3 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	11100	1.37	2.44	1.84	2.06	35.9
Pentachlorodibenzo-p-dioxins	8090	1.00	1.78	1.34	1.50	26.1
Hexachlorodibenzo-p-dioxins	6450	0.80	1.42	1.07	1.20	20.8
Heptachlorodibenzo-p-dioxins	4160	0.51	0.92	0.69	0.77	13.4
Octachlorodibenzo-p-dioxin	5400	0.67	1.19	0.89	1.00	17.4
Total	35200	4.35	7.75	5.83	6.53	114

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	166000	20.5	36.5	27.5	30.8	536
Pentachlorodibenzofurans	84100	10.4	18.5	13.9	15.6	272
Hexachlorodibenzofurans	36400	4.50	8.01	6.03	6.76	118
Heptachlorodibenzofurans	13900	1.72	3.06	2.30	2.58	44.9
Octachlorodibenzofuran	1730	0.21	0.38	0.29	0.32	5.59
Total	302130	37.3	66.5	50.0	56.1	976

Dry Gas Volume Sampled (Rm^3*) :	4.543
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	14.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.5
Wet Reference Flowrate (Rm^3/s*) :	17.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 8
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 7 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	9450	1.47	2.66	2.02	2.24	40.4
Pentachlorodibenzo-p-dioxins	7390	1.15	2.08	1.58	1.75	31.6
Hexachlorodibenzo-p-dioxins	6710	1.05	1.89	1.43	1.59	28.7
Heptachlorodibenzo-p-dioxins	4610	0.72	1.30	0.98	1.09	19.7
Octachlorodibenzo-p-dioxin	7430	1.16	2.09	1.59	1.76	31.8
Total	35590	5.55	10.0	7.60	8.42	152

Furans

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	160000	24.9	45.0	34.2	37.9	685
Pentachlorodibenzofurans	76000	11.8	21.4	16.2	18.0	325
Hexachlorodibenzofurans	32900	5.13	9.24	7.03	7.79	141
Heptachlorodibenzofurans	13100	2.04	3.68	2.80	3.10	56.1
Octachlorodibenzofuran	2130	0.33	0.60	0.46	0.50	9.11
Total	284130	44.3	79.8	60.7	67.2	1216

Dry Gas Volume Sampled (Rm^3*) :	3.559
Actual Flowrate (m^3/s) :	27.5
Dry Reference Flowrate (Rm^3/s*) :	15.2
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	18.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 9
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Actual Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	1.82	1.26	1.37	1.47	1.48	16.2
Pentachlorodibenzo-p-dioxins	1.17	0.77	1.00	1.15	1.02	18.2
Hexachlorodibenzo-p-dioxins	0.92	0.67	0.80	1.05	0.86	18.7
Heptachlorodibenzo-p-dioxins	0.66	0.50	0.51	0.72	0.60	17.9
Octachlorodibenzo-p-dioxin	0.70	0.71	0.67	1.16	0.81	28.9
Total	5.28	3.91	4.35	5.55	4.77	16.1

Furans

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	28.2	20.4	20.5	24.9	23.5	16.1
Pentachlorodibenzofurans	14.6	9.32	10.4	11.8	11.6	20.0
Hexachlorodibenzofurans	6.42	3.31	4.50	5.13	4.84	26.8
Heptachlorodibenzofurans	2.34	1.24	1.72	2.04	1.84	25.7
Octachlorodibenzofuran	0.33	0.17	0.21	0.33	0.26	31.9
Total	51.9	34.4	37.3	44.3	42.0	18.6

TABLE 10
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Dry Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	3.25	2.28	2.44	2.66	2.66	16.1
Pentachlorodibenzo-p-dioxins	2.10	1.39	1.78	2.08	1.84	18.1
Hexachlorodibenzo-p-dioxins	1.66	1.22	1.42	1.89	1.54	18.8
Heptachlorodibenzo-p-dioxins	1.18	0.91	0.92	1.30	1.07	18.1
Octachlorodibenzo-p-dioxin	1.26	1.27	1.19	2.09	1.45	29.3
Total	9.45	7.06	7.75	10.0	8.56	16.2

Furans

Congener Group	Dry Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	50.5	36.7	36.5	45.0	42.2	16.1
Pentachlorodibenzofurans	26.2	16.8	18.5	21.4	20.7	19.8
Hexachlorodibenzofurans	11.5	5.97	8.01	9.24	8.68	26.6
Heptachlorodibenzofurans	4.19	2.24	3.06	3.68	3.29	25.6
Octachlorodibenzofuran	0.59	0.30	0.38	0.60	0.47	32.0
Total	92.9	62.0	66.5	79.8	75.3	18.5

* At 25°C and 1 atmosphere

TABLE 11
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Test No. 7 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	2.45	1.73	1.84	2.02	2.01	15.8
Pentachlorodibenzo-p-dioxins	1.58	1.05	1.34	1.58	1.39	18.0
Hexachlorodibenzo-p-dioxins	1.25	0.92	1.07	1.43	1.17	18.9
Heptachlorodibenzo-p-dioxins	0.89	0.69	0.69	0.98	0.81	18.2
Octachlorodibenzo-p-dioxin	0.95	0.97	0.89	1.59	1.10	29.7
Total	7.12	5.37	5.83	7.60	6.48	16.2

Furans

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Test No. 7 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	38.0	27.9	27.5	34.2	31.9	16.0
Pentachlorodibenzofurans	19.7	12.8	13.9	16.2	15.7	19.6
Hexachlorodibenzofurans	8.65	4.54	6.03	7.03	6.56	26.3
Heptachlorodibenzofurans	3.16	1.70	2.30	2.80	2.49	25.4
Octachlorodibenzofuran	0.44	0.23	0.29	0.46	0.35	32.0
Total	70.0	47.2	50.0	60.7	57.0	18.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 12
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Wet Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	2.74	1.90	2.06	2.24	2.23	16.3
Pentachlorodibenzo-p-dioxins	1.76	1.15	1.50	1.75	1.54	18.5
Hexachlorodibenzo-p-dioxins	1.39	1.01	1.20	1.59	1.30	19.2
Heptachlorodibenzo-p-dioxins	0.99	0.75	0.77	1.09	0.90	18.4
Octachlorodibenzo-p-dioxin	1.06	1.06	1.00	1.76	1.22	29.5
Total	7.95	5.87	6.53	8.42	7.19	16.6

Furans

Congener Group	Wet Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	42.5	30.5	30.8	37.9	35.4	16.4
Pentachlorodibenzofurans	22.1	14.0	15.6	18.0	17.4	20.1
Hexachlorodibenzofurans	9.67	4.97	6.76	7.79	7.29	26.9
Heptachlorodibenzofurans	3.53	1.86	2.58	3.10	2.77	26.0
Octachlorodibenzofuran	0.49	0.25	0.32	0.50	0.39	32.3
Total	78.2	51.6	56.1	67.2	63.3	18.8

* At 25°C and 1 atmosphere

TABLE 13
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Rates
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Test No. 7 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	48.7	34.4	35.9	40.4	39.8	16.2
Pentachlorodibenzo-p-dioxins	31.4	20.9	26.1	31.6	27.5	18.5
Hexachlorodibenzo-p-dioxins	24.8	18.3	20.8	28.7	23.2	19.7
Heptachlorodibenzo-p-dioxins	17.6	13.7	13.4	19.7	16.1	19.1
Octachlorodibenzo-p-dioxin	18.9	19.2	17.4	31.8	21.8	30.7
Total	141	106	114	152	128	17.0

Furans

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Test No. 7 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	755	554	536	685	632	16.6
Pentachlorodibenzofurans	392	254	272	325	311	20.0
Hexachlorodibenzofurans	172	90.0	118	141	130	26.7
Heptachlorodibenzofurans	62.7	33.7	44.9	56.1	49.4	25.8
Octachlorodibenzofuran	8.76	4.52	5.59	9.11	7.00	32.7
Total	1390	935	976	1216	1129	18.9

TABLE 14
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Congener Group Emission Data
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	1.48	2.66	2.01	2.23	39.8
Pentachlorodibenzo-p-dioxins	1.02	1.84	1.39	1.54	27.5
Hexachlorodibenzo-p-dioxins	0.86	1.54	1.17	1.30	23.2
Heptachlorodibenzo-p-dioxins	0.60	1.07	0.81	0.90	16.1
Octachlorodibenzo-p-dioxin	0.81	1.45	1.10	1.22	21.8
Total	4.77	8.56	6.48	7.19	128

Furans

Congener Group	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	23.5	42.2	31.9	35.4	632
Pentachlorodibenzofurans	11.6	20.7	15.7	17.4	311
Hexachlorodibenzofurans	4.84	8.68	6.56	7.29	130
Heptachlorodibenzofurans	1.84	3.29	2.49	2.77	49.4
Octachlorodibenzofuran	0.26	0.47	0.35	0.39	7.00
Total	42.0	75.3	57.0	63.3	1129

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 15
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 1 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	528	0.067	0.12	0.091	0.096	1.81
Pentachlorodibenzo-p-dioxins	1620	0.21	0.35	0.28	0.29	5.55
Hexachlorodibenzo-p-dioxins	3650	0.46	0.80	0.63	0.66	12.5
Heptachlorodibenzo-p-dioxins	981	0.12	0.21	0.17	0.18	3.36
Octachlorodibenzo-p-dioxin	408	0.052	0.089	0.070	0.074	1.40
Total	7187	0.91	1.57	1.24	1.31	24.6

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	378	0.048	0.082	0.065	0.069	1.30
Pentachlorodibenzofurans	569	0.072	0.12	0.098	0.10	1.95
Hexachlorodibenzofurans	705	0.090	0.15	0.12	0.13	2.42
Heptachlorodibenzofurans	308	0.039	0.067	0.053	0.056	1.06
Octachlorodibenzofuran	51.3	0.0065	0.011	0.0089	0.0093	0.18
Total	2011	0.26	0.44	0.35	0.37	6.89

Dry Gas Volume Sampled (Rm^3*) :	4.582
Actual Flowrate (m^3/s) :	26.9
Dry Reference Flowrate (Rm^3/s*) :	15.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.8
Wet Reference Flowrate (Rm^3/s*) :	18.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 16
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 2 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	471	0.056	0.097	0.077	0.080	1.55
Pentachlorodibenzo-p-dioxins	1490	0.18	0.31	0.24	0.25	4.89
Hexachlorodibenzo-p-dioxins	3120	0.37	0.64	0.51	0.53	10.2
Heptachlorodibenzo-p-dioxins	1020	0.12	0.21	0.17	0.17	3.35
Octachlorodibenzo-p-dioxin	398	0.048	0.082	0.065	0.068	1.31
Total	6499	0.78	1.34	1.07	1.11	21.3

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	351	0.042	0.072	0.058	0.060	1.15
Pentachlorodibenzofurans	579	0.069	0.12	0.095	0.099	1.90
Hexachlorodibenzofurans	686	0.082	0.14	0.11	0.12	2.25
Heptachlorodibenzofurans	384	0.046	0.079	0.063	0.065	1.26
Octachlorodibenzofuran	112	0.013	0.023	0.018	0.019	0.37
Total	2112	0.25	0.43	0.35	0.36	6.93

Dry Gas Volume Sampled (Rm^3*) :	4.860
Actual Flowrate (m^3/s) :	27.5
Dry Reference Flowrate (Rm^3/s*) :	16.0
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	19.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 17
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 3 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	473	0.057	0.097	0.077	0.081	1.56
Pentachlorodibenzo-p-dioxins	1340	0.16	0.28	0.22	0.23	4.41
Hexachlorodibenzo-p-dioxins	3480	0.42	0.72	0.57	0.60	11.5
Heptachlorodibenzo-p-dioxins	1020	0.12	0.21	0.17	0.18	3.36
Octachlorodibenzo-p-dioxin	330	0.040	0.068	0.054	0.057	1.09
Total	6643	0.81	1.37	1.08	1.14	21.9

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	286	0.035	0.059	0.047	0.049	0.94
Pentachlorodibenzofurans	440	0.053	0.090	0.072	0.076	1.45
Hexachlorodibenzofurans	655	0.079	0.13	0.11	0.11	2.16
Heptachlorodibenzofurans	285	0.035	0.059	0.046	0.049	0.94
Octachlorodibenzofuran	49.2	0.0060	0.010	0.0080	0.0085	0.16
Total	1715	0.21	0.35	0.28	0.30	5.64

Dry Gas Volume Sampled (Rm^3*) :	4.865
Actual Flowrate (m^3/s) :	27.1
Dry Reference Flowrate (Rm^3/s*) :	16.0
Dry Adjusted Flowrate (Rm^3/s**) :	20.2
Wet Reference Flowrate (Rm^3/s*) :	19.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 18
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 7 - High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	253	0.032	0.056	0.043	0.046	0.86
Pentachlorodibenzo-p-dioxins	848	0.11	0.19	0.14	0.16	2.89
Hexachlorodibenzo-p-dioxins	2140	0.27	0.47	0.36	0.39	7.28
Heptachlorodibenzo-p-dioxins	719	0.092	0.16	0.12	0.13	2.45
Octachlorodibenzo-p-dioxin	260	0.033	0.057	0.044	0.048	0.88
Total	4220	0.54	0.93	0.72	0.77	14.4

Furans

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	211	0.027	0.046	0.036	0.039	0.72
Pentachlorodibenzofurans	330	0.042	0.073	0.056	0.061	1.12
Hexachlorodibenzofurans	416	0.053	0.091	0.071	0.076	1.42
Heptachlorodibenzofurans	223	0.028	0.049	0.038	0.041	0.76
Octachlorodibenzofuran	46	0.0059	0.010	0.0079	0.0085	0.16
Total	1226	0.16	0.27	0.21	0.23	4.17

Dry Gas Volume Sampled (Rm^3*) :	4.551
Actual Flowrate (m^3/s) :	26.7
Dry Reference Flowrate (Rm^3/s*) :	15.5
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	18.5

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 19
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Actual Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.067	0.056	0.057	0.032	0.053	27.9
Pentachlorodibenzo-p-dioxins	0.21	0.18	0.16	0.11	0.16	25.2
Hexachlorodibenzo-p-dioxins	0.46	0.37	0.42	0.27	0.38	21.5
Heptachlorodibenzo-p-dioxins	0.12	0.12	0.12	0.092	0.12	13.8
Octachlorodibenzo-p-dioxin	0.052	0.048	0.040	0.033	0.043	19.2
Total	0.91	0.78	0.81	0.54	0.76	20.9

Furans

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	0.048	0.042	0.035	0.027	0.038	24.1
Pentachlorodibenzofurans	0.072	0.069	0.053	0.042	0.059	23.9
Hexachlorodibenzofurans	0.090	0.082	0.079	0.053	0.076	21.0
Heptachlorodibenzofurans	0.039	0.046	0.035	0.028	0.037	19.9
Octachlorodibenzofuran	0.0065	0.013	0.0060	0.0059	0.0079	45.8
Total	0.26	0.25	0.21	0.16	0.22	21.4

TABLE 20
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Dry Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.12	0.097	0.097	0.056	0.091	27.7
Pentachlorodibenzo-p-dioxins	0.35	0.31	0.28	0.19	0.28	25.1
Hexachlorodibenzo-p-dioxins	0.80	0.64	0.72	0.47	0.66	21.2
Heptachlorodibenzo-p-dioxins	0.21	0.21	0.21	0.16	0.20	13.5
Octachlorodibenzo-p-dioxin	0.089	0.082	0.068	0.057	0.074	19.3
Total	1.57	1.34	1.37	0.93	1.30	20.7

Furans

Congener Group	Dry Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.082	0.072	0.059	0.046	0.065	24.2
Pentachlorodibenzofurans	0.12	0.12	0.090	0.073	0.10	24.0
Hexachlorodibenzofurans	0.15	0.14	0.13	0.091	0.13	20.8
Heptachlorodibenzofurans	0.067	0.079	0.059	0.049	0.063	20.1
Octachlorodibenzofuran	0.011	0.023	0.010	0.010	0.014	46.2
Total	0.44	0.43	0.35	0.27	0.37	21.4

* At 25°C and 1 atmosphere

TABLE 21
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Test No. 7 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.091	0.077	0.077	0.043	0.072	28.3
Pentachlorodibenzo-p-dioxins	0.28	0.24	0.22	0.14	0.22	25.8
Hexachlorodibenzo-p-dioxins	0.63	0.51	0.57	0.36	0.52	21.9
Heptachlorodibenzo-p-dioxins	0.17	0.17	0.17	0.12	0.16	14.4
Octachlorodibenzo-p-dioxin	0.070	0.065	0.054	0.044	0.058	20.0
Total	1.24	1.07	1.08	0.72	1.03	21.4

Furans

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Test No. 7 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.065	0.058	0.047	0.036	0.051	24.9
Pentachlorodibenzofurans	0.098	0.095	0.072	0.056	0.080	24.8
Hexachlorodibenzofurans	0.12	0.11	0.11	0.071	0.10	21.6
Heptachlorodibenzofurans	0.053	0.063	0.046	0.038	0.050	21.0
Octachlorodibenzofuran	0.0089	0.018	0.0080	0.0079	0.011	47.0
Total	0.35	0.35	0.28	0.21	0.30	22.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 22
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Wet Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.096	0.080	0.081	0.046	0.076	27.6
Pentachlorodibenzo-p-dioxins	0.29	0.25	0.23	0.16	0.23	25.0
Hexachlorodibenzo-p-dioxins	0.66	0.53	0.60	0.39	0.55	21.3
Heptachlorodibenzo-p-dioxins	0.18	0.174	0.18	0.13	0.16	13.4
Octachlorodibenzo-p-dioxin	0.074	0.068	0.057	0.048	0.062	19.1
Total	1.31	1.11	1.14	0.77	1.08	20.6

Furans

Congener Group	Wet Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.069	0.060	0.049	0.039	0.054	24.0
Pentachlorodibenzofurans	0.10	0.099	0.076	0.061	0.085	23.7
Hexachlorodibenzofurans	0.13	0.12	0.11	0.076	0.11	20.7
Heptachlorodibenzofurans	0.056	0.065	0.049	0.041	0.053	19.6
Octachlorodibenzofuran	0.0093	0.019	0.0085	0.0085	0.011	45.5
Total	0.37	0.36	0.30	0.23	0.31	21.1

* At 25°C and 1 atmosphere

TABLE 23
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Rates
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Test No. 7 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	1.81	1.55	1.56	0.86	1.44	28.2
Pentachlorodibenzo-p-dioxins	5.55	4.89	4.41	2.89	4.43	25.6
Hexachlorodibenzo-p-dioxins	12.5	10.2	11.5	7.28	10.4	21.8
Heptachlorodibenzo-p-dioxins	3.36	3.35	3.36	2.45	3.13	14.5
Octachlorodibenzo-p-dioxin	1.40	1.31	1.09	0.88	1.17	19.7
Total	24.6	21.3	21.9	14.4	20.5	21.3

Furans

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Test No. 7 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	1.30	1.15	0.94	0.72	1.03	24.5
Pentachlorodibenzofurans	1.95	1.90	1.45	1.12	1.61	24.5
Hexachlorodibenzofurans	2.42	2.25	2.16	1.42	2.06	21.5
Heptachlorodibenzofurans	1.06	1.26	0.94	0.76	1.00	21.0
Octachlorodibenzofuran	0.18	0.37	0.16	0.16	0.22	47.1
Total	6.89	6.93	5.64	4.17	5.91	22.0

TABLE 24
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Congener Group Emission Data
High Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	0.053	0.091	0.072	0.076	1.44
Pentachlorodibenzo-p-dioxins	0.16	0.28	0.22	0.23	4.43
Hexachlorodibenzo-p-dioxins	0.38	0.66	0.52	0.55	10.4
Heptachlorodibenzo-p-dioxins	0.12	0.20	0.16	0.16	3.13
Octachlorodibenzo-p-dioxin	0.043	0.074	0.058	0.062	1.17
Total	0.76	1.30	1.03	1.08	20.5

Furans

Congener Group	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	0.038	0.065	0.051	0.054	1.03
Pentachlorodibenzofurans	0.059	0.10	0.080	0.085	1.61
Hexachlorodibenzofurans	0.076	0.13	0.10	0.11	2.06
Heptachlorodibenzofurans	0.037	0.063	0.050	0.053	1.00
Octachlorodibenzofuran	0.0079	0.014	0.011	0.011	0.22
Total	0.22	0.37	0.30	0.31	5.91

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 25
Covanta - Durham York Energy Centre
Boiler No. 2 - High Carbon Feed Rate with VLN on Air Mode
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<5.7	<6.2
Pentachlorodibenzo-p-dioxins	<4.7	<2.4
Hexachlorodibenzo-p-dioxins	<9.2	<9.1
Heptachlorodibenzo-p-dioxins	3.6	<2.4
Octachlorodibenzo-p-dioxin	37.3	4.8
Total	<60.5	<24.9

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	<3.2	<3.1
Pentachlorodibenzofurans	<3.1	<3.8
Hexachlorodibenzofurans	<3.5	<3.0
Heptachlorodibenzofurans	3.6	<2.7
Octachlorodibenzofuran	4.5	<3.1
Total	<17.9	<15.7

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 26
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 1 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	1200	146	262	197	221	3.92
12378-pentachlorodibenzo-p-dioxin	1430	174	312	235	263	4.67
123478-hexachlorodibenzo-p-dioxin	513	62.6	112	84.4	94.3	1.68
123678-hexachlorodibenzo-p-dioxin	699	85.3	153	115	128	2.28
123789-hexachlorodibenzo-p-dioxin	1080	132	236	178	198	3.53
1234678-heptachlorodibenzo-p-dioxin	2660	325	581	438	489	8.69
Octachlorodibenzo-p-dioxin	5770	704	1260	949	1060	18.9
2378-tetrachlorodibenzofuran	7710	941	1684	1269	1417	25.2
12378-pentachlorodibenzofuran	8020	979	1752	1320	1474	26.2
23478-pentachlorodibenzofuran	8290	1012	1811	1364	1524	27.1
123478-hexachlorodibenzofuran	10800	1318	2359	1777	1985	35.3
123678-hexachlorodibenzofuran	6720	820	1468	1106	1235	22.0
234678-hexachlorodibenzofuran	4000	488	874	658	735	13.1
123789-hexachlorodibenzofuran	352	43.0	76.9	57.9	64.7	1.15
1234678-heptachlorodibenzofuran	14200	1733	3102	2336	2610	46.4
1234789-heptachlorodibenzofuran	1070	131	234	176	197	3.50
Octachlorodibenzofuran	2680	327	585	441	493	8.76
PCB 81	260	31.7	56.8	42.8	47.8	0.85
PCB 77	1200	146	262	197	221	3.92
PCB 123	300	36.6	65.5	49.4	55.1	0.98
PCB 118	9100	1110	1988	1497	1672	29.7
PCB 114	300	36.6	65.5	49.4	55.1	0.98
PCB 105	3300	403	721	543	607	10.8
PCB 126	760	92.7	166	125	140	2.48
PCB 167	460	56.1	100	75.7	84.5	1.50
PCB 156 + PCB 157	980	120	214	161	180	3.20
PCB 169	240	29.3	52.4	39.5	44.1	0.78
PCB 189	290	35.4	63.3	47.7	53.3	0.95
Total Dioxins & Furans Only	77194	9420	16862	12702	14188	252
Dioxin-Like PCBs Only	17190	2098	3755	2828	3159	56.2
Total Dioxins & Furans and PCBs	94384	11517	20617	15530	17347	308
Total PCBs	200000	24405	43687	32908	36758	654

Dry Gas Volume Sampled (Rm^3*) :	4.578
Actual Flowrate (m^3/s) :	26.8
Dry Reference Flowrate (Rm^3/s*) :	15.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	17.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 27
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 2 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	849	99.3	179	136	149	2.70
12378-pentachlorodibenzo-p-dioxin	910	106	192	146	160	2.90
123478-hexachlorodibenzo-p-dioxin	388	45.4	81.9	62.3	68.1	1.23
123678-hexachlorodibenzo-p-dioxin	523	61.2	110	84.0	91.8	1.66
123789-hexachlorodibenzo-p-dioxin	801	93.7	169	129	141	2.55
1234678-heptachlorodibenzo-p-dioxin	2080	243	439	334	365	6.62
Octachlorodibenzo-p-dioxin	6030	705	1272	968	1058	19.2
2378-tetrachlorodibenzofuran	5950	696	1255	955	1044	18.9
12378-pentachlorodibenzofuran	5250	614	1108	843	921	16.7
23478-pentachlorodibenzofuran	5280	618	1114	848	927	16.8
123478-hexachlorodibenzofuran	5970	698	1259	958	1048	19.0
123678-hexachlorodibenzofuran	3650	427	770	586	640	11.6
234678-hexachlorodibenzofuran	1870	219	395	300	328	5.95
123789-hexachlorodibenzofuran	162	18.9	34.2	26.0	28.4	0.52
1234678-heptachlorodibenzofuran	7550	883	1593	1212	1325	24.0
1234789-heptachlorodibenzofuran	543	63.5	115	87.2	95.3	1.73
Octachlorodibenzofuran	1420	166	300	228	249	4.52
PCB 81	210	24.6	44.3	33.7	36.9	0.67
PCB 77	970	113	205	156	170	3.09
PCB 123	240	28.1	50.6	38.5	42.1	0.76
PCB 118	7500	877	1582	1204	1316	23.9
PCB 114	<220	<25.7	<46.4	<35.3	<38.6	<0.70
PCB 105	2300	269	485	369	404	7.32
PCB 126	600	70.2	127	96.3	105	1.91
PCB 167	320	37.4	67.5	51.4	56.2	1.02
PCB 156 + PCB 157	640	74.9	135	103	112	2.04
PCB 169	180	21.1	38.0	28.9	31.6	0.57
PCB 189	230	26.9	48.5	36.9	40.4	0.73
Total Dioxins & Furans Only	49226	5758	10385	7902	8638	157
Dioxin-Like PCBs Only	<13410	<1568	<2829	<2153	<2353	<42.7
Total Dioxins & Furans and PCBs	<62636	<7326	<13214	<10054	<10991	<199
Total PCBs	240000	28071	50633	38524	42115	764

Dry Gas Volume Sampled (Rm³*) :	4.740
Actual Flowrate (m³/s) :	27.2
Dry Reference Flowrate (Rm³/s*) :	15.1
Dry Adjusted Flowrate (Rm³/s**) :	19.8
Wet Reference Flowrate (Rm³/s*) :	18.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 28
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 3 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	898	111	198	149	167	2.90
12378-pentachlorodibenzo-p-dioxin	1090	135	240	181	202	3.52
123478-hexachlorodibenzo-p-dioxin	466	57.6	103	77.2	86.5	1.51
123678-hexachlorodibenzo-p-dioxin	579	71.6	127	95.9	107	1.87
123789-hexachlorodibenzo-p-dioxin	965	119	212	160	179	3.12
1234678-heptachlorodibenzo-p-dioxin	2000	247	440	331	371	6.46
Octachlorodibenzo-p-dioxin	5400	668	1189	894	1002	17.4
2378-tetrachlorodibenzofuran	5380	665	1184	891	999	17.4
12378-pentachlorodibenzofuran	5740	710	1263	951	1065	18.5
23478-pentachlorodibenzofuran	5730	708	1261	949	1064	18.5
123478-hexachlorodibenzofuran	7690	951	1693	1274	1427	24.8
123678-hexachlorodibenzofuran	4690	580	1032	777	870	15.2
234678-hexachlorodibenzofuran	2370	293	522	393	440	7.66
123789-hexachlorodibenzofuran	231	28.6	50.8	38.3	42.9	0.75
1234678-heptachlorodibenzofuran	10400	1286	2289	1723	1930	33.6
1234789-heptachlorodibenzofuran	765	94.6	168	127	142	2.47
Octachlorodibenzofuran	1730	214	381	287	321	5.59
PCB 81	170	21.0	37.4	28.2	31.6	0.55
PCB 77	740	91.5	163	123	137	2.39
PCB 123	180	22.3	39.6	29.8	33.4	0.58
PCB 118	4600	569	1013	762	854	14.9
PCB 114	170	21.0	37.4	28.2	31.6	0.55
PCB 105	1600	198	352	265	297	5.17
PCB 126	530	65.5	117	87.8	98.4	1.71
PCB 167	240	29.7	52.8	39.8	44.5	0.78
PCB 156 + PCB 157	450	55.6	99.1	74.5	83.5	1.45
PCB 169	190	23.5	41.8	31.5	35.3	0.61
PCB 189	190	23.5	41.8	31.5	35.3	0.61
Total Dioxins & Furans Only	56124	6938	12354	9296	10417	181
Dioxin-Like PCBs Only	9060	1120	1994	1501	1682	29.3
Total Dioxins & Furans and PCBs	65184	8058	14348	10796	12098	211
Total PCBs	130000	16070	28615	21531	24128	420

Dry Gas Volume Sampled (Rm^3*) :	4.543
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	14.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.5
Wet Reference Flowrate (Rm^3/s*) :	17.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 29
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 7 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	843	131	237	180	200	3.61
12378-pentachlorodibenzo-p-dioxin	1090	170	306	233	258	4.66
123478-hexachlorodibenzo-p-dioxin	404	63.0	114	86.3	95.6	1.73
123678-hexachlorodibenzo-p-dioxin	639	99.6	180	137	151	2.73
123789-hexachlorodibenzo-p-dioxin	646	101	182	138	153	2.76
1234678-heptachlorodibenzo-p-dioxin	2280	355	641	487	540	9.76
Octachlorodibenzo-p-dioxin	7430	1158	2088	1587	1759	31.8
2378-tetrachlorodibenzofuran	5650	880	1588	1207	1337	24.2
12378-pentachlorodibenzofuran	5540	863	1557	1184	1311	23.7
23478-pentachlorodibenzofuran	4330	675	1217	925	1025	18.5
123478-hexachlorodibenzofuran	4310	672	1211	921	1020	18.4
123678-hexachlorodibenzofuran	4310	672	1211	921	1020	18.4
234678-hexachlorodibenzofuran	2170	338	610	464	514	9.29
123789-hexachlorodibenzofuran	174	27.1	48.9	37.2	41.2	0.74
1234678-heptachlorodibenzofuran	9860	1537	2770	2107	2334	42.2
1234789-heptachlorodibenzofuran	664	103	187	142	157	2.84
Octachlorodibenzofuran	2130	332	598	455	504	9.11
PCB 81	130	20.3	36.5	27.8	30.8	0.56
PCB 77	600	93.5	169	128	142	2.57
PCB 123	140	21.8	39.3	29.9	33.1	0.60
PCB 118	3800	592	1068	812	899	16.3
PCB 114	120	18.7	33.7	25.6	28.4	0.51
PCB 105	1200	187	337	256	284	5.14
PCB 126	350	54.5	98.3	74.8	82.8	1.50
PCB 167	170	26.5	47.8	36.3	40.2	0.73
PCB 156 + PCB 157	340	53.0	95.5	72.6	80.5	1.45
PCB 169	110	17.1	30.9	23.5	26.0	0.47
PCB 189	130	20.3	36.5	27.8	30.8	0.56
Total Dioxins & Furans Only	52470	8177	14743	11210	12419	225
Dioxin-Like PCBs Only	7090	1105	1992	1515	1678	30.3
Total Dioxins & Furans and PCBs	59560	9282	16735	12725	14097	255
Total PCBs	97000	15116	27255	20723	22959	415

Dry Gas Volume Sampled (Rm^3*) :	3.559
Actual Flowrate (m^3/s) :	27.5
Dry Reference Flowrate (Rm^3/s*) :	15.2
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	18.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 30
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Actual Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	pg/m³	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	146	99.3	111	131	122	17.2
12378-pentachlorodibenzo-p-dioxin	174	106	135	170	146	21.9
123478-hexachlorodibenzo-p-dioxin	62.6	45.4	57.6	63.0	57.1	14.4
123678-hexachlorodibenzo-p-dioxin	85.3	61.2	71.6	99.6	79.4	21.0
123789-hexachlorodibenzo-p-dioxin	132	93.7	119	101	111	15.6
1234678-heptachlorodibenzo-p-dioxin	325	243	247	355	293	19.2
Octachlorodibenzo-p-dioxin	704	705	668	1158	809	28.9
2378-tetrachlorodibenzofuran	941	696	665	880	796	17.1
12378-pentachlorodibenzofuran	979	614	710	863	791	20.4
23478-pentachlorodibenzofuran	1012	618	708	675	753	23.4
123478-hexachlorodibenzofuran	1318	698	951	672	910	33.0
123678-hexachlorodibenzofuran	820	427	580	672	625	26.4
234678-hexachlorodibenzofuran	488	219	293	338	334	34.0
123789-hexachlorodibenzofuran	43.0	18.9	28.6	27.1	29.4	34.0
1234678-heptachlorodibenzofuran	1733	883	1286	1537	1359	27.0
1234789-heptachlorodibenzofuran	131	63.5	94.6	103	98.0	28.2
Octachlorodibenzofuran	327	166	214	332	260	31.9
PCB 81	31.7	24.6	21.0	20.3	24.4	21.5
PCB 77	146	113	91.5	93.5	111	22.9
PCB 123	36.6	28.1	22.3	21.8	27.2	25.4
PCB 118	1110	877	569	592	787	32.7
PCB 114	36.6	<25.7	21.0	18.7	<25.5	31.2
PCB 105	403	269	198	187	264	37.6
PCB 126	92.7	70.2	65.5	54.5	70.7	22.7
PCB 167	56.1	37.4	29.7	26.5	37.4	35.5
PCB 156 + PCB 157	120	74.9	55.6	53.0	75.8	40.6
PCB 169	29.3	21.1	23.5	17.1	22.7	22.4
PCB 189	35.4	26.9	23.5	20.3	26.5	24.6
Total Dioxins & Furans Only	9420	5758	6938	8177	7573	20.8
Dioxin-Like PCBs Only	2098	<1568	1120	1105	<1473	31.8
Total Dioxins & Furans and PCBs	11517	<7326	8058	9282	<9046	20.3
Total PCBs	24405	28071	16070	15116	20916	30.3

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 31
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	262	179	198	237	219	17.1
12378-pentachlorodibenzo-p-dioxin	312	192	240	306	263	21.9
123478-hexachlorodibenzo-p-dioxin	112	81.9	103	114	103	14.2
123678-hexachlorodibenzo-p-dioxin	153	110	127	180	143	21.2
123789-hexachlorodibenzo-p-dioxin	236	169	212	182	200	15.2
1234678-heptachlorodibenzo-p-dioxin	581	439	440	641	525	19.4
Octachlorodibenzo-p-dioxin	1260	1272	1189	2088	1452	29.3
2378-tetrachlorodibenzofuran	1684	1255	1184	1588	1428	17.2
12378-pentachlorodibenzofuran	1752	1108	1263	1557	1420	20.4
23478-pentachlorodibenzofuran	1811	1114	1261	1217	1351	23.2
123478-hexachlorodibenzofuran	2359	1259	1693	1211	1631	32.6
123678-hexachlorodibenzofuran	1468	770	1032	1211	1120	26.3
234678-hexachlorodibenzofuran	874	395	522	610	600	33.8
123789-hexachlorodibenzofuran	76.9	34.2	50.8	48.9	52.7	33.7
1234678-heptachlorodibenzofuran	3102	1593	2289	2770	2439	26.9
1234789-heptachlorodibenzofuran	234	115	168	187	176	28.0
Octachlorodibenzofuran	585	300	381	598	466	32.0
PCB 81	56.8	44.3	37.4	36.5	43.8	21.4
PCB 77	262	205	163	169	200	22.9
PCB 123	65.5	50.6	39.6	39.3	48.8	25.3
PCB 118	1988	1582	1013	1068	1413	32.7
PCB 114	65.5	<46.4	37.4	33.7	<45.8	31.0
PCB 105	721	485	352	337	474	37.5
PCB 126	166	127	117	98.3	127	22.5
PCB 167	100	67.5	52.8	47.8	67.1	35.4
PCB 156 + PCB 157	214	135	99.1	95.5	136	40.5
PCB 169	52.4	38.0	41.8	30.9	40.8	22.0
PCB 189	63.3	48.5	41.8	36.5	47.6	24.4
Total Dioxins & Furans Only	16862	10385	12354	14743	13586	20.7
Dioxin-Like PCBs Only	3755	<2829	1994	1992	<2643	31.8
Total Dioxins & Furans and PCBs	20617	<13214	14348	16735	<16229	20.2
Total PCBs	43687	50633	28615	27255	37548	30.5

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 32
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	197	136	149	180	166	17.0
12378-pentachlorodibenzo-p-dioxin	235	146	181	233	199	21.8
123478-hexachlorodibenzo-p-dioxin	84.4	62.3	77.2	86.3	77.5	14.1
123678-hexachlorodibenzo-p-dioxin	115	84.0	95.9	137	108	21.3
123789-hexachlorodibenzo-p-dioxin	178	129	160	138	151	14.6
1234678-heptachlorodibenzo-p-dioxin	438	334	331	487	397	19.5
Octachlorodibenzo-p-dioxin	949	968	894	1587	1100	29.7
2378-tetrachlorodibenzofuran	1269	955	891	1207	1080	17.2
12378-pentachlorodibenzofuran	1320	843	951	1184	1074	20.2
23478-pentachlorodibenzofuran	1364	848	949	925	1021	22.8
123478-hexachlorodibenzofuran	1777	958	1274	921	1232	32.1
123678-hexachlorodibenzofuran	1106	586	777	921	847	26.0
234678-hexachlorodibenzofuran	658	300	393	464	454	33.5
123789-hexachlorodibenzofuran	57.9	26.0	38.3	37.2	39.8	33.3
1234678-heptachlorodibenzofuran	2336	1212	1723	2107	1844	26.7
1234789-heptachlorodibenzofuran	176	87.2	127	142	133	27.7
Octachlorodibenzofuran	441	228	287	455	353	32.0
PCB 81	42.8	33.7	28.2	27.8	33.1	21.1
PCB 77	197	156	123	128	151	22.7
PCB 123	49.4	38.5	29.8	29.9	36.9	25.1
PCB 118	1497	1204	762	812	1069	32.5
PCB 114	49.4	<35.3	28.2	25.6	<34.6	30.8
PCB 105	543	369	265	256	358	37.2
PCB 126	125	96.3	87.8	74.8	96.0	22.2
PCB 167	75.7	51.4	39.8	36.3	50.8	35.1
PCB 156 + PCB 157	161	103	74.5	72.6	103	40.2
PCB 169	39.5	28.9	31.5	23.5	30.8	21.6
PCB 189	47.7	36.9	31.5	27.8	36.0	24.1
Total Dioxins & Furans Only	12702	7902	9296	11210	10277	20.5
Dioxin-Like PCBs Only	2828	<2153	1501	1515	<1999	31.6
Total Dioxins & Furans and PCBs	15530	<10054	10796	12725	<12276	19.9
Total PCBs	32908	38524	21531	20723	28422	30.7

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 33
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Wet Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	221	149	167	200	184	17.5
12378-pentachlorodibenzo-p-dioxin	263	160	202	258	221	22.2
123478-hexachlorodibenzo-p-dioxin	94.3	68.1	86.5	95.6	86.1	14.7
123678-hexachlorodibenzo-p-dioxin	128	91.8	107	151	120	21.6
123789-hexachlorodibenzo-p-dioxin	198	141	179	153	168	15.5
1234678-heptachlorodibenzo-p-dioxin	489	365	371	540	441	19.7
Octachlorodibenzo-p-dioxin	1060	1058	1002	1759	1220	29.5
2378-tetrachlorodibenzofuran	1417	1044	999	1337	1199	17.4
12378-pentachlorodibenzofuran	1474	921	1065	1311	1193	20.7
23478-pentachlorodibenzofuran	1524	927	1064	1025	1135	23.4
123478-hexachlorodibenzofuran	1985	1048	1427	1020	1370	32.9
123678-hexachlorodibenzofuran	1235	640	870	1020	942	26.6
234678-hexachlorodibenzofuran	735	328	440	514	504	34.1
123789-hexachlorodibenzofuran	64.7	28.4	42.9	41.2	44.3	34.0
1234678-heptachlorodibenzofuran	2610	1325	1930	2334	2050	27.2
1234789-heptachlorodibenzofuran	197	95.3	142	157	148	28.4
Octachlorodibenzofuran	493	249	321	504	392	32.3
PCB 81	47.8	36.9	31.6	30.8	36.7	21.3
PCB 77	221	170	137	142	168	22.8
PCB 123	55.1	42.1	33.4	33.1	40.9	25.2
PCB 118	1672	1316	854	899	1185	32.5
PCB 114	55.1	<38.6	31.6	28.4	<38.4	31.0
PCB 105	607	404	297	284	398	37.5
PCB 126	140	105	98.4	82.8	107	22.5
PCB 167	84.5	56.2	44.5	40.2	56.4	35.4
PCB 156 + PCB 157	180	112	83.5	80.5	114	40.6
PCB 169	44.1	31.6	35.3	26.0	34.2	22.2
PCB 189	53.3	40.4	35.3	30.8	39.9	24.4
Total Dioxins & Furans Only	14188	8638	10417	12419	11415	21.1
Dioxin-Like PCBs Only	3159	<2353	1682	1678	<2218	31.7
Total Dioxins & Furans and PCBs	17347	<10991	12098	14097	<13633	20.5
Total PCBs	36758	42115	24128	22959	31490	30.0

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 34
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Rates
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Emission Rate Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	3.92	2.70	2.90	3.61	3.28	17.6
12378-pentachlorodibenzo-p-dioxin	4.67	2.90	3.52	4.66	3.94	22.4
123478-hexachlorodibenzo-p-dioxin	1.68	1.23	1.51	1.73	1.54	14.5
123678-hexachlorodibenzo-p-dioxin	2.28	1.66	1.87	2.73	2.14	22.2
123789-hexachlorodibenzo-p-dioxin	3.53	2.55	3.12	2.76	2.99	14.4
1234678-heptachlorodibenzo-p-dioxin	8.69	6.62	6.46	9.76	7.88	20.4
Octachlorodibenzo-p-dioxin	18.9	19.2	17.4	31.8	21.8	30.7
2378-tetrachlorodibenzofuran	25.2	18.9	17.4	24.2	21.4	17.9
12378-pentachlorodibenzofuran	26.2	16.7	18.5	23.7	21.3	20.8
23478-pentachlorodibenzofuran	27.1	16.8	18.5	18.5	20.2	22.9
123478-hexachlorodibenzofuran	35.3	19.0	24.8	18.4	24.4	32.1
123678-hexachlorodibenzofuran	22.0	11.6	15.2	18.4	16.8	26.4
234678-hexachlorodibenzofuran	13.1	5.95	7.66	9.29	8.99	33.8
123789-hexachlorodibenzofuran	1.15	0.52	0.75	0.74	0.79	33.5
1234678-heptachlorodibenzofuran	46.4	24.0	33.6	42.2	36.6	27.1
1234789-heptachlorodibenzofuran	3.50	1.73	2.47	2.84	2.63	28.0
Octachlorodibenzofuran	8.76	4.52	5.59	9.11	7.00	32.7
PCB 81	0.85	0.67	0.55	0.56	0.66	21.4
PCB 77	3.92	3.09	2.39	2.57	2.99	22.9
PCB 123	0.98	0.76	0.58	0.60	0.73	25.3
PCB 118	29.7	23.9	14.9	16.3	21.2	32.8
PCB 114	0.98	<0.70	0.55	0.51	<0.69	31.0
PCB 105	10.8	7.32	5.17	5.14	7.10	37.4
PCB 126	2.48	1.91	1.71	1.50	1.90	22.3
PCB 167	1.50	1.02	0.78	0.73	1.01	35.3
PCB 156 + PCB 157	3.20	2.04	1.45	1.45	2.04	40.5
PCB 169	0.78	0.57	0.61	0.47	0.61	21.4
PCB 189	0.95	0.73	0.61	0.56	0.71	24.3
Total Dioxins & Furans Only	252	157	181	225	204	21.0
Dioxin-Like PCBs Only	56.2	<42.7	29.3	30.3	<39.6	31.8
Total Dioxins & Furans and PCBs	308	<199	211	255	<243	20.4
Total PCBs	654	764	420	415	563	30.9

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 35
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Specific Isomer Emission Data
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	122	219	166	184	3.28
12378-pentachlorodibenzo-p-dioxin	146	263	199	221	3.94
123478-hexachlorodibenzo-p-dioxin	57.1	103	77.5	86.1	1.54
123678-hexachlorodibenzo-p-dioxin	79.4	143	108	120	2.14
123789-hexachlorodibenzo-p-dioxin	111	200	151	168	2.99
1234678-heptachlorodibenzo-p-dioxin	293	525	397	441	7.88
Octachlorodibenzo-p-dioxin	809	1452	1100	1220	21.8
2378-tetrachlorodibenzofuran	796	1428	1080	1199	21.4
12378-pentachlorodibenzofuran	791	1420	1074	1193	21.3
23478-pentachlorodibenzofuran	753	1351	1021	1135	20.2
123478-hexachlorodibenzofuran	910	1631	1232	1370	24.4
123678-hexachlorodibenzofuran	625	1120	847	942	16.8
234678-hexachlorodibenzofuran	334	600	454	504	8.99
123789-hexachlorodibenzofuran	29.4	52.7	39.8	44.3	0.79
1234678-heptachlorodibenzofuran	1359	2439	1844	2050	36.6
1234789-heptachlorodibenzofuran	98.0	176	133	148	2.63
Octachlorodibenzofuran	260	466	353	392	7.00
PCB 81	24.4	43.8	33.1	36.7	0.66
PCB 77	111	200	151	168	2.99
PCB 123	27.2	48.8	36.9	40.9	0.73
PCB 118	787	1413	1069	1185	21.2
PCB 114	<25.5	<45.8	<34.6	<38.4	<0.69
PCB 105	264	474	358	398	7.10
PCB 126	70.7	127	96.0	107	1.90
PCB 167	37.4	67.1	50.8	56.4	1.01
PCB 156 + PCB 157	75.8	136	103	114	2.04
PCB 169	22.7	40.8	30.8	34.2	0.61
PCB 189	26.5	47.6	36.0	39.9	0.71
Total Dioxins & Furans Only	7573	13586	10277	11415	204
Dioxin-Like PCBs Only	<1473	<2643	<1999	<2218	<39.6
Total Dioxins & Furans and PCBs	<9046	<16229	<12276	<13633	<243
Total PCBs	20916	37548	28422	31490	563

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 36
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 1 pg TEQ/m³	Test No. 2 pg TEQ/m³	Test No. 3 pg TEQ/m³	Test No. 7 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	146	99.3	111	131	122
12378-pentachlorodibenzo-p-dioxin	1.000	174	106	135	170	146
123478-hexachlorodibenzo-p-dioxin	0.100	6.26	4.54	5.76	6.30	5.71
123678-hexachlorodibenzo-p-dioxin	0.100	8.53	6.12	7.16	9.96	7.94
123789-hexachlorodibenzo-p-dioxin	0.100	13.2	9.37	11.9	10.1	11.1
1234678-heptachlorodibenzo-p-dioxin	0.010	3.25	2.43	2.47	3.55	2.93
Octachlorodibenzo-p-dioxin	0.0003	0.21	0.21	0.20	0.35	0.24
2378-tetrachlorodibenzofuran	0.100	94.1	69.6	66.5	88.0	79.6
12378-pentachlorodibenzofuran	0.030	29.4	18.4	21.3	25.9	23.7
23478-pentachlorodibenzofuran	0.300	303	185	212	202	226
123478-hexachlorodibenzofuran	0.100	132	69.8	95.1	67.2	91.0
123678-hexachlorodibenzofuran	0.100	82.0	42.7	58.0	67.2	62.5
234678-hexachlorodibenzofuran	0.100	48.8	21.9	29.3	33.8	33.4
123789-hexachlorodibenzofuran	0.100	4.30	1.89	2.86	2.71	2.94
1234678-heptachlorodibenzofuran	0.010	17.3	8.83	12.9	15.4	13.6
1234789-heptachlorodibenzofuran	0.010	1.31	0.64	0.95	1.03	0.98
Octachlorodibenzofuran	0.0003	0.098	0.050	0.064	0.10	0.078
PCB 81	0.0003	0.0095	0.0074	0.0063	0.0061	0.0073
PCB 77	0.0001	0.015	0.011	0.0091	0.0094	0.011
PCB 123	0.00003	0.0011	0.00084	0.00067	0.00065	0.00082
PCB 118	0.00003	0.033	0.026	0.017	0.018	0.024
PCB 114	0.00003	0.0011	<0.00077	0.00063	0.00056	<0.00077
PCB 105	0.00003	0.012	0.0081	0.0059	0.0056	0.0079
PCB 126	0.100	9.27	7.02	6.55	5.45	7.07
PCB 167	0.00003	0.0017	0.0011	0.00089	0.00079	0.0011
PCB 156 + PCB 157	0.00003	0.0036	0.0022	0.0017	0.0016	0.0023
PCB 169	0.030	0.88	0.63	0.70	0.51	0.68
PCB 189	0.00003	0.0011	0.00081	0.00070	0.00061	0.00080
Total Dioxins & Furans Only		1065	647	773	835	830
Dioxin-Like PCBs Only		10.2	<7.71	7.30	6.01	<7.81
Total Dioxins & Furans and PCBs		1075	<655	780	841	<838

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 37
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	262	179	198	237	219
12378-pentachlorodibenzo-p-dioxin	1.000	312	192	240	306	263
123478-hexachlorodibenzo-p-dioxin	0.100	11.2	8.19	10.3	11.4	10.3
123678-hexachlorodibenzo-p-dioxin	0.100	15.3	11.0	12.7	18.0	14.3
123789-hexachlorodibenzo-p-dioxin	0.100	23.6	16.9	21.2	18.2	20.0
1234678-heptachlorodibenzo-p-dioxin	0.010	5.81	4.39	4.40	6.41	5.25
Octachlorodibenzo-p-dioxin	0.0003	0.38	0.38	0.36	0.63	0.44
2378-tetrachlorodibenzofuran	0.100	168	126	118	159	143
12378-pentachlorodibenzofuran	0.030	52.6	33.2	37.9	46.7	42.6
23478-pentachlorodibenzofuran	0.300	543	334	378	365	405
123478-hexachlorodibenzofuran	0.100	236	126	169	121	163
123678-hexachlorodibenzofuran	0.100	147	77.0	103	121	112
234678-hexachlorodibenzofuran	0.100	87.4	39.5	52.2	61.0	60.0
123789-hexachlorodibenzofuran	0.100	7.69	3.42	5.08	4.89	5.27
1234678-heptachlorodibenzofuran	0.010	31.0	15.9	22.9	27.7	24.4
1234789-heptachlorodibenzofuran	0.010	2.34	1.15	1.68	1.87	1.76
Octachlorodibenzofuran	0.0003	0.18	0.090	0.11	0.18	0.14
PCB 81	0.0003	0.017	0.013	0.011	0.011	0.013
PCB 77	0.0001	0.026	0.020	0.016	0.017	0.020
PCB 123	0.00003	0.0020	0.0015	0.0012	0.0012	0.0015
PCB 118	0.00003	0.060	0.047	0.030	0.032	0.042
PCB 114	0.00003	0.0020	<0.0014	0.0011	0.0010	<0.0014
PCB 105	0.00003	0.022	0.015	0.011	0.010	0.014
PCB 126	0.100	16.6	12.7	11.7	9.83	12.7
PCB 167	0.00003	0.0030	0.0020	0.0016	0.0014	0.0020
PCB 156 + PCB 157	0.00003	0.0064	0.0041	0.0030	0.0029	0.0041
PCB 169	0.030	1.57	1.14	1.25	0.93	1.22
PCB 189	0.00003	0.0019	0.0015	0.0013	0.0011	0.0014
Total Dioxins & Furans Only		1906	1168	1376	1506	1489
Dioxin-Like PCBs Only		18.3	<13.9	13.0	10.8	<14.0
Total Dioxins & Furans and PCBs		1925	<1182	1389	1517	<1503

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 38
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	197	136	149	180	166
12378-pentachlorodibenzo-p-dioxin	1.000	235	146	181	233	199
123478-hexachlorodibenzo-p-dioxin	0.100	8.44	6.23	7.72	8.63	7.75
123678-hexachlorodibenzo-p-dioxin	0.100	11.5	8.40	9.59	13.7	10.8
123789-hexachlorodibenzo-p-dioxin	0.100	17.8	12.9	16.0	13.8	15.1
1234678-heptachlorodibenzo-p-dioxin	0.010	4.38	3.34	3.31	4.87	3.97
Octachlorodibenzo-p-dioxin	0.0003	0.28	0.29	0.27	0.48	0.33
2378-tetrachlorodibenzofuran	0.100	127	95.5	89.1	121	108
12378-pentachlorodibenzofuran	0.030	39.6	25.3	28.5	35.5	32.2
23478-pentachlorodibenzofuran	0.300	409	254	285	278	306
123478-hexachlorodibenzofuran	0.100	178	95.8	127	92.1	123
123678-hexachlorodibenzofuran	0.100	111	58.6	77.7	92.1	84.7
234678-hexachlorodibenzofuran	0.100	65.8	30.0	39.3	46.4	45.4
123789-hexachlorodibenzofuran	0.100	5.79	2.60	3.83	3.72	3.98
1234678-heptachlorodibenzofuran	0.010	23.4	12.1	17.2	21.1	18.4
1234789-heptachlorodibenzofuran	0.010	1.76	0.87	1.27	1.42	1.33
Octachlorodibenzofuran	0.0003	0.13	0.068	0.086	0.14	0.11
PCB 81	0.0003	0.013	0.010	0.0084	0.0083	0.0099
PCB 77	0.0001	0.020	0.016	0.012	0.013	0.015
PCB 123	0.00003	0.0015	0.0012	0.00089	0.00090	0.0011
PCB 118	0.00003	0.045	0.036	0.023	0.024	0.032
PCB 114	0.00003	0.0015	<0.0011	0.00084	0.00077	<0.0010
PCB 105	0.00003	0.016	0.011	0.0080	0.0077	0.011
PCB 126	0.100	12.5	9.63	8.78	7.48	9.60
PCB 167	0.00003	0.0023	0.0015	0.0012	0.0011	0.0015
PCB 156 + PCB 157	0.00003	0.0048	0.0031	0.0022	0.0022	0.0031
PCB 169	0.030	1.18	0.87	0.94	0.71	0.93
PCB 189	0.00003	0.0014	0.0011	0.00094	0.00083	0.0011
Total Dioxins & Furans Only		1436	889	1035	1145	1126
Dioxin-Like PCBs Only		13.8	<10.6	9.78	8.24	<10.6
Total Dioxins & Furans and PCBs		1450	<899	1045	1153	<1137

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 39
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	197	136	149	180	166
12378-pentachlorodibenzo-p-dioxin	0.500	118	73.0	90.3	116	99.3
123478-hexachlorodibenzo-p-dioxin	0.100	8.44	6.23	7.72	8.63	7.75
123678-hexachlorodibenzo-p-dioxin	0.100	11.5	8.40	9.59	13.7	10.8
123789-hexachlorodibenzo-p-dioxin	0.100	17.8	12.9	16.0	13.8	15.1
1234678-heptachlorodibenzo-p-dioxin	0.010	4.38	3.34	3.31	4.87	3.97
Octachlorodibenzo-p-dioxin	0.001	0.95	0.97	0.89	1.59	1.10
2378-tetrachlorodibenzofuran	0.100	127	95.5	89.1	121	108
12378-pentachlorodibenzofuran	0.050	66.0	42.1	47.5	59.2	53.7
23478-pentachlorodibenzofuran	0.500	682	424	475	463	511
123478-hexachlorodibenzofuran	0.100	178	95.8	127	92.1	123
123678-hexachlorodibenzofuran	0.100	111	58.6	77.7	92.1	84.7
234678-hexachlorodibenzofuran	0.100	65.8	30.0	39.3	46.4	45.4
123789-hexachlorodibenzofuran	0.100	5.79	2.60	3.83	3.72	3.98
1234678-heptachlorodibenzofuran	0.010	23.4	12.1	17.2	21.1	18.4
1234789-heptachlorodibenzofuran	0.010	1.76	0.87	1.27	1.42	1.33
Octachlorodibenzofuran	0.001	0.44	0.23	0.29	0.46	0.35
Total Dioxins & Furans		1618	1003	1155	1239	1254

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 40
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	221	149	167	200	184
12378-pentachlorodibenzo-p-dioxin	1.000	263	160	202	258	221
123478-hexachlorodibenzo-p-dioxin	0.100	9.43	6.81	8.65	9.56	8.61
123678-hexachlorodibenzo-p-dioxin	0.100	12.8	9.18	10.7	15.1	12.0
123789-hexachlorodibenzo-p-dioxin	0.100	19.8	14.1	17.9	15.3	16.8
1234678-heptachlorodibenzo-p-dioxin	0.010	4.89	3.65	3.71	5.40	4.41
Octachlorodibenzo-p-dioxin	0.0003	0.32	0.32	0.30	0.53	0.37
2378-tetrachlorodibenzofuran	0.100	142	104	99.9	134	120
12378-pentachlorodibenzofuran	0.030	44.2	27.6	32.0	39.3	35.8
23478-pentachlorodibenzofuran	0.300	457	278	319	307	340
123478-hexachlorodibenzofuran	0.100	198	105	143	102	137
123678-hexachlorodibenzofuran	0.100	124	64.0	87.0	102	94.2
234678-hexachlorodibenzofuran	0.100	73.5	32.8	44.0	51.4	50.4
123789-hexachlorodibenzofuran	0.100	6.47	2.84	4.29	4.12	4.43
1234678-heptachlorodibenzofuran	0.010	26.1	13.2	19.3	23.3	20.5
1234789-heptachlorodibenzofuran	0.010	1.97	0.95	1.42	1.57	1.48
Octachlorodibenzofuran	0.0003	0.15	0.075	0.096	0.15	0.12
PCB 81	0.0003	0.014	0.011	0.0095	0.0092	0.011
PCB 77	0.0001	0.022	0.017	0.014	0.014	0.017
PCB 123	0.00003	0.0017	0.0013	0.0010	0.00099	0.0012
PCB 118	0.00003	0.050	0.039	0.026	0.027	0.036
PCB 114	0.00003	0.0017	<0.0012	0.00095	0.00085	<0.0012
PCB 105	0.00003	0.018	0.012	0.0089	0.0085	0.012
PCB 126	0.100	14.0	10.5	9.84	8.28	10.7
PCB 167	0.00003	0.0025	0.0017	0.0013	0.0012	0.0017
PCB 156 + PCB 157	0.00003	0.0054	0.0034	0.0025	0.0024	0.0034
PCB 169	0.030	1.32	0.95	1.06	0.78	1.03
PCB 189	0.00003	0.0016	0.0012	0.0011	0.00092	0.0012
Total Dioxins & Furans Only		1604	971	1160	1268	1251
Dioxin-Like PCBs Only		15.4	<11.6	11.0	9.13	<11.8
Total Dioxins & Furans and PCBs		1619	<983	1171	1278	<1263

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 41
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Emission Rates
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 1 ng TEQ/s	Test No. 2 ng TEQ/s	Test No. 3 ng TEQ/s	Test No. 7 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	3.92	2.70	2.90	3.61	3.28
12378-pentachlorodibenzo-p-dioxin	1.000	4.67	2.90	3.52	4.66	3.94
123478-hexachlorodibenzo-p-dioxin	0.100	0.17	0.12	0.15	0.17	0.15
123678-hexachlorodibenzo-p-dioxin	0.100	0.23	0.17	0.19	0.27	0.21
123789-hexachlorodibenzo-p-dioxin	0.100	0.35	0.25	0.31	0.28	0.30
1234678-heptachlorodibenzo-p-dioxin	0.010	0.087	0.066	0.065	0.098	0.079
Octachlorodibenzo-p-dioxin	0.0003	0.0057	0.0058	0.0052	0.0095	0.0065
2378-tetrachlorodibenzofuran	0.100	2.52	1.89	1.74	2.42	2.14
12378-pentachlorodibenzofuran	0.030	0.79	0.50	0.56	0.71	0.64
23478-pentachlorodibenzofuran	0.300	8.13	5.04	5.55	5.56	6.07
123478-hexachlorodibenzofuran	0.100	3.53	1.90	2.48	1.84	2.44
123678-hexachlorodibenzofuran	0.100	2.20	1.16	1.52	1.84	1.68
234678-hexachlorodibenzofuran	0.100	1.31	0.59	0.77	0.93	0.90
123789-hexachlorodibenzofuran	0.100	0.12	0.052	0.075	0.074	0.079
1234678-heptachlorodibenzofuran	0.010	0.46	0.24	0.34	0.42	0.37
1234789-heptachlorodibenzofuran	0.010	0.035	0.017	0.025	0.028	0.026
Octachlorodibenzofuran	0.0003	0.0026	0.0014	0.0017	0.0027	0.0021
PCB 81	0.0003	0.00025	0.00020	0.00016	0.00017	0.00020
PCB 77	0.0001	0.00039	0.00031	0.00024	0.00026	0.00030
PCB 123	0.00003	0.000029	0.000023	0.000017	0.000018	0.000022
PCB 118	0.00003	0.00089	0.00072	0.00045	0.00049	0.00064
PCB 114	0.00003	0.000029	<0.000021	0.000016	0.000015	<0.000021
PCB 105	0.00003	0.00032	0.00022	0.00016	0.00015	0.00021
PCB 126	0.100	0.25	0.19	0.17	0.15	0.19
PCB 167	0.00003	0.000045	0.000031	0.000023	0.000022	0.000030
PCB 156 + PCB 157	0.00003	0.000096	0.000061	0.000044	0.000044	0.000061
PCB 169	0.030	0.024	0.017	0.018	0.014	0.018
PCB 189	0.00003	0.000028	0.000022	0.000018	0.000017	0.000021
Total Dioxins & Furans Only		28.5	17.6	20.2	22.9	22.3
Dioxin-Like PCBs Only		0.27	<0.21	0.19	0.17	<0.21
Total Dioxins & Furans and PCBs		28.8	<17.8	20.4	23.1	<22.5

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	122	219	166	184	3.28
12378-pentachlorodibenzo-p-dioxin	146	263	199	221	3.94
123478-hexachlorodibenzo-p-dioxin	5.71	10.3	7.75	8.61	0.15
123678-hexachlorodibenzo-p-dioxin	7.94	14.3	10.8	12.0	0.21
123789-hexachlorodibenzo-p-dioxin	11.1	20.0	15.1	16.8	0.30
1234678-heptachlorodibenzo-p-dioxin	2.93	5.25	3.97	4.41	0.079
Octachlorodibenzo-p-dioxin	0.24	0.44	0.33	0.37	0.0065
2378-tetrachlorodibenzofuran	79.6	143	108	120	2.14
12378-pentachlorodibenzofuran	23.7	42.6	32.2	35.8	0.64
23478-pentachlorodibenzofuran	226	405	306	340	6.07
123478-hexachlorodibenzofuran	91.0	163	123	137	2.44
123678-hexachlorodibenzofuran	62.5	112	84.7	94.2	1.68
234678-hexachlorodibenzofuran	33.4	60.0	45.4	50.4	0.90
123789-hexachlorodibenzofuran	2.94	5.27	3.98	4.43	0.079
1234678-heptachlorodibenzofuran	13.6	24.4	18.4	20.5	0.37
1234789-heptachlorodibenzofuran	0.98	1.76	1.33	1.48	0.026
Octachlorodibenzofuran	0.078	0.14	0.11	0.12	0.0021
PCB 81	0.0073	0.013	0.0099	0.011	0.00020
PCB 77	0.011	0.020	0.015	0.017	0.00030
PCB 123	0.00082	0.0015	0.0011	0.0012	0.000022
PCB 118	0.024	0.042	0.032	0.036	0.00064
PCB 114	<0.00077	<0.0014	<0.0010	<0.0012	<0.000021
PCB 105	0.0079	0.014	0.011	0.012	0.00021
PCB 126	7.07	12.7	9.60	10.7	0.19
PCB 167	0.0011	0.0020	0.0015	0.0017	0.000030
PCB 156 + PCB 157	0.0023	0.0041	0.0031	0.0034	0.000061
PCB 169	0.68	1.22	0.93	1.03	0.018
PCB 189	0.00080	0.0014	0.0011	0.0012	0.000021
Total Dioxins & Furans Only	830	1489	1126	1251	22.3
Dioxin-Like PCBs Only	<7.81	<14.0	<10.6	<11.8	<0.21
Total Dioxins & Furans and PCBs	<838	<1503	<1137	<1263	<22.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 43
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	122	219	166	184	3.28
12378-pentachlorodibenzo-p-dioxin	146	263	199	221	3.94
123478-hexachlorodibenzo-p-dioxin	5.71	10.25	7.75	8.61	0.15
123678-hexachlorodibenzo-p-dioxin	7.94	14.3	10.8	12.0	0.21
123789-hexachlorodibenzo-p-dioxin	11.1	20.0	15.1	16.8	0.30
1234678-heptachlorodibenzo-p-dioxin	2.93	5.25	3.97	4.41	0.079
Octachlorodibenzo-p-dioxin	0.24	0.44	0.33	0.37	0.0065
2378-tetrachlorodibenzofuran	79.6	143	108	120	2.14
12378-pentachlorodibenzofuran	23.7	42.6	32.2	35.8	0.64
23478-pentachlorodibenzofuran	226	405	306	340	6.07
123478-hexachlorodibenzofuran	91.0	163	123	137	2.44
123678-hexachlorodibenzofuran	62.5	112	84.7	94.2	1.68
234678-hexachlorodibenzofuran	33.4	60.0	45.4	50.4	0.90
123789-hexachlorodibenzofuran	2.94	5.27	3.98	4.43	0.079
1234678-heptachlorodibenzofuran	13.6	24.4	18.4	20.5	0.37
1234789-heptachlorodibenzofuran	0.98	1.76	1.33	1.48	0.026
Octachlorodibenzofuran	0.078	0.14	0.106	0.12	0.0021
PCB 81	0.0073	0.013	0.0099	0.011	0.00020
PCB 77	0.011	0.020	0.015	0.017	0.00030
PCB 123	0.00082	0.0015	0.0011	0.0012	0.000022
PCB 118	0.024	0.042	0.032	0.036	0.00064
PCB 114	0.00067	0.0012	0.00091	0.0010	0.000018
PCB 105	0.0079	0.014	0.011	0.012	0.00021
PCB 126	7.07	12.7	9.60	10.7	0.19
PCB 167	0.0011	0.0020	0.0015	0.0017	0.000030
PCB 156 + PCB 157	0.0023	0.0041	0.0031	0.0034	0.000061
PCB 169	0.68	1.22	0.93	1.03	0.018
PCB 189	0.00080	0.0014	0.0011	0.0012	0.000021
Total Dioxins & Furans Only	830	1489	1126	1251	22.3
Dioxin-Like PCBs Only	7.81	14.0	10.6	11.8	0.21
Total Dioxins & Furans and PCBs	838	1503	1137	1263	22.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 44
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 1 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.7	<0.47	<0.81	<0.64	<0.67	<0.013
12378-pentachlorodibenzo-p-dioxin	24.6	3.13	5.37	4.25	4.48	0.084
123478-hexachlorodibenzo-p-dioxin	79.8	10.2	17.4	13.8	14.5	0.27
123678-hexachlorodibenzo-p-dioxin	205	26.1	44.7	35.4	37.3	0.70
123789-hexachlorodibenzo-p-dioxin	221	28.1	48.2	38.2	40.2	0.76
1234678-heptachlorodibenzo-p-dioxin	485	61.7	106	83.8	88.3	1.66
Octachlorodibenzo-p-dioxin	408	51.9	89.0	70.5	74.3	1.40
2378-tetrachlorodibenzofuran	<7.6	<0.97	<1.66	<1.31	<1.38	<0.026
12378-pentachlorodibenzofuran	12.8	1.63	2.79	2.21	2.33	0.044
23478-pentachlorodibenzofuran	57.3	7.29	12.5	9.90	10.4	0.20
123478-hexachlorodibenzofuran	140	17.8	30.6	24.2	25.5	0.48
123678-hexachlorodibenzofuran	70.6	8.99	15.4	12.2	12.9	0.24
234678-hexachlorodibenzofuran	102	13.0	22.3	17.6	18.6	0.35
123789-hexachlorodibenzofuran	<7.4	<0.94	<1.62	<1.28	<1.35	<0.025
1234678-heptachlorodibenzofuran	183	23.3	39.9	31.6	33.3	0.63
1234789-heptachlorodibenzofuran	32.4	4.12	7.07	5.60	5.90	0.11
Octachlorodibenzofuran	51.3	6.53	11.2	8.86	9.34	0.18
PCB 81	<35	<4.45	<7.64	<6.05	<6.37	<0.12
PCB 77	<57	<7.26	<12.4	<9.85	<10.4	<0.20
PCB 123	27	3.44	5.89	4.67	4.92	0.093
PCB 118	1700	216	371	294	310	5.82
PCB 114	<42	<5.35	<9.17	<7.26	<7.65	<0.14
PCB 105	610	77.6	133	105	111	2.09
PCB 126	<20	<2.55	<4.36	<3.46	<3.64	<0.069
PCB 167	33	4.20	7.20	5.70	6.01	0.11
PCB 156 + PCB 157	100	12.7	21.8	17.3	18.2	0.34
PCB 169	<16	<2.04	<3.49	<2.76	<2.91	<0.055
PCB 189	35	4.45	7.64	6.05	6.37	0.12
Total Dioxins & Furans Only	<2092	<266	<456	<361	<381	<7.17
Dioxin-Like PCBs Only	<2675	<340	<584	<462	<487	<9.17
Total Dioxins & Furans and PCBs	<4767	<607	<1040	<824	<868	<16.3
Total PCBs	32000	4073	6984	5529	5826	110

Dry Gas Volume Sampled (Rm^3*) :	4.582
Actual Flowrate (m^3/s) :	26.9
Dry Reference Flowrate (Rm^3/s*) :	15.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.8
Wet Reference Flowrate (Rm^3/s*) :	18.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 2 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.3	<0.39	<0.68	<0.54	<0.56	<0.011
12378-pentachlorodibenzo-p-dioxin	24.0	2.87	4.94	3.94	4.08	0.079
123478-hexachlorodibenzo-p-dioxin	70.4	8.42	14.5	11.5	12.0	0.23
123678-hexachlorodibenzo-p-dioxin	165	19.7	34.0	27.1	28.1	0.54
123789-hexachlorodibenzo-p-dioxin	191	22.8	39.3	31.3	32.5	0.63
1234678-heptachlorodibenzo-p-dioxin	496	59.3	102	81.4	84.4	1.63
Octachlorodibenzo-p-dioxin	398	47.6	81.9	65.3	67.7	1.31
2378-tetrachlorodibenzofuran	<4.0	<0.48	<0.82	<0.66	<0.68	<0.013
12378-pentachlorodibenzofuran	20.3	2.43	4.18	3.33	3.45	0.067
23478-pentachlorodibenzofuran	60.6	7.25	12.5	9.94	10.3	0.20
123478-hexachlorodibenzofuran	164	19.6	33.7	26.9	27.9	0.54
123678-hexachlorodibenzofuran	<82	<9.80	<16.9	<13.4	<14.0	<0.27
234678-hexachlorodibenzofuran	107	12.8	22.0	17.5	18.2	0.35
123789-hexachlorodibenzofuran	<6.8	<0.81	<1.40	<1.12	<1.16	<0.022
1234678-heptachlorodibenzofuran	235	28.1	48.4	38.5	40.0	0.77
1234789-heptachlorodibenzofuran	41.7	4.99	8.58	6.84	7.09	0.14
Octachlorodibenzofuran	112	13.4	23.0	18.4	19.1	0.37
PCB 81	<29	<3.47	<5.97	<4.76	<4.93	<0.095
PCB 77	<56	<6.70	<11.5	<9.18	<9.53	<0.18
PCB 123	30	3.59	6.17	4.92	5.10	0.098
PCB 118	1400	167	288	230	238	4.59
PCB 114	<26	<3.11	<5.35	<4.26	<4.42	<0.085
PCB 105	480	57.4	98.8	78.7	81.7	1.58
PCB 126	<28	<3.35	<5.76	<4.59	<4.76	<0.092
PCB 167	<20	<2.39	<4.12	<3.28	<3.40	<0.066
PCB 156 + PCB 157	82	9.80	16.9	13.4	14.0	0.27
PCB 169	26	3.11	5.35	4.26	4.42	0.085
PCB 189	<27	<3.23	<5.56	<4.43	<4.59	<0.089
Total Dioxins & Furans Only	<2181	<261	<449	<358	<371	<7.16
Dioxin-Like PCBs Only	<2204	<264	<453	<361	<375	<7.23
Total Dioxins & Furans and PCBs	<4385	<524	<902	<719	<746	<14.4
Total PCBs	21000	2511	4321	3444	3573	68.9

Dry Gas Volume Sampled (Rm^3*) :	4.860
Actual Flowrate (m^3/s) :	27.5
Dry Reference Flowrate (Rm^3/s*) :	16.0
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	19.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 3 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.7	<0.45	<0.76	<0.60	<0.64	<0.012
12378-pentachlorodibenzo-p-dioxin	23.9	2.90	4.91	3.90	4.11	0.079
123478-hexachlorodibenzo-p-dioxin	78.0	9.46	16.0	12.7	13.4	0.26
123678-hexachlorodibenzo-p-dioxin	199	24.1	40.9	32.5	34.3	0.65
123789-hexachlorodibenzo-p-dioxin	215	26.1	44.2	35.1	37.0	0.71
1234678-heptachlorodibenzo-p-dioxin	531	64.4	109	86.6	91.4	1.75
Octachlorodibenzo-p-dioxin	330	40.0	67.8	53.8	56.8	1.09
2378-tetrachlorodibenzofuran	53.3	6.47	11.0	8.70	9.17	0.18
12378-pentachlorodibenzofuran	11.6	1.41	2.38	1.89	2.00	0.038
23478-pentachlorodibenzofuran	<50	<6.07	<10.3	<8.16	<8.61	<0.16
123478-hexachlorodibenzofuran	132	16.0	27.1	21.5	22.7	0.43
123678-hexachlorodibenzofuran	65.5	7.95	13.5	10.7	11.3	0.22
234678-hexachlorodibenzofuran	91.2	11.1	18.7	14.9	15.7	0.30
123789-hexachlorodibenzofuran	<6.7	<0.81	<1.38	<1.09	<1.15	<0.022
1234678-heptachlorodibenzofuran	166	20.1	34.1	27.1	28.6	0.55
1234789-heptachlorodibenzofuran	30.6	3.71	6.29	4.99	5.27	0.10
Octachlorodibenzofuran	49.2	5.97	10.1	8.03	8.47	0.16
PCB 81	<33	<4.00	<6.78	<5.38	<5.68	<0.11
PCB 77	<42	<5.10	<8.63	<6.85	<7.23	<0.14
PCB 123	<28	<3.40	<5.76	<4.57	<4.82	<0.092
PCB 118	1900	231	391	310	327	6.25
PCB 114	54	6.55	11.1	8.81	9.29	0.18
PCB 105	690	83.7	142	113	119	2.27
PCB 126	<26	<3.15	<5.34	<4.24	<4.48	<0.086
PCB 167	34	4.13	6.99	5.55	5.9	0.11
PCB 156 + PCB 157	110	13.3	22.6	17.9	18.9	0.36
PCB 169	<28	<3.40	<5.76	<4.57	<4.82	<0.092
PCB 189	<26	<3.15	<5.34	<4.24	<4.48	<0.086
Total Dioxins & Furans Only	<2037	<247	<419	<332	<351	<6.70
Dioxin-Like PCBs Only	<2971	<361	<611	<485	<511	<9.78
Total Dioxins & Furans and PCBs	<5008	<608	<1029	<817	<862	<16.5
Total PCBs	40000	4854	8222	6526	6885	132

Dry Gas Volume Sampled (Rm^3*) :	4.865
Actual Flowrate (m^3/s) :	27.1
Dry Reference Flowrate (Rm^3/s*) :	16.0
Dry Adjusted Flowrate (Rm^3/s**) :	20.2
Wet Reference Flowrate (Rm^3/s*) :	19.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 7 - High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.5	<0.45	<0.77	<0.60	<0.64	<0.012
12378-pentachlorodibenzo-p-dioxin	12.5	1.59	2.75	2.13	2.29	0.043
123478-hexachlorodibenzo-p-dioxin	47.5	6.06	10.4	8.10	8.72	0.16
123678-hexachlorodibenzo-p-dioxin	117	14.9	25.7	20.0	21.5	0.40
123789-hexachlorodibenzo-p-dioxin	124	15.8	27.2	21.1	22.8	0.42
1234678-heptachlorodibenzo-p-dioxin	355	45.3	78.0	60.5	65.2	1.21
Octachlorodibenzo-p-dioxin	260	33.2	57.1	44.3	47.7	0.88
2378-tetrachlorodibenzofuran	5.2	0.66	1.14	0.89	0.95	0.018
12378-pentachlorodibenzofuran	<11	<1.40	<2.42	<1.88	<2.02	<0.037
23478-pentachlorodibenzofuran	27.0	3.44	5.93	4.60	4.96	0.092
123478-hexachlorodibenzofuran	35.0	4.47	7.69	5.97	6.43	0.12
123678-hexachlorodibenzofuran	<44	<5.61	<9.67	<7.50	<8.08	<0.15
234678-hexachlorodibenzofuran	64.4	8.22	14.2	11.0	11.8	0.22
123789-hexachlorodibenzofuran	<3.9	<0.50	<0.86	<0.67	<0.72	<0.013
1234678-heptachlorodibenzofuran	134	17.1	29.4	22.9	24.6	0.46
1234789-heptachlorodibenzofuran	25.1	3.20	5.52	4.28	4.61	0.085
Octachlorodibenzofuran	46.3	5.91	10.2	7.90	8.50	0.16
PCB 81	<49	<6.25	<10.8	<8.36	<9.00	<0.17
PCB 77	<54	<6.89	<11.9	<9.21	<9.91	<0.18
PCB 123	<43	<5.49	<9.45	<7.33	<7.89	<0.15
PCB 118	2200	281	483	375	404	7.49
PCB 114	50	6.38	11.0	8.53	9.18	0.17
PCB 105	850	108	187	145	156	2.89
PCB 126	<39	<4.98	<8.57	<6.65	<7.16	<0.13
PCB 167	<44	<5.61	<9.67	<7.50	<8.08	<0.15
PCB 156 + PCB 157	<140	<17.9	<30.8	<23.9	<25.7	<0.48
PCB 169	<44	<5.61	<9.67	<7.50	<8.08	<0.15
PCB 189	<29	<3.70	<6.37	<4.95	<5.32	<0.099
Total Dioxins & Furans Only	<1315	<168	<289	<224	<241	<4.48
Dioxin-Like PCBs Only	<3542	<452	<778	<604	<650	<12.1
Total Dioxins & Furans and PCBs	<4857	<620	<1067	<828	<892	<16.5
Total PCBs	36000	4593	7910	6139	6609	123

Dry Gas Volume Sampled (Rm^3*) :	4.551
Actual Flowrate (m^3/s) :	26.7
Dry Reference Flowrate (Rm^3/s*) :	15.5
Dry Adjusted Flowrate (Rm^3/s**) :	20.0
Wet Reference Flowrate (Rm^3/s*) :	18.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Actual Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	<0.47	<0.39	<0.45	<0.45	<0.44	7.4
12378-pentachlorodibenzo-p-dioxin	3.13	2.87	2.90	1.59	2.62	26.5
123478-hexachlorodibenzo-p-dioxin	10.2	8.42	9.46	6.06	8.52	21.0
123678-hexachlorodibenzo-p-dioxin	26.1	19.7	24.1	14.9	21.2	23.4
123789-hexachlorodibenzo-p-dioxin	28.1	22.8	26.1	15.8	23.2	23.2
1234678-heptachlorodibenzo-p-dioxin	61.7	59.3	64.4	45.3	57.7	14.8
Octachlorodibenzo-p-dioxin	51.9	47.6	40.0	33.2	43.2	19.2
2378-tetrachlorodibenzofuran	<0.97	<0.48	6.47	0.66	<2.14	135
12378-pentachlorodibenzofuran	1.63	2.43	1.41	<1.40	<1.72	28.3
23478-pentachlorodibenzofuran	7.29	7.25	<6.07	3.44	<6.01	30.0
123478-hexachlorodibenzofuran	17.8	19.6	16.0	4.47	14.5	47.2
123678-hexachlorodibenzofuran	8.99	<9.80	7.95	<5.61	<8.09	22.5
234678-hexachlorodibenzofuran	13.0	12.8	11.1	8.22	11.3	19.6
123789-hexachlorodibenzofuran	<0.94	<0.81	<0.81	<0.50	<0.77	24.7
1234678-heptachlorodibenzofuran	23.3	28.1	20.1	17.1	22.2	21.2
1234789-heptachlorodibenzofuran	4.12	4.99	3.71	3.20	4.01	18.8
Octachlorodibenzofuran	6.53	13.4	5.97	5.91	7.95	45.8
PCB 81	<4.45	<3.47	<4.00	<6.25	<4.54	26.6
PCB 77	<7.26	<6.70	<5.10	<6.89	<6.48	14.7
PCB 123	3.44	3.59	<3.40	<5.49	<3.98	25.4
PCB 118	216	167	231	281	224	20.8
PCB 114	<5.35	<3.11	6.55	6.38	<5.35	29.6
PCB 105	77.6	57.4	83.7	108	81.8	25.7
PCB 126	<2.55	<3.35	<3.15	<4.98	<3.51	29.6
PCB 167	4.20	<2.39	4.13	<5.61	<4.08	32.3
PCB 156 + PCB 157	12.7	9.80	13.3	<17.9	<13.4	24.8
PCB 169	<2.04	3.11	<3.40	<5.61	<3.54	42.4
PCB 189	4.45	<3.23	<3.15	<3.70	<3.63	16.5
Total Dioxins & Furans Only	<266	<261	<247	<168	<235	19.5
Dioxin-Like PCBs Only	<340	<264	<361	<452	<354	21.9
Total Dioxins & Furans and PCBs	<607	<524	<608	<620	<590	7.5
Total PCBs	4073	2511	4854	4593	4008	26.2

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 49
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Reference Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.81	<0.68	<0.76	<0.77	<0.75	7.2
12378-pentachlorodibenzo-p-dioxin	5.37	4.94	4.91	2.75	4.49	26.3
123478-hexachlorodibenzo-p-dioxin	17.4	14.5	16.0	10.4	14.6	20.7
123678-hexachlorodibenzo-p-dioxin	44.7	34.0	40.9	25.7	36.3	23.0
123789-hexachlorodibenzo-p-dioxin	48.2	39.3	44.2	27.2	39.7	22.9
1234678-heptachlorodibenzo-p-dioxin	106	102	109	78.0	98.8	14.3
Octachlorodibenzo-p-dioxin	89.0	81.9	67.8	57.1	74.0	19.3
2378-tetrachlorodibenzofuran	<1.66	<0.82	11.0	1.14	<3.65	134
12378-pentachlorodibenzofuran	2.79	4.18	2.38	<2.42	<2.94	28.7
23478-pentachlorodibenzofuran	12.5	12.5	<10.3	5.93	<10.3	30.0
123478-hexachlorodibenzofuran	30.6	33.7	27.1	7.69	24.8	47.3
123678-hexachlorodibenzofuran	15.4	<16.9	13.5	<9.67	<13.9	22.5
234678-hexachlorodibenzofuran	22.3	22.0	18.7	14.2	19.3	19.6
123789-hexachlorodibenzofuran	<1.62	<1.40	<1.38	<0.86	<1.31	24.5
1234678-heptachlorodibenzofuran	39.9	48.4	34.1	29.4	38.0	21.5
1234789-heptachlorodibenzofuran	7.07	8.58	6.29	5.52	6.86	19.1
Octachlorodibenzofuran	11.2	23.0	10.1	10.2	13.6	46.2
PCB 81	<7.64	<5.97	<6.78	<10.8	<7.79	27.0
PCB 77	<12.4	<11.5	<8.63	<11.9	<11.1	15.3
PCB 123	5.89	6.17	<5.76	<9.45	<6.82	25.9
PCB 118	371	288	391	483	383	20.9
PCB 114	<9.17	<5.35	11.1	11.0	<9.15	29.3
PCB 105	133	98.8	142	187	140	25.9
PCB 126	<4.36	<5.76	<5.34	<8.57	<6.01	30.0
PCB 167	7.20	<4.12	6.99	<9.67	<6.99	32.5
PCB 156 + PCB 157	21.8	16.9	22.6	<30.8	<23.0	25.0
PCB 169	<3.49	5.35	<5.76	<9.67	<6.07	42.8
PCB 189	7.64	<5.56	<5.34	<6.37	<6.23	16.7
Total Dioxins & Furans Only	<456	<449	<419	<289	<403	19.3
Dioxin-Like PCBs Only	<584	<453	<611	<778	<607	22.0
Total Dioxins & Furans and PCBs	<1040	<902	<1029	<1067	<1010	7.3
Total PCBs	6984	4321	8222	7910	6859	25.8

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 50
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.64	<0.54	<0.60	<0.60	<0.60	6.8
12378-pentachlorodibenzo-p-dioxin	4.25	3.94	3.90	2.13	3.55	27.1
123478-hexachlorodibenzo-p-dioxin	13.8	11.5	12.7	8.10	11.5	21.4
123678-hexachlorodibenzo-p-dioxin	35.4	27.1	32.5	20.0	28.7	23.7
123789-hexachlorodibenzo-p-dioxin	38.2	31.3	35.1	21.1	31.4	23.6
1234678-heptachlorodibenzo-p-dioxin	83.8	81.4	86.6	60.5	78.1	15.2
Octachlorodibenzo-p-dioxin	70.5	65.3	53.8	44.3	58.5	20.0
2378-tetrachlorodibenzofuran	<1.31	<0.66	8.70	0.89	<2.89	134
12378-pentachlorodibenzofuran	2.21	3.33	1.89	<1.88	<2.33	29.5
23478-pentachlorodibenzofuran	9.90	9.94	<8.16	4.60	<8.15	30.7
123478-hexachlorodibenzofuran	24.2	26.9	21.5	5.97	19.6	47.7
123678-hexachlorodibenzofuran	12.2	<13.4	10.7	<7.50	<11.0	23.4
234678-hexachlorodibenzofuran	17.6	17.5	14.9	11.0	15.3	20.5
123789-hexachlorodibenzofuran	<1.28	<1.12	<1.09	<0.67	<1.04	25.2
1234678-heptachlorodibenzofuran	31.6	38.5	27.1	22.9	30.0	22.4
1234789-heptachlorodibenzofuran	5.60	6.84	4.99	4.28	5.43	20.0
Octachlorodibenzofuran	8.86	18.4	8.03	7.90	10.8	47.0
PCB 81	<6.05	<4.76	<5.38	<8.36	<6.14	25.6
PCB 77	<9.85	<9.18	<6.85	<9.21	<8.77	15.0
PCB 123	4.67	4.92	<4.57	<7.33	<5.37	24.5
PCB 118	294	230	310	375	302	19.8
PCB 114	<7.26	<4.26	8.81	8.53	<7.21	28.8
PCB 105	105	78.7	113	145	110	24.7
PCB 126	<3.46	<4.59	<4.24	<6.65	<4.74	28.8
PCB 167	5.70	<3.28	5.55	<7.50	<5.51	31.4
PCB 156 + PCB 157	17.3	13.4	17.9	<23.9	<18.1	23.7
PCB 169	<2.76	4.26	<4.57	<7.50	<4.78	41.5
PCB 189	6.05	<4.43	<4.24	<4.95	<4.92	16.5
Total Dioxins & Furans Only	<361	<358	<332	<224	<319	20.2
Dioxin-Like PCBs Only	<462	<361	<485	<604	<478	20.8
Total Dioxins & Furans and PCBs	<824	<719	<817	<828	<797	6.5
Total PCBs	5529	3444	6526	6139	5410	25.4

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 51
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Wet Reference Concentration					Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.67	<0.56	<0.64	<0.64	<0.63	7.6
12378-pentachlorodibenzo-p-dioxin	4.48	4.08	4.11	2.29	3.74	26.2
123478-hexachlorodibenzo-p-dioxin	14.5	12.0	13.4	8.72	12.2	20.7
123678-hexachlorodibenzo-p-dioxin	37.3	28.1	34.3	21.5	30.3	23.2
123789-hexachlorodibenzo-p-dioxin	40.2	32.5	37.0	22.8	33.1	22.9
1234678-heptachlorodibenzo-p-dioxin	88.3	84.4	91.4	65.2	82.3	14.3
Octachlorodibenzo-p-dioxin	74.3	67.7	56.8	47.7	61.6	19.1
2378-tetrachlorodibenzofuran	<1.38	<0.68	9.17	0.95	<3.05	134
12378-pentachlorodibenzofuran	2.33	3.45	2.00	<2.02	<2.45	28.0
23478-pentachlorodibenzofuran	10.4	10.3	<8.61	4.96	<8.58	29.8
123478-hexachlorodibenzofuran	25.5	27.9	22.7	6.43	20.6	47.0
123678-hexachlorodibenzofuran	12.9	<14.0	11.3	<8.08	<11.5	22.1
234678-hexachlorodibenzofuran	18.6	18.2	15.7	11.8	16.1	19.3
123789-hexachlorodibenzofuran	<1.35	<1.16	<1.15	<0.72	<1.09	24.5
1234678-heptachlorodibenzofuran	33.3	40.0	28.6	24.6	31.6	20.9
1234789-heptachlorodibenzofuran	5.90	7.09	5.27	4.61	5.72	18.5
Octachlorodibenzofuran	9.34	19.1	8.47	8.50	11.3	45.5
PCB 81	<6.37	<4.93	<5.68	<9.00	<6.50	27.2
PCB 77	<10.4	<9.53	<7.23	<9.91	<9.26	15.1
PCB 123	4.92	5.10	<4.82	<7.89	<5.68	26.0
PCB 118	310	238	327	404	320	21.3
PCB 114	<7.65	<4.42	9.29	9.18	<7.64	29.7
PCB 105	111	81.7	119	156	117	26.2
PCB 126	<3.64	<4.76	<4.48	<7.16	<5.01	30.1
PCB 167	6.01	<3.40	5.85	<8.08	<5.84	32.8
PCB 156 + PCB 157	18.2	14.0	18.9	<25.7	<19.2	25.3
PCB 169	<2.91	4.42	<4.82	<8.08	<5.06	43.0
PCB 189	6.37	<4.59	<4.48	<5.32	<5.19	16.8
Total Dioxins & Furans Only	<381	<371	<351	<241	<336	19.1
Dioxin-Like PCBs Only	<487	<375	<511	<650	<506	22.4
Total Dioxins & Furans and PCBs	<868	<746	<862	<892	<842	7.7
Total PCBs	5826	3573	6885	6609	5723	26.2

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 52
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Rates
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Emission Rate Test No. 1	Test No. 2	Test No. 3	Test No. 7	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	<0.013	<0.011	<0.012	<0.012	<0.012	6.6
12378-pentachlorodibenzo-p-dioxin	0.084	0.079	0.079	0.043	0.071	27.0
123478-hexachlorodibenzo-p-dioxin	0.27	0.23	0.26	0.16	0.23	21.3
123678-hexachlorodibenzo-p-dioxin	0.70	0.54	0.65	0.40	0.57	23.6
123789-hexachlorodibenzo-p-dioxin	0.76	0.63	0.71	0.42	0.63	23.5
1234678-heptachlorodibenzo-p-dioxin	1.66	1.63	1.75	1.21	1.56	15.4
Octachlorodibenzo-p-dioxin	1.40	1.31	1.09	0.88	1.17	19.7
2378-tetrachlorodibenzofuran	<0.026	<0.013	0.18	0.018	<0.058	135
12378-pentachlorodibenzofuran	0.044	0.067	0.038	<0.037	<0.047	29.5
23478-pentachlorodibenzofuran	0.20	0.20	<0.16	0.092	<0.16	30.6
123478-hexachlorodibenzofuran	0.48	0.54	0.43	0.12	0.39	47.7
123678-hexachlorodibenzofuran	0.24	<0.27	0.22	<0.15	<0.22	23.3
234678-hexachlorodibenzofuran	0.35	0.35	0.30	0.22	0.30	20.3
123789-hexachlorodibenzofuran	<0.025	<0.022	<0.022	<0.013	<0.021	25.1
1234678-heptachlorodibenzofuran	0.63	0.77	0.55	0.46	0.60	22.3
1234789-heptachlorodibenzofuran	0.11	0.14	0.10	0.085	0.11	19.9
Octachlorodibenzofuran	0.18	0.37	0.16	0.16	0.22	47.1
PCB 81	<0.12	<0.095	<0.11	<0.17	<0.12	25.4
PCB 77	<0.20	<0.18	<0.14	<0.18	<0.18	14.4
PCB 123	0.093	0.098	<0.092	<0.15	<0.11	24.4
PCB 118	5.82	4.59	6.25	7.49	6.04	19.8
PCB 114	<0.14	<0.085	0.18	0.17	<0.14	29.0
PCB 105	2.09	1.58	2.27	2.89	2.21	24.6
PCB 126	<0.069	<0.092	<0.086	<0.13	<0.095	28.8
PCB 167	0.11	<0.066	0.11	<0.15	<0.11	31.3
PCB 156 + PCB 157	0.34	0.27	0.36	<0.48	<0.36	23.7
PCB 169	<0.055	0.085	<0.092	<0.15	<0.096	41.5
PCB 189	0.12	<0.089	<0.086	<0.099	<0.098	15.8
Total Dioxins & Furans Only	<7.17	<7.16	<6.70	<4.48	<6.38	20.1
Dioxin-Like PCBs Only	<9.17	<7.23	<9.78	<12.1	<9.56	20.8
Total Dioxins & Furans and PCBs	<16.3	<14.4	<16.5	<16.5	<15.9	6.5
Total PCBs	110	68.9	132	123	108	25.6

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 53
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Specific Isomer Emission Data
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.44	<0.75	<0.60	<0.63	<0.012
12378-pentachlorodibenzo-p-dioxin	2.62	4.49	3.55	3.74	0.071
123478-hexachlorodibenzo-p-dioxin	8.52	14.6	11.5	12.2	0.23
123678-hexachlorodibenzo-p-dioxin	21.2	36.3	28.7	30.3	0.57
123789-hexachlorodibenzo-p-dioxin	23.2	39.7	31.4	33.1	0.63
1234678-heptachlorodibenzo-p-dioxin	57.7	98.8	78.1	82.3	1.56
Octachlorodibenzo-p-dioxin	43.2	74.0	58.5	61.6	1.17
2378-tetrachlorodibenzofuran	<2.14	<3.65	<2.89	<3.05	<0.058
12378-pentachlorodibenzofuran	<1.72	<2.94	<2.33	<2.45	<0.047
23478-pentachlorodibenzofuran	<6.01	<10.3	<8.15	<8.58	<0.16
123478-hexachlorodibenzofuran	14.5	24.8	19.6	20.6	0.39
123678-hexachlorodibenzofuran	<8.09	<13.9	<11.0	<11.5	<0.22
234678-hexachlorodibenzofuran	11.3	19.3	15.3	16.1	0.30
123789-hexachlorodibenzofuran	<0.77	<1.31	<1.04	<1.09	<0.021
1234678-heptachlorodibenzofuran	22.2	38.0	30.0	31.6	0.60
1234789-heptachlorodibenzofuran	4.01	6.86	5.43	5.72	0.11
Octachlorodibenzofuran	7.95	13.6	10.8	11.3	0.22
PCB 81	<4.54	<7.79	<6.14	<6.50	<0.12
PCB 77	<6.48	<11.1	<8.77	<9.26	<0.18
PCB 123	<3.98	<6.82	<5.37	<5.68	<0.11
PCB 118	224	383	302	320	6.04
PCB 114	<5.35	<9.15	<7.21	<7.64	<0.14
PCB 105	81.8	140	110	117	2.21
PCB 126	<3.51	<6.01	<4.74	<5.01	<0.095
PCB 167	<4.08	<6.99	<5.51	<5.84	<0.11
PCB 156 + PCB 157	<13.4	<23.0	<18.1	<19.2	<0.36
PCB 169	<3.54	<6.07	<4.78	<5.06	<0.096
PCB 189	<3.63	<6.23	<4.92	<5.19	<0.098
Total Dioxins & Furans Only	<235	<403	<319	<336	<6.38
Dioxin-Like PCBs Only	<354	<607	<478	<506	<9.56
Total Dioxins & Furans and PCBs	<590	<1010	<797	<842	<15.9
Total PCBs	4008	6859	5410	5723	108

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 54
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 1 pg TEQ/m³	Test No. 2 pg TEQ/m³	Test No. 3 pg TEQ/m³	Test No. 7 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.47	<0.39	<0.45	<0.45	<0.44
12378-pentachlorodibenzo-p-dioxin	1.000	3.13	2.87	2.90	1.59	2.62
123478-hexachlorodibenzo-p-dioxin	0.100	1.02	0.84	0.95	0.61	0.85
123678-hexachlorodibenzo-p-dioxin	0.100	2.61	1.97	2.41	1.49	2.12
123789-hexachlorodibenzo-p-dioxin	0.100	2.81	2.28	2.61	1.58	2.32
1234678-heptachlorodibenzo-p-dioxin	0.010	0.62	0.59	0.64	0.45	0.58
Octachlorodibenzo-p-dioxin	0.0003	0.016	0.014	0.012	0.010	0.013
2378-tetrachlorodibenzofuran	0.100	<0.097	<0.048	0.65	0.066	<0.21
12378-pentachlorodibenzofuran	0.030	0.049	0.073	0.042	<0.042	<0.052
23478-pentachlorodibenzofuran	0.300	2.19	2.17	<1.82	1.03	<1.80
123478-hexachlorodibenzofuran	0.100	1.78	1.96	1.60	0.45	1.45
123678-hexachlorodibenzofuran	0.100	0.90	<0.98	0.79	<0.56	<0.81
234678-hexachlorodibenzofuran	0.100	1.30	1.28	1.11	0.82	1.13
123789-hexachlorodibenzofuran	0.100	<0.094	<0.081	<0.081	<0.050	<0.077
1234678-heptachlorodibenzofuran	0.010	0.23	0.28	0.20	0.17	0.22
1234789-heptachlorodibenzofuran	0.010	0.041	0.050	0.037	0.032	0.040
Octachlorodibenzofuran	0.0003	0.0020	0.0040	0.0018	0.0018	0.0024
PCB 81	0.0003	<0.0013	<0.0010	<0.0012	<0.0019	<0.0014
PCB 77	0.0001	<0.00073	<0.00067	<0.00051	<0.00069	<0.00065
PCB 123	0.00003	0.00010	0.00011	<0.00010	<0.00016	<0.00012
PCB 118	0.00003	0.0065	0.0050	0.0069	0.0084	0.0067
PCB 114	0.00003	<0.00016	<0.000093	0.00020	0.00019	<0.00016
PCB 105	0.00003	0.0023	0.0017	0.0025	0.0033	0.0025
PCB 126	0.100	<0.25	<0.33	<0.32	<0.50	<0.35
PCB 167	0.00003	0.00013	<0.000072	0.00012	<0.00017	<0.00012
PCB 156 + PCB 157	0.00003	0.00038	0.00029	0.00040	<0.00054	<0.00040
PCB 169	0.030	<0.061	0.093	<0.10	<0.17	<0.11
PCB 189	0.00003	0.00013	<0.000097	<0.000095	<0.00011	<0.00011
Total Dioxins & Furans Only		<17.4	<15.9	<16.3	<9.41	<14.7
Dioxin-Like PCBs Only		<0.33	<0.44	<0.43	<0.68	<0.47
Total Dioxins & Furans and PCBs		<17.7	<16.3	<16.7	<10.1	<15.2

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 55
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.81	<0.68	<0.76	<0.77	<0.75
12378-pentachlorodibenzo-p-dioxin	1.000	5.37	4.94	4.91	2.75	4.49
123478-hexachlorodibenzo-p-dioxin	0.100	1.74	1.45	1.60	1.04	1.46
123678-hexachlorodibenzo-p-dioxin	0.100	4.47	3.40	4.09	2.57	3.63
123789-hexachlorodibenzo-p-dioxin	0.100	4.82	3.93	4.42	2.72	3.97
1234678-heptachlorodibenzo-p-dioxin	0.010	1.06	1.02	1.09	0.78	0.99
Octachlorodibenzo-p-dioxin	0.0003	0.027	0.025	0.020	0.017	0.022
2378-tetrachlorodibenzofuran	0.100	<0.17	<0.082	1.10	0.11	<0.36
12378-pentachlorodibenzofuran	0.030	0.084	0.13	0.072	<0.073	<0.088
23478-pentachlorodibenzofuran	0.300	3.75	3.74	<3.08	1.78	<3.09
123478-hexachlorodibenzofuran	0.100	3.06	3.37	2.71	0.77	2.48
123678-hexachlorodibenzofuran	0.100	1.54	<1.69	1.35	<0.97	<1.39
234678-hexachlorodibenzofuran	0.100	2.23	2.20	1.87	1.42	1.93
123789-hexachlorodibenzofuran	0.100	<0.16	<0.14	<0.14	<0.086	<0.13
1234678-heptachlorodibenzofuran	0.010	0.40	0.48	0.34	0.29	0.38
1234789-heptachlorodibenzofuran	0.010	0.071	0.086	0.063	0.055	0.069
Octachlorodibenzofuran	0.0003	0.0034	0.0069	0.0030	0.0031	0.0041
PCB 81	0.0003	<0.0023	<0.0018	<0.0020	<0.0032	<0.0023
PCB 77	0.0001	<0.0012	<0.0012	<0.00086	<0.0012	<0.0011
PCB 123	0.00003	0.00018	0.00019	<0.00017	<0.00028	<0.00020
PCB 118	0.00003	0.011	0.0086	0.012	0.015	0.011
PCB 114	0.00003	<0.00027	<0.00016	0.00033	0.00033	<0.00027
PCB 105	0.00003	0.0040	0.0030	0.0043	0.0056	0.0042
PCB 126	0.100	<0.44	<0.58	<0.53	<0.86	<0.60
PCB 167	0.00003	0.00022	<0.00012	0.00021	<0.00029	<0.00021
PCB 156 + PCB 157	0.00003	0.00065	0.00051	0.00068	<0.00092	<0.00069
PCB 169	0.030	<0.10	0.16	<0.17	<0.29	<0.18
PCB 189	0.00003	0.00023	<0.00017	<0.00016	<0.00019	<0.00019
Total Dioxins & Furans Only		<29.8	<27.4	<27.6	<16.21	<25.2
Dioxin-Like PCBs Only		<0.56	<0.75	<0.73	<1.17	<0.80
Total Dioxins & Furans and PCBs		<30.3	<28.1	<28.4	<17.4	<26.0

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 56
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.64	<0.54	<0.60	<0.60	<0.60
12378-pentachlorodibenzo-p-dioxin	1.000	4.25	3.94	3.90	2.13	3.55
123478-hexachlorodibenzo-p-dioxin	0.100	1.38	1.15	1.27	0.81	1.15
123678-hexachlorodibenzo-p-dioxin	0.100	3.54	2.71	3.25	2.00	2.87
123789-hexachlorodibenzo-p-dioxin	0.100	3.82	3.13	3.51	2.11	3.14
1234678-heptachlorodibenzo-p-dioxin	0.010	0.84	0.81	0.87	0.61	0.78
Octachlorodibenzo-p-dioxin	0.0003	0.021	0.020	0.016	0.013	0.018
2378-tetrachlorodibenzofuran	0.100	<0.13	<0.066	0.87	0.089	<0.29
12378-pentachlorodibenzofuran	0.030	0.066	0.10	0.057	<0.056	<0.070
23478-pentachlorodibenzofuran	0.300	2.97	2.98	<2.45	1.38	<2.45
123478-hexachlorodibenzofuran	0.100	2.42	2.69	2.15	0.60	1.96
123678-hexachlorodibenzofuran	0.100	1.22	<1.34	1.07	<0.75	<1.10
234678-hexachlorodibenzofuran	0.100	1.76	1.75	1.49	1.10	1.53
123789-hexachlorodibenzofuran	0.100	<0.13	<0.11	<0.11	<0.067	<0.10
1234678-heptachlorodibenzofuran	0.010	0.32	0.39	0.27	0.23	0.30
1234789-heptachlorodibenzofuran	0.010	0.056	0.068	0.050	0.043	0.054
Octachlorodibenzofuran	0.0003	0.0027	0.0055	0.0024	0.0024	0.0032
PCB 81	0.0003	<0.0018	<0.0014	<0.0016	<0.0025	<0.0018
PCB 77	0.0001	<0.00098	<0.00092	<0.00069	<0.00092	<0.00088
PCB 123	0.00003	0.00014	0.00015	<0.00014	<0.00022	<0.00016
PCB 118	0.00003	0.0088	0.0069	0.0093	0.011	0.0091
PCB 114	0.00003	<0.00022	<0.00013	0.00026	0.00026	<0.00022
PCB 105	0.00003	0.0032	0.0024	0.0034	0.0043	0.0033
PCB 126	0.100	<0.35	<0.46	<0.42	<0.67	<0.47
PCB 167	0.00003	0.00017	<0.000098	0.00017	<0.00023	<0.00017
PCB 156 + PCB 157	0.00003	0.00052	0.00040	0.00054	<0.00072	<0.00054
PCB 169	0.030	<0.083	0.13	<0.14	<0.23	<0.14
PCB 189	0.00003	0.00018	<0.00013	<0.00013	<0.00015	<0.00015
Total Dioxins & Furans Only		<23.6	<21.8	<21.9	<12.6	<20.0
Dioxin-Like PCBs Only		<0.44	<0.60	<0.58	<0.91	<0.63
Total Dioxins & Furans and PCBs		<24.0	<22.4	<22.5	<13.5	<20.6

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 57
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.64	<0.54	<0.60	<0.60	<0.60
12378-pentachlorodibenzo-p-dioxin	0.500	2.13	1.97	1.95	1.07	1.78
123478-hexachlorodibenzo-p-dioxin	0.100	1.38	1.15	1.27	0.81	1.15
123678-hexachlorodibenzo-p-dioxin	0.100	3.54	2.71	3.25	2.00	2.87
123789-hexachlorodibenzo-p-dioxin	0.100	3.82	3.13	3.51	2.11	3.14
1234678-heptachlorodibenzo-p-dioxin	0.010	0.84	0.81	0.87	0.61	0.78
Octachlorodibenzo-p-dioxin	0.001	0.070	0.065	0.054	0.044	0.058
2378-tetrachlorodibenzofuran	0.100	<0.13	<0.066	0.87	0.089	<0.29
12378-pentachlorodibenzofuran	0.050	0.11	0.17	0.095	<0.094	<0.12
23478-pentachlorodibenzofuran	0.500	4.95	4.97	<4.08	2.30	<4.08
123478-hexachlorodibenzofuran	0.100	2.42	2.69	2.15	0.60	1.96
123678-hexachlorodibenzofuran	0.100	1.22	<1.34	1.07	<0.75	<1.10
234678-hexachlorodibenzofuran	0.100	1.76	1.75	1.49	1.10	1.53
123789-hexachlorodibenzofuran	0.100	<0.13	<0.11	<0.11	<0.067	<0.10
1234678-heptachlorodibenzofuran	0.010	0.32	0.39	0.27	0.23	0.30
1234789-heptachlorodibenzofuran	0.010	0.056	0.068	0.050	0.043	0.054
Octachlorodibenzofuran	0.001	0.0089	0.018	0.0080	0.0079	0.011
Total Dioxins & Furans		<23.5	<22.0	<21.7	<12.5	<19.9
In-Stack Emission Limit						60

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 58
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Test No. 7 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.67	<0.56	<0.64	<0.64	<0.63
12378-pentachlorodibenzo-p-dioxin	1.000	4.48	4.08	4.11	2.29	3.74
123478-hexachlorodibenzo-p-dioxin	0.100	1.45	1.20	1.34	0.87	1.22
123678-hexachlorodibenzo-p-dioxin	0.100	3.73	2.81	3.43	2.15	3.03
123789-hexachlorodibenzo-p-dioxin	0.100	4.02	3.25	3.70	2.28	3.31
1234678-heptachlorodibenzo-p-dioxin	0.010	0.88	0.84	0.91	0.65	0.82
Octachlorodibenzo-p-dioxin	0.0003	0.022	0.020	0.017	0.014	0.018
2378-tetrachlorodibenzofuran	0.100	<0.14	<0.068	0.92	0.095	<0.30
12378-pentachlorodibenzofuran	0.030	0.070	0.10	0.060	<0.061	<0.074
23478-pentachlorodibenzofuran	0.300	3.13	3.09	<2.58	1.49	<2.57
123478-hexachlorodibenzofuran	0.100	2.55	2.79	2.27	0.64	2.06
123678-hexachlorodibenzofuran	0.100	1.29	<1.40	1.13	<0.81	<1.15
234678-hexachlorodibenzofuran	0.100	1.86	1.82	1.57	1.18	1.61
123789-hexachlorodibenzofuran	0.100	<0.13	<0.12	<0.12	<0.072	<0.11
1234678-heptachlorodibenzofuran	0.010	0.33	0.40	0.29	0.25	0.32
1234789-heptachlorodibenzofuran	0.010	0.059	0.071	0.053	0.046	0.057
Octachlorodibenzofuran	0.0003	0.0028	0.0057	0.0025	0.0025	0.0034
PCB 81	0.0003	<0.0019	<0.0015	<0.0017	<0.0027	<0.0019
PCB 77	0.0001	<0.0010	<0.00095	<0.00072	<0.00099	<0.00093
PCB 123	0.00003	0.00015	0.00015	<0.00014	<0.00024	<0.00017
PCB 118	0.00003	0.0093	0.0071	0.0098	0.012	0.0096
PCB 114	0.00003	<0.00023	<0.00013	0.00028	0.00028	<0.00023
PCB 105	0.00003	0.0033	0.0024	0.0036	0.0047	0.0035
PCB 126	0.100	<0.36	<0.48	<0.45	<0.72	<0.50
PCB 167	0.00003	0.00018	<0.00010	0.00018	<0.00024	<0.00018
PCB 156 + PCB 157	0.00003	0.00055	0.00042	0.00057	<0.00077	<0.00058
PCB 169	0.030	<0.087	0.13	<0.14	<0.24	<0.15
PCB 189	0.00003	0.00019	<0.00014	<0.00013	<0.00016	<0.00016
Total Dioxins & Furans Only		<24.8	<22.6	<23.1	<13.5	<21.0
Dioxin-Like PCBs Only		<0.47	<0.62	<0.61	<0.98	<0.67
Total Dioxins & Furans and PCBs		<25.3	<23.2	<23.7	<14.5	<21.7

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 59
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Emission Rates
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 1 ng TEQ/s	Test No. 2 ng TEQ/s	Test No. 3 ng TEQ/s	Test No. 7 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.013	<0.011	<0.012	<0.012	<0.012
12378-pentachlorodibenzo-p-dioxin	1.000	0.084	0.079	0.079	0.043	0.071
123478-hexachlorodibenzo-p-dioxin	0.100	0.027	0.023	0.026	0.016	0.023
123678-hexachlorodibenzo-p-dioxin	0.100	0.070	0.054	0.065	0.040	0.057
123789-hexachlorodibenzo-p-dioxin	0.100	0.076	0.063	0.071	0.042	0.063
1234678-heptachlorodibenzo-p-dioxin	0.010	0.017	0.016	0.017	0.012	0.016
Octachlorodibenzo-p-dioxin	0.0003	0.00042	0.00039	0.00033	0.00027	0.00035
2378-tetrachlorodibenzofuran	0.100	<0.0026	<0.0013	0.018	0.0018	<0.0058
12378-pentachlorodibenzofuran	0.030	0.0013	0.0020	0.0011	<0.0011	<0.0014
23478-pentachlorodibenzofuran	0.300	0.059	0.060	<0.049	0.028	<0.049
123478-hexachlorodibenzofuran	0.100	0.048	0.054	0.043	0.012	0.039
123678-hexachlorodibenzofuran	0.100	0.024	<0.027	0.022	<0.015	<0.022
234678-hexachlorodibenzofuran	0.100	0.035	0.035	0.030	0.022	0.030
123789-hexachlorodibenzofuran	0.100	<0.0025	<0.0022	<0.0022	<0.0013	<0.0021
1234678-heptachlorodibenzofuran	0.010	0.0063	0.0077	0.0055	0.0046	0.0060
1234789-heptachlorodibenzofuran	0.010	0.0011	0.0014	0.0010	0.00085	0.0011
Octachlorodibenzofuran	0.0003	0.000053	0.00011	0.000049	0.000047	0.000065
PCB 81	0.0003	<0.000036	<0.000029	<0.000033	<0.000050	<0.000037
PCB 77	0.0001	<0.000020	<0.000018	<0.000014	<0.000018	<0.000018
PCB 123	0.00003	0.0000028	0.0000030	<0.0000028	<0.0000044	<0.0000032
PCB 118	0.00003	0.00017	0.00014	0.00019	0.00022	0.00018
PCB 114	0.00003	<0.0000043	<0.0000026	0.0000053	0.0000051	<0.0000043
PCB 105	0.00003	0.000063	0.000047	0.000068	0.000087	0.000066
PCB 126	0.100	<0.0069	<0.0092	<0.0086	<0.013	<0.0095
PCB 167	0.00003	0.0000034	<0.0000020	0.0000034	<0.0000045	<0.0000033
PCB 156 + PCB 157	0.00003	0.000010	0.0000081	0.000011	<0.000014	<0.000011
PCB 169	0.030	<0.0016	0.0026	<0.0028	<0.0045	<0.0029
PCB 189	0.00003	0.0000036	<0.0000027	<0.0000026	<0.0000030	<0.0000029
Total Dioxins & Furans Only		<0.47	<0.44	<0.44	<0.25	<0.40
Dioxin-Like PCBs Only		<0.0088	<0.012	<0.012	<0.018	<0.013
Total Dioxins & Furans and PCBs		<0.48	<0.45	<0.45	<0.27	<0.41

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 60
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.44	<0.75	<0.60	<0.63	<0.012
12378-pentachlorodibenzo-p-dioxin	2.62	4.49	3.55	3.74	0.071
123478-hexachlorodibenzo-p-dioxin	0.85	1.46	1.15	1.22	0.023
123678-hexachlorodibenzo-p-dioxin	2.12	3.63	2.87	3.03	0.057
123789-hexachlorodibenzo-p-dioxin	2.32	3.97	3.14	3.31	0.063
1234678-heptachlorodibenzo-p-dioxin	0.58	0.99	0.78	0.82	0.016
Octachlorodibenzo-p-dioxin	0.013	0.022	0.018	0.018	0.00035
2378-tetrachlorodibenzofuran	<0.21	<0.36	<0.29	<0.30	<0.0058
12378-pentachlorodibenzofuran	<0.052	<0.088	<0.070	<0.074	<0.0014
23478-pentachlorodibenzofuran	<1.80	<3.09	<2.45	<2.57	<0.049
123478-hexachlorodibenzofuran	1.45	2.48	1.96	2.06	0.039
123678-hexachlorodibenzofuran	<0.81	<1.39	<1.10	<1.15	<0.022
234678-hexachlorodibenzofuran	1.13	1.93	1.53	1.61	0.030
123789-hexachlorodibenzofuran	<0.077	<0.13	<0.10	<0.11	<0.0021
1234678-heptachlorodibenzofuran	0.22	0.38	0.30	0.32	0.0060
1234789-heptachlorodibenzofuran	0.040	0.069	0.054	0.057	0.0011
Octachlorodibenzofuran	0.0024	0.0041	0.0032	0.0034	0.000065
PCB 81	<0.0014	<0.0023	<0.0018	<0.0019	<0.000037
PCB 77	<0.00065	<0.0011	<0.00088	<0.00093	<0.000018
PCB 123	<0.00012	<0.00020	<0.00016	<0.00017	<0.0000032
PCB 118	0.0067	0.011	0.0091	0.0096	0.00018
PCB 114	<0.00016	<0.00027	<0.00022	<0.00023	<0.0000043
PCB 105	0.0025	0.0042	0.0033	0.0035	0.000066
PCB 126	<0.35	<0.60	<0.47	<0.50	<0.0095
PCB 167	<0.00012	<0.00021	<0.00017	<0.00018	<0.0000033
PCB 156 + PCB 157	<0.00040	<0.00069	<0.00054	<0.00058	<0.000011
PCB 169	<0.11	<0.18	<0.14	<0.15	<0.0029
PCB 189	<0.00011	<0.00019	<0.00015	<0.00016	<0.0000029
Total Dioxins & Furans Only	<14.7	<25.2	<20.0	<21.0	<0.40
Dioxin-Like PCBs Only	<0.47	<0.80	<0.63	<0.67	<0.013
Total Dioxins & Furans and PCBs	<15.2	<26.0	<20.6	<21.7	<0.41

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 61
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	0.22	0.38	0.30	0.31	0.0059
12378-pentachlorodibenzo-p-dioxin	2.62	4.49	3.55	3.74	0.071
123478-hexachlorodibenzo-p-dioxin	0.85	1.46	1.15	1.22	0.023
123678-hexachlorodibenzo-p-dioxin	2.12	3.63	2.87	3.03	0.057
123789-hexachlorodibenzo-p-dioxin	2.32	3.97	3.14	3.31	0.063
1234678-heptachlorodibenzo-p-dioxin	0.58	0.99	0.78	0.82	0.016
Octachlorodibenzo-p-dioxin	0.013	0.022	0.018	0.018	0.00035
2378-tetrachlorodibenzofuran	0.20	0.33	0.26	0.28	0.0053
12378-pentachlorodibenzofuran	0.046	0.079	0.063	0.066	0.0013
23478-pentachlorodibenzofuran	1.58	2.70	2.14	2.25	0.043
123478-hexachlorodibenzofuran	1.45	2.48	1.96	2.06	0.039
123678-hexachlorodibenzofuran	0.62	1.05	0.83	0.88	0.017
234678-hexachlorodibenzofuran	1.13	1.93	1.53	1.61	0.030
123789-hexachlorodibenzofuran	0.038	0.066	0.052	0.055	0.0010
1234678-heptachlorodibenzofuran	0.22	0.38	0.30	0.32	0.0060
1234789-heptachlorodibenzofuran	0.040	0.069	0.054	0.057	0.0011
Octachlorodibenzofuran	0.0024	0.0041	0.0032	0.0034	0.000065
PCB 81	0.00068	0.0012	0.00092	0.00097	0.000018
PCB 77	0.00032	0.00056	0.00044	0.00046	0.0000088
PCB 123	0.000086	0.00015	0.00012	0.00012	0.0000023
PCB 118	0.0067	0.011	0.0091	0.0096	0.00018
PCB 114	0.00013	0.00022	0.00017	0.00018	0.0000035
PCB 105	0.0025	0.0042	0.0033	0.0035	0.000066
PCB 126	0.18	0.30	0.24	0.25	0.0047
PCB 167	0.000092	0.00016	0.00012	0.00013	0.0000025
PCB 156 + PCB 157	0.00034	0.00058	0.00045	0.00048	0.0000091
PCB 169	0.065	0.11	0.088	0.092	0.0018
PCB 189	0.000071	0.00012	0.000096	0.00010	0.0000019
Total Dioxins & Furans Only	14.0	24.0	19.0	20.0	0.38
Dioxin-Like PCBs Only	0.25	0.43	0.34	0.36	0.0068
Total Dioxins & Furans and PCBs	14.3	24.5	19.4	20.4	0.39

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 62
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Blank Dioxin and Furan Specific Isomer Analyses
High Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Blank Train pg	Laboratory Blank pg
2378-tetrachlorodibenzo-p-dioxin	<3.4	<3.5
12378-pentachlorodibenzo-p-dioxin	<3.7	<3.4
123478-hexachlorodibenzo-p-dioxin	<2.8	<2.8
123678-hexachlorodibenzo-p-dioxin	<2.8	<2.9
123789-hexachlorodibenzo-p-dioxin	<2.6	<2.6
1234678-heptachlorodibenzo-p-dioxin	3.6	<2.4
Octachlorodibenzo-p-dioxin	37.3	4.8
2378-tetrachlorodibenzofuran	<3.2	<3.1
12378-pentachlorodibenzofuran	<3.1	<3.8
23478-pentachlorodibenzofuran	<3.1	<3.8
123478-hexachlorodibenzofuran	<3.4	<2.9
123678-hexachlorodibenzofuran	<3.3	<2.8
234678-hexachlorodibenzofuran	<3.6	<3.0
123789-hexachlorodibenzofuran	<3.7	<3.2
1234678-heptachlorodibenzofuran	3.6	<2.5
1234789-heptachlorodibenzofuran	<2.8	<3.0
Octachlorodibenzofuran	4.5	<3.1
PCB 81	<18	<21
PCB 77	<18	<20
PCB 123	<14	<22
PCB 118	56	<19
PCB 114	<13	<19
PCB 105	<15	<20
PCB 126	<13	<20
PCB 167	<13	<14
PCB 156 + PCB 157	<13	<13
PCB 169	<13	<14
PCB 189	<17	<15
Total Dioxins & Furans Only	<90.5	<54
Dioxin-Like PCBs Only	<203	<197
Total Dioxins & Furans and PCBs	<294	<251
Total PCBs	980	-

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

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APPENDIX 5

Data Tables for Boiler No. 2
with Medium Carbon Feed Rate and VLN on Air Mode
(58 pages)

TABLE 1
Covanta
Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate with VLN on Air Mode
Test Schedule

Quench Inlet

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
4	September 22, 2016	13:36	17:11	180
5	September 23, 2016	7:40	11:14	180
6	September 23, 2016	13:05	16:42	180

APC Outlet

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
4	September 22, 2016	13:33	17:39	240
5	September 23, 2016	7:34	11:40	240
6	September 23, 2016	13:03	17:08	240

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate with VLN on Air Mode
Stack Gas Sampling Parameters

Quench Inlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
4	0.848	0.998	6.39	3.472	98.5
5	0.848	0.998	6.39	3.531	99.4
6	0.848	0.998	6.39	3.500	98.5

APC Outlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
4	0.842	0.993	6.24	4.750	98.9
5	0.842	0.993	6.24	4.640	99.7
6	0.842	0.993	6.24	4.593	98.8

* Dry at 25°C and 1 atmosphere

TABLE 3
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate with VLN on Air Mode
Stack Gas Physical Parameters

Quench Inlet

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
4	169	15.4	18.1	-0.60	99.5	10.8	8.08
5	168	16.0	18.3	-0.62	99.6	10.7	8.02
6	168	15.2	18.2	-0.62	99.8	10.8	7.99
Average	168	15.5	18.2	-0.61	99.6	10.8	8.03

APC Outlet

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
4	136	16.1	18.5	-2.32	97.8	10.8	8.46
5	136	16.7	18.0	-2.47	97.8	10.7	8.48
6	136	16.4	17.9	-2.44	97.9	10.8	8.49
Average	136	16.4	18.1	-2.41	97.8	10.8	8.48

* Dry basis, measured by the DYEC CEMS

TABLE 4
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate with VLN on Air Mode
Stack Gas Volumetric Flowrates

Quench Inlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
4	26.8	15.0	19.4	17.8
5	27.1	15.1	19.7	18.0
6	26.8	15.1	19.7	17.9
Average	26.9	15.1	19.6	17.9

APC Outlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
4	27.3	16.1	20.3	19.2
5	26.6	15.6	19.6	18.7
6	26.5	15.6	19.6	18.7
Average	26.8	15.8	19.8	18.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 4 - Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	12400	2.00	3.57	2.76	3.02	53.6
Pentachlorodibenzo-p-dioxins	8740	1.41	2.52	1.94	2.13	37.8
Hexachlorodibenzo-p-dioxins	6540	1.06	1.88	1.46	1.59	28.3
Heptachlorodibenzo-p-dioxins	4170	0.67	1.20	0.93	1.02	18.0
Octachlorodibenzo-p-dioxin	5750	0.93	1.66	1.28	1.40	24.9
Total	37600	6.07	10.8	8.37	9.16	163

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	216000	34.9	62.2	48.1	52.6	934
Pentachlorodibenzofurans	109000	17.6	31.4	24.3	26.5	471
Hexachlorodibenzofurans	48000	7.75	13.8	10.7	11.7	208
Heptachlorodibenzofurans	20800	3.36	5.99	4.63	5.07	89.9
Octachlorodibenzofuran	3200	0.52	0.92	0.71	0.78	13.8
Total	397000	64.1	114	88.3	96.7	1716

Dry Gas Volume Sampled (Rm^3*) :	3.472
Actual Flowrate (m^3/s) :	26.8
Dry Reference Flowrate (Rm^3/s*) :	15.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	17.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 5 - Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	12800	2.03	3.63	2.79	3.05	54.9
Pentachlorodibenzo-p-dioxins	8990	1.42	2.55	1.96	2.14	38.5
Hexachlorodibenzo-p-dioxins	6810	1.08	1.93	1.48	1.62	29.2
Heptachlorodibenzo-p-dioxins	5310	0.84	1.50	1.16	1.26	22.8
Octachlorodibenzo-p-dioxin	8470	1.34	2.40	1.84	2.02	36.3
Total	42380	6.71	12.0	9.23	10.1	182

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	243000	38.5	68.8	52.9	57.8	1042
Pentachlorodibenzofurans	118000	18.7	33.4	25.7	28.1	506
Hexachlorodibenzofurans	48700	7.71	13.8	10.6	11.6	209
Heptachlorodibenzofurans	20000	3.17	5.66	4.36	4.76	85.8
Octachlorodibenzofuran	3530	0.56	1.00	0.77	0.84	15.1
Total	433230	68.6	123	94.3	103	1858

Dry Gas Volume Sampled (Rm^3*) :	3.531
Actual Flowrate (m^3/s) :	27.1
Dry Reference Flowrate (Rm^3/s*) :	15.1
Dry Adjusted Flowrate (Rm^3/s**) :	19.7
Wet Reference Flowrate (Rm^3/s*) :	18.0

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 7
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 6 - Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	14100	2.27	4.03	3.09	3.42	61.0
Pentachlorodibenzo-p-dioxins	11000	1.77	3.14	2.41	2.67	47.6
Hexachlorodibenzo-p-dioxins	10200	1.65	2.91	2.24	2.47	44.1
Heptachlorodibenzo-p-dioxins	7440	1.20	2.13	1.63	1.80	32.2
Octachlorodibenzo-p-dioxin	10600	1.71	3.03	2.32	2.57	45.9
Total	53340	8.60	15.2	11.7	12.9	231

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	213000	34.4	60.9	46.7	51.6	921
Pentachlorodibenzofurans	120000	19.4	34.3	26.3	29.1	519
Hexachlorodibenzofurans	53900	8.69	15.4	11.8	13.1	233
Heptachlorodibenzofurans	26000	4.19	7.43	5.70	6.30	112
Octachlorodibenzofuran	4780	0.77	1.37	1.05	1.16	20.7
Total	417680	67.4	119	91.5	101	1807

Dry Gas Volume Sampled (Rm^3*) :	3.500
Actual Flowrate (m^3/s) :	26.8
Dry Reference Flowrate (Rm^3/s*) :	15.1
Dry Adjusted Flowrate (Rm^3/s**) :	19.7
Wet Reference Flowrate (Rm^3/s*) :	17.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 8
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	2.00	2.03	2.27	2.10	7.2
Pentachlorodibenzo-p-dioxins	1.41	1.42	1.77	1.54	13.4
Hexachlorodibenzo-p-dioxins	1.06	1.08	1.65	1.26	26.5
Heptachlorodibenzo-p-dioxins	0.67	0.84	1.20	0.90	29.8
Octachlorodibenzo-p-dioxin	0.93	1.34	1.71	1.33	29.5
Total	6.07	6.71	8.60	7.13	18.5

Furans

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	34.9	38.5	34.4	35.9	6.2
Pentachlorodibenzofurans	17.6	18.7	19.4	18.5	4.8
Hexachlorodibenzofurans	7.75	7.71	8.69	8.05	6.9
Heptachlorodibenzofurans	3.36	3.17	4.19	3.57	15.3
Octachlorodibenzofuran	0.52	0.56	0.77	0.62	22.2
Total	64.1	68.6	67.4	66.7	3.5

TABLE 9
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	3.57	3.63	4.03	3.74	6.7
Pentachlorodibenzo-p-dioxins	2.52	2.55	3.14	2.74	12.9
Hexachlorodibenzo-p-dioxins	1.88	1.93	2.91	2.24	26.0
Heptachlorodibenzo-p-dioxins	1.20	1.50	2.13	1.61	29.3
Octachlorodibenzo-p-dioxin	1.66	2.40	3.03	2.36	29.1
Total	10.8	12.0	15.2	12.7	18.0

Furans

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	62.2	68.8	60.9	64.0	6.7
Pentachlorodibenzofurans	31.4	33.4	34.3	33.0	4.5
Hexachlorodibenzofurans	13.8	13.8	15.4	14.3	6.4
Heptachlorodibenzofurans	5.99	5.66	7.43	6.36	14.8
Octachlorodibenzofuran	0.92	1.00	1.37	1.10	21.6
Total	114	123	119	119	3.5

* At 25°C and 1 atmosphere

TABLE 10
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	2.76	2.79	3.09	2.88	6.4
Pentachlorodibenzo-p-dioxins	1.94	1.96	2.41	2.10	12.6
Hexachlorodibenzo-p-dioxins	1.46	1.48	2.24	1.72	25.7
Heptachlorodibenzo-p-dioxins	0.93	1.16	1.63	1.24	28.9
Octachlorodibenzo-p-dioxin	1.28	1.84	2.32	1.82	28.8
Total	8.37	9.23	11.7	9.76	17.7

Furans

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	48.1	52.9	46.7	49.2	6.7
Pentachlorodibenzofurans	24.3	25.7	26.3	25.4	4.1
Hexachlorodibenzofurans	10.7	10.6	11.8	11.0	6.1
Heptachlorodibenzofurans	4.63	4.36	5.70	4.89	14.5
Octachlorodibenzofuran	0.71	0.77	1.05	0.84	21.3
Total	88.3	94.3	91.5	91.4	3.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 11
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	3.02	3.05	3.42	3.16	7.0
Pentachlorodibenzo-p-dioxins	2.13	2.14	2.67	2.31	13.3
Hexachlorodibenzo-p-dioxins	1.59	1.62	2.47	1.90	26.4
Heptachlorodibenzo-p-dioxins	1.02	1.26	1.80	1.36	29.6
Octachlorodibenzo-p-dioxin	1.40	2.02	2.57	1.99	29.3
Total	9.16	10.1	12.9	10.7	18.3

Furans

Congener Group	Wet Reference Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	52.6	57.8	51.6	54.0	6.2
Pentachlorodibenzofurans	26.5	28.1	29.1	27.9	4.6
Hexachlorodibenzofurans	11.7	11.6	13.1	12.1	6.8
Heptachlorodibenzofurans	5.07	4.76	6.30	5.38	15.2
Octachlorodibenzofuran	0.78	0.84	1.16	0.93	22.0
Total	96.7	103	101	100	3.3

* At 25°C and 1 atmosphere

TABLE 12
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	53.6	54.9	61.0	56.5	7.0
Pentachlorodibenzo-p-dioxins	37.8	38.5	47.6	41.3	13.2
Hexachlorodibenzo-p-dioxins	28.3	29.2	44.1	33.9	26.3
Heptachlorodibenzo-p-dioxins	18.0	22.8	32.2	24.3	29.6
Octachlorodibenzo-p-dioxin	24.9	36.3	45.9	35.7	29.5
Total	163	182	231	192	18.3

Furans

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	934	1042	921	966	6.9
Pentachlorodibenzofurans	471	506	519	499	5.0
Hexachlorodibenzofurans	208	209	233	216	6.7
Heptachlorodibenzofurans	89.9	85.8	112.5	96.0	15.0
Octachlorodibenzofuran	13.8	15.1	20.7	16.5	22.0
Total	1716	1858	1807	1794	4.0

TABLE 13
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	2.10	3.74	2.88	3.16	56.5
Pentachlorodibenzo-p-dioxins	1.54	2.74	2.10	2.31	41.3
Hexachlorodibenzo-p-dioxins	1.26	2.24	1.72	1.90	33.9
Heptachlorodibenzo-p-dioxins	0.90	1.61	1.24	1.36	24.3
Octachlorodibenzo-p-dioxin	1.33	2.36	1.82	1.99	35.7
Total	7.13	12.7	9.76	10.7	192

Furans

Congener Group	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	35.9	64.0	49.2	54.0	966
Pentachlorodibenzofurans	18.5	33.0	25.4	27.9	499
Hexachlorodibenzofurans	8.05	14.3	11.0	12.1	216
Heptachlorodibenzofurans	3.57	6.36	4.89	5.38	96.0
Octachlorodibenzofuran	0.62	1.10	0.84	0.93	16.5
Total	66.7	119	91.4	100	1794

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 14
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 4 - Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	369	0.046	0.078	0.062	0.065	1.25
Pentachlorodibenzo-p-dioxins	1090	0.14	0.23	0.18	0.19	3.70
Hexachlorodibenzo-p-dioxins	2730	0.34	0.57	0.46	0.48	9.26
Heptachlorodibenzo-p-dioxins	819	0.10	0.17	0.14	0.14	2.78
Octachlorodibenzo-p-dioxin	346	0.043	0.073	0.058	0.061	1.17
Total	5354	0.66	1.13	0.90	0.95	18.2

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	349	0.043	0.073	0.058	0.062	1.18
Pentachlorodibenzofurans	440	0.055	0.093	0.074	0.078	1.49
Hexachlorodibenzofurans	653	0.081	0.14	0.11	0.12	2.22
Heptachlorodibenzofurans	354	0.044	0.075	0.059	0.063	1.20
Octachlorodibenzofuran	88.5	0.011	0.019	0.015	0.016	0.30
Total	1885	0.23	0.40	0.32	0.33	6.40

Dry Gas Volume Sampled (Rm^3*) :	4.750
Actual Flowrate (m^3/s) :	27.3
Dry Reference Flowrate (Rm^3/s*) :	16.1
Dry Adjusted Flowrate (Rm^3/s**) :	20.3
Wet Reference Flowrate (Rm^3/s*) :	19.2

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 15
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 5 - Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	323	0.041	0.070	0.056	0.058	1.09
Pentachlorodibenzo-p-dioxins	952	0.12	0.21	0.16	0.17	3.20
Hexachlorodibenzo-p-dioxins	2420	0.31	0.52	0.42	0.43	8.15
Heptachlorodibenzo-p-dioxins	721	0.091	0.16	0.12	0.13	2.43
Octachlorodibenzo-p-dioxin	282	0.036	0.061	0.048	0.051	0.95
Total	4698	0.59	1.01	0.81	0.84	15.8

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	220	0.028	0.047	0.038	0.040	0.74
Pentachlorodibenzofurans	357	0.045	0.077	0.061	0.064	1.20
Hexachlorodibenzofurans	516	0.065	0.11	0.089	0.093	1.74
Heptachlorodibenzofurans	251	0.032	0.054	0.043	0.045	0.84
Octachlorodibenzofuran	60.2	0.0076	0.013	0.010	0.011	0.20
Total	1404	0.18	0.30	0.24	0.25	4.73

Dry Gas Volume Sampled (Rm^3*) :	4.640
Actual Flowrate (m^3/s) :	26.6
Dry Reference Flowrate (Rm^3/s*) :	15.6
Dry Adjusted Flowrate (Rm^3/s**) :	19.6
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 16
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 6 - Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	290	0.037	0.063	0.050	0.053	0.98
Pentachlorodibenzo-p-dioxins	879	0.11	0.19	0.15	0.16	2.99
Hexachlorodibenzo-p-dioxins	2180	0.28	0.47	0.38	0.40	7.40
Heptachlorodibenzo-p-dioxins	696	0.089	0.15	0.12	0.13	2.36
Octachlorodibenzo-p-dioxin	278	0.036	0.061	0.048	0.051	0.94
Total	4323	0.55	0.94	0.75	0.79	14.7

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	161	0.021	0.035	0.028	0.029	0.55
Pentachlorodibenzofurans	379	0.049	0.083	0.066	0.069	1.29
Hexachlorodibenzofurans	427	0.055	0.093	0.074	0.078	1.45
Heptachlorodibenzofurans	249	0.032	0.054	0.043	0.045	0.85
Octachlorodibenzofuran	53.3	0.0068	0.012	0.0093	0.0097	0.18
Total	1269	0.16	0.28	0.22	0.23	4.31

Dry Gas Volume Sampled (Rm^3*) :	4.593
Actual Flowrate (m^3/s) :	26.5
Dry Reference Flowrate (Rm^3/s*) :	15.6
Dry Adjusted Flowrate (Rm^3/s**) :	19.6
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 17
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.046	0.041	0.037	0.041	10.5
Pentachlorodibenzo-p-dioxins	0.14	0.12	0.11	0.12	9.3
Hexachlorodibenzo-p-dioxins	0.34	0.31	0.28	0.31	9.6
Heptachlorodibenzo-p-dioxins	0.10	0.091	0.089	0.094	7.1
Octachlorodibenzo-p-dioxin	0.043	0.036	0.036	0.038	11.1
Total	0.66	0.59	0.55	0.60	9.2

Furans

Congener Group	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	0.043	0.028	0.021	0.031	37.9
Pentachlorodibenzofurans	0.055	0.045	0.049	0.049	9.7
Hexachlorodibenzofurans	0.081	0.065	0.055	0.067	19.7
Heptachlorodibenzofurans	0.044	0.032	0.032	0.036	19.5
Octachlorodibenzofuran	0.011	0.0076	0.0068	0.0085	26.0
Total	0.23	0.18	0.16	0.19	19.6

TABLE 18
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.078	0.070	0.063	0.070	10.4
Pentachlorodibenzo-p-dioxins	0.23	0.21	0.19	0.21	9.2
Hexachlorodibenzo-p-dioxins	0.57	0.52	0.47	0.52	9.6
Heptachlorodibenzo-p-dioxins	0.17	0.16	0.15	0.16	7.0
Octachlorodibenzo-p-dioxin	0.073	0.061	0.061	0.065	10.9
Total	1.13	1.01	0.94	1.03	9.1

Furans

Congener Group	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.073	0.047	0.035	0.052	37.7
Pentachlorodibenzofurans	0.093	0.077	0.083	0.084	9.5
Hexachlorodibenzofurans	0.14	0.11	0.093	0.11	19.6
Heptachlorodibenzofurans	0.075	0.054	0.054	0.061	19.3
Octachlorodibenzofuran	0.019	0.013	0.012	0.014	25.9
Total	0.40	0.30	0.28	0.33	19.5

* At 25°C and 1 atmosphere

TABLE 19
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.062	0.056	0.050	0.056	10.2
Pentachlorodibenzo-p-dioxins	0.18	0.16	0.15	0.17	9.1
Hexachlorodibenzo-p-dioxins	0.46	0.42	0.38	0.42	9.4
Heptachlorodibenzo-p-dioxins	0.14	0.12	0.12	0.13	6.8
Octachlorodibenzo-p-dioxin	0.058	0.048	0.048	0.052	10.7
Total	0.90	0.81	0.75	0.82	9.0

Furans

Congener Group	Dry Adjusted Concentration Test No. 4 ng/Rm³*	Test No. 5 ng/Rm³*	Test No. 6 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.058	0.038	0.028	0.041	37.6
Pentachlorodibenzofurans	0.074	0.061	0.066	0.067	9.3
Hexachlorodibenzofurans	0.11	0.089	0.074	0.091	19.5
Heptachlorodibenzofurans	0.059	0.043	0.043	0.049	19.1
Octachlorodibenzofuran	0.015	0.010	0.0093	0.011	25.7
Total	0.32	0.24	0.22	0.26	19.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 20
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.065	0.058	0.053	0.059	10.6
Pentachlorodibenzo-p-dioxins	0.19	0.17	0.16	0.17	9.5
Hexachlorodibenzo-p-dioxins	0.48	0.43	0.40	0.44	9.8
Heptachlorodibenzo-p-dioxins	0.14	0.13	0.13	0.13	7.2
Octachlorodibenzo-p-dioxin	0.061	0.051	0.051	0.054	11.2
Total	0.95	0.84	0.79	0.86	9.3

Furans

Congener Group	Wet Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.062	0.040	0.029	0.043	38.0
Pentachlorodibenzofurans	0.078	0.064	0.069	0.070	9.8
Hexachlorodibenzofurans	0.12	0.093	0.078	0.095	19.9
Heptachlorodibenzofurans	0.063	0.045	0.045	0.051	19.6
Octachlorodibenzofuran	0.016	0.011	0.0097	0.012	26.1
Total	0.33	0.25	0.23	0.27	19.7

* At 25°C and 1 atmosphere

TABLE 21
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	1.25	1.09	0.98	1.11	12.2
Pentachlorodibenzo-p-dioxins	3.70	3.20	2.99	3.30	11.1
Hexachlorodibenzo-p-dioxins	9.26	8.15	7.40	8.27	11.3
Heptachlorodibenzo-p-dioxins	2.78	2.43	2.36	2.52	8.9
Octachlorodibenzo-p-dioxin	1.17	0.95	0.94	1.02	12.8
Total	18.2	15.8	14.7	16.2	11.0

Furans

Congener Group	Emission Rate Test No. 4 ng/s	Test No. 5 ng/s	Test No. 6 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	1.18	0.74	0.55	0.82	39.7
Pentachlorodibenzofurans	1.49	1.20	1.29	1.33	11.3
Hexachlorodibenzofurans	2.22	1.74	1.45	1.80	21.5
Heptachlorodibenzofurans	1.20	0.84	0.85	0.96	21.3
Octachlorodibenzofuran	0.30	0.20	0.18	0.23	27.9
Total	6.40	4.73	4.31	5.14	21.4

TABLE 22
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate with VLN on Air Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.041	0.070	0.056	0.059	1.11
Pentachlorodibenzo-p-dioxins	0.12	0.21	0.17	0.17	3.30
Hexachlorodibenzo-p-dioxins	0.31	0.52	0.42	0.44	8.27
Heptachlorodibenzo-p-dioxins	0.094	0.16	0.13	0.13	2.52
Octachlorodibenzo-p-dioxin	0.038	0.065	0.052	0.054	1.02
Total	0.60	1.03	0.82	0.86	16.2

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	0.031	0.052	0.041	0.043	0.82
Pentachlorodibenzofurans	0.049	0.084	0.067	0.070	1.33
Hexachlorodibenzofurans	0.067	0.11	0.091	0.095	1.80
Heptachlorodibenzofurans	0.036	0.061	0.049	0.051	0.96
Octachlorodibenzofuran	0.0085	0.014	0.011	0.012	0.23
Total	0.19	0.33	0.26	0.27	5.14

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 23
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate with VLN on Air Mode
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<5.7	<8.3
Pentachlorodibenzo-p-dioxins	<4.7	<4.0
Hexachlorodibenzo-p-dioxins	<9.2	<11
Heptachlorodibenzo-p-dioxins	3.6	<3.8
Octachlorodibenzo-p-dioxin	37.3	13.2
Total	<60.5	<40.3

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	<3.2	<3.9
Pentachlorodibenzofurans	<3.1	<2.7
Hexachlorodibenzofurans	<3.5	<3.1
Heptachlorodibenzofurans	3.6	8.6
Octachlorodibenzofuran	4.5	5.2
Total	<17.9	<23.5

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 24
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 4 - Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	1010	163	291	225	246	4.37
12378-pentachlorodibenzo-p-dioxin	1180	190	340	263	287	5.10
123478-hexachlorodibenzo-p-dioxin	429	69.2	124	95.5	104	1.85
123678-hexachlorodibenzo-p-dioxin	604	97.5	174	134	147	2.61
123789-hexachlorodibenzo-p-dioxin	986	159	284	219	240	4.26
1234678-heptachlorodibenzo-p-dioxin	2030	328	585	452	494	8.78
Octachlorodibenzo-p-dioxin	5750	928	1656	1279	1400	24.9
2378-tetrachlorodibenzofuran	6640	1072	1912	1477	1617	28.7
12378-pentachlorodibenzofuran	6960	1123	2005	1549	1695	30.1
23478-pentachlorodibenzofuran	6510	1051	1875	1448	1586	28.1
123478-hexachlorodibenzofuran	9660	1559	2782	2149	2353	41.8
123678-hexachlorodibenzofuran	6040	975	1740	1344	1471	26.1
234678-hexachlorodibenzofuran	4210	679	1213	937	1025	18.2
123789-hexachlorodibenzofuran	227	36.6	65.4	50.5	55.3	0.98
1234678-heptachlorodibenzofuran	15300	2469	4407	3404	3726	66.1
1234789-heptachlorodibenzofuran	1070	173	308	238	261	4.63
Octachlorodibenzofuran	3200	516	922	712	779	13.8
PCB 81	210	33.9	60.5	46.7	51.1	0.91
PCB 77	940	152	271	209	229	4.06
PCB 123	190	30.7	54.7	42.3	46.3	0.82
PCB 118	3100	500	893	690	755	13.4
PCB 114	130	21.0	37.4	28.9	31.7	0.56
PCB 105	1000	161	288	222	244	4.32
PCB 126	520	83.9	150	116	127	2.25
PCB 167	260	42.0	74.9	57.8	63.3	1.12
PCB 156 + PCB 157	430	69.4	124	95.7	105	1.86
PCB 169	150	24.2	43.2	33.4	36.5	0.65
PCB 189	190	30.7	54.7	42.3	46.3	0.82
Total Dioxins & Furans Only	71806	11587	20681	15977	17489	310
Dioxin-Like PCBs	7120	1149	2051	1584	1734	30.8
Total Dioxins & Furans and PCBs	78926	12736	22732	17561	19223	341
Total PCBs	140000	22592	40323	31150	34098	605

Dry Gas Volume Sampled (Rm^3*) :	3.472
Actual Flowrate (m^3/s) :	26.8
Dry Reference Flowrate (Rm^3/s*) :	15.0
Dry Adjusted Flowrate (Rm^3/s**) :	19.4
Wet Reference Flowrate (Rm^3/s*) :	17.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 25
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 5 - Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	1060	168	300	231	252	4.55
12378-pentachlorodibenzo-p-dioxin	1300	206	368	283	309	5.57
123478-hexachlorodibenzo-p-dioxin	466	73.8	132	101	111	2.00
123678-hexachlorodibenzo-p-dioxin	631	100	179	137	150	2.71
123789-hexachlorodibenzo-p-dioxin	1050	166	297	229	250	4.50
1234678-heptachlorodibenzo-p-dioxin	2570	407	728	560	612	11.0
Octachlorodibenzo-p-dioxin	8470	1341	2399	1844	2015	36.3
2378-tetrachlorodibenzofuran	9330	1477	2642	2032	2220	40.0
12378-pentachlorodibenzofuran	8360	1323	2368	1820	1989	35.8
23478-pentachlorodibenzofuran	7420	1174	2101	1616	1766	31.8
123478-hexachlorodibenzofuran	9880	1564	2798	2151	2351	42.4
123678-hexachlorodibenzofuran	6130	970	1736	1335	1459	26.3
234678-hexachlorodibenzofuran	4220	668	1195	919	1004	18.1
123789-hexachlorodibenzofuran	329	52.1	93.2	71.6	78.3	1.41
1234678-heptachlorodibenzofuran	13600	2153	3852	2962	3236	58.3
1234789-heptachlorodibenzofuran	1060	168	300	231	252	4.55
Octachlorodibenzofuran	3530	559	1000	769	840	15.1
PCB 81	180	28.5	51.0	39.2	42.8	0.77
PCB 77	980	155	278	213	233	4.20
PCB 123	180	28.5	51.0	39.2	42.8	0.77
PCB 118	1500	237	425	327	357	6.43
PCB 114	97	15.4	27.5	21.1	23.1	0.42
PCB 105	660	104	187	144	157	2.83
PCB 126	570	90.2	161	124	136	2.44
PCB 167	220	34.8	62.3	47.9	52.3	0.94
PCB 156 + PCB 157	420	66.5	119	91.5	99.9	1.80
PCB 169	160	25.3	45.3	34.8	38.1	0.69
PCB 189	190	30.1	53.8	41.4	45.2	0.81
Total Dioxins & Furans Only	79406	12568	22488	17292	18894	340
Dioxin-Like PCBs	5157	816	1460	1123	1227	22.1
Total Dioxins & Furans and PCBs	84563	13384	23949	18415	20121	363
Total PCBs	58000	9180	16426	12630	13801	249

Dry Gas Volume Sampled (Rm³*) :	3.531
Actual Flowrate (m³/s) :	27.1
Dry Reference Flowrate (Rm³/s*) :	15.1
Dry Adjusted Flowrate (Rm³/s**) :	19.7
Wet Reference Flowrate (Rm³/s*) :	18.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 26
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 6 - Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	1140	184	326	250	276	4.93
12378-pentachlorodibenzo-p-dioxin	1450	234	414	318	351	6.27
123478-hexachlorodibenzo-p-dioxin	702	113	201	154	170	3.04
123678-hexachlorodibenzo-p-dioxin	972	157	278	213	236	4.20
123789-hexachlorodibenzo-p-dioxin	1610	260	460	353	390	6.96
1234678-heptachlorodibenzo-p-dioxin	3650	589	1043	800	885	15.8
Octachlorodibenzo-p-dioxin	10600	1710	3029	2323	2569	45.9
2378-tetrachlorodibenzofuran	7270	1173	2077	1593	1762	31.4
12378-pentachlorodibenzofuran	8020	1294	2291	1757	1944	34.7
23478-pentachlorodibenzofuran	7940	1281	2269	1740	1924	34.3
123478-hexachlorodibenzofuran	11100	1790	3171	2432	2690	48.0
123678-hexachlorodibenzofuran	6850	1105	1957	1501	1660	29.6
234678-hexachlorodibenzofuran	4660	752	1331	1021	1129	20.2
123789-hexachlorodibenzofuran	272	43.9	77.7	59.6	65.9	1.18
1234678-heptachlorodibenzofuran	19100	3081	5457	4185	4629	82.6
1234789-heptachlorodibenzofuran	1460	235	417	320	354	6.32
Octachlorodibenzofuran	4780	771	1366	1047	1158	20.7
PCB 81	180	29.0	51.4	39.4	43.6	0.78
PCB 77	720	116	206	158	174	3.11
PCB 123	130	21.0	37.1	28.5	31.5	0.56
PCB 118	1300	210	371	285	315	5.62
PCB 114	82	13.2	23.4	18.0	19.9	0.35
PCB 105	540	87.1	154	118	131	2.34
PCB 126	550	88.7	157	121	133	2.38
PCB 167	<210	<33.9	<60.0	<46.0	<50.9	<0.91
PCB 156 + PCB 157	420	67.7	120	92.0	102	1.82
PCB 169	190	30.6	54.3	41.6	46.0	0.82
PCB 189	<190	<30.6	<54.3	<41.6	<46.0	<0.82
Total Dioxins & Furans Only	91576	14770	26165	20067	22192	396
Dioxin-Like PCBs	<4512	<728	<1289	<989	<1093	<19.5
Total Dioxins & Furans and PCBs	<96088	<15498	<27454	<21056	<23286	<416
Total PCBs	46000	7419	13143	10080	11147	199

Dry Gas Volume Sampled (Rm³*) :	3.500
Actual Flowrate (m³/s) :	26.8
Dry Reference Flowrate (Rm³/s*) :	15.1
Dry Adjusted Flowrate (Rm³/s**) :	19.7
Wet Reference Flowrate (Rm³/s*) :	17.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 27
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	163	168	184	172	6.4
12378-pentachlorodibenzo-p-dioxin	190	206	234	210	10.5
123478-hexachlorodibenzo-p-dioxin	69.2	73.8	113	85.4	28.3
123678-hexachlorodibenzo-p-dioxin	97.5	100	157	118	28.4
123789-hexachlorodibenzo-p-dioxin	159	166	260	195	28.8
1234678-heptachlorodibenzo-p-dioxin	328	407	589	441	30.4
Octachlorodibenzo-p-dioxin	928	1341	1710	1326	29.5
2378-tetrachlorodibenzofuran	1072	1477	1173	1240	17.0
12378-pentachlorodibenzofuran	1123	1323	1294	1247	8.7
23478-pentachlorodibenzofuran	1051	1174	1281	1169	9.9
123478-hexachlorodibenzofuran	1559	1564	1790	1638	8.1
123678-hexachlorodibenzofuran	975	970	1105	1017	7.5
234678-hexachlorodibenzofuran	679	668	752	700	6.5
123789-hexachlorodibenzofuran	36.6	52.1	43.9	44.2	17.5
1234678-heptachlorodibenzofuran	2469	2153	3081	2567	18.4
1234789-heptachlorodibenzofuran	173	168	235	192	19.7
Octachlorodibenzofuran	516	559	771	615	22.2
PCB 81	33.9	28.5	29.0	30.5	9.8
PCB 77	152	155	116	141	15.3
PCB 123	30.7	28.5	21.0	26.7	19.0
PCB 118	500	237	210	316	50.8
PCB 114	21.0	15.4	13.2	16.5	24.2
PCB 105	161	104	87.1	118	33.0
PCB 126	83.9	90.2	88.7	87.6	3.8
PCB 167	42.0	34.8	<33.9	<36.9	12.0
PCB 156 + PCB 157	69.4	66.5	67.7	67.9	2.2
PCB 169	24.2	25.3	30.6	26.7	12.9
PCB 189	30.7	30.1	<30.6	<30.5	1.1
Total Dioxins & Furans Only	11587	12568	14770	12975	12.6
Dioxin-Like PCBs	1149	816	<728	<898	24.7
Total Dioxins & Furans and PCBs	12736	13384	<15498	<13873	10.4
Total PCBs	22592	9180	7419	13064	63.5

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 28
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Reference Concentration				Coefficient of Variation
	Test No. 4	Test No. 5	Test No. 6	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	291	300	326	306	5.9
12378-pentachlorodibenzo-p-dioxin	340	368	414	374	10.0
123478-hexachlorodibenzo-p-dioxin	124	132	201	152	27.8
123678-hexachlorodibenzo-p-dioxin	174	179	278	210	27.9
123789-hexachlorodibenzo-p-dioxin	284	297	460	347	28.2
1234678-heptachlorodibenzo-p-dioxin	585	728	1043	785	29.9
Octachlorodibenzo-p-dioxin	1656	2399	3029	2361	29.1
2378-tetrachlorodibenzofuran	1912	2642	2077	2211	17.3
12378-pentachlorodibenzofuran	2005	2368	2291	2221	8.6
23478-pentachlorodibenzofuran	1875	2101	2269	2082	9.5
123478-hexachlorodibenzofuran	2782	2798	3171	2917	7.6
123678-hexachlorodibenzofuran	1740	1736	1957	1811	7.0
234678-hexachlorodibenzofuran	1213	1195	1331	1246	6.0
123789-hexachlorodibenzofuran	65.4	93.2	77.7	78.8	17.7
1234678-heptachlorodibenzofuran	4407	3852	5457	4572	17.8
1234789-heptachlorodibenzofuran	308	300	417	342	19.1
Octachlorodibenzofuran	922	1000	1366	1096	21.6
PCB 81	60.5	51.0	51.4	54.3	9.9
PCB 77	271	278	206	251	15.8
PCB 123	54.7	51.0	37.1	47.6	19.4
PCB 118	893	425	371	563	51.0
PCB 114	37.4	27.5	23.4	29.4	24.5
PCB 105	288	187	154	210	33.2
PCB 126	150	161	157	156	3.8
PCB 167	74.9	62.3	<60.0	<65.7	12.2
PCB 156 + PCB 157	124	119	120	121	2.1
PCB 169	43.2	45.3	54.3	47.6	12.4
PCB 189	54.7	53.8	<54.3	<54.3	0.8
Total Dioxins & Furans Only	20681	22488	26165	23111	12.1
Dioxin-Like PCBs	2051	1460	<1289	<1600	25.0
Total Dioxins & Furans and PCBs	22732	23949	<27454	<24712	9.9
Total PCBs	40323	16426	13143	23297	63.7

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 29
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	225	231	250	235	5.6
12378-pentachlorodibenzo-p-dioxin	263	283	318	288	9.7
123478-hexachlorodibenzo-p-dioxin	95.5	101	154	117	27.5
123678-hexachlorodibenzo-p-dioxin	134	137	213	162	27.6
123789-hexachlorodibenzo-p-dioxin	219	229	353	267	27.9
1234678-heptachlorodibenzo-p-dioxin	452	560	800	604	29.5
Octachlorodibenzo-p-dioxin	1279	1844	2323	1816	28.8
2378-tetrachlorodibenzofuran	1477	2032	1593	1701	17.2
12378-pentachlorodibenzofuran	1549	1820	1757	1709	8.3
23478-pentachlorodibenzofuran	1448	1616	1740	1601	9.1
123478-hexachlorodibenzofuran	2149	2151	2432	2244	7.3
123678-hexachlorodibenzofuran	1344	1335	1501	1393	6.7
234678-hexachlorodibenzofuran	937	919	1021	959	5.7
123789-hexachlorodibenzofuran	50.5	71.6	59.6	60.6	17.5
1234678-heptachlorodibenzofuran	3404	2962	4185	3517	17.6
1234789-heptachlorodibenzofuran	238	231	320	263	18.8
Octachlorodibenzofuran	712	769	1047	843	21.3
PCB 81	46.7	39.2	39.4	41.8	10.2
PCB 77	209	213	158	193	16.0
PCB 123	42.3	39.2	28.5	36.7	19.7
PCB 118	690	327	285	434	51.3
PCB 114	28.9	21.1	18.0	22.7	24.9
PCB 105	222	144	118	162	33.6
PCB 126	116	124	121	120	3.5
PCB 167	57.8	47.9	<46.0	<50.6	12.6
PCB 156 + PCB 157	95.7	91.5	92.0	93.1	2.5
PCB 169	33.4	34.8	41.6	36.6	12.0
PCB 189	42.3	41.4	<41.6	<41.8	1.1
Total Dioxins & Furans Only	15977	17292	20067	17779	11.7
Dioxin-Like PCBs	1584	1123	<989	<1232	25.4
Total Dioxins & Furans and PCBs	17561	18415	<21056	<19011	9.6
Total PCBs	31150	12630	10080	17953	64.1

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 30
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Wet Reference Concentration				Coefficient of Variation
	Test No. 4	Test No. 5	Test No. 6	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	246	252	276	258	6.2
12378-pentachlorodibenzo-p-dioxin	287	309	351	316	10.3
123478-hexachlorodibenzo-p-dioxin	104	111	170	128	28.2
123678-hexachlorodibenzo-p-dioxin	147	150	236	178	28.3
123789-hexachlorodibenzo-p-dioxin	240	250	390	293	28.6
1234678-heptachlorodibenzo-p-dioxin	494	612	885	663	30.2
Octachlorodibenzo-p-dioxin	1400	2015	2569	1995	29.3
2378-tetrachlorodibenzofuran	1617	2220	1762	1866	16.9
12378-pentachlorodibenzofuran	1695	1989	1944	1876	8.4
23478-pentachlorodibenzofuran	1586	1766	1924	1758	9.6
123478-hexachlorodibenzofuran	2353	2351	2690	2465	7.9
123678-hexachlorodibenzofuran	1471	1459	1660	1530	7.4
234678-hexachlorodibenzofuran	1025	1004	1129	1053	6.4
123789-hexachlorodibenzofuran	55.3	78.3	65.9	66.5	17.3
1234678-heptachlorodibenzofuran	3726	3236	4629	3864	18.3
1234789-heptachlorodibenzofuran	261	252	354	289	19.5
Octachlorodibenzofuran	779	840	1158	926	22.0
PCB 81	51.1	42.8	43.6	45.9	10.0
PCB 77	229	233	174	212	15.4
PCB 123	46.3	42.8	31.5	40.2	19.2
PCB 118	755	357	315	476	51.1
PCB 114	31.7	23.1	19.9	24.9	24.5
PCB 105	244	157	131	177	33.3
PCB 126	127	136	133	132	3.5
PCB 167	63.3	52.3	<50.9	<55.5	12.2
PCB 156 + PCB 157	105	99.9	102	102	2.4
PCB 169	36.5	38.1	46.0	40.2	12.7
PCB 189	46.3	45.2	<46.0	<45.8	1.2
Total Dioxins & Furans Only	17489	18894	22192	19525	12.4
Dioxin-Like PCBs	1734	1227	<1093	<1352	25.0
Total Dioxins & Furans and PCBs	19223	20121	<23286	<20877	10.2
Total PCBs	34098	13801	11147	19682	63.8

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 31
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Emission Rate Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	4.37	4.55	4.93	4.61	6.3
12378-pentachlorodibenzo-p-dioxin	5.10	5.57	6.27	5.65	10.4
123478-hexachlorodibenzo-p-dioxin	1.85	2.00	3.04	2.30	28.1
123678-hexachlorodibenzo-p-dioxin	2.61	2.71	4.20	3.17	28.2
123789-hexachlorodibenzo-p-dioxin	4.26	4.50	6.96	5.24	28.5
1234678-heptachlorodibenzo-p-dioxin	8.78	11.0	15.8	11.9	30.2
Octachlorodibenzo-p-dioxin	24.9	36.3	45.9	35.7	29.5
2378-tetrachlorodibenzofuran	28.7	40.0	31.4	33.4	17.7
12378-pentachlorodibenzofuran	30.1	35.8	34.7	33.5	9.1
23478-pentachlorodibenzofuran	28.1	31.8	34.3	31.4	9.9
123478-hexachlorodibenzofuran	41.8	42.4	48.0	44.0	7.8
123678-hexachlorodibenzofuran	26.1	26.3	29.6	27.3	7.3
234678-hexachlorodibenzofuran	18.2	18.1	20.2	18.8	6.2
123789-hexachlorodibenzofuran	0.98	1.41	1.18	1.19	18.1
1234678-heptachlorodibenzofuran	66.1	58.3	82.6	69.0	18.0
1234789-heptachlorodibenzofuran	4.63	4.55	6.32	5.16	19.4
Octachlorodibenzofuran	13.8	15.1	20.7	16.5	22.0
PCB 81	0.91	0.77	0.78	0.82	9.4
PCB 77	4.06	4.20	3.11	3.79	15.6
PCB 123	0.82	0.77	0.56	0.72	19.1
PCB 118	13.4	6.43	5.62	8.49	50.4
PCB 114	0.56	0.42	0.35	0.44	24.0
PCB 105	4.32	2.83	2.34	3.16	32.7
PCB 126	2.25	2.44	2.38	2.36	4.2
PCB 167	1.12	0.94	<0.91	<0.99	11.7
PCB 156 + PCB 157	1.86	1.80	1.82	1.83	1.6
PCB 169	0.65	0.69	0.82	0.72	12.7
PCB 189	0.82	0.81	<0.82	<0.82	0.5
Total Dioxins & Furans Only	310	340	396	349	12.5
Dioxin-Like PCBs	30.8	22.1	<19.5	<24.1	24.4
Total Dioxins & Furans and PCBs	341	363	<416	<373	10.3
Total PCBs	605	249	199	351	63.1

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 32
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	172	306	235	258	4.61
12378-pentachlorodibenzo-p-dioxin	210	374	288	316	5.65
123478-hexachlorodibenzo-p-dioxin	85.4	152	117	128	2.30
123678-hexachlorodibenzo-p-dioxin	118	210	162	178	3.17
123789-hexachlorodibenzo-p-dioxin	195	347	267	293	5.24
1234678-heptachlorodibenzo-p-dioxin	441	785	604	663	11.9
Octachlorodibenzo-p-dioxin	1326	2361	1816	1995	35.7
2378-tetrachlorodibenzofuran	1240	2211	1701	1866	33.4
12378-pentachlorodibenzofuran	1247	2221	1709	1876	33.5
23478-pentachlorodibenzofuran	1169	2082	1601	1758	31.4
123478-hexachlorodibenzofuran	1638	2917	2244	2465	44.0
123678-hexachlorodibenzofuran	1017	1811	1393	1530	27.3
234678-hexachlorodibenzofuran	700	1246	959	1053	18.8
123789-hexachlorodibenzofuran	44.2	78.8	60.6	66.5	1.19
1234678-heptachlorodibenzofuran	2567	4572	3517	3864	69.0
1234789-heptachlorodibenzofuran	192	342	263	289	5.16
Octachlorodibenzofuran	615	1096	843	926	16.5
PCB 81	30.5	54.3	41.8	45.9	0.82
PCB 77	141	251	193	212	3.79
PCB 123	26.7	47.6	36.7	40.2	0.72
PCB 118	316	563	434	476	8.49
PCB 114	16.5	29.4	22.7	24.9	0.44
PCB 105	118	210	162	177	3.16
PCB 126	87.6	156	120	132	2.36
PCB 167	<36.9	<65.7	<50.6	<55.5	<0.99
PCB 156 + PCB 157	67.9	121	93.1	102	1.83
PCB 169	26.7	47.6	36.6	40.2	0.72
PCB 189	<30.5	<54.3	<41.8	<45.8	<0.82
Total Dioxins & Furans Only	12975	23111	17779	19525	349
Dioxin-Like PCBs	<898	<1600	<1232	<1352	<24.1
Total Dioxins & Furans and PCBs	<13873	<24712	<19011	<20877	<373
Total PCBs	13064	23297	17953	19682	351

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 33
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 4 pg TEQ/m³	Test No. 5 pg TEQ/m³	Test No. 6 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	163	168	184	172
12378-pentachlorodibenzo-p-dioxin	1.000	190	206	234	210
123478-hexachlorodibenzo-p-dioxin	0.100	6.92	7.38	11.3	8.54
123678-hexachlorodibenzo-p-dioxin	0.100	9.75	9.99	15.7	11.8
123789-hexachlorodibenzo-p-dioxin	0.100	15.9	16.6	26.0	19.5
1234678-heptachlorodibenzo-p-dioxin	0.010	3.28	4.07	5.89	4.41
Octachlorodibenzo-p-dioxin	0.0003	0.28	0.40	0.51	0.40
2378-tetrachlorodibenzofuran	0.100	107	148	117	124
12378-pentachlorodibenzofuran	0.030	33.7	39.7	38.8	37.4
23478-pentachlorodibenzofuran	0.300	315	352	384	351
123478-hexachlorodibenzofuran	0.100	156	156	179	164
123678-hexachlorodibenzofuran	0.100	97.5	97.0	110	102
234678-hexachlorodibenzofuran	0.100	67.9	66.8	75.2	70.0
123789-hexachlorodibenzofuran	0.100	3.66	5.21	4.39	4.42
1234678-heptachlorodibenzofuran	0.010	24.7	21.5	30.8	25.7
1234789-heptachlorodibenzofuran	0.010	1.73	1.68	2.35	1.92
Octachlorodibenzofuran	0.0003	0.15	0.17	0.23	0.18
PCB 81	0.0003	0.010	0.0085	0.0087	0.0091
PCB 77	0.0001	0.015	0.016	0.012	0.014
PCB 123	0.00003	0.00092	0.00085	0.00063	0.00080
PCB 118	0.00003	0.015	0.0071	0.0063	0.0095
PCB 114	0.00003	0.00063	0.00046	0.00040	0.00050
PCB 105	0.00003	0.0048	0.0031	0.0026	0.0035
PCB 126	0.100	8.39	9.02	8.87	8.76
PCB 167	0.00003	0.0013	0.0010	<0.0010	<0.0011
PCB 156 + PCB 157	0.00003	0.0021	0.0020	0.0020	0.0020
PCB 169	0.030	0.73	0.76	0.92	0.80
PCB 189	0.00003	0.00092	0.00090	<0.00092	<0.00091
Total Dioxins & Furans Only		1197	1300	1420	1306
Dioxin-Like PCBs		9.17	9.82	<9.82	<9.60
Total Dioxins & Furans and PCBs		1206	1310	<1430	<1315

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 34
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	291	300	326	306
12378-pentachlorodibenzo-p-dioxin	1.000	340	368	414	374
123478-hexachlorodibenzo-p-dioxin	0.100	12.4	13.2	20.1	15.2
123678-hexachlorodibenzo-p-dioxin	0.100	17.4	17.9	27.8	21.0
123789-hexachlorodibenzo-p-dioxin	0.100	28.4	29.7	46.0	34.7
1234678-heptachlorodibenzo-p-dioxin	0.010	5.85	7.28	10.4	7.85
Octachlorodibenzo-p-dioxin	0.0003	0.50	0.72	0.91	0.71
2378-tetrachlorodibenzofuran	0.100	191	264	208	221
12378-pentachlorodibenzofuran	0.030	60.1	71.0	68.7	66.6
23478-pentachlorodibenzofuran	0.300	563	630	681	624
123478-hexachlorodibenzofuran	0.100	278	280	317	292
123678-hexachlorodibenzofuran	0.100	174	174	196	181
234678-hexachlorodibenzofuran	0.100	121	120	133	125
123789-hexachlorodibenzofuran	0.100	6.54	9.32	7.77	7.88
1234678-heptachlorodibenzofuran	0.010	44.1	38.5	54.6	45.7
1234789-heptachlorodibenzofuran	0.010	3.08	3.00	4.17	3.42
Octachlorodibenzofuran	0.0003	0.28	0.30	0.41	0.33
PCB 81	0.0003	0.018	0.015	0.015	0.016
PCB 77	0.0001	0.027	0.028	0.021	0.025
PCB 123	0.00003	0.0016	0.0015	0.0011	0.0014
PCB 118	0.00003	0.027	0.013	0.011	0.017
PCB 114	0.00003	0.0011	0.00082	0.00070	0.00088
PCB 105	0.00003	0.0086	0.0056	0.0046	0.0063
PCB 126	0.100	15.0	16.1	15.7	15.6
PCB 167	0.00003	0.0022	0.0019	<0.0018	<0.0020
PCB 156 + PCB 157	0.00003	0.0037	0.0036	0.0036	0.0036
PCB 169	0.030	1.30	1.36	1.63	1.43
PCB 189	0.00003	0.0016	0.0016	<0.0016	<0.0016
Total Dioxins & Furans Only		2137	2327	2515	2326
Dioxin-Like PCBs		16.4	17.6	<17.4	<17.1
Total Dioxins & Furans and PCBs		2153	2344	<2533	<2343

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 35
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	225	231	250	235
12378-pentachlorodibenzo-p-dioxin	1.000	263	283	318	288
123478-hexachlorodibenzo-p-dioxin	0.100	9.55	10.1	15.4	11.7
123678-hexachlorodibenzo-p-dioxin	0.100	13.4	13.7	21.3	16.2
123789-hexachlorodibenzo-p-dioxin	0.100	21.9	22.9	35.3	26.7
1234678-heptachlorodibenzo-p-dioxin	0.010	4.52	5.60	8.00	6.04
Octachlorodibenzo-p-dioxin	0.0003	0.38	0.55	0.70	0.54
2378-tetrachlorodibenzofuran	0.100	148	203	159	170
12378-pentachlorodibenzofuran	0.030	46.5	54.6	52.7	51.3
23478-pentachlorodibenzofuran	0.300	435	485	522	480
123478-hexachlorodibenzofuran	0.100	215	215	243	224
123678-hexachlorodibenzofuran	0.100	134	133	150	139
234678-hexachlorodibenzofuran	0.100	93.7	91.9	102	95.9
123789-hexachlorodibenzofuran	0.100	5.05	7.16	5.96	6.06
1234678-heptachlorodibenzofuran	0.010	34.0	29.6	41.9	35.2
1234789-heptachlorodibenzofuran	0.010	2.38	2.31	3.20	2.63
Octachlorodibenzofuran	0.0003	0.21	0.23	0.31	0.25
PCB 81	0.0003	0.014	0.012	0.012	0.013
PCB 77	0.0001	0.021	0.021	0.016	0.019
PCB 123	0.00003	0.0013	0.0012	0.00085	0.0011
PCB 118	0.00003	0.021	0.0098	0.0085	0.013
PCB 114	0.00003	0.00087	0.00063	0.00054	0.00068
PCB 105	0.00003	0.0067	0.0043	0.0035	0.0048
PCB 126	0.100	11.6	12.4	12.1	12.0
PCB 167	0.00003	0.0017	0.0014	<0.0014	<0.0015
PCB 156 + PCB 157	0.00003	0.0029	0.0027	0.0028	0.0028
PCB 169	0.030	1.00	1.05	1.25	1.10
PCB 189	0.00003	0.0013	0.0012	<0.0012	<0.0013
Total Dioxins & Furans Only		1651	1789	1929	1790
Dioxin-Like PCBs		12.6	13.5	<13.3	<13.2
Total Dioxins & Furans and PCBs		1663	1803	<1942	<1803

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 36
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	225	231	250	235
12378-pentachlorodibenzo-p-dioxin	0.500	131	142	159	144
123478-hexachlorodibenzo-p-dioxin	0.100	9.55	10.1	15.4	11.7
123678-hexachlorodibenzo-p-dioxin	0.100	13.4	13.7	21.3	16.2
123789-hexachlorodibenzo-p-dioxin	0.100	21.9	22.9	35.3	26.7
1234678-heptachlorodibenzo-p-dioxin	0.010	4.52	5.60	8.00	6.04
Octachlorodibenzo-p-dioxin	0.001	1.28	1.84	2.32	1.82
2378-tetrachlorodibenzofuran	0.100	148	203	159	170
12378-pentachlorodibenzofuran	0.050	77.4	91.0	87.9	85.4
23478-pentachlorodibenzofuran	0.500	724	808	870	801
123478-hexachlorodibenzofuran	0.100	215	215	243	224
123678-hexachlorodibenzofuran	0.100	134	133	150	139
234678-hexachlorodibenzofuran	0.100	93.7	91.9	102	95.9
123789-hexachlorodibenzofuran	0.100	5.05	7.16	5.96	6.06
1234678-heptachlorodibenzofuran	0.010	34.0	29.6	41.9	35.2
1234789-heptachlorodibenzofuran	0.010	2.38	2.31	3.20	2.63
Octachlorodibenzofuran	0.001	0.71	0.77	1.05	0.84
Total Dioxins & Furans		1841	2009	2156	2002

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 37
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	246	252	276	258
12378-pentachlorodibenzo-p-dioxin	1.000	287	309	351	316
123478-hexachlorodibenzo-p-dioxin	0.100	10.4	11.1	17.0	12.8
123678-hexachlorodibenzo-p-dioxin	0.100	14.7	15.0	23.6	17.8
123789-hexachlorodibenzo-p-dioxin	0.100	24.0	25.0	39.0	29.3
1234678-heptachlorodibenzo-p-dioxin	0.010	4.94	6.12	8.85	6.63
Octachlorodibenzo-p-dioxin	0.0003	0.42	0.60	0.77	0.60
2378-tetrachlorodibenzofuran	0.100	162	222	176	187
12378-pentachlorodibenzofuran	0.030	50.9	59.7	58.3	56.3
23478-pentachlorodibenzofuran	0.300	476	530	577	528
123478-hexachlorodibenzofuran	0.100	235	235	269	246
123678-hexachlorodibenzofuran	0.100	147	146	166	153
234678-hexachlorodibenzofuran	0.100	103	100	113	105
123789-hexachlorodibenzofuran	0.100	5.53	7.83	6.59	6.65
1234678-heptachlorodibenzofuran	0.010	37.3	32.4	46.3	38.6
1234789-heptachlorodibenzofuran	0.010	2.61	2.52	3.54	2.89
Octachlorodibenzofuran	0.0003	0.23	0.25	0.35	0.28
PCB 81	0.0003	0.015	0.013	0.013	0.014
PCB 77	0.0001	0.023	0.023	0.017	0.021
PCB 123	0.00003	0.0014	0.0013	0.00095	0.0012
PCB 118	0.00003	0.023	0.011	0.0095	0.014
PCB 114	0.00003	0.00095	0.00069	0.00060	0.00075
PCB 105	0.00003	0.0073	0.0047	0.0039	0.0053
PCB 126	0.100	12.7	13.6	13.3	13.2
PCB 167	0.00003	0.0019	0.0016	<0.0015	<0.0017
PCB 156 + PCB 157	0.00003	0.0031	0.0030	0.0031	0.0031
PCB 169	0.030	1.10	1.14	1.38	1.21
PCB 189	0.00003	0.0014	0.0014	<0.0014	<0.0014
Total Dioxins & Furans Only		1807	1955	2133	1965
Dioxin-Like PCBs		13.8	14.8	<14.8	<14.5
Total Dioxins & Furans and PCBs		1821	1970	<2148	<1979

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 38
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 4 ng TEQ/s	Test No. 5 ng TEQ/s	Test No. 6 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	4.37	4.55	4.93	4.61
12378-pentachlorodibenzo-p-dioxin	1.000	5.10	5.57	6.27	5.65
123478-hexachlorodibenzo-p-dioxin	0.100	0.19	0.20	0.30	0.23
123678-hexachlorodibenzo-p-dioxin	0.100	0.26	0.27	0.42	0.32
123789-hexachlorodibenzo-p-dioxin	0.100	0.43	0.45	0.70	0.52
1234678-heptachlorodibenzo-p-dioxin	0.010	0.088	0.11	0.16	0.12
Octachlorodibenzo-p-dioxin	0.0003	0.0075	0.011	0.014	0.011
2378-tetrachlorodibenzofuran	0.100	2.87	4.00	3.14	3.34
12378-pentachlorodibenzofuran	0.030	0.90	1.08	1.04	1.01
23478-pentachlorodibenzofuran	0.300	8.44	9.54	10.3	9.43
123478-hexachlorodibenzofuran	0.100	4.18	4.24	4.80	4.40
123678-hexachlorodibenzofuran	0.100	2.61	2.63	2.96	2.73
234678-hexachlorodibenzofuran	0.100	1.82	1.81	2.02	1.88
123789-hexachlorodibenzofuran	0.100	0.098	0.14	0.12	0.12
1234678-heptachlorodibenzofuran	0.010	0.66	0.58	0.83	0.69
1234789-heptachlorodibenzofuran	0.010	0.046	0.045	0.063	0.052
Octachlorodibenzofuran	0.0003	0.0042	0.0045	0.0062	0.0050
PCB 81	0.0003	0.00027	0.00023	0.00023	0.00025
PCB 77	0.0001	0.00041	0.00042	0.00031	0.00038
PCB 123	0.00003	0.000025	0.000023	0.000017	0.000022
PCB 118	0.00003	0.00040	0.00019	0.00017	0.00025
PCB 114	0.00003	0.000017	0.000012	0.000011	0.000013
PCB 105	0.00003	0.00013	0.000085	0.000070	0.000095
PCB 126	0.100	0.22	0.24	0.24	0.24
PCB 167	0.00003	0.000034	0.000028	<0.000027	<0.000030
PCB 156 + PCB 157	0.00003	0.000056	0.000054	0.000055	0.000055
PCB 169	0.030	0.019	0.021	0.025	0.022
PCB 189	0.00003	0.000025	0.000024	<0.000025	<0.000025
Total Dioxins & Furans Only		32.1	35.2	38.1	35.1
Dioxin-Like PCBs		0.25	0.27	<0.26	<0.26
Total Dioxins & Furans and PCBs		32.3	35.5	<38.3	<35.4

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 39
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	172	306	235	258	4.61
12378-pentachlorodibenzo-p-dioxin	210	374	288	316	5.65
123478-hexachlorodibenzo-p-dioxin	8.54	15.2	11.7	12.8	0.23
123678-hexachlorodibenzo-p-dioxin	11.8	21.0	16.2	17.8	0.32
123789-hexachlorodibenzo-p-dioxin	19.5	34.7	26.7	29.3	0.52
1234678-heptachlorodibenzo-p-dioxin	4.41	7.85	6.04	6.63	0.12
Octachlorodibenzo-p-dioxin	0.40	0.71	0.54	0.60	0.011
2378-tetrachlorodibenzofuran	124	221	170	187	3.34
12378-pentachlorodibenzofuran	37.4	66.6	51.3	56.3	1.01
23478-pentachlorodibenzofuran	351	624	480	528	9.43
123478-hexachlorodibenzofuran	164	292	224	246	4.40
123678-hexachlorodibenzofuran	102	181	139	153	2.73
234678-hexachlorodibenzofuran	70.0	125	95.9	105	1.88
123789-hexachlorodibenzofuran	4.42	7.88	6.06	6.65	0.12
1234678-heptachlorodibenzofuran	25.7	45.7	35.2	38.6	0.69
1234789-heptachlorodibenzofuran	1.92	3.42	2.63	2.89	0.052
Octachlorodibenzofuran	0.18	0.33	0.25	0.28	0.0050
PCB 81	0.0091	0.016	0.013	0.014	0.00025
PCB 77	0.014	0.025	0.019	0.021	0.00038
PCB 123	0.00080	0.0014	0.0011	0.0012	0.000022
PCB 118	0.0095	0.017	0.013	0.014	0.00025
PCB 114	0.00050	0.00088	0.00068	0.00075	0.000013
PCB 105	0.0035	0.0063	0.0048	0.0053	0.000095
PCB 126	8.76	15.6	12.0	13.2	0.24
PCB 167	<0.0011	<0.0020	<0.0015	<0.0017	<0.000030
PCB 156 + PCB 157	0.0020	0.0036	0.0028	0.0031	0.000055
PCB 169	0.80	1.43	1.10	1.21	0.022
PCB 189	<0.00091	<0.0016	<0.0013	<0.0014	<0.000025
Total Dioxins & Furans Only	1306	2326	1790	1965	35.1
Dioxin-Like PCBs	<9.60	<17.1	<13.2	<14.5	<0.26
Total Dioxins & Furans and PCBs	<1315	<2343	<1803	<1979	<35.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 40
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	172	306	235	258	4.61
12378-pentachlorodibenzo-p-dioxin	210	374	288	316	5.65
123478-hexachlorodibenzo-p-dioxin	8.54	15.2	11.7	12.8	0.23
123678-hexachlorodibenzo-p-dioxin	11.8	21.0	16.2	17.8	0.32
123789-hexachlorodibenzo-p-dioxin	19.5	34.7	26.7	29.3	0.52
1234678-heptachlorodibenzo-p-dioxin	4.41	7.85	6.04	6.63	0.12
Octachlorodibenzo-p-dioxin	0.40	0.71	0.54	0.60	0.011
2378-tetrachlorodibenzofuran	124	221	170	187	3.34
12378-pentachlorodibenzofuran	37.4	66.6	51.3	56.3	1.01
23478-pentachlorodibenzofuran	351	624	480	528	9.43
123478-hexachlorodibenzofuran	164	292	224	246	4.40
123678-hexachlorodibenzofuran	102	181	139	153	2.73
234678-hexachlorodibenzofuran	70.0	125	95.9	105	1.88
123789-hexachlorodibenzofuran	4.42	7.88	6.06	6.65	0.12
1234678-heptachlorodibenzofuran	25.7	45.7	35.2	38.6	0.69
1234789-heptachlorodibenzofuran	1.92	3.42	2.63	2.89	0.052
Octachlorodibenzofuran	0.18	0.33	0.25	0.28	0.0050
PCB 81	0.0091	0.016	0.013	0.014	0.00025
PCB 77	0.014	0.025	0.019	0.021	0.00038
PCB 123	0.00080	0.0014	0.0011	0.0012	0.000022
PCB 118	0.0095	0.017	0.013	0.014	0.00025
PCB 114	0.00050	0.00088	0.00068	0.00075	0.000013
PCB 105	0.0035	0.0063	0.0048	0.0053	0.000095
PCB 126	8.76	15.6	12.0	13.2	0.24
PCB 167	0.00094	0.0017	0.0013	0.0014	0.000025
PCB 156 + PCB 157	0.0020	0.0036	0.0028	0.0031	0.000055
PCB 169	0.80	1.43	1.10	1.21	0.022
PCB 189	0.00076	0.0014	0.0010	0.0011	0.000020
Total Dioxins & Furans Only	1306	2326	1790	1965	35.1
Dioxin-Like PCBs	9.60	17.1	13.2	14.5	0.26
Total Dioxins & Furans and PCBs	1315	2343	1803	1979	35.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 41
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 4 - Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<5.0	<0.62	<1.05	<0.84	<0.88	<0.017
12378-pentachlorodibenzo-p-dioxin	17.8	2.21	3.75	2.98	3.14	0.060
123478-hexachlorodibenzo-p-dioxin	60.5	7.51	12.7	10.1	10.7	0.21
123678-hexachlorodibenzo-p-dioxin	145	18.0	30.5	24.3	25.6	0.49
123789-hexachlorodibenzo-p-dioxin	170	21.1	35.8	28.5	30.0	0.58
1234678-heptachlorodibenzo-p-dioxin	407	50.5	85.7	68.2	71.9	1.38
Octachlorodibenzo-p-dioxin	346	43.0	72.8	58.0	61.1	1.17
2378-tetrachlorodibenzofuran	<4.5	<0.56	<0.95	<0.75	<0.79	<0.015
12378-pentachlorodibenzofuran	18.7	2.32	3.94	3.13	3.30	0.063
23478-pentachlorodibenzofuran	<45	<5.59	<9.47	<7.54	<7.95	<0.15
123478-hexachlorodibenzofuran	135	16.8	28.4	22.6	23.8	0.46
123678-hexachlorodibenzofuran	71.9	8.93	15.1	12.0	12.7	0.24
234678-hexachlorodibenzofuran	90.1	11.2	19.0	15.1	15.9	0.31
123789-hexachlorodibenzofuran	<6.7	<0.83	<1.41	<1.12	<1.18	<0.023
1234678-heptachlorodibenzofuran	210	26.1	44.2	35.2	37.1	0.71
1234789-heptachlorodibenzofuran	35.9	4.46	7.56	6.01	6.34	0.12
Octachlorodibenzofuran	88.5	11.0	18.6	14.8	15.6	0.30
PCB 81	<56	<6.95	<11.8	<9.38	<9.89	<0.19
PCB 77	100	12.4	21.1	16.8	17.7	0.34
PCB 123	<51	<6.33	<10.7	<8.54	<9.01	<0.17
PCB 118	1900	236	400	318	335	6.45
PCB 114	<45	<5.59	<9.47	<7.54	<7.95	<0.15
PCB 105	550	68.3	116	92.1	97.1	1.87
PCB 126	<47	<5.84	<9.89	<7.87	<8.30	<0.16
PCB 167	<50	<6.21	<10.5	<8.38	<8.83	<0.17
PCB 156 + PCB 157	<88	<10.9	<18.5	<14.7	<15.5	<0.30
PCB 169	<49	<6.08	<10.3	<8.21	<8.65	<0.17
PCB 189	<32	<3.97	<6.74	<5.36	<5.65	<0.11
Total Dioxins & Furans Only	<1858	<231	<391	<311	<328	<6.30
Dioxin-Like PCBs	<2968	<369	<625	<497	<524	<10.1
Total Dioxins & Furans and PCBs	<4826	<599	<1016	<808	<852	<16.4
Total PCBs	52000	6457	10947	8710	9182	176

Dry Gas Volume Sampled (Rm^3*) :	4.750
Actual Flowrate (m^3/s) :	27.3
Dry Reference Flowrate (Rm^3/s*) :	16.1
Dry Adjusted Flowrate (Rm^3/s**) :	20.3
Wet Reference Flowrate (Rm^3/s*) :	19.2

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 5 - Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<3.5	<0.44	<0.75	<0.60	<0.63	<0.012
12378-pentachlorodibenzo-p-dioxin	15.7	1.98	3.38	2.70	2.82	0.053
123478-hexachlorodibenzo-p-dioxin	51.3	6.48	11.1	8.82	9.22	0.17
123678-hexachlorodibenzo-p-dioxin	135	17.1	29.1	23.2	24.3	0.45
123789-hexachlorodibenzo-p-dioxin	148	18.7	31.9	25.4	26.6	0.50
1234678-heptachlorodibenzo-p-dioxin	361	45.6	77.8	62.0	64.8	1.22
Octachlorodibenzo-p-dioxin	282	35.6	60.8	48.5	50.7	0.95
2378-tetrachlorodibenzofuran	9.8	1.24	2.11	1.68	1.76	0.033
12378-pentachlorodibenzofuran	11.5	1.45	2.48	1.98	2.07	0.039
23478-pentachlorodibenzofuran	30.1	3.81	6.49	5.17	5.41	0.10
123478-hexachlorodibenzofuran	106	13.4	22.8	18.2	19.0	0.36
123678-hexachlorodibenzofuran	52.2	6.60	11.3	8.97	9.38	0.18
234678-hexachlorodibenzofuran	69.3	8.76	14.9	11.9	12.4	0.23
123789-hexachlorodibenzofuran	<4.6	<0.58	<0.99	<0.79	<0.83	<0.015
1234678-heptachlorodibenzofuran	147	18.6	31.7	25.3	26.4	0.49
1234789-heptachlorodibenzofuran	26.0	3.29	5.60	4.47	4.67	0.088
Octachlorodibenzofuran	60.2	7.61	13.0	10.3	10.8	0.20
PCB 81	<47	<5.94	<10.1	<8.08	<8.44	<0.16
PCB 77	92	11.6	19.8	15.8	16.5	0.31
PCB 123	<58	<7.33	<12.5	<9.97	<10.4	<0.20
PCB 118	2300	291	496	395	413	7.74
PCB 114	<51	<6.45	<11.0	<8.76	<9.16	<0.17
PCB 105	690	87.2	148.7	119	123.9	2.32
PCB 126	<53	<6.70	<11.4	<9.11	<9.52	<0.18
PCB 167	<48	<6.07	<10.3	<8.25	<8.62	<0.16
PCB 156 + PCB 157	94	11.9	20.3	16.2	16.9	0.32
PCB 169	<47	<5.94	<10.1	<8.08	<8.44	<0.16
PCB 189	<23	<2.91	<4.96	<3.95	<4.13	<0.077
Total Dioxins & Furans Only	<1513	<191	<326	<260	<272	<5.09
Dioxin-Like PCBs	<3503	<443	<755	<602	<629	<11.8
Total Dioxins & Furans and PCBs	<5016	<634	<1081	<862	<901	<16.9
Total PCBs	53000	6700	11422	9108	9521	178

Dry Gas Volume Sampled (Rm^3*) :	4.640
Actual Flowrate (m^3/s) :	26.6
Dry Reference Flowrate (Rm^3/s*) :	15.6
Dry Adjusted Flowrate (Rm^3/s**) :	19.6
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 43
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 6 - Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<2.9	<0.37	<0.63	<0.50	<0.53	<0.0098
12378-pentachlorodibenzo-p-dioxin	14.0	1.80	3.05	2.43	2.55	0.048
123478-hexachlorodibenzo-p-dioxin	48.6	6.24	10.6	8.44	8.85	0.17
123678-hexachlorodibenzo-p-dioxin	117	15.0	25.5	20.3	21.3	0.40
123789-hexachlorodibenzo-p-dioxin	126	16.2	27.4	21.9	22.9	0.43
1234678-heptachlorodibenzo-p-dioxin	360	46.2	78.4	62.5	65.5	1.22
Octachlorodibenzo-p-dioxin	278	35.7	60.5	48.3	50.6	0.94
2378-tetrachlorodibenzofuran	14.4	1.85	3.14	2.50	2.62	0.049
12378-pentachlorodibenzofuran	10.8	1.39	2.35	1.88	1.97	0.037
23478-pentachlorodibenzofuran	20.3	2.61	4.42	3.53	3.69	0.069
123478-hexachlorodibenzofuran	102	13.1	22.2	17.7	18.6	0.35
123678-hexachlorodibenzofuran	<50	<6.42	<10.9	<8.69	<9.10	<0.17
234678-hexachlorodibenzofuran	67.8	8.70	14.8	11.8	12.3	0.23
123789-hexachlorodibenzofuran	<4.9	<0.63	<1.07	<0.85	<0.89	<0.017
1234678-heptachlorodibenzofuran	143	18.4	31.1	24.8	26.0	0.49
1234789-heptachlorodibenzofuran	26.5	3.40	5.77	4.60	4.82	0.090
Octachlorodibenzofuran	53.3	6.84	11.6	9.26	9.70	0.18
PCB 81	<44	<5.65	<9.58	<7.64	<8.01	<0.15
PCB 77	43	5.52	9.36	7.47	7.83	0.15
PCB 123	<50	<6.42	<10.9	<8.69	<9.10	<0.17
PCB 118	800	103	174	139	146	2.72
PCB 114	<43	<5.52	<9.36	<7.47	<7.83	<0.15
PCB 105	<280	<35.9	<61.0	<48.6	<51.0	<0.95
PCB 126	<45	<5.78	<9.80	<7.82	<8.19	<0.15
PCB 167	<50	<6.42	<10.9	<8.69	<9.10	<0.17
PCB 156 + PCB 157	55	7.06	12.0	9.56	10.0	0.19
PCB 169	<49	<6.29	<10.7	<8.51	<8.92	<0.17
PCB 189	<19	<2.44	<4.14	<3.30	<3.46	<0.065
Total Dioxins & Furans Only	<1440	<185	<313	<250	<262	<4.89
Dioxin-Like PCBs	<1478	<190	<322	<257	<269	<5.02
Total Dioxins & Furans and PCBs	<2918	<374	<635	<507	<531	<9.91
Total PCBs	16000	2054	3484	2780	2912	54.3

Dry Gas Volume Sampled (Rm^3*) :	4.593
Actual Flowrate (m^3/s) :	26.5
Dry Reference Flowrate (Rm^3/s*) :	15.6
Dry Adjusted Flowrate (Rm^3/s**) :	19.6
Wet Reference Flowrate (Rm^3/s*) :	18.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 44
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	<0.62	<0.44	<0.37	<0.48	26.8
12378-pentachlorodibenzo-p-dioxin	2.21	1.98	1.80	2.00	10.4
123478-hexachlorodibenzo-p-dioxin	7.51	6.48	6.24	6.75	10.0
123678-hexachlorodibenzo-p-dioxin	18.0	17.1	15.0	16.7	9.1
123789-hexachlorodibenzo-p-dioxin	21.1	18.7	16.2	18.7	13.2
1234678-heptachlorodibenzo-p-dioxin	50.5	45.6	46.2	47.5	5.6
Octachlorodibenzo-p-dioxin	43.0	35.6	35.7	38.1	11.1
2378-tetrachlorodibenzofuran	<0.56	1.24	1.85	<1.22	53.1
12378-pentachlorodibenzofuran	2.32	1.45	1.39	1.72	30.3
23478-pentachlorodibenzofuran	<5.59	3.81	2.61	<4.00	37.5
123478-hexachlorodibenzofuran	16.8	13.4	13.1	14.4	14.1
123678-hexachlorodibenzofuran	8.93	6.60	<6.42	<7.32	19.1
234678-hexachlorodibenzofuran	11.2	8.76	8.70	9.55	14.9
123789-hexachlorodibenzofuran	<0.83	<0.58	<0.63	<0.68	19.5
1234678-heptachlorodibenzofuran	26.1	18.6	18.4	21.0	20.9
1234789-heptachlorodibenzofuran	4.46	3.29	3.40	3.72	17.4
Octachlorodibenzofuran	11.0	7.61	6.84	8.48	26.0
PCB 81	<6.95	<5.94	<5.65	<6.18	11.1
PCB 77	12.4	11.6	5.52	9.86	38.3
PCB 123	<6.33	<7.33	<6.42	<6.69	8.3
PCB 118	236	291	103	210	46.1
PCB 114	<5.59	<6.45	<5.52	<5.85	8.8
PCB 105	68.3	87.2	<35.9	<63.8	40.6
PCB 126	<5.84	<6.70	<5.78	<6.10	8.5
PCB 167	<6.21	<6.07	<6.42	<6.23	2.8
PCB 156 + PCB 157	<10.9	11.9	7.06	<9.96	25.6
PCB 169	<6.08	<5.94	<6.29	<6.11	2.9
PCB 189	<3.97	<2.91	<2.44	<3.11	25.3
Total Dioxins & Furans Only	<231	<191	<185	<202	12.3
Dioxin-Like PCBs	<369	<443	<190	<334	39.0
Total Dioxins & Furans and PCBs	<599	<634	<374	<536	26.3
Total PCBs	6457	6700	2054	5070	51.6

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Reference Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<1.05	<0.75	<0.63	<0.81	26.7
12378-pentachlorodibenzo-p-dioxin	3.75	3.38	3.05	3.39	10.3
123478-hexachlorodibenzo-p-dioxin	12.7	11.1	10.6	11.5	9.9
123678-hexachlorodibenzo-p-dioxin	30.5	29.1	25.5	28.4	9.2
123789-hexachlorodibenzo-p-dioxin	35.8	31.9	27.4	31.7	13.2
1234678-heptachlorodibenzo-p-dioxin	85.7	77.8	78.4	80.6	5.4
Octachlorodibenzo-p-dioxin	72.8	60.8	60.5	64.7	10.9
2378-tetrachlorodibenzofuran	<0.95	2.11	3.14	<2.06	53.0
12378-pentachlorodibenzofuran	3.94	2.48	2.35	2.92	30.1
23478-pentachlorodibenzofuran	<9.47	6.49	4.42	<6.79	37.4
123478-hexachlorodibenzofuran	28.4	22.8	22.2	24.5	14.0
123678-hexachlorodibenzofuran	15.1	11.3	<10.9	<12.4	19.0
234678-hexachlorodibenzofuran	19.0	14.9	14.8	16.2	14.7
123789-hexachlorodibenzofuran	<1.41	<0.99	<1.07	<1.16	19.3
1234678-heptachlorodibenzofuran	44.2	31.7	31.1	35.7	20.7
1234789-heptachlorodibenzofuran	7.56	5.60	5.77	6.31	17.2
Octachlorodibenzofuran	18.6	13.0	11.6	14.4	25.9
PCB 81	<11.8	<10.1	<9.58	<10.5	11.0
PCB 77	21.1	19.8	9.36	16.7	38.4
PCB 123	<10.7	<12.5	<10.9	<11.4	8.6
PCB 118	400	496	174	357	46.3
PCB 114	<9.47	<11.0	<9.36	<9.94	9.2
PCB 105	116	148.7	<61.0	<108	40.9
PCB 126	<9.89	<11.4	<9.80	<10.4	8.8
PCB 167	<10.5	<10.3	<10.9	<10.6	2.6
PCB 156 + PCB 157	<18.5	20.3	12.0	<16.9	25.8
PCB 169	<10.3	<10.1	<10.7	<10.4	2.6
PCB 189	<6.74	<4.96	<4.14	<5.28	25.2
Total Dioxins & Furans Only	<391	<326	<313	<344	12.1
Dioxin-Like PCBs	<625	<755	<322	<567	39.2
Total Dioxins & Furans and PCBs	<1016	<1081	<635	<911	26.4
Total PCBs	10947	11422	3484	8618	51.7

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Dry Adjusted Concentration Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.84	<0.60	<0.50	<0.65	26.5
12378-pentachlorodibenzo-p-dioxin	2.98	2.70	2.43	2.70	10.2
123478-hexachlorodibenzo-p-dioxin	10.1	8.82	8.44	9.13	9.7
123678-hexachlorodibenzo-p-dioxin	24.3	23.2	20.3	22.6	9.1
123789-hexachlorodibenzo-p-dioxin	28.5	25.4	21.9	25.3	13.0
1234678-heptachlorodibenzo-p-dioxin	68.2	62.0	62.5	64.3	5.3
Octachlorodibenzo-p-dioxin	58.0	48.5	48.3	51.6	10.7
2378-tetrachlorodibenzofuran	<0.75	1.68	2.50	<1.65	53.1
12378-pentachlorodibenzofuran	3.13	1.98	1.88	2.33	30.0
23478-pentachlorodibenzofuran	<7.54	5.17	3.53	<5.41	37.3
123478-hexachlorodibenzofuran	22.6	18.2	17.7	19.5	13.8
123678-hexachlorodibenzofuran	12.0	8.97	<8.69	<9.90	18.8
234678-hexachlorodibenzofuran	15.1	11.9	11.8	12.9	14.5
123789-hexachlorodibenzofuran	<1.12	<0.79	<0.85	<0.92	19.2
1234678-heptachlorodibenzofuran	35.2	25.3	24.8	28.4	20.6
1234789-heptachlorodibenzofuran	6.01	4.47	4.60	5.03	17.0
Octachlorodibenzofuran	14.8	10.3	9.26	11.5	25.7
PCB 81	<9.38	<8.08	<7.64	<8.37	10.8
PCB 77	16.8	15.8	7.47	13.3	38.3
PCB 123	<8.54	<9.97	<8.69	<9.07	8.6
PCB 118	318	395	139	284	46.3
PCB 114	<7.54	<8.76	<7.47	<7.92	9.2
PCB 105	92.1	119	<48.6	<86.4	40.8
PCB 126	<7.87	<9.11	<7.82	<8.27	8.8
PCB 167	<8.38	<8.25	<8.69	<8.44	2.7
PCB 156 + PCB 157	<14.7	16.2	9.56	<13.5	25.8
PCB 169	<8.21	<8.08	<8.51	<8.27	2.7
PCB 189	<5.36	<3.95	<3.30	<4.20	25.0
Total Dioxins & Furans Only	<311	<260	<250	<274	12.0
Dioxin-Like PCBs	<497	<602	<257	<452	39.2
Total Dioxins & Furans and PCBs	<808	<862	<507	<726	26.4
Total PCBs	8710	9108	2780	6866	51.6

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Wet Reference Concentration				Coefficient of Variation
	Test No. 4	Test No. 5	Test No. 6	Average	
	pg/Rm³*	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.88	<0.63	<0.53	<0.68	26.9
12378-pentachlorodibenzo-p-dioxin	3.14	2.82	2.55	2.84	10.5
123478-hexachlorodibenzo-p-dioxin	10.7	9.22	8.85	9.58	10.1
123678-hexachlorodibenzo-p-dioxin	25.6	24.3	21.3	23.7	9.3
123789-hexachlorodibenzo-p-dioxin	30.0	26.6	22.9	26.5	13.4
1234678-heptachlorodibenzo-p-dioxin	71.9	64.8	65.5	67.4	5.7
Octachlorodibenzo-p-dioxin	61.1	50.7	50.6	54.1	11.2
2378-tetrachlorodibenzofuran	<0.79	1.76	2.62	<1.73	53.0
12378-pentachlorodibenzofuran	3.30	2.07	1.97	2.44	30.4
23478-pentachlorodibenzofuran	<7.95	5.41	3.69	<5.68	37.6
123478-hexachlorodibenzofuran	23.8	19.0	18.6	20.5	14.2
123678-hexachlorodibenzofuran	12.7	9.38	<9.10	<10.4	19.3
234678-hexachlorodibenzofuran	15.9	12.4	12.3	13.6	15.0
123789-hexachlorodibenzofuran	<1.18	<0.83	<0.89	<0.97	19.6
1234678-heptachlorodibenzofuran	37.1	26.4	26.0	29.8	21.0
1234789-heptachlorodibenzofuran	6.34	4.67	4.82	5.28	17.5
Octachlorodibenzofuran	15.6	10.8	9.70	12.0	26.1
PCB 81	<9.89	<8.44	<8.01	<8.78	11.2
PCB 77	17.7	16.5	7.83	14.0	38.4
PCB 123	<9.01	<10.4	<9.10	<9.51	8.3
PCB 118	335	413	146	298	46.2
PCB 114	<7.95	<9.16	<7.83	<8.31	8.9
PCB 105	97.1	123.9	<51.0	<90.7	40.7
PCB 126	<8.30	<9.52	<8.19	<8.67	8.5
PCB 167	<8.83	<8.62	<9.10	<8.85	2.7
PCB 156 + PCB 157	<15.5	16.9	10.0	<14.1	25.8
PCB 169	<8.65	<8.44	<8.92	<8.67	2.8
PCB 189	<5.65	<4.13	<3.46	<4.41	25.4
Total Dioxins & Furans Only	<328	<272	<262	<287	12.4
Dioxin-Like PCBs	<524	<629	<269	<474	39.1
Total Dioxins & Furans and PCBs	<852	<901	<531	<761	26.4
Total PCBs	9182	9521	2912	7205	51.7

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Emission Rate Test No. 4	Test No. 5	Test No. 6	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	<0.017	<0.012	<0.0098	<0.013	28.6
12378-pentachlorodibenzo-p-dioxin	0.060	0.053	0.048	0.054	12.1
123478-hexachlorodibenzo-p-dioxin	0.21	0.17	0.17	0.18	11.8
123678-hexachlorodibenzo-p-dioxin	0.49	0.45	0.40	0.45	10.6
123789-hexachlorodibenzo-p-dioxin	0.58	0.50	0.43	0.50	14.9
1234678-heptachlorodibenzo-p-dioxin	1.38	1.22	1.22	1.27	7.4
Octachlorodibenzo-p-dioxin	1.17	0.95	0.94	1.02	12.8
2378-tetrachlorodibenzofuran	<0.015	0.033	0.049	<0.032	52.0
12378-pentachlorodibenzofuran	0.063	0.039	0.037	0.046	32.2
23478-pentachlorodibenzofuran	<0.15	0.10	0.069	<0.11	39.2
123478-hexachlorodibenzofuran	0.46	0.36	0.35	0.39	15.9
123678-hexachlorodibenzofuran	0.24	0.18	<0.17	<0.20	21.0
234678-hexachlorodibenzofuran	0.31	0.23	0.23	0.26	16.7
123789-hexachlorodibenzofuran	<0.023	<0.015	<0.017	<0.018	21.3
1234678-heptachlorodibenzofuran	0.71	0.49	0.49	0.56	22.8
1234789-heptachlorodibenzofuran	0.12	0.088	0.090	0.10	19.2
Octachlorodibenzofuran	0.30	0.20	0.18	0.23	27.9
PCB 81	<0.19	<0.16	<0.15	<0.17	12.9
PCB 77	0.34	0.31	0.15	0.27	39.3
PCB 123	<0.17	<0.20	<0.17	<0.18	7.7
PCB 118	6.45	7.74	2.72	5.64	46.3
PCB 114	<0.15	<0.17	<0.15	<0.16	8.5
PCB 105	1.87	2.32	<0.95	<1.71	40.8
PCB 126	<0.16	<0.18	<0.15	<0.16	8.1
PCB 167	<0.17	<0.16	<0.17	<0.17	2.8
PCB 156 + PCB 157	<0.30	0.32	0.19	<0.27	26.3
PCB 169	<0.17	<0.16	<0.17	<0.16	2.9
PCB 189	<0.11	<0.077	<0.065	<0.084	27.1
Total Dioxins & Furans Only	<6.30	<5.09	<4.89	<5.43	14.1
Dioxin-Like PCBs	<10.1	<11.8	<5.02	<8.96	39.3
Total Dioxins & Furans and PCBs	<16.4	<16.9	<9.91	<14.4	27.0
Total PCBs	176	178	54.3	136	52.1

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 49
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.48	<0.81	<0.65	<0.68	<0.013
12378-pentachlorodibenzo-p-dioxin	2.00	3.39	2.70	2.84	0.054
123478-hexachlorodibenzo-p-dioxin	6.75	11.5	9.13	9.58	0.18
123678-hexachlorodibenzo-p-dioxin	16.7	28.4	22.6	23.7	0.45
123789-hexachlorodibenzo-p-dioxin	18.7	31.7	25.3	26.5	0.50
1234678-heptachlorodibenzo-p-dioxin	47.5	80.6	64.3	67.4	1.27
Octachlorodibenzo-p-dioxin	38.1	64.7	51.6	54.1	1.02
2378-tetrachlorodibenzofuran	<1.22	<2.06	<1.65	<1.73	<0.032
12378-pentachlorodibenzofuran	1.72	2.92	2.33	2.44	0.046
23478-pentachlorodibenzofuran	<4.00	<6.79	<5.41	<5.68	<0.11
123478-hexachlorodibenzofuran	14.4	24.5	19.5	20.5	0.39
123678-hexachlorodibenzofuran	<7.32	<12.4	<9.90	<10.4	<0.20
234678-hexachlorodibenzofuran	9.55	16.2	12.9	13.6	0.26
123789-hexachlorodibenzofuran	<0.68	<1.16	<0.92	<0.97	<0.018
1234678-heptachlorodibenzofuran	21.0	35.7	28.4	29.8	0.56
1234789-heptachlorodibenzofuran	3.72	6.31	5.03	5.28	0.10
Octachlorodibenzofuran	8.48	14.4	11.5	12.0	0.23
PCB 81	<6.18	<10.5	<8.37	<8.78	<0.17
PCB 77	9.86	16.7	13.3	14.0	0.27
PCB 123	<6.69	<11.4	<9.07	<9.51	<0.18
PCB 118	210	357	284	298	5.64
PCB 114	<5.85	<9.94	<7.92	<8.31	<0.16
PCB 105	<63.8	<108	<86.4	<90.7	<1.71
PCB 126	<6.10	<10.4	<8.27	<8.67	<0.16
PCB 167	<6.23	<10.6	<8.44	<8.85	<0.17
PCB 156 + PCB 157	<9.96	<16.9	<13.5	<14.1	<0.27
PCB 169	<6.11	<10.4	<8.27	<8.67	<0.16
PCB 189	<3.11	<5.28	<4.20	<4.41	<0.084
Total Dioxins & Furans Only	<202	<344	<274	<287	<5.43
Dioxin-Like PCBs	<334	<567	<452	<474	<8.96
Total Dioxins & Furans and PCBs	<536	<911	<726	<761	<14.4
Total PCBs	5070	8618	6866	7205	136

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 50
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 4 pg TEQ/m³	Test No. 5 pg TEQ/m³	Test No. 6 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.62	<0.44	<0.37	<0.48
12378-pentachlorodibenzo-p-dioxin	1.000	2.21	1.98	1.80	2.00
123478-hexachlorodibenzo-p-dioxin	0.100	0.75	0.65	0.62	0.67
123678-hexachlorodibenzo-p-dioxin	0.100	1.80	1.71	1.50	1.67
123789-hexachlorodibenzo-p-dioxin	0.100	2.11	1.87	1.62	1.87
1234678-heptachlorodibenzo-p-dioxin	0.010	0.51	0.46	0.46	0.47
Octachlorodibenzo-p-dioxin	0.0003	0.013	0.011	0.011	0.011
2378-tetrachlorodibenzofuran	0.100	<0.056	0.12	0.18	<0.12
12378-pentachlorodibenzofuran	0.030	0.070	0.044	0.042	0.052
23478-pentachlorodibenzofuran	0.300	<1.68	1.14	0.78	<1.20
123478-hexachlorodibenzofuran	0.100	1.68	1.34	1.31	1.44
123678-hexachlorodibenzofuran	0.100	0.89	0.66	<0.64	<0.73
234678-hexachlorodibenzofuran	0.100	1.12	0.88	0.87	0.96
123789-hexachlorodibenzofuran	0.100	<0.083	<0.058	<0.063	<0.068
1234678-heptachlorodibenzofuran	0.010	0.26	0.19	0.18	0.21
1234789-heptachlorodibenzofuran	0.010	0.045	0.033	0.034	0.037
Octachlorodibenzofuran	0.0003	0.0033	0.0023	0.0021	0.0025
PCB 81	0.0003	<0.0021	<0.0018	<0.0017	<0.0019
PCB 77	0.0001	0.0012	0.0012	0.00055	0.00099
PCB 123	0.00003	<0.00019	<0.00022	<0.00019	<0.00020
PCB 118	0.00003	0.0071	0.0087	0.0031	0.0063
PCB 114	0.00003	<0.00017	<0.00019	<0.00017	<0.00018
PCB 105	0.00003	0.0020	0.0026	<0.0011	<0.0019
PCB 126	0.100	<0.58	<0.67	<0.58	<0.61
PCB 167	0.00003	<0.00019	<0.00018	<0.00019	<0.00019
PCB 156 + PCB 157	0.00003	<0.00033	0.00036	0.00021	<0.00030
PCB 169	0.030	<0.18	<0.18	<0.19	<0.18
PCB 189	0.00003	<0.00012	<0.000087	<0.000073	<0.000093
Total Dioxins & Furans Only		<13.9	<11.6	<10.5	<12.0
Dioxin-Like PCBs		<0.78	<0.86	<0.77	<0.81
Total Dioxins & Furans and PCBs		<14.7	<12.4	<11.3	<12.8

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 51
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<1.05	<0.75	<0.63	<0.81
12378-pentachlorodibenzo-p-dioxin	1.000	3.75	3.38	3.05	3.39
123478-hexachlorodibenzo-p-dioxin	0.100	1.27	1.11	1.06	1.15
123678-hexachlorodibenzo-p-dioxin	0.100	3.05	2.91	2.55	2.84
123789-hexachlorodibenzo-p-dioxin	0.100	3.58	3.19	2.74	3.17
1234678-heptachlorodibenzo-p-dioxin	0.010	0.86	0.78	0.78	0.81
Octachlorodibenzo-p-dioxin	0.0003	0.022	0.018	0.018	0.019
2378-tetrachlorodibenzofuran	0.100	<0.095	0.21	0.31	<0.21
12378-pentachlorodibenzofuran	0.030	0.12	0.074	0.071	0.088
23478-pentachlorodibenzofuran	0.300	<2.84	1.95	1.33	<2.04
123478-hexachlorodibenzofuran	0.100	2.84	2.28	2.22	2.45
123678-hexachlorodibenzofuran	0.100	1.51	1.13	<1.09	<1.24
234678-hexachlorodibenzofuran	0.100	1.90	1.49	1.48	1.62
123789-hexachlorodibenzofuran	0.100	<0.14	<0.099	<0.11	<0.12
1234678-heptachlorodibenzofuran	0.010	0.44	0.32	0.31	0.36
1234789-heptachlorodibenzofuran	0.010	0.076	0.056	0.058	0.063
Octachlorodibenzofuran	0.0003	0.0056	0.0039	0.0035	0.0043
PCB 81	0.0003	<0.0035	<0.0030	<0.0029	<0.0031
PCB 77	0.0001	0.0021	0.0020	0.00094	0.0017
PCB 123	0.00003	<0.00032	<0.00038	<0.00033	<0.00034
PCB 118	0.00003	0.012	0.015	0.0052	0.011
PCB 114	0.00003	<0.00028	<0.00033	<0.00028	<0.00030
PCB 105	0.00003	0.0035	0.0045	<0.0018	<0.0033
PCB 126	0.100	<0.99	<1.14	<0.98	<1.04
PCB 167	0.00003	<0.00032	<0.00031	<0.00033	<0.00032
PCB 156 + PCB 157	0.00003	<0.00056	0.00061	0.00036	<0.00051
PCB 169	0.030	<0.31	<0.30	<0.32	<0.31
PCB 189	0.00003	<0.00020	<0.00015	<0.00012	<0.00016
Total Dioxins & Furans Only		<23.6	<19.7	<17.8	<20.4
Dioxin-Like PCBs		<1.32	<1.47	<1.31	<1.37
Total Dioxins & Furans and PCBs		<24.9	<21.2	<19.1	<21.7

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 52
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.84	<0.60	<0.50	<0.65
12378-pentachlorodibenzo-p-dioxin	1.000	2.98	2.70	2.43	2.70
123478-hexachlorodibenzo-p-dioxin	0.100	1.01	0.88	0.84	0.91
123678-hexachlorodibenzo-p-dioxin	0.100	2.43	2.32	2.03	2.26
123789-hexachlorodibenzo-p-dioxin	0.100	2.85	2.54	2.19	2.53
1234678-heptachlorodibenzo-p-dioxin	0.010	0.68	0.62	0.63	0.64
Octachlorodibenzo-p-dioxin	0.0003	0.017	0.015	0.014	0.015
2378-tetrachlorodibenzofuran	0.100	<0.075	0.17	0.25	<0.16
12378-pentachlorodibenzofuran	0.030	0.094	0.059	0.056	0.070
23478-pentachlorodibenzofuran	0.300	<2.26	1.55	1.06	<1.62
123478-hexachlorodibenzofuran	0.100	2.26	1.82	1.77	1.95
123678-hexachlorodibenzofuran	0.100	1.20	0.90	<0.87	<0.99
234678-hexachlorodibenzofuran	0.100	1.51	1.19	1.18	1.29
123789-hexachlorodibenzofuran	0.100	<0.11	<0.079	<0.085	<0.092
1234678-heptachlorodibenzofuran	0.010	0.35	0.25	0.25	0.28
1234789-heptachlorodibenzofuran	0.010	0.060	0.045	0.046	0.050
Octachlorodibenzofuran	0.0003	0.0044	0.0031	0.0028	0.0034
PCB 81	0.0003	<0.0028	<0.0024	<0.0023	<0.0025
PCB 77	0.0001	0.0017	0.0016	0.00075	0.0013
PCB 123	0.00003	<0.00026	<0.00030	<0.00026	<0.00027
PCB 118	0.00003	0.0095	0.012	0.0042	0.0085
PCB 114	0.00003	<0.00023	<0.00026	<0.00022	<0.00024
PCB 105	0.00003	0.0028	0.0036	<0.0015	<0.0026
PCB 126	0.100	<0.79	<0.91	<0.78	<0.83
PCB 167	0.00003	<0.00025	<0.00025	<0.00026	<0.00025
PCB 156 + PCB 157	0.00003	<0.00044	0.00048	0.00029	<0.00040
PCB 169	0.030	<0.25	<0.24	<0.26	<0.25
PCB 189	0.00003	<0.00016	<0.00012	<0.000099	<0.00013
Total Dioxins & Furans Only		<18.7	<15.7	<14.2	<16.2
Dioxin-Like PCBs		<1.05	<1.17	<1.05	<1.09
Total Dioxins & Furans and PCBs		<19.8	<16.9	<15.3	<17.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 53
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.84	<0.60	<0.50	<0.65
12378-pentachlorodibenzo-p-dioxin	0.500	1.49	1.35	1.22	1.35
123478-hexachlorodibenzo-p-dioxin	0.100	1.01	0.88	0.84	0.91
123678-hexachlorodibenzo-p-dioxin	0.100	2.43	2.32	2.03	2.26
123789-hexachlorodibenzo-p-dioxin	0.100	2.85	2.54	2.19	2.53
1234678-heptachlorodibenzo-p-dioxin	0.010	0.68	0.62	0.63	0.64
Octachlorodibenzo-p-dioxin	0.001	0.058	0.048	0.048	0.052
2378-tetrachlorodibenzofuran	0.100	<0.075	0.17	0.25	<0.16
12378-pentachlorodibenzofuran	0.050	0.16	0.099	0.094	0.12
23478-pentachlorodibenzofuran	0.500	<3.77	2.59	1.76	<2.71
123478-hexachlorodibenzofuran	0.100	2.26	1.82	1.77	1.95
123678-hexachlorodibenzofuran	0.100	1.20	0.90	<0.87	<0.99
234678-hexachlorodibenzofuran	0.100	1.51	1.19	1.18	1.29
123789-hexachlorodibenzofuran	0.100	<0.11	<0.079	<0.085	<0.092
1234678-heptachlorodibenzofuran	0.010	0.35	0.25	0.25	0.28
1234789-heptachlorodibenzofuran	0.010	0.060	0.045	0.046	0.050
Octachlorodibenzofuran	0.001	0.015	0.010	0.0093	0.011
Total Dioxins & Furans		<18.9	<15.5	<13.8	<16.1
In-Stack Emission Limit					60

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 54
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 4 pg TEQ/Rm³*	Test No. 5 pg TEQ/Rm³*	Test No. 6 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.88	<0.63	<0.53	<0.68
12378-pentachlorodibenzo-p-dioxin	1.000	3.14	2.82	2.55	2.84
123478-hexachlorodibenzo-p-dioxin	0.100	1.07	0.92	0.88	0.96
123678-hexachlorodibenzo-p-dioxin	0.100	2.56	2.43	2.13	2.37
123789-hexachlorodibenzo-p-dioxin	0.100	3.00	2.66	2.29	2.65
1234678-heptachlorodibenzo-p-dioxin	0.010	0.72	0.65	0.66	0.67
Octachlorodibenzo-p-dioxin	0.0003	0.018	0.015	0.015	0.016
2378-tetrachlorodibenzofuran	0.100	<0.079	0.18	0.26	<0.17
12378-pentachlorodibenzofuran	0.030	0.099	0.062	0.059	0.073
23478-pentachlorodibenzofuran	0.300	<2.38	1.62	1.11	<1.70
123478-hexachlorodibenzofuran	0.100	2.38	1.90	1.86	2.05
123678-hexachlorodibenzofuran	0.100	1.27	0.94	<0.91	<1.04
234678-hexachlorodibenzofuran	0.100	1.59	1.24	1.23	1.36
123789-hexachlorodibenzofuran	0.100	<0.12	<0.083	<0.089	<0.097
1234678-heptachlorodibenzofuran	0.010	0.37	0.26	0.26	0.30
1234789-heptachlorodibenzofuran	0.010	0.063	0.047	0.048	0.053
Octachlorodibenzofuran	0.0003	0.0047	0.0032	0.0029	0.0036
PCB 81	0.0003	<0.0030	<0.0025	<0.0024	<0.0026
PCB 77	0.0001	0.0018	0.0017	0.00078	0.0014
PCB 123	0.00003	<0.00027	<0.00031	<0.00027	<0.00029
PCB 118	0.00003	0.010	0.012	0.0044	0.0089
PCB 114	0.00003	<0.00024	<0.00027	<0.00023	<0.00025
PCB 105	0.00003	0.0029	0.0037	<0.0015	<0.0027
PCB 126	0.100	<0.83	<0.95	<0.82	<0.87
PCB 167	0.00003	<0.00026	<0.00026	<0.00027	<0.00027
PCB 156 + PCB 157	0.00003	<0.00047	0.00051	0.00030	<0.00042
PCB 169	0.030	<0.26	<0.25	<0.27	<0.26
PCB 189	0.00003	<0.00017	<0.00012	<0.00010	<0.00013
Total Dioxins & Furans Only		<19.8	<16.5	<14.9	<17.0
Dioxin-Like PCBs		<1.11	<1.23	<1.10	<1.14
Total Dioxins & Furans and PCBs		<20.9	<17.7	<16.0	<18.2

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 55
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 4 ng TEQ/s	Test No. 5 ng TEQ/s	Test No. 6 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.017	<0.012	<0.0098	<0.013
12378-pentachlorodibenzo-p-dioxin	1.000	0.060	0.053	0.048	0.054
123478-hexachlorodibenzo-p-dioxin	0.100	0.021	0.017	0.017	0.018
123678-hexachlorodibenzo-p-dioxin	0.100	0.049	0.045	0.040	0.045
123789-hexachlorodibenzo-p-dioxin	0.100	0.058	0.050	0.043	0.050
1234678-heptachlorodibenzo-p-dioxin	0.010	0.014	0.012	0.012	0.013
Octachlorodibenzo-p-dioxin	0.0003	0.00035	0.00028	0.00028	0.00031
2378-tetrachlorodibenzofuran	0.100	<0.0015	0.0033	0.0049	<0.0032
12378-pentachlorodibenzofuran	0.030	0.0019	0.0012	0.0011	0.0014
23478-pentachlorodibenzofuran	0.300	<0.046	0.030	0.021	<0.032
123478-hexachlorodibenzofuran	0.100	0.046	0.036	0.035	0.039
123678-hexachlorodibenzofuran	0.100	0.024	0.018	<0.017	<0.020
234678-hexachlorodibenzofuran	0.100	0.031	0.023	0.023	0.026
123789-hexachlorodibenzofuran	0.100	<0.0023	<0.0015	<0.0017	<0.0018
1234678-heptachlorodibenzofuran	0.010	0.0071	0.0049	0.0049	0.0056
1234789-heptachlorodibenzofuran	0.010	0.0012	0.00088	0.00090	0.0010
Octachlorodibenzofuran	0.0003	0.000090	0.000061	0.000054	0.000068
PCB 81	0.0003	<0.000057	<0.000047	<0.000045	<0.000050
PCB 77	0.0001	0.000034	0.000031	0.000015	0.000027
PCB 123	0.00003	<0.0000052	<0.0000059	<0.0000051	<0.0000054
PCB 118	0.00003	0.00019	0.00023	0.000082	0.00017
PCB 114	0.00003	<0.0000046	<0.0000052	<0.0000044	<0.0000047
PCB 105	0.00003	0.000056	0.000070	<0.000029	<0.000051
PCB 126	0.100	<0.016	<0.018	<0.015	<0.016
PCB 167	0.00003	<0.0000051	<0.0000048	<0.0000051	<0.0000050
PCB 156 + PCB 157	0.00003	<0.0000090	0.0000095	0.0000056	<0.0000080
PCB 169	0.030	<0.0050	<0.0047	<0.0050	<0.0049
PCB 189	0.00003	<0.0000033	<0.0000023	<0.0000019	<0.0000025
Total Dioxins & Furans Only		<0.38	<0.31	<0.28	<0.32
Dioxin-Like PCBs		<0.021	<0.023	<0.020	<0.022
Total Dioxins & Furans and PCBs		<0.40	<0.33	<0.30	<0.34

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 56
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.48	<0.81	<0.65	<0.68	<0.013
12378-pentachlorodibenzo-p-dioxin	2.00	3.39	2.70	2.84	0.054
123478-hexachlorodibenzo-p-dioxin	0.67	1.15	0.91	0.96	0.018
123678-hexachlorodibenzo-p-dioxin	1.67	2.84	2.26	2.37	0.045
123789-hexachlorodibenzo-p-dioxin	1.87	3.17	2.53	2.65	0.050
1234678-heptachlorodibenzo-p-dioxin	0.47	0.81	0.64	0.67	0.013
Octachlorodibenzo-p-dioxin	0.011	0.019	0.015	0.016	0.00031
2378-tetrachlorodibenzofuran	<0.12	<0.21	<0.16	<0.17	<0.0032
12378-pentachlorodibenzofuran	0.052	0.088	0.070	0.073	0.0014
23478-pentachlorodibenzofuran	<1.20	<2.04	<1.62	<1.70	<0.032
123478-hexachlorodibenzofuran	1.44	2.45	1.95	2.05	0.039
123678-hexachlorodibenzofuran	<0.73	<1.24	<0.99	<1.04	<0.020
234678-hexachlorodibenzofuran	0.96	1.62	1.29	1.36	0.026
123789-hexachlorodibenzofuran	<0.068	<0.12	<0.092	<0.097	<0.0018
1234678-heptachlorodibenzofuran	0.21	0.36	0.28	0.30	0.0056
1234789-heptachlorodibenzofuran	0.037	0.063	0.050	0.053	0.0010
Octachlorodibenzofuran	0.0025	0.0043	0.0034	0.0036	0.000068
PCB 81	<0.0019	<0.0031	<0.0025	<0.0026	<0.000050
PCB 77	0.00099	0.0017	0.0013	0.0014	0.000027
PCB 123	<0.00020	<0.00034	<0.00027	<0.00029	<0.0000054
PCB 118	0.0063	0.011	0.0085	0.0089	0.00017
PCB 114	<0.00018	<0.00030	<0.00024	<0.00025	<0.0000047
PCB 105	<0.0019	<0.0033	<0.0026	<0.0027	<0.000051
PCB 126	<0.61	<1.04	<0.83	<0.87	<0.016
PCB 167	<0.00019	<0.00032	<0.00025	<0.00027	<0.0000050
PCB 156 + PCB 157	<0.00030	<0.00051	<0.00040	<0.00042	<0.0000080
PCB 169	<0.18	<0.31	<0.25	<0.26	<0.0049
PCB 189	<0.000093	<0.00016	<0.00013	<0.00013	<0.0000025
Total Dioxins & Furans Only	<12.0	<20.4	<16.2	<17.0	<0.32
Dioxin-Like PCBs	<0.81	<1.37	<1.09	<1.14	<0.022
Total Dioxins & Furans and PCBs	<12.8	<21.7	<17.3	<18.2	<0.34

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 57
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.24	<0.41	<0.32	<0.34	<0.0064
12378-pentachlorodibenzo-p-dioxin	2.00	3.39	2.70	2.84	0.054
123478-hexachlorodibenzo-p-dioxin	0.67	1.15	0.91	0.96	0.018
123678-hexachlorodibenzo-p-dioxin	1.67	2.84	2.26	2.37	0.045
123789-hexachlorodibenzo-p-dioxin	1.87	3.17	2.53	2.65	0.050
1234678-heptachlorodibenzo-p-dioxin	0.47	0.81	0.64	0.67	0.013
Octachlorodibenzo-p-dioxin	0.011	0.019	0.015	0.016	0.00031
2378-tetrachlorodibenzofuran	<0.11	<0.19	<0.15	<0.16	<0.0030
12378-pentachlorodibenzofuran	0.052	0.088	0.070	0.073	0.0014
23478-pentachlorodibenzofuran	<0.92	<1.56	<1.25	<1.31	<0.025
123478-hexachlorodibenzofuran	1.44	2.45	1.95	2.05	0.039
123678-hexachlorodibenzofuran	<0.62	<1.06	<0.85	<0.89	<0.017
234678-hexachlorodibenzofuran	0.96	1.62	1.29	1.36	0.026
123789-hexachlorodibenzofuran	<0.034	<0.058	<0.046	<0.048	<0.00091
1234678-heptachlorodibenzofuran	0.21	0.36	0.28	0.30	0.0056
1234789-heptachlorodibenzofuran	0.037	0.063	0.050	0.053	0.0010
Octachlorodibenzofuran	0.0025	0.0043	0.0034	0.0036	0.000068
PCB 81	0.00093	0.0016	0.0013	0.0013	0.000025
PCB 77	0.00099	0.0017	0.0013	0.0014	0.000027
PCB 123	0.00010	0.00017	0.00014	0.00014	0.0000027
PCB 118	0.0063	0.011	0.0085	0.0089	0.00017
PCB 114	0.000088	0.00015	0.00012	0.00012	0.0000024
PCB 105	0.0017	0.0029	0.0024	0.0025	0.000047
PCB 126	0.31	0.52	0.41	0.43	0.0082
PCB 167	0.000093	0.00016	0.00013	0.00013	0.0000025
PCB 156 + PCB 157	0.00024	0.00041	0.00033	0.00035	0.0000065
PCB 169	0.092	0.16	0.12	0.13	0.0025
PCB 189	0.000047	0.000079	0.000063	0.000066	0.0000013
Total Dioxins & Furans Only	11.3	19.2	15.3	16.1	0.30
Dioxin-Like PCBs	0.41	0.69	0.55	0.58	0.011
Total Dioxins & Furans and PCBs	11.7	19.9	15.9	16.7	0.31

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 58
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Blank Dioxin and Furan Specific Isomer Analyses
Medium Carbon Feed Rate with VLN on Air Mode

Specific Isomer	Blank Train pg	Laboratory Blank pg
2378-tetrachlorodibenzo-p-dioxin	<3.4	<2.9
12378-pentachlorodibenzo-p-dioxin	<3.7	<3.2
123478-hexachlorodibenzo-p-dioxin	<2.8	<4.3
123678-hexachlorodibenzo-p-dioxin	<2.8	<4.3
123789-hexachlorodibenzo-p-dioxin	<2.6	<4.0
1234678-heptachlorodibenzo-p-dioxin	3.6	<3.8
Octachlorodibenzo-p-dioxin	37.3	13.2
2378-tetrachlorodibenzofuran	<3.2	<3.9
12378-pentachlorodibenzofuran	<3.1	<2.7
23478-pentachlorodibenzofuran	<3.1	<2.7
123478-hexachlorodibenzofuran	<3.4	<3.1
123678-hexachlorodibenzofuran	<3.3	<2.9
234678-hexachlorodibenzofuran	<3.6	<3.2
123789-hexachlorodibenzofuran	<3.7	<3.4
1234678-heptachlorodibenzofuran	3.6	3.9
1234789-heptachlorodibenzofuran	<2.8	<4.0
Octachlorodibenzofuran	4.5	5.2
PCB 81	<18	<18
PCB 77	<18	<18
PCB 123	<14	<9.8
PCB 118	56	<8.8
PCB 114	<13	<8.5
PCB 105	<15	<8.9
PCB 126	<13	<8.9
PCB 167	<13	<7.8
PCB 156 + PCB 157	<13	<7.2
PCB 169	<13	<7.7
PCB 189	<17	<13
Total Dioxins & Furans Only	<90.5	<71
Dioxin-Like PCBs	<203	<117
Total Dioxins & Furans and PCBs	<294	<187
Total PCBs	980	-

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

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APPENDIX 6

Data Tables for Boiler No. 2
with Medium Carbon Feed Rate and VLN on Gas Mode
(54 pages)

TABLE 1
Covanta
Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate and VLN on Gas Mode
Test Schedule

Quench Inlet

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
8	November 4, 2016	8:35	12:14	180
9	November 4, 2016	13:49	17:29	180

APC Outlet

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
8	November 4, 2016	8:30	12:41	240
9	November 4, 2016	13:43	17:55	240

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate and VLN on Gas Mode
Stack Gas Sampling Parameters

Quench Inlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
8	0.846	0.978	5.98	3.004	101.8
9	0.846	0.978	5.98	3.022	99.8

APC Outlet

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
8	0.848	0.989	6.47	4.737	101.1
9	0.848	0.989	6.47	4.921	100.4

* Dry at 25°C and 1 atmosphere

TABLE 3
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate and VLN on Gas Mode
Stack Gas Physical Parameters

Quench Inlet

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
8	168	17.8	17.7	-0.62	100.4	11.2	7.20
9	170	15.9	17.8	-0.62	100.2	10.8	7.51
Average	169	16.9	17.7	-0.62	100.3	11.0	7.36

APC Outlet

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Static Pressure kPa	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
8	139	17.7	17.1	-2.37	98.6	11.2	8.01
9	140	16.3	17.6	-2.37	98.4	10.8	8.41
Average	139	17.0	17.4	-2.37	98.5	11.0	8.21

* Dry basis, measured by the DYEC CEMS

TABLE 4
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate and VLN on Gas Mode
Stack Gas Volumetric Flowrates

Quench Inlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
8	26.1	14.4	19.9	17.5
9	26.3	14.7	19.9	17.5
Average	26.2	14.5	19.9	17.5

APC Outlet

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
8	25.3	14.6	19.1	17.8
9	26.1	15.3	19.3	18.3
Average	25.7	15.0	19.2	18.0

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 8 - Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	3220	0.59	1.07	0.78	0.88	15.4
Pentachlorodibenzo-p-dioxins	3030	0.56	1.01	0.73	0.83	14.5
Hexachlorodibenzo-p-dioxins	2370	0.44	0.79	0.57	0.65	11.4
Heptachlorodibenzo-p-dioxins	2520	0.46	0.84	0.61	0.69	12.1
Octachlorodibenzo-p-dioxin	2890	0.53	0.96	0.70	0.79	13.9
Total	14030	2.58	4.67	3.38	3.84	67.3

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	92400	17.0	30.8	22.3	25.3	443
Pentachlorodibenzofurans	37400	6.87	12.5	9.01	10.2	179
Hexachlorodibenzofurans	10700	1.97	3.56	2.58	2.93	51.3
Heptachlorodibenzofurans	5170	0.95	1.72	1.25	1.42	24.8
Octachlorodibenzofuran	618	0.11	0.21	0.15	0.17	2.96
Total	146288	26.9	48.7	35.2	40.1	701

Dry Gas Volume Sampled (Rm^3*) :	3.004
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	14.4
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	17.5

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Data
Test No. 9 - Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	3180	0.59	1.05	0.78	0.88	15.5
Pentachlorodibenzo-p-dioxins	2260	0.42	0.75	0.55	0.63	11.0
Hexachlorodibenzo-p-dioxins	3330	0.62	1.10	0.81	0.93	16.2
Heptachlorodibenzo-p-dioxins	3110	0.58	1.03	0.76	0.86	15.1
Octachlorodibenzo-p-dioxin	3070	0.57	1.02	0.75	0.85	14.9
Total	14950	2.77	4.95	3.65	4.16	72.7

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	87900	16.3	29.1	21.5	24.4	428
Pentachlorodibenzofurans	44000	8.14	14.6	10.8	12.2	214
Hexachlorodibenzofurans	13200	2.44	4.37	3.23	3.67	64.2
Heptachlorodibenzofurans	6370	1.18	2.11	1.56	1.77	31.0
Octachlorodibenzofuran	820	0.15	0.27	0.20	0.23	3.99
Total	152290	28.2	50.4	37.2	42.3	741

Dry Gas Volume Sampled (Rm^3*) :	3.022
Actual Flowrate (m^3/s) :	26.3
Dry Reference Flowrate (Rm^3/s*) :	14.7
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	17.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 7
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.59	0.59	0.59	0.4
Pentachlorodibenzo-p-dioxins	0.56	0.42	0.49	20.1
Hexachlorodibenzo-p-dioxins	0.44	0.62	0.53	24.3
Heptachlorodibenzo-p-dioxins	0.46	0.58	0.52	15.3
Octachlorodibenzo-p-dioxin	0.53	0.57	0.55	4.8
Total	2.58	2.77	2.67	5.0

Furans

Congener Group	Actual Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	17.0	16.3	16.6	3.0
Pentachlorodibenzofurans	6.87	8.14	7.50	12.0
Hexachlorodibenzofurans	1.97	2.44	2.20	15.3
Heptachlorodibenzofurans	0.95	1.18	1.06	15.2
Octachlorodibenzofuran	0.11	0.15	0.13	20.4
Total	26.9	28.2	27.5	3.3

TABLE 8
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	1.07	1.05	1.06	1.3
Pentachlorodibenzo-p-dioxins	1.01	0.75	0.88	21.0
Hexachlorodibenzo-p-dioxins	0.79	1.10	0.95	23.4
Heptachlorodibenzo-p-dioxins	0.84	1.03	0.93	14.4
Octachlorodibenzo-p-dioxin	0.96	1.02	0.99	3.8
Total	4.67	4.95	4.81	4.1

Furans

Congener Group	Dry Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	30.8	29.1	29.9	4.0
Pentachlorodibenzofurans	12.5	14.6	13.5	11.0
Hexachlorodibenzofurans	3.56	4.37	3.96	14.4
Heptachlorodibenzofurans	1.72	2.11	1.91	14.3
Octachlorodibenzofuran	0.21	0.27	0.24	19.5
Total	48.7	50.4	49.5	2.4

* At 25°C and 1 atmosphere

TABLE 9
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 8 ng/Rm³*	Test No. 9 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.78	0.78	0.78	0.2
Pentachlorodibenzo-p-dioxins	0.73	0.55	0.64	19.6
Hexachlorodibenzo-p-dioxins	0.57	0.81	0.69	24.8
Heptachlorodibenzo-p-dioxins	0.61	0.76	0.68	15.8
Octachlorodibenzo-p-dioxin	0.70	0.75	0.72	5.3
Total	3.38	3.65	3.52	5.5

Furans

Congener Group	Dry Adjusted Concentration Test No. 8 ng/Rm³*	Test No. 9 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	22.3	21.5	21.9	2.5
Pentachlorodibenzofurans	9.01	10.8	9.88	12.5
Hexachlorodibenzofurans	2.58	3.23	2.90	15.8
Heptachlorodibenzofurans	1.25	1.56	1.40	15.7
Octachlorodibenzofuran	0.15	0.20	0.17	20.9
Total	35.2	37.2	36.2	3.9

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 10
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 8 ng/Rm³*	Test No. 9 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.88	0.88	0.88	0.2
Pentachlorodibenzo-p-dioxins	0.83	0.63	0.73	19.6
Hexachlorodibenzo-p-dioxins	0.65	0.93	0.79	24.8
Heptachlorodibenzo-p-dioxins	0.69	0.86	0.78	15.8
Octachlorodibenzo-p-dioxin	0.79	0.85	0.82	5.3
Total	3.84	4.16	4.00	5.5

Furans

Congener Group	Wet Reference Concentration Test No. 8 ng/Rm³*	Test No. 9 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	25.3	24.4	24.9	2.5
Pentachlorodibenzofurans	10.2	12.2	11.2	12.5
Hexachlorodibenzofurans	2.93	3.67	3.30	15.8
Heptachlorodibenzofurans	1.42	1.77	1.59	15.7
Octachlorodibenzofuran	0.17	0.23	0.20	20.9
Total	40.1	42.3	41.2	3.9

* At 25°C and 1 atmosphere

TABLE 11
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Emission Rate Test No. 8 ng/s	Test No. 9 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	15.4	15.5	15.5	0.2
Pentachlorodibenzo-p-dioxins	14.5	11.0	12.8	19.6
Hexachlorodibenzo-p-dioxins	11.4	16.2	13.8	24.8
Heptachlorodibenzo-p-dioxins	12.1	15.1	13.6	15.8
Octachlorodibenzo-p-dioxin	13.9	14.9	14.4	5.3
Total	67.3	72.7	70.0	5.5

Furans

Congener Group	Emission Rate Test No. 8 ng/s	Test No. 9 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	443	428	435	2.5
Pentachlorodibenzofurans	179	214	197	12.5
Hexachlorodibenzofurans	51.3	64.2	57.8	15.8
Heptachlorodibenzofurans	24.8	31.0	27.9	15.7
Octachlorodibenzofuran	2.96	3.99	3.48	20.9
Total	701	741	721	3.9

TABLE 12
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.59	1.06	0.78	0.88	15.5
Pentachlorodibenzo-p-dioxins	0.49	0.88	0.64	0.73	12.8
Hexachlorodibenzo-p-dioxins	0.53	0.95	0.69	0.79	13.8
Heptachlorodibenzo-p-dioxins	0.52	0.93	0.68	0.78	13.6
Octachlorodibenzo-p-dioxin	0.55	0.99	0.72	0.82	14.4
Total	2.67	4.81	3.52	4.00	70.0

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	16.6	29.9	21.9	24.9	435
Pentachlorodibenzofurans	7.50	13.5	9.88	11.2	197
Hexachlorodibenzofurans	2.20	3.96	2.90	3.30	57.8
Heptachlorodibenzofurans	1.06	1.91	1.40	1.59	27.9
Octachlorodibenzofuran	0.13	0.24	0.17	0.20	3.48
Total	27.5	49.5	36.2	41.2	721

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 13
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 8 - Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	125	0.015	0.026	0.020	0.022	0.39
Pentachlorodibenzo-p-dioxins	489	0.060	0.10	0.079	0.085	1.51
Hexachlorodibenzo-p-dioxins	1290	0.16	0.27	0.21	0.22	3.98
Heptachlorodibenzo-p-dioxins	845	0.10	0.18	0.14	0.15	2.60
Octachlorodibenzo-p-dioxin	345	0.042	0.073	0.056	0.060	1.06
Total	3094	0.38	0.65	0.50	0.54	9.54

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	144	0.018	0.030	0.023	0.025	0.44
Pentachlorodibenzofurans	140	0.017	0.030	0.023	0.024	0.43
Hexachlorodibenzofurans	274	0.033	0.058	0.044	0.047	0.84
Heptachlorodibenzofurans	213	0.026	0.045	0.034	0.037	0.66
Octachlorodibenzofuran	<51	<0.0062	<0.011	<0.0082	<0.0088	<0.16
Total	<822	<0.10	<0.17	<0.13	<0.14	<2.53

Dry Gas Volume Sampled (Rm^3*) :	4.737
Actual Flowrate (m^3/s) :	25.3
Dry Reference Flowrate (Rm^3/s*) :	14.6
Dry Adjusted Flowrate (Rm^3/s**) :	19.1
Wet Reference Flowrate (Rm^3/s*) :	17.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 14
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Data
Test No. 9 - Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzo-p-dioxins	144	0.017	0.029	0.023	0.024	0.45
Pentachlorodibenzo-p-dioxins	402	0.048	0.082	0.065	0.068	1.25
Hexachlorodibenzo-p-dioxins	1410	0.17	0.29	0.23	0.24	4.38
Heptachlorodibenzo-p-dioxins	918	0.11	0.19	0.15	0.16	2.85
Octachlorodibenzo-p-dioxin	350	0.042	0.071	0.056	0.059	1.09
Total	3224	0.38	0.66	0.52	0.55	10.0

Furans

Congener Group	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	ng/m³	ng/Rm³*	ng/Rm³**	ng/Rm³*	ng/s
Tetrachlorodibenzofurans	118	0.014	0.024	0.019	0.020	0.37
Pentachlorodibenzofurans	192	0.023	0.039	0.031	0.033	0.60
Hexachlorodibenzofurans	288	0.034	0.059	0.046	0.049	0.90
Heptachlorodibenzofurans	246	0.029	0.050	0.040	0.042	0.76
Octachlorodibenzofuran	<56	<0.0067	<0.011	<0.0090	<0.0095	<0.17
Total	<900	<0.11	<0.18	<0.14	<0.15	<2.80

Dry Gas Volume Sampled (Rm^3*) :	4.921
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	15.3
Dry Adjusted Flowrate (Rm^3/s**) :	19.3
Wet Reference Flowrate (Rm^3/s*) :	18.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 15
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Actual Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzo-p-dioxins	0.015	0.017	0.016	8.4
Pentachlorodibenzo-p-dioxins	0.060	0.048	0.054	15.4
Hexachlorodibenzo-p-dioxins	0.16	0.17	0.16	4.7
Heptachlorodibenzo-p-dioxins	0.10	0.11	0.11	4.3
Octachlorodibenzo-p-dioxin	0.042	0.042	0.042	0.6
Total	0.38	0.38	0.38	1.3

Furans

Congener Group	Actual Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	%
Tetrachlorodibenzofurans	0.018	0.014	0.016	15.6
Pentachlorodibenzofurans	0.017	0.023	0.020	20.6
Hexachlorodibenzofurans	0.033	0.034	0.034	1.9
Heptachlorodibenzofurans	0.026	0.029	0.028	8.6
Octachlorodibenzofuran	<0.0062	<0.0067	<0.0064	5.0
Total	<0.10	<0.11	<0.10	4.8

TABLE 16
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Dry Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.026	0.029	0.028	7.3
Pentachlorodibenzo-p-dioxins	0.10	0.082	0.092	16.5
Hexachlorodibenzo-p-dioxins	0.27	0.29	0.28	3.6
Heptachlorodibenzo-p-dioxins	0.18	0.19	0.18	3.2
Octachlorodibenzo-p-dioxin	0.073	0.071	0.072	1.7
Total	0.65	0.66	0.65	0.2

Furans

Congener Group	Dry Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.030	0.024	0.027	16.7
Pentachlorodibenzofurans	0.030	0.039	0.034	19.5
Hexachlorodibenzofurans	0.058	0.059	0.058	0.8
Heptachlorodibenzofurans	0.045	0.050	0.047	7.5
Octachlorodibenzofuran	<0.011	<0.011	<0.011	3.9
Total	<0.17	<0.18	<0.18	3.7

* At 25°C and 1 atmosphere

TABLE 17
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 8 ng/Rm³*	Test No. 9 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.020	0.023	0.022	9.9
Pentachlorodibenzo-p-dioxins	0.079	0.065	0.072	13.9
Hexachlorodibenzo-p-dioxins	0.21	0.23	0.22	6.2
Heptachlorodibenzo-p-dioxins	0.14	0.15	0.14	5.7
Octachlorodibenzo-p-dioxin	0.056	0.056	0.056	0.9
Total	0.50	0.52	0.51	2.8

Furans

Congener Group	Dry Adjusted Concentration Test No. 8 ng/Rm³*	Test No. 9 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.023	0.019	0.021	14.2
Pentachlorodibenzofurans	0.023	0.031	0.027	22.0
Hexachlorodibenzofurans	0.044	0.046	0.045	3.4
Heptachlorodibenzofurans	0.034	0.040	0.037	10.0
Octachlorodibenzofuran	<0.0082	<0.0090	<0.0086	6.5
Total	<0.13	<0.14	<0.14	6.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 18
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Wet Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzo-p-dioxins	0.022	0.024	0.023	8.7
Pentachlorodibenzo-p-dioxins	0.085	0.068	0.076	15.1
Hexachlorodibenzo-p-dioxins	0.22	0.24	0.23	4.9
Heptachlorodibenzo-p-dioxins	0.15	0.16	0.15	4.5
Octachlorodibenzo-p-dioxin	0.060	0.059	0.060	0.3
Total	0.54	0.55	0.54	1.6

Furans

Congener Group	Wet Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Tetrachlorodibenzofurans	0.025	0.020	0.022	15.4
Pentachlorodibenzofurans	0.024	0.033	0.028	20.8
Hexachlorodibenzofurans	0.047	0.049	0.048	2.2
Heptachlorodibenzofurans	0.037	0.042	0.039	8.8
Octachlorodibenzofuran	<0.0088	<0.0095	<0.0092	5.3
Total	<0.14	<0.15	<0.15	5.1

* At 25°C and 1 atmosphere

TABLE 19
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Congener Group Emission Rates
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Emission Rate Test No. 8 ng/s	Test No. 9 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.39	0.45	0.42	10.6
Pentachlorodibenzo-p-dioxins	1.51	1.25	1.38	13.2
Hexachlorodibenzo-p-dioxins	3.98	4.38	4.18	6.9
Heptachlorodibenzo-p-dioxins	2.60	2.85	2.73	6.5
Octachlorodibenzo-p-dioxin	1.06	1.09	1.08	1.6
Total	9.54	10.0	9.78	3.5

Furans

Congener Group	Emission Rate Test No. 8 ng/s	Test No. 9 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	0.44	0.37	0.41	13.4
Pentachlorodibenzofurans	0.43	0.60	0.51	22.8
Hexachlorodibenzofurans	0.84	0.90	0.87	4.1
Heptachlorodibenzofurans	0.66	0.76	0.71	10.8
Octachlorodibenzofuran	<0.16	<0.17	<0.17	7.2
Total	<2.53	<2.80	<2.67	7.0

TABLE 20
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Congener Group Emission Data
Medium Carbon Feed Rate and VLN on Gas Mode

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.016	0.028	0.022	0.023	0.42
Pentachlorodibenzo-p-dioxins	0.054	0.092	0.072	0.076	1.38
Hexachlorodibenzo-p-dioxins	0.16	0.28	0.22	0.23	4.18
Heptachlorodibenzo-p-dioxins	0.11	0.18	0.14	0.15	2.73
Octachlorodibenzo-p-dioxin	0.042	0.072	0.056	0.060	1.08
Total	0.38	0.65	0.51	0.54	9.78

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	0.016	0.027	0.021	0.022	0.41
Pentachlorodibenzofurans	0.020	0.034	0.027	0.028	0.51
Hexachlorodibenzofurans	0.034	0.058	0.045	0.048	0.87
Heptachlorodibenzofurans	0.028	0.047	0.037	0.039	0.71
Octachlorodibenzofuran	<0.0064	<0.011	<0.0086	<0.0092	<0.17
Total	<0.10	<0.18	<0.14	<0.15	<2.67

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 21
Covanta - Durham York Energy Centre
Boiler No. 2 - Medium Carbon Feed Rate and VLN on Gas Mode
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<4.5	<5.0
Pentachlorodibenzo-p-dioxins	<8.2	<3.6
Hexachlorodibenzo-p-dioxins	<17	<9.0
Heptachlorodibenzo-p-dioxins	<3.2	3.2
Octachlorodibenzo-p-dioxin	10.4	12.0
Total	<43.3	<32.8

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	<3.5	<3.3
Pentachlorodibenzofurans	<3.3	<3.2
Hexachlorodibenzofurans	<3.3	3.9
Heptachlorodibenzofurans	<3.2	4.3
Octachlorodibenzofuran	<3.4	4.7
Total	<16.7	<19.4

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 22
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 8 - Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	280	51.4	93.2	67.4	76.7	1.34
12378-pentachlorodibenzo-p-dioxin	447	82.1	149	108	122	2.14
123478-hexachlorodibenzo-p-dioxin	131	24.1	43.6	31.6	35.9	0.63
123678-hexachlorodibenzo-p-dioxin	239	43.9	79.6	57.6	65.5	1.15
123789-hexachlorodibenzo-p-dioxin	224	41.1	74.6	54.0	61.4	1.07
1234678-heptachlorodibenzo-p-dioxin	1270	233	423	306	348	6.09
Octachlorodibenzo-p-dioxin	2890	531	962	696	792	13.9
2378-tetrachlorodibenzofuran	3410	626	1135	821	934	16.3
12378-pentachlorodibenzofuran	2660	489	885	641	729	12.8
23478-pentachlorodibenzofuran	2330	428	776	561	638	11.2
123478-hexachlorodibenzofuran	2070	380	689	499	567	9.92
123678-hexachlorodibenzofuran	1440	264	479	347	394	6.90
234678-hexachlorodibenzofuran	712	131	237	172	195	3.41
123789-hexachlorodibenzofuran	52	9.55	17.3	12.5	14.2	0.25
1234678-heptachlorodibenzofuran	3550	652	1182	855	972	17.0
1234789-heptachlorodibenzofuran	262	48.1	87.2	63.1	71.8	1.26
Octachlorodibenzofuran	618	114	206	149	169	2.96
PCB 81	150	27.5	49.9	36.1	41.1	0.72
PCB 77	620	114	206	149	170	2.97
PCB 123	120	22.0	39.9	28.9	32.9	0.58
PCB 118	1200	220	399	289	329	5.75
PCB 114	<60	<11.0	<20.0	<14.5	<16.4	<0.29
PCB 105	470	86.3	156	113	129	2.25
PCB 126	<320	<58.8	<107	<77.1	<87.7	<1.53
PCB 167	<150	<27.5	<49.9	<36.1	<41.1	<0.72
PCB 156 + PCB 157	270	49.6	89.9	65.0	74.0	1.29
PCB 169	140	25.7	46.6	33.7	38.3	0.67
PCB 189	<110	<20.2	<36.6	<26.5	<30.1	<0.53
Total Dioxins & Furans Only	22585	4148	7518	5440	6186	108
Dioxin-Like PCBs	<3610	<663	<1202	<870	<989	<17.3
Total Dioxins & Furans and PCBs	<26195	<4811	<8720	<6310	<7175	<126
Total PCBs	35000	6428	11651	8431	9587	168

Dry Gas Volume Sampled (Rm^3*) :	3.004
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	14.4
Dry Adjusted Flowrate (Rm^3/s**) :	19.9
Wet Reference Flowrate (Rm^3/s*) :	17.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 23
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 9 - Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	176	32.6	58.2	43.0	48.9	0.86
12378-pentachlorodibenzo-p-dioxin	585	108	194	143	163	2.85
123478-hexachlorodibenzo-p-dioxin	196	36.3	64.9	47.9	54.5	0.95
123678-hexachlorodibenzo-p-dioxin	318	58.8	105	77.7	88.4	1.55
123789-hexachlorodibenzo-p-dioxin	443	81.9	147	108	123	2.15
1234678-heptachlorodibenzo-p-dioxin	1530	283	506	374	425	7.44
Octachlorodibenzo-p-dioxin	3070	568	1016	750	853	14.9
2378-tetrachlorodibenzofuran	2630	486	870	643	731	12.8
12378-pentachlorodibenzofuran	3040	562	1006	743	845	14.8
23478-pentachlorodibenzofuran	2540	470	841	621	706	12.4
123478-hexachlorodibenzofuran	2590	479	857	633	720	12.6
123678-hexachlorodibenzofuran	1730	320	572	423	481	8.42
234678-hexachlorodibenzofuran	885	164	293	216	246	4.30
123789-hexachlorodibenzofuran	71	13.1	23.5	17.4	19.7	0.35
1234678-heptachlorodibenzofuran	4670	864	1545	1142	1298	22.7
1234789-heptachlorodibenzofuran	337	62.3	112	82.4	93.7	1.64
Octachlorodibenzofuran	820	152	271	200	228	3.99
PCB 81	140	25.9	46.3	34.2	38.9	0.68
PCB 77	560	104	185	137	156	2.72
PCB 123	120	22.2	39.7	29.3	33.4	0.58
PCB 118	890	165	295	218	247	4.33
PCB 114	<75	<13.9	<24.8	<18.3	<20.8	<0.36
PCB 105	390	72.1	129	95.3	108	1.90
PCB 126	360	66.6	119	88.0	100	1.75
PCB 167	<140	<25.9	<46.3	<34.2	<38.9	<0.68
PCB 156 + PCB 157	290	53.6	96.0	70.9	80.6	1.41
PCB 169	110	20.3	36.4	26.9	30.6	0.54
PCB 189	150	27.7	49.6	36.7	41.7	0.73
Total Dioxins & Furans Only	25631	4741	8481	6265	7124	125
Dioxin-Like PCBs	<3225	<596	<1067	<788	<896	<15.7
Total Dioxins & Furans and PCBs	<28856	<5337	<9549	<7054	<8021	<140
Total PCBs	33000	6104	10920	8066	9173	161

Dry Gas Volume Sampled (Rm³*) :	3.022
Actual Flowrate (m³/s) :	26.3
Dry Reference Flowrate (Rm³/s*) :	14.7
Dry Adjusted Flowrate (Rm³/s**) :	19.9
Wet Reference Flowrate (Rm³/s*) :	17.5

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 24
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	51.4	32.6	42.0	31.8
12378-pentachlorodibenzo-p-dioxin	82.1	108	95.1	19.4
123478-hexachlorodibenzo-p-dioxin	24.1	36.3	30.2	28.6
123678-hexachlorodibenzo-p-dioxin	43.9	58.8	51.4	20.5
123789-hexachlorodibenzo-p-dioxin	41.1	81.9	61.5	46.9
1234678-heptachlorodibenzo-p-dioxin	233	283	258	13.6
Octachlorodibenzo-p-dioxin	531	568	549	4.8
2378-tetrachlorodibenzofuran	626	486	556	17.8
12378-pentachlorodibenzofuran	489	562	525	9.9
23478-pentachlorodibenzofuran	428	470	449	6.6
123478-hexachlorodibenzofuran	380	479	430	16.3
123678-hexachlorodibenzofuran	264	320	292	13.4
234678-hexachlorodibenzofuran	131	164	147	15.8
123789-hexachlorodibenzofuran	9.55	13.1	11.3	22.3
1234678-heptachlorodibenzofuran	652	864	758	19.8
1234789-heptachlorodibenzofuran	48.1	62.3	55.2	18.2
Octachlorodibenzofuran	114	152	133	20.4
PCB 81	27.5	25.9	26.7	4.4
PCB 77	114	104	109	6.7
PCB 123	22.0	22.2	22.1	0.5
PCB 118	220	165	193	20.5
PCB 114	<11.0	<13.9	<12.4	16.2
PCB 105	86.3	72.1	79.2	12.7
PCB 126	<58.8	66.6	<62.7	8.8
PCB 167	<27.5	<25.9	<26.7	4.4
PCB 156 + PCB 157	49.6	53.6	51.6	5.5
PCB 169	25.7	20.3	23.0	16.5
PCB 189	<20.2	27.7	<24.0	22.2
Total Dioxins & Furans Only	4148	4741	4444	9.4
Dioxin-Like PCBs	<663	<596	<630	7.5
Total Dioxins & Furans and PCBs	<4811	<5337	<5074	7.3
Total PCBs	6428	6104	6266	3.7

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 25
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Dry Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	93.2	58.2	75.7	32.7
12378-pentachlorodibenzo-p-dioxin	149	194	171	18.5
123478-hexachlorodibenzo-p-dioxin	43.6	64.9	54.2	27.7
123678-hexachlorodibenzo-p-dioxin	79.6	105	92.4	19.6
123789-hexachlorodibenzo-p-dioxin	74.6	147	111	46.1
1234678-heptachlorodibenzo-p-dioxin	423	506	465	12.7
Octachlorodibenzo-p-dioxin	962	1016	989	3.8
2378-tetrachlorodibenzofuran	1135	870	1003	18.7
12378-pentachlorodibenzofuran	885	1006	946	9.0
23478-pentachlorodibenzofuran	776	841	808	5.7
123478-hexachlorodibenzofuran	689	857	773	15.4
123678-hexachlorodibenzofuran	479	572	526	12.5
234678-hexachlorodibenzofuran	237	293	265	14.9
123789-hexachlorodibenzofuran	17.3	23.5	20.4	21.4
1234678-heptachlorodibenzofuran	1182	1545	1364	18.9
1234789-heptachlorodibenzofuran	87.2	112	99.4	17.3
Octachlorodibenzofuran	206	271	239	19.5
PCB 81	49.9	46.3	48.1	5.3
PCB 77	206	185	196	7.6
PCB 123	39.9	39.7	39.8	0.4
PCB 118	399	295	347	21.4
PCB 114	<20.0	<24.8	<22.4	15.3
PCB 105	156	129	143	13.6
PCB 126	<107	119	<113	7.9
PCB 167	<49.9	<46.3	<48.1	5.3
PCB 156 + PCB 157	89.9	96.0	92.9	4.6
PCB 169	46.6	36.4	41.5	17.4
PCB 189	<36.6	49.6	<43.1	21.3
Total Dioxins & Furans Only	7518	8481	8000	8.5
Dioxin-Like PCBs	<1202	<1067	<1134	8.4
Total Dioxins & Furans and PCBs	<8720	<9549	<9134	6.4
Total PCBs	11651	10920	11286	4.6

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 26
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Dry Adjusted Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	67.4	43.0	55.2	31.3
12378-pentachlorodibenzo-p-dioxin	108	143	125	19.9
123478-hexachlorodibenzo-p-dioxin	31.6	47.9	39.7	29.1
123678-hexachlorodibenzo-p-dioxin	57.6	77.7	67.7	21.1
123789-hexachlorodibenzo-p-dioxin	54.0	108	81.1	47.4
1234678-heptachlorodibenzo-p-dioxin	306	374	340	14.2
Octachlorodibenzo-p-dioxin	696	750	723	5.3
2378-tetrachlorodibenzofuran	821	643	732	17.2
12378-pentachlorodibenzofuran	641	743	692	10.5
23478-pentachlorodibenzofuran	561	621	591	7.1
123478-hexachlorodibenzofuran	499	633	566	16.8
123678-hexachlorodibenzofuran	347	423	385	14.0
234678-hexachlorodibenzofuran	172	216	194	16.3
123789-hexachlorodibenzofuran	12.5	17.4	14.9	22.9
1234678-heptachlorodibenzofuran	855	1142	998	20.3
1234789-heptachlorodibenzofuran	63.1	82.4	72.7	18.7
Octachlorodibenzofuran	149	200	175	20.9
PCB 81	36.1	34.2	35.2	3.8
PCB 77	149	137	143	6.2
PCB 123	28.9	29.3	29.1	1.0
PCB 118	289	218	253	20.0
PCB 114	<14.5	<18.3	<16.4	16.7
PCB 105	113	95.3	104	12.1
PCB 126	<77.1	88.0	<82.5	9.4
PCB 167	<36.1	<34.2	<35.2	3.8
PCB 156 + PCB 157	65.0	70.9	68.0	6.1
PCB 169	33.7	26.9	30.3	15.9
PCB 189	<26.5	36.7	<31.6	22.8
Total Dioxins & Furans Only	5440	6265	5853	10.0
Dioxin-Like PCBs	<870	<788	<829	6.9
Total Dioxins & Furans and PCBs	<6310	<7054	<6682	7.9
Total PCBs	8431	8066	8249	3.1

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 27
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Wet Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	76.7	48.9	62.8	31.3
12378-pentachlorodibenzo-p-dioxin	122	163	143	19.9
123478-hexachlorodibenzo-p-dioxin	35.9	54.5	45.2	29.1
123678-hexachlorodibenzo-p-dioxin	65.5	88.4	76.9	21.1
123789-hexachlorodibenzo-p-dioxin	61.4	123	92.2	47.4
1234678-heptachlorodibenzo-p-dioxin	348	425	387	14.2
Octachlorodibenzo-p-dioxin	792	853	822	5.3
2378-tetrachlorodibenzofuran	934	731	833	17.2
12378-pentachlorodibenzofuran	729	845	787	10.5
23478-pentachlorodibenzofuran	638	706	672	7.1
123478-hexachlorodibenzofuran	567	720	643	16.8
123678-hexachlorodibenzofuran	394	481	438	14.0
234678-hexachlorodibenzofuran	195	246	221	16.3
123789-hexachlorodibenzofuran	14.2	19.7	17.0	22.9
1234678-heptachlorodibenzofuran	972	1298	1135	20.3
1234789-heptachlorodibenzofuran	71.8	93.7	82.7	18.7
Octachlorodibenzofuran	169	228	199	20.9
PCB 81	41.1	38.9	40.0	3.8
PCB 77	170	156	163	6.2
PCB 123	32.9	33.4	33.1	1.0
PCB 118	329	247	288	20.0
PCB 114	<16.4	<20.8	<18.6	16.7
PCB 105	129	108	119	12.1
PCB 126	<87.7	100	<93.9	9.4
PCB 167	<41.1	<38.9	<40.0	3.8
PCB 156 + PCB 157	74.0	80.6	77.3	6.1
PCB 169	38.3	30.6	34.5	15.9
PCB 189	<30.1	41.7	<35.9	22.8
Total Dioxins & Furans Only	6186	7124	6655	10.0
Dioxin-Like PCBs	<989	<896	<943	6.9
Total Dioxins & Furans and PCBs	<7175	<8021	<7598	7.9
Total PCBs	9587	9173	9380	3.1

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 28
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Emission Rate Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	1.34	0.86	1.10	31.3
12378-pentachlorodibenzo-p-dioxin	2.14	2.85	2.49	19.9
123478-hexachlorodibenzo-p-dioxin	0.63	0.95	0.79	29.1
123678-hexachlorodibenzo-p-dioxin	1.15	1.55	1.35	21.1
123789-hexachlorodibenzo-p-dioxin	1.07	2.15	1.61	47.4
1234678-heptachlorodibenzo-p-dioxin	6.09	7.44	6.77	14.2
Octachlorodibenzo-p-dioxin	13.9	14.9	14.4	5.3
2378-tetrachlorodibenzofuran	16.3	12.8	14.6	17.2
12378-pentachlorodibenzofuran	12.8	14.8	13.8	10.5
23478-pentachlorodibenzofuran	11.2	12.4	11.8	7.1
123478-hexachlorodibenzofuran	9.92	12.6	11.3	16.8
123678-hexachlorodibenzofuran	6.90	8.42	7.66	14.0
234678-hexachlorodibenzofuran	3.41	4.30	3.86	16.3
123789-hexachlorodibenzofuran	0.25	0.35	0.30	22.9
1234678-heptachlorodibenzofuran	17.0	22.7	19.9	20.3
1234789-heptachlorodibenzofuran	1.26	1.64	1.45	18.7
Octachlorodibenzofuran	2.96	3.99	3.48	20.9
PCB 81	0.72	0.68	0.70	3.8
PCB 77	2.97	2.72	2.85	6.2
PCB 123	0.58	0.58	0.58	1.0
PCB 118	5.75	4.33	5.04	20.0
PCB 114	<0.29	<0.36	<0.33	16.7
PCB 105	2.25	1.90	2.08	12.1
PCB 126	<1.53	1.75	<1.64	9.4
PCB 167	<0.72	<0.68	<0.70	3.8
PCB 156 + PCB 157	1.29	1.41	1.35	6.1
PCB 169	0.67	0.54	0.60	15.9
PCB 189	<0.53	0.73	<0.63	22.8
Total Dioxins & Furans Only	108	125	116	10.0
Dioxin-Like PCBs	<17.3	<15.7	<16.5	6.9
Total Dioxins & Furans and PCBs	<126	<140	<133	7.9
Total PCBs	168	161	164	3.1

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 29
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration pg/m³	Dry Reference Concentration pg/Rm³*	Dry Adjusted Concentration pg/Rm³**	Wet Reference Concentration pg/Rm³*	Emission Rate ng/s
2378-tetrachlorodibenzo-p-dioxin	42.0	75.7	55.2	62.8	1.10
12378-pentachlorodibenzo-p-dioxin	95.1	171	125	143	2.49
123478-hexachlorodibenzo-p-dioxin	30.2	54.2	39.7	45.2	0.79
123678-hexachlorodibenzo-p-dioxin	51.4	92.4	67.7	76.9	1.35
123789-hexachlorodibenzo-p-dioxin	61.5	111	81.1	92.2	1.61
1234678-heptachlorodibenzo-p-dioxin	258	465	340	387	6.77
Octachlorodibenzo-p-dioxin	549	989	723	822	14.4
2378-tetrachlorodibenzofuran	556	1003	732	833	14.6
12378-pentachlorodibenzofuran	525	946	692	787	13.8
23478-pentachlorodibenzofuran	449	808	591	672	11.8
123478-hexachlorodibenzofuran	430	773	566	643	11.3
123678-hexachlorodibenzofuran	292	526	385	438	7.66
234678-hexachlorodibenzofuran	147	265	194	221	3.86
123789-hexachlorodibenzofuran	11.3	20.4	14.9	17.0	0.30
1234678-heptachlorodibenzofuran	758	1364	998	1135	19.9
1234789-heptachlorodibenzofuran	55.2	99.4	72.7	82.7	1.45
Octachlorodibenzofuran	133	239	175	199	3.48
PCB 81	26.7	48.1	35.2	40.0	0.70
PCB 77	109	196	143	163	2.85
PCB 123	22.1	39.8	29.1	33.1	0.58
PCB 118	193	347	253	288	5.04
PCB 114	<12.4	<22.4	<16.4	<18.6	<0.33
PCB 105	79.2	143	104	119	2.08
PCB 126	<62.7	<113	<82.5	<93.9	<1.64
PCB 167	<26.7	<48.1	<35.2	<40.0	<0.70
PCB 156 + PCB 157	51.6	92.9	68.0	77.3	1.35
PCB 169	23.0	41.5	30.3	34.5	0.60
PCB 189	<24.0	<43.1	<31.6	<35.9	<0.63
Total Dioxins & Furans Only	4444	8000	5853	6655	116
Dioxin-Like PCBs	<630	<1134	<829	<943	<16.5
Total Dioxins & Furans and PCBs	<5074	<9134	<6682	<7598	<133
Total PCBs	6266	11286	8249	9380	164

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 30
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 8 pg TEQ/m³	Test No. 9 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	51.4	32.6	42.0
12378-pentachlorodibenzo-p-dioxin	1.000	82.1	108	95.1
123478-hexachlorodibenzo-p-dioxin	0.100	2.41	3.63	3.02
123678-hexachlorodibenzo-p-dioxin	0.100	4.39	5.88	5.14
123789-hexachlorodibenzo-p-dioxin	0.100	4.11	8.19	6.15
1234678-heptachlorodibenzo-p-dioxin	0.010	2.33	2.83	2.58
Octachlorodibenzo-p-dioxin	0.0003	0.16	0.17	0.16
2378-tetrachlorodibenzofuran	0.100	62.6	48.6	55.6
12378-pentachlorodibenzofuran	0.030	14.7	16.9	15.8
23478-pentachlorodibenzofuran	0.300	128	141	135
123478-hexachlorodibenzofuran	0.100	38.0	47.9	43.0
123678-hexachlorodibenzofuran	0.100	26.4	32.0	29.2
234678-hexachlorodibenzofuran	0.100	13.1	16.4	14.7
123789-hexachlorodibenzofuran	0.100	0.96	1.31	1.13
1234678-heptachlorodibenzofuran	0.010	6.52	8.64	7.58
1234789-heptachlorodibenzofuran	0.010	0.48	0.62	0.55
Octachlorodibenzofuran	0.0003	0.034	0.045	0.040
PCB 81	0.0003	0.0083	0.0078	0.0080
PCB 77	0.0001	0.011	0.010	0.011
PCB 123	0.00003	0.00066	0.00067	0.00066
PCB 118	0.00003	0.0066	0.0049	0.0058
PCB 114	0.00003	<0.00033	<0.00042	<0.00037
PCB 105	0.00003	0.0026	0.0022	0.0024
PCB 126	0.100	<5.88	6.66	<6.27
PCB 167	0.00003	<0.00083	<0.00078	<0.00080
PCB 156 + PCB 157	0.00003	0.0015	0.0016	0.0015
PCB 169	0.030	0.77	0.61	0.69
PCB 189	0.00003	<0.00061	0.00083	<0.00072
Total Dioxins & Furans Only		438	475	456
Dioxin-Like PCBs		<6.68	<7.30	<6.99
Total Dioxins & Furans and PCBs		<445	<482	<463

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 31
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	93.2	58.2	75.7
12378-pentachlorodibenzo-p-dioxin	1.000	149	194	171
123478-hexachlorodibenzo-p-dioxin	0.100	4.36	6.49	5.42
123678-hexachlorodibenzo-p-dioxin	0.100	7.96	10.5	9.24
123789-hexachlorodibenzo-p-dioxin	0.100	7.46	14.7	11.1
1234678-heptachlorodibenzo-p-dioxin	0.010	4.23	5.06	4.65
Octachlorodibenzo-p-dioxin	0.0003	0.29	0.30	0.30
2378-tetrachlorodibenzofuran	0.100	114	87.0	100
12378-pentachlorodibenzofuran	0.030	26.6	30.2	28.4
23478-pentachlorodibenzofuran	0.300	233	252	242
123478-hexachlorodibenzofuran	0.100	68.9	85.7	77.3
123678-hexachlorodibenzofuran	0.100	47.9	57.2	52.6
234678-hexachlorodibenzofuran	0.100	23.7	29.3	26.5
123789-hexachlorodibenzofuran	0.100	1.73	2.35	2.04
1234678-heptachlorodibenzofuran	0.010	11.8	15.5	13.6
1234789-heptachlorodibenzofuran	0.010	0.87	1.12	0.99
Octachlorodibenzofuran	0.0003	0.062	0.081	0.072
PCB 81	0.0003	0.015	0.014	0.014
PCB 77	0.0001	0.021	0.019	0.020
PCB 123	0.00003	0.0012	0.0012	0.0012
PCB 118	0.00003	0.012	0.0088	0.010
PCB 114	0.00003	<0.00060	<0.00074	<0.00067
PCB 105	0.00003	0.0047	0.0039	0.0043
PCB 126	0.100	<10.7	11.9	<11.3
PCB 167	0.00003	<0.0015	<0.0014	<0.0014
PCB 156 + PCB 157	0.00003	0.0027	0.0029	0.0028
PCB 169	0.030	1.40	1.09	1.25
PCB 189	0.00003	<0.0011	0.0015	<0.0013
Total Dioxins & Furans Only		794	849	822
Dioxin-Like PCBs		<12.1	<13.1	<12.6
Total Dioxins & Furans and PCBs		<806	<863	<834

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 32
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	67.4	43.0	55.2
12378-pentachlorodibenzo-p-dioxin	1.000	108	143	125
123478-hexachlorodibenzo-p-dioxin	0.100	3.16	4.79	3.97
123678-hexachlorodibenzo-p-dioxin	0.100	5.76	7.77	6.77
123789-hexachlorodibenzo-p-dioxin	0.100	5.40	10.8	8.11
1234678-heptachlorodibenzo-p-dioxin	0.010	3.06	3.74	3.40
Octachlorodibenzo-p-dioxin	0.0003	0.21	0.23	0.22
2378-tetrachlorodibenzofuran	0.100	82.1	64.3	73.2
12378-pentachlorodibenzofuran	0.030	19.2	22.3	20.8
23478-pentachlorodibenzofuran	0.300	168	186	177
123478-hexachlorodibenzofuran	0.100	49.9	63.3	56.6
123678-hexachlorodibenzofuran	0.100	34.7	42.3	38.5
234678-hexachlorodibenzofuran	0.100	17.2	21.6	19.4
123789-hexachlorodibenzofuran	0.100	1.25	1.74	1.49
1234678-heptachlorodibenzofuran	0.010	8.55	11.4	9.98
1234789-heptachlorodibenzofuran	0.010	0.63	0.82	0.73
Octachlorodibenzofuran	0.0003	0.045	0.060	0.052
PCB 81	0.0003	0.011	0.010	0.011
PCB 77	0.0001	0.015	0.014	0.014
PCB 123	0.00003	0.00087	0.00088	0.00087
PCB 118	0.00003	0.0087	0.0065	0.0076
PCB 114	0.00003	<0.00043	<0.00055	<0.00049
PCB 105	0.00003	0.0034	0.0029	0.0031
PCB 126	0.100	<7.71	8.80	<8.25
PCB 167	0.00003	<0.0011	<0.0010	<0.0011
PCB 156 + PCB 157	0.00003	0.0020	0.0021	0.0020
PCB 169	0.030	1.01	0.81	0.91
PCB 189	0.00003	<0.00079	0.0011	<0.00095
Total Dioxins & Furans Only		575	627	601
Dioxin-Like PCBs		<8.76	<9.65	<9.20
Total Dioxins & Furans and PCBs		<583	<637	<610

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 33
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	67.4	43.0	55.2
12378-pentachlorodibenzo-p-dioxin	0.500	53.8	71.5	62.7
123478-hexachlorodibenzo-p-dioxin	0.100	3.16	4.79	3.97
123678-hexachlorodibenzo-p-dioxin	0.100	5.76	7.77	6.77
123789-hexachlorodibenzo-p-dioxin	0.100	5.40	10.8	8.11
1234678-heptachlorodibenzo-p-dioxin	0.010	3.06	3.74	3.40
Octachlorodibenzo-p-dioxin	0.001	0.70	0.75	0.72
2378-tetrachlorodibenzofuran	0.100	82.1	64.3	73.2
12378-pentachlorodibenzofuran	0.050	32.0	37.2	34.6
23478-pentachlorodibenzofuran	0.500	281	310	296
123478-hexachlorodibenzofuran	0.100	49.9	63.3	56.6
123678-hexachlorodibenzofuran	0.100	34.7	42.3	38.5
234678-hexachlorodibenzofuran	0.100	17.2	21.6	19.4
123789-hexachlorodibenzofuran	0.100	1.25	1.74	1.49
1234678-heptachlorodibenzofuran	0.010	8.55	11.4	9.98
1234789-heptachlorodibenzofuran	0.010	0.63	0.82	0.73
Octachlorodibenzofuran	0.001	0.15	0.20	0.17
Total Dioxins & Furans		646	696	671

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

TABLE 34
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	76.7	48.9	62.8
12378-pentachlorodibenzo-p-dioxin	1.000	122	163	143
123478-hexachlorodibenzo-p-dioxin	0.100	3.59	5.45	4.52
123678-hexachlorodibenzo-p-dioxin	0.100	6.55	8.84	7.69
123789-hexachlorodibenzo-p-dioxin	0.100	6.14	12.3	9.22
1234678-heptachlorodibenzo-p-dioxin	0.010	3.48	4.25	3.87
Octachlorodibenzo-p-dioxin	0.0003	0.24	0.26	0.25
2378-tetrachlorodibenzofuran	0.100	93.4	73.1	83.3
12378-pentachlorodibenzofuran	0.030	21.9	25.4	23.6
23478-pentachlorodibenzofuran	0.300	191	212	202
123478-hexachlorodibenzofuran	0.100	56.7	72.0	64.3
123678-hexachlorodibenzofuran	0.100	39.4	48.1	43.8
234678-hexachlorodibenzofuran	0.100	19.5	24.6	22.1
123789-hexachlorodibenzofuran	0.100	1.42	1.97	1.70
1234678-heptachlorodibenzofuran	0.010	9.72	13.0	11.4
1234789-heptachlorodibenzofuran	0.010	0.72	0.94	0.83
Octachlorodibenzofuran	0.0003	0.051	0.068	0.060
PCB 81	0.0003	0.012	0.012	0.012
PCB 77	0.0001	0.017	0.016	0.016
PCB 123	0.00003	0.00099	0.0010	0.00099
PCB 118	0.00003	0.0099	0.0074	0.0086
PCB 114	0.00003	<0.00049	<0.00063	<0.00056
PCB 105	0.00003	0.0039	0.0033	0.0036
PCB 126	0.100	<8.77	10.0	<9.39
PCB 167	0.00003	<0.0012	<0.0012	<0.0012
PCB 156 + PCB 157	0.00003	0.0022	0.0024	0.0023
PCB 169	0.030	1.15	0.92	1.03
PCB 189	0.00003	<0.00090	0.0013	<0.0011
Total Dioxins & Furans Only		653	714	683
Dioxin-Like PCBs		<9.96	<11.0	<10.5
Total Dioxins & Furans and PCBs		<663	<725	<694

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 35
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 8 ng TEQ/s	Test No. 9 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	1.34	0.86	1.10
12378-pentachlorodibenzo-p-dioxin	1.000	2.14	2.85	2.49
123478-hexachlorodibenzo-p-dioxin	0.100	0.063	0.095	0.079
123678-hexachlorodibenzo-p-dioxin	0.100	0.11	0.15	0.13
123789-hexachlorodibenzo-p-dioxin	0.100	0.11	0.22	0.16
1234678-heptachlorodibenzo-p-dioxin	0.010	0.061	0.074	0.068
Octachlorodibenzo-p-dioxin	0.0003	0.0042	0.0045	0.0043
2378-tetrachlorodibenzofuran	0.100	1.63	1.28	1.46
12378-pentachlorodibenzofuran	0.030	0.38	0.44	0.41
23478-pentachlorodibenzofuran	0.300	3.35	3.71	3.53
123478-hexachlorodibenzofuran	0.100	0.99	1.26	1.13
123678-hexachlorodibenzofuran	0.100	0.69	0.84	0.77
234678-hexachlorodibenzofuran	0.100	0.34	0.43	0.39
123789-hexachlorodibenzofuran	0.100	0.025	0.035	0.030
1234678-heptachlorodibenzofuran	0.010	0.17	0.23	0.20
1234789-heptachlorodibenzofuran	0.010	0.013	0.016	0.014
Octachlorodibenzofuran	0.0003	0.00089	0.0012	0.0010
PCB 81	0.0003	0.00022	0.00020	0.00021
PCB 77	0.0001	0.00030	0.00027	0.00028
PCB 123	0.00003	0.000017	0.000018	0.000017
PCB 118	0.00003	0.00017	0.00013	0.00015
PCB 114	0.00003	<0.0000086	<0.000011	<0.0000098
PCB 105	0.00003	0.000068	0.000057	0.000062
PCB 126	0.100	<0.15	0.18	<0.16
PCB 167	0.00003	<0.000022	<0.000020	<0.000021
PCB 156 + PCB 157	0.00003	0.000039	0.000042	0.000041
PCB 169	0.030	0.020	0.016	0.018
PCB 189	0.00003	<0.000016	0.000022	<0.000019
Total Dioxins & Furans Only		11.4	12.5	12.0
Dioxin-Like PCBs		<0.17	<0.19	<0.18
Total Dioxins & Furans and PCBs		<11.6	<12.7	<12.1

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 36
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	42.0	75.7	55.2	62.8	1.10
12378-pentachlorodibenzo-p-dioxin	95.1	171	125	143	2.49
123478-hexachlorodibenzo-p-dioxin	3.02	5.42	3.97	4.52	0.079
123678-hexachlorodibenzo-p-dioxin	5.14	9.24	6.77	7.69	0.13
123789-hexachlorodibenzo-p-dioxin	6.15	11.1	8.11	9.22	0.16
1234678-heptachlorodibenzo-p-dioxin	2.58	4.65	3.40	3.87	0.068
Octachlorodibenzo-p-dioxin	0.16	0.30	0.22	0.25	0.0043
2378-tetrachlorodibenzofuran	55.6	100	73.2	83.3	1.46
12378-pentachlorodibenzofuran	15.8	28.4	20.8	23.6	0.41
23478-pentachlorodibenzofuran	135	242	177	202	3.53
123478-hexachlorodibenzofuran	43.0	77.3	56.6	64.3	1.13
123678-hexachlorodibenzofuran	29.2	52.6	38.5	43.8	0.77
234678-hexachlorodibenzofuran	14.7	26.5	19.4	22.1	0.39
123789-hexachlorodibenzofuran	1.13	2.04	1.49	1.70	0.030
1234678-heptachlorodibenzofuran	7.58	13.6	9.98	11.4	0.20
1234789-heptachlorodibenzofuran	0.55	0.99	0.73	0.83	0.014
Octachlorodibenzofuran	0.040	0.072	0.052	0.060	0.0010
PCB 81	0.0080	0.014	0.011	0.012	0.00021
PCB 77	0.011	0.020	0.014	0.016	0.00028
PCB 123	0.00066	0.0012	0.00087	0.00099	0.000017
PCB 118	0.0058	0.010	0.0076	0.0086	0.00015
PCB 114	<0.00037	<0.00067	<0.00049	<0.00056	<0.0000098
PCB 105	0.0024	0.0043	0.0031	0.0036	0.000062
PCB 126	<6.27	<11.3	<8.25	<9.39	<0.16
PCB 167	<0.00080	<0.0014	<0.0011	<0.0012	<0.000021
PCB 156 + PCB 157	0.0015	0.0028	0.0020	0.0023	0.000041
PCB 169	0.69	1.25	0.91	1.03	0.018
PCB 189	<0.00072	<0.0013	<0.00095	<0.0011	<0.000019
Total Dioxins & Furans Only	456	822	601	683	12.0
Dioxin-Like PCBs	<6.99	<12.6	<9.20	<10.5	<0.18
Total Dioxins & Furans and PCBs	<463	<834	<610	<694	<12.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 37
Covanta - Durham York Energy Centre
Boiler No. 2 Quench Inlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	42.0	75.7	55.2	62.8	1.10
12378-pentachlorodibenzo-p-dioxin	95.1	171	125	143	2.49
123478-hexachlorodibenzo-p-dioxin	3.02	5.42	3.97	4.52	0.079
123678-hexachlorodibenzo-p-dioxin	5.14	9.24	6.77	7.69	0.13
123789-hexachlorodibenzo-p-dioxin	6.15	11.1	8.11	9.22	0.16
1234678-heptachlorodibenzo-p-dioxin	2.58	4.65	3.40	3.87	0.068
Octachlorodibenzo-p-dioxin	0.16	0.30	0.22	0.25	0.0043
2378-tetrachlorodibenzofuran	55.6	100	73.2	83.3	1.46
12378-pentachlorodibenzofuran	15.8	28.4	20.8	23.6	0.41
23478-pentachlorodibenzofuran	135	242	177	202	3.53
123478-hexachlorodibenzofuran	43.0	77.3	56.6	64.3	1.13
123678-hexachlorodibenzofuran	29.2	52.6	38.5	43.8	0.77
234678-hexachlorodibenzofuran	14.7	26.5	19.4	22.1	0.39
123789-hexachlorodibenzofuran	1.13	2.04	1.49	1.70	0.030
1234678-heptachlorodibenzofuran	7.58	13.6	9.98	11.4	0.20
1234789-heptachlorodibenzofuran	0.55	0.99	0.73	0.83	0.014
Octachlorodibenzofuran	0.040	0.072	0.052	0.060	0.0010
PCB 81	0.0080	0.014	0.011	0.012	0.00021
PCB 77	0.011	0.020	0.014	0.016	0.00028
PCB 123	0.00066	0.0012	0.00087	0.00099	0.000017
PCB 118	0.0058	0.010	0.0076	0.0086	0.00015
PCB 114	0.00019	0.00034	0.00025	0.00028	0.0000049
PCB 105	0.0024	0.0043	0.0031	0.0036	0.000062
PCB 126	4.80	8.62	6.33	7.19	0.13
PCB 167	0.00040	0.00072	0.00053	0.00060	0.000011
PCB 156 + PCB 157	0.0015	0.0028	0.0020	0.0023	0.000041
PCB 169	0.69	1.25	0.91	1.03	0.018
PCB 189	0.00057	0.0010	0.00075	0.00085	0.000015
Total Dioxins & Furans Only	456	822	601	683	12.0
Dioxin-Like PCBs	5.52	9.92	7.28	8.27	0.14
Total Dioxins & Furans and PCBs	462	832	608	692	12.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 38
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 8 - Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<5.6	<0.68	<1.18	<0.90	<0.97	<0.017
12378-pentachlorodibenzo-p-dioxin	10.9	1.33	2.30	1.76	1.89	0.034
123478-hexachlorodibenzo-p-dioxin	25.4	3.09	5.36	4.10	4.40	0.078
123678-hexachlorodibenzo-p-dioxin	66.2	8.06	14.0	10.7	11.5	0.20
123789-hexachlorodibenzo-p-dioxin	21.4	2.61	4.52	3.45	3.71	0.066
1234678-heptachlorodibenzo-p-dioxin	395	48.1	83.4	63.7	68.4	1.22
Octachlorodibenzo-p-dioxin	345	42.0	72.8	55.7	59.7	1.06
2378-tetrachlorodibenzofuran	<7.0	<0.85	<1.48	<1.13	<1.21	<0.022
12378-pentachlorodibenzofuran	<8.6	<1.05	<1.82	<1.39	<1.49	<0.027
23478-pentachlorodibenzofuran	18.1	2.20	3.82	2.92	3.13	0.056
123478-hexachlorodibenzofuran	52.1	6.35	11.0	8.41	9.02	0.16
123678-hexachlorodibenzofuran	<25	<3.05	<5.28	<4.03	<4.33	<0.077
234678-hexachlorodibenzofuran	34.3	4.18	7.24	5.53	5.94	0.11
123789-hexachlorodibenzofuran	<3.3	<0.40	<0.70	<0.53	<0.57	<0.010
1234678-heptachlorodibenzofuran	119	14.5	25.1	19.2	20.6	0.37
1234789-heptachlorodibenzofuran	19.8	2.41	4.18	3.20	3.43	0.061
Octachlorodibenzofuran	<51	<6.21	<10.8	<8.23	<8.83	<0.16
PCB 81	<99	<12.1	<20.9	<16.0	<17.1	<0.31
PCB 77	<95	<11.6	<20.1	<15.3	<16.4	<0.29
PCB 123	<72	<8.77	<15.2	<11.6	<12.5	<0.22
PCB 118	540	65.8	114	87.1	93.5	1.66
PCB 114	<63	<7.67	<13.3	<10.2	<10.9	<0.19
PCB 105	190	23.1	40.1	30.7	32.9	0.59
PCB 126	<66	<8.04	<13.9	<10.7	<11.4	<0.20
PCB 167	<77	<9.38	<16.3	<12.4	<13.3	<0.24
PCB 156 + PCB 157	<70	<8.53	<14.8	<11.3	<12.1	<0.22
PCB 169	<75	<9.14	<15.8	<12.1	<13.0	<0.23
PCB 189	<50	<6.09	<10.6	<8.07	<8.66	<0.15
Total Dioxins & Furans Only	<1208	<147	<255	<195	<209	<3.72
Dioxin-Like PCBs	<1397	<170	<295	<225	<242	<4.31
Total Dioxins & Furans and PCBs	<2605	<317	<550	<420	<451	<8.03
Total PCBs	11000	1340	2322	1775	1905	33.9

Dry Gas Volume Sampled (Rm^3*) :	4.737
Actual Flowrate (m^3/s) :	25.3
Dry Reference Flowrate (Rm^3/s*) :	14.6
Dry Adjusted Flowrate (Rm^3/s**) :	19.1
Wet Reference Flowrate (Rm^3/s*) :	17.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 39
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Data
Test No. 9 - Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Total Collected	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	6.2	0.74	1.26	1.00	1.05	0.019
12378-pentachlorodibenzo-p-dioxin	10.1	1.20	2.05	1.63	1.72	0.031
123478-hexachlorodibenzo-p-dioxin	26.0	3.10	5.28	4.19	4.42	0.081
123678-hexachlorodibenzo-p-dioxin	67.6	8.05	13.7	10.9	11.5	0.21
123789-hexachlorodibenzo-p-dioxin	26.0	3.10	5.28	4.19	4.42	0.081
1234678-heptachlorodibenzo-p-dioxin	434	51.7	88.2	69.9	73.7	1.35
Octachlorodibenzo-p-dioxin	350	41.7	71.1	56.4	59.5	1.09
2378-tetrachlorodibenzofuran	<7.1	<0.85	<1.44	<1.14	<1.21	<0.022
12378-pentachlorodibenzofuran	9.2	1.10	1.87	1.48	1.56	0.029
23478-pentachlorodibenzofuran	19.3	2.30	3.92	3.11	3.28	0.060
123478-hexachlorodibenzofuran	59.1	7.04	12.0	9.52	10.0	0.18
123678-hexachlorodibenzofuran	<26	<3.10	<5.28	<4.19	<4.42	<0.081
234678-hexachlorodibenzofuran	37.1	4.42	7.54	5.98	6.30	0.12
123789-hexachlorodibenzofuran	<3.8	<0.45	<0.77	<0.61	<0.65	<0.012
1234678-heptachlorodibenzofuran	138	16.4	28.0	22.2	23.4	0.43
1234789-heptachlorodibenzofuran	21.9	2.61	4.45	3.53	3.72	0.068
Octachlorodibenzofuran	<56	<6.67	<11.4	<9.02	<9.51	<0.17
PCB 81	<40	<4.76	<8.13	<6.44	<6.80	<0.12
PCB 77	<39	<4.65	<7.93	<6.28	<6.63	<0.12
PCB 123	<40	<4.76	<8.13	<6.44	<6.80	<0.12
PCB 118	320	38.1	65.0	51.6	54.4	0.99
PCB 114	<36	<4.29	<7.32	<5.80	<6.12	<0.11
PCB 105	110	13.1	22.4	17.7	18.7	0.34
PCB 126	<37	<4.41	<7.52	<5.96	<6.29	<0.12
PCB 167	<38	<4.53	<7.72	<6.12	<6.46	<0.12
PCB 156 + PCB 157	<35	<4.17	<7.11	<5.64	<5.95	<0.11
PCB 169	<38	<4.53	<7.72	<6.12	<6.46	<0.12
PCB 189	<30	<3.57	<6.10	<4.83	<5.10	<0.093
Total Dioxins & Furans Only	<1297	<155	<264	<209	<220	<4.03
Dioxin-Like PCBs	<763	<90.9	<155	<123	<130	<2.37
Total Dioxins & Furans and PCBs	<2060	<245	<419	<332	<350	<6.41
Total PCBs	7200	858	1463	1160	1223	22.4

Dry Gas Volume Sampled (Rm^3*) :	4.921
Actual Flowrate (m^3/s) :	26.1
Dry Reference Flowrate (Rm^3/s*) :	15.3
Dry Adjusted Flowrate (Rm^3/s**) :	19.3
Wet Reference Flowrate (Rm^3/s*) :	18.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 40
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Actual Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/m³	pg/m³	pg/m³	%
2378-tetrachlorodibenzo-p-dioxin	<0.68	0.74	<0.71	5.6
12378-pentachlorodibenzo-p-dioxin	1.33	1.20	1.27	7.0
123478-hexachlorodibenzo-p-dioxin	3.09	3.10	3.10	0.1
123678-hexachlorodibenzo-p-dioxin	8.06	8.05	8.06	0.1
123789-hexachlorodibenzo-p-dioxin	2.61	3.10	2.85	12.2
1234678-heptachlorodibenzo-p-dioxin	48.1	51.7	49.9	5.1
Octachlorodibenzo-p-dioxin	42.0	41.7	41.9	0.6
2378-tetrachlorodibenzofuran	<0.85	<0.85	<0.85	0.6
12378-pentachlorodibenzofuran	<1.05	1.10	<1.07	3.2
23478-pentachlorodibenzofuran	2.20	2.30	2.25	3.0
123478-hexachlorodibenzofuran	6.35	7.04	6.69	7.3
123678-hexachlorodibenzofuran	<3.05	<3.10	<3.07	1.2
234678-hexachlorodibenzofuran	4.18	4.42	4.30	4.0
123789-hexachlorodibenzofuran	<0.40	<0.45	<0.43	8.4
1234678-heptachlorodibenzofuran	14.5	16.4	15.5	8.9
1234789-heptachlorodibenzofuran	2.41	2.61	2.51	5.5
Octachlorodibenzofuran	<6.21	<6.67	<6.44	5.0
PCB 81	<12.1	<4.76	<8.41	61.3
PCB 77	<11.6	<4.65	<8.11	60.4
PCB 123	<8.77	<4.76	<6.77	41.9
PCB 118	65.8	38.1	52.0	37.7
PCB 114	<7.67	<4.29	<5.98	40.0
PCB 105	23.1	13.1	18.1	39.2
PCB 126	<8.04	<4.41	<6.22	41.3
PCB 167	<9.38	<4.53	<6.95	49.4
PCB 156 + PCB 157	<8.53	<4.17	<6.35	48.5
PCB 169	<9.14	<4.53	<6.83	47.7
PCB 189	<6.09	<3.57	<4.83	36.8
Total Dioxins & Furans Only	<147	<155	<151	3.5
Dioxin-Like PCBs	<170	<90.9	<131	43.0
Total Dioxins & Furans and PCBs	<317	<245	<281	18.1
Total PCBs	1340	858	1099	31.0

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 41
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Dry Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<1.18	1.26	<1.22	4.5
12378-pentachlorodibenzo-p-dioxin	2.30	2.05	2.18	8.1
123478-hexachlorodibenzo-p-dioxin	5.36	5.28	5.32	1.0
123678-hexachlorodibenzo-p-dioxin	14.0	13.7	13.9	1.2
123789-hexachlorodibenzo-p-dioxin	4.52	5.28	4.90	11.1
1234678-heptachlorodibenzo-p-dioxin	83.4	88.2	85.8	4.0
Octachlorodibenzo-p-dioxin	72.8	71.1	72.0	1.7
2378-tetrachlorodibenzofuran	<1.48	<1.44	<1.46	1.7
12378-pentachlorodibenzofuran	<1.82	1.87	<1.84	2.1
23478-pentachlorodibenzofuran	3.82	3.92	3.87	1.8
123478-hexachlorodibenzofuran	11.0	12.0	11.5	6.2
123678-hexachlorodibenzofuran	<5.28	<5.28	<5.28	0.1
234678-hexachlorodibenzofuran	7.24	7.54	7.39	2.9
123789-hexachlorodibenzofuran	<0.70	<0.77	<0.73	7.3
1234678-heptachlorodibenzofuran	25.1	28.0	26.6	7.8
1234789-heptachlorodibenzofuran	4.18	4.45	4.32	4.4
Octachlorodibenzofuran	<10.8	<11.4	<11.1	3.9
PCB 81	<20.9	<8.13	<14.5	62.2
PCB 77	<20.1	<7.93	<14.0	61.3
PCB 123	<15.2	<8.13	<11.7	42.9
PCB 118	114	65.0	89.5	38.7
PCB 114	<13.3	<7.32	<10.3	41.1
PCB 105	40.1	22.4	31.2	40.2
PCB 126	<13.9	<7.52	<10.7	42.3
PCB 167	<16.3	<7.72	<12.0	50.3
PCB 156 + PCB 157	<14.8	<7.11	<10.9	49.5
PCB 169	<15.8	<7.72	<11.8	48.7
PCB 189	<10.6	<6.10	<8.33	37.9
Total Dioxins & Furans Only	<255	<264	<259	2.4
Dioxin-Like PCBs	<295	<155	<225	44.0
Total Dioxins & Furans and PCBs	<550	<419	<484	19.2
Total PCBs	2322	1463	1893	32.1

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Dry Adjusted Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.90	1.00	<0.95	7.1
12378-pentachlorodibenzo-p-dioxin	1.76	1.63	1.69	5.5
123478-hexachlorodibenzo-p-dioxin	4.10	4.19	4.14	1.5
123678-hexachlorodibenzo-p-dioxin	10.7	10.9	10.8	1.4
123789-hexachlorodibenzo-p-dioxin	3.45	4.19	3.82	13.6
1234678-heptachlorodibenzo-p-dioxin	63.7	69.9	66.8	6.5
Octachlorodibenzo-p-dioxin	55.7	56.4	56.0	0.9
2378-tetrachlorodibenzofuran	<1.13	<1.14	<1.14	0.9
12378-pentachlorodibenzofuran	<1.39	1.48	<1.43	4.6
23478-pentachlorodibenzofuran	2.92	3.11	3.01	4.4
123478-hexachlorodibenzofuran	8.41	9.52	8.96	8.8
123678-hexachlorodibenzofuran	<4.03	<4.19	<4.11	2.7
234678-hexachlorodibenzofuran	5.53	5.98	5.76	5.4
123789-hexachlorodibenzofuran	<0.53	<0.61	<0.57	9.8
1234678-heptachlorodibenzofuran	19.2	22.2	20.7	10.3
1234789-heptachlorodibenzofuran	3.20	3.53	3.36	7.0
Octachlorodibenzofuran	<8.23	<9.02	<8.63	6.5
PCB 81	<16.0	<6.44	<11.2	60.1
PCB 77	<15.3	<6.28	<10.8	59.2
PCB 123	<11.6	<6.44	<9.03	40.5
PCB 118	87.1	51.6	69.3	36.3
PCB 114	<10.2	<5.80	<7.98	38.7
PCB 105	30.7	17.7	24.2	37.8
PCB 126	<10.7	<5.96	<8.31	39.9
PCB 167	<12.4	<6.12	<9.27	48.1
PCB 156 + PCB 157	<11.3	<5.64	<8.47	47.2
PCB 169	<12.1	<6.12	<9.11	46.4
PCB 189	<8.07	<4.83	<6.45	35.5
Total Dioxins & Furans Only	<195	<209	<202	4.9
Dioxin-Like PCBs	<225	<123	<174	41.6
Total Dioxins & Furans and PCBs	<420	<332	<376	16.6
Total PCBs	1775	1160	1467	29.6

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 43
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Wet Reference Concentration Test No. 8	Test No. 9	Average	Coefficient of Variation
	pg/Rm³*	pg/Rm³*	pg/Rm³*	%
2378-tetrachlorodibenzo-p-dioxin	<0.97	1.05	<1.01	5.9
12378-pentachlorodibenzo-p-dioxin	1.89	1.72	1.80	6.7
123478-hexachlorodibenzo-p-dioxin	4.40	4.42	4.41	0.3
123678-hexachlorodibenzo-p-dioxin	11.5	11.5	11.5	0.1
123789-hexachlorodibenzo-p-dioxin	3.71	4.42	4.06	12.4
1234678-heptachlorodibenzo-p-dioxin	68.4	73.7	71.1	5.3
Octachlorodibenzo-p-dioxin	59.7	59.5	59.6	0.3
2378-tetrachlorodibenzofuran	<1.21	<1.21	<1.21	0.3
12378-pentachlorodibenzofuran	<1.49	1.56	<1.53	3.4
23478-pentachlorodibenzofuran	3.13	3.28	3.21	3.2
123478-hexachlorodibenzofuran	9.02	10.0	9.53	7.6
123678-hexachlorodibenzofuran	<4.33	<4.42	<4.37	1.4
234678-hexachlorodibenzofuran	5.94	6.30	6.12	4.2
123789-hexachlorodibenzofuran	<0.57	<0.65	<0.61	8.6
1234678-heptachlorodibenzofuran	20.6	23.4	22.0	9.1
1234789-heptachlorodibenzofuran	3.43	3.72	3.57	5.8
Octachlorodibenzofuran	<8.83	<9.51	<9.17	5.3
PCB 81	<17.1	<6.80	<12.0	61.1
PCB 77	<16.4	<6.63	<11.5	60.2
PCB 123	<12.5	<6.80	<9.63	41.6
PCB 118	93.5	54.4	73.9	37.4
PCB 114	<10.9	<6.12	<8.51	39.8
PCB 105	32.9	18.7	25.8	39.0
PCB 126	<11.4	<6.29	<8.86	41.0
PCB 167	<13.3	<6.46	<9.89	49.1
PCB 156 + PCB 157	<12.1	<5.95	<9.03	48.3
PCB 169	<13.0	<6.46	<9.72	47.5
PCB 189	<8.66	<5.10	<6.88	36.6
Total Dioxins & Furans Only	<209	<220	<215	3.7
Dioxin-Like PCBs	<242	<130	<186	42.7
Total Dioxins & Furans and PCBs	<451	<350	<401	17.8
Total PCBs	1905	1223	1564	30.8

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 44
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Specific Isomer Emission Rates
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Emission Rate Test No. 8	Test No. 9	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	<0.017	0.019	<0.018	7.8
12378-pentachlorodibenzo-p-dioxin	0.034	0.031	0.032	4.8
123478-hexachlorodibenzo-p-dioxin	0.078	0.081	0.080	2.3
123678-hexachlorodibenzo-p-dioxin	0.20	0.21	0.21	2.1
123789-hexachlorodibenzo-p-dioxin	0.066	0.081	0.073	14.3
1234678-heptachlorodibenzo-p-dioxin	1.22	1.35	1.28	7.3
Octachlorodibenzo-p-dioxin	1.06	1.09	1.08	1.6
2378-tetrachlorodibenzofuran	<0.022	<0.022	<0.022	1.6
12378-pentachlorodibenzofuran	<0.027	0.029	<0.028	5.4
23478-pentachlorodibenzofuran	0.056	0.060	0.058	5.2
123478-hexachlorodibenzofuran	0.16	0.18	0.17	9.5
123678-hexachlorodibenzofuran	<0.077	<0.081	<0.079	3.4
234678-hexachlorodibenzofuran	0.11	0.12	0.11	6.2
123789-hexachlorodibenzofuran	<0.010	<0.012	<0.011	10.6
1234678-heptachlorodibenzofuran	0.37	0.43	0.40	11.1
1234789-heptachlorodibenzofuran	0.061	0.068	0.065	7.7
Octachlorodibenzofuran	<0.16	<0.17	<0.17	7.2
PCB 81	<0.31	<0.12	<0.21	59.5
PCB 77	<0.29	<0.12	<0.21	58.6
PCB 123	<0.22	<0.12	<0.17	39.8
PCB 118	1.66	0.99	1.33	35.6
PCB 114	<0.19	<0.11	<0.15	38.0
PCB 105	0.59	0.34	0.46	37.1
PCB 126	<0.20	<0.12	<0.16	39.2
PCB 167	<0.24	<0.12	<0.18	47.4
PCB 156 + PCB 157	<0.22	<0.11	<0.16	46.6
PCB 169	<0.23	<0.12	<0.17	45.8
PCB 189	<0.15	<0.093	<0.12	34.8
Total Dioxins & Furans Only	<3.72	<4.03	<3.88	5.7
Dioxin-Like PCBs	<4.31	<2.37	<3.34	40.9
Total Dioxins & Furans and PCBs	<8.03	<6.41	<7.22	15.9
Total PCBs	33.9	22.4	28.1	28.9

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Specific Isomer Emission Data
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg/m³	pg/Rm³*	pg/Rm³**	pg/Rm³*	ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.71	<1.22	<0.95	<1.01	<0.018
12378-pentachlorodibenzo-p-dioxin	1.27	2.18	1.69	1.80	0.032
123478-hexachlorodibenzo-p-dioxin	3.10	5.32	4.14	4.41	0.080
123678-hexachlorodibenzo-p-dioxin	8.06	13.9	10.8	11.5	0.21
123789-hexachlorodibenzo-p-dioxin	2.85	4.90	3.82	4.06	0.073
1234678-heptachlorodibenzo-p-dioxin	49.9	85.8	66.8	71.1	1.28
Octachlorodibenzo-p-dioxin	41.9	72.0	56.0	59.6	1.08
2378-tetrachlorodibenzofuran	<0.85	<1.46	<1.14	<1.21	<0.022
12378-pentachlorodibenzofuran	<1.07	<1.84	<1.43	<1.53	<0.028
23478-pentachlorodibenzofuran	2.25	3.87	3.01	3.21	0.058
123478-hexachlorodibenzofuran	6.69	11.5	8.96	9.53	0.17
123678-hexachlorodibenzofuran	<3.07	<5.28	<4.11	<4.37	<0.079
234678-hexachlorodibenzofuran	4.30	7.39	5.76	6.12	0.11
123789-hexachlorodibenzofuran	<0.43	<0.73	<0.57	<0.61	<0.011
1234678-heptachlorodibenzofuran	15.5	26.6	20.7	22.0	0.40
1234789-heptachlorodibenzofuran	2.51	4.32	3.36	3.57	0.065
Octachlorodibenzofuran	<6.44	<11.1	<8.63	<9.17	<0.17
PCB 81	<8.41	<14.5	<11.2	<12.0	<0.21
PCB 77	<8.11	<14.0	<10.8	<11.5	<0.21
PCB 123	<6.77	<11.7	<9.03	<9.63	<0.17
PCB 118	52.0	89.5	69.3	73.9	1.33
PCB 114	<5.98	<10.3	<7.98	<8.51	<0.15
PCB 105	18.1	31.2	24.2	25.8	0.46
PCB 126	<6.22	<10.7	<8.31	<8.86	<0.16
PCB 167	<6.95	<12.0	<9.27	<9.89	<0.18
PCB 156 + PCB 157	<6.35	<10.9	<8.47	<9.03	<0.16
PCB 169	<6.83	<11.8	<9.11	<9.72	<0.17
PCB 189	<4.83	<8.33	<6.45	<6.88	<0.12
Total Dioxins & Furans Only	<151	<259	<202	<215	<3.88
Dioxin-Like PCBs	<131	<225	<174	<186	<3.34
Total Dioxins & Furans and PCBs	<281	<484	<376	<401	<7.22
Total PCBs	1099	1893	1467	1564	28.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Actual Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 8 pg TEQ/m³	Test No. 9 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.68	0.74	<0.71
12378-pentachlorodibenzo-p-dioxin	1.000	1.33	1.20	1.27
123478-hexachlorodibenzo-p-dioxin	0.100	0.31	0.31	0.31
123678-hexachlorodibenzo-p-dioxin	0.100	0.81	0.81	0.81
123789-hexachlorodibenzo-p-dioxin	0.100	0.26	0.31	0.29
1234678-heptachlorodibenzo-p-dioxin	0.010	0.48	0.52	0.50
Octachlorodibenzo-p-dioxin	0.0003	0.013	0.013	0.013
2378-tetrachlorodibenzofuran	0.100	<0.085	<0.085	<0.085
12378-pentachlorodibenzofuran	0.030	<0.031	0.033	<0.032
23478-pentachlorodibenzofuran	0.300	0.66	0.69	0.68
123478-hexachlorodibenzofuran	0.100	0.63	0.70	0.67
123678-hexachlorodibenzofuran	0.100	<0.30	<0.31	<0.31
234678-hexachlorodibenzofuran	0.100	0.42	0.44	0.43
123789-hexachlorodibenzofuran	0.100	<0.040	<0.045	<0.043
1234678-heptachlorodibenzofuran	0.010	0.14	0.16	0.15
1234789-heptachlorodibenzofuran	0.010	0.024	0.026	0.025
Octachlorodibenzofuran	0.0003	<0.0019	<0.0020	<0.0019
PCB 81	0.0003	<0.0036	<0.0014	<0.0025
PCB 77	0.0001	<0.0012	<0.00046	<0.00081
PCB 123	0.00003	<0.00026	<0.00014	<0.00020
PCB 118	0.00003	0.0020	0.0011	0.0016
PCB 114	0.00003	<0.00023	<0.00013	<0.00018
PCB 105	0.00003	0.00069	0.00039	0.00054
PCB 126	0.100	<0.80	<0.44	<0.62
PCB 167	0.00003	<0.00028	<0.00014	<0.00021
PCB 156 + PCB 157	0.00003	<0.00026	<0.00013	<0.00019
PCB 169	0.030	<0.27	<0.14	<0.20
PCB 189	0.00003	<0.00018	<0.00011	<0.00014
Total Dioxins & Furans Only		<6.23	<6.40	<6.31
Dioxin-Like PCBs		<1.09	<0.58	<0.83
Total Dioxins & Furans and PCBs		<7.31	<6.98	<7.15

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<1.18	1.26	<1.22
12378-pentachlorodibenzo-p-dioxin	1.000	2.30	2.05	2.18
123478-hexachlorodibenzo-p-dioxin	0.100	0.54	0.53	0.53
123678-hexachlorodibenzo-p-dioxin	0.100	1.40	1.37	1.39
123789-hexachlorodibenzo-p-dioxin	0.100	0.45	0.53	0.49
1234678-heptachlorodibenzo-p-dioxin	0.010	0.83	0.88	0.86
Octachlorodibenzo-p-dioxin	0.0003	0.022	0.021	0.022
2378-tetrachlorodibenzofuran	0.100	<0.15	<0.14	<0.15
12378-pentachlorodibenzofuran	0.030	<0.054	0.056	<0.055
23478-pentachlorodibenzofuran	0.300	1.15	1.18	1.16
123478-hexachlorodibenzofuran	0.100	1.10	1.20	1.15
123678-hexachlorodibenzofuran	0.100	<0.53	<0.53	<0.53
234678-hexachlorodibenzofuran	0.100	0.72	0.75	0.74
123789-hexachlorodibenzofuran	0.100	<0.070	<0.077	<0.073
1234678-heptachlorodibenzofuran	0.010	0.25	0.28	0.27
1234789-heptachlorodibenzofuran	0.010	0.042	0.045	0.043
Octachlorodibenzofuran	0.0003	<0.0032	<0.0034	<0.0033
PCB 81	0.0003	<0.0063	<0.0024	<0.0044
PCB 77	0.0001	<0.0020	<0.00079	<0.0014
PCB 123	0.00003	<0.00046	<0.00024	<0.00035
PCB 118	0.00003	0.0034	0.0020	0.0027
PCB 114	0.00003	<0.00040	<0.00022	<0.00031
PCB 105	0.00003	0.0012	0.00067	0.00094
PCB 126	0.100	<1.39	<0.75	<1.07
PCB 167	0.00003	<0.00049	<0.00023	<0.00036
PCB 156 + PCB 157	0.00003	<0.00044	<0.00021	<0.00033
PCB 169	0.030	<0.47	<0.23	<0.35
PCB 189	0.00003	<0.00032	<0.00018	<0.00025
Total Dioxins & Furans Only		<10.8	<10.9	<10.9
Dioxin-Like PCBs		<1.88	<0.99	<1.44
Total Dioxins & Furans and PCBs		<12.7	<11.9	<12.3

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.90	1.00	<0.95
12378-pentachlorodibenzo-p-dioxin	1.000	1.76	1.63	1.69
123478-hexachlorodibenzo-p-dioxin	0.100	0.41	0.42	0.41
123678-hexachlorodibenzo-p-dioxin	0.100	1.07	1.09	1.08
123789-hexachlorodibenzo-p-dioxin	0.100	0.35	0.42	0.38
1234678-heptachlorodibenzo-p-dioxin	0.010	0.64	0.70	0.67
Octachlorodibenzo-p-dioxin	0.0003	0.017	0.017	0.017
2378-tetrachlorodibenzofuran	0.100	<0.11	<0.11	<0.11
12378-pentachlorodibenzofuran	0.030	<0.042	0.044	<0.043
23478-pentachlorodibenzofuran	0.300	0.88	0.93	0.90
123478-hexachlorodibenzofuran	0.100	0.84	0.95	0.90
123678-hexachlorodibenzofuran	0.100	<0.40	<0.42	<0.41
234678-hexachlorodibenzofuran	0.100	0.55	0.60	0.58
123789-hexachlorodibenzofuran	0.100	<0.053	<0.061	<0.057
1234678-heptachlorodibenzofuran	0.010	0.19	0.22	0.21
1234789-heptachlorodibenzofuran	0.010	0.032	0.035	0.034
Octachlorodibenzofuran	0.0003	<0.0025	<0.0027	<0.0026
PCB 81	0.0003	<0.0048	<0.0019	<0.0034
PCB 77	0.0001	<0.0015	<0.00063	<0.0011
PCB 123	0.00003	<0.00035	<0.00019	<0.00027
PCB 118	0.00003	0.0026	0.0015	0.0021
PCB 114	0.00003	<0.00030	<0.00017	<0.00024
PCB 105	0.00003	0.00092	0.00053	0.00073
PCB 126	0.100	<1.07	<0.60	<0.83
PCB 167	0.00003	<0.00037	<0.00018	<0.00028
PCB 156 + PCB 157	0.00003	<0.00034	<0.00017	<0.00025
PCB 169	0.030	<0.36	<0.18	<0.27
PCB 189	0.00003	<0.00024	<0.00014	<0.00019
Total Dioxins & Furans Only		<8.25	<8.65	<8.45
Dioxin-Like PCBs		<1.44	<0.79	<1.11
Total Dioxins & Furans and PCBs		<9.69	<9.44	<9.56

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 49
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.90	1.00	<0.95
12378-pentachlorodibenzo-p-dioxin	0.500	0.88	0.81	0.85
123478-hexachlorodibenzo-p-dioxin	0.100	0.41	0.42	0.41
123678-hexachlorodibenzo-p-dioxin	0.100	1.07	1.09	1.08
123789-hexachlorodibenzo-p-dioxin	0.100	0.35	0.42	0.38
1234678-heptachlorodibenzo-p-dioxin	0.010	0.64	0.70	0.67
Octachlorodibenzo-p-dioxin	0.001	0.056	0.056	0.056
2378-tetrachlorodibenzofuran	0.100	<0.11	<0.11	<0.11
12378-pentachlorodibenzofuran	0.050	<0.069	0.074	<0.072
23478-pentachlorodibenzofuran	0.500	1.46	1.55	1.51
123478-hexachlorodibenzofuran	0.100	0.84	0.95	0.90
123678-hexachlorodibenzofuran	0.100	<0.40	<0.42	<0.41
234678-hexachlorodibenzofuran	0.100	0.55	0.60	0.58
123789-hexachlorodibenzofuran	0.100	<0.053	<0.061	<0.057
1234678-heptachlorodibenzofuran	0.010	0.19	0.22	0.21
1234789-heptachlorodibenzofuran	0.010	0.032	0.035	0.034
Octachlorodibenzofuran	0.001	<0.0082	<0.0090	<0.0086
Total Dioxins & Furans		<8.03	<8.53	<8.28
In-Stack Emission Limit				60

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

NATO/CCMS (1989) Toxicity Equivalency Factors

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 50
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 8 pg TEQ/Rm³*	Test No. 9 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.97	1.05	<1.01
12378-pentachlorodibenzo-p-dioxin	1.000	1.89	1.72	1.80
123478-hexachlorodibenzo-p-dioxin	0.100	0.44	0.44	0.44
123678-hexachlorodibenzo-p-dioxin	0.100	1.15	1.15	1.15
123789-hexachlorodibenzo-p-dioxin	0.100	0.37	0.44	0.41
1234678-heptachlorodibenzo-p-dioxin	0.010	0.68	0.74	0.71
Octachlorodibenzo-p-dioxin	0.0003	0.018	0.018	0.018
2378-tetrachlorodibenzofuran	0.100	<0.12	<0.12	<0.12
12378-pentachlorodibenzofuran	0.030	<0.045	0.047	<0.046
23478-pentachlorodibenzofuran	0.300	0.94	0.98	0.96
123478-hexachlorodibenzofuran	0.100	0.90	1.00	0.95
123678-hexachlorodibenzofuran	0.100	<0.43	<0.44	<0.44
234678-hexachlorodibenzofuran	0.100	0.59	0.63	0.61
123789-hexachlorodibenzofuran	0.100	<0.057	<0.065	<0.061
1234678-heptachlorodibenzofuran	0.010	0.21	0.23	0.22
1234789-heptachlorodibenzofuran	0.010	0.034	0.037	0.036
Octachlorodibenzofuran	0.0003	<0.0026	<0.0029	<0.0028
PCB 81	0.0003	<0.0051	<0.0020	<0.0036
PCB 77	0.0001	<0.0016	<0.00066	<0.0012
PCB 123	0.00003	<0.00037	<0.00020	<0.00029
PCB 118	0.00003	0.0028	0.0016	0.0022
PCB 114	0.00003	<0.00033	<0.00018	<0.00026
PCB 105	0.00003	0.00099	0.00056	0.00077
PCB 126	0.100	<1.14	<0.63	<0.89
PCB 167	0.00003	<0.00040	<0.00019	<0.00030
PCB 156 + PCB 157	0.00003	<0.00036	<0.00018	<0.00027
PCB 169	0.030	<0.39	<0.19	<0.29
PCB 189	0.00003	<0.00026	<0.00015	<0.00021
Total Dioxins & Furans Only		<8.85	<9.12	<8.99
Dioxin-Like PCBs		<1.54	<0.83	<1.19
Total Dioxins & Furans and PCBs		<10.4	<9.95	<10.2

* At 25°C and 1 atmosphere

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 51
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Dioxin and Furan Toxicity Equivalent Emission Rates
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 8 ng TEQ/s	Test No. 9 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.017	0.019	<0.018
12378-pentachlorodibenzo-p-dioxin	1.000	0.034	0.031	0.032
123478-hexachlorodibenzo-p-dioxin	0.100	0.0078	0.0081	0.0080
123678-hexachlorodibenzo-p-dioxin	0.100	0.020	0.021	0.021
123789-hexachlorodibenzo-p-dioxin	0.100	0.0066	0.0081	0.0073
1234678-heptachlorodibenzo-p-dioxin	0.010	0.012	0.013	0.013
Octachlorodibenzo-p-dioxin	0.0003	0.00032	0.00033	0.00032
2378-tetrachlorodibenzofuran	0.100	<0.0022	<0.0022	<0.0022
12378-pentachlorodibenzofuran	0.030	<0.00080	0.00086	<0.00083
23478-pentachlorodibenzofuran	0.300	0.017	0.018	0.017
123478-hexachlorodibenzofuran	0.100	0.016	0.018	0.017
123678-hexachlorodibenzofuran	0.100	<0.0077	<0.0081	<0.0079
234678-hexachlorodibenzofuran	0.100	0.011	0.012	0.011
123789-hexachlorodibenzofuran	0.100	<0.0010	<0.0012	<0.0011
1234678-heptachlorodibenzofuran	0.010	0.0037	0.0043	0.0040
1234789-heptachlorodibenzofuran	0.010	0.00061	0.00068	0.00065
Octachlorodibenzofuran	0.0003	<0.000047	<0.000052	<0.000050
PCB 81	0.0003	<0.000092	<0.000037	<0.000064
PCB 77	0.0001	<0.000029	<0.000012	<0.000021
PCB 123	0.00003	<0.0000067	<0.0000037	<0.0000052
PCB 118	0.00003	0.000050	0.000030	0.000040
PCB 114	0.00003	<0.0000058	<0.0000034	<0.0000046
PCB 105	0.00003	0.000018	0.000010	0.000014
PCB 126	0.100	<0.020	<0.012	<0.016
PCB 167	0.00003	<0.0000071	<0.0000035	<0.0000053
PCB 156 + PCB 157	0.00003	<0.0000065	<0.0000033	<0.0000049
PCB 169	0.030	<0.0069	<0.0035	<0.0052
PCB 189	0.00003	<0.0000046	<0.0000028	<0.0000037
Total Dioxins & Furans Only		<0.16	<0.17	<0.16
Dioxin-Like PCBs		<0.027	<0.015	<0.021
Total Dioxins & Furans and PCBs		<0.19	<0.18	<0.18

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 52
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.71	<1.22	<0.95	<1.01	<0.018
12378-pentachlorodibenzo-p-dioxin	1.27	2.18	1.69	1.80	0.032
123478-hexachlorodibenzo-p-dioxin	0.31	0.53	0.41	0.44	0.0080
123678-hexachlorodibenzo-p-dioxin	0.81	1.39	1.08	1.15	0.021
123789-hexachlorodibenzo-p-dioxin	0.29	0.49	0.38	0.41	0.0073
1234678-heptachlorodibenzo-p-dioxin	0.50	0.86	0.67	0.71	0.013
Octachlorodibenzo-p-dioxin	0.013	0.022	0.017	0.018	0.00032
2378-tetrachlorodibenzofuran	<0.085	<0.15	<0.11	<0.12	<0.0022
12378-pentachlorodibenzofuran	<0.032	<0.055	<0.043	<0.046	<0.00083
23478-pentachlorodibenzofuran	0.68	1.16	0.90	0.96	0.017
123478-hexachlorodibenzofuran	0.67	1.15	0.90	0.95	0.017
123678-hexachlorodibenzofuran	<0.31	<0.53	<0.41	<0.44	<0.0079
234678-hexachlorodibenzofuran	0.43	0.74	0.58	0.61	0.011
123789-hexachlorodibenzofuran	<0.043	<0.073	<0.057	<0.061	<0.0011
1234678-heptachlorodibenzofuran	0.15	0.27	0.21	0.22	0.0040
1234789-heptachlorodibenzofuran	0.025	0.043	0.034	0.036	0.00065
Octachlorodibenzofuran	<0.0019	<0.0033	<0.0026	<0.0028	<0.000050
PCB 81	<0.0025	<0.0044	<0.0034	<0.0036	<0.000064
PCB 77	<0.00081	<0.0014	<0.0011	<0.0012	<0.000021
PCB 123	<0.00020	<0.00035	<0.00027	<0.00029	<0.0000052
PCB 118	0.0016	0.0027	0.0021	0.0022	0.000040
PCB 114	<0.00018	<0.00031	<0.00024	<0.00026	<0.0000046
PCB 105	0.00054	0.00094	0.00073	0.00077	0.000014
PCB 126	<0.62	<1.07	<0.83	<0.89	<0.016
PCB 167	<0.00021	<0.00036	<0.00028	<0.00030	<0.0000053
PCB 156 + PCB 157	<0.00019	<0.00033	<0.00025	<0.00027	<0.0000049
PCB 169	<0.20	<0.35	<0.27	<0.29	<0.0052
PCB 189	<0.00014	<0.00025	<0.00019	<0.00021	<0.0000037
Total Dioxins & Furans Only	<6.31	<10.9	<8.45	<8.99	<0.16
Dioxin-Like PCBs	<0.83	<1.44	<1.11	<1.19	<0.021
Total Dioxins & Furans and PCBs	<7.15	<12.3	<9.56	<10.2	<0.18

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 53
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Actual Concentration	Dry Reference Concentration	Dry Adjusted Concentration	Wet Reference Concentration	Emission Rate
	pg TEQ/m³	pg TEQ/Rm³*	pg TEQ/Rm³**	pg TEQ/Rm³*	ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	0.54	0.93	0.73	0.77	0.014
12378-pentachlorodibenzo-p-dioxin	1.27	2.18	1.69	1.80	0.032
123478-hexachlorodibenzo-p-dioxin	0.31	0.53	0.41	0.44	0.0080
123678-hexachlorodibenzo-p-dioxin	0.81	1.39	1.08	1.15	0.021
123789-hexachlorodibenzo-p-dioxin	0.29	0.49	0.38	0.41	0.0073
1234678-heptachlorodibenzo-p-dioxin	0.50	0.86	0.67	0.71	0.013
Octachlorodibenzo-p-dioxin	0.013	0.022	0.017	0.018	0.00032
2378-tetrachlorodibenzofuran	0.042	0.073	0.057	0.060	0.0011
12378-pentachlorodibenzofuran	0.024	0.042	0.033	0.035	0.00063
23478-pentachlorodibenzofuran	0.68	1.16	0.90	0.96	0.017
123478-hexachlorodibenzofuran	0.67	1.15	0.90	0.95	0.017
123678-hexachlorodibenzofuran	0.15	0.26	0.21	0.22	0.0039
234678-hexachlorodibenzofuran	0.43	0.74	0.58	0.61	0.011
123789-hexachlorodibenzofuran	0.021	0.037	0.029	0.030	0.00055
1234678-heptachlorodibenzofuran	0.15	0.27	0.21	0.22	0.0040
1234789-heptachlorodibenzofuran	0.025	0.043	0.034	0.036	0.00065
Octachlorodibenzofuran	0.00097	0.0017	0.0013	0.0014	0.000025
PCB 81	0.0013	0.0022	0.0017	0.0018	0.000032
PCB 77	0.00041	0.00070	0.00054	0.00058	0.000010
PCB 123	0.00010	0.00017	0.00014	0.00014	0.0000026
PCB 118	0.0016	0.0027	0.0021	0.0022	0.000040
PCB 114	0.000090	0.00015	0.00012	0.00013	0.0000023
PCB 105	0.00054	0.00094	0.00073	0.00077	0.000014
PCB 126	0.31	0.54	0.42	0.44	0.0080
PCB 167	0.00010	0.00018	0.00014	0.00015	0.0000027
PCB 156 + PCB 157	0.000095	0.00016	0.00013	0.00014	0.0000024
PCB 169	0.10	0.18	0.14	0.15	0.0026
PCB 189	0.000072	0.00012	0.000097	0.00010	0.0000019
Total Dioxins & Furans Only	5.91	10.2	7.92	8.42	0.15
Dioxin-Like PCBs	0.42	0.72	0.56	0.59	0.011
Total Dioxins & Furans and PCBs	6.33	10.9	8.48	9.02	0.16

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

World Health Organization Toxicity Equivalency Factors as detailed in O. Reg. 419/05.

Note: The value of half the detection limit was used to calculate emission data for those analytes not detected.

TABLE 54
Covanta - Durham York Energy Centre
Boiler No. 2 APC Outlet
Blank Dioxin and Furan Specific Isomer Analyses
Medium Carbon Feed Rate and VLN on Gas Mode

Specific Isomer	Blank Train pg	Laboratory Blank pg
2378-tetrachlorodibenzo-p-dioxin	<3.2	<3.4
12378-pentachlorodibenzo-p-dioxin	<3.6	<3.6
123478-hexachlorodibenzo-p-dioxin	<3.3	<3.4
123678-hexachlorodibenzo-p-dioxin	<3.4	<3.4
123789-hexachlorodibenzo-p-dioxin	<3.1	<3.1
1234678-heptachlorodibenzo-p-dioxin	<3.2	3.2
Octachlorodibenzo-p-dioxin	10.4	12.0
2378-tetrachlorodibenzofuran	<3.5	<3.3
12378-pentachlorodibenzofuran	<3.3	<3.2
23478-pentachlorodibenzofuran	<3.3	<3.2
123478-hexachlorodibenzofuran	<3.2	<3.1
123678-hexachlorodibenzofuran	<3.0	<2.9
234678-hexachlorodibenzofuran	<3.4	<3.2
123789-hexachlorodibenzofuran	<3.5	3.9
1234678-heptachlorodibenzofuran	<3.0	4.3
1234789-heptachlorodibenzofuran	<3.5	<3.4
Octachlorodibenzofuran	<3.4	4.7
PCB 81	<39	<37
PCB 77	<38	<36
PCB 123	<10	<29
PCB 118	110	<27
PCB 114	<8.8	<26
PCB 105	42	<27
PCB 126	<9.1	<27
PCB 167	<25	<18
PCB 156 + PCB 157	<23	<17
PCB 169	<24	<18
PCB 189	<31	<17
Total Dioxins & Furans Only	<63.3	<67.3
Dioxin-Like PCBs	<360	<279
Total Dioxins & Furans and PCBs	<423	<346
Total PCBs	800	-

"<" indicates that the amount detected is less than the detection limit
In these cases the value of the detection limit was used to calculate the total collected.

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APPENDIX 7

SVOC Field Data Sheets
for Boiler No. 1
(80 pages)

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 1	Semi-Volatile Organic Compounds
Test Date	26 Sep 16
Test Location	Quench Inlet No. 1
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	6
Impinger Box No.:	

Pitot Factor	0.848 ✓	
DGMCF	0.979 ✓	
Barometric Pressure	29.42	"Hg
Static Pressure	-2.8	"H2O
Nozzle Size	0.2516 ✓	inches
Stack Diameter	4.5 ✓	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5	
Number of Ports	2	
Number of Points/Port	12	

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None / Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	470.4 ✓	g
WCBDA	10.8 ✓	g

Combustion Gas Concentration

Oxygen	8.92	%
Carbon Dioxide	10.12	%
Carbon Monoxide	13.0	ppm

Site Diagram

Measuring Device	MII Numbers
Probe / Pitot SP4	B04011 ✓
Trendicator	
Control Box #6	A06100 ✓
Incline Manometer #9	A01674 ✓
Comb.Gas.Analyzer	
Micromanometer	
Barometer	Env Can
Calipers	

Nozzle Measurements	
1	0.2510
2	0.2520
3	0.2520
4	0.2515
Average:	0.2516

Notes:

Field Data Sheet

Date: 26 Sep 16.	Plant:	Covanta DYEC	Test No.: 1	SVOC	Page 2 of 5
	Plant Location:	Courtice, Ontario	Test Location:	Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	0.04	0.55	0.61	340	238	242	63	44	71	72	1.2	5.
	2.5	1.58	0.55	0.61	343	256	262	52	42	72	77	1.2	5.5
	5	3.12	0.56	0.62	343	256	261	50	41	72	79	1.2	6
2	7.5	4.70	0.67	0.68	343	257	259	49	41	73	82	1.5	7.5
	10	6.41	0.68	0.68	342	257	254	48	41	73	84	1.5	7.5
	12.5	8.15	0.68	0.69	342	258	253	47	42	74	86	1.5	7.5
3	15	9.88	0.76	0.73	342	257	255	47	42	74	88	1.7	8.5
	17.5	11.72	0.76	0.73	342	257	257	46	42	75	90	1.7	8.5
	20	13.57	0.75	0.73	342	258	257	46	42	76	92	1.65	9
4	22.5	15.39	0.78	0.74	341	258	258	46	42	77	94	1.8	10
	25	17.29	0.78	0.74	341	258	257	45	45	77	96	1.75	10
	27.5	19.20	0.77	0.74	341	258	255	45	44	78	97	1.75	10
5	30	21.07	0.77	0.74	340	258	255	45	42	79	98	1.75	10
	32.5	22.95	0.77	0.74	340	258	255	45	42	80	99	1.75	10
	35	24.79	0.77	0.75	340	258	256	44	43	80	100	1.75	10.5
6	37.5	26.66	0.78	0.75	340	258	257	44	43	81	101	1.8	11
	40	28.57	0.79	0.76	341	258	257	44	43	82	102	1.8	11
	42.5	30.48	0.79	0.76	342	258	258	44	43	83	102	1.8	11
7	45	32.39	0.93	0.82	341	258	258	43	43	83	103	2.1	13
	47.5	34.43	0.94	0.83	341	258	257	45	44	84	105	2.2	13.5
	50	36.52	0.94	0.83	341	258	258	45	45	85	106	2.2	13.5

Traverse: East			
Start Time: 8:22	Initial Leak Check: 0.003 cfm@ 18 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 26 Sep 16	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

	Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	8	52.5	38.60	0.98	0.85	341	258	258	46	45	85	106	2.25	14.5
		55	40.72	0.98	0.85	342	258	258	47	45	86	107	2.25	15
		57.5	42.81	0.98	0.85	341	257	258	47	44	86	108	2.25	15
*	9	60	44.92	1.00	0.86	341	258	259	46	44	87	108	2.3	10
47.48		62.5	47.15	1.01	0.85	342	258	242	51	40	86	95	2.25	10
49.46		65	49.13	1.02	0.86	342	259	261	48	45	86	98	2.3	11
51.64	10	67.5	51.31	1.02	0.86	343	260	261	46	47	86	101	2.3	11
53.83		70	53.50	1.01	0.86	343	260	260	46	47	86	102	2.25	11
55.99		72.5	55.66	1.02	0.86	343	259	260	46	46	86	103	2.3	11.5
58.14	11	75	57.81	1.03	0.87	343	259	259	46	47	86	104	2.35	12
60.32		77.5	59.99	0.99	0.85	343	259	260	46	46	86	105	2.25	11.5
62.46		80	62.13	0.98	0.85	342	259	260	46	45	86	106	2.25	11.5
64.60	12	82.5	64.27	0.99	0.85	342	259	259	46	45	87	106	2.25	11.5
66.73		85	66.40	0.98	0.85	342	258	259	46	45	87	107	2.25	11.5
68.85		87.5	68.52	0.97	0.85	341	258	259	46	46	87	108	2.25	11.5
70.98		90	70.65											

Traverse: East		Traverse:			
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time: 10:07	Final Leak Check: 0.004 cfm@ 20 "Hg	Finish Time:	Final Leak Check:	cfm @	"Hg

* Stopped to change filter — Leak check 0.002 @ 18"
re-started @ 9:37 — Leak check 0.003 @ 19"
Int 44.92 } vol = 0.33
Final 45.25

Project No.: 21707
Operator: TS

Rev: April 28, 2005

ORTECH Environmental

Field Data Sheet

Date: 26 Sep 16

Plant: Covanta DYEC

Plant Location: Courtice, Ontario

Test No.: 1 SVOC

Test Location: Quench Inlet No. 1

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure ΔH "H_2O	Pump Vacuum "Hg Gauge
1	0	71.46	0.73	0.71	343	259	261	73	47	82	83	1.7	10
	2.5	73.27	0.74	0.72	343	260	261	49	43	81	85	1.65	10
	5	75.08	0.75	0.73	343	261	263	47	44	81	87	1.7	10.5
2	7.5	76.93	0.79	0.75	343	262	263	47	44	81	89	1.8	11.5
	10	78.80	0.80	0.75	343	262	263	45	44	81	91	1.8	12
	12.5	80.70	0.80	0.75	343	261	262	45	44	81	93	1.8	12
3	15	82.60	0.82	0.77	342	261	261	46	44	81	95	1.85	13
	17.5	84.54	0.81	0.76	342	261	261	45	44	81	96	1.8	13
	20	86.47	0.81	0.76	342	260	260	45	43	82	98	1.8	13
4	22.5	88.37	0.77	0.74	342	260	260	45	44	82	99	1.75	13
	25	90.24	0.78	0.75	342	260	259	45	43	83	100	1.75	13.5
	27.5	92.13	0.80	0.76	341	260	259	45	43	83	101	1.8	14
5	30	94.00	0.74	0.73	341	260	259	43	43	84	102	1.75	14
	32.5	95.88	0.74	0.74	341	260	260	45	43	85	103	1.75	14.5
	35	97.75	0.74	0.74	341	260	259	45	44	85	104	1.7	15
6	37.5	99.61	0.72	0.73	342	260	260	46	43	86	105	1.65	15
	40	101.44	0.72	0.73	341	260	259	46	43	86	105	1.65	15
	42.5	103.29	0.72	0.73	341	260	259	46	42	86	106	1.65	15
7	45	105.12	0.84	0.79	340	260	259	46	43	87	106	2.0	15.5
	47.5	107.07	0.83	0.78	340	260	258	46	43	87	108	2.0	15.5
*	50	109.04	0.84	0.79	340	260	258	46	42	88	108	2.0	10

Traverse: West

Start Time: 10:44

Finish Time:

Initial Leak Check: 0.003 cfm@ 20 "Hg

Final Leak Check: cfm@ "Hg

Traverse:

Start Time:

Finish Time:

Initial Leak Check: cfm @ "Hg

Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator: TD

Int = 109.04

Final = 109.34

Vol = 0.3

* Stopped to change filter
Re-started @ 11:45
Leak check 0.003 @ 19"
Leak check 0.004 @ 20"

Field Data Sheet

Date: 26 Sep 16	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

	Point	Clock Time *	Dry Gas Meter ft^3 * 110.98	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
111.28	8	52.5	~~111.28~~	0.93	0.82	340	260	250	49	43	88	100	2.15	11
113.35		55	113.05	0.91	0.82	339	260	253	47	45	88	103	2.15	11
115.45		57.5	115.15	0.91	0.82	339	260	259	47	45	88	104	2.1	11
117.52	9	60	117.22	0.93	0.83	338	261	259	47	45	88	105	2.15	11.5
119.57		62.5	119.27	0.92	0.83	338	260	259	48	46	88	106	2.15	12
121.66		65	121.36	0.92	0.83	337	260	260	48	46	88	107	2.15	12
123.74	10	67.5	123.44	0.85	0.80	337	260	260	48	47	89	107	2.0	12
125.77		70	125.47	0.84	0.79	337	259	260	48	47	89	108	1.9	12
127.76		72.5	127.46	0.90	0.82	337	259	260	49	47	89	108	2.05	12.5
129.82	11	75	129.52	0.73	0.74	338	259	260	49	47	89	109	1.75	12
131.68		77.5	131.38	0.72	0.73	337	259	260	49	45	90	109	1.75	12
133.57		80	133.27	0.73	0.74	336	259	260	49	43	90	109	1.75	12
135.45	12	82.5	135.15	0.73	0.74	336	259	260	49	43	90	109	1.75	12
137.32		85	137.02	0.70	0.72	336	259	260	49	43	90	109	1.7	12
139.14		87.5	138.84	0.71	0.73	335	259	260	49	42	91	110	1.7	12
140.96		90	140.66											

Traverse: West			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 12:25	Final Leak Check: 0.002	cfm@ 19.5	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	2 Semi-Volatile Organic Compounds
Test Date	26 Sep 16
Test Location	Quench Inlet No. 1
Operator Signature	TD

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	–
DGMCF	0.979	✓
Barometric Pressure	29.34	"Hg
Static Pressure	-2.9	"H2O
Nozzle Size	0.2350 ✓	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5	
Number of Ports	2	
Number of Points/Port	12	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	414.8 –	g
WCBDA	10.4 ✓	g

Combustion Gas Concentration

Oxygen	8.81	%
Carbon Dioxide	10.15	%
Carbon Monoxide	13.2	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test #1
Incline Manometer	
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	0.2350
2	0.2355
3	0.2345
4	0.2350
Average:	0.2350

Site Diagram

Notes:

Field Data Sheet

Date: 26 Sep 16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	41.76	0.57	0.55	342	256	258	67	45	79	80	0.95	5
	2.5	43.18	0.57	0.55	342	257	258	57	42	78	81	0.9	5
	5	44.55	0.58	0.55	342	258	260	53	39	78	84	0.95	5
2	7.5	45.90	0.73	0.62	343	259	261	53	39	78	85	1.25	6.5
	10	47.46	0.73	0.62	343	259	260	52	39	78	87	1.25	6.5
	12.5	49.05	0.72	0.62	342	259	260	50	39	79	89	1.2	6.5
3	15	50.61	0.79	0.65	342	259	260	50	40	79	91	1.4	7.5
	17.5	52.24	0.78	0.65	342	259	260	49	40	79	93	1.4	8
	20	53.88	0.78	0.65	341	259	260	49	40	80	94	1.4	8
4	22.5	55.52	0.82	0.67	341	259	260	48	40	80	95	1.45	8.5
	25	57.22	0.82	0.67	342	259	260	48	40	81	97	1.45	8.5
	27.5	58.91	0.81	0.67	341	259	259	48	41	82	98	1.45	8.5
5	30	60.60	0.80	0.66	342	259	259	48	41	82	99	1.45	8.5
	32.5	62.23	0.81	0.67	341	259	260	48	41	83	99	1.45	9
	35	63.92	0.80	0.66	341	259	260	48	41	83	100	1.45	9
6	37.5	65.62	0.81	0.67	341	259	260	47	41	84	101	1.45	9
	40	67.31	0.81	0.67	341	259	260	47	40	84	102	1.45	9
	42.5	68.99	0.80	0.67	340	259	260	48	39	85	102	1.45	9.5
7	45	70.68	0.92	0.72	339	259	261	48	39	85	103	1.7	11
	47.5	72.54	0.93	0.72	339	260	259	49	41	86	104	1.65	11.5
	50	74.39	0.92		339	260	260	49	41	86	105	1.6	11.5

Traverse: East			
Start Time: 13:31	Initial Leak Check: 0.002	cfm@ 18	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 26 Sep 16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
8	52.5	76.19	0.98	0.74	340	260	260	50	41	87	106	1.8	12
	55	78.05	0.97	0.74	340	260	261	51	41	87	106	1.75	12
	57.5	79.94	0.97	0.74	339	260	260	51	41	88	107	1.75	12.5
9	60	81.82	0.98	0.74	340	260	260	51	41	88	108	1.75	13
	62.5	83.68	0.97	0.74	340	260	261	50	41	88	108	1.75	13
	65	85.55	0.96	0.74	340	260	261	50	41	89	108	1.75	13
10	67.5	87.40	0.96	0.74	340	260	262	50	42	89	108	1.75	13.5
	70	89.26	0.96	0.74	340	260	262	50	42	89	109	1.75	13.5
	72.5	91.10	0.97	0.74	341	260	262	50	42	90	109	1.75	13.5
11	75	93.01	0.92	0.72	340	260	262	50	43	90	110	1.65	14
	77.5	94.85	0.93	0.73	341	260	262	50	42	90	110	1.7	14.5
	80	96.70	0.93	0.73	341	260	262	50	42	91	110	1.7	14.5
12	82.5	98.54	0.94	0.73	341	260	262	50	42	91	110	1.7	14.5
	85	100.38	0.94	0.73	340	260	262	51	41	91	110	1.7	15
	87.5	102.23	0.93	0.73	340	260	261	51	42	91	111	1.7	15
	90	104.07											

Traverse: East			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 15:01	Final Leak Check: 0.003	cfm@ 19	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 26 Sep 16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	104.38	0.71	0.62	342	261	259	72	47	83	84	1.2	7
	2.5	105.98	0.73	0.63	342	262	258	58	41	82	86	1.25	7
	5	107.52	0.72	0.62	342	262	259	55	43	82	88	1.25	7
2	7.5	109.08	0.76	0.64	343	262	258	51	43	82	90	1.3	8
	10	110.71	0.76	0.64	343	262	257	50	44	82	92	1.3	8
	12.5	112.33	0.78	0.65	343	262	255	49	43	82	93	1.35	8.5
3	15	113.96	0.81	0.66	343	262	253	48	43	82	95	1.4	9
	17.5	115.66	0.80	0.66	343	261	255	47	43	82	96	1.35	9
	20	117.34	0.79	0.66	342	261	254	46	44	83	97	1.35	9
4	22.5	119.01	0.74	0.64	342	261	252	46	44	83	99	1.3	8.5
	25	120.63	0.74	0.64	341	261	254	46	43	84	99	1.3	8.5
	27.5	122.22	0.75	0.64	342	261	252	46	43	84	100	1.35	9
5	30	123.85	0.71	0.63	341	260	250	46	43	85	101	1.25	9
	32.5	125.45	0.74	0.64	341	260	249	47	41	85	101	1.3	9
	35	127.08	0.73	0.64	342	260	251	46	42	85	102	1.3	9
6	37.5	128.70	0.70	0.62	342	260	252	47	42	86	103	1.25	9
	40	130.31	0.69	0.62	342	260	254	47	42	87	104	1.2	9
	42.5	131.87	0.71	0.63	342	260	255	47	41	87	104	1.25	9.5
7	45	133.45	0.82	0.68	341	260	253	47	42	87	104	1.45	10.5
	47.5	135.16	0.83	0.68	340	260	252	47	43	88	106	1.45	10.5
	50	136.93	0.84	0.69	340	260	253	47	44	88	107	1.45	11

Traverse: West			
Start Time: 15:42	Initial Leak Check: 0.004 cfm@ 19 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator: TS

Field Data Sheet

Date: 20 Sep 16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	138.68	0.90	0.71	340	260	256	47	43	89	107	1.6	12
	55	140.48	0.90	0.71	340	260	257	47	43	89	108	1.6	12
	57.5	142.27	0.91	0.72	341	260	256	47	44	89	108	1.65	12.5
9	60	144.10	0.97	0.74	341	260	255	47	45	90	109	1.75	13
	62.5	145.97	0.95	0.73	341	260	256	47	46	90	109	1.7	13
	65	147.84	0.95	0.73	341	260	257	48	46	90	110	1.7	13
10	67.5	149.70	0.93	0.73	340	260	257	47	45	91	110	1.65	13
	70	151.54	0.91	0.72	339	260	256	47	44	91	110	1.6	13.5
	72.5	153.38	0.93	0.73	339	260	253	48	44	91	110	1.65	13.5
11	75	155.21	0.90	0.72	339	260	254	48	46	91	110	1.6	14
	77.5	157.03	0.88	0.71	338	260	253	48	46	92	111	1.6	14
	80	158.85	0.88	0.71	339	260	256	48	45	92	111	1.55	14
12	82.5	160.66	0.88	0.71	338	260	257	49	45	92	111	1.55	14
	85	162.46	0.88	0.71	338	260	258	49	45	92	111	1.55	14
	87.5	164.25	0.88	0.71	338	260	257	49	45	92	111	1.55	14
	90	166.03											

Traverse: West			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 17:12	Final Leak Check: 0.004	cfm@ 20	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 3	Semi-Volatile Organic Compounds
Test Date	27 Sep 16
Test Location	Quench Inlet No. 1
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	
DGMCF	0.979	
Barometric Pressure	29.31	"Hg
Static Pressure	-2.8	"H2O
Nozzle Size	0.2350	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5	
Number of Ports	2	
Number of Points/Port	12	

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	411.5	g
WCBDA	92	g

Combustion Gas Concentration

Oxygen	8.77	%
Carbon Dioxide	10.33	%
Carbon Monoxide	17.7	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test
Incline Manometer	#1
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	See
2	Test #2.
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	66.47	0.75	0.62	342	251	254	60	43	69	70	1.25	6
	2.5	68.07	0.74	0.62	342	258	255	50	41	69	72	1.2	6
	5	69.63	0.74	0.62	341	258	256	47	41	69	74	1.2	6
2	7.5	71.20	0.78	0.64	341	259	255	47	41	69	77	1.3	6.5
	10	72.83	0.78	0.64	341	259	254	45	40	70	79	1.3	6.5
	12.5	74.45	0.78	0.64	341	259	254	44	40	70	81	1.3	7
3	15	76.06	0.82	0.66	340	259	255	44	40	71	83	1.35	7.5
	17.5	77.72	0.81	0.66	340	259	254	43	39	71	85	1.35	7.5
	20	79.35	0.81	0.66	339	259	252	43	39	72	87	1.4	8
4	22.5	81.00	0.78	0.65	339	259	251	43	39	73	88	1.35	8
	25	82.64	0.77	0.65	339	259	250	43	39	74	90	1.35	8
	27.5	84.26	0.76	0.64	338	259	251	43	39	74	91	1.35	8
5	30	85.90	0.75	0.64	339	259	251	43	40	75	93	1.3	8
	32.5	87.53	0.72	0.63	338	259	251	43	40	76	94	1.25	8
	35	89.13	0.71	0.63	338	259	251	43	40	77	95	1.25	8.5
6	37.5	90.73	0.68	0.61	338	259	249	43	40	78	96	1.2	8.5
	40	92.31	0.68	0.61	337	259	252	43	40	79	97	1.2	8.5
	42.5	93.85	0.69	0.62	337	259	252	43	39	79	97	1.25	8.5
7	45	95.42	0.85	0.69	335	260	251	43	40	80	98	1.55	10
	47.5	97.15	0.84	0.69	334	260	253	43	40	81	99	1.55	10.5
	50	98.93	0.84	0.69	334	260	253	43	40	81	101	1.5	10.5

Traverse: West			
Start Time: 7:45	Initial Leak Check: 0.003 cfm@ 19 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:		
Start Time:	Initial Leak Check:	cfm @ "Hg
Finish Time:	Final Leak Check:	cfm @ "Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
8	52.5	100.69	0.90	0.71	334	260	253	43	41	82	101	1.6	11.5
	55	102.49	0.90	0.71	333	260	251	43	41	82	102	1.6	11.5
	57.5	104.27	0.90	0.71	334	260	253	44	42	83	103	1.6	11.5
9	60	106.06	0.91	0.73	333	260	254	44	42	83	103	1.7	13
	62.5	107.93	0.93	0.73	333	260	255	44	41	84	104	1.65	13
	65	109.78	0.92	0.73	332	260	253	44	41	84	104	1.65	13
10	67.5	111.61	0.92	0.73	332	260	255	44	40	85	105	1.65	13
	70	113.43	0.90	0.72	333	260	255	44	40	85	105	1.6	13.5
	72.5	115.25	0.89	0.71	333	261	255	44	40	86	105	1.6	13.5
11	75	117.06	0.86	0.71	332	261	256	44	40	86	105	1.55	13.5
	77.5	118.84	0.86	0.71	330	261	256	45	40	87	106	1.55	13.5
	80	120.60	0.86	0.71	330	261	255	45	40	87	106	1.55	14
12	82.5	122.39	0.86	0.71	330	261	255	45	40	87	106	1.55	14
	85	124.15	0.85	0.70	331	261	255	45	40	87	106	1.55	14.5
	87.5	125.93	0.86		330	261	256	46	40	87	106	1.55	15
	90	127.67											

Traverse: West			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 9:15	Final Leak Check: 0.004	cfm@ 20	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 27 Sep 16	Plant:	Covanta DYEC	Test No.: 3	SVOC	Page 4 of 5
	Plant Location:	Courtice, Ontario	Test Location:	Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	128.11	0.58	0.56	333	262	259	70	45	81	82	1.0	6
	2.5	129.55	0.57	0.56	333	262	259	52	42	80	84	0.95	6
	5	130.94	0.58	0.56	333	262	261	48	42	80	86	1.0	6.5
2	7.5	132.35	0.71	0.62	334	263	260	47	42	80	87	1.3	7.5
	10	133.98	0.70	0.62	334	263	259	45	42	80	90	1.25	7.5
	12.5	135.59	0.71	0.63	334	263	259	44	42	80	91	1.2	8
3	15	137.20	0.77	0.65	334	262	258	44	42	80	93	1.4	9.5
	17.5	138.80	0.76	0.65	334	262	258	44	42	80	94	1.4	9.5
	20	140.48	0.78	0.66	334	262	257	43	42	81	96	1.4	9.5
4	22.5	142.15	0.79	0.66	334	261	257	43	42	81	97	1.4	9.5
	25	143.84	0.80	0.67	334	261	257	43	42	82	98	1.4	9.5
	27.5	145.52	0.80	0.67	334	261	256	43	42	82	99	1.45	9.5
5	30	147.25	0.81	0.68	334	261	256	43	42	83	100	1.45	9.5
	32.5	148.98	0.78	0.66	334	261	256	43	42	83	101	1.4	9.5
	35	150.68	0.79	0.67	334	261	256	43	41	84	102	1.4	9.5
6	37.5	152.40	0.79	0.67	334	261	256	43	41	84	102	1.4	9.5
	40	154.06	0.80	0.68	333	261	256	43	41	84	103	1.45	10
	42.5	155.77	0.82	0.68	334	261	256	43	42	85	103	1.5	10.5
7	45	157.55	0.83	0.69	335	261	256	43	43	85	105	1.5	10.5
	47.5	159.32	0.97	0.74	336	261	256	44	42	86	105	1.75	12
	50	161.18	0.96	0.74	336	261	256	44	43	86	106	1.8	12

Traverse: East		Traverse:	
Start Time: 9:52	Initial Leak Check: 0.003 cfm@ 18 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	163.08	1.02	0.77	336	261	256	45	43	87	107	1.85	13
	55	165.01	1.01	0.76	336	262	256	46	44	87	108	1.85	13
	57.5	166.95	1.03	0.77	336	261	256	46	44	87	108	1.9	13.5
9	60	168.90	1.04	0.77	337	261	256	46	43	88	108	1.9	13.5
	62.5	170.87	1.05	0.78	337	261	256	46	42	88	109	1.9	14
	65	172.84	1.06	0.78	338	261	256	46	42	89	109	1.95	14
10	67.5	174.82	1.10	0.80	339	261	256	45	42	89	110	2.0	15
	70	176.83	1.07	0.79	340	261	256	45	43	89	110	1.95	15
	72.5	178.79	1.07	0.79	340	261	256	45	43	90	110	1.95	15.5
11	75	180.77	0.97	0.75	339	261	257	46	43	90	110	1.8	15.5
	77.5	182.71	0.96	0.75	338	261	257	46	42	90	111	1.75	15.5
	80	184.63	0.96	0.75	338	261	256	46	42	90	110	1.75	15.5
12	82.5	186.52	0.96	0.75	338	261	257	47	42	90	110	1.75	15.5
	85	188.41	0.96	0.75	338	261	257	47	42	91	111	1.75	15.5
	87.5	190.30	0.96	0.75	338	261	257	47	43	91	111	1.75	16
	90	192.18											

Traverse: East			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 11:22	Final Leak Check: 0.005	cfm@ 20	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	4 Semi-Volatile Organic Compounds
Test Date	29 Sep 16
Test Location	Quench Inlet No. 1
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	
DGMCF	0.979	
Barometric Pressure	29.84	"Hg
Static Pressure	-3.1	"H2O
Nozzle Size	0.2350	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	489.2	g
WCBDA	7.8	g

Combustion Gas Concentration

Oxygen	8.69	%
Carbon Dioxide	10.42	%
Carbon Monoxide	16.9	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test
Incline Manometer	#1
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1 See
2 Test #2
3
4
Average:

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: 29Sep16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	38.31	0.56	0.55	333	254	250	63	42	73	73	0.9	5
	2.5	39.64	0.57	0.55	333	256	256	47	41	73	76	0.95	5
	5	41.00	0.55	0.54	333	257	257	45	40	73	78	0.95	5
2	7.5	42.33	0.64	0.59	333	257	256	44	40	73	80	1.15	6
	10	43.81	0.63	0.58	333	257	255	43	40	73	82	1.1	6
	12.5	45.27	0.64	0.59	332	257	254	43	40	73	84	1.15	6
3	15	46.76	0.72	0.63	332	257	254	42	40	74	86	1.35	7
	17.5	48.38	0.73	0.63	333	257	254	42	41	75	88	1.35	7
	20	49.99	0.73	0.63	333	257	254	42	42	75	89	1.35	7.5
4	22.5	51.61	0.74	0.64	332	257	253	41	41	76	91	1.35	7.5
	25	53.21	0.74	0.64	332	257	253	41	41	77	93	1.35	7.5
	27.5	54.83	0.75	0.65	332	257	253	42	41	78	95	1.4	8
5	30	56.48	0.74	0.64	332	257	253	41	42	78	95	1.35	8
	32.5	58.15	0.73	0.64	332	257	253	41	41	79	97	1.3	8
	35	59.79	0.73	0.64	332	257	254	41	42	80	97	1.3	8
6	37.5	61.40	0.75	0.65	332	257	252	41	42	81	98	1.35	8.5
	40	63.06	0.75	0.65	333	257	253	41	43	81	99	1.35	8.5
	42.5	64.70	0.75	0.65	333	257	254	41	42	82	100	1.35	8.5
7	45	66.32	0.91	0.72	333	257	254	41	42	82	100	1.7	10
	47.5	68.14	0.89	0.71	333	257	254	41	44	83	102	1.65	10.5
	50	69.96	0.89	0.71	333	257	255	41	44	83	103	1.65	10.5

Traverse: East			
Start Time: 8:22	Initial Leak Check: 0.002 cfm@ 19 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator : TD

Field Data Sheet

Date: 29Sep16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
8	52.5	71.76	0.89	0.71	333	257	254	41	44	84	104	1.65	11
	55	73.60	0.90	0.72	333	257	254	41	43	85	105	1.65	11
	57.5	75.43	0.90	0.72	333	257	255	41	43	85	105	1.65	11
9	60	77.23	0.92	0.73	333	257	255	41	44	86	106	1.7	12
	62.5	79.07	0.94	0.74	334	257	255	40	44	88	106	1.75	12
	65	80.95	0.94	0.74	335	258	255	40	45	87	107	1.75	12.5
10	67.5	82.80	0.93	0.73	335	258	255	40	45	87	107	1.75	12.5
	70	84.65	0.93	0.73	336	258	256	40	46	87	108	1.75	12.5
	72.5	86.50	0.90	0.72	335	258	255	40	47	88	108	1.7	13
11	75	88.32	0.81	0.68	335	258	256	40	47	88	108	1.55	12.5
	77.5	90.09	0.82	0.69	333	258	256	40	47	88	108	1.5	12
	80	91.85	0.83	0.69	333	258	256	40	48	89	108	1.5	12
12	82.5	93.58	0.82	0.69	333	258	256	40	48	89	108	1.5	12
	85	95.35	0.84	0.70	334	258	256	40	49	89	108	1.55	12.5
	87.5	97.12	0.84	0.70	334	258	257	40	49	89	108	1.55	12.5
	90	98.89											

Traverse: East			
Start Time: 9:52	Initial Leak Check:	cfm@	"Hg
Finish Time: 9:52	Final Leak Check: 0.002	cfm@ 19.5	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 29Sep16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	99.31	0.70	0.62	338	259	259	70	43	80	84	1.35	7
	2.5	100.91	0.72	0.63	341	259	258	45	42	81	85	1.25	7
	5	102.46	0.73	0.63	340	259	259	42	42	80	86	1.3	7
2	7.5	104.04	0.74	0.64	340	260	259	41	42	80	89	1.35	7.5
	10	105.66	0.75	0.64	339	260	258	40	43	80	90	1.4	8
	12.5	107.31	0.75	0.64	339	260	258	40	43	80	91	1.35	8
3	15	108.95	0.73	0.63	339	260	257	40	42	80	93	1.3	8
	17.5	110.57	0.74	0.64	338	260	257	39	42	80	93	1.35	8
	20	112.21	0.74	0.64	338	259	257	39	42	81	95	1.35	8
4	22.5	113.85	0.71	0.63	337	259	256	39	42	81	96	1.3	8
	25	115.43	0.71	0.63	338	259	256	39	42	82	97	1.3	8
	27.5	117.02	0.71	0.63	338	259	256	39	42	82	98	1.3	8.5
5	30	118.63	0.68	0.62	338	259	256	39	42	82	98	1.25	8.5
	32.5	120.22	0.67	0.61	338	259	256	39	42	83	99	1.25	8.5
	35	121.78	0.68	0.62	338	259	256	39	42	83	99	1.25	8.5
6	37.5	123.35	0.64	0.60	338	259	256	39	42	84	100	1.2	8.5
	40	124.89	0.65	0.61	338	259	256	39	42	84	101	1.2	8.5
	42.5	126.43	0.65	0.61	338	259	256	40	41	84	101	1.2	8.5
7	45	127.96	0.77	0.66	337	259	257	40	41	85	101	1.45	9.5
	47.5	129.63	0.79	0.67	336	259	256	39	42	85	102	1.5	10
	50	131.35	0.79	0.67	336	259	257	39	43	85	104	1.45	10

Traverse: West			
Start Time: 10:31	Initial Leak Check: 0.006	cfm@ 19	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: TS

Field Data Sheet

Date: 29 Sep 16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	133.10	0.88	0.71	335	259	256	39	43	86	104	1.65	11
	55	134.89	0.88	0.71	335	259	256	39	44	86	105	1.65	11
	57.5	136.67	0.88	0.71	336	259	257	39	44	86	105	1.65	11
9	60	138.50	0.90	0.72	335	259	257	39	45	87	106	1.7	12
	62.5	140.35	0.90	0.72	336	259	257	39	45	87	106	1.65	12
	65	142.20	0.89	0.72	336	259	257	40	45	87	107	1.6	12
10	67.5	144.07	0.87	0.71	334	259	256	40	44	88	107	1.55	12
	70	145.83	0.88	0.71	334	259	256	40	44	88	107	1.6	12
	72.5	147.61	0.88	0.71	334	259	257	40	45	88	107	1.6	12
11	75	149.40	0.81	0.68	333	259	257	40	46	88	107	1.55	12.5
	77.5	151.17	0.83	0.69	334	259	257	40	45	88	107	1.55	12.5
	80	152.94	0.83	0.69	334	259	257	40	45	89	107	1.55	12.5
12	82.5	154.67	0.83	0.69	333	259	257	40	45	89	107	1.55	12.5
	85	156.44	0.83	0.69	334	259	257	41	46	89	108	1.55	13
	87.5	158.20	0.83	0.69	333	259	257	41	45	89	108	1.55	13
	90	159.95											

Traverse: West			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 12:01	Final Leak Check: 0.003	cfm@	20.5 "Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TD

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	5 Semi-Volatile Organic Compounds
Test Date	29 Sep 16
Test Location	Quench Inlet No. 1
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	
DGMCF	0.979	
Barometric Pressure	29.85	"Hg
Static Pressure	-2.9	"H2O
Nozzle Size	0.2350	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	419.7	g
WCBDA	8.9	g

Combustion Gas Concentration

Oxygen	8.76	%
Carbon Dioxide	10.45	%
Carbon Monoxide	15.0	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test #1
Incline Manometer	
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	See
2	Test #2
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: 29 Sep 16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	60.65	0.55	0.54	340	254	251	67	57	77	79	0.95	5
	2.5	62.04	0.55	0.54	340	259	259	55	40	74	77	0.95	5
	5	63.39	0.55	0.54	340	260	260	52	39	74	79	0.95	5
2	7.5	64.76	0.67	0.60	340	260	258	52	39	74	81	1.15	5.5
	10	66.27	0.68	0.60	340	260	256	50	39	75	84	1.15	5.5
	12.5	67.80	0.68	0.60	340	260	255	50	39	75	85	1.15	6
3	15	69.31	0.76	0.64	341	259	255	49	40	75	87	1.35	7
	17.5	70.95	0.76	0.64	341	259	254	49	40	76	89	1.35	7
	20	72.60	0.77	0.65	341	259	254	49	40	77	91	1.35	7
4	22.5	74.24	0.76	0.64	340	259	254	49	40	77	93	1.3	7
	25	75.87	0.75	0.64	340	259	254	48	40	78	94	1.3	7
	27.5	77.47	0.75	0.64	340	259	254	48	40	79	95	1.35	7.5
5	30	79.11	0.77	0.65	340	258	254	48	40	79	96	1.4	7.5
	32.5	80.78	0.76	0.65	340	259	254	48	40	80	98	1.35	7.5
	35	82.44	0.76	0.65	341	258	254	48	40	81	99	1.35	7.5
6	37.5	84.10	0.75	0.65	340	258	255	48	40	82	99	1.35	7.5
	40	85.73	0.74	0.64	340	259	254	49	40	83	101	1.3	7.5
	42.5	87.34	0.73	0.64	340	259	258	49	41	83	101	1.3	7.5
7	45	88.97	0.90	0.71	339	258	254	50	41	84	102	1.65	9
	47.5	90.75	0.91	0.72	338	259	254	50	41	84	104	1.7	9.5
	50	92.60	0.91	0.72	338	259	254	47	40	85	104	1.7	9.5

Traverse: East			
Start Time: 13:34	Initial Leak Check: 0.003 cfm@ 19 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 29 Sep 16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
8	52.5	94.46	0.94	0.73	338	259	254	47	39	86	105	1.75	10
	55	96.31	0.93	0.73	338	258	254	48	40	86	105	1.75	10
	57.5	98.20	0.93	0.73	338	258	254	48	41	87	106	1.7	10.5
9	60	100.06	0.94	0.73	338	258	254	47	41	87	107	1.7	10.5
	62.5	101.92	0.94	0.73	339	258	254	47	43	87	107	1.7	10.5
	65	103.78	0.94	0.74	338	258	253	46	43	88	108	1.7	10.5
10	67.5	105.62	0.90	0.72	338	258	255	46	44	88	108	1.65	11
	70	107.44	0.90	0.72	338	259	255	46	45	89	108	1.65	11
	72.5	109.26	0.91	0.72	338	259	255	46	45	89	108	1.65	11
11	75	111.07	0.88	0.71	337	259	255	46	45	89	108	1.6	11
	77.5	112.90	0.86	0.71	337	259	256	46	46	89	109	1.55	11
	80	114.65	0.85	0.70	337	259	256	46	46	90	109	1.55	11
12	82.5	116.42	0.86	0.71	337	259	256	46	45	90	109	1.6	11.5
	85	118.19	0.85	0.70	336	259	256	46	45	90	109	1.6	11.5
	87.5	119.98	0.84	0.70	336	259	256	46	44	90	109	1.6	11.5
	90	121.76											

Traverse: East			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 15:04	Final Leak Check: 0.004	cfm@ 21	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TB

Field Data Sheet

Date: 29Sep16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	122.45	0.60	0.57	342	259	254	71	45	84	85	1.05	5.5
	2.5	123.90	0.61	0.58	343	259	260	50	39	83	86	1.1	5.5
	5	125.33	0.60	0.57	343	261	264	47	39	82	89	1.1	5.5
2	7.5	126.77	0.79	0.66	343	261	261	47	39	82	89	1.4	6.5
	10	128.40	0.79	0.66	342	261	258	45	40	82	92	1.4	7
	12.5	130.09	0.80	0.66	342	261	256	44	41	82	94	1.4	7.5
3	15	131.79	0.76	0.65	342	261	257	44	41	83	96	1.35	7.5
	17.5	133.45	0.77	0.65	341	260	257	44	40	83	97	1.35	7.5
	20	135.09	0.77	0.66	341	260	256	44	40	83	98	1.4	7.5
4	22.5	136.76	0.75	0.65	341	260	255	44	40	84	99	1.35	7.5
	25	138.40	0.74	0.64	341	259	254	44	39	84	100	1.35	8
	27.5	140.02	0.75	0.65	341	259	255	44	39	84	101	1.4	8
5	30	141.70	0.71	0.63	342	260	255	44	40	85	102	1.3	8
	32.5	143.34	0.72	0.64	342	259	255	44	40	85	102	1.3	8
	35	144.95	0.70	0.63	342	259	255	44	40	86	103	1.3	8
6	37.5	146.53	0.69	0.62	341	259	255	44	40	86	103	1.3	8
	40	148.12	0.70	0.63	342	259	255	45	40	87	104	1.3	8.5
	42.5	149.68	0.70	0.63	342	259	255	45	40	87	104	1.35	8.5
7	45	151.32	0.85	0.70	341	259	256	45	41	88	105	1.6	10
	47.5	153.09	0.87	0.71	341	260	255	45	41	88	107	1.65	10
	50	154.94	0.86	0.70	342	260	255	45	42	89	108	1.6	10.5

Traverse: West			
Start Time: 15:44	Initial Leak Check: 0.005	cfm@ 18	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 29Sep 16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	156.74	0.91	0.72	341	260	255	46	42	89	108	1.7	11
	55	158.58	0.92	0.73	340	260	255	45	42	89	109	1.75	11.5
	57.5	160.45	0.92	0.73	340	260	256	46	42	90	109	1.75	11.5
9	60	162.30	0.95	0.74	340	260	256	46	42	90	110	1.8	12
	62.5	164.20	0.94	0.74	339	260	256	46	42	91	110	1.75	12.5
	65	166.08	0.93	0.73	340	260	256	46	43	91	111	1.75	12.5
10	67.5	167.96	0.92	0.73	340	260	257	46	43	91	111	1.7	12.5
	70	169.83	0.92	0.73	340	260	257	46	43	92	111	1.7	12.5
	72.5	171.66	0.93	0.74	340	260	256	46	43	92	111	1.75	13
11	75	173.53	0.84	0.70	338	260	256	47	44	92	111	1.6	13
	77.5	175.35	0.84	0.70	339	260	256	47	44	92	112	1.55	13
	80	177.16	0.83	0.70	338	260	257	47	44	92	112	1.5	12.5
12	82.5	178.95	0.83	0.70	337	260	257	47	45	92	111	1.5	12.5
	85	180.71	0.82	0.69	337	260	257	47	45	93	111	1.5	12.5
	87.5	182.45	0.82	0.69	338	260	257	47	45	93	112	1.5	12.5
	90	184.19											

Traverse: West		
Start Time:	Initial Leak Check:	cfm@ "Hg
Finish Time: 17:14	Final Leak Check: 0.003	cfm@ 21.5 "Hg

Traverse:		
Start Time:	Initial Leak Check:	cfm @ "Hg
Finish Time:	Final Leak Check:	cfm @ "Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	6 Semi-Volatile Organic Compounds
Test Date	30 Sep 16
Test Location	Quench Inlet No. 1
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848 ✓	
DGMCF	0.979 ✓	
Barometric Pressure	29.85	"Hg
Static Pressure	-2.7	"H2O
Nozzle Size	0.2850 ✓	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5	
Number of Ports	2	
Number of Points/Port	12	

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None / Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	400.1 ✓	g
WCBDA	7.7 ✓	g

Combustion Gas Concentration

Oxygen	8.77	%
Carbon Dioxide	10.44	%
Carbon Monoxide	15.8	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test #1
Incline Manometer	
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	See
2	Test #2
3	
4	
Average:	

Site Diagram

Notes:

Field Data Sheet

Date: 3 Sep 16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	84.72	0.57	0.55	333	256	253	73	46	75	76	0.95	5
	2.5	86.16	0.57	0.55	334	257	254	62	42	75	78	0.95	5
	5	87.57	0.58	0.56	334	258	256	58	39	75	81	0.95	5
2	7.5	88.95	0.69	0.61	334	258	257	57	39	76	83	1.25	6.5
	10	90.46	0.68	0.61	334	259	256	54	39	76	86	1.25	7
	12.5	92.02	0.68	0.61	334	258	255	51	38	77	88	1.25	7
3	15	93.58	0.77	0.65	334	258	255	49	38	77	90	1.4	8
	17.5	95.23	0.76	0.65	333	258	255	47	38	78	92	1.4	8
	20	96.89	0.75	0.64	334	259	255	46	39	79	94	1.35	8
4	22.5	98.52	0.77	0.65	333	258	254	45	39	79	95	1.4	8.5
	25	100.19	0.77	0.66	333	258	254	44	39	81	98	1.4	8.5
	27.5	101.83	0.77	0.66	335	259	255	44	39	82	99	1.4	8.5
5	30	103.47	0.80	0.67	334	258	255	44	39	82	99	1.5	9
	32.5	105.18	0.79	0.67	334	258	255	44	39	82	100	1.45	9
	35	106.90	0.79	0.67	333	258	255	43	39	84	102	1.45	9.5
6	37.5	108.62	0.77	0.66	333	258	255	43	40	84	103	1.4	9.5
	40	110.31	0.77	0.66	333	258	255	43	39	85	103	1.4	9.5
	42.5	112.00	0.76	0.66	333	259	255	43	39	86	104	1.4	9.5
7	45	113.66	0.89	0.72	332	259	256	43	39	86	105	1.7	11
	47.5	115.50	0.89	0.72	332	259	255	45	40	87	107	1.7	11
	50	117.34	0.89	0.72	332	259	256	45	41	88	107	1.7	11

Traverse: East			
Start Time: 7:40	Initial Leak Check: 0.003	cfm@ 18	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 30 Sep 16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	119.18	0.93	0.73	332	259	256	45	41	88	108	1.7	11.5
	55	121.03	0.93	0.74	332	259	256	46	41	89	109	1.7	11.5
	57.5	122.85	0.92	0.73	333	259	256	47	42	89	109	1.75	12
9	60	124.70	0.93	0.74	333	259	256	46	42	90	110	1.75	12.5
	62.5	126.58	0.93	0.74	333	260	256	46	42	90	110	1.75	12.5
	65	128.43	0.93	0.74	332	260	256	46	43	90	111	1.75	12.5
10	67.5	130.31	0.91	0.73	332	260	256	46	43	91	111	1.7	13
	70	132.12	0.92	0.73	332	260	257	46	43	91	111	1.75	13.5
	72.5	133.95	0.94	0.74	333	260	258	45	44	91	111	1.8	14.5
11	75	135.85	0.93	0.74	333	260	258	45	44	92	112	1.75	15
	77.5	137.74	0.92	0.74	333	260	258	45	45	92	112	1.7	15
	80	139.60	0.91	0.73	333	260	257	45	46	92	112	1.7	15
12	82.5	141.45	0.90	0.73	334	260	257	45	47	92	112	1.7	15.5
	85	143.28	0.90	0.73	333	260	257	45	46	93	112	1.7	15.5
	87.5	145.10	0.91	0.73	333	260	257	45	47	93	112	1.7	15.5
	90	146.93											

Traverse: East			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 9:10	Final Leak Check: 0.004	cfm@ 20	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 30Sep16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	147.39	0.69	0.62	336	262	260	71	46	85	87	1.25	7
	2.5	148.96	0.70	0.62	337	262	263	47	39	85	89	1.25	7
	5	150.53	0.70	0.62	336	262	264	44	39	84	91	1.3	7.5
2	7.5	152.11	0.74	0.64	336	263	262	43	39	84	93	1.35	7.5
	10	153.74	0.74	0.64	336	263	261	42	40	84	94	1.35	7.5
	12.5	155.38	0.73	0.64	336	263	260	42	40	84	96	1.3	8
3	15	157.00	0.74	0.65	335	262	260	42	40	84	97	1.35	8
	17.5	158.64	0.74	0.65	335	262	260	42	40	84	98	1.35	8
	20	160.28	0.75	0.65	335	262	259	42	40	85	99	1.4	8.5
4	22.5	161.96	0.72	0.64	335	261	259	42	40	85	100	1.35	8.5
	25	163.63	0.71	0.64	334	261	258	42	40	86	102	1.3	8.5
	27.5	165.35	0.70	0.63	334	261	258	42	39	86	102	1.3	8.5
5	30	166.84	0.65	0.61	333	260	258	42	39	87	103	1.25	8.5
	32.5	168.43	0.65	0.61	333	260	258	42	39	87	103	1.25	8.5
	35	170.00	0.67	0.62	333	260	258	42	39	87	104	1.3	9
6	37.5	171.60	0.62	0.60	333	260	258	42	39	87	105	1.25	8.5
	40	173.04	0.63	0.60	333	260	258	42	39	88	105	1.3	9
	42.5	174.64	0.62	0.60	333	260	258	42	40	88	106	1.2	9
7	45	176.20	0.78	0.67	332	260	258	43	39	89	105	1.5	10.5
	47.5	177.95	0.78	0.67	332	260	258	43	40	89	107	1.5	10.5
	50	179.69	0.81	0.69	332	260	258	43	40	89	108	1.5	10.5

Traverse: West		
Start Time: 9:49	Initial Leak Check: 0.002 cfm@ 19 "Hg	
Finish Time:	Final Leak Check: cfm@ "Hg	

Traverse:		
Start Time:	Initial Leak Check: cfm @ "Hg	
Finish Time:	Final Leak Check: cfm @ "Hg	

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 30 Sep 16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	181.42	0.85	0.70	332	260	258	43	41	90	109	1.6	11.5
	55	183.19	0.85	0.70	332	260	258	43	40	90	109	1.65	12
	57.5	185.00	0.85	0.70	332	260	258	43	40	90	110	1.6	12
9	60	186.80	0.86	0.71	332	260	258	43	43	91	110	1.65	12.5
	62.5	188.63	0.86	0.71	332	260	258	44	40	91	111	1.65	12.5
	65	190.45	0.89	0.72	332	260	258	44	40	92	111	1.7	13
10	67.5	192.30	0.88	0.72	332	260	258	44	41	92	112	1.7	13
	70	194.14	0.88	0.72	332	260	258	44	41	92	112	1.7	13.5
	72.5	195.97	0.88	0.72	332	260	258	44	40	92	112	1.7	13.5
11	75	197.81	0.83	0.70	330	260	258	44	40	92	112	1.6	13.5
	77.5	199.62	0.84	0.70	330	260	258	44	41	93	112	1.6	13.5
	80	201.39	0.86	0.71	331	260	258	44	41	93	112	1.7	14
12	82.5	203.20	0.86	0.71	332	261	258	44	42	93	113	1.7	14
	85	205.00	0.85	0.71	332	261	258	44	42	93	113	1.7	14
	87.5	206.81	0.85	0.71	333	261	259	44	42	93	113	1.7	14
	90	208.62											

Traverse: West			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 11:19	Final Leak Check: 0.003	cfm@ 9.5	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 7	Semi-Volatile Organic Compounds
Test Date	4 NOV 16
Test Location	Quench Inlet No. 1
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.84	
DGMCF	1.019	
Barometric Pressure	29.80	"Hg
Static Pressure	-2.65	"H2O
Nozzle Size	0.2366	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union (None) /Metal / Teflon / Other_____

Pitot Leak Checked? (Yes) No

Particulate Gain

Filter	Ø	mg
Probe	Ø	mg

Moisture Gain

CWTR	485.9	g
WCBDA	8.4	g

Combustion Gas Concentration

Oxygen	7.45	%
Carbon Dioxide	11.25	%
Carbon Monoxide	12.5	ppm

Measuring Device	MII Numbers
Probe / Pitot S7A	CSE 20112
Trendicator #4	A04713
Control Box	
Incline Manometer	#10 P02107
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	0.2360
2	0.2375
3	0.2355
4	0.2375
Average:	0.2366

Site Diagram

Notes:

Field Data Sheet

Date: 4 Nov 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	78.91	0.45	0.49	334	254	262	71	50	85	92	0.45	1.0
	2.5	~~80.79~~ 79.95	0.48	0.49	333	265	258	61	43	78	80	0.55	2.0
	5	81.12	0.48	0.49	333	255	257	53	41	79	84	0.6	2.5
2	7.5	82.42	0.61	0.56	333	253	254	51	41	81	85	0.65	3.5
	10	83.84	0.61	0.56	336	256	252	51	42	81	87	0.65	3.5
	12.5	85.28	0.66	0.58	334	256	251	49	42	82	88	0.7	4.0
3	15	86.74	0.72	0.61	334	259	254	49	42	83	89	0.75	4.5
	17.5	88.29	0.73	0.61	334	255	258	49	39	83	91	0.75	4.5
	20	89.83	0.71	0.61	334	261	250	50	41	83	93	0.75	4.5
4	22.5	91.35	0.73	0.62	333	258	251	48	41	85	93	0.8	5.0
	25	92.89	0.71	0.61	333	253	255	48	39	86	95	0.8	5.0
	27.5	94.46	0.73	0.62	333	261	250	48	40	88	96	0.8	5.0
5	30	96.04	0.72	0.62	333	252	249	49	38	89	97	0.8	5.0
	32.5	97.60	0.75	0.63	334	254	251	49	40	89	98	0.85	6.0
	35	99.20	0.74	0.63	334	256	255	50	42	91	99	0.85	6.0
6	37.5	100.84	0.75	0.63	334	260	252	47	41	91	100	0.85	6.5
	40	102.46	0.74	0.63	334	256	249	48	40	90	101	0.8	6.5
	42.5	104.07	0.74	0.63	334	254	255	48	40	91	103	0.8	6.5
7	45	105.67	0.86	0.68	334	255	251	49	42	93	104	0.9	7.5
	47.5	107.35	0.87	0.69	334	253	260	47	42	94	105	0.9	7.5
	50	109.07	0.87	0.69	334	259	252	47	42	95	107	0.95	8.0

Traverse: 1		Traverse:	
Start Time: 8:35	Initial Leak Check: 0.002 cfm@ 18 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 4 Nov 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	110.81	0.88	0.69	335	254	252	50	44	95	108	1.0	8.5
	55	112.60	0.89	0.70	334	253	250	47	43	96	109	1.0	8.5
	57.5	114.39	0.89	0.70	333	257	250	48	42	96	110	1.0	9.0
9	60	116.17	0.87	0.69	333	253	252	48	42	96	111	0.95	9.0
	62.5	117.93	0.87	0.69	332	253	252	48	42	97	113	0.95	9.0
	65	119.67	0.86	0.69	333	254	260	50	42	98	114	0.95	9.5
10	67.5	121.40	0.86	0.69	333	253	256	48	40	96	115	0.95	9.5
	70	123.15	0.85	0.69	333	255	257	47	42	97	115	0.95	9.5
	72.5	124.89	0.85	0.69	333	255	252	47	41	98	116	0.95	10.0
11	75	126.63	0.77	0.66	328	257	258	50	44	98	116	0.85	10.0
	77.5	128.34	0.78	0.66	327	256	255	47	44	98	117	0.85	10.0
	80	130.02	0.77	0.66	327	259	251	47	42	99	116	0.85	10.0
12	82.5	131.69	0.75	0.65	326	261	250	49	43	99	116	0.80	10.5
	85	133.34	0.76	0.65	325	258	257	50	45	99	116	0.80	10.5
	87.5	134.98	0.75	0.65	325	257	252	46	43	100	116	0.80	10.5
	90	136.63											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 10:05	Final Leak Check: 0.002	cfm@ 16	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 4 NOV 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	136.85	0.67	0.59	334	257	260	77	52	87	87	0.7	3.5
	2.5	138.25	0.68	0.60	334	257	260	58	45	88	91	0.75	4.0
	5	139.78	0.68	0.60	333	257	265	51	46	86	95	0.75	4.0
2	7.5	141.31	0.70	0.61	337	258	261	49	45	86	97	0.75	4.0
	10	142.83	0.69	0.60	334	257	255	49	42	86	99	0.75	4.5
	12.5	144.33	0.70	0.61	338	257	257	50	42	86	101	0.80	5.0
3	15	145.89	0.74	0.63	335	255	255	48	42	87	102	0.85	5.5
	17.5	147.52	0.75	0.63	334	261	252	48	39	88	104	0.85	5.5
	20	149.14	0.75	0.63	333	267	255	48	39	88	105	0.85	5.5
4	22.5	150.74	0.73	0.63	335	257	260	49	39	89	106	0.85	6.0
	25	152.33	0.72	0.62	334	256	254	48	40	90	107	0.85	6.0
	27.5	153.91	0.72	0.62	336	256	252	48	39	91	108	0.85	6.0
5	30	155.46	0.69	0.61	334	258	254	48	38	91	109	0.80	6.0
	32.5	157.01	0.70	0.62	335	256	251	49	39	93	110	0.80	6.5
	35	158.55	0.71	0.62	335	260	253	48	38	93	110	0.85	7.0
6	37.5	160.20	0.65	0.60	334	254	251	50	39	94	111	0.75	6.5
	40	161.70	0.68	0.61	334	255	253	49	39	94	112	0.80	6.5
	42.5	163.26	0.66	0.60	334	259	252	47	43	94	112	0.75	6.5
7	45	164.74	0.75	0.64	334	256	253	48	43	95	112	0.85	7.5
	47.5	166.30	0.75	0.64	337	254	256	50	40	96	113	0.90	8.0
	50	167.92	0.76	0.65	336	259	258	44	39	96	114	0.90	8.5

Traverse: 2		Traverse:	
Start Time: 10:43	Initial Leak Check: 0.003 cfm@ 16 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 4 Nov 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
8	52.5	169.60	0.80	0.67	334	254	253	45	40	97	114	0.9	8.5
	55	171.30	0.81		337	256	256	44	39	97	115	0.9	9.0
	57.5	173.00	0.80		333	255	254	45	40	98	115	0.9	9.0
9	60	174.65	0.80		334	252	253	45	40	98	115	0.9	9.0
	62.5	176.32	0.79		335	258	251	44	43	97	116	0.9	9.0
	65	177.94	0.90		337	256	252	45	45	100	116	1.0	9.0
10	67.5	179.67	0.70		337	255	253	45	42	98	116	0.8	9.0
	70	180.17	0.75		338	256	251	46	40	98	116	0.8	9.5
	72.5	182.75	0.73		338	258	251	45	43	98	116.	0.75	9.5
11	75	184.33	0.72		337	257	252	45	42	99	117	0.75	9.5
	77.5	185.88	0.69		336	256	251	47	41	99	117	0.75	9.5
	80	187.42	0.68		336	257	253	46	40	100	116	0.70	9.5
12	82.5	188.94	0.65		336	261	256	46	40	101	116	0.70	9.5
	85	190.44	0.62		336	254	254	46	42	100	117	0.65	9.5
	87.5	191.92	0.60		337	257	254	44	40	101	117	0.65	9.5
	90	193.39											

Traverse: 2			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 12:13	Final Leak Check: 0.003	cfm@ 17	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	8 Semi-Volatile Organic Compounds
Test Date	4 NOV 16
Test Location	Quench Inlet No. 1
Operator Signature	TS.

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.840	
DGMCF	1.09	
Barometric Pressure	29.76	"Hg
Static Pressure	-2.65	"H2O
Nozzle Size	0.2366	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Particulate Gain

Filter	Ø	mg
Probe	Ø	mg

Moisture Gain

CWTR	416.9	g
WCBDA	11.2	g

Combustion Gas Concentration

Oxygen	8.09	%
Carbon Dioxide	10.69	%
Carbon Monoxide	9.4	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test
Incline Manometer	#7
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1 See
2 Test #7.
3
4
Average:

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union (None) / Metal / Teflon / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Field Data Sheet

Date: 4 NOV 16	Plant: Covanta DYEC	Test No.: 8 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	0.53	0.55	0.53	333	254	265	71	46	85	84	0.55	2.0
	2.5	1.80	0.53	0.52	335	262	257	60	47	85	85	0.6	2.5
	5	3.06	0.53	0.52	333	256	259	48	41	84	88	0.65	3.0
2	7.5	4.35	0.57	0.54	333	255	260	46	42	83	92	0.7	4.5
	10	5.79	0.57	0.54	332	262	253	45	39	81	94	0.7	4.5
	12.5	7.20	0.58	0.55	333	255	252	46	41	83	96	0.7	4.5
3	15	8.60	0.64	0.58	333	263	250	45	40	85	98	0.75	5.0
	17.5	10.09	0.65	0.59	334	256	251	46	40	84	100	0.75	5.0
	20	11.60	0.67	0.60	333	254	249	47	41	85	101	0.75	5.0
4	22.5	13.10	0.67	0.60	333	254	249	45	42	86	103	0.75	5.5
	25	14.60	0.69	0.61	334	254	254	45	40	88	104	0.8	6.0
	27.5	16.16	0.69	0.61	333	254	256	44	41	91	105	0.8	6.0
5	30	17.71	0.66	0.60	334	261	251	45	40	89	107	0.75	6.0
	32.5	19.26	0.72	0.62	334	255	250	44	40	90	108	0.8	6.5
	35	20.83	0.69	0.61	334	254	255	46	41	92	109	0.75	6.5
6	37.5	22.42	0.70	0.62	335	255	259	46	41	94	109	0.75	6.5
	40	23.98	0.72	0.63	335	259	256	44	40	93	110	0.8	7.0
	42.5	25.55	0.73	0.63	334	254	249	45	41	93	111	0.8	7.0
7	45	27.13	0.88	0.69	336	256	250	46	41	95	112	0.95	8.5
	47.5	28.90	0.88	0.70	335	256	257	45	42	95	113	0.95	8.5
	50	30.68	0.88	0.70	336	262	250	45	42	96	114	0.9	9.0

Traverse: 1				Traverse:			
Start Time: 13:44	Initial Leak Check:	cfm@ 16	"Hg	Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg	Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 4 Nov 16	Plant: Covanta DYEC	Test No.: 8 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	32.45	0.88	0.70	337	257	249	47	43	98	115	0.9	9.0
	55	34.22	0.87	0.69	339	262	251	45	42	97	115	0.9	9.0
	57.5	35.97	0.86	0.69	335	256	254	46	43	97	116	0.9	9.0
9	60	37.70	0.85	0.69	335	254	254	46	43	98	116	0.9	9.5
	62.5	39.42	0.85	0.69	336	255	257	47	42	99	117	0.9	9.5
	65	41.15	0.85	0.69	333	257	258	46	43	99	117	0.9	9.5
10	67.5	42.91	0.81	0.67	335	256	256	46	43	99	117	0.85	9.5
	70	44.64	0.81	0.67	334	256	258	47	45	99	118	0.85	9.5
	72.5	46.35	0.83	0.68	332	255	256	47	45	99	118	0.9	10.0
11	75	48.05	0.82	0.68	332	254	252	47	43	100	118	0.9	10.0
	77.5	49.79	0.79	0.67	332	255	254	45	42	100	118	0.85	10.0
	80	51.51	0.78	0.66	331	261	251	45	41	100	118	0.85	10.0
12	82.5	53.19	0.78	0.66	332	254	250	45	41	101	118	0.85	10.0
	85	54.87	0.79	0.67	332	254	254	44	41	100	118	0.85	10.5
	87.5	56.58	0.79	0.67	331	255	251	45	43	101	119	0.85	10.5
	90	58.25											

Traverse: 1			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 15:14	Final Leak Check: 0.003	cfm@ 16	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 4/20/16	Plant: Covanta DYEC	Test No.: 8 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	58.63	0.70	0.60	338	259	255	79	49	90	88	0.75	4.0
	2.5	60.18	0.72	0.61	338	256	259	52	42	88	92	0.75	4.0
	5	61.74	0.73	0.62	338	257	259	45	40	87	96	0.75	5.0
2	7.5	63.27	0.76	0.63	338	258	259	44	40	87	98	0.8	5.5
	10	64.87	0.78	0.64	337	256	258	44	40	88	100	0.85	6.0
	12.5	66.51	0.77	0.64	337	259	254	43	41	88	102	0.85	6.0
3	15	68.16	0.80	0.65	336	256	254	43	40	89	104	0.85	6.5
	17.5	69.79	0.79	0.65	335	259	255	43	40	89	105	0.85	6.5
	20	71.42	0.78	0.65	335	255	254	44	40	90	107	0.85	6.5
4	22.5	73.04	0.77	0.65	335	256	253	44	41	91	108	0.85	6.5
	25	74.65	0.77	0.65	335	257	250	43	40	92	109	0.85	7.0
	27.5	76.27	0.77	0.65	337	259	254	43	40	92	110	0.85	7.0
5	30	77.89	0.71	0.62	335	254	251	44	41	93	111	0.85	7.0
	32.5	79.49	0.69	0.61	335	258	250	43	40	94	111	0.8	7.0
	35	81.09	0.68	0.61	336	255	253	44	40	94	112	0.75	7.0
6	37.5	82.66	0.67	0.61	335	255	251	44	40	95	112	0.75	6.5
	40	84.18	0.70	0.62	337	254	251	44	39	96	113	0.8	7.0
	42.5	85.75	0.67	0.61	334	255	256	45	41	97	113	0.75	7.0
7	45	87.25	0.77	0.65	336	255	252	46	39	96	114	0.85	8.0
	47.5	88.89	0.79	0.66	334	259	253	45	40	98	115	0.85	8.5
	50	90.58	0.78	0.66	337	254	253	45	41	97	115	0.85	8.5

Traverse: 2			
Start Time: 15:56	Initial Leak Check: 0.002 cfm@ 17 "Hg	Traverse:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ 17 "Hg	Start Time:	Final Leak Check: cfm @ "Hg
		Finish Time:	

Project No.: 21707

Operator : TS.

Field Data Sheet

Date: 4 Nov 16	Plant: Covanta DYEC	Test No.: 8 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure ΔH "H_2O	Pump Vacuum "Hg Gauge
8	52.5	92.27	0.83	0.68	337	255	250	45	40	98	116	0.95	9.5
	55	94.04	0.84	0.68	334	255	251	45	41	98	116	0.95	10
	57.5	95.80	0.86	0.69	334	254	257	45	42	98	117	0.95	10
9	60	97.55	0.90	0.71	338	254	250	46	42	99	117	1.0	10.5
	62.5	99.36	0.91	0.71	336	254	256	45	42	99	118	1.0	10.5
	65	101.16	0.91	0.71	337	257	253	45	42	100	118	1.0	10.5
10	67.5	102.95	0.90	0.71	335	254	251	46	42	99	118	1.0	10.5
	70	104.72	0.90	0.71	336	256	252	45	42	100	118	1.0	11
	72.5	106.52	0.89	0.71	335	258	251	46	43	100	119	1.0	11
11	75	108.31	0.81	0.67	335	254	250	46	42	100	119	0.9	11
	77.5	110.07	0.82	0.68	336	255	252	47	42	100	119	0.85	11
	80	111.80	0.83	0.68	335	254	252	48	41	101	119	0.85	11
12	82.5	113.52	0.80	0.67	334	254	251	48	42	101	119	0.8	11
	85	115.22	0.81	0.67	335	256	256	48	41	101	119	0.85	11.5
	87.5	116.91	0.81	0.67	335	257	255	48	42	101	119	0.85	11.5
	90	118.60											

Traverse: 2			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 17:26	Final Leak Check: 0.004	cfm@ 18	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 1	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 28, 2016
Test Location	APC Outlet No. 1
Operator Signature	CHRIS BELOIZE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	

Pitot Factor	0.842	–
DGMCF	0.993	–
Barometric Pressure	29.40	"Hg
Static Pressure	–11.3	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	–	feet
Width	–	feet
Port length:	–	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	659.7	g
WCBDA	17.0	g

Combustion Gas Concentration

Oxygen	9.33	%
Carbon Dioxide	10.12	%
Carbon Monoxide	10.4	ppm

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	TEST #1
Control Box	
Incline Manometer	UNIT #2
Comb.Gas.Analyzer	
Micromanometer	OUTLET
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	
2	
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 26/16	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	7.12	1.01	.79	292	247	248	65	45	69	69	2.1	6.2
	5	10.82	1.01	.79	292	245	249	46	42	69	69	2.1	6.2
2	10	14.58	1.01	.79	293	245	250	48	43	69	69	2.1	6.2
	15	18.35	1.05	.79	292	245	250	48	45	70	69	2.1	6.6
3	20	22.19	1.10	.81	293	247	249	48	42	70	69	2.2	7.0
	25	26.17	1.10	.81	292	246	252	50	44	71	70	2.2	7.0
4	30	30.20	.99	.77	290	248	250	49	45	71	69	2.1	7.0
	35	34.12	.99	.77	291	249	251	47	42	71	69	2.1	7.0
5	40	38.02	.94	.75	292	246	250	49	43	72	69	2.0	7.0
	45	41.86	.94	.75	292	246	250	49	43	72	69	2.0	7.0
6	50	45.68	.88	.73	292	248	251	48	41	73	70	1.9	7.0
	55	49.47	.88	.73	293	246	251	48	42	72	70	1.9	7.0
7	60	53.23	.87	.72	292	249	251	48	42	73	70	1.8	6.8
	65	56.95	.88	.73	292	248	251	46	39	72	71	1.8	6.8
8	70	60.61	.87	.72	292	246	251	45	42	73	71	1.8	6.8
	75	64.26	.87	.72	292	245	251	44	41	72	71	1.8	6.8
9	80	67.89	.92	.74	293	244	251	43	40	73	71	1.9	6.8
	85	71.59	.90	.74	293	246	251	43	40	73	71	1.9	6.8
10	90	75.35	.89	.73	293	249	251	43	40	74	71	1.8	6.8
	95	78.96	.90	.74	292	248	251	43	39	73	71	1.8	6.8
11	100	82.66	.86	.72	292	248	251	43	39	74	72	1.7	6.7

Traverse: 1					
Start Time: 08:19	Initial Leak Check: .008	cfm@	14	"Hg
Finish Time: —	Final Leak Check: —	cfm@	—	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

– SHUT OFF @ 09:22 TO CHANGE FILTERS @ INLET

– BACK ON @ 09:36

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 26 / 16	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	86.27	.84	.71	292	244	250	43	40	75	72	1.75	6.7
12	110	89.80	.80	.70	292	246	251	43	40	75	72	1.7	6.7
	115	93.35	.78	.69	292	246	251	43	40	75	72	1.7	6.7
	120	96.92											

Traverse: 1		Traverse:	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: ~~10:45~~ 10:33	Final Leak Check: .004 cfm@ 15 "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator: CHRIS BELLORE

Field Data Sheet

Date: SEPT. 26/16	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
1	0	97.41	1.10	.82	291	248	251	54	38	74	72	2.2	8.0
	5	101.28	1.10	.82	291	245	251	43	41	75	73	2.2	8.0
2	10	105.26	1.10	.82	292	247	252	43	41	75	73	2.2	8.0
	15	109.29	1.10	.82	292	248	252	43	40	75	73	2.2	8.0
3	20	113.31	1.05	.80	292	248	251	43	41	75	73	2.2	8.0
	25	117.33	1.05	.80	292	247	252	44	41	75	73	2.2	8.0
4	30	121.33	.96	.76	292	250	251	44	41	75	73	2.0	8.0
	35	125.25	.96	.76	292	251	251	44	40	75	73	2.0	8.0
5	40	129.16	.91	.74	292	247	252	44	40	75	73	1.8	8.0
	45	132.89	.92	.74	292	248	252	44	40	75	73	1.8	8.0
6	50	136.62	.82	.71	292	248	252	45	46	75	73	1.75	8.0
	55	140.27	.88	.73	291	248	252	45	40	75	73	1.75	8.0
7	60	143.91	.90	.74	291	248	252	45	40	75	73	1.8	8.0
	65	147.53	.94	.76	291	249	253	46	41	76	74	1.9	8.0
8	70	151.25	.90	.74	289	247	252	45	40	76	74	1.9	8.0
	75	155.02	.90	.74	290	248	252	45	41	76	74	1.9	8.0
9	80	158.72	.79	.70	290	246	251	46	41	76	74	1.7	8.0
	85	162.28	.79	.70	290	247	251	46	42	77	74	1.7	7.8
10	90	165.85	.80	.70	290	247	251	46	42	77	74	1.7	7.8
	95	169.38	.81	.71	290	247	251	46	42	77	74	1.7	7.8
11	100	172.91	.86	.73	289	247	252	46	46	77	74	1.8	7.8

Traverse: 2			
Start Time: 10:40	Initial Leak Check: .004 cfm@ 15 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

inlet started @ 10:44

Project No.: 21707

Operator : CHRIS BELORE

Field Data Sheet

Date: SEPT. 26/10	Plant:	Covanta DYEC	Test No.: 1	SVOC	Page 5 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	176.53	.86	.73	289	249	251	46	49	77	74	1.8	7.8
12	110	180.16	.92	.75	289	249	252	46	52	77	74	1.85	7.8
	115	183.90	.92	.75	289	249	252	46	52	77	74	1.85	8
	120	187.64											

Traverse: 2		Traverse:	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time:	Initial Leak Check: cfm@ "Hg
Finish Time: 12:40	Final Leak Check: .004 cfm@ 16 "Hg	Finish Time:	Final Leak Check: cfm@ "Hg

inlet off @ 12:25

Project No.: 21707

Operator: CHRIS BELDORE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 2	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 26, 2016
Test Location	APC Outlet No. 1
Operator Signature	CHRIS BELOTE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	—

Pitot Factor	0.842	—
DGMCF	0.993	✓
Barometric Pressure	29.34	"Hg
Static Pressure	-11.5	"H2O
Nozzle Size	0.245	✓ inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	654.9	— g
WCBDA	20.1	✓ g

Combustion Gas Concentration

Oxygen	9.16	%
Carbon Dioxide	10.15	%
Carbon Monoxide	10.7	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE
Control Box	TEST #1
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE TEST #1
2	
3	UNIT #2
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 26 '16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	88.08	1.1	.82	290	246	247	69	60	74	74	2.1	8.0
	5	91.96	1.1	.82	290	250	248	57	41	74	74	2.2	9.0
2	10	95.96	1.08	.81	289	249	249	56	42	73	74	2.2	9.0
	15	100.00	1.08	.81	291	246	251	54	43	73	73	2.2	9.0
3	20	104.04	1.05	.80	289	248	251	51	41	73	73	2.1	9.0
	25	108.00	1.05	.80	288	250	250	47	42	73	73	2.1	9.0
4	30	111.93	.96	.76	288	250	251	47	44	73	73	2.0	9.0
	35	115.79	.97	.77	288	248	250	46	42	73	73	2.0	9.0
5	40	119.68	.89	.74	287	249	251	47	42	73	73	1.85	8.5
	45	123.43	.89	.74	287	246	250	45	42	74	73	1.85	8
6	50	127.14	.87	.73	286	249	251	45	41	74	73	1.85	8
	55	130.80	.81	.70	285	247	251	45	42	74	73	1.7	8
7	60	134.35	.78	.69	286	245	251	45	41	74	73	1.6	8
	65	137.83	.78	.69	285	245	251	44	40	74	73	1.6	8
8	70	141.28	.83	.71	285	245	251	44	40	75	73	1.7	8
	75	144.80	.83	.71	286	247	252	45	42	75	73	1.7	8
9	80	148.32	.85	.72	285	244	251	44	42	75	73	1.7	8
	85	151.87	.85	.72	286	247	251	44	42	75	73	1.7	8
10	90	155.43	.84	.72	284	249	251	44	43	75	73	1.7	8
	95	159.02	.84	.72	284	250	251	43	42	75	73	1.7	8
11	100	162.56	.81	.71	284	249	251	43	42	75	73	1.7	8

Traverse:			
Start Time: 13:30	Initial Leak Check: .008 cfm@ 16 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator: CHRIS BELOTE

Field Data Sheet

Date: Sept. 26/16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	166.15	.80	.71	283	243	251	43	42	75	73	1.7	8.0
12	110	169.70	.75	.68	283	249	251	43	42	75	73	1.6	7.8
	115	173.18	.75	.68	283	249	251	43	42	75	73	1.6	7.8
	120	176.60											

Traverse: 1					
Start Time: —	Initial Leak Check: —	cfm@	—	"Hg	
Finish Time: 15:30	Final Leak Check: .006	cfm@	15	"Hg	

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 26/16	Plant:	Covanta DYEC	Test No.: 2	SVOC	Page 4 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	177.05	.97	.78	288	246	253	56	42	74	73	2.05	9.5
	5	180.90	.99	.78	290	249	251	44	42	75	73	2.05	9.5
2	10	184.91	1.01	.79	291	249	252	43	40	75	74	2.05	9.5
	15	188.86	1.01	.79	291	245	252	42	40	75	73	2.05	9.5
3	20	192.80	.96	.77	292	245	251	42	40	74	74	2.0	9.5
	25	196.70	.94	.76	292	250	251	42	40	74	74	1.95	9.3
4	30	200.52	.89	.74	292	250	251	42	39	74	73	1.85	9.0
	35	204.27	.91	.75	292	250	252	43	39	75	74	1.85	9.0
5	40	207.98	.83	.71	293	249	251	43	39	74	73	1.7	8.5
	45	211.56	.83	.71	292	246	251	44	38	75	74	1.7	8.5
6	50	215.13	.77	.69	292	248	251	44	38	75	73	1.6	8.0
	55	218.61	.77	.69	292	248	251	44	38	75	73	1.6	8.0
7	60	222.06	.87	.70	292	245	251	44	38	76	74	1.7	8.3
	65	225.55	.82	.70	292	245	251	44	38	76	74	1.7	8.5
8	70	229.10	.82	.70	293	246	251	44	38	76	74	1.7	8.5
	75	232.72	.82	.70	292	246	251	44	38	76	74	1.7	8.5
9	80	236.32	.82	.70	292	249	251	45	39	77	74	1.7	8.5
	85	239.82	.82	.70	292	249	251	45	39	77	75	1.7	8.5
10	90	243.41	.83	.72	290	248	252	45	39	77	75	1.7	8.5
	95	246.93	.83	.72	290	248	252	45	39	77	75	1.7	8.5
11	100	250.48	.82	.71	290	248	251	45	40	77	75	1.7	8.5

Traverse: 2			Traverse:		
Start Time: 15:38	Initial Leak Check: .005	cfm@ 15 "Hg	Start Time:	Initial Leak Check:	cfm@ "Hg
Finish Time: —	Final Leak Check: —	cfm@ — "Hg	Finish Time:	Final Leak Check:	cfm @ "Hg

inlet started @ 15:42 (off @ 17:12)

Project No.: 21707

Operator: CHRIS BELGRADE

Field Data Sheet

Date: SEPT. 26/16	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	254.03	.82	.71	289	249	251	45	40	77	75	1.7	8.5
12	110	257.57	.77	.69	289	249	251	45	41	77	75	1.6	8.5
	115	261.03	.76	.68	289	247	251	45	40	77	75	1.6	8.5
	120	264.52											

Traverse: 2			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 17:38	Final Leak Check: .005 cfm@ 18 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS BELOTE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 3	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 27, 2016
Test Location	APC Outlet No. 1
Operator Signature	CHRIS BELORE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	15

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.31	"Hg
Static Pressure	-11.2	"H2O
Nozzle Size	.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	631.0	g
WCBDA	18.2	g

Combustion Gas Concentration

Oxygen	9.14	%
Carbon Dioxide	10.33	%
Carbon Monoxide	14.8	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE
Control Box	TEST #1
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	TEST #1
3	
4	UNIT #2
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 22/16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	65.51	1.08	.80	289	248	244	66	57	67	66	2	6
	5	69.36	1.08	.80	290	248	244	50	46	67	67	2.1	7
2	10	73.32	1.05	.79	290	246	246	49	53	68	67	2.1	7
	15	77.10	1.05	.79	289	247	246	46	51	68	67	2.2	7.5
3	20	81.06	1.00	.77	289	244	247	45	47	68	67	2.1	7.5
	25	85.04	1.00	.77	289	248	248	46	51	68	67	2.1	7.5
4	30	88.96	.95	.75	289	247	248	45	49	69	67	1.95	7.3
	35	92.79	.94	.74	290	247	248	45	46	69	67	1.9	7.0
5	40	96.62	.85	.72	288	248	248	47	48	69	67	1.75	6.8
	45	100.25	.84	.71	287	246	248	48	46	70	67	1.75	6.8
6	50	103.85	.80	.70	286	247	248	46	46	71	67	1.7	6.8
	55	107.43	.83	.71	286	246	248	48	47	71	68	1.7	6.8
7	60	111.00	.73	.67	284	248	248	45	45	72	68	1.5	6.5
	65	114.42	.74	.67	283	248	249	45	45	72	69	1.5	6.5
8	70	117.82	.74	.67	282	248	249	45	46	72	69	1.5	6.5
	75	121.23	.74	.67	284	246	249	44	46	73	69	1.5	6.5
9	80	124.66	.76	.68	284	248	249	44	45	73	69	1.5	6.5
	85	128.07	.75	.66	282	244	249	44	46	74	70	1.5	6.5
10	90	131.49	.75	.68	279	244	249	45	46	74	70	1.5	6.5
	95	134.90	.75	.66	279	244	249	45	46	74	70	1.5	6.5
11	100	138.30	.73	.67	279	249	249	45	46	75	71	1.5	6.5

Traverse: 1			
Start Time: 07:44	Initial Leak Check: .005 cfm@ 14 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS RELOREE

Field Data Sheet

Date: SEPT. 27/16	Plant:	Covanta DYEC	Test No.: 3	SVOC	Page 3 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	141.68	.73	.67	279	249	249	45	46	75	71	1.5	6.5
12	110	145.12	.68	.65	279	249	249	45	47	75	71	1.4	6.3
	115	148.39	.68	.65	279	248	249	46	47	75	71	1.4	6.3
	120	151.66											

Traverse:			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 09:44	Final Leak Check: .005	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS BELOTE

Field Data Sheet

Date: SEPT. 27/16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
1	0	151.95	.93	.76	281	245	251	56	46	74	72	1.95	7.3
	5	155.75	.92	.76	281	246	248	46	47	75	72	1.95	7.6
2	10	159.54	.94	.76	282	248	249	46	48	74	72	2	7.8
	15	163.36	.94	.76	282	249	250	46	48	75	72	2	7.8
3	20	167.18	.91	.75	282	248	250	46	48	75	72	1.95	7.8
	25	170.96	.92	.75	283	246	250	45	48	75	72	1.95	7.8
4	30	174.74	.87	.73	283	246	250	45	48	75	72	1.8	7.8
	35	178.46	.87	.73	283	247	250	45	48	75	72	1.8	7.7
5	40	182.17	.83	.72	283	249	250	45	47	75	73	1.75	7.6
	45	185.82	.82	.72	284	248	250	46	48	75	73	1.7	7.6
6	50	189.42	.78	.70	284	246	250	47	48	76	73	1.6	7.5
	55	192.92	.78	.70	284	246	250	47	48	76	73	1.6	7.5
7	60	196.42	.84	.72	283	245	250	47	47	76	73	1.7	7.6
	65	200.00	.84	.72	285	249	250	47	48	78	74	1.7	7.6
8	70	203.64	.91	.75	286	248	250	47	49	77	74	1.95	8
	75	207.41	.91	.75	286	250	250	47	49	77	74	1.9	8
9	80	211.08	.88	.74	286	250	250	47	49	77	74	1.9	8
	85	214.84	.88	.74	285	249	250	47	45	77	74	1.9	8
10	90	218.59	.89	.74	285	249	250	48	45	77	74	1.9	8
	95	222.35	.89	.74	285	248	250	48	46	77	74	1.9	8
11	100	226.11	.89	.74	283	248	249	48	47	77	74	1.85	8

Traverse:		Traverse:	
Start Time: 09:50	Initial Leak Check: .003 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

inlet on @ 09:52
off @ 11:22

Project No.: 21707
Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 22/16	Plant: Covanta DYEC	Test No.: 3 SVOC		Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1		

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	229.83	.86	.73	283	247	250	48	46	77	74	1.8	8
12	110	233.53	.82	.71	283	245	250	49	47	77	74	1.75	8
	115	237.14	.82	.71	283	248	250	49	47	77	75	1.75	8
	120	240.70											

Traverse: 0			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 11:50	Final Leak Check: 0.003 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS BELCOURT

Rev: April 28, 2005

ORTECH Environmental

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 4	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 29, 2016
Test Location	APC Outlet No. 1
Operator Signature	CHRIS BELCORE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	—

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.84	"Hg
Static Pressure	-10.8	"H2O
Nozzle Size	.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	601.4	g
WCBDA	15.3	g

Combustion Gas Concentration

Oxygen	9.09	%
Carbon Dioxide	10.42	%
Carbon Monoxide	13.9	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE
Control Box	TEST #1
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	TEST #1
3	
4	UNIT #2
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 29 /16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	6.76	.78	.69	282	246	248	50	43	71	71	1.6	5.8
	5	10.10	.72	.67	282	245	249	45	43	71	71	1.5	6.0
2	10	13.38	.72	.67	282	245	250	45	42	71	70	1.5	6.0
	15	16.68	.70	.66	280	248	249	43	41	71	70	1.5	6.0
3	20	20.00	.71	.66	281	247	250	44	42	71	71	1.5	6.0
	25	23.22	.72	.67	280	247	249	43	41	72	70	1.5	6.0
4	30	26.54	.73	.67	280	248	250	43	41	72	70	1.5	6.0
	35	29.87	.73	.67	286	249	250	43	42	72	70	1.5	6.0
5	40	33.19	.73	.67	288	246	250	43	42	72	71	1.5	6.5
	45	36.53	.73	.67	288	247	250	43	42	72	71	1.5	6.5
6	50	39.84	.70	.65	289	248	250	44	42	73	71	1.5	6.5
	55	43.20	.70	.65	289	246	250	44	42	73	71	1.5	6.5
7	60	46.46	.74	.67	289	248	250	44	42	73	71	1.5	6.7
	65	49.81	.76	.68	290	246	250	45	44	74	72	1.6	7.0
8	70	53.20	.80	.70	290	249	250	45	44	73	72	1.6	7.0
	75	56.65	.80	.70	290	249	250	45	44	73	72	1.6	7.0
9	80	60.08	.80	.70	290	248	251	48	44	74	72	1.6	7.0
	85	63.52	.89	.74	290	248	251	48	46	73	72	1.85	8.0
10	90	67.17	.96	.76	291	250	251	48	47	73	72	2.0	8.5
	95	70.91	.97	.76	291	246	251	49	51	73	72	2.0	8.5
11	100	74.70	.98	.76	291	246	251	49	51	74	72	2.0	8.5

Traverse: 1		Traverse:	
Start Time: 08:20	Initial Leak Check: .003 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 29/16	Plant:	Covanta DYEC	Test No.: 4	SVOC	Page 3 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	78.46	.98	.77	290	246	250	47	49	73	72	2.0	9.0
12	110	82.28	.98	.77	291	250	251	46	50	73	72	2.0	9.0
	115	86.07	.98	.77	291	250	251	45	48	73	72	2.0	9.0
	120	90.02											

Traverse: 1							
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg	Traverse:			
Finish Time: 10:20	Final Leak Check: .003	cfm@ 22	"Hg	Start Time:	Initial Leak Check:	cfm @	"Hg
				Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS RELOPE

Field Data Sheet

Date: SEPT. 29 / 16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	90.61	.80	.70	281	248	250	57	40	73	72	1.7	8.0
	5	94.01	.82	.71	282	248	250	43	44	72	72	1.7	8.0
2	10	97.53	.78	.69	282	246	248	42	44	72	72	1.7	8.0
	15	101.04	.75	.68	283	246	250	42	44	72	72	1.7	8.0
3	20	104.53	.76	.68	284	245	249	42	43	72	72	1.7	8.0
	25	108.00	.75	.68	284	247	250	42	44	73	72	1.7	8.0
4	30	111.47	.80	.70	291	245	251	42	44	73	72	1.7	8.0
	35	114.95	.80	.70	292	249	250	42	45	73	72	1.7	8.0
5	40	118.46	.81	.70	292	248	250	42	45	72	72	1.7	8.0
	45	122.00	.81	.70	292	248	250	42	45	72	72	1.7	8.0
6	50	125.50	.81	.70	292	248	250	42	45	72	72	1.7	8.0
	55	128.98	.81	.70	292	249	251	42	43	73	72	1.7	8.0
7	60	132.50	.75	.67	292	245	251	43	44	73	72	1.6	8.0
	65	135.95	.76	.68	292	247	250	43	44	72	72	1.6	8.0
8	70	139.39	.70	.65	292	249	250	43	44	73	72	1.45	8.0
	75	142.67	.70	.65	290	248	250	44	45	73	72	1.45	8.0
9	80	145.95	.75	.67	289	250	251	44	45	73	72	1.5	8.0
	85	149.25	.75	.67	291	250	250	44	44	73	72	1.5	8.0
10	90	152.60	.85	.72	291	250	251	45	45	74	72	1.7	8.5
	95	156.05	.85	.72	292	248	251	44	47	74	72	1.7	8.5
11	100	159.60	.90	.74	291	250	251	44	53	73	72	1.9	9.3

Traverse:		Traverse:	
Start Time: 10:29	Initial Leak Check: .003 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm@ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm@ "Hg

inlet on @ 10:31 – 12:01
particulate on @ 10:31 – 12:07

Project No.: 21707
Operator : CHRIS BELCHER

Field Data Sheet

Date: SEPT. 29/16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	163.22	.90	.74	292	247	251	45	54	73	72	1.9	9.3
12	110	166.94	.95	.76	291	249	251	45	45	73	72	2.0	9.5
	115	170.68	.95	.76	292	251	250	45	45	73	72	2.0	9.5
	120	174.51											

Traverse: 2			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 12:29	Final Leak Check: .003 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Project No.: 21707

Operator: CHRIS BELOPE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 5	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 29, 2016
Test Location	APC Outlet No. 1
Operator Signature	CHRIS BELOTE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	—

Pitot Factor	0.842	—
DGMCF	0.993	✓
Barometric Pressure	29.85	"Hg
Static Pressure	-11.4	"H2O
Nozzle Size	0.2456 ✓	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	656.1 —	g
WCBDA	34.0 ✓	g

Combustion Gas Concentration

Oxygen	9.20	%
Carbon Dioxide	10.45	%
Carbon Monoxide	13.1	ppm

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	TEST #1
Control Box	
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	TEST #1
3	
4	UNIT #2
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 29/16	Plant:	Covanta DYEC	Test No.: 5	SVOC	Page 2 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft³	Pitot Δ P "H₂O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H₂O	Pump Vacuum "Hg Gauge
1	0	75.16	.76	.68	289	248	247	70	47	72	71	1.55	6.0
	5	78.51	.76	.68	290	248	251	50	46	72	72	1.55	6.0
2	10	81.81	.81	.70	289	249	251	49	46	72	71	1.7	6.5
	15	85.25	.81	.70	289	249	251	47	43	72	72	1.7	6.6
3	20	88.81	.82	.71	291	248	251	46	43	72	72	1.7	6.6
	25	92.28	.82	.71	291	248	251	42	44	73	72	1.7	6.7
4	30	95.80	.81	.70	291	248	250	41	44	73	72	1.7	6.7
	35	99.33	.81	.70	292	248	251	41	42	74	72	1.7	6.7
5	40	102.83	.80	.70	292	246	250	41	42	74	72	1.7	6.7
	45	106.35	.80	.70	292	249	251	41	42	74	72	1.7	6.7
6	50	109.88	.77	.68	291	249	251	41	42	74	72	1.55	6.5
	55	113.27	.77	.69	290	249	251	42	41	75	72	1.6	6.5
7	60	116.71	.80	.70	288	249	251	42	42	75	73	1.7	6.5
	65	120.19	.79	.70	287	245	251	43	45	75	73	1.75	6.5
8	70	123.75	.82	.71	287	245	251	44	45	75	73	1.75	7
	75	127.33	.86	.73	286	247	251	45	44	75	73	1.85	7
9	80	130.99	.90	.74	286	250	251	46	47	76	73	1.9	7
	85	134.71	.90	.74	286	249	251	46	48	76	74	1.9	7.5
10	90	138.44	.99	.78	289	249	251	45	46	76	74	2.1	8.0
	95	142.28	.99	.78	289	249	251	46	50	76	74	2.1	8.0
11	100	146.17	1.05	.80	290	248	251	46	48	76	76	2.2	8.5

Traverse: 1			
Start Time: 13:32	Initial Leak Check: .006 cfm@ 15 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 29/16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	150.17	1.05	.80	291	248	252	46	47	76	74	2.2	8.5
12	110	154.14	.99	.78	291	247	251	47	51	76	74	2.1	8.5
	115	158.04	.99	.78	290	248	251	46	52	76	74	2.1	8.5
	120	162.05											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 15:32	Final Leak Check: .003	cfm@ 13	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS BELOTE

Field Data Sheet

Date: SEPT. 29 / 16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft³	Pitot Δ P "H₂O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H₂O	Pump Vacuum "Hg Gauge
1	0	162.42	.80	.70	289	250	252	59	48	76	74	1.7	7.0
	5	165.93	.82	.71	289	248	252	46	44	76	75	1.7	7.0
2	10	169.45	.83	.71	288	246	251	46	43	76	75	1.8	7.5
	15	173.07	.83	.71	289	246	251	45	44	76	75	1.8	7.5
3	20	176.71	.87	.73	286	246	252	45	44	77	75	1.85	7.5
	25	180.36	.87	.73	285	246	252	45	44	77	75	1.85	7.5
4	30	184.04	.86	.73	286	250	252	46	44	77	75	1.85	8
	35	187.74	.86	.73	286	248	252	46	44	77	75	1.85	8
5	40	191.46	.84	.72	286	248	251	46	44	77	75	1.8	8
	45	195.07	.84	.72	287	249	252	46	42	77	75	1.8	8
6	50	198.71	.83	.71	287	249	252	47	41	78	75	1.8	8
	55	202.37	.83	.71	286	246	252	46	40	77	76	1.8	8
7	60	206.01	.80	.70	287	247	252	47	40	78	76	1.7	7.8
	65	209.59	.80	.70	287	247	251	47	40	78	76	1.7	7.8
8	70	213.17	.84	.72	287	247	251	47	40	78	76	1.8	8.
	75	216.76	.84	.72	286	251	252	48	40	78	76	1.8	8.
9	80	220.38	.88	.74	286	250	252	48	41	78	76	1.9	8.
	85	224.09	.88	.74	286	247	252	48	41	79	76	1.9	8.
10	90	227.85	.91	.75	285	250	252	48	41	79	76	1.9	8.
	95	231.60	.91	.75	285	248	252	48	41	79	76	1.9	8.
11	100	235.30	.93	.76	285	249	252	48	41	79	76	1.9	8.

Traverse: 2			
Start Time: 15:41	Initial Leak Check: .003 cfm@ 13 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm@ "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

inlet on @ 15:44 – 17:14

particulate on @ 15:43 – ~~17:00~~ 17:19

Project No.: 21707

Operator: CHRIS BELDORE

Field Data Sheet

Date: SEPT. 29/10	Plant: Covanta DYEC	Test No.: 5 SVOC		Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1		

Point	Clock Time	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	239.04	.94	.77	284	252	252	49	42	78	77	1.95	8.2
12	110	242.86	.94	.77	285	249	252	48	42	78	77	1.95	8.2
	115	246.62	.94	.77	285	253	253	48	42	79	77	1.95	8.2
	120	250.32											

Traverse: 2			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 17:41	Final Leak Check: .003 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS RELORME

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 6	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 30, 2016
Test Location	APC Outlet No. 1
Operator Signature	CHRIS BELORE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	—

Pitot Factor	0.841	—
DGMCF	0.993	—
Barometric Pressure	29.85	"Hg
Static Pressure	-11.0	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	608.7	g
WCBDA	16.2	g

Combustion Gas Concentration

Oxygen	9.23	%
Carbon Dioxide	10.44	%
Carbon Monoxide	14.1	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE
Control Box	TEST #1
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	TEST #1
3	
4	UNIT #2
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 30 / 16	Plant:	Covanta DYEC	Test No.: 6 SVOC	Page 2 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 1

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	51.15	.76	.69	280	250	242	66	45	75	74	1.6	5.8
	5	54.66	.76	.69	281	247	245	52	52	74	74	1.6	5.8
2	10	58.05	.76	.69	284	250	246	50	53	74	74	1.6	5.8
	15	61.44	.76	.69	283	247	246	48	51	74	74	1.6	5.8
3	20	64.85	.76	.69	283	249	247	47	51	75	74	1.6	5.8
	25	68.29	.76	.69	287	248	248	46	50	75	74	1.6	5.8
4	30	71.51	.78	.69	289	247	249	46	54	76	74	1.6	6.0
	35	74.92	.77	.69	289	247	249	46	54	76	74	1.6	6.0
5	40	78.36	.77	.69	289	249	249	46	51	77	74	1.6	6.0
	45	81.79	.76	.69	289	249	249	46	50	77	74	1.6	6.0
6	50	85.25	.74	.67	290	247	250	47	52	77	74	1.55	6.0
	55	88.65	.75	.68	290	250	250	46	50	77	75	1.55	6.3
7	60	92.04	.76	.69	290	250	250	47	53	78	75	1.6	6.5
	65	95.47	.76	.69	289	250	250	50	52	78	75	1.6	6.5
8	70	98.92	.80	.70	287	246	250	49	52	78	75	1.7	6.8
	75	102.42	.81	.71	287	249	250	51	53	78	75	1.7	6.8
9	80	105.93	.90	.75	289	250	249	54	56	78	75	1.9	7.2
	85	109.61	.90	.75	289	248	250	50	55	78	75	1.9	7.5
10	90	113.41	.97	.77	289	251	250	50	56	78	75	2.0	8.0
	95	117.27	.97	.77	290	248	251	52	56	78	76	2.0	8.0
11	100	121.05	.96	.76	290	251	251	49	54	78	76	2.0	8.0

Traverse:			
Start Time: 07:37	Initial Leak Check: .005 cfm@	15	"Hg
Finish Time: —	Final Leak Check: — cfm@	—	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS PELOTOS

Field Data Sheet

Date: SEPT. 30/16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	124.87	.96	.77	290	246	250	50	56	78	76	2.0	8.0
12	110	128.69	.97	.77	289	249	250	51	56	78	76	2.0	8.0
	115	132.53	.97	.77	289	248	251	49	55	78	76	2.0	8.0
	120	136.39											

Traverse: 1			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 09:37	Final Leak Check: .006 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELOBE

Field Data Sheet

Date: SEPT. 30 /16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	136.80	.80	.70	288	249	251	61	44	77	76	1.7	7.0
	5	140.32	.83	.71	289	245	252	47	54	77	76	1.7	7.2
2	10	143.85	.83	.71	289	250	251	46	54	77	76	1.7	7.2
	15	147.35	.83	.71	289	247	251	45	55	77	76	1.75	7.3
3	20	150.94	.80	.70	289	248	251	44	50	78	76	1.7	7.3
	25	154.51	.83	.71	288	249	251	44	49	78	76	1.75	7.3
4	30	158.10	.80	.70	288	249	251	44	50	78	76	1.7	7.3
	35	161.67	.78	.69	289	246	251	44	50	78	76	1.65	7.3
5	40	165.17	.78	.69	288	246	251	45	51	78	76	1.65	7.3
	45	168.67	.78	.69	289	250	251	45	51	79	76	1.65	7.3
6	50	172.17	.77	.69	289	250	251	45	51	78	76	1.6	7.3
	55	175.64	.78	.69	290	246	251	45	51	79	76	1.6	7.3
7	60	179.10	.75	.68	290	250	252	45	50	79	76	1.6	7.2
	65	182.54	.74	.68	289	250	251	45	49	78	76	1.6	7.2
8	70	185.95	.70	.66	289	248	252	45	51	79	77	1.5	7.0
	75	189.32	.70	.66	288	250	251	46	49	79	77	1.5	7.0
9	80	192.68	.72	.67	289	250	251	46	50	79	77	1.5	7.0
	85	196.02	.72	.67	289	247	251	46	51	79	77	1.5	7.0
10	90	199.36	.89	.74	290	249	251	46	50	79	77	1.9	8.3
	95	203.11	.90	.75	290	250	251	45	51	79	77	1.9	8.3
11	100	206.86	.90	.75	289	251	251	46	54	79	77	1.9	8.3

Traverse: 2		Traverse:	
Start Time: 09:46	Initial Leak Check: .003 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

particulate on @ 09:48 – 11:34

inlet DtF on @ 09:49 – 11:19

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 30/16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	210.63	.90	.75	287	251	251	46	55	79	77	1.9	8.3
12	110	214.40	.90	.75	286	251	251	46	54	79	77	1.9	8.3
	115	218.14	.90	.75	286	251	251	46	56	79	77	1.9	8.3
	120	221.81											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 11:46	Final Leak Check: .004	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 7	Semi-Volatile Organic Compounds 7
Test Date	Nov. 4/16
Test Location	APC Outlet No. 1
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	Team 1 COE 2009
Impinger Box No.:	4

Pitot Factor	~~0.848~~ 0.847	
DGMCF	0.993	
Barometric Pressure	29.82	"Hg
Static Pressure	-10.8	"H2O
Nozzle Size	.2524	inches
Stack Diameter	4.5	feet
Length	–	feet
Width	–	feet
Port length:		inches

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Particulate Gain

Filter	0	mg
Probe	0	mg

Moisture Gain

CWTR	~~674.7~~	742.4	g
WCBDA	~~19.5~~	12.9	g

Combustion Gas Concentration

Oxygen	8.07	%
Carbon Dioxide	11.25	%
Carbon Monoxide	10.6	ppm

Measuring Device	MII Numbers
Probe / Pitot	15D
Trendicator	
Control Box	Team 1 COE 2009
Incline Manometer	
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	B02103

See

Nozzle Measurements	
1	.2525
2	.2525
3	.2530
4	.2515
Average:	.2524

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None / Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: Nov. 4/16	Plant: Covanta DYEC	Test No.: SVOC 7	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O * 0.73	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	11.55	~~0.81~~	0.70	288	232	262	67	72	68	67	2.0	6.5
	5	15.33	0.75	0.71	288	231	263	49	39	67	67	1.8	6.5
2	10	18.92	0.77	0.72	289	231	263	47	39	67	67	1.5	6.5
	15	22.47	0.77	0.72	288	232	264	45	39	67	67	1.6	6.5
3	20	26.03	0.75	0.71	289	246	264	43	39	67	67	1.6	6.5
	25	29.58	0.75	0.71	289	246	264	42	39	67	67	1.6	6.5
4	30	33.17	0.69	0.68	289	246	263	41	39	68	67	1.6	7.0
	35	36.73	0.71	0.69	289	246	264	41	38	67	67	1.6	7.0
5	40	40.28	0.68	0.68	290	246	263	41	39	68	67	1.6	7.0
	45	43.81	0.68	0.68	290	246	264	41	38	68	67	1.5	7.0
6	50	47.33	0.65	0.66	290	246	264	41	39	68	67	1.3	7.0
	55	50.77	0.66	0.67	290	246	264	41	38	68	67	1.3	7.0
7	60	54.19	0.63	0.65	290	246	264	42	38	68	67	1.1	6.5
	65	57.56	0.64	0.66	289	245	263	42	38	69	67	1.1	6.5
8	70	60.91	0.67	0.67	289	245	263	42	38	69	67	1.1	6.5
	75	64.26	0.67	0.67	289	245	264	42	38	69	68	1.2	6.5
9	80	67.64	0.67	0.67	289	246	264	42	38	69	68	1.2	6.5
	85	71.00	0.67	0.67	289	246	264	42	38	69	68	1.2	6.5
10	90	74.36	0.67	0.67	289	246	264	43	39	70	68	1.2	6.5
	95	77.75	0.69	0.68	288	245	264	43	38	70	68	1.4	6.5
11	100	81.20	0.69	0.68	288	245	264	43	38	70	68	1.4	6.5

Traverse: 2			
Start Time: 6:30	Initial Leak Check: <.002 cfm@ 15 "Hg		
Finish Time: 10:30	Final Leak Check: <.002 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RV

Rev: April 28, 2005

ORTECH Environmental

Field Data Sheet

Date: Nov. 4/16	Plant: Covanta DYEC	Test No.: SVOC 7	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. V	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	84.66	0.69	0.68	288	245	264	43	38	70	69	1.4	6.5
12	110	88.14	0.69	0.69	281	245	264	43	38	70	69	1.4	6.5
	115	91.58	0.69	0.69	280	245	264	44	38	70	69	1.7	6.5
	120	95.17											

Traverse: 2			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RW

Field Data Sheet

Date: Nov. 4/16	Plant: Covanta DYEC	Test No.: SVOC 7	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	95.52	0.71	0.70	287	245	264	57	38	70	69	1.7	6.5
	5	99.04	0.75	0.71	287	245	264	46	40	70	70	2.0	7.0
2	10	102.76	0.79	0.73	288	246	265	46	40	71	70	2.0	7.0
	15	106.47	0.81	0.74	288	246	264	45	41	70	70	2.0	7.0
3	20	110.38	0.78	0.73	288	246	264	44	40	70	70	1.8	7.0
	25	113.87	0.76	0.72	288	245	264	43	41	71	69	1.6	7.0
4	30	117.51	0.71	0.69	288	246	265	43	42	70	70	1.2	7.0
	35	121.01	0.70	0.69	288	246	265	43	41	70	70	1.2	7.0
5	40	124.46	0.59	0.63	288	246	264	43	42	71	70	1.0	7.0
	45	127.82	0.59	0.63	288	245	264	43	42	70	70	1.0	7.0
6	50	131.16	0.58	0.63	288	246	265	44	42	70	69	0.8	6.5
	55	134.41	0.57	0.62	288	245	264	43	39	71	70	0.8	6.5
7	60	137.61	0.66	0.67	288	246	264	43	38	70	70	1.2	7.0
	65	140.92	0.68	0.68	288	246	265	43	38	71	70	1.2	7.0
8	70	144.23	0.73	0.71	287	246	264	43	39	71	70	1.6	7.0
	75	147.79	0.73	0.70	289	246	265	43	39	71	70	1.8	7.0
9	80	151.38	0.75	0.71	290	246	265	43	39	71	70	1.9	7.0
	85	155.04	0.75	0.71	290	246	264	43	39	71	70	1.9	7.0
10	90	158.77	0.74	0.71	290	245	265	44	39	71	70	1.7	7.0
	95	162.32	0.77	0.72	290	245	264	44	39	71	70	1.7	7.0
11	100	165.96	0.70	0.69	289	246	265	44	39	71	70	1.2	7.0

Traverse: 1			
Start Time: 10:40	Initial Leak Check: <.002 cfm@ 15 "Hg		
Finish Time: 12:40	Final Leak Check: <.002 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RW

Field Data Sheet

Date: Nov. 4/16	Plant: Covanta DYEC	Test No.: SVOC 7	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	169.41	0.70	0.69	288	245	264	45	37	71	70	1.4	7
12	110	172.90	0.69	0.69	286	245	265	45	37	71	70	1.4	7
	115	176.40	0.69	0.69	286	245	264	45	39	71	70	1.4	7
	120	179.80											

Traverse: 1		Traverse:	
Start Time:	Initial Leak Check: cfm@ "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : RW

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	8 Semi-Volatile Organic Compounds
Test Date	Nov. 4/16
Test Location	APC Outlet No. 1
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	Team 4 COE 20094
Impinger Box No.:	11

Pitot Factor	0.847	
DGMCF	0.993	
Barometric Pressure	29.76	"Hg
Static Pressure	-10.1	"H2O
Nozzle Size	.2524	inches
Stack Diameter	4.5	feet
Length	–	feet
Width	–	feet
Port length:		inches

Particulate Gain

Filter	0	mg
Probe	0	mg

Moisture Gain

CWTR	~~742.4~~ 674.7	g
WCBDA	T 19.5	g

Combustion Gas Concentration

Oxygen	8.64	%
Carbon Dioxide	10.69	%
Carbon Monoxide	8.3	ppm

Measuring Device	MII Numbers
Probe / Pitot	15D
Trendicator	
Control Box	Team 1 COE 20094
Incline Manometer	
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	B02103

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	
2	See
3	T7
4	
Average:	.2524

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: 8 SVOC 3	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	80.43	0.75	0.72	288	250	268	50	38	70	70	1.5	7
	5	84.11	0.74	0.71	286	247	260	50	38	71	71	1.5	7
2	10	87.50	0.76	0.72	286	248	264	47	39	71	71	1.5	7
	15	91.05	0.85	0.76	286	247	264	46	37	71	71	2	7
3	20	94.87	0.78	0.73	287	247	263	44	40	71	71	1.8	7
	25	98.63	0.80	0.74	286	247	263	44	40	72	71	1.8	7
4	30	102.37	0.72	0.70	286	247	264	44	40	71	71	1.6	7
	35	106.02	0.78	0.73	286	247	264	45	44	72	71	1.6	8
5	40	109.65	0.70	0.69	285	247	264	44	42	72	71	1.6	8
	45	113.28	0.67	0.68	287	247	264	44	38	72	71	1.4	8
6	50	116.82	0.62	0.65	288	247	264	44	38	72	71	1.0	8
	55	120.20	0.65	0.67	289	248	264	46	39	72	72	1.2	8
7	60	123.65	0.70	0.69	289	248	264	44	38	73	71	1.2	8
	65	127.17	0.68	0.68	287	247	264	44	37	73	72	1.6	8
8	70	130.66	0.68	0.69	284	247	263	43	37	73	72	1.6	8
	75	134.27	0.74	0.72	285	247	264	43	37	73	72	1.6	8
9	80	137.93	0.70	0.69	287	247	264	43	37	73	72	1.6	8
	85	141.56	0.75	0.72	288	247	264	42	38	73	72	1.6	8
10	90	145.17	0.75	0.72	285	247	264	42	38	73	72	1.6	8
	95	148.78	0.74	0.72	284	247	264	42	38	74	72	1.6	8
11	100	152.41	0.72	0.71	282	247	264	43	38	74	73	1.6	8

Traverse: 2			
Start Time: 13:42	Initial Leak Check: <.002 cfm@ 15 "Hg		
Finish Time: 15:42	Final Leak Check: <.002 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RV

142.09

Field Data Sheet

Date: Nov 4/16	Plant:	Covanta DYEC	Test No.: 8 SVOC
	Plant Location:	Courtice, Ontario	Test Location: APC Outlet No. 1

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	156.02	0.72	0.71	281	247	284	42	38	74	73	1.6	8
12	110	159.61	0.73	0.71	282	247	264	43	38	74	73	1.6	8
	115	163.26	0.73	0.71	282	247	264	44	83	74	73	1.6	8
	120	166.80											

Traverse: 1			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RW

Field Data Sheet

Date: Nov. 4/16	Plant: Covanta DYEC	Test No.: 8 SVOC 2	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	167.26	0.85	0.77	285	246	264	50	40	74	74	2.0	8.5
	5	170.98	0.84	0.76	287	246	262	45	40	75	74	2.0	8.5
2	10	174.78	0.84	0.76	287	247	266	42	40	74	74	2.0	8.5
	15	178.54	0.82	0.75	286	247	264	42	41	74	73	2.0	8.5
3	20	182.30	0.84	0.76	284	247	264	41	42	73	73	2.0	8.5
	25	186.04	0.84	0.76	284	247	264	41	42	74	73	2.0	8.5
4	30	189.84	0.77	0.73	283	247	264	42	42	73	73	2.0	8.5
	35	193.56	0.72	0.71	283	247	264	42	43	74	73	~~1.8~~	~~8.5~~ 9
5	40	197.36	0.71	0.70	282	248	264	43	43	74	73	1.6	~~8.5~~ 9
	45	200.90	0.68	0.69	282	248	264	43	43	74	73	1.6	9
6	50	204.52	0.66	0.68	282	248	264	43	43	74	73	1.6	9
	55	208.09	0.65	0.67	281	248	264	44	43	73	73	1.4	9
7	60	211.62	0.72	0.71	282	248	264	44	40	73	73	1.4	9
	65	215.14	0.72	0.71	282	248	264	44	38	73	73	1.4	9
8	70	218.66	0.74	0.72	282	247	264	44	36	73	73	1.4	9
	75	222.18	0.74	0.72	282	247	264	44	36	73	73	1.4	9
9	80	225.71	0.75	0.72	282	247	264	44	36	73	73	1.6	9
	85	229.31	0.77	0.72	282	247	264	45	36	73	73	1.6	9
10	90	232.91	0.80	0.72	282	247	264	45	36	73	73	1.6	9
	95	236.53	0.79	0.74	282	247	264	45	37	73	73	1.8	9
11	100	240.27	0.72	0.71	282	247	264	45	37	73	73	1.8	9

Traverse: 2			
Start Time: 15:54	Initial Leak Check: .002	cfm@ 17	"Hg
Finish Time: 17:54	Final Leak Check: <.002	cfm@ 18	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RL

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: 8 SVOC 3	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	244.12	0.70	0.70	282	247	264	45	37	73	73	1.4	9
12	110	247.59	0.70	0.70	282	246	264	45	38	73	73	1.4	9
	115	251.20	0.68	0.68	282	246	264	45	37	73	73	1.4	9
	120	254.76											

Traverse: 2			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : RW

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APPENDIX 8

SVOC Field Data Sheets
for Boiler No. 2
(90 pages)

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 1	Semi-Volatile Organic Compounds
Test Date	September 19, 2016
Test Location	Quench Inlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	7 Series
Meter Box No.:	Box 11
Impinger Box No.:	

Pitot Factor	.848 ✓	
DGMCF	.998 ✓	
Barometric Pressure	29.52	"Hg
Static Pressure	-2.5	"H2O
Nozzle Size	.2516 ✓	inches
Stack Diameter	4.5 ✓	feet
Length	—	feet
Width	—	feet
Port length:		inches

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union (None) / Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	528.6 ✓	g
WCBDA	103.3 ✓	g

Combustion Gas Concentration

Oxygen	7.76	%
Carbon Dioxide	10.97	%
Carbon Monoxide	22.1	ppm

Measuring Device	MII Numbers
Probe / Pitot S/N	B04011 ✓
Trendicator	B03699 ✓
Control Box	B03699
Incline Manometer	B00717 ✓
Comb.Gas.Analyzer	
Micromanometer	
Barometer	Env. Canada
Calipers	

Nozzle Measurements

1	.2510
2	.2520
3	.2520
4	.2515
Average:	0.2516

Site Diagram

Notes: 15.4% 7 12 13

Rev. November 27, 2014

Field Data Sheet

Date: Sept. 19, 2016	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet/Trap~~ Inlet °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	24.64	.57	.63	329	253	257	93	54	84	85	1.1	3
	5	27.80	.57	.63	334	255	260	68	43	84	86	1.1	4
2	10	30.94	.57	.63	334	253	257	64	44	84	89	1.1	5
	15	34.16	.58	.64	334	253	256	61	44	84	92	1.1	5
3	20	37.34	.63	.67	333	253	256	58	44	85	94	1.3	6
	25	40.72	.63	.67	331	253	255	55	45	87	97	1.3	6.5
4	30	44.11	.64	.68	333	252	254	53	47	88	99	1.35	7.5
	35	47.57	.63	.67	333	252	253	52	47	90	101	1.35	7.5
5	40	50.99	.62	.67	333	251	254	51	48	91	103	1.3	8
	45	54.36	.61	.67	333	252	253	52	48	92	104	1.3	8
6	50	57.74	.60	.66	332	252	254	53	45	94	105	1.25	8.5
	55	61.09	.59	.66	332	252	254	53	42	95	107	1.25	9
7	60	64.39	.77	.74	332	253	255	52	42	96	109	1.6	10.5
	65	68.09	.76	.74	332	253	254	51	43	97	111	1.6	12
8	70	71.82	.81	.76	332	253	255	51	43	99	112	1.7	13.5
	75	75.67	.85	.78	332	253	255	51	44	100	113	1.8	14
9	80	79.56	.83	.78	333	254	256	52	43	101	115	1.8	14
	85	83.37	.83	.78	332	253	255	52	44	102	115	1.8	14.5
10	90	87.16	.86	.79	331	253	254	52	44	102	116	1.8	14.5
	95	90.80	.83	.78	331	253	255	53	45	103	117	1.8	14.5
11	100	94.55	.65	.69	331	253	255	53	45	103	117	1.4	5

Traverse: West			
Start Time: 13:00	Initial Leak Check: .008	cfm@ 18	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

1:34 minute mark pump off vacuum high (94 min)
Start 14:36 leak checked performed @ end of traverse

Project No.: 21707
Operator :

Field Data Sheet

Date: Sept 19, 2016	Plant:	Covanta DYEC	Test No.: 1 SVOC	Page 3 of 5
	Plant Location:	Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	105	98.15	.64	.68	335	256	263	54	47	101	114	1.4	5
12	110	101.57	.58	.65	335	254	256	55	46	101	112	1.2	5
	115	104.80	.57	.64	334	253	255	55	46	101	114	1.2	5.5
	120	108.05											

Traverse: West					
Start Time: –	Initial Leak Check:	–	cfm@	–	"Hg
Finish Time: 15	Final Leak Check:	.006	cfm@	14	"Hg

Traverse:					
Start Time:	Initial Leak Check:		cfm @		"Hg
Finish Time:	Final Leak Check:		cfm @		"Hg

Project No.: 21707

Operator :

Rev: April 28, 2005

ORTECH Environmental

Field Data Sheet

Date: Sept 19 2016	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm .66	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	108.37	.68	.331	.331	254	266	73	55	100	104	1.3	6
	5	111.82	.67	.69	334	251	257	56	51	99	107	1.3	6
2	10	115.27	.67	.69	334	249	254	55	45	99	110	1.3	6.5
	15	118.70	.68	.70	334	248	257	55	44	99	111	1.35	7.5
3	20	122.21	.69	.70	334	248	258	55	44	100	113	1.35	7.5
	25	125.74	.71	.72	334	248	255	55	45	101	114	1.4	9
4	30	129.35	.69	.71	335	249	255	55	46	101	115	1.35	9
	35	132.88	.67	.70	335	248	255	56	47	102	116	1.35	9
5	40	136.37	.68	.70	334	248	255	56	48	103	116	1.35	9
	45	139.87	.67	.70	334	248	255	57	50	103	116	1.35	9.5
6	50	143.37	.70	.71	335	247	256	57	51	104	117	1.4	10.5
	55	146.87	.67	.70	335	248	254	57	54	104	117	1.35	10.5
7	60	150.37	.74	.73	334	248	255	58	55	104	118	1.5	12
	65	154.05	.76	.75	334	249	256	58	61	105	119	1.6	14
8	70	157.80	.76	.75	334	249	256	58	64	106	119	1.6	14
	75	161.68	.88	.80	334	249	256	57	53	106	120	1.8	7
9	80	165.70	.89	.80	337	267	268	50	53	103	113	1.8	7
	85	169.65	.87	.79	336	265	261	50	46	103	114	1.8	7
10	90	173.67	.87	.79	335	257	248	50	46	103	116	1.8	7
	95	177.66	.87	.80	335	257	239	50	44	104	117	1.8	7
11	100	181.69	.78	.76	332	257	243	50	45	104	118	1.6	9.5

Traverse: East		Traverse:	
Start Time: 15:38	Initial Leak Check: .004 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Pump off at 16:50 - high vacuum
Pump on at 17:11 leak check performed @ end of traverse

Project No.: 21707
Operator :

Field Data Sheet

Date: Sept. 19, 2016	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	185.53	.78	.76	333	256	243	50	45	105	119	1.6	9.5
12	110	189.32	.75	.74	339	256	242	51	46	105	120	1.6	10
	115	193.05	.75	.74	329	257	242	51	46	105	120	1.6	10
	120	196.79											

Traverse: East					
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg		
Finish Time: 17:56	Final Leak Check: .004	cfm@ 18	"Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 2	Semi-Volatile Organic Compounds
Test Date	September 20, 2016
Test Location	Quench Inlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	6 Series
Meter Box No.:	11
Impinger Box No.:	

Pitot Factor	.848	
DGMCF	.998	
Barometric Pressure	29.60	"Hg
Static Pressure	-2.5	"H2O
Nozzle Size	.2516	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	675.5	g
WCBDA	27.1	g

Combustion Gas Concentration

Oxygen	7.89	%
Carbon Dioxide	11.03	%
Carbon Monoxide	17.4	ppm

Measuring Device	MII Numbers
Probe / Pitot SP4	B04011
Trendicator	B03699
Control Box	B03699
Incline Manometer	B00717
Comb.Gas.Analyzer	
Micromanometer	
Barometer	Env. Canada
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	
2	
3	
4	
Average:	

Probe Liner Glass / Metal /Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None /Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: Sept. 20, 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	97.44	.70	.69	336	254	244	73	58	80	81	1.3	3
	5	100.87	.75	.71	336	257	250	56	49	81	83	1.4	4
2	10	104.35	.76	.72	335	256	250	53	52	81	86	1.4	4
	15	107.94	.76	.72	334	256	249	52	55	82	89	1.5	6
3	20	111.58	.76	.72	334	256	248	51	50	83	92	1.5	6
	25	115.24	.77	.73	334	255	247	51	49	84	95	1.55	6.5
4	30	118.93	.77	.73	335	256	247	51	51	85	97	1.55	7
	35	122.69	.77	.73	336	256	246	50	50	87	99	1.55	7.5
5	40	126.41	.77	.73	336	255	247	50	50	88	102	1.55	7.5
	45	130.10	.76	.73	335	254	246	51	50	89	103	1.5	7.5
6	50	133.62	.76	.74	335	255	246	51	49	91	105	1.6	8.5
	55	137.29	.75	.73	335	255	246	51	51	92	107	1.5	9.0
7	60	140.95	.76	.74	333	252	246	51	48	93	108	1.55	10
	65	144.72	.76	.74	332	254	245	50	47	94	109	1.55	10
8	70	148.43	.77	.75	332	255	247	50	47	96	110	1.6	11
	75	152.22	.77	.75	332	255	248	50	47	97	111	1.6	12
9	80	156.05	.79	.76	332	255	248	50	47	98	112	1.7	13
	85	160.00	.76	.74	331	254	248	50	48	99	113	1.55	4.5
10	90	163.79	.74	.73	334	259	254	54	47	97	107	1.5	5
	95	167.44	.73	.73	334	255	251	51	47	97	109	1.5	5.5
11	100	171.15	.73	.73	332	254	251	51	48	97	110	1.5	6

Traverse: East		Traverse:	
Start Time: 9:25	Initial Leak Check: .002 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Pump off at 11:05 – 85 minute mark, start pump leak check performed @ end of traverse

Project No.: 21707

Operator: [illegible]

Field Data Sheet

Date: Sept. 20 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	174.80	.73	.73	332	254	251	51	48	98	110	1.5	6.5
12	110	178.52	.73	.73	333	254	251	51	50	98	111	1.5	7
	115	182.23	.73	.73	331	254	251	51	51	98	111	1.5	8
	120	185.92											

Traverse:	East						
Start Time:	—	Initial Leak Check:	—	cfm@	—	"Hg	
Finish Time:	11:40	Final Leak Check:	.009	cfm@	13	"Hg	

Traverse:					
Start Time:		Initial Leak Check:		cfm @	"Hg
Finish Time:		Final Leak Check:		cfm @	"Hg

Project No.: 21707

Operator : [illegible]

Field Data Sheet

Date: Sept. 20, 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	186.85	.59	.65	331	258	256	74	57	96	98	1.2	7
	5	190.23	.60	.65	336	260	254	55	45	94	101	1.1	7
2	10	193.48	.65	.68	335	257	253	53	45	94	104	1.3	8.5
	15	196.86	.65	.68	334	257	253	52	45	94	105	1.3	9.5
3	20	200.34	.66	.69	334	257	253	52	45	95	106	1.35	10
	25	203.86	.66	.69	334	257	252	52	45	96	107	1.35	10
4	30	207.35	.68	.70 ~~.69~~	336	257	252	53	45	96	109	1.4	11.5
	35	210.91	.68	.70	335	257	251	53	45	97	110	1.4	11.5
5	40	214.48	.68	.70	334	256	251	54	46	98	110	1.4	11.5
	45	218.05	.69	.71	333	257	251	55	46	98	111	1.5	14
6	50	221.61	.68	.71	333	257	252	55	47	99	111	1.5	15
	55	225.16	.74	.74	332	257	251	56	48	99	112	1.6	5
7	60	228.95	.74	.73	331	261	254	57	46	97	106	1.6	6.0
	65	232.70	.74	.74	331	258	253	55	46	97	108	1.55	6.0
8	70	236.31	.74	.74	331	257	252	56	44	98	110	1.55	6.5
	75	239.98	.76	.75	330	256	252	57	44	98	111	1.7	7.5
9	80	243.81	.75	.74	331	256	252	58	45	99	112	1.6	7.5
	85	247.60	.75	.74	332	256	250	58	45	100	113	1.6	8.5
10	90	251.35	.76	.75	331	256	252	58	46	100	114	1.65	9
	95	255.24	.74	.74	332	256	250	59	45	101	115	1.6	9
11	100	258.07	.72	.73	328	256	251	60	45	101	115	1.55	9

Traverse: 12:12 West					
Start Time: 12:00	Initial Leak Check: .007	cfm@	16	"Hg	
Finish Time: —	Final Leak Check: —	cfm@	—	"Hg	

Traverse:					
Start Time:	Initial Leak Check:	cfm @		"Hg	
Finish Time:	Final Leak Check:	cfm @		"Hg	

pump off at 55 min mark
pump on 13:25 leak check performed @ end of traverse

Project No.: 21707
Operator :

Field Data Sheet

Date: Sept 20, 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	262.83	.75	.76	312	256	251	61	45	102	116	1.65	10.5
12	110	266.64	.75	.76	312	256	251	61	45	102	116	1.65	10.5
	115	270.71	.74	.75	323	255	251	63	49	103	117	1.6	11
	120	274.52											

Traverse: West					
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg		
Finish Time: 14:30	Final Leak Check: .008	cfm@ 19	"Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 3	Semi-Volatile Organic Compounds
Test Date	September 20, 2016
Test Location	Quench Inlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	6 series
Meter Box No.:	11
Impinger Box No.:	15

Pitot Factor	.848	
DGMCF	.998	
Barometric Pressure	29.64	"Hg
Static Pressure	- 2.5	"H2O
Nozzle Size	.2516	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	598.2	g
WCBDA	21.4	g

Combustion Gas Concentration

Oxygen	7.74	%
Carbon Dioxide	11.06	%
Carbon Monoxide	16.4	ppm

Measuring Device	MII Numbers
Probe / Pitot SP4	B04011
Trendicator	B03699
Control Box	B03699
Incline Manometer	A01674
Comb.Gas.Analyzer	
Micromanometer	
Barometer	Env. Canada
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1 _____
2 _____
3 _____
4 _____
Average:

Probe Liner Glass / Metal /Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None /Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: Sept 20 2016	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	74.92	.57	.63	334	256	246	78	53	95	97	1.0	4
	5	78.16	.57	.63	335	256	255	59	45	89	93	1.1	4.5
2	10	81.28	.57	.63	334	256	254	55	44	89	95	1.1	4.5
	15	84.50	.59	.64	334	256	253	53	45	90	98	1.2	5.5
3	20	87.85	.59	.64	333	257	252	52	45	91	100	1.2	5.5
	25	91.08	.60	.65	334	257	254	52	46	92	103	1.25	6.5
4	30	94.39	.60	.65	335	257	251	52	46	92	104	1.2	6.5
	35	97.67	.60	.65	334	257	251	52	46	94	106	1.2	6.5
5	40	100.98	.58	.65	334	257	252	52	47	95	108	1.2	6.5
	45	104.27	.58	.65	334	257	251	53	47	96	109	1.2	6.5
6	50	107.57	.59	.65	333	256	251	53	49	97	111	1.2	7.5
	55	110.87	.59	.65	333	256	250	54	51	98	112	1.2	8
7	60	114.16	.71	.72	332	256	250	54	47	99	113	1.5	10
	65	117.81	.70	.72	332	257	249	54	48	100	115	1.5	10
8	70	121.48	.77	.75	332	258	251	54	47	101	117	1.6	11
	75	125.23	.78	.76	332	258	252	55	46	103	118	1.65	13
9	80	129.15	.78	.76	337	258	252	56	50	104	119	1.65	14
	85	132.03	.82	.78	334	258	252	55	48	105	120	1.7	14.5
10	90	136.92	.79	.77	334	258	252	54	48	105	120	1.7	7
	95	140.85	.80	.77	333	202	261	55	47	104	113	1.65	7
11	100	144.67	.76	.75	334	259	252	54	48	103	115	1.6	7.5

Traverse: East					
Start Time: 16:18	Initial Leak Check:	.003	cfm@	17	"Hg
Finish Time: —	Final Leak Check:	—	cfm@	—	"Hg

Traverse:					
Start Time:	Initial Leak Check:		cfm @		"Hg
Finish Time:	Final Leak Check:		cfm @		"Hg

Pump off at 17:48
pump on at 18:03
leak check performed @ end of traverse

Project No.: 21707
Operator : fh

Field Data Sheet

Date: Sept. 20, 2016	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	148.41	.72	.73	332	258	253	54	47	104	117	1.5	8
12	110	152.10	.72	.73	332	258	253	53	46	104	118	1.5	8
	115	155.76	.74	.74	332	257	253	54	47	105	119	1.6	9
	120	159.54											

Traverse:			
Start Time: —	Initial Leak Check: —	cfm@	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Sept. 20, 2016	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	159.91	.55	.63	336	260	255	78	51	104	108	1.1	7
	5	163.11	.54	.63	335	263	256	56	44	103	112	1.1	7
2	10	166.26	.60	.66	335	261	257	55	43	103	114	1.2	8
	15	169.56	.59	.66	335	260	255	54	45	103	115	1.2	9
3	20	172.95	.60	.67	335	260	255	55	46	104	117	1.25	9
	25	176.33	.64	.69	335	259	255	55	46	104	118	1.3	10
4	30	179.80	.60	.67	335	260	255	55	46	105	118	1.25	10
	35	183.16	.61	.67	335	260	255	57	47	105	119	1.25	10
5	40	186.53	.61	.67	335	260	255	57	48	106	119	1.25	10
	45	189.97	.59	.66	335	260	255	57	49	106	120	1.2	11
6	50	193.31	.58	.66	335	260	255	59	49	106	120	1.2	11
	55	196.67	.61	.68	336	259	256	57	48	107	120	1.3	11.5
7	60	200.04	.73	.74	334	259	255	56	47	107	120	1.55	14
	65	203.73	.77	.76	332	259	255	54	48	107	121	1.6	7
8	70	207.53	.83	.78	335	264	257	53	48	104	114	1.7	8
	75	211.43	.85	.79	335	261	255	53	49	104	116	1.8	9
9	80	215.40	.85	.79	336	259	258	54	51	104	117	1.8	9.5
	85	219.46	.86	.80	336	259	254	54	51	104	118	1.8	9.5
10	90	223.50	.83	.78	337	259	256	54	49	105	119	1.8	9.5
	95	227.54	.81	.78	336	260	256	53	50	105	120	1.75	10.5
11	100	231.52	.71	.73	336	260	256	54	48	105	120	1.5	10

Traverse: West			
Start Time: 18:47	Initial Leak Check: 1.008	cfm@ 16.5	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

pump off at 19:52
pump on at 20:07
leak check performed e and f traverse

Project No.: 21707
Operator :

Field Data Sheet

Date: Sept. 20, 2016	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	235.29	.72	.73	334	259	255	54	45	106	121	1.4	9.5
12	110	238.86	.69	.72	330	259	255	54	45	106	121	1.45	10
	115	242.49	.69	.72	329	259	255	54	45	106	122	1.45	10
	120	246.13											

Traverse: West			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 20:02	Final Leak Check: .003	cfm@ 17	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 4	Semi-Volatile Organic Compounds
Test Date	22 Sep16
Test Location	Quench Inlet No. 2
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	
DGMCF	0.998	
Barometric Pressure	29.56	"Hg
Static Pressure	-2.4	"H2O
Nozzle Size	0.2516	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5	
Number of Ports	2	
Number of Points/Port	12	

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	449.1	g
WCBDA	15.7	g

Combustion Gas Concentration

Oxygen	8.08	%
Carbon Dioxide	10.75	%
Carbon Monoxide	33.1	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test
Incline Manometer	#1
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	See
2	Test #1
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: 22Sep16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	47.40	0.60	0.64	335	254	250	53	61	84	85	1.2	3.0
	2.5	49.07	0.59	0.63	335	252	253	64	56	84	86	1.1	3.0
	5	50.64	0.58	0.63	334	252	254	59	53	84	87	1.1	3.5
2	7.5	52.18	0.64	0.66	335	251	253	56	51	84	88	1.3	4.0
	10	53.88	0.65	0.66	335	251	252	53	52	84	89	1.3	4.0
	12.5	55.56	0.67	0.68	335	252	251	52	51	84	90	1.35	4.5
3	15	57.26	0.69	0.69	336	252	251	50	51	84	92	1.4	5.0
	17.5	59.03	0.68	0.68	336	252	250	50	52	85	93	1.35	5.0
	20	60.78	0.68	0.68	336	252	250	49	51	85	94	1.35	5.0
4	22.5	62.50	0.68	0.68	336	251	250	50	51	86	96	1.35	5.5
	25	64.22	0.68	0.69	336	251	249	49	51	87	97	1.35	5.5
	27.5	65.93	0.69	0.70	336	251	249	50	50	87	98	1.4	6.0
5	30	67.68	0.66	0.68	336	251	249	49	50	88	99	1.35	6.0
	32.5	69.38	0.66	0.68	336	252	249	50	51	89	101	1.35	6.0
	35	71.07	0.65	0.68	336	252	249	50	50	89	102	1.35	6.0
6	37.5	72.80	0.63	0.67	336	252	248	50	51	90	103	1.3	6.5
	40	74.50	0.63	0.67	336	253	248	50	51	91	104	1.25	6.5
	42.5	76.20	0.63	0.67	336	253	249	50	51	92	105	1.25	6.5
7	45	77.86	0.74	0.73	335	253	250	50	51	92	106	1.55	8.0
	47.5	79.69	0.75	0.74	335	253	250	50	52	93	107	1.6	8.5
	50	81.57	0.75	0.74	335	253	250	50	52	94	108	1.6	8.5

Traverse: EAST			
Start Time: 13:36	Initial Leak Check: 0.003 cfm@ 14.5 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time: /	Initial Leak Check: / cfm @ / "Hg		
Finish Time: /	Final Leak Check: / cfm @ / "Hg		

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 20 Sep 16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	83.43	0.79	0.76	334	253	249	50	49	94	109	1.7	9.0
	55	85.35	0.79	0.76	334	253	249	50	48	95	110	1.65	9.0
	57.5	87.26	0.78	0.75	334	253	248	50	50	95	111	1.65	9.0
9	60	89.16	0.79	0.76	333	253	249	51	50	96	112	1.65	9.5
	62.5	91.05	0.79	0.76	333	253	250	51	51	97	113	1.65	9.5
	65	92.94	0.80	0.77	333	253	250	51	51	98	113	1.7	10
10	67.5	94.86	0.78	0.76	333	253	250	51	52	98	114	1.65	10
	70	96.78	0.78	0.76	333	253	250	52	52	99	114	1.65	10
	72.5	98.68	0.79	0.76	333	253	251	52	54	99	115	1.7	10.5
11	75	100.60	0.76	0.75	334	252	251	52	53	100	115	1.65	11
	77.5	102.49	0.74	0.74	333	253	251	52	53	100	116	1.6	11
	80	104.36	0.72	0.73	332	253	251	53	52	101	116	1.55	11
12	82.5	106.21	0.72	0.73	332	252	251	53	52	101	117	1.55	11.5
	85	108.05	0.73	0.74	333	251	250	54	52	101	117	1.55	11.5
	87.5	109.87	0.73	0.74	333	252	250	54	52	102	117	1.55	11.5
	90	111.69											

Traverse: East			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 15:06	Final Leak Check: 0.004	cfm@ 18	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 22 Sep 16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	112.44	0.52	0.61	338	255	254	79	56	98	100	1.05	3.0
	2.5	114.02	0.51	0.60	339	256	257	57	49	97	102	1.05	3.0
	5	115.55	0.51	0.60	338	257	259	55	50	97	103	1.0	3.0
2	7.5	117.07	0.59	0.65	338	256	256	54	50	97	104	1.2	4.0
	10	118.71	0.61	0.66	338	255	254	53	51	97	105	1.3	4.5
	12.5	120.42	0.60	0.66	338	255	254	53	53	97	106	1.25	4.5
3	15	122.10	0.63	0.67	339	255	254	53	53	97	107	1.25	5.0
	17.5	123.79	0.63	0.67	339	255	254	53	51	97	108	1.25	5.0
	20	125.47	0.64	0.68	339	254	254	53	50	97	109	1.3	5.0
4	22.5	127.16	0.64	0.68	339	254	253	53	50	98	110	1.3	5.5
	25	128.88	0.65	0.69	339	255	253	54	50	98	111	1.35	6.0
	27.5	130.62	0.65	0.69	339	255	253	54	50	98	112	1.35	6.0
5	30	132.35	0.65	0.69	340	255	253	55	50	99	112	1.35	6.0
	32.5	134.08	0.64	0.68	340	255	253	55	51	99	113	1.3	6.0
	35	135.80	0.64	0.68	340	255	253	55	51	100	113	1.3	6.0
6	37.5	137.49	0.65	0.69	341	255	253	55	51	100	114	1.35	6.5
	40	139.23	0.64	0.69	341	255	253	54	51	100	115	1.35	6.5
	42.5	140.94	0.64	0.69	340	255	253	52	50	101	115	1.35	6.5
7	45	142.65	0.81	0.77	339	255	253	52	51	101	115	1.75	8.5
	47.5	144.62	0.81	0.78	338	255	252	51	54	102	117	1.70	8.0
	50	146.55	0.81	0.78	338	255	252	51	53	102	118	1.70	8.5

Traverse: West			
Start Time: 15:41	Initial Leak Check: 0.005 cfm@ 17 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse: /			
Start Time: /	Initial Leak Check: / cfm @ / "Hg		
Finish Time: /	Final Leak Check: / cfm @ / "Hg		

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 22 Sep 16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	148.47	0.85	0.80	337	255	252	51	53	102	118	1.85	10
	55	150.52	0.84	0.79	336	255	252	50	54	103	119	1.8	10
	57.5	152.55	0.84	0.79	336	255	253	50	55	103	120	1.8	10
9	60	154.54	0.84	0.79	336	255	253	51	56	104	120	1.8	10.5
	62.5	156.56	0.85	0.80	338	255	253	52	58	104	121	1.8	10.5
	65	158.51	0.86	0.80	338	255	253	52	57	105	121	1.8	10.5
10	67.5	160.49	0.85	0.80	338	255	253	53	56	105	122	1.8	10.5
	70	162.50	0.86	0.81	337	255	252	54	57	105	122	1.8	11
	72.5	164.51	0.83	0.79	337	254	253	54	57	105	122	1.75	11
11	75	166.49	0.80	0.78	336	254	253	55	55	106	122	1.75	11.5
	77.5	168.45	0.79	0.77	336	254	252	55	54	106	122	1.70	11.5
	80	170.37	0.79	0.77	336	254	252	56	54	106	122	1.70	12
12	82.5	172.31	0.78	0.74	336	255	252	56	54	106	122	1.6	11.5
	85	174.20	0.70	0.73	335	254	253	57	53	107	122	1.55	11.5
	87.5	176.07	0.70	0.73	335	254	253	58	53	107	122	1.50	12
	90	177.93											

Traverse: West		
Start Time: —	Initial Leak Check: — cfm@ — "Hg	
Finish Time: 17:11	Final Leak Check: 0.005 cfm@ 18 "Hg	

Traverse: /		
Start Time: /	Initial Leak Check: / cfm @ / "Hg	
Finish Time:	Final Leak Check: / cfm @ / "Hg	

Project No.: 21707

Operator : TB

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 5	Semi-Volatile Organic Compounds
Test Date	23 Sep 16
Test Location	Quench Inlet No. 2
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	
DGMCF	0.998	
Barometric Pressure	29.61	"Hg
Static Pressure	-2.5	"H2O
Nozzle Size	0.2516	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5	
Number of Ports	2	
Number of Points/Port	12	

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	482.7	g
WCBDA	10.8	g

Combustion Gas Concentration

Oxygen	8.02	%
Carbon Dioxide	10.73	%
Carbon Monoxide	30.4	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test
Incline Manometer	#1
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	See
2	Test #1
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: 23 Sep 16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
1	0	78.78	0.61	0.64	337	252	247	77	59	82	83	1.2	2.0
	2.5	80.44	0.60	0.64	336	252	248	69	50	82	84	1.15	2
	5	82.05	0.62	0.65	335	252	250	67	48	82	85	1.15	2.5
2	7.5	83.62	0.72	0.70	336	251	251	66	48	82	86	1.4	3
	10	85.40	0.71	0.70	336	248	250	64	47	82	88	1.4	3
	12.5	87.17	0.71	0.70	336	250	250	62	44	83	90	1.4	3
3	15	88.92	0.74	0.71	336	250	249	59	45	83	92	1.5	4
	17.5	90.73	0.73	0.71	336	250	251	58	46	83	92	1.45	4
	20	92.53	0.72	0.71	336	251	250	57	45	84	94	1.4	4
4	22.5	94.26	0.71	0.70	336	251	248	56	45	85	95	1.4	4
	25	96.04	0.71	0.70	335	250	248	55	45	85	96	1.4	4
	27.5	97.79	0.70	0.70	335	251	249	55	46	86	98	1.4	4.5
5	30	99.54	0.69	0.70	335	251	247	55	46	87	99	1.4	4.5
	32.5	101.33	0.68	0.69	337	251	247	55	48	87	100	1.35	5
	35	103.10	0.71	0.71	335	251	248	56	47	88	101	1.4	5
6	37.5	104.86	0.69	0.70	335	251	248	56	47	89	102	1.4	5
	40	106.60	0.68	0.69	336	250	248	57	47	89	103	1.35	5.5
	42.5	108.33	0.67	0.69	336	250	247	57	47	90	104	1.35	5.5
7	45	110.04	0.79	0.75	336	250	248	57	47	91	105	1.65	7
	47.5	111.95	0.83	0.77	336	252	250	56	48	91	106	1.75	7.5
	50	113.90	0.83	0.77	336	252	249	56	50	92	107	1.75	7.5

Traverse: East			
Start Time: 7:40	Initial Leak Check: 0.003	cfm@ 16	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 23Sep16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
8	52.5	115.86	0.85	0.78	336	252	249	56	49	92	108	1.8	8
	55	117.82	0.85	0.78	335	252	249	55	49	93	109	1.8	8.5
	57.5	119.80	0.84	0.78	335	252	250	54	50	94	109	1.75	8.5
9	60	121.76	0.87	0.79	335	252	249	52	49	94	110	1.85	9.5
	62.5	123.78	0.86	0.79	335	252	250	51	49	95	111	1.8	9.5
	65	125.82	0.88	0.80	335	252	250	51	50	95	111	1.85	10
10	67.5	127.83	0.87	0.80	336	252	251	50	50	96	112	1.8	10
	70	129.82	0.86	0.79	336	252	251	51	49	97	112	1.8	10.5
	72.5	131.82	0.85	0.79	336	252	250	50	49	97	112	1.8	10.5
11	75	133.80	0.85	0.79	335	252	251	50	48	97	113	1.8	11
	77.5	135.78	0.84	0.78	334	252	251	50	48	98	113	1.75	11
	80	137.75	0.84	0.79	334	252	251	49	48	98	113	1.75	11.5
12	82.5	139.76	0.83	0.78	334	252	253	49	48	98	114	1.75	11.5
	85	141.73	0.81	0.77	334	252	252	49	48	99	114	1.75	11.5
	87.5	143.68	0.80	0.77	333	252	251	49	48	99	114	1.7	11.5
	90	145.62											

Traverse: East			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 9:10	Final Leak Check: 0.004	cfm@ 23	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TD

Field Data Sheet

Date: 23 Sep 16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	146.85	0.52	0.61	332	256	251	73	56	93	97	1.05	3
	2.5	148.43	0.51	0.60	333	255	250	59	51	93	98	1.0	3
	5	149.96	0.52	0.61	333	255	252	56	51	92	99	1.0	3
2	7.5	151.49	0.56	0.63	333	254	254	55	51	92	100	1.1	3.5
	10	153.06	0.58	0.64	332	253	253	54	52	92	101	1.2	4
	12.5	154.71	0.58	0.64	332	253	253	51	51	92	102	1.15	4
3	15	156.35	0.61	0.66	332	253	253	49	48	92	103	1.2	4.5
	17.5	158.00	0.61	0.66	332	252	253	48	47	92	104	1.2	4.5
	20	159.65	0.60	0.66	333	253	253	48	47	92	105	1.2	5
4	22.5	161.30	0.59	0.65	332	253	253	48	48	93	105	1.2	5
	25	162.94	0.58	0.65	332	253	253	48	48	93	105	1.2	5
	27.5	164.60	0.59	0.65	333	253	252	47	46	93	106	1.2	5
5	30	166.23	0.58	0.65	332	253	253	47	46	93	106	1.2	5.5
	32.5	167.86	0.57	0.64	332	253	253	47	46	93	107	1.15	5.5
	35	169.48	0.59	0.65	332	253	253	47	46	94	107	1.2	5.5
6	37.5	171.11	0.58	0.65	332	253	253	47	46	94	108	1.2	6
	40	172.76	0.59	0.65	333	253	253	46	46	94	108	1.2	6
	42.5	174.41	0.60	0.66	334	253	252	46	46	94	108	1.25	6
7	45	176.05	0.75	0.74	333	254	251	46	47	95	109	1.6	7.5
	47.5	177.92	0.77	0.75	332	253	253	46	47	95	110	1.65	8
	50	179.80	0.76	0.74	332	254	252	46	48	95	110	1.65	8

Traverse: West			
Start Time: 9:44	Initial Leak Check: 0.005	cfm@ 21	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 23Sep16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	181.69	0.80	0.77	331	253	251	46	48	95	111	1.7	8.5
	55	183.62	0.81	0.77	332	253	252	46	48	96	111	1.7	9
	57.5	185.55	0.81	0.77	332	253	252	45	48	96	112	1.75	9
9	60	187.52	0.82	0.78	332	253	252	45	49	96	112	1.75	9.5
	62.5	189.49	0.82	0.78	331	253	252	46	49	96	112	1.75	9.5
	65	191.43	0.82	0.78	332	253	252	46	49	97	112	1.75	10
10	67.5	193.39	0.82	0.78	331	253	252	47	50	97	113	1.75	10
	70	195.33	0.81	0.77	332	253	251	47	50	97	113	1.7	10
	72.5	197.26	0.82	0.78	332	253	251	47	49	97	113	1.75	10.5
11	75	199.21	0.80	0.77	332	253	252	47	49	97	113	1.7	10.5
	77.5	201.15	0.80	0.77	331	253	252	47	49	98	114	1.7	11
	80	203.06	0.80	0.77	332	253	252	47	49	98	114	1.7	11
12	82.5	205.01	0.80	0.77	331	253	253	47	49	98	114	1.7	11
	85	206.94	0.79	0.76	331	253	251	48	49	98	114	1.65	11.5
	87.5	208.87	0.80	0.77	332	253	253	48	50	98	114	1.7	12
	90	210.79											

Traverse: West			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 11:14	Final Leak Check: 0.003	cfm@ 20	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 6	Semi-Volatile Organic Compounds
Test Date	23 Sep 16
Test Location	Quench Inlet No. 2
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848	
DGMCF	0.998	
Barometric Pressure	29.64	"Hg
Static Pressure	-2.5	"H2O
Nozzle Size	0.25116	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	452.8	g
WCBDA	7.5	g

Combustion Gas Concentration

Oxygen	7.99	%
Carbon Dioxide	10.78	%
Carbon Monoxide	20.1	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	Test
Incline Manometer	#1
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	See
2	Test #1
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: 23 Sep 16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	11.61	0.60	0.64	336	256	248	66	45	83	85	1.2	2.5
	2.5	13.23	0.61	0.64	337	257	256	51	44	79	81	1.2	2.5
	5	14.84	0.60	0.63	337	256	259	48	43	79	82	1.2	3
2	7.5	16.45	0.65	0.66	337	256	257	48	43	78	83	1.25	3.5
	10	18.09	0.64	0.66	336	255	256	48	43	78	85	1.25	4
	12.5	19.82	0.66	0.67	337	256	254	48	44	79	86	1.3	4
3	15	21.53	0.68	0.68	337	256	253	48	44	79	88	1.3	4
	17.5	23.23	0.68	0.68	337	255	253	48	44	79	89	1.35	4.5
	20	24.92	0.67	0.68	336	254	253	48	44	80	90	1.35	4.5
4	22.5	26.60	0.66	0.67	336	254	252	48	43	80	91	1.3	4.5
	25	28.30	0.65	0.67	337	254	252	48	43	81	93	1.3	5
	27.5	30.00	0.66	0.67	336	254	252	48	43	82	94	1.35	5
5	30	31.69	0.63	0.66	337	254	252	48	44	82	94	1.25	5
	32.5	33.37	0.63	0.66	336	255	252	48	44	83	96	1.25	5
	35	35.05	0.63	0.66	336	255	252	48	44	83	97	1.25	5.5
6	37.5	36.69	0.61	0.65	336	255	252	48	44	84	98	1.2	5.5
	40	38.34	0.61	0.65	336	256	252	47	45	85	99	1.2	5.5
	42.5	40.00	0.61	0.65	336	256	252	47	45	85	100	1.2	6
7	45	41.65	0.74	0.72	335	256	252	47	44	86	101	1.5	7
	47.5	43.45	0.75	0.73	335	256	252	47	44	87	102	1.55	7.5
	50	45.30	0.75	0.73	334	256	252	46	45	87	103	1.55	7.5

Traverse: East			
Start Time: 13:05	Initial Leak Check: 0.005 cfm@ 17 1/2 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:		
Start Time:	Initial Leak Check:	cfm @ "Hg
Finish Time:	Final Leak Check:	cfm @ "Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 23 Sep 16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	47.12	0.81	0.76	334	255	252	46	45	88	104	1.7	8.5
	55	49.04	0.82	0.76	334	255	252	45	46	89	105	1.7	8.5
	57.5	50.96	0.83	0.77	334	255	252	45	47	89	106	1.75	9
9	60	52.91	0.84	0.78	334	255	253	45	48	90	107	1.75	9
	62.5	54.84	0.84	0.78	335	255	253	45	46	90	107	1.75	10
	65	56.79	0.85	0.78	335	255	253	45	46	91	108	1.8	10.5
10	67.5	58.77	0.83	0.77	335	255	253	46	46	92	109	1.75	10
	70	60.73	0.82	0.77	334	256	253	46	45	92	110	1.7	10
	72.5	62.67	0.85	0.79	334	256	252	46	44	93	110	1.8	10.5
11	75	64.65	0.80	0.76	333	256	253	46	45	93	111	1.7	10.5
	77.5	66.60	0.81	0.77	332	256	253	46	45	94	111	1.65	10.5
	80	68.51	0.80	0.76	332	255	253	46	45	94	112	1.65	10.5
12	82.5	70.40	0.80	0.76	332	255	253	46	46	94	112	1.65	11
	85	72.31	0.79	0.76	332	256	253	46	47	95	113	1.65	11
	87.5	74.21	0.80	0.77	332	256	253	46	47	95	113	1.65	11
	90	76.12											

Traverse: East			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 14:35	Final Leak Check: 0.004 cfm@ 18 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

Field Data Sheet

Date: 23Sep16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	76.74	0.58	0.64	332	258	257	72	55	90	93	1.15	3
	2.5	78.37	0.58	0.64	337	257	257	56	57	89	94	1.1	3
	5	79.95	0.58	0.64	336	257	257	52	57	89	96	1.15	3
2	7.5	81.56	0.64	0.67	336	256	257	50	51	89	97	1.3	4
	10	83.27	0.66	0.68	337	255	255	48	46	89	98	1.35	4.5
	12.5	84.98	0.68	0.69	338	254	255	48	44	89	99	1.4	5
3	15	86.70	0.67	0.69	336	254	254	48	44	89	101	1.4	5
	17.5	88.45	0.69	0.70	336	255	253	48	44	89	101	1.4	5
	20	90.21	0.71	0.71	338	255	253	48	44	90	102	1.45	5.5
4	22.5	92.03	0.65	0.68	337	255	253	47	45	90	103	1.3	5.5
	25	93.76	0.66	0.69	336	255	253	47	45	90	104	1.3	5.5
	27.5	95.47	0.68	0.70	338	254	253	47	44	91	104	1.35	6
5	30	97.20	0.65	0.68	337	254	253	47	44	91	105	1.3	6
	32.5	98.92	0.62	0.67	336	255	252	47	42	91	106	1.25	6
	35	100.60	0.65	0.68	336	256	253	46	42	91	106	1.3	6.5
6	37.5	102.30	0.61	0.66	336	256	253	46	41	92	107	1.25	6
	40	103.95	0.61	0.66	335	256	253	46	41	92	107	1.25	6
	42.5	105.64	0.62	0.67	336	257	253	46	42	93	108	1.25	6
7	45	107.32	0.79	0.76	335	257	253	46	42	93	109	1.7	8.5
	47.5	109.26	0.77	0.75	334	257	253	45	43	94	110	1.6	8.5
	50	111.18	0.77	0.75	333	257	253	45	44	94	111	1.55	8.5

Traverse: West	0.004	Traverse:	
Start Time: 15:12	Initial Leak Check: 100 cfm@ 19 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 23 Sep 16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	113.06	0.80	0.77	332	257	253	45	43	95	112	1.65	9
	55	114.98	0.80	0.77	332	257	253	44	43	95	112	1.65	9
	57.5	116.90	0.80	0.77	332	257	253	44	42	95	113	1.65	9
9	60	118.80	0.83	0.78	333	257	253	44	42	96	113	1.7	9.5
	62.5	120.73	0.82	0.78	332	257	253	44	42	96	114	1.7	10
	65	122.67	0.80	0.77	331	257	254	44	42	97	114	1.65	10
10	67.5	124.60	0.77	0.75	332	257	254	44	41	97	115	1.6	10
	70	126.48	0.77	0.76	331	257	254	44	41	98	115	1.6	10.5
	72.5	128.37	0.77	0.76	332	257	254	44	41	98	116	1.6	10.5
11	75	130.24	0.75	0.75	330	257	253	44	42	98	116	1.55	10.5
	77.5	132.11	0.73	0.74	329	257	253	44	42	98	116	1.5	10.5
	80	133.96	0.72	0.73	328	256	253	44	42	98	116	1.5	10.5
12	82.5	135.79	0.71	0.73	326	256	253	44	42	99	117	1.45	10.5
	85	137.59	0.72	0.73	327	257	254	44	43	99	117	1.5	11
	87.5	139.42	0.72	0.73	329	256	253	44	44	99	117	1.5	11
	90	141.26											

Traverse: West			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 16:42	Final Leak Check: 0.002	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : [illegible]

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	7 Semi-Volatile Organic Compounds
Test Date	27 Sep 16
Test Location	Quench Inlet No. 2
Operator Signature	TS

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	
Impinger Box No.:	

Pitot Factor	0.848 ✓	
DGMCF	0.979 ✓	
Barometric Pressure	29.27	"Hg
Static Pressure	-2.7	"H2O
Nozzle Size	0.2516 ✓	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	477.1 ✓	g
WCBDA	10.7 ✓	g

Combustion Gas Concentration

Oxygen	7.88	%
Carbon Dioxide	10.93	%
Carbon Monoxide	14.0	ppm

Measuring Device	MII Numbers
Probe / Pitot SP4	B04011 ✓
Trendicator	
Control Box #6	A06100 ✓
Incline Manometer #9	A01674 ✓
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Nozzle Measurements	
1	Scc
2	Test #1
3	
4	
Average:	

Site Diagram

Notes:

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	0.45	0.60	0.65	335	255	254	62	42	77	78	1.35	6
	2.5	2.12	0.60	0.65	335	255	257	49	40	76	81	1.35	6
	5	3.73	0.59	0.64	335	256	258	46	39	76	83	1.35	6.5
2	7.5	5.35	0.61	0.66	335	257	259	45	38	77	86	1.4	7
	10	7.02	0.61	0.66	335	258	260	44	38	77	88	1.4	7
	12.5	8.68	0.61	0.66	334	258	258	44	38	77	89	1.4	7
3	15	10.35	0.66	0.69	335	258	256	44	38	78	91	1.5	8
	17.5	12.09	0.67	0.69	335	259	255	43	38	78	93	1.55	8
	20	13.86	0.67	0.70	335	259	255	43	38	79	95	1.55	8
4	22.5	15.62	0.67	0.70	335	259	255	43	38	80	96	1.55	8.5
	25	17.38	0.66	0.69	335	258	255	42	39	80	97	1.55	8.5
	27.5	19.14	0.67	0.70	335	258	256	42	38	81	98	1.55	8.5
5	30	20.89	0.66	0.69	335	258	256	43	38	82	99	1.6	9
	32.5	22.69	0.63	0.68	335	259	256	43	38	83	101	1.5	9
	35	24.46	0.65	0.69	335	259	256	43	38	83	101	1.55	9
6	37.5	26.22	0.64	0.69	334	259	256	43	38	84	102	1.55	9
	40	27.97	0.64	0.69	334	259	256	43	38	84	103	1.55	9
	42.5	29.70	0.63	0.68	334	259	256	43	37	85	103	1.5	9
7	45	31.44	0.83	0.79	333	259	256	43	37	86	104	1.95	11
	47.5	33.40	0.82	0.78	333	259	256	43	37	86	106	1.95	11.5
	50	35.40	0.82	0.78	333	259	256	43	39	87	107	1.95	11.5

Traverse: West			
Start Time: 12:57	Initial Leak Check: 0.003 cfm@ 18 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
8	52.5	37.41	0.87	0.81	332	259	256	43	39	87	108	2.05	12.5
	55	39.47	0.87	0.81	332	259	256	43	40	88	109	2.05	12.5
	57.5	41.53	0.87	0.81	332	259	256	43	40	88	109	2.05	13
9	60	43.58	0.90	0.83	331	259	256	43	40	89	110	2.1	14
	62.5	45.68	0.90	0.83	331	259	256	43	41	89	111	2.1	14
	65	47.76	0.90	0.83	331	259	256	43	41	90	111	2.1	14
10	67.5	49.82	0.87	0.82	331	259	256	43	40	90	112	2.05	14.5
	70	51.89	0.87	0.82	331	259	256	43	39	91	112	2.05	14.5
	72.5	53.91	0.86	0.81	331	259	256	43	39	91	112	2.05	14.5
11	75	55.98	0.76	0.76	332	259	256	44	40	91	112	1.85	14.5
	77.5	57.93	0.77	0.77	332	259	257	44	40	91	112	1.85	14.5
	80	59.86	0.76	0.76	332	259	258	44	41	92	113	1.85	14.5
12	82.5	61.76	0.76	0.76	331	259	258	44	41	92	113	1.85	14.5
	85	63.67	0.77	0.77	331	259	258	44	42	92	113	1.85	15
	87.5	65.62	0.77	0.77	331	259	257	44	41	93	114	1.85	15
	90	67.56											

Traverse: West			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 14:27	Final Leak Check: 0.004	cfm@ 19	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TJ

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	69.65	0.67	0.70	332	261	240	72	43	85	87	1.55	7.5
	2.5	71.41	0.68	0.70	333	261	243	56	39	84	89	1.55	7.5
	5	73.13	0.67	0.70	333	262	245	51	39	84	92	1.55	8
2	7.5	74.86	0.70	0.71	333	262	260	50	40	84	94	1.65	9
	10	76.68	0.70	0.72	333	262	262	49	41	84	96	1.65	9
	12.5	78.51	0.70	0.72	333	262	260	48	41	84	97	1.65	9
3	15	80.31	0.74	0.74	333	262	258	48	40	84	98	1.75	9.5
	17.5	82.15	0.74	0.74	334	262	259	47	40	85	100	1.75	9.5
	20	84.02	0.73	0.74	333	261	259	47	40	85	101	1.75	10
4	22.5	85.89	0.70	0.72	333	261	258	47	40	85	102	1.65	10
	25	87.72	0.71	0.73	333	261	258	47	40	86	103	1.65	10
	27.5	89.55	0.71	0.73	333	261	257	47	39	86	104	1.65	10
5	30	91.38	0.68	0.71	333	260	258	46	40	87	105	1.55	10.5
	32.5	93.20	0.68	0.71	333	258	258	45	39	88	106	1.55	10.5
	35	95.00	0.67	0.71	333	258	258	44	38	88	107	1.55	10.5
6	37.5	96.79	0.66	0.71	333	258	258	44	39	89	107	1.6	11
	40	98.58	0.66	0.71	333	258	258	44	39	89	108	1.55	11
	42.5	100.37	0.66	0.71	332	259	258	44	40	89	108	1.55	11
7	45	102.16	0.78	0.77	331	258	257	43	39	90	109	1.85	12
	47.5	104.08	0.79	0.78	331	259	257	43	39	90	110	1.9	12.5
	50	106.05	0.78	0.77	331	259	258	43	41	91	111	1.9	12.5

Traverse: East			
Start Time: 15:15	Initial Leak Check: 0.005	cfm@ 18	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: 27 Sep 16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	108.01	0.82	0.79	331	259	257	43	40	91	112	1.95	13
	55	110.03	0.83	0.80	331	260	257	43	41	91	112	1.95	13
	57.5	112.03	0.83	0.80	331	260	258	43	41	92	112	1.95	13
9	60	114.03	0.84	0.80	331	260	258	43	42	92	113	2.0	14
	62.5	116.04	0.84	0.80	332	260	258	44	41	93	113	2.0	14.5
	65	118.06	0.84	0.80	332	260	258	44	41	93	114	2.0	14.5
10	67.5	120.08	0.81	0.79	331	260	258	44	41	93	114	1.95	14.5
	70	122.09	0.82	0.80	331	260	258	45	40	94	114	1.95	14.5
	72.5	124.08	0.81	0.79	330	260	258	45	41	94	115	1.95	15
11	75	126.08	0.75	0.76	330	260	259	45	40	94	115	1.85	14.5
	77.5	128.05	0.74	0.76	330	260	258	45	40	94	115	1.8	14.5
	80	129.98	0.75	0.76	330	260	258	45	40	95	115	1.8	14.5
12	82.5	131.89	0.76	0.77	330	260	258	46	40	95	115	1.85	15
	85	133.82	0.76	0.77	331	260	258	46	40	95	115	1.85	15
	87.5	135.74	0.75	0.76	330	260	259	46	41	95	116	1.85	15
	90	137.65											

Traverse: East			
Start Time:	Initial Leak Check: a	cfm@	"Hg
Finish Time: 16:45	Final Leak Check: 0.004	cfm@ 21	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : TS

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 8	Semi-Volatile Organic Compounds
Test Date	November 4, 2016
Test Location	Quench Inlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	6 series
Meter Box No.:	7
Impinger Box No.:	6

Pitot Factor	.846 ✓	
DGMCF	.978 ✓	
Barometric Pressure	29.80	"Hg
Static Pressure	-2.5	"H2O
Nozzle Size	.2355 ✓	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Particulate Gain

Filter	Ø	mg
Probe	Ø	mg

Moisture Gain

CWTR	463.7 ✓	g
WCBDA	13.5 ✓	g

Combustion Gas Concentration

Oxygen	7.20 ✓	%
Carbon Dioxide	11.15 ✓	%
Carbon Monoxide	15.4	ppm

Measuring Device	MII Numbers
Probe / Pitot 15A	B03775
Trendicator	A09072
Control Box	A09072
Incline Manometer	A11630
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	B03922

Nozzle Measurements	
1	.2355
2	.2350
3	.2350
4	.2365
Average:	.2355

Probe Liner Glass / Metal /Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None /Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: Nov 4 2016	Plant:	Covanta DYEC	Test No.: 8	SVOC	Page 2 of 5
	Plant Location:	Courtice, Ontario	Test Location:	Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	31.74	.47	.50	332	254	252	69	40	73	74	.6	2
	2.5	32.89	.47	.49	333	254	253	59	39	73	74	.9	4
	5	34.15	.46	.49	333	254	254	56	39	73	75	.9	4
2	7.5	35.46	.56	.54	333	254	255	54	38	73	76	.95	4
	10	36.83	.55	.54	332	254	255	53	39	73	77	.95	4.5
	12.5	38.20	.57	.55	332	254	255	52	39	74	77	1.0	5
3	15	39.60	.71	.61	332	254	255	51	39	74	78	1.1	6
	17.5	41.13	.7	.61	332	254	255	51	39	74	79	1.1	6
	20	42.65	.71	.61	333	255	255	50	39	74	79	1.1	6
4	22.5	44.19	.70	.61	335	254	255	50	39	75	80	1.1	6.5
	25	45.75	.71	.61	335	254	254	49	40	75	81	1.2	7
	27.5	47.30	.71	.61	336	255	254	49	40	76	82	1.2	7
5	30	48.85	.72	.62	335	255	254	49	40	76	82	1.2	7
	32.5	50.45	.71	.61	336	255	254	49	40	77	83	1.2	7
	35	51.99	.72	.62	336	254	253	49	40	77	83	1.25	7.5
6	37.5	53.57	.72	.62	336	254	253	50	40	77	84	1.25	7.5
	40	55.15	.72	.62	336	254	253	49	40	78	85	1.25	7.5
	42.5	56.73	.71	.62	336	254	253	49	40	78	85	1.25	7.5
7	45	58.29	.78	.65	335	254	253	49	39	79	85	1.3	9
	47.5	59.94	.78	.65	335	254	253	49	39	79	86	1.3	9
	50	61.60	.80	.66	335	254	253	49	39	79	86	1.35	9.5

Traverse: 1					
Start Time: 8:35	Initial Leak Check: 0.003	cfm@ 17	"Hg		
Finish Time: —	Final Leak Check: —	cfm@	"Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov. 4 2016	Plant: Covanta DYEC	Test No.: 8 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	63.26	.81	.66	335	254	253	49	39	80	87	1.35	8.5
	55	64.96	.84	.67	335	254	253	49	39	80	87	1.35	10
	57.5	66.65	.85	.68	336	254	253	49	40	80	87	1.4	10.5
9	60	68.34	.84	.67	336	254	253	49	40	80	87	1.35	10.5
	62.5	70.03	.84	.67	336	254	253	49	40	80	87	1.35	10.5
	65	71.74	.84	.67	336	254	253	49	39	81	88	1.35	10.5
10	67.5	73.42	.66	.60	335	254	254	49	39	81	88	1.1	9.5
	70	74.95	.67	.60	334	254	254	50	39	81	88	1.1	9
	72.5	76.45	.65	.59	334	254	254	50	39	81	88	1.1	9
11	75	77.95	.61	.58	334	254	254	50	39	81	88	1.1	9
	77.5	79.44	.61	.58	333	253	253	50	39	81	88	1.05	9
	80	80.89	.60	.57	333	253	253	50	40	81	89	1.05	9
12	82.5	82.34	.59	.57	331	254	253	50	40	82	89	1.05	9
	85	83.77	.60	.57	332	253	253	51	40	82	89	1.05	9
	87.5	85.22	.61	.58	332	253	253	51	40	82	89	1.1	9.5
	90	86.69											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 10:05	Final Leak Check: .006	cfm@ 16.5	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov, 4 2016	Plant: Covanta DYEC	Test No.: 8 SVOC		Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2		

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	87.02	.51	.52	334	254	255	68	68	81	80	[illegible]	[illegible]
	2.5	88.21	.51	.52	334	254	252	53	38	78	79	.8	4
	5	89.47	.51	.52	334	254	254	50	38	78	80	.9	4.5
2	7.5	90.78	.54	.54	335	255	256	48	38	78	81	1.0	5
	10	92.17	.56	.55	335	255	256	47	38	78	81	1.05	6
	12.5	93.63	.54	.54	335	255	256	47	38	78	82	1.0	6
3	15	95.05	.57	.55	334	255	256	47	38	78	83	.95	5
	17.5	96.48	.57	.55	334	254	255	47	38	78	84	.95	5
	20	97.82	.55	.54	335	254	255	47	38	78	84	1.0	5.5
4	22.5	99.21	.58	.56	335	254	255	47	38	78	84	1.05	6.5
	25	100.63	.56	.55	335	254	255	47	38	78	85	1	6
	27.5	102.05	.57	.55	335	254	254	47	38	79	85	.95	6
5	30	103.44	.55	.54	335	254	254	47	38	79	85	.95	6
	32.5	104.81	.55	.54	334	254	254	47	38	79	86	.95	6
	35	106.16	.54	.54	334	254	254	47	38	79	86	.95	6
6	37.5	107.52	.55	.54	335	254	254	48	38	79	86	.95	6
	40	108.90	.56	.55	335	254	254	47	38	80	86	1	6.5
	42.5	110.31	.56	.55	335	254	254	48	38	80	87	1	6.5
7	45	111.70	.75	.64	334	254	254	48	38	80	87	1.25	9
	47.5	113.30	.74	.63	334	254	254	48	38	80	87	1.2	9
	50	114.90	.74	.63	333	254	254	48	38	80	88	1.2	9

Traverse: 2			
Start Time: 10:44	Initial Leak Check: .006 cfm@ 16 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov. 4 2016	Plant: Covanta DYEC	Test No.: 8 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	116.50	.79	.65	333	254	254	48	39	80	88	1.35	10
	55	118.18	.79	.65	334	254	254	48	38	81	88	1.35	10.5
	57.5	119.86	.80	.66	334	254	253	48	39	81	88	1.35	11
9	60	121.53	.81	.66	334	254	253	48	39	81	88	1.35	11
	62.5	123.19	.81	.66	334	254	253	48	39	81	88	1.35	11
	65	124.83	.83	.67	334	253	254	49	39	81	88	1.4	12
10	67.5	126.56	.83	.67	334	254	254	49	39	81	88	1.4	13
	70	128.26	.84	.67	334	254	253	49	39	81	89	1.4	13
	72.5	129.95	.85	.68	335	254	253	49	40	81	89	1.45	14
11	75	131.70	.83	.67	335	254	253	49	40	81	89	1.4	14
	77.5	133.42	.79	.65	336	253	253	49	40	81	89	1.35	14
	80	135.09	.80	.66	336	253	253	50	40	81	89	1.35	13
12	82.5	136.74	.78	.65	335	253	253	50	41	82	89	1.25	13
	85	138.38	.78	.65	335	253	253	50	41	82	89	1.25	13
	87.5	140.08	.79	.66	334	253	253	50	42	82	89	1.2	13
	90	141.51											

Traverse: 2		Traverse:	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: 12:14	Final Leak Check: .002 cfm@ 17 "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	9 Semi-Volatile Organic Compounds
Test Date	November 4, 2016
Test Location	Quench Inlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	6 series
Meter Box No.:	7
Impinger Box No.:	10

Pitot Factor	.846	
DGMCF	.978	
Barometric Pressure	29.76	"Hg
Static Pressure	-2.5	"H2O
Nozzle Size	.2355	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	408.6	g
WCBDA	12.1	g

Combustion Gas Concentration

Oxygen	7.51	%
Carbon Dioxide	10.77	%
Carbon Monoxide	16.1	ppm

Measuring Device	MII Numbers
Probe / Pitot 15A	B03775
Trendicator	A09072
Control Box	A09072
Incline Manometer	A11630
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	B03922

Reading Interval	2.5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	.2355
2	.2350
3	.2350
4	.2365
Average:	.2355

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None / Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Field Data Sheet

Date: Nov 4 2016	Plant: Covanta DYEC	Test No.: 9 3 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	41.95	.64	.58	336	254	253	75	59	77	78	1.0	3
	2.5	43.40	.62	.57	337	254	255	59	38	76	77	.95	3
	5	44.77	.61	.57	337	255	255	56	36	76	78	1.0	4
2	7.5	46.18	.72	.61	338	255	256	55	36	77	79	1.2	3
	10	47.75	.71	.61	338	255	256	53	37	77	80	1.2	5
	12.5	49.32	.73	.62	338	255	256	52	37	77	81	1.25	5.5
3	15	50.90	.69	.60	339	256	256	52	37	77	82	1.15	5.5
	17.5	52.44	.76	.63	339	256	256	51	37	77	83	1.3	6
	20	54.06	.77	.64	339	256	256	51	37	78	83	1.3	6.5
4	22.5	55.72	.79	.65	339	256	256	50	38	78	84	1.3	6.5
	25	57.37	.78	.64	339	256	256	50	37	78	85	1.3	6.5
	27.5	59.0	.77	.64	338	256	255	50	37	79	85	1.3	6.5
5	30	60.63	.79	.65	339	256	255	50	37	79	86	1.3	6.5
	32.5	62.28	.79	.65	339	256	255	50	37	79	86	1.3	7
	35	63.92	.76	.64	339	256	255	50	37	80	87	1.3	7
6	37.5	65.55	.74	.63	339	256	255	50	37	80	87	1.25	7
	40	67.15	.74	.63	338	255	255	50	37	81	88	1.25	7
	42.5	68.74	.72	.62	337	255	255	51	37	81	88	1.2	7
7	45	70.30	.83	.67	338	255	255	51	37	81	88	1.4	8.5
	47.5	72.01	.82	.67	338	256	255	51	37	82	89	1.4	8.5
	50	73.73	.84	.67	338	256	256	51	36	82	89	1.4	9

Traverse: 4.1				
Start Time: 13.49	Initial Leak Check: .008	cfm@ 15	"Hg	
Finish Time:	Final Leak Check:	cfm@	"Hg	

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov. 2 2016	Plant: Covanta DYEC	Test No.: 9 3 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
8	52.5	75.44	.85	.68	338	255	256	51	36	82	90	1.4	9
	55	77.15	.81	.66	337	255	256	51	37	83	90	1.4	9
	57.5	78.85	.79	.66	337	255	256	51	37	83	91	1.4	9
9	60	80.52	.74	.64	337	255	255	52	37	83	91	1.25	8.5
	62.5	82.13	.72	.63	337	255	255	52	37	84	91	1.25	8.5
	65	83.72	.74	.64	336	254	255	52	36	84	91	1.25	8.5
10	67.5	85.32	.71	.62	337	254	255	52	36	84	92	1.2	9
	70	86.88	.68	.61	336	255	255	53	37	84	92	1.15	9
	72.5	88.44	.69	.61	336	255	255	53	37	84	92	1.15	9
11	75	89.98	.69	.61	336	255	254	53	36	84	92	1.15	9
	77.5	91.52	.61	.58	333	255	255	53	36	84	92	1.05	8
	80	92.98	.64	.59	335	255	255	54	36	84	92	1.05	8
12	82.5	94.44	.63	.59	335	255	255	54	36	84	92	1.1	9
	85	95.93	.57	.56	335	255	255	54	36	85	92	.95	8
	87.5	97.33	.57	.56	336	254	255	54	36	85	92	.95	8
	90	98.73											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 15:19	Final Leak Check: .006	cfm@ 14	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov. 4 2016	Plant: Covanta DYEC	Test No.: 9 3 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure ΔH "H_2O	Pump Vacuum "Hg Gauge
1	0	99.01	.54	.54	337	256	255	72	46	82	84	.9	4
	2.5	100.35	.56	.55	337	256	252	58	37	81	82	.9	4
	5	101.60	.56	.55	337	256	253	54	36	81	83	1	4.5
2	7.5	103.01	.58	.56	338	257	256	52	37	81	84	1.05	5
	10	104.49	.61	.57	338	257	257	51	37	81	85	1.05	5
	12.5	105.93	.60	.57	338	256	256	50	37	81	85	1.05	5
3	15	107.37	.61	.57	338	256	256	49	37	81	86	1.05	5
	17.5	108.81	.61	.57	338	256	256	49	37	81	86	1.05	5
	20	110.26	.63	.58	338	256	256	49	37	81	87	1.05	5.5
4	22.5	111.74	.61	.57	338	256	255	49	37	81	87	1.05	5.5
	25	113.20	.61	.57	339	256	255	49	38	81	87	1.05	5.5
	27.5	114.67	.61	.57	339	256	255	49	38	81	88	1.05	5.5
5	30	116.13	.59	.56	339	256	255	49	38	82	88	1.0	5.5
	32.5	117.53	.57	.56	338	255	255	49	37	82	88	1.05	5.5
	35	118.94	.57	.56	338	255	255	49	37	82	89	1.05	5.5
6	37.5	120.36	.57	.56	338	256	255	49	37	82	89	1.05	6
	40	121.77	.60	.57	338	256	254	49	37	82	89	1.05	6
	42.5	123.25	.57	.56	338	256	255	49	37	82	89	1.05	6.5
7	45	124.71	.77	.65	336	255	254	49	37	83	90	1.3	8
	47.5	126.35	.78	.65	336	255	253	49	37	83	90	1.3	8
	50	128.0	.77	.65	336	255	254	49	37	83	90	1.3	8

Traverse: 2		Traverse:	
Start Time: 15:59	Initial Leak Check: .006 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov 4 2016	Plant: Covanta DYEC	Test No.: 9 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: Quench Inlet No. 2	

Point	Clock Time	Dry Gas Meter ft³	Pitot Δ P "H₂O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H₂O	Pump Vacuum "Hg Gauge
8	52.5	129.65	.79	.66	336	255	255	49	37	83	90	1.35	9
	55	131.33	.80	.66	337	255	254	49	38	83	91	1.35	9
	57.5	133.01	.79	.66	338	255	254	49	38	83	91	1.35	9
9	60	134.68	.79	.66	338	255	254	49	38	84	91	1.35	9
	62.5	136.37	.75	.64	338	255	254	49	38	84	91	1.3	9
	65	138.02	.77	.65	337	254	254	50	38	84	91	1.3	9
10	67.5	139.68	.74	.64	337	254	254	50	37	84	91	1.3	8.5
	70	141.31	.77	.65	336	254	254	50	37	84	91	1.3	8.5
	72.5	142.93	.71	.62	337	254	254	50	38	84	91	1.2	9
11	75	144.48	.63	.59	336	254	254	50	38	84	91	1.0	8
	77.5	145.92	.65	.60	335	254	254	50	37	84	91	1.1	9
	80	147.40	.66	.60	335	255	254	51	37	84	91	1.2	8.5
12	82.5	148.95	.55	.55	336	255	254	51	38	84	91	.95	8.5
	85	150.35	.57	.56	335	255	254	51	38	84	91	.95	8.5
	87.5	151.72	.56	.55	336	254	254	51	38	84	91	.95	8.5
	90	153.11											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 17:29	Final Leak Check: .002	cfm@ 14	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 1	Semi-Volatile Organic Compounds
Test Date	SEPT 19, 2016
Test Location	APC Outlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	TEAM 1
Impinger Box No.:	4

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.50	"Hg
Static Pressure	-10.5	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	11	inches

Reading Interval	5	
Number of Ports	2	
Number of Points/Port	12	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Particulate Gain

Filter	—	mg
Probe	—	mg

Moisture Gain

CWTR	648.5	554.0	g
WCBDA	190	160	g

Combustion Gas Concentration

Oxygen	8.40	%
Carbon Dioxide	10.97	%
Carbon Monoxide	16.4	ppm

Site Diagram

Measuring Device	MII Numbers
Probe / Pitot SP5	COE 20169
Trendicator	COE 20094
Control Box	COE 20094
Incline Manometer	COE 20094
Comb.Gas.Analyzer	
Micromanometer	
Barometer	ENVCAN
Calipers	

Nozzle Measurements	
1	.2455
2	.2460
3	.2455
4	.2455
Average:	0.2456

Notes:

Rev. November 27, 2014

Field Data Sheet

Date: SEPT 19/16	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
* 1	0	81.47	0.95	0.76	278	259	255	64	46	78	77	2.	5
	5	84.26	0.95	0.76	279	259	259	47	45	76	77	2	5
2	10	88.12	0.92	0.75	279	255	259	47	45	76	77	2	5
	15	91.93	0.96	0.76	280	253	259	47	46	77	77	2	5
3	20	95.78	0.88	0.73	279	253	258	47	46	77	77	1.9	6
	25	99.50	0.88	0.73	279	249	258	48	46	79	77	1.9	6
4	30	103.20	0.83	0.71	279	254	258	48	47	79	77	1.8	6
	35	106.83	0.83	0.71	279	250	258	48	47	80	78	1.8	6
5	40	110.43	0.76	0.68	279	251	257	48	50	81	78	1.65	5.5
	45	113.97	0.79	0.70	279	253	258	47	45	81	79	1.70	5.5
6	50	117.56	0.72	0.67	279	253	258	46	45	82	79	1.5	5.0
	55	120.88	0.71	0.66	278	252	258	47	45	82	79	1.6	5.0
7	60	124.25	0.73	0.67	278	255	258	47	45	82	80	1.6	5.0
	65	127.68	0.71	0.66	278	253	258	48	46	83	80	1.5	5.0
8	70	130.95	0.74	0.68	278	250	258	48	45	83	80	1.5	5.0
	75	134.38	0.74	0.69	278	251	258	48	45	83	80	1.7	6.0
9	80	137.86	0.75	0.68	279	251	257	48	46	84	80	1.7	6.0
	85	141.34	0.74	0.68	278	255	258	48	46	83	80	1.7	6.0
10	90	144.82	0.75	0.68	278	248	258	48	48	82	81	1.7	6.0
	95	148.30	0.73	0.67	278	252	258	49	47	84	81	1.6	6.0
11	100	151.46	0.74	0.68	279	253	258	62	49	83	81	1.6	6.0

Traverse: 1		Traverse:	
Start Time: 13:00	Initial Leak Check: .005 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

* FIRST ISO READING CORRECT -> WRONG ΔH SETTING
OFF @ 1439 INLET NEEDED A FILTER CHANGE
ON @ 1456.

Project No.: 21707
Operator :

Field Data Sheet

Date: Sept 19, 2016	Plant:	Covanta DYEC	Test No.: 1	SVOC	Page 3 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	154.80	0.77	0.69	279	253	257	49	46	83	82	1.7	6.0
12	110	158.25	0.75	0.68	280	253	258	48	46	82	82	1.65	6.0
	115	161.67	0.75	0.68	281	251	254	46	47	83	82	1.65	6.0
	120	165.19											

Traverse: .001			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 1518	Final Leak Check: .008	cfm@ 14	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Sept 19, 2016	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	165.46	.88	0.74	279	256	258	71	63	83	81	1.9	6.
	5	169.00	.86	0.73	276	255	257	48	50	82	82	1.9	7
2	10	172.70	.86	0.73	277	255	259	48	47	82	82	1.9	7
	15	176.35	.86	0.73	278	254	258	48	46	82	82	1.9	7
3	20	180.10	.83	0.72	278	254	256	48	49	82	82	1.9	7
	25	183.82	.84	0.72	276	257	256	53	47	82	81	1.9	7
4	30	187.52	.78	.69	278	252	257	54	48	82	82	1.8	7
	35	191.17	.76	.69	279	257	257	50	48	83	82	1.6	7
5	40	194.68	.73	.67	278	251	258	50	47	82	82	1.6	7
	45	198.21	.72	.67	278	254	256	49	47	83	82	1.5	6
6	50	201.55	.70	.66	278	257	257	49	47	83	82	1.5	6
	55	204.84	.70	.66	279	255	256	50	47	85	82	1.5	6
7	60	208.14	.70	.66	279	255	256	50	47	84	82	1.5	6
	65	211.48	.68	.65	279	255	257	50	47	84	82	1.5	6
8	70	214.73	.70	.66	279	255	256	51	48	86	83	1.5	6
	75	218.06	.70	.66	279	255	258	50	48	85	83	1.5	6
9	80	221.28	.72	.67	278	255	257	50	48	85	83	1.6	6.
	85	224.69	.69	.66	279	252	259	47	48	84	83	1.6	6.5
10	90	228.05	.68	.65	279	252	258	47	48	84	83	1.6	6.5
	95	231.30	.66	.65	279	252	257	48	48	84	83	1.6	6.5
11	100	234.81	.60	.69	270	251	256	48	48	84	83	1.3	6

Traverse: 2		Traverse:	
Start Time: 15:38	Initial Leak Check: .005 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

off @ 452 BACK ON @ 1711 due to filter change @ inlet

Project No.: 21707

Operator :

Field Data Sheet

Date: Sept 19 2014	Plant: Covanta DYEC	Test No.: 1 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	239.05	.60	~~.62~~ .64 ~~270~~	270	255	256	49	47	85	83	1.3	6
12	110	241.17	.60	.62	270	255	256	49	47	85	83	1.3	6
	115	244.34	.60	.62	270	255	257	50	47	85	83	1.3	6
	120	247.49											

Traverse: 2					
Start Time:	Initial Leak Check:	cfm@	"Hg	Traverse:	
Finish Time: 1756	Final Leak Check: .006	cfm@ 16	"Hg	Start Time:	Initial Leak Check: cfm @ "Hg
				Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : [illegible]

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 2	Semi-Volatile Organic Compounds
Test Date	SEPT 20 2016
Test Location	APC Outlet No. 1
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	TEAM 1
Impinger Box No.:	11

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.60	"Hg
Static Pressure	-10.00	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	646.3	g
WCBDA	100.6	g

Combustion Gas Concentration

Oxygen	8.48	%
Carbon Dioxide	11.03	%
Carbon Monoxide	12.0	ppm

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	
Control Box	
Incline Manometer	TEST
Comb.Gas.Analyzer	
Micromanometer	
Barometer	1
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	
3	TEST
4	
Average:	1

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None / Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Rev. November 27, 2014

551.0
16.0

Field Data Sheet

Date: Sept 20/2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft³	Pitot Δ P "H₂O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H₂O	Pump Vacuum "Hg Gauge
1	0	48.06	.095	0.78	277.	254	256	76	84	78	77	2.1	6
	5	51.87	.94	0.78	277	253	256	51	43	78	77.	2.2	7.
2	10	55.90	0.92	0.77	277.	244	257	49	44	78	77	2.1	7
	15	59.84	0.90	0.76	277	248	256	49	45	77	77.	2.0	7.
3	20	63.72	0.90	0.76	276	249	257	49	45	78	77	2.0	7.
	25	67.55	0.94	0.78	276	248	256	49	46	78	77	2.15	7
4	30	71.51	0.87	0.75	277	244	256	50	47	78	77	2.0	7
	35	75.40	0.90	0.76	277	243	257	46	44	78	77.	2.0	7.
5	40	79.27.	0.93	0.78	278	247	257	46	44	78	77	2.1	7
	45	83.20	0.82	0.73	278	249	256	46	44	79	77.	1.9	7.
6	50	~~86.~~ 87.00	0.77	0.71	278	264	247	46	44	79	77.	1.7	7.
	55	90.57	0.76	0.70	278	252	241	46	42	80	77	1.7	7
7	60	94.10	0.73.	0.69	278	252	245	47	42	81	78	1.65	7
	65	97.57	0.73	0.69.	277	251	249	47	42	81	78	1.65	7.
8	70	101.08.	0.75	0.70	280	250	252	50	44	83	80.	1.7	7.
	75	104.66	0.75	0.70.	277.	252	250	47	43	82	79	1.7	7.
9	80	108.17.	0.77	0.71	277	250	250	48	43	83	79.	1.75	7
*	85	111.75	0.77	0.71	278	250	250	70	49	82	80	1.75	7.
10	90	115.29	0.81	0.73	278	251	250	47	46	82	80.	1.80	7.
	95	118.88.	0.80	0.72	278.	250	250	48	48	82	80	1.80	7
11	100	122.51	0.80	0.73	277	248	250	49	51	82	81.	1.8	7

Traverse:				Traverse:			
Start Time: 0925	Initial Leak Check:	0.005 cfm@	15 "Hg	Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time: –	Final Leak Check:	– cfm@	– "Hg	Finish Time:	Final Leak Check:	cfm @	"Hg

* OFF @ 85 min OR 10:50 INLET FILTER CHANGE
111.75

Project No.: 21707
Operator :

Field Data Sheet

Date: SEP 20, 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	126.14	0.8	0.72	277	248	250	49	54	82	80	1.8	7.
12	110	129.74	0.78	0.71	278	246	250	50	57	82	80	1.8	7
	115	133.37	0.78	0.72	277.	251	250	50	49	82	80	1.8	7.
	120	136.97											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@	"Hg
Finish Time: 1141	Final Leak Check: <.005	cfm@ 15	"Hg

Traverse: /			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

Field Data Sheet

Date: Sept 20, 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
1	0	137.37	.93	0.78	280	246	251	64	47	82	81	2.15	9
	5	140.29	.94	.80	278	245	250	51	47	82	81	2.2	9
2	10	145.35	.93	.78	277	248	251	53	44	82	81	2.2	9
	15	149.42	.94	.79	278	252	250	55	44	81	81	2.2	9
3	20	153.51	0.89	0.76	278	253	250	55	44	81	81	2.1	9
	25	157.44	0.89	0.76	278	249	250	56	44	81	81	2.0	9
4	30	161.32	0.82	0.73	278	252	250	53	44	82	81	1.9	8
	35	165.10	0.81	0.73	278	252	250	52	43	82	81	1.9	8
5	40	168.85	0.76	0.71	278	251	250	51	44	82	81	1.7	8
	45	172.47	0.72	0.69	277	252	250	51	44	83	81	1.6	7
6	50	175.93	0.72	0.69	277	248	250	51	46	83	81	1.6	7
*	55	179.35	0.69	0.67	275	249	250	51	48	83	81	1.6	7
7	60	182.78	0.68	0.67	276	250	250	49	47	83	82	1.6	7
	65	186.17	.70	0.68	276	250	252	49	47	83	82	1.6	7
8	70	189.61	.67	.67	276	251	249	49	43	82	81	1.6	7
	75	192.99	.69	.68	276	249	250	49	42	82	81	1.6	7
9	80	196.47	.70	.68	276	248	250	50	43	82	81	1.6	7
	85	199.80	.72	.69	276	249	251	50	43	83	81	1.6	7
10	90	203.24	0.72	0.69	277	251	250	53	45	84	81	1.7	8
	95	206.74	0.72	0.69	277	248	250	52	45	84	81	1.7	8
11	100	210.24	0.65	0.66	277	247	250	53	42	84	82	1.5	8

Traverse:		Traverse:	
Start Time: 1208	Initial Leak Check: 0.005 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

122

* OFF @ 55 MIN MARK OR 1307 DUE TO INLET FILTER CHANGE.

* ON @ 1325

Project No.: 21707

Operator :

Rev: April 28, 2005

ORTECH Environmental

Field Data Sheet

Date: Sept 20, 2016	Plant: Covanta DYEC	Test No.: 2 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	213.57	0.66	0.66	276	251	250	54	41	85	82	1.5	8
12	110	216.84	0.65	0.66	277	246	250	54	41	85	82	1.5	8
	115	220.17	0.65	0.66	277	248	250	54	42	85	83	1.5	8
	120	223.43											

Traverse: 2			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 1430	Final Leak Check: <.005 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator :

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 3	Semi-Volatile Organic Compounds
Test Date	SEPT 20, 2016
Test Location	APC Outlet No. 2
Operator Signature	CHRIS RELORE

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	TEAM 1
Impinger Box No.:	4

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.64	"Hg
Static Pressure	-10.0	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length		feet
Width		feet
Port length:	11	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	675.9	g
WCBDA	17.6	g

Combustion Gas Concentration

Oxygen	8.43	%
Carbon Dioxide	11.06	%
Carbon Monoxide	11.6	ppm

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	
Control Box	TEST
Incline Manometer	
Comb.Gas.Analyzer	1
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	
3	TEST
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT 20, 2016	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	24.05	.88	.76	275	250	248	77	52	83	82	2.0	5.0
	5	27.67	.90	.77	278	246	249	52	45	83	83	2.2	6.0
2	10	31.73	.88	.76	277	247	252	51	45	83	82	2.1	6.0
	15	35.72	.88	.76	277	252	251	50	45	83	83	2.0	6.0
3	20	39.62	.86	.75	277	253	252	49	43	83	83	2.0	6.5
	25	43.54	.86	.75	278	253	250	49	42	84	82	2.0	6.5
4	30	47.41	.80	.73	277	253	250	50	42	84	82	1.8	6.2
	35	51.18	.80	.73	278	252	251	50	42	85	83	1.8	6.0
5	40	54.91	.78	.72	278	253	252	51	43	86	83	1.75	6.0
	45	58.54	.78	.72	278	253	251	48	42	86	83	1.75	6.0
6	50	62.18	.78	.69	278	252	252	48	42	87	83	1.6	5.6
	55	65.69	.72	.69	278	253	252	48	42	87	83	1.6	5.6
7	60	69.19	.72	.69	277	253	252	49	42	86	84	1.6	5.6
	65	72.69	.72	.70	278	253	252	49	42	88	84	1.6	5.6
8	70	76.26	.72	.69	277	252	252	49	42	89	85	1.6	5.6
	75	79.67	.73	.70	277	251	252	50	42	89	85	1.6	5.6
9	80	83.16	.73	.70	277	248	252	50	42	89	85	1.6	5.6
	85	86.63	.74	.71	277	250	253	50	43	90	86	1.6	5.6
* 10	90	90.12	.70	.70	278	252	253	50	43	89	85	1.6	5.5
	95	93.66	.74	.70	278	250	252	49	42	88	85	1.6	5.5
11	100	97.18	.74	.70	278	250	252	49	42	88	85	1.6	5.5

Traverse: 1		Traverse:	
Start Time: 16:18	Initial Leak Check: .007 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Shut off at 90 min. mark for filter change at inlet (17:48)
Back on at 18:03

Project No.: 21707
Operator :

Field Data Sheet

Date: Sept. 20/16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	100.56	.70	.69	277	251	253	48	41	88	86	1.6	5.7
12	110	104.02	.72	.69	277	253	253	49	42	88	86	1.6	5.7
	115	107.57	.71	.69	277	253	253	49	42	88	86	1.6	5.7
	120	111.05											

Traverse:			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 18:33	Final Leak Check: .008	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS BELOPE

Field Data Sheet

Date: SEPT. 20/16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
1	0	111.46	.91	.78	275	252	254	70	46	88	87	2.2	7.0
	5	115.48	.91	.77	278	252	253	48	43	88	86	2.2	7.0
2	10	119.50	.92	.79	278	248	253	48	42	88	87	2.2	7.0
	15	123.66	.93	.79	278	253	255	48	42	88	87	2.2	7.0
3	20	127.79	.88	.77	278	253	255	48	42	88	86	2.1	7.0
	25	131.77	.90	.78	278	253	255	48	42	88	86	2.1	7.0
4	30	135.75	.82	.74	279	254	255	50	43	91	89	1.9	7.0
	35	139.61	.83	.75	279	254	254	48	41	88	87	1.8	7.0
5	40	143.33	.77	.72	278	248	254	48	40	89	87	1.8	6.8
	45	147.04	.77	.72	279	249	254	48	40	89	87	1.8	6.8
6	50	150.75	.71	.69	279	250	254	49	40	89	87	1.65	6.6
	55	154.32	.71	.69	279	253	253	48	40	89	86	1.65	6.6
7	60	157.86	.70	.68	279	253	253	48	40	89	86	1.65	6.6
*	65	161.50	.70	.68	279	253	253	48	40	89	86	1.60	6.0
8	70	164.92	.75	.71	278	247	253	50	42	87	86	1.8	7.0
	75	168.55	.74	.70	279	251	254	49	42	87	86	1.8	7.0
9	80	172.18	.78	.72	279	250	254	50	42	87	86	1.8	7.0
	85	175.88	.78	.72	280	253	254	50	42	87	86	1.8	7.0
10	90	179.55	.80	.73	280	253	254	50	42	87	86	1.8	7.0
	95	183.25	.78	.72	280	253	254	50	42	87	86	1.8	7.0
11	100	186.91	.70	.68	277	250	254	50	42	87	86	1.65	6.8

Traverse: 2			
Start Time: 18:47	Initial Leak Check: .005	cfm@ 15	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Pump off at 65 min. for filter change at inlet. Back on at 20:07.

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 20 /16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	190.50	.71	.74	276	253	254	50	41	87	87	1.65	6.8
12	110	194.04	.71	.74	276	253	254	51	41	87	86	1.65	6.8
	115	197.57	.70	.73	276	252	254	50	41	87	85	1.65	6.8
	120	201.18											

Traverse: 2					
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg		
Finish Time: 21:02	Final Leak Check: .007	cfm@ 17	"Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 4	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 28, 2016
Test Location	APC Outlet No. 2
Operator Signature	CHRIS BELORE

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	TEAM 1
Impinger Box No.:	16

Pitot Factor	0.847	
DGMCF	0.993	
Barometric Pressure	29.56	"Hg
Static Pressure	-9.30	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	11	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	652.1	g
WCBDA	17.1	g

Combustion Gas Concentration

Oxygen	8.46	%
Carbon Dioxide	10.75	%
Carbon Monoxide	26.6	ppm

Measuring Device	MII Numbers
Probe / Pitot SP5	COE 20109
Trendicator	COE 20094
Control Box	COE 20094
Incline Manometer	COE 20094
Comb.Gas.Analyzer	COA-17A
Micromanometer	B03936
Barometer	ENV. CANADA
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	
2	
3	
4	
Average:	

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 22/16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	2.16	.80	.71	277	240	251	77	45	79	78	1.7	5
	5	5.92	.80	.71	277	245	250	50	42	79	78	1.7	5
2	10	9.46	.90	.75	278	241	250	49	42	79	78	1.8	5.5
	15	13.16	.89	.75	278	243	250	49	42	80	78	1.8	5.5
3	20	16.67	.91	.76	279	244	250	48	42	80	79	1.8	5.6
	25	20.41	.91	.76	278	246	250	48	42	80	78	1.9	5.8
4	30	24.25	.88	.75	279	244	250	48	42	81	79	1.9	5.8
	35	28.09	.88	.75	279	248	250	48	42	82	79	1.9	5.8
5	40	31.63	.79	.71	279	249	250	48	42	82	79	1.8	5.8
	45	35.40	.80	.71	279	248	250	49	41	83	80	1.8	5.8
6	50	38.95	.72	.68	279	246	251	49	41	83	80	1.6	5.6
	55	42.42	.72	.68	278	246	251	49	40	84	80	1.6	5.6
7	60	45.93	.71	.68	279	247	250	49	40	84	80	1.6	5.6
	65	49.42	.71	.68	278	245	251	50	40	85	81	1.6	5.6
8	70	52.92	.71	.68	278	245	251	50	41	85	81	1.55	5.5
	75	56.34	.71	.68	278	248	250	50	41	85	81	1.55	5.5
9	80	59.75	.76	.70	278	251	251	50	40	85	81	1.55	5.5
	85	63.24	.75	.70	278	250	251	49	41	85	81	1.55	5.5
10	90	66.75	.73	.68	276	250	251	50	42	86	82	1.6	5.5
	95	70.20	.73	.68	274	250	251	50	42	86	82	1.6	5.5
11	100	73.67	.67	.66	276	255	255	52	44	86	83	1.5	5.5

Traverse: 1			
Start Time: 13:33	Initial Leak Check: .005 cfm@ 17 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator: CHRIS BELOVE

Field Data Sheet

Date: SEPT. 22/16	Plant:	Covanta DYEC	Test No.: 4	SVOC	Page 3 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	77.05	.67	.66	267	250	251	50	42	86	82	1.5	5.5
12	110	80.42	.73	.69	267	251	252	50	43	86	83	1.6	5.5
	115	83.88	.73	.69	267	246	252	50	43	86	83	1.6	5.5
	120	87.36											

Traverse: 1		Traverse:	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: 15:33	Final Leak Check: .005 cfm@ 15 "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : CHRIS BELOTE

Field Data Sheet

Date: SEPT. 22/16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	87.57	.88	.75	276	246	251	54	42	86	83	1.9	6.5
	5	91.32	.88	.75	278	249	251	51	42	86	83	1.9	6.5
2	10	95.08	.94	.78	278	249	252	52	41	85	83	2.0	6.6
	15	98.97	.93	.78	278	248	252	51	42	86	83	2.0	6.6
3	20	102.77	.95	.76	278	250	252	52	42	86	83	2.0	6.6
	25	106.61	.98	.80	279	251	252	52	42	86	83	2.1	7.0
4	30	110.52	.97	.80	279	247	252	52	42	87	84	2.1	7.0
	35	114.44	.97	.80	280	246	252	52	43	86	84	2.1	7.0
5	40	118.35	.91	.77	280	248	252	53	42	87	84	2.05	7.0
	45	122.27	.88	.75	281	250	252	53	42	87	84	1.9	7.0
6	50	126.06	.80	.72	280	252	252	54	41	87	84	1.8	6.8
	55	129.80	.80	.72	280	250	252	54	41	87	84	1.8	6.8
7	60	133.48	.73	.69	280	252	252	54	41	87	84	1.6	6.5
	65	137.00	.73	.69	280	250	252	55	41	87	84	1.6	6.5
8	70	140.51	.74	.69	280	251	252	55	41	87	84	1.6	6.5
	75	143.03	.72	.68	280	246	253	55	41	87	84	1.55	6.5
9	80	147.47	.74	.69	280	246	252	55	41	87	84	1.6	6.5
	85	150.93	.74	.69	280	248	252	55	42	87	84	1.6	6.5
10	90	154.42	.74	.69	279	246	252	55	42	87	84	1.6	6.5
	95	157.91	.74	.69	278	248	252	55	43	87	84	1.6	6.5
11	100	161.39	.70	.67	271	251	252	55	43	87	84	1.5	6.5

Traverse: 2			
Start Time: 15:39	Initial Leak Check: .005 cfm@ 15 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

inlet started @ 15:41

Project No.: 21707

Operator: CHRIS PELOKE

Field Data Sheet

Date: SEPT. 22/16	Plant: Covanta DYEC	Test No.: 4 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	164.78	.70	.68	270	248	252	53	42	87	84	1.5	6.5
12	110	168.17	.61	.63	271	249	252	53	42	87	84	1.4	6.3
	115	171.41	.60	.63	271	249	252	53	42	87	84	1.35	6.3
	120	174.60											

Traverse: 2			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 17:39	Final Leak Check: .005 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : CHRIS BELORE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 5	Semi-Volatile Organic Compounds
Test Date	SEPT. 23, 2016
Test Location	APC Outlet No. 2
Operator Signature	CHRIS BELOTTE

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	TEAM 1
Impinger Box No.:	

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.61	"Hg
Static Pressure	-9.9	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	666.4	g
WCBDA	15.6	g

Combustion Gas Concentration

Oxygen	8.48	%
Carbon Dioxide	10.73	%
Carbon Monoxide	23.5	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE
Control Box	TEST #1
Incline Manometer	UNIT 2
Comb.Gas.Analyzer	OUTLET
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	.2435
2	.2460
3	.2455
4	.2455
Average:	.2456

Probe Liner Glass / Metal /Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None /Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 23/16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	75.85	.86	.74	279	248	244	67	44	77	77	1.9	5.5
	5	79.58	.86	.74	279	250	244	54	44	77	77	1.85	5.5
2	10	83.27	.88	.74	279	248	246	50	44	77	77	1.9	5.7
	15	87.00	.89	.75	279	250	247	48	44	78	77	1.9	5.7
3	20	90.72	.89	.75	279	249	246	47	43	78	76	1.9	5.7
	25	94.42	.88	.75	279	249	248	46	44	78	76	1.9	5.7
4	30	98.14	.82	.72	279	246	248	46	44	79	76	1.8	5.7
	35	101.80	.81	.72	279	251	248	47	44	80	77	1.75	5.7
5	40	105.41	.76	.69	279	247	248	47	44	80	77	1.6	5.5
	45	108.90	.76	.69	278	249	248	47	44	81	77	1.6	5.5
6	50	112.35	.72	.67	278	250	248	47	44	81	78	1.55	5.5
	55	115.77	.72	.67	278	248	249	47	44	81	78	1.55	5.5
7	60	119.18	.74	.68	278	245	248	47	42	81	78	1.55	5.5
	65	122.68	.74	.68	278	245	248	47	42	81	78	1.55	5.5
8	70	126.06	.75	.69	279	249	249	47	43	81	78	1.6	5.7
	75	129.54	.74	.68	279	249	249	47	43	81	78	1.6	5.7
9	80	133.02	.75	.69	279	247	248	47	43	82	78	1.6	5.7
	85	136.51	.75	.69	278	250	249	47	43	81	78	1.6	5.7
10	90	139.98	.73	.68	276	250	249	47	44	81	78	1.55	5.7
	95	143.40	.73	.68	276	248	249	46	43	81	78	1.55	5.7
11	100	146.81	.71	.67	277	250	248	45	43	81	78	1.5	5.7

Traverse:		Traverse:	
Start Time: 07:34	Initial Leak Check: .004 cfm@ 13 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 23/16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	150.19	.71	.67	276	250	249	45	43	80	78	1.5	5.7
12	110	153.57	.58	.61	276	248	248	45	43	80	78	1.2	5.3
	115	156.63	.58	.61	276	249	249	45	42	80	78	1.2	5.3
	120	159.70											

Traverse:			
Start Time: —	Initial Leak Check: — cfm@ — "Hg		
Finish Time: 09:34	Final Leak Check: .004 cfm@ 14 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS FELORE

Field Data Sheet

Date: SEPT. 23/16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	160.02	.79	.71	276	248	248	55	42	78	78	1.8	6.3
	5	163.73	.79	.71	276	248	249	44	43	78	77	1.8	6.5
2	10	167.36	.83	.72	275	249	248	43	43	78	77	1.8	6.5
	15	170.99	.82	.72	275	248	249	43	42	78	77	1.8	6.5
3	20	174.61	.82	.72	274	247	249	43	42	78	77	1.8	6.5
	25	178.22	.83	.72	274	250	249	43	43	78	77	1.8	6.5
4	30	181.87	.77	.70	275	248	249	43	44	77	76	1.7	6.5
	35	185.40	.77	.70	275	249	249	43	43	77	76	1.65	6.5
5	40	188.90	.77	.70	275	249	249	43	43	77	76	1.65	6.5
	45	192.41	.74	.68	275	249	249	44	44	77	76	1.6	6.5
6	50	195.86	.68	.65	276	249	249	44	44	77	76	1.5	6.2
	55	199.22	.69	.66	276	250	249	44	44	77	75	1.5	6.2
7	60	202.58	.66	.64	276	250	249	44	44	77	75	1.4	6.0
	65	205.83	.67	.65	276	250	250	44	46	77	75	1.4	6.0
8	70	209.07	.73	.68	276	249	249	44	47	76	75	1.55	6.2
	75	212.46	.73	.68	276	245	249	44	43	76	75	1.55	6.2
9	80	215.81	.75	.68	276	248	248	44	42	76	75	1.6	6.4
	85	219.73	.75	.68	277	249	249	45	42	76	75	1.6	6.4
10	90	222.65	.73	.68	276	248	249	45	42	76	75	1.6	6.4
	95	226.05	.73	.68	275	245	249	45	42	76	75	1.6	6.4
11	100	229.46	.69	.66	271	244	249	45	43	76	76	1.5	6.3

Traverse: 2		Traverse:	
Start Time: 09:46	Initial Leak Check: .004 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

inlet @ 09:44 (inlet off @ 11:14)

Project No.: 21707

Operator: CHRIS RECORE

Rev: April 28, 2005

ORTECH Environmental

Field Data Sheet

Date: Sept 23/16	Plant: Covanta DYEC	Test No.: 5 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	232.77	.67	.65	271	249	249	45	42	75	74	1.5	6.3
12	110	236.07	.60	.61	271	248	249	45	42	75	74	1.25	6.0
	115	239.18	.60	.61	271	248	248	45	43	75	74	1.25	6.0
	120	242.28											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 11:40	Final Leak Check: .004	cfm@ 14	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 6	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 23, 2016
Test Location	APC Outlet No. 2
Operator Signature	CHRIS BELCOURT

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 2
Impinger Box No.:	5

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.64	"Hg
Static Pressure	-9.8	"H2O
Nozzle Size	0.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	645.2	g
WCBDA	116.1	g

Combustion Gas Concentration

Oxygen	8.49	%
Carbon Dioxide	10.78	%
Carbon Monoxide	14.7	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE TEST #1
Control Box	
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	OUTLET
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1 _____
2 _____
3 _____
4 _____
Average:

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: Sept. 23/16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	42.85	.86	.73	278	245	245	58	48	73	72	1.9	5.
	5	46.62	.82	.71	278	244	247	46	42	71	71	1.7	5.
2	10	50.16	.88	.73	279	248	247	46	42	71	71	1.8	5.5
	15	53.79	.86	.73	278	247	247	45	42	70	71	1.8	5.5
3	20	57.37	.85	.72	279	249	247	46	43	70	70	1.8	5.5
	25	60.93	.85	.72	278	249	248	46	43	71	71	1.8	5.5
4	30	64.53	.78	.69	278	250	248	46	43	71	70	1.6	5.5
	35	68.02	.77	.68	278	248	248	47	42	72	71	1.6	5.5
5	40	71.47	.73	.67	278	248	248	47	42	72	70	1.6	5.5
	45	74.90	.73	.67	278	247	248	47	43	72	70	1.6	5.5
6	50	78.32	.70	.66	278	248	248	47	43	72	70	1.5	5
	55	81.66	.70	.66	277	250	248	44	42	73	71	1.5	5
7	60	84.96	.73	.67	277	248	248	44	40	74	71	1.55	5.
	65	88.35	.73	.67	277	248	248	44	40	74	71	1.55	5
8	70	91.67	.72	.66	277	245	248	44	40	75	71	1.55	5
	75	95.04	.73	.67	277	246	248	44	40	75	71	1.55	5
9	80	98.38	.73	.67	276	245	248	45	40	75	72	1.55	5
	85	101.73	.72	.66	276	245	248	45	40	75	72	1.55	5
10	90	105.04	.71	.66	276	246	248	45	42	76	72	1.55	5
	95	108.37	.71	.66	275	245	248	45	42	76	72	1.55	5
11	100	111.68	.70	.66	275	246	248	46	42	76	72	1.55	5

Traverse:			
Start Time: 13:03	Initial Leak Check: .004 cfm@ 14 "Hg		
Finish Time: —	Final Leak Check: — cfm@ — "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS PELLERE

Field Data Sheet

Date: SEPT. 22/16	Plant:	Covanta DYEC	Test No.: 6 SVOC	Page 3 of 5
	Plant Location:	Courtice, Ontario	Test Location:	APC Outlet No. 2

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	115.00	.70	.66	275	249	248	46	42	76	72	1.55	5
12	110	118.31	.70	.66	275	249	248	46	42	76	72	1.55	5
	115	121.60	.70	.66	275	248	248	46	43	76	73	1.55	5
	120	124.81											

Traverse: 1		Traverse:	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: 15:03	Final Leak Check: .003 cfm@ 14 "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : CHRIS BELLURE

Field Data Sheet

Date: SEPT. 23/10	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O" *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O" *	Pump Vacuum "Hg Gauge *
1	0	125.20	.89	.74	275	247	249	50	39	75	73	1.9	6.5
	5	129.00	.90	.75	276	245	247	48	43	76	73	1.9	6.5
2	10	132.62	.90	.75	276	249	249	47	44	76	73	1.9	6.5
	15	136.32	.97	.78	276	250	250	48	44	76	73	2.1	7
3	20	140.23	.86	.73	276	248	250	48	45	76	73	1.8	7
	25	143.90	.86	.73	278	247	249	48	45	76	74	1.8	7
4	30	147.57	.81	.71	278	251	249	49	46	77	74	1.7	6.5
	35	151.14	.76	.69	278	250	249	48	43	76	74	1.6	6.5
5	40	154.60	.74	.68	278	246	249	47	42	77	74	1.6	6.5
	45	158.06	.71	.67	277	250	249	46	42	77	74	1.55	6
6	50	161.46	.71	.67	277	248	249	46	41	77	74	1.5	6
	55	164.81	.68	.65	276	250	249	46	41	78	74	1.4	6
7	60	168.09	.67	.65	276	250	249	47	42	78	74	1.4	6
	65	171.30	.65	.64	276	248	249	46	42	77	74	1.4	6
8	70	174.53	.66	.64	275	248	248	47	43	78	75	1.4	6
	75	177.78	.66	.64	274	250	249	47	43	78	75	1.4	6
9	80	180.99	.66	.64	274	250	249	47	43	78	75	1.4	6
	85	184.21	.65	.64	273	249	249	47	44	78	75	1.4	6
10	90	187.44	.65	.64	273	246	249	47	46	78	75	1.4	6
	95	190.66	.65	.64	273	249	249	48	46	78	75	1.4	6
11	100	193.90	.68	.66	273	250	249	48	43	79	75	1.4	6

Traverse: 2		Traverse:	
Start Time: 15:08	Initial Leak Check: .003 cfm@ 14 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

(inlet started @ 15:12)

Project No.: 21707

Operator: CHRIS BELNICE

Field Data Sheet

Date: Sept. 23/16	Plant: Covanta DYEC	Test No.: 6 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	197.12	.68	.66	273	246	248	48	41	78	75	1.4	6
12	110	200.34	.58	.60	273	249	249	48	41	79	76	1.2	5.8
	115	203.40	.58	.61	273	250	249	49	40	79	76	1.2	5.8
	120	206.47											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 17:08	Final Leak Check: .003	cfm@ 14	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.: 7	Semi-Volatile Organic Compounds
Test Date	SEPTEMBER 27, 2016
Test Location	APC Outlet No. 2
Operator Signature	CHRIS BELLOPE

Project No.:	21707
Page	1 of 5
Probe No.:	6 SERIES
Meter Box No.:	TEAM 1
Impinger Box No.:	6

Pitot Factor	0.842	
DGMCF	0.993	
Barometric Pressure	29.27	"Hg
Static Pressure	-10.1	"H2O
Nozzle Size	.2456	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:	—	inches

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	646.4	g
WCBDA	11.5	g

Combustion Gas Concentration

Oxygen	8.14	%
Carbon Dioxide	10.93	%
Carbon Monoxide	9.5	ppm

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	SEE
Control Box	TEST #1
Incline Manometer	
Comb.Gas.Analyzer	UNIT #2
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1	SEE
2	TEST #1
3	
4	UNIT #2
Average:	

Probe Liner (Glass) / Metal / Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None / Metal / (Teflon) / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT. 27/16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 2 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	41.25	.88	.74	278	248	248	64	39	75	74	1.9	6.0
	5	44.90	.88	.74	277	246	249	62	40	74	74	1.9	6.5
2	10	48.59	.90	.75	277	249	249	62	40	74	74	1.9	6.5
	15	52.37	.90	.75	278	250	250	56	41	75	74	1.9	6.5
3	20	55.98	.88	.74	278	248	251	48	40	74	74	1.9	6.8
	25	59.70	.88	.74	278	250	250	47	39	74	74	1.9	6.8
4	30	63.43	.83	.72	279	249	250	47	39	75	74	1.9	6.8
	35	67.18	.83	.72	279	249	251	46	39	75	73	1.8	6.5
5	40	70.90	.76	.69	279	248	250	45	39	75	73	1.6	6.5
	45	74.39	.76	.69	278	249	251	45	39	75	73	1.6	6.5
6	50	77.80	.70	.66	278	248	251	45	39	76	74	1.5	6.0
	55	81.16	.70	.66	278	250	251	45	40	76	74	1.5	6.0
7	60	84.50	.71	.67	278	245	250	45	40	76	74	1.5	6.0
	65	87.82	.71	.67	278	246	251	45	40	76	74	1.5	6.0
8	70	91.15	.70	.66	278	248	251	45	41	76	74	1.5	6.0
	75	94.47	.70	.66	278	249	251	45	40	77	74	1.5	6.0
9	80	97.78	.67	.65	277	248	250	45	41	77	74	1.4	6.0
	85	101.02	.67	.65	277	250	251	45	40	77	75	1.4	6.0
10	90	104.25	.70	.66	277	248	250	46	42	77	75	1.5	6.0
	95	107.56	.70	.66	275	249	251	46	42	77	75	1.5	6.0
11	100	110.92	.70	.66	275	248	251	46	42	77	75	1.5	6.0

Traverse:					
Start Time: 1215	Initial Leak Check: .005	cfm@ 15	"Hg		
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELOKE

Field Data Sheet

Date: SEPT. 22/14	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 3 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	114.20	.66	.64	275	248	250	46	42	77	75	1.4	6.0
12	110	117.40	.66	.64	275	250	250	46	42	77	75	1.4	6.0
	115	120.71	.66	.64	275	250	250	46	42	77	75	1.4	6.0
	120	123.99											

Traverse:			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 14:50	Final Leak Check: .004	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 27/16	Plant: Covanta DYEC	Test No.: 7 SVOC	Page 4 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft³	Pitot Δ P "H₂O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H₂O	Pump Vacuum "Hg Gauge
1	0	124.40	.90	.75	278	250	256	63	46	79	78	2.	8.0
	5	128.10	.89	.75	279	248	251	50	44	77	76	2.	8.0
2	10	131.91	.87	.74	278	247	251	44	44	77	76	1.9	8.0
	15	135.71	.87	.74	278	246	251	43	44	76	76	1.85	8.0
3	20	139.43	.85	.73	278	249	251	43	44	77	76	1.75	8.0
	25	143.08	.85	.73	278	247	251	44	44	76	76	1.75	8.0
4	30	146.70	.80	.71	279	248	252	45	43	78	77	1.6	7.8
	35	150.25	.80	.71	278	249	251	44	41	77	76	1.6	7.8
5	40	153.81	.73	.68	278	250	251	44	40	77	76	1.55	7.5
	45	157.17	.73	.68	278	250	251	44	40	77	76	1.55	7.5
6	50	160.56	.68	.65	277	251	252	45	39	77	76	1.50	6.8
	55	163.88	.66	.64	276	247	251	46	39	77	76	1.4	6.8
7	60	167.15	.65	.64	276	247	250	46	39	78	76	1.4	6.8
	65	170.38	.64	.63	277	247	251	46	40	78	76	1.4	6.8
8	70	173.64	.67	.65	276	246	251	46	40	78	76	1.4	6.8
	75	176.90	.67	.65	277	246	251	46	38	78	76	1.4	6.8
9	80	180.18	.66	.65	277	247	251	46	38	78	77	1.4	6.8
	85	183.50	.66	.65	276	250	251	46	38	78	77	1.4	6.8
10	90	186.66	.66	.65	276	247	251	46	38	79	77	1.4	6.8
	95	189.92	.67	.65	274	250	250	46	39	79	77	1.4	6.8
11	100	193.16	.67	.65	274	250	250	46	39	79	77	1.4	6.8

Traverse: 2		Traverse:	
Start Time: 15:02	Initial Leak Check: .004 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

inlet started @ 15:15
off @ 16:45

Project No.: 21707
Operator: CHRIS BELORE

Field Data Sheet

Date: SEPT. 27/16	Plant: Covanta DYEC	Test No.: 3 SVOC	Page 5 of 5
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	196.40	.67	.65	274	246	251	46	39	79	77	1.4	6.8
12	110	199.64	.66	.65	274	246	250	46	38	79	77	1.4	6.8
	115	202.88	.67	.65	274	249	251	46	39	80	77	1.4	6.8
	120	206.05											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 17:02	Final Leak Check: 0.003	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: CHRIS BELOZE

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	8 Semi-Volatile Organic Compounds
Test Date	Nov 4, 2016
Test Location	APC Outlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	Team 2 COE 20092
Impinger Box No.:	2

Pitot Factor	0.848	
DGMCF	0.989	
Barometric Pressure	29.82	"Hg
Static Pressure	-9.5	"H2O
Nozzle Size	0.2546	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter	0	mg
Probe	0	mg

Moisture Gain

CWTR	731.4	g
WCBDA	17.1	g

Combustion Gas Concentration

Oxygen	8.01	%
Carbon Dioxide	11.15	%
Carbon Monoxide	10.8	ppm

Measuring Device	MII Numbers
Probe / Pitot	SP4
Trendicator	
Control Box	Team 2 COE 20092
Incline Manometer	Team 2
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	B039222

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements	
1	.2545
2	.2545
3	.2545
4	.2550
Average:	0.2546

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / Teflon / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes: Diagnostic

Rev. November 27, 2014

Field Data Sheet

Date: Nov 4, 2016	Plant: Covanta DYEC	Test No.: 8	SVOC
	Plant Location: Courtice, Ontario	Test Location:	APC Outlet No. 2

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F *	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	25.70	.63	.67	281 ~~255~~	256 ~~246~~	246	56	47	68	67	1.5	5
	5	29.07	.62	.66	283	253	245	52	38	67	67	1.4	5
2	10	32.39	.72	.71	282	257	246	48	39	67	67	1.7	6
	15	35.83	.72	.71	282	252	246	44	39	67	67	1.7	6
3	20	39.54	.72	.71	282	255	247	44	40	68	67	1.7	6
	25	43.02	.74	.73	283	255	246	43	40	69	67	1.8	6
4	30	46.68	.70	.71	284	256	247	43	40	70	68	1.7	6
	35	50.24	.70	.71	284	259	246	43	40	70	68	1.7	6
5	40	53.81	.65	.68	285	260	247	42	40 ~~42~~	71	68	1.6	6
	45	57.23	.65	.68	285	253	247	41	40	71	68	1.6	6
6	50	60.65	.60	.65	285	253	247	41	40	72	69	1.4	5.5
	55	63.96	.61	.66	285	255	247	41	41	72	69	1.4	5.5
7	60	67.28	.65	.68	285	259	247	41	42	73	70	1.5	6
	65	70.69	.66	.69	286	258	247	41	42	73	70	1.6	6
8	70	74.15	.66	.69	286	255	247	41	42	74	70	1.6	6
	75	77.64	.64	.68	285	258	247	41	41	74	70	1.6	6
9	80	81.12	.69	.71	284	258	247	42	41	74	71	1.7	6
	85	84.68	.66	.69	282	255	246	42	42	74	71	1.6	6
10	90	88.21	.67	.70 ~~.710~~	280	259	247	42	41	75	71	1.6	6
	95	91.73	.68	.70	279	255	247	41	40	75	72	1.6	6
11	100	95.22	.64	.68	277	258	247	40	40	75	72	1.5	6

Traverse: 1 FW		Traverse:	
Start Time: 8:30	Initial Leak Check: 0.003 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time: —	Final Leak Check: — cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator: AS

Field Data Sheet

Date: Nov 4, 2016	Plant: Covanta DYEC	Test No.: 8	SVOC
	Plant Location: Courtice, Ontario	Test Location:	APC Outlet No. 2

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	98.69	.63	.68	277	256	247	40	40	75	72	1.5	6
12	110	102.15	.60	.66	277	257	247	41	40	75	72	1.4	6
	115	105.50	.64	.68	277	257	247	40	40	75	72	1.5	6
	120	108.93											

Traverse: 1			
Start Time:	Initial Leak Check: — cfm@ "Hg		
Finish Time:	Final Leak Check: 0.002 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: AS

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: 8	SVOC
	Plant Location: Courtice, Ontario	Test Location:	APC Outlet No. 2

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	109.285	.73	.73	279	252	247	54	43	74	73	1.8	6
	5	112.95	.74	.73	281	255	247	41	42	74	73	1.8	6
2	10	116.63	.76	.74	283	256	247	41	46	74	73	1.8	7
	15	120.33	.76	.74	282	259	248	42	47	74	73	1.8	7
3	20	124.09	.77	.75	282	260	248	42	49	75	73	1.8	7
	25	127.88	.75	.74	283	256	248	42	44	75	73	1.8	7
4	30	131.64	.70	.71	283	258	248	42	42	75	73	1.7	7
	35	135.27	.69	.71	283	260	248	43	42	75	73	1.7	7
5	40	138.89	.61	.67	284	254	248	43	42	75	73	1.5	6
	45	142.22	.61	.67	284	259	248	43	40	75	73	1.5	6
6	50	145.62	.54	.63	284	258	247	43	40	76	73	1.3	5.5
	55	148.79	.55	.63	284	257	248	43	40	76	73	1.3	5.5
7	60	151.96	.58	.65	284	259	247	43	41	76	73	1.4	6
	65	155.23	.58	.65	284	254	248	43	43	76	74	1.4	6
8	70	158.49	.64	.68	285	254	248	43	44	76	74	1.6	6
	75	161.94	.66	.69	285	260	248	43	48	76	74	1.6	6
9	80	165.41	.70	.72	285	255	248	44	50	76	74	1.7	7
	85	169.01	.68	.70	286	254	249	44	44	76	74	1.7	7
10	90	172.62	.69	.71	285	255	247	44	42	76	74	1.7	7
	95	176.22	.70	.71	286	258	248	45	42	76	74	1.7	7
11	100	179.81	.63	.68	277	255	248	45	42	76	74	1.6	6.5

Traverse: 2			
Start Time: 10:41	Initial Leak Check: 0.004 cfm@ 15 "Hg		
Finish Time: —	Final Leak Check: — cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator :

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: 8	SVOC
	Plant Location: Courtice, Ontario	Test Location:	APC Outlet No. 2

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	105	183.27	.63	.68	277	254	248	45	41	76	74	1.6	6.5
12	110	186.72	.60	.67	277	257	247	45	42	76	74	1.5	6
	115	190.14	.61	.67	277	259	248	45	44	76	74	1.5	6
	120	193.562											

Traverse: 2			
Start Time: —	Initial Leak Check: — cfm@ "Hg		
Finish Time: 12:41	Final Leak Check: 0.001 cfm@ 15 "Hg		

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : AS

ORTECH Environmental

Plant	Covanta DYEC
Plant Location	Courtice, Ontario
Test No.:	9 Semi-Volatile Organic Compounds
Test Date	Nov 4, 2016
Test Location	APC Outlet No. 2
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	
Meter Box No.:	Team 2
Impinger Box No.:	12

Pitot Factor	0.848	
DGMCF	0.989	
Barometric Pressure	29.76	"Hg
Static Pressure	-9.5	"H2O
Nozzle Size	0.2546	inches
Stack Diameter	4.5	feet
Length	—	feet
Width	—	feet
Port length:		inches

Particulate Gain

Filter	0	mg
Probe	0	mg

Moisture Gain

CWTR	684.6	g
WCBDA	18.7	g

Combustion Gas Concentration

Oxygen	8.41	%
Carbon Dioxide	10.77	%
Carbon Monoxide	12.4	ppm

Measuring Device	MII Numbers
Probe / Pitot	SP4
Trendicator	
Control Box	See
Incline Manometer	Test 3
Comb.Gas.Analyzer	
Micromanometer	
Barometer	
Calipers	

Reading Interval	5
Number of Ports	2
Number of Points/Port	12

Nozzle Measurements

1 _____
2 _____
3 _____
4 _____
Average:

see test 8

Probe Liner (Glass) / Metal /Teflon / Other_____

Nozzle (Glass) / Metal / Other_____

Union None /Metal / Teflon / Other_____

Pitot Leak Checked? (Yes) No

Site Diagram

Notes: Diagnostic

Rev. November 27, 2014

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: 29 SVOC	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	194.082	.82	.77	283	258	248	60	40	73	73	2.0	6
	5	197.98	.82	.77	285	259	249	45	42	72	73	2.0	6.5
2	10	201.86	.90	.81	286	260	250	43	44	73	73	2.2	7.5
	15	205.93	.87	.79	285	254	251	42	46	73	73	2.1	7
3	20	209.90	.84	.78	285	260	251	41	46	73	73	2.1	7
	25	213.80	.87	.80	285	256	251	41	47	74	73	2.1	7.5
4	30	~~217~~ 216.88	.77	.75	285	260	251	41	47	74	73	1.9	7
	35	221.57	.75	.74	284	258	251	42	45	75	73	1.9	7
5	40	225.36	.73	.73	285	260	251	42	46	75	73	1.8	7
	45	229.10	.68	.70	285	261	252	42	45	75	73	1.7	7
6	50	232.71	.64	.68	286	260	251	43	47	76	73	1.6	6.5
	55	236.22	.68	.70	285	259	252	43	46	77	74	1.7	7
7	60	239.81	.67	.70	285	256	251	44	46	77	74	1.7	7
	65	243.42	.64	.69	283	254	252	44	44	77	74	1.6	6.5
8	70	246.92	.71	.72	280	255	252	45	44	77	75	1.8	6.5
	75	250.56	.65	.69	281	260	252	45	45	78	75	1.6	6
9	80	254.08	.68	.71	283	259	252	46	45	78	75	1.7	6.5
	85	257.66	.70	.72	283	255	252	46	46	78	75	1.7	6.5
10	90	261.28	.74	.74	283	256	252	46	46	79	76	1.8	7
	95	265.0	.71	.72	284	256	252	47	48	79	76	1.8	7
11	100	268.69	.68	.71	278	254	252	47	48	79	76	1.7	7

Traverse:		Traverse:	
Start Time: 13:43	Initial Leak Check: 0.007 cfm@ 15 "Hg	Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm@ "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : AS

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: ~~8~~ 9 SVOC	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	105	272.31	.60	.67	278	257	252	47	49	79	76	1.5	6
12	110	275.71	.60	.67	278	259	252	47	49	79	76	1.5	6
	115	279.13	.64	.69	278	257	252	47	50	79	76	1.6	6
	120	282.61											

Traverse: 1			
Start Time: —	Initial Leak Check: — cfm@ "Hg		
Finish Time: 15:43	Final Leak Check: 0.007 cfm@ 15 "Hg		

Traverse:		
Start Time:	Initial Leak Check:	cfm @ "Hg
Finish Time:	Final Leak Check:	cfm @ "Hg

Project No.: 21707

Operator : AS

ORTECH Environmental

Rev: April 28, 2005

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: ~~7~~ 9 SVOC	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	283.007	.84	.79	281	254	251	61	47	78	76	2.1	8
	5	286.90	.83	.78	283	256	251	48	47	78	77	2.1	8
2	10	290.94	.84	.79	283	255	252	49	51	78	76	2.1	8
	15	295.08	.86	.80	284	258	253	50	49 ~~50~~	77 ~~49~~	~~77~~ 76	2.1	8
3	20	299.21	.83	.78	285	258	252	51	50	77	76	2.1	8
	25	303.20	.82	.78	285	261	252	51	51	77	76	2.0	8
4	30	307.15	.78	.76	286	256	252	50	50	77	76	1.9	7.5
	35	310.93	.75	.74	286	260	252	52	46	77	76	1.9	7.5
5	40	314.68	.63	.68	285	256	252	51	43	78	76	1.6	7
	45	318.18	.65	.69	285	258	252	49	41	78	76	1.6	7
6	50	321.72	.56	.64	284	260	252	47	40	78	76	1.4	6
	55	324.99	.58	.65	285	256	252	47	40	78	76	1.4	6
7	60	328.31	.63	.68	285	260	252	46	41	79	77	1.6	7
	65	331.81	.62	.68	286	259	252	45	43	79	77	1.6	7
8	70	335.34	.65	.69	286	256	252	45	41	79	77	1.6	7
	75	338.85	.66	.70	285	259	252	45	40	79	77	1.6	7
9	80	342.39	.68	.71	284	255	252	45	40	79	77	1.7	7
	85	345.95	.70	.72	285	255	252	46	41	79	77	1.7	7
10	90	349.58	.65	.69	284	259	251	46	41	79	77	1.6	7
	95	353.12	.66	.70	285	257	252	46	41	79	77	1.6	7
11	100	356.64	.58	.66	278	255	251	46	41	78	77	1.4	6

Traverse: 2			
Start Time: 15:55	Initial Leak Check: 0.007 cfm@ 15 "Hg		
Finish Time:	Final Leak Check: cfm@ "Hg		

Traverse:			
Start Time:	Initial Leak Check: cfm @ "Hg		
Finish Time:	Final Leak Check: cfm @ "Hg		

Project No.: 21707

Operator : AS

Field Data Sheet

Date: Nov 4/16	Plant: Covanta DYEC	Test No.: ~~3~~ 9 SVOC	
	Plant Location: Courtice, Ontario	Test Location: APC Outlet No. 2	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F *	Impinger Temp Outlet °F	Impinger Temp ~~Inlet~~/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	105	359.94	.60	.67	278	255	252	46	40	78	77	1.5	6
12	110	363.28	.59	.66	278	254	251	47	40	78	77	1.5	6
	115	366.63	.60	.67	278	258	251	47	41	78	77	1.5	6
	120	370.01											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@	"Hg
Finish Time: 17:55	Final Leak Check: 0.008	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : AS

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APPENDIX 9

SVOC Train Recovery Data Sheets
(37 pages)

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 1
Test Date: Sep.26/16
Test Location: Unit 1 Inlet

Sample ID 1	Sample ID 2	Sample ID 3	Sample ID 4	Sample ID 5	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	416.3
After Acetone/ Hexane Rinse:	946.3
Total TS1:	

Colour: GREY

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Initial Wt:	327.1
Final Wt:	331.0
1 Gain:	3.9
Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty	
Empty Wt:	649.1
Final Wt:	953.1
2 Gain:	304.0
Colour:	CLEAR

Impinger #2 Ethylene Glycol	
Empty Wt:	573.3
Initial Wt:	672.6
Final Wt:	834.5
3 Gain:	161.9
Colour:	CLEAR

Impinger #3 Empty	
Empty Wt:	653.2
Final Wt:	653.8
4 Gain:	0.6
Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	414.3
With Imp Soln:	~~946.3~~ 966.1
Imp Volume:	551.8
After ~100g H_2O Rinse:	1078.9
Total TS4:	664.6

CWTR = 1 + 2 + 3 + 4:	470.4
WCBDA=5:	10.8

Empty Wt:	414.2
After Acetone Rinse:	522.2
Acetone Rinse Gain:	108.0
After Hexane Rinse:	641.1
Hexane Rinse Gain:	118.9
Total TS5:	226.9

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Initial Wt:	775.4
Final Wt:	786.2
5 Gain:	10.8
% Spent:	90

Impinger Box ID: 6

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	F
Trap ID:	7
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep.26/16

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 2
Test Date: Sep. 26/16
Test Location: Unit 1 Inlet

Sample ID 6	Sample ID 7	Sample ID 8	Sample ID 9	Sample ID 10
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 414.9	Colour: GREY	Initial Wt: 395.2	Impinger #1 Empty	Empty Wt: 413.6
After Acetone/ Hexane Rinse: 859.5	FOLD IN FOIL	1 Final Wt: 402.8	Empty Wt: 661.9	After Acetone Rinse: 554.2
Total TS1: 444.6	SEAL AND LABEL CONTAINER TS2	1 Gain: 7.6	Final Wt: 970.1	Acetone Rinse Gain: 140.6
MARK FLUID LEVEL		1 Colour: WHITE	2 Gain: 308.2	After Hexane Rinse: 674.1
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	2 Colour: CLEAR	Hexane Rinse Gain: 119.9
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 260.5
		LABEL AS CONTAINER TS3	Empty Wt: 660.7	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*
			Initial Wt: 768.0	
			Final Wt: 865.8	
			3 Gain: 97.8	
			3 Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 654.8	
			Final Wt: 656.0	
			4 Gain: 1.2	
			4 Colour: CLEAR	
			Container TS4 Weights	
			Empty Wt: 414.0	
			With Imp Soln: 913.0	
			Imp Volume: 499.0	
			After ~100g H_2O Rinse: 1045.6	
			Total TS4: 631.6	

Sample ID	Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)	
Initial Wt:	954.2
Final Wt:	964.6
5 Gain:	10.4
% Spent:	15

Impinger Box ID: 4

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	I
Trap ID:	5
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

CWTR = 1 + 2 + 3 + 4: 414.8

WCBDA=5: 10.4

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 26/16

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 3
Test Date: Sep. 27/16
Test Location: Unit 1 Inlet

Sample ID 11	Sample ID 12	Sample ID 13	Sample ID 14	Sample ID 15
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 413.9	Colour: GREY	Initial Wt: 409.6	Impinger #1 Empty	Empty Wt: 411.5
After Acetone/ Hexane Rinse: 884.5	FOLD IN FOIL	1 Final Wt: 416.8	Empty Wt: 656.3	After Acetone Rinse: 534.7
Total TS1: 470.6	SEAL AND LABEL CONTAINER TS2	Gain: 7.2	Final Wt: 957.6	Acetone Rinse Gain: 123.2
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 301.3	After Hexane Rinse: 635.1
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 100.4
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 223.6
		LABEL AS CONTAINER TS3	Empty Wt: 655.7	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 783.8	
			Final Wt: 886.5	
			3 Gain: 102.7	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 648.6	
			Final Wt: 648.9	
			4 Gain: 0.3	
			Colour: CLEAR	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 812.8
Final Wt: 822.0
5 Gain: 9.2
% Spent: 20

Impinger Box ID: 3

Train & Proofing Identification	
Glassware Train Proofing Provided By:	DT
Glassware Train ID:	T J
Trap ID:	11
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	154109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Container TS4 Weights	
Empty Wt:	414.0
With Imp Soln:	929.7
Imp Volume:	515.7
After ~100g H_2O Rinse:	1093.9
Total T54:	679.9

CWTR = 1 + 2 + 3 + 4: ~~414.2~~ 411.5

WCBDA=5: 9.2

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: DT
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 27/16

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 4
Test Date: Sep. 29/16
Test Location: Unit 1 – Inlet

Sample ID 16	Sample ID 17	Sample ID 18	Sample ID 19	Sample ID 20	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

TS1

Empty Wt:	415.2
After Acetone/ Hexane Rinse:	923.2
Total TS1:	508.0

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

TS2

Colour: GREY

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

TS3

Initial Wt:	360.6
Final Wt:	367.5
1 Gain:	6.9
Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

TS4

Impinger #1 Empty	
Empty Wt:	656.4
Final Wt:	967.6
2 Gain:	311.2
Colour:	CLEAR

Impinger #2 Ethylene Glycol	
Empty Wt:	670.0
Initial Wt:	793.5
Final Wt:	884.1
3 Gain:	90.6
Colour:	CLEAR

Impinger #3 Empty	
Empty Wt:	658.6
Final Wt:	659.1
4 Gain:	0.5
Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	415.4
With Imp Soln:	926.4
Imp Volume:	511.0
After ~100g H_2O Rinse:	1071.3
Total TS4:	655.9

CWTR = 1 + 2 + 3 + 4: 409.2

WCBDA=5: 7.8

TS5

Empty Wt:	415.6
After Acetone Rinse:	519.2
Acetone Rinse Gain:	103.6
After Hexane Rinse:	628.7
Hexane Rinse Gain:	109.5
Total TS5:	213.1

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 11

TS6 (Impinger)

Initial Wt:	750.0
Final Wt:	757.8
5 Gain:	7.8
% Spent:	10

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	2
Trap ID:	15
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	162249
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 29/16

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 5
Test Date: SEPT 29, 16
Test Location: UPNLET

Sample ID 21	Sample ID 22	Sample ID 23	Sample ID 24	Sample ID 25	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)
Empty Wt: 415.2	Colour: GREY	Initial Wt: 388.8	Impinger #1 Empty	Empty Wt: 417.9	Initial Wt: 816.8
After Acetone/ Hexane Rinse: 805.2	FOLD IN FOIL	1 Final Wt: 395.4	Empty Wt: 673.4	After Acetone Rinse: 603.2	Final Wt: 825.7
Total TS1: 390.0	SEAL AND LABEL CONTAINER TS2	Gain: 6.6	Final Wt: 982.7	Acetone Rinse Gain: 185.4	5 Gain: 8.9
		Colour: WHITE	2 Gain: 309.3	After Hexane Rinse: 742.3	% Spent:
		SEAL TRAP	Colour: clear	Hexane Rinse Gain: 139.1	
			Impinger #2 Ethylene Glycol	Total TS5: 324.5	
MARK FLUID LEVEL		WRAP IN FOIL	Empty Wt: 653.3		
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3	Initial Wt: 749.3	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*	
			Final Wt: 852.8		
			3 Gain: 103.5		
			Colour: clear		
			Impinger #3 Empty		
			Empty Wt: 658.5		
			Final Wt: 658.8	Impinger Box ID: 15	
			4 Gain: 0.3		
			Colour: clear		

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	Q
Trap ID:	23
HPLC Batch No.:	
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	
Acetone Batch No.:	

Container TS4 Weights	
Empty Wt:	466.7
With Imp Soln:	916.4
Imp Volume:	300.2
After ~100g H_2O Rinse:	1090.2
Total TS4:	674.0

Train Loaded By: AN
Train Recovered By: DT
Recovery Witnessed By:
Date: SEPT 29/16

CWTR = 1 + 2 + 3 + 4: 419.7

WCBDA=5: 8.9

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 6
Test Date: 30 Sep 16
Test Location: U1 - Inlet

Sample ID 26	Sample ID 27	Sample ID 28	Sample ID 29	Sample ID 30
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 418.0	Colour: Grey	Initial Wt: 415.2	Impinger #1 Empty	Empty Wt: 411.5
After Acetone/ Hexane Rinse: 799.5	FOLD IN FOIL	1 Gain: 6.4	Empty Wt: 664.4	After Acetone Rinse: 550.9
Total TS1: 381.5	SEAL AND LABEL CONTAINER TS2	Colour: White	Final Wt: 979.3	Acetone Rinse Gain: 139.4
		SEAL TRAP	2 Gain: 314.9	After Hexane Rinse: 673.6
MARK FLUID LEVEL		WRAP IN FOIL	Colour: Clear	Hexane Rinse Gain: 122.7
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3	Impinger #2 Ethylene Glycol	Total TS5: 962.1
			Empty Wt: 652.2	
			Initial Wt: 764.4	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Final Wt: 842.3	
			3 Gain: 77.9	
			Colour: Clear	
			Impinger #3 Empty	
			Empty Wt: 689.3	
			Final Wt: 690.2	Impinger Box ID: 4
			4 Gain: 0.9	
			Colour: Clear	
			Container TS4 Weights	
			Empty Wt: 411.5	
			With Imp Soln: 903.3	
			Imp Volume: 491.8	
			After ~100g H_2O Rinse: 999.3	
			Total TS4: 587.8	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 923.9
Final Wt: 931.6
5 Gain: 7.7
% Spent:

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	C
Trap ID:	10
HPLC Batch No.:	
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: AN
Train Recovered By: TJ
Recovery Witnessed By:
Date: 30 Sep 16

CWTR = 1 + 2 + 3 + 4: 400.1

WCBDA=5: 7.7

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	7
Test Date:	NOV 4/16
Test Location:	INLET UNIT 1

Sample ID 41	Sample ID 42	Sample ID 43	Sample ID 44	Sample ID 45	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	411.9	Colour:	BEIGE	Initial Wt:	383.4	Impinger #1 Empty		Empty Wt:	413.1	Initial Wt:	931.9
After Acetone/ Hexane Rinse:	665.0	FOLD IN FOIL		1 Final Wt:	389.6	Empty Wt:	655.0	After Acetone Rinse:	539.9	Final Wt:	940.3
Total TS1:	253.1 ✓	SEAL AND LABEL CONTAINER TS2		1 Gain:	6.2 ✓	Final Wt:	1001.5	Acetone Rinse Gain:	128.8 ✓	5 Gain:	8.4 ✓
				Colour:	WHITE	2 Gain:	346.5 ✓	After Hexane Rinse:	655.0	% Spent:	—
						Colour:	CLEAR	Hexane Rinse Gain:	116.1 ✓		
								Total TS5:	241.9 ✓		
MARK FLUID LEVEL		SEAL TRAP				Impinger #2 Ethylene Glycol					
		WRAP IN FOIL				Empty Wt:	637.8				
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3				Initial Wt:	723.8				
						Final Wt:	856.8	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*			
						3 Gain:	133.0 ✓				
						Colour:	CLEAR				
						Impinger #3 Empty					
						Empty Wt:	661.0				
						Final Wt:	661.2				
						4 Gain:	0.2 ✓	Impinger Box ID:	1		
						Colour:	CLEAR				
						Container TS4 Weights					
						Empty Wt:	407.1				
						With Imp Soln:	961.8				
						Imp Volume:	554.7 ✓				
						After ~100g H_2O Rinse:	971.9				
						Total TS4:	664.8 ✓				

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	P
Trap ID:	S
HPLC Batch No.:	DFL 692-01
Ethylene Gylcol Batch No.:	153713
Hexane Batch No.:	162249
Acetone Batch No.:	170993

Train Loaded By:	DT
Train Recovered By:	DT
Recovery Witnessed By:	
Date:	Nov 4/16

CWTR = 1 + 2 + 3 + 4:	495.9 ✓
WCBDA=5:	8.4 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	8
Test Date:	4 NOV 16
Test Location:	INLET UNIT 1

Sample ID 46	Sample ID 47	Sample ID 48	Sample ID 49	Sample ID 50	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	416.0
After Acetone/ Hexane Rinse:	748.3
Total TS1:	332.3 ✓

Colour:	Beige

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

	Initial Wt:	336.8
	Final Wt:	340.2
1	Gain:	3.4 ✓
	Colour:	white.

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty		
	Empty Wt:	666.0
	Final Wt:	991.1
2	Gain:	325.1 ✓
	Colour:	clear

Impinger #2 Ethylene Glycol		
	Empty Wt:	656.6
	Initial Wt:	717.8
	Final Wt:	807.7
3	Gain:	89.9 ✓
	Colour:	Clear

Impinger #3 Empty		
	Empty Wt:	613.7
	Final Wt:	612.2
4	Gain:	-1.5 ✓
	Colour:	Clear

Container TS4 Weights	
Empty Wt:	417.4
With Imp Soln:	886.8
Imp Volume:	469.4 ✓
After ~100g H_2O Rinse:	985.4
Total TS4:	568.0 ✓

Empty Wt:	415.3
After Acetone Rinse:	545.0
Acetone Rinse Gain:	129.7 ✓
After Hexane Rinse:	673.0
Hexane Rinse Gain:	128.0 ✓
Total TS5:	257.7 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

	Initial Wt:	920.8
	Final Wt:	932.0
5	Gain:	11.2 ✓
	% Spent:	

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	T
Trap ID:	6
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Impinger Box ID: 3

Train Loaded By:	DT
Train Recovered By:	TS
Recovery Witnessed By:	
Date:	4 NOV 16

CWTR = 1 + 2 + 3 + 4:	416.9 ✓
WCBDA=5:	11.2 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 1
Test Date: SEPT 26, 16
Test Location: UNIT #1 OUTLET

Sample ID	101	102	103	104	105
	Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
	CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5

CONTAINER TS1	
Empty Wt:	414.4
After Acetone/ Hexane Rinse:	619.7
Total TS1:	205.3

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

CONTAINER TS2	
Colour:	WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

CONTAINER TS3	
Initial Wt:	377.1
Final Wt:	383.1
1 Gain:	6.0
Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty	
Empty Wt:	654.2
Final Wt:	961.3
2 Gain:	307.1
Colour:	CLEAR

Impinger #2 Ethylene Glycol	
Empty Wt:	655.7
Initial Wt:	761.2
Final Wt:	928.4
3 Gain:	167.2
Colour:	CLEAR

Impinger #3 Empty	
Empty Wt:	653.4
Final Wt:	832.8
4 Gain:	179.4
Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	414.9
With Imp Soln:	1157.2
Imp Volume:	742.3
After ~100g H_2O Rinse:	1276.3
Total TS4:	861.4

CONTAINER TS5	
Empty Wt:	413.8
After Acetone Rinse:	536.3
Acetone Rinse Gain:	122.5
After Hexane Rinse:	637.1
Hexane Rinse Gain:	100.8
Total TS5:	223.3

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 16

Impinger 4 Silica Gel	
CONTAINER TS6 (Impinger)	
Initial Wt:	910.6
Final Wt:	927.6
5 Gain:	17.0
% Spent:	

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	I
Trap ID:	12
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: DT / AN
Recovery Witnessed By:
Date: SEPT 26, 16

CWTR = 1 + 2 + 3 + 4: 659.7

WCBDA=5: 17.0

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 2
Test Date: 26 Sep 16
Test Location: U1 - Outlet

Sample ID 106	Sample ID 107	Sample ID 108	Sample ID 109	Sample ID 110	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

TS1

Empty Wt:	414.2
After Acetone/ Hexane Rinse:	751.3
Total TS1:	337.1

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

TS2

Colour: White

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

TS3

Initial Wt:	391.3
Final Wt:	397.4
1 Gain:	6.1
Colour:	White

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

TS4

Impinger #1 Empty	
Empty Wt:	~~651.0~~ 671.1
Final Wt:	993.3
2 Gain:	322.2
Colour:	Clear

Impinger #2 Ethylene Glycol	
Empty Wt:	~~697.7~~ 651.0
Initial Wt:	740.6
Final Wt:	891.8
3 Gain:	151.2
Colour:	Clear

Impinger #3 Empty	
Empty Wt:	673.2
Final Wt:	848.6
4 Gain:	175.4
Colour:	Clear

Container TS4 Weights	
Empty Wt:	413.7
With Imp Soln:	1134.1
Imp Volume:	720.4
After ~100g H_2O Rinse:	1228.5
Total TS4:	814.8

CWTR = 1 + 2 + 3 + 4: ~~648.8~~ 654.9

WCBDA=5: 20.1

TS5

Empty Wt:	415.0
After Acetone Rinse:	516.9
Acetone Rinse Gain:	101.9
After Hexane Rinse:	619.4
Hexane Rinse Gain:	102.5
Total TS5:	204.4

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 11

TS6 (Impinger)

Initial Wt:	807.3
Final Wt:	827.4
5 Gain:	20.1
% Spent:	

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	A
Trap ID:	25
HPLC Batch No.:	
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: AN
Train Recovered By:
Recovery Witnessed By:
Date:

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 3
Test Date: Sep. 27/16
Test Location: Unit 1 Outlet

Sample ID 111	Sample ID 112	Sample ID 113	Sample ID 114	Sample ID 115
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 414.7	Colour: WHITE	Initial Wt: 353.9	Impinger #1 Empty	Empty Wt: 412.1
After Acetone/ Hexane Rinse: 756.4	FOLD IN FOIL	1 Final Wt: 360.6	Empty Wt: 662.4	After Acetone Rinse: 535.7
Total TS1: 341.7	SEAL AND LABEL CONTAINER TS2	Gain: 6.7	Final Wt: 992.7	Acetone Rinse Gain: 123.6
		Colour: WHITE	2 Gain: 330.3	After Hexane Rinse: 643.6
		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 107.9
MARK FLUID LEVEL		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 231.5
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3	Empty Wt: 635.8	*Use 100 - 150g ocetone total & 100- 150g of hexane total for rinses*
			Initial Wt: 808.3	
			Final Wt: 957.5	
			3 Gain: 149.2	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 656.8	
			Final Wt: 801.6	
			4 Gain: 144.8	
			Colour: CLEAR	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 889.3
Final Wt: 907.5
5 Gain: 18.2
% Spent: 30

Impinger Box ID: 15

Train & Proofing Identification	
Glassware Train Proofing Provided By:	~~MAXXAM~~ DT
Glassware Train ID:	14
Trap ID:	14
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Container TS4 Weights	
Empty Wt:	411.5
With Imp Soln:	1139.0
Imp Volume:	727.5
After ~100g H_2O Rinse:	1259.7
Total TS4:	848.2

Train Loaded By: DT
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 27/16

CWTR = 1 + 2 + 3 + 4: 631.0

WCBDA=5: 18.2

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 4
Test Date: Sep. 29/16
Test Location: Unit 1 - outlet

Sample ID 116	Sample ID 117	Sample ID 118	Sample ID 119	Sample ID 120
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 414.5	Colour: WHITE	Initial Wt: 335.0	Impinger #1 Empty	Empty Wt: 415.0
After Acetone/ Hexane Rinse: 663.2	FOLD IN FOIL	1 Final Wt: 341.3	Empty Wt: 655.7	After Acetone Rinse: 517.6
Total TS1: 248.7	SEAL AND LABEL CONTAINER TS2	1 Gain: 6.3	Final Wt: 986.6	Acetone Rinse Gain: 102.6
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 330.9	After Hexane Rinse: 633.4
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 115.8
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 218.4
		LABEL AS CONTAINER TS3	Empty Wt: 673.2	
			Initial Wt: 777.5	
			Final Wt: 897.7	
			3 Gain: 120.2	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 658.1	
			Final Wt: 822.1	
			4 Gain: 164.0	
			Colour: CLEAR	

Impinger 4 Silica Gel	
CONTAINER TS6 (Impinger)	
Initial Wt: 850.3	
Final Wt: 865.6	
5 Gain: 15.3	
% Spent: 10	

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 1

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	Y
Trap ID:	1
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	162249
Acetone Batch No.:	162165

Container TS4 Weights	
Empty Wt:	415.8
With Imp Soln:	1112.7
Imp Volume:	696.9
After ~100g H_2O Rinse:	1256.2
Total TS4:	840.4

CWTR = 1 + 2 + 3 + 4: 621.4

WCBDA=5: 15.3

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 29/16

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 5
Test Date: 29 Sep 16
Test Location: U1 - Outlet

Sample ID 121	Sample ID ~~DNB~~ 122	Sample ID 123	Sample ID 124	Sample ID 125	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt: 415.8	Colour: white	Initial Wt: 382.2	Impinger #1 Empty	Empty Wt: 416.9	Initial Wt: 811.3
After Acetone/ Hexane Rinse: 669.1	FOLD IN FOIL	1 Final Wt: 389.3	Empty Wt: 651.7	After Acetone Rinse: 528.5	Final Wt: 845.3
Total TS1: 253.3	SEAL AND LABEL CONTAINER TS2	Gain: 7.1	Final Wt: 967.5	Acetone Rinse Gain: 111.6	5 Gain: 34.0
		Colour: white	2 Gain: 315.8	After Hexane Rinse: 636.4	% Spent:
		SEAL TRAP	Colour: clear	Hexane Rinse Gain: 107.9	
MARK FLUID LEVEL		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 219.5	
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3	Empty Wt: 645.5	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*	
			Initial Wt: 754.8		
			Final Wt: 835.8		
			3 Gain: 81.0		
			Colour: clear		
			Impinger #3 Empty		
			Empty Wt: 670.9		
			Final Wt: 923.1		
			4 Gain: 252.2	Impinger Box ID: 10	
			Colour: clear		
			Container TS4 Weights		
			Empty Wt: 415.5		
			With Imp Soln: 1154.7		
			Imp Volume: 739.2		
			After ~100g H_2O Rinse: 1055.0		
			Total TS4: 839.5		

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	D
Trap ID:	6
HPLC Batch No.:	
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: AN
Train Recovered By: TD
Recovery Witnessed By: —
Date: 29 Sep 16

CWTR = 1 + 2 + 3 + 4: 656.1

WCBDA=5: 34.0

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 6
Test Date: 30 Sep 16
Test Location: U1 - outlet

Sample ID 126	Sample ID 127	Sample ID 128	Sample ID 129	Sample ID 130
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 472.2	Colour: white	Initial Wt: 325.2	Impinger #1 Empty	Empty Wt: 412.0
After Acetone/ Hexane Rinse: 616.0	FOLD IN FOIL	1 Final Wt: 333.3	Empty Wt: 665.1	After Acetone Rinse: 529.7
Total TS1: 253.8	SEAL AND LABEL CONTAINER TS2	Gain: 8.1	Final Wt: 975.0	Acetone Rinse Gain: 107.7
MARK FLUID LEVEL		Colour: white	2 Gain: 309.9	After Hexane Rinse: 646.9
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: clear	Hexane Rinse Gain: 107.2
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 234.9
		LABEL AS CONTAINER TS3	Empty Wt: 666.9	
			Initial Wt: 795.5	
			Final Wt: 930.3	
			3 Gain: 134.8	
			Colour: clear	
			Impinger #3 Empty	
			Empty Wt: 533.5	
			Final Wt: 689.4	
			4 Gain: 155.9	
			Colour: clear	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 803.9
Final Wt: 820.1
5 Gain: 16.2
% Spent:

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 5

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	EA 7
Trap ID:	
HPLC Batch No.:	
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	
Acetone Batch No.:	

Container TS4 Weights	
Empty Wt:	411.0
With Imp Soln:	1121.3
Imp Volume:	710.3
After ~100g H_2O Rinse:	1014.5
Total TS4:	803.5

CWTR = 1 + 2 + 3 + 4: 608.7

WCBDA=5: 16.2

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: JG
Train Recovered By: TS/OT
Recovery Witnessed By:
Date: SEPT 30, 16

ORTECH Environmental

Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: ~~21698~~ 21709
Sample Batch No.: 16-~~21698~~-SVOC-21709

Test No.: 7 9
Test Date: Nov 4, 2016
Test Location: OUTLET UNIT #1

Sample ID 141	Sample ID 142	Sample ID 143	Sample ID 144	Sample ID 145	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt: 414.6	Colour: WHITE	Initial Wt: 377.6	Impinger #1 Empty		Empty Wt: 413.0		Initial Wt: 883.4
After Acetone/ Hexane Rinse: ~~696.0~~ 717.7	FOLD IN FOIL	1 Gain: 6.3	Empty Wt: 736.4		After Acetone Rinse: 530.7		Final Wt: 896.3
Total TS1: 303.1	SEAL AND LABEL CONTAINER TS2	Colour: WHITE	Final Wt: 1447.4		Acetone Rinse Gain: 117.7	5	Gain: 12.9
		SEAL TRAP	2 Gain: ~~710~~ 711.0		After Hexane Rinse: 642.7		% Spent: 15
MARK FLUID LEVEL		WRAP IN FOIL	Colour: CLEAR		Hexane Rinse Gain: 112.0		
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3	Impinger #2 Ethylene Glycol		Total TS5: 229.7		
			Empty Wt: 656.6				
			Initial Wt: 723.6				
			Final Wt: 748.4		*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*		
			3 Gain: ~~67.0~~ 24.8				
			Colour: CLEAR				
			Impinger #3 Empty				
			Empty Wt: 655.9				
			Final Wt: 656.2				
			4 Gain: 0.3		Impinger Box ID: 4		
			Colour: CLEAR				
			Container TS4 Weights				
			Empty Wt: 413.7				
			With Imp Soln: 1207.5				
			Imp Volume: ~~1320.5~~ 793.8				
			After ~100g H_2O Rinse: ~~113.0~~ 1320.5				
			Total TS4: 906.8				
			CWTR = 1 + 2 + 3 + 4: ~~781.6~~ 742.4		TS1, TS4, TS5 - 1L Amber Glass Bottle		
			WCBDA=5: 12.9		TS2 - Glass Petri Dish		
					TS3 - Glass Trap		

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	V
Trap ID:	9
HPLC Batch No.:	DFI 682.01
Ethylene Gylcol Batch No.:	153715
Hexane Batch No.:	162249
Acetone Batch No.:	100993

Train Loaded By: DT
Train Recovered By: JG
Recovery Witnessed By:
Date: Nov 4, 2016

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	8
Test Date:	4 NOV 16
Test Location:	OUTLET UNIT 1

Sample ID 146	Sample ID 147	Sample ID 148	Sample ID 149	Sample ID 150	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	417.0
After Acetone/ Hexane Rinse:	733.8
Total TS1:	316.8 ✓

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Colour:	white.

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

	Initial Wt:	393.8
	Final Wt:	400.1
1	Gain:	6.3 ✓
	Colour:	white.

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty		
	Empty Wt:	649.9
	Final Wt:	990.1
2	Gain:	340.2 ✓
	Colour:	clear

Impinger #2 Ethylene Glycol		
	Empty Wt:	696.5
	Initial Wt:	710.6
	Final Wt:	898.1
3	Gain:	187.5 ✓
	Colour:	clear

Impinger #3 Empty		
	Empty Wt:	650.4
	Final Wt:	791.5
4	Gain:	140.7 ✓
	Colour:	clear

Container TS4 Weights	
Empty Wt:	411.4
With Imp Soln:	1118.0
Imp Volume:	706.6 ✓
After ~100g H_2O Rinse:	1240.4
Total TS4:	829.0 ✓

Empty Wt:	415.8
After Acetone Rinse:	559.3
Acetone Rinse Gain:	143.5 ✓
After Hexane Rinse:	684.1
Hexane Rinse Gain:	124.8 ✓
Total TS5:	268.3 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

	Initial Wt:	847.0
	Final Wt:	866.5
5	Gain:	19.5 ✓
	% Spent:	

Impinger Box ID: 1/

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	K
Trap ID:	3
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By:	DT
Train Recovered By:	TS
Recovery Witnessed By:	
Date:	4 NOV 16

CWTR = 1 + 2 + 3 + 4:	674.7 ✓
WCBDA=5:	19.5 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 1
Test Date: Sep. 19/16
Test Location: Unit 2 Inlet

Sample ID 201	Sample ID 202	Sample ID 203	Sample ID 204	Sample ID 205
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 414.7	Colour: GREY	Initial Wt: 398.5	Impinger #1 Empty	Empty Wt: 412.0
After Acetone/ Hexane Rinse: 1074.2	FOLD IN FOIL	1 Final Wt: 403.6	Empty Wt: 690.0	After Acetone Rinse: 534.1
Total TS1: 659.5 ✓	SEAL AND LABEL CONTAINER TS2	Gain: 5.1 ✓	Final Wt: 999.3	Acetone Rinse Gain: 122.1 ✓
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 309.3 ✓	After Hexane Rinse: 648.8
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 114.7 ✓
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TSS: 236.8 ✓
		LABEL AS CONTAINER TS3	Empty Wt: 652.6	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 800.1	
			Final Wt: 974.5	
			3 Gain: 174.4 ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 665.1	
			Final Wt: 704.9	
			4 Gain: 39.8 ✓	
			Colour: CLEAR	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 834.8
Final Wt: 938.1
5 Gain: 103.3 ✓
% Spent: 80%

Impinger Box ID: 16

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	C
Trap ID:	4
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Container TS4 Weights	
Empty Wt:	412.0
With Imp Soln:	1067.1
Imp Volume:	655.1 ✓
After ~100g H_2O Rinse:	1190.7
Total TS4:	778.7 ✓

Train Loaded By: JG
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 19/16

CWTR = 1 + 2 + 3 + 4: 528.6 ✓

WCBDA=5: 103.3 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Revision: June 19, 2014

ORTECH Environmental

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	2
Test Date:	Sep. 20/16
Test Location:	Unit 2 Inlet

Sample ID 206	Sample ID 207	Sample ID 208	Sample ID 209	Sample ID 210	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	410.1	Colour:	GREY	Initial Wt:	391.3	Impinger #1 Empty		Empty Wt:	411.0	Initial Wt:	962.8
After Acetone/ Hexane Rinse:	1055.1	FOLD IN FOIL		1 Final Wt:	397.9	Empty Wt:	663.5	After Acetone Rinse:	513.6	Final Wt:	989.9
Total TS1:	645.0 ✓			Gain:	6.6 ✓	Final Wt:	963.7	Acetone Rinse Gain:	102.6 ✓	5 Gain:	27.1 ✓
		SEAL AND LABEL CONTAINER TS2		Colour:	WHITE	2 Gain:	300.2 ✓	After Hexane Rinse:	613.8	% Spent:	70
						Colour:	CLEAR	Hexane Rinse Gain:	100.2 ✓		
				SEAL TRAP		Impinger #2 Ethylene Glycol		Total TS5:	202.8 ✓		
MARK FLUID LEVEL				WRAP IN FOIL		Empty Wt:	653.4				
						Initial Wt:	757.8				
SEAL AND LABEL CONTAINER TS1				LABEL AS CONTAINER TS3		Final Wt:	950.8	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*			
						3 Gain:	193.0 ✓				
						Colour:	CLEAR				
						Impinger #3 Empty					
						Empty Wt:	661.9				
						Final Wt:	837.6				
						4 Gain:	175.7 ✓	Impinger Box ID:	6		
						Colour:	CLEAR				
						Container TS4 Weights					
						Empty Wt:	410.7				
						With Imp Soln:	1162.2				
						Imp Volume:	751.5 ✓				
						After ~100g H_2O Rinse:	1161.6				
						Total TS4:	858.9 ✓				

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	P
Trap ID:	16
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By:	AN
Train Recovered By:	AN
Recovery Witnessed By:	
Date:	Sep. 20/16

CWTR = 1 + 2 + 3 + 4:	675.5 ✓
WCBDA=5:	27.1 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	3
Test Date:	Sep. 20/16
Test Location:	Unit 2 Inlet

Sample ID 211	Sample ID 212	Sample ID 213	Sample ID 214	Sample ID 215	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	411.9	Colour:	GREY	Initial Wt:	~~362.4~~ 412.6	Impinger #1 Empty		Empty Wt:	412.4	Initial Wt:	831.8
After Acetone/ Hexane Rinse:	1032.5	FOLD IN FOIL		Final Wt:	419.7	Empty Wt:	658.8	After Acetone Rinse:	532.3	Final Wt:	853.2
Total TS1:	620.6 ✓			1 Gain:	7.1 ✓	Final Wt:	970.8	Acetone Rinse Gain:	119.9 ✓	5 Gain:	21.4 ✓
		SEAL AND LABEL CONTAINER TS2		Colour:	WHITE	2 Gain:	312.0 ✓	After Hexane Rinse:	642.7	% Spent:	70
						Colour:	CLEAR	Hexane Rinse Gain:	110.4 ✓		
				SEAL TRAP				Total TS5:	230.3 ✓		
MARK FLUID LEVEL				WRAP IN FOIL		Impinger #2 Ethylene Glycol					
						Empty Wt:	656.4				
						Initial Wt:	755.5				
SEAL AND LABEL CONTAINER TS1				LABEL AS CONTAINER TS3		Final Wt:	971.7	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*			
						3 Gain:	216.2 ✓				
						Colour:	CLEAR				
						Impinger #3 Empty					
						Empty Wt:	654.0				
						Final Wt:	716.9				
						4 Gain:	62.9 ✓	Impinger Box ID:	15		
						Colour:	CLEAR				
						Container TS4 Weights					
						Empty Wt:	412.3				
						With Imp Soln:	1081.2				
						Imp Volume:	668.9 ✓				
						After ~100g H_2O Rinse:	1215.1				
						Total TS4:	802.8 ✓				

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	0
Trap ID:	21
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

CWTR = 1 + 2 + 3 + 4:	398.2 ✓
WCBDA=5:	21.4 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By:	AS
Train Recovered By:	AN
Recovery Witnessed By:	
Date:	~~Sept 16/16~~ Sep. 20/16

AN

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 4
Test Date: Sep 22/16
Test Location: U2 Inlet

Sample ID 216	Sample ID 217	Sample ID 218	Sample ID 219	Sample ID 220	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	416.6
After Acetone/ Hexane Rinse:	894.1
Total TS1:	477.5 ✓

Colour: GREY

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Initial Wt:	362.4
Final Wt:	368.1
1 Gain:	5.7 ✓
Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty	
Empty Wt:	656.4
Final Wt:	947.8
2 Gain:	291.4 ✓
Colour:	CLEAR

Impinger #2 Ethylene Glycol	
Empty Wt:	658.6
Initial Wt:	755.9
Final Wt:	906.7
3 Gain:	150.8 ✓
Colour:	CLEAR

Impinger #3 Empty	
Empty Wt:	670.4
Final Wt:	671.6
4 Gain:	1.2 ✓
Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	415.1
With Imp Soln:	941.6
Imp Volume:	526.5 ✓
After ~100g H_2O Rinse:	1059.9
Total TS4:	644.8 ✓

Empty Wt:	415.9
After Acetone Rinse:	528.4
Acetone Rinse Gain:	112.5 ✓
After Hexane Rinse:	629.6
Hexane Rinse Gain:	101.2 ✓
Total TS5:	213.7 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Initial Wt:	962.4
Final Wt:	978.1
5 Gain:	15.7 ✓
% Spent:	50

Impinger Box ID: 3

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	2
Trap ID:	2
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 22/16

CWTR = 1 + 2 + 3 + 4: 449.1 ✓

WCBDA=5: 15.7 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

JAN

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 5
Test Date: Sep. 23/16
Test Location: Unit 2 Inlet

Sample ID 221	Sample ID 222	Sample ID 223	Sample ID 224	Sample ID 225
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 415.9	Colour: GREY	Initial Wt: 416.8	Impinger #1 Empty	Empty Wt: 414.4
After Acetone/ Hexane Rinse: 907.2	FOLD IN FOIL	1 Final Wt: 423.4	Empty Wt: 655.7	After Acetone Rinse: 535.7
Total TS1: 491.3 ✓	SEAL AND LABEL CONTAINER TS2	Gain: 6.6 ✓	Final Wt: 955.6	Acetone Rinse Gain: 121.3 ✓
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 299.4 ✓	After Hexane Rinse: 635.7
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 100.0 ✓
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 221.3 ✓
		LABEL AS CONTAINER TS3	Empty Wt: 656.3	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 762.4	
			Final Wt: 938.0	
			3 Gain: 175.6 ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 648.3	
			Final Wt: 648.9	
			4 Gain: 0.6 ✓	
			Colour: CLEAR	

Sample ID 225
Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 857.1
Final Wt: 867.9 ✓
5 Gain: 10.8 ✓
% Spent: 70

Impinger Box ID: 11

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	'I'
Trap ID:	/
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Container TS4 Weights	
Empty Wt:	417.1
With Imp Soln:	983.8
Imp Volume:	566.7 ✓
After ~100g H_2O Rinse:	1141.5
Total TS4:	724.4 ✓

CWTR = 1 + 2 + 3 + 4: 482.7 ✓

WCBDA=5: 10.8 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: TT
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 23/16

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Revision: June 19, 2014

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 6
Test Date: Sep. 23/16
Test Location: Unit 2 Inlet

Sample ID 226	Sample ID 227	Sample ID 228	Sample ID 229	Sample ID 230
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 415.3	Colour: GREY	Initial Wt: 352.0	Impinger #1 Empty	Empty Wt: 414.8
After Acetone/ Hexane Rinse: 934.1	FOLD IN FOIL	1 Gain: 6.1 ✓	Empty Wt: 662.8	After Acetone Rinse: 525.4
Total TS1: 518.8 ✓	SEAL AND LABEL CONTAINER TS2	Colour: WHITE	Final Wt: 978.0	Acetone Rinse Gain: 110.6 ✓
MARK FLUID LEVEL		SEAL TRAP	2 Gain: 315.2 ✓	After Hexane Rinse: 631.7
SEAL AND LABEL CONTAINER TS1		WRAP IN FOIL	Colour: CLEAR	Hexane Rinse Gain: 106.3 ✓
		LABEL AS CONTAINER TS3	Impinger #2 Ethylene Glycol	Total TS5: 216.9 ✓
			Empty Wt: 664.2	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 775.1	
			Final Wt: 906.6	
			3 Gain: 131.5 ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 654.4	
			Final Wt: 654.4	
			4 Gain: 0 ✓	
			Colour: CLEAR	
			Container TS4 Weights	
			Empty Wt: 415.1	
			With Imp Soln: 958.5	
			Imp Volume: 543.4 ✓	
			After ~100g H_2O Rinse: 1093.9	
			Total TS4: 678.8 ✓	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 820.7
Final Wt: 828.2
5 Gain: 7.5 ✓
% Spent: 80

Impinger Box ID: 3

Train & Proofing Identification	
Glassware Train Proofing Provided By:	~~AK~~ AN
Glassware Train ID:	8
Trap ID:	8
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 23/16

CWTR = 1 + 2 + 3 + 4: 452.8 ✓

WCBDA=5: 7.5 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 7
Test Date: Sep. 27/16
Test Location: Unit 2 Inlet

Sample ID 231	Sample ID 232	Sample ID 233	Sample ID 234	Sample ID 235
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 412.6	Colour: GREY	Initial Wt: 414.1	Impinger #1 Empty	Empty Wt: 411.8
After Acetone/ Hexane Rinse: 915.0	FOLD IN FOIL	1 Final Wt: 423.9	Empty Wt: 658.8	After Acetone Rinse: 523.6
Total TS1: 502.4	SEAL AND LABEL CONTAINER TS2	Gain: 9.8	Final Wt: 963.8	Acetone Rinse Gain: 111.6
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 305.0	After Hexane Rinse: 620.8
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 97.4
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 209.0
		LABEL AS CONTAINER TS3	Empty Wt: 656.4	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 771.2	
			Final Wt: 932.7	
			3 Gain: 161.5	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 654.0	
			Final Wt: 654.8	
			4 Gain: 0.8	
			Colour: CLEAR	
			Container TS4 Weights	
			Empty Wt: 412.0	
			With Imp Soln: 978.3	
			Imp Volume: 566.3	
			After ~100g H_2O Rinse: 1079.2	
			Total TS4: 666.2	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 930.6
Final Wt: 941.3
5 Gain: 10.7
% Spent: 20

Impinger Box ID: 16

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	9
Trap ID:	
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 27/16

CWTR = 1 + 2 + 3 + 4: 477.1

WCBDA=5: 10.7

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: ~~21698~~ 21707
Sample Batch No.: 16-~~21698~~-SVOC-21707

Test No.: 8
Test Date: NOV 4, 16
Test Location: UNIT 2 INLET

Sample ID 241	Sample ID 242	Sample ID 243	Sample ID 244	Sample ID 245
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 413.3	Colour: BEIGE	Initial Wt: 419.3	Impinger #1 Empty	Empty Wt: 415.3
After Acetone/ Hexane Rinse: 719.0	FOLD IN FOIL	1 Gain: 3.4 ✓	Empty Wt: 660.9	After Acetone Rinse: 527.4
Total TS1: 305.7 ✓	SEAL AND LABEL CONTAINER TS2	Colour: WHITE	Final Wt: 986.0	Acetone Rinse Gain: 112.1 ✓
MARK FLUID LEVEL		SEAL TRAP	2 Gain: 325.1 ✓	5 After Hexane Rinse: 647.0
SEAL AND LABEL CONTAINER TS1		WRAP IN FOIL	Colour: CLEAR	Hexane Rinse Gain: 119.6 ✓
		LABEL AS CONTAINER TS3	Impinger #2 Ethylene Glycol	Total TS5: 231.7 ✓
			Empty Wt: 633.3	
			Initial Wt: 724.7	
			Final Wt: 859.6	
			3 Gain: 134.9 ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 658.3	
			Final Wt: 658.6	
			4 Gain: 0.3 ✓	
			Colour: CLEAR	
			Container TS4 Weights	
			Empty Wt: 414.6	
			With Imp Soln: 933.0	
			Imp Volume: 518.4 ✓	
			After ~100g H_2O Rinse: 1034.1	
			Total TS4: 619.5 ✓	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 945.8
Final Wt: 959.3
5 Gain: 13.5 ✓
% Spent:

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 6

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	U
Trap ID:	19
HPLC Batch No.:	DET 682-01
Ethylene Gylcol Batch No.:	153713
Hexane Batch No.:	162249
Acetone Batch No.:	100993

CWTR = 1 + 2 + 3 + 4: 483.7 ✓

WCBDA=5: 13.5 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: DT
Train Recovered By: DT
Recovery Witnessed By:
Date: NOV 4, 16

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	39
Test Date:	Nov 4, 16
Test Location:	INLET UNIT 2

Sample ID 246	Sample ID 247	Sample ID 248	Sample ID 249	Sample ID 250	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	415.4
After Acetone/ Hexane Rinse:	641.2
Total TS1:	225.8 ✓

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Colour:	BEIGE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

	Initial Wt:	416.0
	Final Wt:	422.7
1	Gain:	6.7 ✓
	Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

	Impinger #1 Empty	
	Empty Wt:	656.2
	Final Wt:	1011.2
2	Gain:	355.0 ✓
	Colour:	CLEAR

	Impinger #2 Ethylene Glycol	
	Empty Wt:	670.8
	Initial Wt:	726.8
	Final Wt:	773.7
3	Gain:	46.9 ✓
	Colour:	CLEAR

	Impinger #3 Empty	
	Empty Wt:	678.6
	Final Wt:	678.6
4	Gain:	0.0 ✓
	Colour:	—

Empty Wt:	414.9
After Acetone Rinse:	527.3
Acetone Rinse Gain:	112.4 ✓
After Hexane Rinse:	638.0
Hexane Rinse Gain:	110.7 ✓
Total TS5:	223.1 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Impinger Box ID: 10

	Initial Wt:	961.7
	Final Wt:	973.4
5	Gain:	12.1 ✓
	% Spent:	

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	L
Trap ID:	16
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By:	DT
Train Recovered By:	DT
Recovery Witnessed By:	
Date:	Nov 4, 16

Empty Wt:	414.5
With Imp Soln:	862.1
Imp Volume:	447.6 ✓
After ~100g H_2O Rinse:	963.9
Total TS4:	549.4 ✓

CWTR = 1 + 2 + 3 + 4:	408.6 ✓
WCBDA=5:	12.1 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	1
Test Date:	SEPT 19, 2016
Test Location:	UNIT #2 APC OUTLET

Sample ID 301	Sample ID 302	Sample ID 303	Sample ID 304	Sample ID 305	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)
Empty Wt: 411.6	Colour: WHITE	Initial Wt: 377.6	Impinger #1 Empty	Empty Wt: 412.4	Initial Wt: 198.5
After Acetone/ Hexane Rinse: 706.4	FOLD IN FOIL	1 Final Wt: 384.0	Empty Wt: 672.5	After Acetone Rinse: 525.6	Final Wt: 182.5
Total TS1: 294.8 ✓		Gain: 6.4 ✓	Final Wt: 1003.8	Acetone Rinse Gain: 113.2 ✓	5 Gain: 16.0 19.0
	SEAL AND LABEL CONTAINER TS2	Colour: WHITE	2 Gain: 331.3 ✓	After Hexane Rinse: 618.9	% Spent:
		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 93.3 ✓	
MARK FLUID LEVEL		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 206.5 ✓	
			Empty Wt: 650.7		
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3	Initial Wt: 750.1	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*	
			Final Wt: 963.4		
			3 Gain: 213.3 ✓		
			Colour: CLEAR		
			Impinger #3 Empty		
			Empty Wt: 670.3		
			Final Wt: 762.8		
			4 Gain: 92.5 ✓	Impinger Box ID: 4	
			Colour: CLEAR		

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	~~H~~ A
Trap ID:	5
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Container TS4 Weights	
Empty Wt:	412.0
With Imp Soln:	1133.2
Imp Volume:	~~1~~ 721.2 ✓
After ~100g H_2O Rinse:	1263.2
Total TS4:	851.2 ✓

Train Loaded By:	JGT
Train Recovered By:	JG
Recovery Witnessed By:	
Date:	SEPT 19 2016.

CWTR = 1 + 2 + 3 + 4:	~~551.0~~ 648.5 ✓
WCBDA=5:	~~16.0~~ 19.0 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 2
Test Date: Sep. 20/16
Test Location: U2 Outlet

Sample ID 306	Sample ID 307	Sample ID 308	Sample ID 309	Sample ID 310
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 410.5	Colour: WHITE	Initial Wt: 389.3	Impinger #1 Empty	Empty Wt: 411.8
After Acetone/ Hexane Rinse: 809.7	FOLD IN FOIL	1 Final Wt: 395.5	Empty Wt: 661.3	After Acetone Rinse: 532.6
Total TS1: 399.2 ✓	SEAL AND LABEL CONTAINER TS2	Gain: 6.2 ✓	Final Wt: 992.0	Acetone Rinse Gain: 120.8 ✓
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 330.7 ✓	After Hexane Rinse: 648.3
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 115.7 ✓
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 236.5 ✓
		LABEL AS CONTAINER TS3	Empty Wt: 676.6	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 780.3	
			Final Wt: 835.4	
			3 Gain: 55.1 ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 655.3	
			Final Wt: 909.6	
			4 Gain: 254.3 ✓	
			Colour: CLEAR	
			Container TS4 Weights	
			Empty Wt: 402.9	
			With Imp Soln: 1129.2	
			Imp Volume: 726.3 ✓	
			After ~100g H_2O Rinse: 1268.2	
			Total TS4: 865.3 ✓	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 755.8
Final Wt: 856.4 ✓
5 Gain: 100.6 ✓
% Spent: 60

Impinger Box ID: 11

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	6
Trap ID:	3
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep 20/16

CWTR = 1 + 2 + 3 + 4: 646.3 ✓

WCBDA=5: 100.6 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 3
Test Date: Sep. 20/16
Test Location: Unit 2 Outlet

Sample ID 311	Sample ID 312	Sample ID 313	Sample ID 314	Sample ID 315	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	411.3
After Acetone/ Hexane Rinse:	668.8
Total TS1:	257.5 ✓

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Colour:	WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

Initial Wt:	382.2	
Final Wt:	389.6	
1 Gain:	7.4	✓
Colour:	WHITE	

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty		
Empty Wt:	663.0	
Final Wt:	971.1	
2 Gain:	308.1	✓
Colour:	CLEAR	

Impinger #2 Ethylene Glycol		
Empty Wt:	653.4	
Initial Wt:	752.3	
Final Wt:	868.3	
3 Gain:	116.0	✓
Colour:	CLEAR	

Impinger #3 Empty		
Empty Wt:	654.0	
Final Wt:	898.4	
4 Gain:	244.4	✓
Colour:	CLEAR	

Container TS4 Weights		
Empty Wt:	417.6	
With Imp Soln:	1163.0	
Imp Volume:	745.4	✓
After ~100g H_2O Rinse:	1301.7	
Total TS4:	884.1	✓

Empty Wt:	416.4
After Acetone Rinse:	536.9
Acetone Rinse Gain:	120.5 ✓
After Hexane Rinse:	651.8
Hexane Rinse Gain:	114.9 ✓
Total TS5:	235.4 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

Initial Wt:	768.5	
Final Wt:	786.1	
5 Gain:	17.6	✓
% Spent:	20	

Impinger Box ID: 4

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	R
Trap ID:	24
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

CWTR = 1 + 2 + 3 + 4:	675.9 ✓
WCBDA=5:	17.6 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 21/16

Revision: June 19, 2014

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 4
Test Date: 22 Sep 16
Test Location: Unit 2 APC Outlet

Sample ID 316	Sample ID 317	Sample ID 318	Sample ID 319	Sample ID 320
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 416.5	Colour: WHITE	Initial Wt: 394.5	Impinger #1 Empty: Empty Wt: 658.7	Empty Wt: 416.4
After Acetone/ Hexane Rinse: 629.4	FOLD IN FOIL	1 Final Wt: 400.2	Final Wt: 1011.3	After Acetone Rinse: 530.3
Total TS1: 212.9 ✓	SEAL AND LABEL CONTAINER TS2	Gain: 5.7 ✓	2 Gain: 352.6 ✓	Acetone Rinse Gain: 113.9 ✓
		Colour: white	Colour: clear	After Hexane Rinse: 625.4
MARK FLUID LEVEL		SEAL TRAP	Impinger #2 Ethylene Glycol: Empty Wt: 673.6	Hexane Rinse Gain: 95.1 ✓
SEAL AND LABEL CONTAINER TS1		WRAP IN FOIL	Initial Wt: 773.1	Total TSS: 209.0 ✓
		LABEL AS CONTAINER TS3	Final Wt: 913.3	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			3 Gain: 140.2 ✓	
			Colour: clear	
			Impinger #3 Empty: Empty Wt: 653.3	
			Final Wt: 806.9	
			4 Gain: 153.6 ✓	
			Colour: clear	
			Container TS4 Weights: Empty Wt: 415.7	
			With Imp Soln: 1234.0	
			Imp Volume: 818.3 ✓	
			After ~100g H_2O Rinse: 1341.8	
			Total TS4: ~~107.5~~ 926.1 ✓	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 804.4
Final Wt: 821.5
5 Gain: 17.1 ✓
% Spent:

Impinger Box ID: 16

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	8
Trap ID:	19
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: TS / TT
Recovery Witnessed By:
Date: 22 Sep 16

CWTR = 1 + 2 + 3 + 4: 652.1 ✓

WCBDA=5: 17.1 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 5
Test Date: Sep. 23/16
Test Location: Unit 2 Outlet

Sample ID 321	Sample ID 322	Sample ID 323	Sample ID 324	Sample ID 325
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 416.2	Colour: WHITE	Initial Wt: 325.3	Impinger #1 Empty	Empty Wt: 414.5
After Acetone/ Hexane Rinse: 700.9	FOLD IN FOIL	1 Final Wt: 331.9	Empty Wt: 611.2	After Acetone Rinse: 530.0
Total TS1: 284.7 ✓	SEAL AND LABEL CONTAINER TS2	Gain: 6.6 ✓	Final Wt: 961.5	Acetone Rinse Gain: 115.5 ✓
MARK FLUID LEVEL		Colour: WHITE	2 Gain: 350.3 ✓	After Hexane Rinse: 644.2
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: CLEAR	Hexane Rinse Gain: 114.7 ✓
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 229.7 ✓
		LABEL AS CONTAINER TS3	Empty Wt: 666.9	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 774.2	
			Final Wt: 941.4	
			3 Gain: 167.2 ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 637.9	
			Final Wt: 780.2	
			4 Gain: 142.3 ✓	
			Colour: CLEAR	
			Container TS4 Weights	
			Empty Wt: 415.3	
			With Imp Soln: 1162.8	
			Imp Volume: 747.5 ✓	
			After ~100g H_2O Rinse: 1288.7	
			Total TS4: 873.4 ✓	

Sample ID 325
Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 760.1
Final Wt: 775.7
5 Gain: 15.6 ✓
% Spent: 10

Impinger Box ID: 6

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	5
Trap ID:	2
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

CWTR = 1 + 2 + 3 + 4: 666.4 ✓

WCBDA=5: 15.6 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 23/16

Revision: June 19, 2014

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 6
Test Date: 23 Sep 16
Test Location: Unit #2 Outlet

Sample ID 326	Sample ID 327	Sample ID 328	Sample ID 329	Sample ID 330	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

TS1

Empty Wt:	414.6
After Acetone/ Hexane Rinse:	821.2
Total TS1:	406.6 ✓

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

TS2

Colour: WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

TS3

Initial Wt:	327.8
Final Wt:	336.1
1 Gain:	6.3 ✓
Colour:	white

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

TS4

Impinger #1 Empty

Empty Wt:	601.1
Final Wt:	979.7
2 Gain:	~~378.7~~ 318.6 ✓
Colour:	clear

Impinger #2 Ethylene Glycol

Empty Wt:	656.0
Initial Wt:	763.5
Final Wt:	952.0
3 Gain:	188.5 ✓
Colour:	clear

Impinger #3 Empty

Empty Wt:	685.7
Final Wt:	817.5
4 Gain:	131.8 ✓
Colour:	clear

Container TS4 Weights

Empty Wt:	515.6
With Imp Soln:	1142.1
Imp Volume:	626.5 ✓
After ~100g H_2O Rinse:	1254. ✓
Total TS4:	~~738.5~~ ✓

CWTR = 1 + 2 + 3 + 4: ~~644.7~~ 645.2 ✓

WCBDA=5: 16.1 ✓

TS5

Empty Wt:	415.2
After Acetone Rinse:	519.4
Acetone Rinse Gain:	104.2 ✓
After Hexane Rinse:	621.2
Hexane Rinse Gain:	101.8 ✓
Total TS5:	206.0 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

TS6 (Impinger)

Initial Wt:	818.8
Final Wt:	834.9
5 Gain:	16.1 ✓
% Spent:	

Impinger Box ID: 15

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	H
Trap ID:	3
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: TS/AN
Recovery Witnessed By:
Date: Sep. 23/16

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: 7
Test Date: Sep. 27/16
Test Location: Unit 2 Outlet

Sample ID 331	Sample ID 332	Sample ID 333	Sample ID 334	Sample ID 335
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 411.7	Colour: white	Initial Wt: 401.6	Impinger #1 Empty	Empty Wt: 412.8
After Acetone/ Hexane Rinse: 734.6	FOLD IN FOIL	1 Final Wt: 408.1	Empty Wt: 611.3	After Acetone Rinse: 1[illegible]
Total TS1: 322.9	SEAL AND LABEL CONTAINER TS2	Gain: 6.5	Final Wt: 947.5	Acetone Rinse Gain: 535.0
		Colour: white	2 Gain: 336.2	After Hexane Rinse: 629.8
MARK FLUID LEVEL		SEAL TRAP	Colour: clear	Hexane Rinse Gain: ~~629.8~~ 91.8
SEAL AND LABEL CONTAINER TS1		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 917.0
		LABEL AS CONTAINER TS3	Empty Wt: 666.9	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 779.7	
			Final Wt: 961.7	
			3 Gain: 182.0	
			Colour: clear	
			Impinger #3 Empty	
			Empty Wt: 637.7	
			Final Wt: 759.4	
			4 Gain: 121.7	
			Colour: clear	
			Container TS4 Weights	
			Empty Wt: 412.8	
			With Imp Soln: 1146.3	
			Imp Volume: 733.5	
			After ~100g H_2O Rinse: 1248.7	
			Total TS4: 835.9	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 825.3
Final Wt: 836.8
5 Gain: 11.5
% Spent:

Impinger Box ID: 6

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	S
Trap ID:	22
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: TS
Recovery Witnessed By:
Date: Sep. 27/16

CWTR = 1 + 2 + 3 + 4: 646.4

WCBDA=5: 115

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	~~21698~~ 21707
Sample Batch No.:	16-~~21698~~-SVOC-21707

Test No.:	8
Test Date:	Nov 4, 2016
Test Location:	OUTLET UNIT 2

Sample ID 341	Sample ID 342	Sample ID 343	Sample ID 344	Sample ID 345	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	414.7	Colour:	WHITE	Initial Wt:	395.8		Impinger #1 Empty	Empty Wt:	416.7 ~~417.6~~	Initial Wt:	953.0
After Acetone/ Hexane Rinse:	2080	FOLD IN FOIL		1 Final Wt:	402.8		Empty Wt: 769.1	After Acetone Rinse:	545.3	Final Wt:	920.1
Total TS1:	293.3 ✓	SEAL AND LABEL CONTAINER TS2		1 Gain:	7.0 ✓		Final Wt: 1511.6	Acetone Rinse Gain:	128.6 ✓	5 Gain:	17.1 ✓
				Colour:	~~CLE~~ WHITE		2 Gain: 742.5 ✓	After Hexane Rinse:	645.6	% Spent:	
				SEAL TRAP			Colour: CLEAR	Hexane Rinse Gain:	100.3 ✓		
MARK FLUID LEVEL		WRAP IN FOIL					Impinger #2 Ethylene Glycol	Total TS5:	228.9 ✓		
SEAL AND LABEL CONTAINER TS1		LABEL A5 CONTAINER TS3					Empty Wt: 659.0				
							Initial Wt: 737.3	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*			
							Final Wt: 719.0				
							3 Gain: -18.3 ✓				
							Colour: CLEAR				
							Impinger #3 Empty				
							Empty Wt: 653.5				
							Final Wt: 653.7	Impinger Box ID: 2			
							4 Gain: 0.2 ✓				
							Colour: CLEAR				
							Container TS4 Weights				
							Empty Wt: 417.0				
							With Imp Soln: 1209.0				
							Imp Volume: 792.0 ✓				
							After ~100g H_2O Rinse: 1310.5				
							Total TS4: 893.5 ✓				

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	0
Trap ID:	20
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By:	DT
Train Recovered By:	JG
Recovery Witnessed By:	
Date:	Nov 4, 2016

CWTR = 1 + 2 + 3 + 4:	731.4 ✓
WCBDA=5:	17.1 ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	29
Test Date:	Nov 4, 16
Test Location:	OUTLET UNIT 2

Sample ID 346	Sample ID 347	Sample ID 348	Sample ID 349	Sample ID 350	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	416.0
After Acetone/ Hexane Rinse:	714.7
Total TS1:	298.7 ✓

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Colour:	WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

	Initial Wt:	353.5
	Final Wt:	360.1
1	Gain:	6.6 ✓
	Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Impinger #1 Empty

	Empty Wt:	770.6
	Final Wt:	1417.7
2	Gain:	647.1 ✓
	Colour:	CLEAR

Impinger #2 Ethylene Glycol

	Empty Wt:	669.2
	Initial Wt:	731.8
	Final Wt:	762.7
3	Gain:	30.9 ✓
	Colour:	CLEAR

Impinger #3 Empty

	Empty Wt:	663.9
	Final Wt:	663.9
4	Gain:	0.0 ✓
	Colour:	—

Container TS4 Weights

Empty Wt:	416.3
With Imp Soln:	1152.2
Imp Volume:	735.9 ✓
After ~100g H_2O Rinse:	1323.7
Total TS4:	907.4 ✓

CWTR = 1 + 2 + 3 + 4:	~~655.7~~ 684.6 ✓
WCBDA=5:	18.7 ✓

Empty Wt:	416.5
After Acetone Rinse:	523.3
Acetone Rinse Gain:	106.8 ✓
After Hexane Rinse:	618.9
Hexane Rinse Gain:	95.6 ✓
Total TS5:	202.4 ✓

Use 100 - 150g acetone total & 100- 150g of hexane total for rinses

	Initial Wt:	771.5
	Final Wt:	770.2
5	Gain:	18.7 ✓
	% Spent:	

Impinger Box ID: 12

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	5
Trap ID:	6
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By:	DT
Train Recovered By:	DT
Recovery Witnessed By:	
Date:	Nov 4, 16

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

VAN

Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: BLANK
Test Date: Sep. 29/16
Test Location: Unit 1

Sample ID 401	Sample ID 402	Sample ID 403	Sample ID 404	Sample ID 405
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 411.7	Colour: WHITE	Initial Wt: 404.0	Impinger #1 Empty	Empty Wt: 410.8
After Acetone/ Hexane Rinse: 657.3	FOLD IN FOIL	1 Final Wt: 404.0	Empty Wt: 653.5	After Acetone Rinse: 520.7
Total TS1: 245.6 ✓	SEAL AND LABEL CONTAINER TS2	Gain: Ø ✓	Final Wt: 653.5	Acetone Rinse Gain: 109.9 ✓
MARK FLUID LEVEL		Colour: WHITE	2 Gain: Ø ✓	After Hexane Rinse: 618.6
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: —	Hexane Rinse Gain: 97.9 ✓
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 207.8 ✓
		LABEL AS CONTAINER TS3	Empty Wt: 654.0	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 759.8	
			Final Wt: 759.8	
			3 Gain: Ø ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 663.1	
			Final Wt: 663.1	
			4 Gain: Ø ✓	
			Colour: —	
			Container TS4 Weights	
			Empty Wt: 412.2	
			With Imp Soln: 521.3	
			Imp Volume: 109.1 ✓	
			After ~100g H_2O Rinse: 631.3	
			Total TS4: ~~410.0~~ 219.1 ✓	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 835.3
Final Wt: 835.3
5 Gain: Ø ✓
% Spent: Ø

Impinger Box ID:

Train & Proofing Identification	
Glassware Train Proofing Provided By:	AN
Glassware Train ID:	R
Trap ID:	6
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 29/16

CWTR = 1 + 2 + 3 + 4: Ø ✓

WCBDA=5: Ø ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

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Semi-Volatile Organics Train Recovery Data Sheet

Client : Covanta DYEC
Project No.: 21707
Sample Batch No.: 16-21707-SVOC-

Test No.: BLANK
Test Date: Sep. 20/16
Test Location: UNIT 2

Sample ID 406	Sample ID 407	Sample ID 408	Sample ID 409	Sample ID 410
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5
Empty Wt: 410.6	Colour: WHITE	Initial Wt: 348.8	Impinger #1 Empty	Empty Wt: 410.1
After Acetone/ Hexane Rinse: 793.2	FOLD IN FOIL	Final Wt: 348.8	Empty Wt: ~~654.6~~ 691.9	After Acetone Rinse: 511.1
Total TS1: 382.6 ✓	SEAL AND LABEL CONTAINER TS2	1 Gain: Ø ✓	Final Wt: 691.9	Acetone Rinse Gain: 101.0 ✓
MARK FLUID LEVEL		Colour: WHITE	2 Gain: Ø ✓	After Hexane Rinse: 606.5
SEAL AND LABEL CONTAINER TS1		SEAL TRAP	Colour: —	Hexane Rinse Gain: 95.4 ✓
		WRAP IN FOIL	Impinger #2 Ethylene Glycol	Total TS5: 196.4 ✓
		LABEL AS CONTAINER TS3	Empty Wt: 654.6	Use 100 - 150g acetone total & 100- 150g of hexane total for rinses
			Initial Wt: 763.3	
			Final Wt: 763.3	
			3 Gain: Ø ✓	
			Colour: CLEAR	
			Impinger #3 Empty	
			Empty Wt: 666.9	
			Final Wt: 666.9	
			4 Gain: Ø ✓	
			Colour: —	
			Container TS4 Weights	
			Empty Wt: 411.3	
			With Imp Soln: 513.4	
			Imp Volume: 102.1 ✓	
			After ~100g H_2O Rinse: 640.9 ✓	
			Total TS4: 229.6 ✓	

Impinger 4 Silica Gel
CONTAINER TS6 (Impinger)
Initial Wt: 907.8
Final Wt: 907.8
5 Gain: Ø ✓
% Spent: Ø

Impinger Box ID: —

Train & Proofing Identification	
Glassware Train Proofing Provided By:	MAXXAM
Glassware Train ID:	C
Trap ID:	4
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	159109
Hexane Batch No.:	100584
Acetone Batch No.:	162165

CWTR = 1 + 2 + 3 + 4: Ø ✓

WCBDA=5: Ø ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 20/16

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Semi-Volatile Organics Train Recovery Data Sheet

Client :	Covanta DYEC
Project No.:	21707
Sample Batch No.:	16-21707-SVOC-

Test No.:	BLANK
Test Date:	
Test Location:	

Sample ID 411	Sample ID 412	Sample ID 413	Sample ID 414	Sample ID 415	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

Empty Wt:	418.0	Colour:	WHITE	Initial Wt:	403.3	Impinger #1 Empty		Empty Wt:	417.2	Initial Wt:	771.6
After Acetone/ Hexane Rinse:	758.6	FOLD IN FOIL		1 Gain:	0.0 ✓	Empty Wt:	770.2	After Acetone Rinse:	571.2	Final Wt:	771.6
Total TS1:	340.6 ✓	SEAL AND LABEL CONTAINER TS2		Colour:	WHITE	Final Wt:	770.2	Acetone Rinse Gain:	154.0 ✓	5 Gain:	—
						2 Gain:	0.0 ✓	After Hexane Rinse:	648.9	% Spent:	
						Colour:	Clear	Hexane Rinse Gain:	77.7 ✓		
								Total TS5:	231.7 ✓		
MARK FLUID LEVEL		SEAL TRAP				Impinger #2 Ethylene Glycol					
		WRAP IN FOIL				Empty Wt:	668.0				
SEAL AND LABEL CONTAINER TS1		LABEL AS CONTAINER TS3				Initial Wt:	724.6	*Use 100 - 150g acetone total & 100- 150g of hexane total for rinses*			
						Final Wt:	724.6				
						3 Gain:	0.0 ✓				
						Colour:	clear				
						Impinger #3 Empty					
						Empty Wt:	663.0				
						Final Wt:	663.0				
						4 Gain:	0.0 ✓	Impinger Box ID:			
						Colour:	—				
						Container TS4 Weights					
						Empty Wt:	416.7				
						With Imp Soln:	471.6				
						Imp Volume:	54.9 ✓				
						After ~100g H_2O Rinse:	632.6				
						Total TS4:	215.9 ✓				

Train & Proofing Identification	
Glassware Train Proofing Provided By:	Maxxam
Glassware Train ID:	5
Trap ID:	16
HPLC Batch No.:	MAXXAM
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By:	DT
Train Recovered By:	DT
Recovery Witnessed By:	
Date:	Nov 7, 16

CWTR = 1 + 2 + 3 + 4:	— ✓
WCBDA=5:	— ✓

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

JAN

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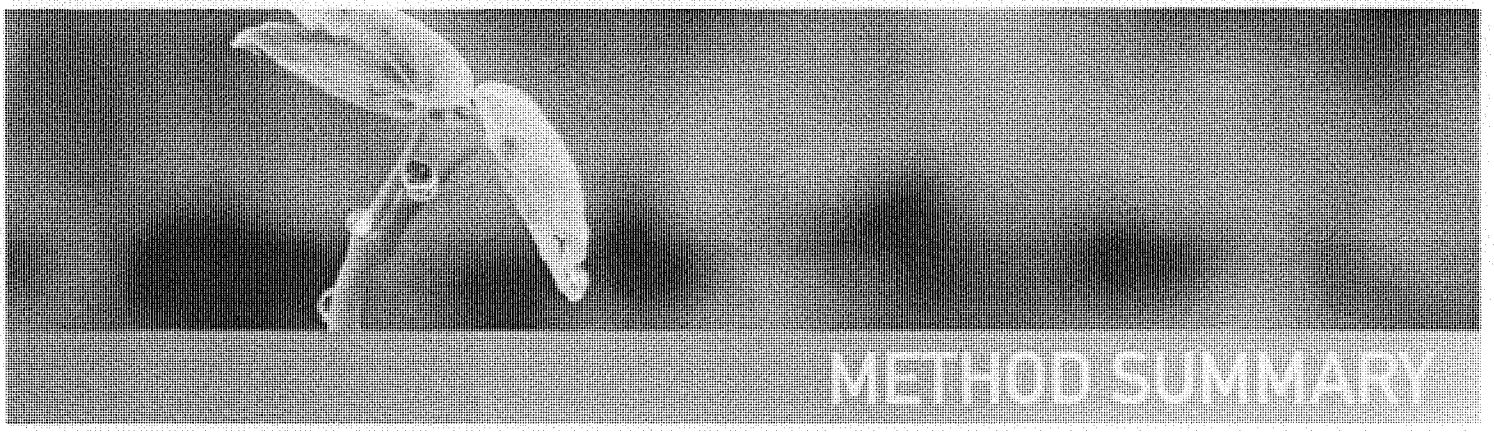
APPENDIX 10

SVOC Analytical Reports
(185 pages)



Definition of Estimated Detection Limit, Reportable Detection Limit and Method Detection Limit

Reference Method: COR WI-00012, COR WI-00050 & CAM WI-00095

Method Detection Limit (MDL):

It is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. In other words, if a substance is detected at or above the DL, it can be reliably stated (with 99% confidence) that the analyte is present (there is a 1% chance that the analyte is not present (a false positive)). Note that for reporting purposes, any result at or above the DL must also meet qualitative identification criteria required by the test method.

Note: The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a 99% confidence level. In other words, if a sample has a true concentration at the LOD, there is a minimum probability of 99% of reporting a "detection" (a measured value ≥ DL) and a 1% chance of reporting a non-detect (a false negative). The failure to obtain a "detection" should be reported as "<LOD," because the false negative rate at the LOD is 1%. Reporting the sample result as "<DL" is inappropriate because, as stated above, the false negative rate at the DL is 50%.

Reporting Detection Limit (RDL):

It is the lowest analyte concentration that can be reported with confidence for a specific method. (i.e. within specified limits of precision and accuracy during routine laboratory operations). The RDL is generally 5 to 10 times the MDL or equal to the lowest standard of the calibration curve but may be higher or lower in order to comply with specific client or regulatory requirements. Data less than the RDL are reported as "< RDL" or "ND." Any applicable sample dilution factors will be applied to these values and reported appropriately. Note the RDL is not a fixed multiple of the MDL, but the RDL must be greater than or equal to the MDL.

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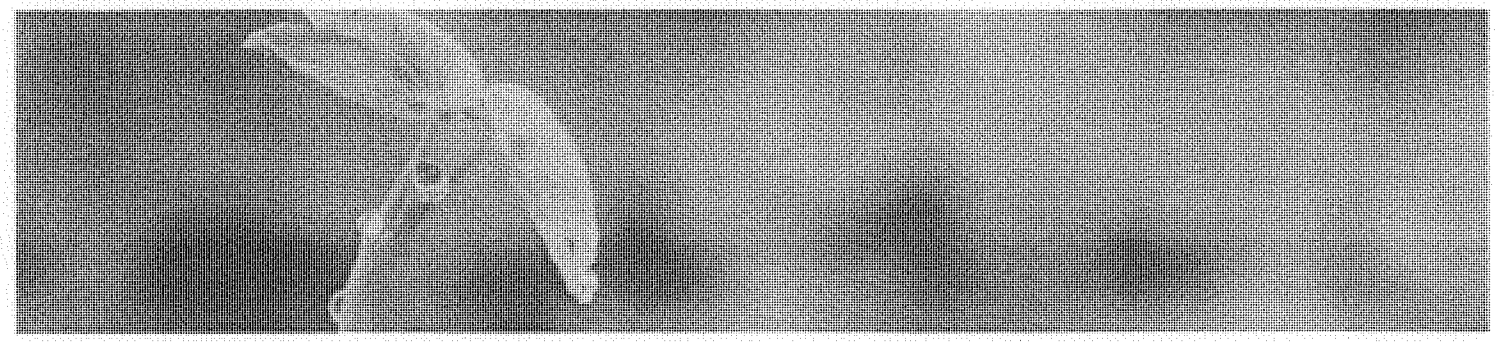

Estimated Detection Limit (EDL):

The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The EDL is generally 5 to 10 times the MDL or for High Resolution GC/MS it is method specified as 2.5 times the signal to noise ratio (S/N). For many analytes the EDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. Sample EDL's are highly matrix dependent. The EDL's in SW-846 are provided for guidance and may not always be achievable.

Signal to Noise Ratio (S/N) is a dimensionless measure of the relative strength of an analytical signal (S) to the average strength of the background instrumental noise (N) for a particular sample and is closely related to the detection level. The ratio is useful for determining the effect of the noise on the relative error of a measurement. The S/N ratio can be measured a variety of ways, but one convenient way to approximate the S/N ratio is to divide the arithmetic mean (average) of a series of replicates by the standard deviation of the replicate results. (Skoog & Leary 1992)

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Your P.O. #: 21707-J2279
Your Project #: 21707
Site Location: COVANTA

Attention:CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
L5J 2Y4

Report Date: 2016/10/17
Report #: R4214144
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B6L1075
Received: 2016/09/30, 15:41

Sample Matrix: Stack Sampling Train
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
2,3,7,8-TCDF Confirmation (M23)	6	N/A	2016/10/05	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	7	2016/09/30	2016/10/04	BRL SOP-00404	EPA M23/23A m
PCBs in a Sampling Train (1668Amod)	7	2016/09/30	2016/10/11	BRL SOP-00408	EPA 1668A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Clayton Johnson
Project Manager - Air Toxics, Source Evaluation
17 Oct 2016 19:44:10 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905)817-5769

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Lab Blank

Maxxam ID		DEA947							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 401-405	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<2.7	2.7	30	6.0	1.00	2.70	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	<3.6	3.6	30	6.0	1.00	3.60	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	<3.9	3.9	30	6.0	0.100	0.390	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	<3.9	3.9	30	6.0	0.100	0.390	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	<3.6	3.6	30	6.0	0.100	0.360	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	5.5	3.0	30	9.0	0.0100	0.0550	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	19.3	3.5	300	9.0	0.000300	0.00579	N/A	4687209
Total Tetra CDD *	pg	<9.0 (1)	9.0	30	N/A	N/A	N/A	0	4687209
Total Penta CDD *	pg	<6.4 (1)	6.4	30	N/A	N/A	N/A	0	4687209
Total Hexa CDD *	pg	<13 (1)	13	30	N/A	N/A	N/A	0	4687209
Total Hepta CDD *	pg	9.5	3.0	30	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	7.6	3.3	30	6.0	0.100	0.760	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	<7.0 (2)	7.0	30	6.0	0.0300	0.210	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	7.1	3.3	30	6.0	0.300	2.13	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	13.8	3.1	30	6.0	0.100	1.38	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	9.3	3.0	30	6.0	0.100	0.930	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	7.5	3.2	30	6.0	0.100	0.750	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	<3.4	3.4	30	6.0	0.100	0.340	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	17.1	3.2	30	9.0	0.0100	0.171	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	<3.8	3.8	30	6.0	0.0100	0.0380	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	5.6	3.5	300	15	0.000300	0.00168	N/A	4687209
Total Tetra CDF **	pg	16.7	3.3	30	N/A	N/A	N/A	3	4687209
Total Penta CDF **	pg	40.4	3.3	30	N/A	N/A	N/A	5	4687209
Total Hexa CDF **	pg	48.5	3.2	30	N/A	N/A	N/A	4	4687209
Total Hepta CDF **	pg	17.1	3.5	30	N/A	N/A	N/A	1	4687209
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	14.2	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA947							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 401-405	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4687209

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA948							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 16-20	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	891	36	300	6.0	1.00	891	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	1000	33	300	6.0	1.00	1000	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	427	36	300	6.0	0.100	42.7	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	663	36	300	6.0	0.100	66.3	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	1060 (1)	33	300	6.0	0.100	106	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	2020	43	300	9.0	0.0100	20.2	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	6030	40	3000	9.0	0.000300	1.81	N/A	4687209
Total Tetra CDD *	pg	11200	36	300	N/A	N/A	N/A	16	4687209
Total Penta CDD *	pg	7340	33	300	N/A	N/A	N/A	10	4687209
Total Hexa CDD *	pg	7190	35	300	N/A	N/A	N/A	7	4687209
Total Hepta CDD *	pg	4160	43	300	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	16000	45	300	6.0	0.100	1600	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	5580	38	300	6.0	0.0300	167	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	4730	38	300	6.0	0.300	1420	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	7310 (1)	42	300	6.0	0.100	731	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	4790	41	300	6.0	0.100	479	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	2730	45	300	6.0	0.100	273	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	233	47	300	6.0	0.100	23.3	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	11300	35	300	9.0	0.0100	113	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	930	41	300	6.0	0.0100	9.30	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	2700	37	3000	15	0.000300	0.810	N/A	4687209
Total Tetra CDF **	pg	164000	45	300	N/A	N/A	N/A	16	4687209
Total Penta CDF **	pg	81900	38	300	N/A	N/A	N/A	14	4687209
Total Hexa CDF **	pg	37500	43	300	N/A	N/A	N/A	14	4687209
Total Hepta CDF **	pg	16100	38	300	N/A	N/A	N/A	4	4687209
Confirmation 2,3,7,8-Tetra CDF **	pg	5100	110	300	N/A	0.100	510	N/A	4691254
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5850	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA948							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 16-20	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4691254
C13-1234678 HeptaCDD *	%	129	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	125	N/A	N/A	N/A	N/A	N/A	N/A	4687209

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
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N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

TS-41 IN

Maxxam ID		DEA949							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 21-25	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	721	56	300	6.0	1.00	721	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	1100	37	300	6.0	1.00	1100	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	439	31	300	6.0	0.100	43.9	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	679	31	300	6.0	0.100	67.9	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	1030 (1)	29	300	6.0	0.100	103	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	2430	43	300	9.0	0.0100	24.3	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	6680	33	3000	9.0	0.000300	2.00	N/A	4687209
Total Tetra CDD *	pg	8850	56	300	N/A	N/A	N/A	13	4687209
Total Penta CDD *	pg	8500	37	300	N/A	N/A	N/A	11	4687209
Total Hexa CDD *	pg	7110	30	300	N/A	N/A	N/A	7	4687209
Total Hepta CDD *	pg	5070	43	300	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	16300	39	300	6.0	0.100	1630	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	5720	41	300	6.0	0.0300	172	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	4710	41	300	6.0	0.300	1410	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	8070 (1)	35	300	6.0	0.100	807	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	5030	34	300	6.0	0.100	503	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	2970	37	300	6.0	0.100	297	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	166	39	300	6.0	0.100	16.6	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	13200	29	300	9.0	0.0100	132	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	922	34	300	6.0	0.0100	9.22	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	2930	34	3000	15	0.000300	0.879	N/A	4687209
Total Tetra CDF **	pg	164000	39	300	N/A	N/A	N/A	16	4687209
Total Penta CDF **	pg	86400	41	300	N/A	N/A	N/A	13	4687209
Total Hexa CDF **	pg	43100	36	300	N/A	N/A	N/A	14	4687209
Total Hepta CDF **	pg	18000	31	300	N/A	N/A	N/A	4	4687209
Confirmation 2,3,7,8-Tetra CDF **	pg	4500	140	300	N/A	0.100	450	N/A	4691254
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5860	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA949							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 21-25	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	4691254
C13-1234678 HeptaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	119	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4687209

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6L1075
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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA950							
Sampling Date		2016/09/30				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 26-30	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	810	36	300	6.0	1.00	810	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	893	37	300	6.0	1.00	893	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	352	35	300	6.0	0.100	35.2	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	537	35	300	6.0	0.100	53.7	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	501	32	300	6.0	0.100	50.1	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	2020	38	300	9.0	0.0100	20.2	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	7020	36	3000	9.0	0.000300	2.11	N/A	4687209
Total Tetra CDD *	pg	10100	36	300	N/A	N/A	N/A	15	4687209
Total Penta CDD *	pg	6280	37	300	N/A	N/A	N/A	10	4687209
Total Hexa CDD *	pg	5660	34	300	N/A	N/A	N/A	8	4687209
Total Hepta CDD *	pg	4150	38	300	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	15500	31	300	6.0	0.100	1550	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	5630	43	300	6.0	0.0300	169	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	4340	43	300	6.0	0.300	1300	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	6590 (1)	35	300	6.0	0.100	659	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	4210	33	300	6.0	0.100	421	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	2330	37	300	6.0	0.100	233	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	152	38	300	6.0	0.100	15.2	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	10500	30	300	9.0	0.0100	105	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	810	35	300	6.0	0.0100	8.10	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	2660	39	3000	15	0.000300	0.798	N/A	4687209
Total Tetra CDF **	pg	163000	31	300	N/A	N/A	N/A	17	4687209
Total Penta CDF **	pg	79100	43	300	N/A	N/A	N/A	14	4687209
Total Hexa CDF **	pg	32600	36	300	N/A	N/A	N/A	14	4687209
Total Hepta CDF **	pg	14900	32	300	N/A	N/A	N/A	4	4687209
Confirmation 2,3,7,8-Tetra CDF **	pg	4760	150	300	N/A	0.100	476	N/A	4691254
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5250	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA950							
Sampling Date		2016/09/30				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 26-30	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4691254
C13-1234678 HeptaCDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	4687209

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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ORTECH Environmental
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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

TH- LH OUT

Maxxam ID		DEA951							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 116-120	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.5	3.5	30	6.0	1.00	3.50	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	8.5	4.1	30	6.0	1.00	8.50	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	22.1	3.3	30	6.0	0.100	2.21	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	59.0	3.3	30	6.0	0.100	5.90	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	51.7 (1)	3.0	30	6.0	0.100	5.17	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	583	3.4	30	9.0	0.0100	5.83	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	1130	3.7	300	9.0	0.000300	0.339	N/A	4687209
Total Tetra CDD *	pg	159	3.5	30	N/A	N/A	N/A	4	4687209
Total Penta CDD *	pg	326	4.1	30	N/A	N/A	N/A	7	4687209
Total Hexa CDD *	pg	1190	3.2	30	N/A	N/A	N/A	7	4687209
Total Hepta CDD *	pg	1290	3.4	30	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	67.6	3.2	30	6.0	0.100	6.76	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	14.1	4.0	30	6.0	0.0300	0.423	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	21.9	4.0	30	6.0	0.300	6.57	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	54.1 (1)	3.0	30	6.0	0.100	5.41	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	<28 (2)	28	30	6.0	0.100	2.80	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	37.3	3.2	30	6.0	0.100	3.73	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	<3.7 (2)	3.7	30	6.0	0.100	0.370	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	205	2.4	30	9.0	0.0100	2.05	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	23.0	2.9	30	6.0	0.0100	0.230	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	177	2.9	300	15	0.000300	0.0531	N/A	4687209
Total Tetra CDF **	pg	722	3.2	30	N/A	N/A	N/A	15	4687209
Total Penta CDF **	pg	195	4.0	30	N/A	N/A	N/A	8	4687209
Total Hexa CDF **	pg	245	3.1	30	N/A	N/A	N/A	10	4687209
Total Hepta CDF **	pg	337	2.6	30	N/A	N/A	N/A	4	4687209
Confirmation 2,3,7,8-Tetra CDF **	pg	17	11	30	N/A	0.100	1.70	N/A	4691254

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA951							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 116-120	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	54.8	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4691254
C13-1234678 HeptaCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687209

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
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** CDF = Chloro Dibenzo-p-Furan
* CDD = Chloro Dibenzo-p-Dioxin

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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

TS-41 out

Maxxam ID		DEA952							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 121-125	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.6	3.6	30	6.0	1.00	3.60	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	6.3	2.7	30	6.0	1.00	6.30	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	17.4	3.1	30	6.0	0.100	1.74	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	47.4	3.2	30	6.0	0.100	4.74	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	39.2 (1)	2.9	30	6.0	0.100	3.92	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	452	2.8	30	9.0	0.0100	4.52	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	953	3.6	300	9.0	0.000300	0.286	N/A	4687209
Total Tetra CDD *	pg	91.6	3.6	30	N/A	N/A	N/A	2	4687209
Total Penta CDD *	pg	182	2.7	30	N/A	N/A	N/A	5	4687209
Total Hexa CDD *	pg	1050	3.0	30	N/A	N/A	N/A	7	4687209
Total Hepta CDD *	pg	1000	2.8	30	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	41.8	3.6	30	6.0	0.100	4.18	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	9.2	3.6	30	6.0	0.0300	0.276	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	15.7	3.6	30	6.0	0.300	4.71	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	43.4 (1)	2.9	30	6.0	0.100	4.34	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	<21 (2)	21	30	6.0	0.100	2.10	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	31.7	3.1	30	6.0	0.100	3.17	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	<3.2	3.2	30	6.0	0.100	0.320	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	168	3.5	30	9.0	0.0100	1.68	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	14.5 (3)	4.1	30	6.0	0.0100	0.145	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	142	2.9	300	15	0.000300	0.0426	N/A	4687209
Total Tetra CDF **	pg	296	3.6	30	N/A	N/A	N/A	15	4687209
Total Penta CDF **	pg	144	3.6	30	N/A	N/A	N/A	9	4687209
Total Hexa CDF **	pg	195	3.0	30	N/A	N/A	N/A	9	4687209
Total Hepta CDF **	pg	269	3.7	30	N/A	N/A	N/A	4	4687209

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.
(3) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA952							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 121-125	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Confirmation 2,3,7,8-Tetra CDF **	pg	<8.3	8.3	30	N/A	0.100	0.830	N/A	4691254
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	42.7	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4691254
C13-1234678 HeptaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	128	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687209

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Tr.-Ul Out

Maxxam ID		DEA953							
Sampling Date		2016/09/30				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 126-128	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.9	3.9	30	6.0	1.00	3.90	N/A	4687209
1,2,3,7,8-Penta CDD *	pg	8.5	2.8	30	6.0	1.00	8.50	N/A	4687209
1,2,3,4,7,8-Hexa CDD *	pg	19.0	3.0	30	6.0	0.100	1.90	N/A	4687209
1,2,3,6,7,8-Hexa CDD *	pg	55.7	3.1	30	6.0	0.100	5.57	N/A	4687209
1,2,3,7,8,9-Hexa CDD *	pg	28.3	2.8	30	6.0	0.100	2.83	N/A	4687209
1,2,3,4,6,7,8-Hepta CDD *	pg	550	2.7	30	9.0	0.0100	5.50	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDD *	pg	1320	3.0	300	9.0	0.000300	0.396	N/A	4687209
Total Tetra CDD *	pg	150	3.9	30	N/A	N/A	N/A	5	4687209
Total Penta CDD *	pg	298	2.8	30	N/A	N/A	N/A	6	4687209
Total Hexa CDD *	pg	1130	3.0	30	N/A	N/A	N/A	8	4687209
Total Hepta CDD *	pg	1160	2.7	30	N/A	N/A	N/A	2	4687209
2,3,7,8-Tetra CDF **	pg	38.9	3.7	30	6.0	0.100	3.89	N/A	4687209
1,2,3,7,8-Penta CDF **	pg	10.5	2.9	30	6.0	0.0300	0.315	N/A	4687209
2,3,4,7,8-Penta CDF **	pg	19.9	2.9	30	6.0	0.300	5.97	N/A	4687209
1,2,3,4,7,8-Hexa CDF **	pg	20.2	3.0	30	6.0	0.100	2.02	N/A	4687209
1,2,3,6,7,8-Hexa CDF **	pg	<25 (1)	25	30	6.0	0.100	2.50	N/A	4687209
2,3,4,6,7,8-Hexa CDF **	pg	34.3	3.1	30	6.0	0.100	3.43	N/A	4687209
1,2,3,7,8,9-Hexa CDF **	pg	<3.7 (1)	3.7	30	6.0	0.100	0.370	N/A	4687209
1,2,3,4,6,7,8-Hepta CDF **	pg	190	2.8	30	9.0	0.0100	1.90	N/A	4687209
1,2,3,4,7,8,9-Hepta CDF **	pg	21.4	3.3	30	6.0	0.0100	0.214	N/A	4687209
1,2,3,4,6,7,8,9-Octa CDF **	pg	186	3.4	300	15	0.000300	0.0558	N/A	4687209
Total Tetra CDF **	pg	274	3.7	30	N/A	N/A	N/A	14	4687209
Total Penta CDF **	pg	210	2.9	30	N/A	N/A	N/A	12	4687209
Total Hexa CDF **	pg	200	3.0	30	N/A	N/A	N/A	11	4687209
Total Hepta CDF **	pg	301	3.0	30	N/A	N/A	N/A	4	4687209
Confirmation 2,3,7,8-Tetra CDF **	pg	12.7	7.3	30	N/A	0.100	1.27	N/A	4691254
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	46.6	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DEA953							
Sampling Date		2016/09/30				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 126-128	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4691254
C13-1234678 HeptaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234678 HeptaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDD *	%	128	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123478 HexaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123678 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-12378 PentaCDF **	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-123789 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-23478 PentaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4687209
C13-Octachlorodibenzo-p-Dioxin	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4687209
Cl37-2378 TetraCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4687209

EDL = Estimated Detection Limit
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Oil- Blank

Maxxam ID		DEA947							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 401-405	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<37	37	300	N/A	0.00010	0.0037	N/A	4684142
344'5-TetraCB-(81)	pg	<38	38	300	N/A	0.00030	0.011	N/A	4684142
233'44'-PentaCB-(105)	pg	29	22	300	N/A	0.000030	0.00087	N/A	4684142
2344'5-PentaCB-(114)	pg	<21	21	300	N/A	0.000030	0.00063	N/A	4684142
23'44'5-PentaCB-(118)	pg	68	21	300	N/A	0.000030	0.0020	N/A	4684142
23'44'5'-PentaCB-(123)	pg	<24	24	300	N/A	0.000030	0.00072	N/A	4684142
33'44'5-PentaCB-(126)	pg	<22	22	300	N/A	0.10	2.2	N/A	4684142
HexaCB-(156)+(157)	pg	<16	16	600	N/A	0.000030	0.00048	N/A	4684142
23'44'55'-HexaCB-(167)	pg	<17	17	300	N/A	0.000030	0.00051	N/A	4684142
33'44'55'-HexaCB-(169)	pg	<17	17	300	N/A	0.030	0.51	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	<19	19	300	N/A	0.000030	0.00057	N/A	4684142
Total PCB	pg	1200	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	2.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DEA948							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 16-20	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	430	38	300	N/A	0.00010	0.043	N/A	4684142
344'5-TetraCB-(81)	pg	130	38	300	N/A	0.00030	0.039	N/A	4684142
233'44'-PentaCB-(105)	pg	340	36	300	N/A	0.000030	0.010	N/A	4684142
2344'5-PentaCB-(114)	pg	68	34	300	N/A	0.000030	0.0020	N/A	4684142
23'44'5-PentaCB-(118)	pg	740	36	300	N/A	0.000030	0.022	N/A	4684142
23'44'5'-PentaCB-(123)	pg	110	40	300	N/A	0.000030	0.0033	N/A	4684142
33'44'5-PentaCB-(126)	pg	350	36	300	N/A	0.10	35	N/A	4684142
HexaCB-(156)+(157)	pg	320	26	600	N/A	0.000030	0.0096	N/A	4684142
23'44'55'-HexaCB-(167)	pg	170	28	300	N/A	0.000030	0.0051	N/A	4684142
33'44'55'-HexaCB-(169)	pg	130	28	300	N/A	0.030	3.9	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	180	27	300	N/A	0.000030	0.0054	N/A	4684142
Total PCB	pg	28000	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	39	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	57	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4684142

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TS-L41 10

Maxxam ID		DEA949							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 21-25	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	510	38	300	N/A	0.00010	0.051	N/A	4684142
344'5-TetraCB-(81)	pg	140	38	300	N/A	0.00030	0.042	N/A	4684142
233'44'-PentaCB-(105)	pg	550	27	300	N/A	0.000030	0.017	N/A	4684142
2344'5-PentaCB-(114)	pg	94	26	300	N/A	0.000030	0.0028	N/A	4684142
23'44'5-PentaCB-(118)	pg	1400	27	300	N/A	0.000030	0.042	N/A	4684142
23'44'5'-PentaCB-(123)	pg	120	30	300	N/A	0.000030	0.0036	N/A	4684142
33'44'5-PentaCB-(126)	pg	400	27	300	N/A	0.10	40	N/A	4684142
HexaCB-(156)+(157)	pg	430	25	600	N/A	0.000030	0.013	N/A	4684142
23'44'55'-HexaCB-(167)	pg	190	26	300	N/A	0.000030	0.0057	N/A	4684142
33'44'55'-HexaCB-(169)	pg	170	26	300	N/A	0.030	5.1	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	220	26	300	N/A	0.000030	0.0066	N/A	4684142
Total PCB	pg	49000	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	45	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4684142

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

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N/A = Not Applicable

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DEA950							
Sampling Date		2016/09/30				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 26-30	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	460	31	300	N/A	0.00010	0.046	N/A	4684142
344'5-TetraCB-(81)	pg	130	32	300	N/A	0.00030	0.039	N/A	4684142
233'44'-PentaCB-(105)	pg	400	33	300	N/A	0.000030	0.012	N/A	4684142
2344'5-PentaCB-(114)	pg	84	32	300	N/A	0.000030	0.0025	N/A	4684142
23'44'5-PentaCB-(118)	pg	860	33	300	N/A	0.000030	0.026	N/A	4684142
23'44'5'-PentaCB-(123)	pg	98	37	300	N/A	0.000030	0.0029	N/A	4684142
33'44'5-PentaCB-(126)	pg	330	34	300	N/A	0.10	33	N/A	4684142
HexaCB-(156)+(157)	pg	320	42	600	N/A	0.000030	0.0096	N/A	4684142
23'44'55'-HexaCB-(167)	pg	170	45	300	N/A	0.000030	0.0051	N/A	4684142
33'44'55'-HexaCB-(169)	pg	130	45	300	N/A	0.030	3.9	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	190	20	300	N/A	0.000030	0.0057	N/A	4684142
Total PCB	pg	32000	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	37	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4684142

EDL = Estimated Detection Limit

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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N/A = Not Applicable

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TH- Lal Out

Maxxam ID		DEA951							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 116-120	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	310	41	300	N/A	0.00010	0.031	N/A	4684142
344'5-TetraCB-(81)	pg	<42	42	300	N/A	0.00030	0.013	N/A	4684142
233'44'-PentaCB-(105)	pg	2900	40	300	N/A	0.000030	0.087	N/A	4684142
2344'5-PentaCB-(114)	pg	300	38	300	N/A	0.000030	0.0090	N/A	4684142
23'44'5-PentaCB-(118)	pg	13000	39	300	N/A	0.000030	0.39	N/A	4684142
23'44'5'-PentaCB-(123)	pg	150	44	300	N/A	0.000030	0.0045	N/A	4684142
33'44'5-PentaCB-(126)	pg	<40	40	300	N/A	0.10	4.0	N/A	4684142
HexaCB-(156)+(157)	pg	140	23	600	N/A	0.000030	0.0042	N/A	4684142
23'44'55'-HexaCB-(167)	pg	49	25	300	N/A	0.000030	0.0015	N/A	4684142
33'44'55'-HexaCB-(169)	pg	<24	24	300	N/A	0.030	0.72	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	<17	17	300	N/A	0.000030	0.00051	N/A	4684142
Total PCB	pg	480000	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5.3	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	65	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4684142

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TS-4 Out

Maxxam ID		DEA952							
Sampling Date		2016/09/29				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 121-125	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	430	28	300	N/A	0.00010	0.043	N/A	4684142
344'5-TetraCB-(81)	pg	<28	28	300	N/A	0.00030	0.0084	N/A	4684142
233'44'-PentaCB-(105)	pg	3300	24	300	N/A	0.000030	0.099	N/A	4684142
2344'5-PentaCB-(114)	pg	300	23	300	N/A	0.000030	0.0090	N/A	4684142
23'44'5-PentaCB-(118)	pg	14000	24	300	N/A	0.000030	0.42	N/A	4684142
23'44'5'-PentaCB-(123)	pg	130	27	300	N/A	0.000030	0.0039	N/A	4684142
33'44'5-PentaCB-(126)	pg	<24	24	300	N/A	0.10	2.4	N/A	4684142
HexaCB-(156)+(157)	pg	520	22	600	N/A	0.000030	0.016	N/A	4684142
23'44'55'-HexaCB-(167)	pg	180	24	300	N/A	0.000030	0.0054	N/A	4684142
33'44'55'-HexaCB-(169)	pg	<24	24	300	N/A	0.030	0.72	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	37	18	300	N/A	0.000030	0.0011	N/A	4684142
Total PCB	pg	450000	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4684142

EDL = Estimated Detection Limit
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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Tle-Ul Out

Maxxam ID		DEA953							
Sampling Date		2016/09/30				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 126-128	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	100	41	300	N/A	0.00010	0.010	N/A	4684142
344'5-TetraCB-(81)	pg	<42	42	300	N/A	0.00030	0.013	N/A	4684142
233'44'-PentaCB-(105)	pg	770	35	300	N/A	0.000030	0.023	N/A	4684142
2344'5-PentaCB-(114)	pg	57	33	300	N/A	0.000030	0.0017	N/A	4684142
23'44'5-PentaCB-(118)	pg	2400	34	300	N/A	0.000030	0.072	N/A	4684142
23'44'5'-PentaCB-(123)	pg	<38	38	300	N/A	0.000030	0.0011	N/A	4684142
33'44'5-PentaCB-(126)	pg	<35	35	300	N/A	0.10	3.5	N/A	4684142
HexaCB-(156)+(157)	pg	260	17	600	N/A	0.000030	0.0078	N/A	4684142
23'44'55'-HexaCB-(167)	pg	92	18	300	N/A	0.000030	0.0028	N/A	4684142
33'44'55'-HexaCB-(169)	pg	<18	18	300	N/A	0.030	0.54	N/A	4684142
233'44'55'-HeptaCB-(189)	pg	59	15	300	N/A	0.000030	0.0018	N/A	4684142
Total PCB	pg	88000	N/A	N/A	N/A	N/A	N/A	N/A	4684142
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	4.2	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5-HexaCB-(156)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'5'-HexaCB-(157)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-233'44'-PentaCB-(105)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'55'-HexaCB-(167)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2344'5-PentaCB-(114)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-23'44'5-PentaCB-(118)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-2'344'5-PentaCB-(123)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'55'-HexaCB-(169)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'5-PentaCB-(126)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-33'44'-TetraCB-(77)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4684142
C13-344'5-TetraCB-(81)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4684142

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DEA947
Sample ID: 16-21707-SVOC 401-405
Matrix: Stack Sampling Train

Collected: 2016/09/29
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

Maxxam ID: DEA948
Sample ID: 16-21707-SVOC 16- 20
Matrix: Stack Sampling Train

Collected: 2016/09/29
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4691254	N/A	2016/10/05	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

Maxxam ID: DEA949
Sample ID: 16-21707-SVOC 21- 25
Matrix: Stack Sampling Train

Collected: 2016/09/29
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4691254	N/A	2016/10/05	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

Maxxam ID: DEA950
Sample ID: 16-21707-SVOC 26- 30
Matrix: Stack Sampling Train

Collected: 2016/09/30
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4691254	N/A	2016/10/05	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

Maxxam ID: DEA951
Sample ID: 16-21707-SVOC 116-120
Matrix: Stack Sampling Train

Collected: 2016/09/29
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4691254	N/A	2016/10/05	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

Maxxam ID: DEA952
Sample ID: 16-21707-SVOC 121-125
Matrix: Stack Sampling Train

Collected: 2016/09/29
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4691254	N/A	2016/10/05	Vica Cioranic

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Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DEA952
Sample ID: 16-21707-SVOC 121-125
Matrix: Stack Sampling Train

Collected: 2016/09/29
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

Maxxam ID: DEA953
Sample ID: 16-21707-SVOC 126-128
Matrix: Stack Sampling Train

Collected: 2016/09/30
Shipped:
Received: 2016/09/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4691254	N/A	2016/10/05	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4687209	2016/09/30	2016/10/04	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4684142	2016/09/30	2016/10/11	Branko Vrzic

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GENERAL COMMENTS

Sample DEA948-01 : 10X DILUTION

Sample DEA949-01 : 10X DILUTION

Sample DEA950-01 : 10X DILUTION

Results relate only to the items tested.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4684142	BY	Spiked Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/11		101	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/11		96	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/11		96	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/11		101	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/11		98	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/11		98	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/11		99	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/11		100	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/11		79	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/11		97	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/11		98	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/11		95	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/11		92	%	50 - 150
			344'5-TetraCB-(81)	2016/10/11		89	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/11		94	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/11		91	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/11		93	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/11		93	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/11		92	%	50 - 150
			HexaCB-(156)+(157)	2016/10/11		93	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/11		90	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/11		94	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/11		83	%	50 - 150
4684142	BY	Spiked Blank DUP	C13-233'44'55'-HeptaCB-(189)	2016/10/11		86	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/11		90	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/11		90	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/11		95	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/11		89	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/11		93	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/11		91	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/11		95	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/11		74	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/11		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/11		95	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/11		94	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/11		87	%	50 - 150
			344'5-TetraCB-(81)	2016/10/11		86	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/11		90	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/11		88	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/11		89	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/11		89	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/11		88	%	50 - 150
			HexaCB-(156)+(157)	2016/10/11		92	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/11		92	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/11		90	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/11		89	%	50 - 150
4684142	BY	RPD	33'44'-TetraCB-(77)	2016/10/11	5.6		%	30
			344'5-TetraCB-(81)	2016/10/11	3.4		%	30
			233'44'-PentaCB-(105)	2016/10/11	4.3		%	30
			2344'5-PentaCB-(114)	2016/10/11	3.4		%	30
			23'44'5-PentaCB-(118)	2016/10/11	4.4		%	30
			23'44'5'-PentaCB-(123)	2016/10/11	4.4		%	30

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Client Project #: 21707
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'44'5-PentaCB-(126)	2016/10/11	4.4		%	30
			HexaCB-(156)+(157)	2016/10/11	1.1		%	30
			23'44'55'-HexaCB-(167)	2016/10/11	2.2		%	30
			33'44'55'-HexaCB-(169)	2016/10/11	4.3		%	30
			233'44'55'-HeptaCB-(189)	2016/10/11	7.0		%	30
4684142	BY	Method Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/11		89	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/11		87	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/11		87	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/11		89	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/11		88	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/11		88	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/11		91	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/11		91	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/11		73	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/11		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/11		92	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/11		91	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/11	<12		pg	
			344'5-TetraCB-(81)	2016/10/11	<13		pg	
			233'44'-PentaCB-(105)	2016/10/11	<7.4		pg	
			2344'5-PentaCB-(114)	2016/10/11	<7.1		pg	
			23'44'5-PentaCB-(118)	2016/10/11	<7.4		pg	
			23'44'5'-PentaCB-(123)	2016/10/11	<8.2		pg	
			33'44'5-PentaCB-(126)	2016/10/11	<7.5		pg	
			HexaCB-(156)+(157)	2016/10/11	<10		pg	
			23'44'55'-HexaCB-(167)	2016/10/11	<11		pg	
			33'44'55'-HexaCB-(169)	2016/10/11	<11		pg	
			233'44'55'-HeptaCB-(189)	2016/10/11	<20		pg	
			Total PCB	2016/10/11	0.0000000000000		pg	
4687209	OBC	Spiked Blank	C13-1234678 HeptaCDD	2016/10/04		110	%	25 - 130
			C13-1234678 HeptaCDF	2016/10/04		97	%	25 - 130
			C13-123678 HexaCDD	2016/10/04		102	%	40 - 130
			C13-123678 HexaCDF	2016/10/04		98	%	40 - 130
			C13-12378 PentaCDD	2016/10/04		117	%	40 - 130
			C13-12378 PentaCDF	2016/10/04		117	%	40 - 130
			C13-123789 HexaCDF	2016/10/04		91	%	40 - 130
			C13-2378 TetraCDD	2016/10/04		94	%	40 - 130
			C13-2378 TetraCDF	2016/10/04		101	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/10/04		74	%	25 - 130
			2,3,7,8-Tetra CDD	2016/10/04		106	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/10/04		98	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/10/04		100	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/10/04		108	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/10/04		106	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/10/04		82	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/04		106	%	80 - 140
			2,3,7,8-Tetra CDF	2016/10/04		112	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/10/04		101	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/10/04		110	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/10/04		111	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/10/04		114	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/10/04		119	%	80 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDF	2016/10/04		112	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/10/04		103	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/10/04		95	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/04		106	%	80 - 140
4687209	OBC	Spiked Blank DUP	C13-1234678 HeptaCDD	2016/10/04		99	%	25 - 130
			C13-1234678 HeptaCDF	2016/10/04		90	%	25 - 130
			C13-123678 HexaCDD	2016/10/04		98	%	40 - 130
			C13-123678 HexaCDF	2016/10/04		95	%	40 - 130
			C13-12378 PentaCDD	2016/10/04		110	%	40 - 130
			C13-12378 PentaCDF	2016/10/04		116	%	40 - 130
			C13-123789 HexaCDF	2016/10/04		89	%	40 - 130
			C13-2378 TetraCDD	2016/10/04		94	%	40 - 130
			C13-2378 TetraCDF	2016/10/04		100	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/10/04		68	%	25 - 130
			2,3,7,8-Tetra CDD	2016/10/04		107	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/10/04		95	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/10/04		104	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/10/04		101	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/10/04		109	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/10/04		81	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/04		106	%	80 - 140
			2,3,7,8-Tetra CDF	2016/10/04		114	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/10/04		103	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/10/04		112	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/10/04		109	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/10/04		113	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/10/04		116	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2016/10/04		109	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/10/04		104	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/10/04		93	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/04		104	%	80 - 140
4687209	OBC	RPD	2,3,7,8-Tetra CDD	2016/10/04	NC		%	20
			1,2,3,7,8-Penta CDD	2016/10/04	NC		%	20
			1,2,3,4,7,8-Hexa CDD	2016/10/04	NC		%	20
			1,2,3,6,7,8-Hexa CDD	2016/10/04	NC		%	20
			1,2,3,7,8,9-Hexa CDD	2016/10/04	NC		%	20
			1,2,3,4,6,7,8-Hepta CDD	2016/10/04	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/04	NC		%	20
			2,3,7,8-Tetra CDF	2016/10/04	NC		%	20
			1,2,3,7,8-Penta CDF	2016/10/04	NC		%	20
			2,3,4,7,8-Penta CDF	2016/10/04	NC		%	20
			1,2,3,4,7,8-Hexa CDF	2016/10/04	NC		%	20
			1,2,3,6,7,8-Hexa CDF	2016/10/04	NC		%	20
			2,3,4,6,7,8-Hexa CDF	2016/10/04	NC		%	20
			1,2,3,7,8,9-Hexa CDF	2016/10/04	NC		%	20
			1,2,3,4,6,7,8-Hepta CDF	2016/10/04	NC		%	20
			1,2,3,4,7,8,9-Hepta CDF	2016/10/04	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/04	NC		%	20
4687209	OBC	Method Blank	C13-1234678 HeptaCDD	2016/10/04		109	%	25 - 130
			C13-1234678 HeptaCDF	2016/10/04		97	%	25 - 130
			C13-123678 HexaCDD	2016/10/04		103	%	40 - 130
			C13-123678 HexaCDF	2016/10/04		99	%	40 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-12378 PentaCDD	2016/10/04		105	%	40 - 130
			C13-12378 PentaCDF	2016/10/04		108	%	40 - 130
			C13-123789 HexaCDF	2016/10/04		93	%	40 - 130
			C13-2378 TetraCDD	2016/10/04		95	%	40 - 130
			C13-2378 TetraCDF	2016/10/04		100	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/10/04		75	%	25 - 130
			2,3,7,8-Tetra CDD	2016/10/04	<2.9, EDL=2.9		pg	
			1,2,3,7,8-Penta CDD	2016/10/04	<3.4, EDL=3.4		pg	
			1,2,3,4,7,8-Hexa CDD	2016/10/04	<4.1, EDL=4.1		pg	
			1,2,3,6,7,8-Hexa CDD	2016/10/04	<4.2, EDL=4.2		pg	
			1,2,3,7,8,9-Hexa CDD	2016/10/04	<3.8, EDL=3.8		pg	
			1,2,3,4,6,7,8-Hepta CDD	2016/10/04	5.5, EDL=3.1		pg	
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/04	32.1, EDL=3.3		pg	
			Total Tetra CDD	2016/10/04	14.5, EDL=2.9		pg	
			Total Penta CDD	2016/10/04	6.2, EDL=3.4		pg	
			Total Hexa CDD	2016/10/04	<21, EDL=21 (1)		pg	
			Total Hepta CDD	2016/10/04	11.7, EDL=3.1		pg	
			2,3,7,8-Tetra CDF	2016/10/04	<3.7, EDL=3.7		pg	
			1,2,3,7,8-Penta CDF	2016/10/04	<2.8, EDL=2.8		pg	
			2,3,4,7,8-Penta CDF	2016/10/04	<2.8, EDL=2.8		pg	
			1,2,3,4,7,8-Hexa CDF	2016/10/04	3.5, EDL=2.8		pg	
			1,2,3,6,7,8-Hexa CDF	2016/10/04	<2.7, EDL=2.7		pg	
			2,3,4,6,7,8-Hexa CDF	2016/10/04	<2.9, EDL=2.9		pg	
			1,2,3,7,8,9-Hexa CDF	2016/10/04	<3.0, EDL=3.0		pg	
			1,2,3,4,6,7,8-Hepta CDF	2016/10/04	3.9, EDL=2.9		pg	
			1,2,3,4,7,8,9-Hepta CDF	2016/10/04	<3.4, EDL=3.4		pg	
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/04	5.4, EDL=3.3		pg	

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Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Tetra CDF	2016/10/04	<3.7, EDL=3.7		pg	
			Total Penta CDF	2016/10/04	<2.8, EDL=2.8		pg	
			Total Hexa CDF	2016/10/04	3.5, EDL=2.8		pg	
			Total Hepta CDF	2016/10/04	3.9, EDL=3.1		pg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam
A Bureau Veritas Group Company

Maxxam Job #: B6L1075
Report Date: 2016/10/17

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Branko Vrzic, A.SC.T., Senior Analyst, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Your P.O. #: 21707-J2279
Your Project #: 21707
Site Location: COVANTA

Attention:CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
L5J 2Y4

Report Date: 2016/10/14
Report #: R4208838
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6K7956
Received: 2016/09/27, 19:39

Sample Matrix: Stack Sampling Train
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
2,3,7,8-TCDF Confirmation (M23)	8	N/A	2016/10/03	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	8	2016/09/28	2016/10/02	BRL SOP-00404	EPA M23/23A m
PCBs in a Sampling Train (1668Amod)	7	2016/09/28	2016/10/10	BRL SOP-00408	EPA 1668A m
PCBs in a Sampling Train (1668Amod)	1	2016/09/28	2016/10/13	BRL SOP-00408	EPA 1668A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Clayton Johnson
Project Manager - Air Toxics, Source Evaluation
14 Oct 2016 17:56:06 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905)817-5769

==========

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Maxxam
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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM231							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 1-5	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	822	39	300	6.0	1.00	822	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	1030	43	300	6.0	1.00	1030	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	448	31	300	6.0	0.100	44.8	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	677	32	300	6.0	0.100	67.7	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	564	29	300	6.0	0.100	56.4	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	2920	32	300	9.0	0.0100	29.2	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	10200	42	3000	9.0	0.000300	3.06	N/A	4685199
Total Tetra CDD *	pg	11200	39	300	N/A	N/A	N/A	14	4685199
Total Penta CDD *	pg	8500	43	300	N/A	N/A	N/A	12	4685199
Total Hexa CDD *	pg	7690	31	300	N/A	N/A	N/A	8	4685199
Total Hepta CDD *	pg	6010	32	300	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	15300	54	300	6.0	0.100	1530	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	5130	39	300	6.0	0.0300	154	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	4360	39	300	6.0	0.300	1310	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	3940	38	300	6.0	0.100	394	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	4110	36	300	6.0	0.100	411	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	2250	40	300	6.0	0.100	225	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	197	42	300	6.0	0.100	19.7	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	9430	33	300	9.0	0.0100	94.3	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	739	39	300	6.0	0.0100	7.39	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	1880	41	3000	15	0.000300	0.564	N/A	4685199
Total Tetra CDF **	pg	154000	54	300	N/A	N/A	N/A	16	4685199
Total Penta CDF **	pg	71700	39	300	N/A	N/A	N/A	13	4685199
Total Hexa CDF **	pg	32800	39	300	N/A	N/A	N/A	15	4685199
Total Hepta CDF **	pg	13600	36	300	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	5010	68	300	N/A	0.100	501	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5170	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4687624

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam
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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM231							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 1-5	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	125	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM232							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 6-10	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	640	37	300	6.0	1.00	640	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	795	43	300	6.0	1.00	795	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	355	36	300	6.0	0.100	35.5	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	606	36	300	6.0	0.100	60.6	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	528	33	300	6.0	0.100	52.8	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	2260	34	300	9.0	0.0100	22.6	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	5590	35	3000	9.0	0.000300	1.68	N/A	4685199
Total Tetra CDD *	pg	8950	37	300	N/A	N/A	N/A	15	4685199
Total Penta CDD *	pg	6570	43	300	N/A	N/A	N/A	12	4685199
Total Hexa CDD *	pg	6470	35	300	N/A	N/A	N/A	8	4685199
Total Hepta CDD *	pg	4640	34	300	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	10800	36	300	6.0	0.100	1080	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	3790	48	300	6.0	0.0300	114	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	3480	49	300	6.0	0.300	1040	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	3220	44	300	6.0	0.100	322	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	3290	43	300	6.0	0.100	329	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	2080	47	300	6.0	0.100	208	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	140	49	300	6.0	0.100	14.0	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	7260	29	300	9.0	0.0100	72.6	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	556	35	300	6.0	0.0100	5.56	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	1470	39	3000	15	0.000300	0.441	N/A	4685199
Total Tetra CDF **	pg	110000	36	300	N/A	N/A	N/A	16	4685199
Total Penta CDF **	pg	57400	49	300	N/A	N/A	N/A	14	4685199
Total Hexa CDF **	pg	25400	46	300	N/A	N/A	N/A	14	4685199
Total Hepta CDF **	pg	10100	32	300	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	3570	140	300	N/A	0.100	357	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	4070	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	57	N/A	N/A	N/A	N/A	N/A	N/A	4687624

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM232							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 6-10	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	55	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	65	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	66	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

TR-U1 10

Maxxam ID		DDM233							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 11-15	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	661	47	300	6.0	1.00	661	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	891	31	300	6.0	1.00	891	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	356	32	300	6.0	0.100	35.6	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	679	32	300	6.0	0.100	67.9	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	613	30	300	6.0	0.100	61.3	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	3140	32	300	9.0	0.0100	31.4	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	8480	38	3000	9.0	0.000300	2.54	N/A	4685199
Total Tetra CDD *	pg	9060	47	300	N/A	N/A	N/A	15	4685199
Total Penta CDD *	pg	7190	31	300	N/A	N/A	N/A	11	4685199
Total Hexa CDD *	pg	7650	31	300	N/A	N/A	N/A	8	4685199
Total Hepta CDD *	pg	6090	32	300	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	15400	35	300	6.0	0.100	1540	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	4910	40	300	6.0	0.0300	147	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	4270	40	300	6.0	0.300	1280	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	3220	37	300	6.0	0.100	322	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	3620	36	300	6.0	0.100	362	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	1840	39	300	6.0	0.100	184	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	174	41	300	6.0	0.100	17.4	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	8410	34	300	9.0	0.0100	84.1	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	661	40	300	6.0	0.0100	6.61	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	1680	33	3000	15	0.000300	0.504	N/A	4685199
Total Tetra CDF **	pg	153000	35	300	N/A	N/A	N/A	16	4685199
Total Penta CDF **	pg	70900	40	300	N/A	N/A	N/A	13	4685199
Total Hexa CDF **	pg	28100	38	300	N/A	N/A	N/A	15	4685199
Total Hepta CDF **	pg	11200	37	300	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	4770	100	300	N/A	0.100	477	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	4630	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	4687624

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM233							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 11-15	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

U1-T1 out

Maxxam ID		DDM234							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 101-105	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	3.5 (1)	3.3	30	6.0	1.00	3.50	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	10.7	3.7	30	6.0	1.00	10.7	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	28.6	3.1	30	6.0	0.100	2.86	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	81.2	3.1	30	6.0	0.100	8.12	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	70.0 (2)	2.9	30	6.0	0.100	7.00	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	818	2.9	30	9.0	0.0100	8.18	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	2070	3.7	300	9.0	0.000300	0.621	N/A	4685199
Total Tetra CDD *	pg	210	3.3	30	N/A	N/A	N/A	9	4685199
Total Penta CDD *	pg	420	3.7	30	N/A	N/A	N/A	11	4685199
Total Hexa CDD *	pg	1550	3.0	30	N/A	N/A	N/A	7	4685199
Total Hepta CDD *	pg	1830	2.9	30	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	50.1	3.5	30	6.0	0.100	5.01	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	14.2	4.2	30	6.0	0.0300	0.426	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	28.1	4.2	30	6.0	0.300	8.43	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	33.3	3.2	30	6.0	0.100	3.33	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	34.3	3.1	30	6.0	0.100	3.43	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	56.5	3.4	30	6.0	0.100	5.65	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	<5.7 (3)	5.7	30	6.0	0.100	0.570	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	335	2.5	30	9.0	0.0100	3.35	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	36.7	2.9	30	6.0	0.0100	0.367	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	299	3.6	300	15	0.000300	0.0897	N/A	4685199
Total Tetra CDF **	pg	326	3.5	30	N/A	N/A	N/A	13	4685199
Total Penta CDF **	pg	266	4.2	30	N/A	N/A	N/A	10	4685199
Total Hexa CDF **	pg	334	3.3	30	N/A	N/A	N/A	12	4685199
Total Hepta CDF **	pg	525	2.7	30	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	9.0	3.1	30	N/A	0.100	0.900	N/A	4687624

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
(2) EMPC / Merged Peak
(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM234							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 101-105	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	67.5	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4687624
C13-1234678 HeptaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
* CDD = Chloro Dibenzo-p-Dioxin

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Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM235							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 106-110	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<2.9	2.9	30	6.0	1.00	2.90	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	11.0	3.8	30	6.0	1.00	11.0	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	23.4	2.8	30	6.0	0.100	2.34	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	68.6	2.9	30	6.0	0.100	6.86	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	56.9 (1)	2.6	30	6.0	0.100	5.69	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	626	3.7	30	9.0	0.0100	6.26	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	1400	3.2	300	9.0	0.000300	0.420	N/A	4685199
Total Tetra CDD *	pg	169	2.9	30	N/A	N/A	N/A	6	4685199
Total Penta CDD *	pg	335	3.8	30	N/A	N/A	N/A	9	4685199
Total Hexa CDD *	pg	1290	2.8	30	N/A	N/A	N/A	7	4685199
Total Hepta CDD *	pg	1370	3.7	30	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	59.1	3.2	30	6.0	0.100	5.91	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	20.0	3.8	30	6.0	0.0300	0.600	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	34.2	3.8	30	6.0	0.300	10.3	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	45.9	3.1	30	6.0	0.100	4.59	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	43.5	3.0	30	6.0	0.100	4.35	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	49.4	3.3	30	6.0	0.100	4.94	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	<5.4 (2)	5.4	30	6.0	0.100	0.540	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	288	3.1	30	9.0	0.0100	2.88	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	28.2	3.7	30	6.0	0.0100	0.282	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	210	2.9	300	15	0.000300	0.0630	N/A	4685199
Total Tetra CDF **	pg	380	3.2	30	N/A	N/A	N/A	14	4685199
Total Penta CDF **	pg	339	3.8	30	N/A	N/A	N/A	11	4685199
Total Hexa CDF **	pg	358	3.2	30	N/A	N/A	N/A	12	4685199
Total Hepta CDF **	pg	437	3.4	30	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	13.0	4.3	30	N/A	0.100	1.30	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	65.3	N/A	N/A

EDL = Estimated Detection Limit
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM235							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 106-110	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4687624
C13-1234678 HeptaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	125	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM236							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 111-115	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<2.8	2.8	30	6.0	1.00	2.80	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	5.4 (1)	3.2	30	6.0	1.00	5.40	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	17.7	3.1	30	6.0	0.100	1.77	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	48.6	3.1	30	6.0	0.100	4.86	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	24.0	2.9	30	6.0	0.100	2.40	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	467	3.6	30	9.0	0.0100	4.67	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	1060	3.4	300	9.0	0.000300	0.318	N/A	4685199
Total Tetra CDD *	pg	105	2.8	30	N/A	N/A	N/A	4	4685199
Total Penta CDD *	pg	212	3.2	30	N/A	N/A	N/A	5	4685199
Total Hexa CDD *	pg	935	3.0	30	N/A	N/A	N/A	8	4685199
Total Hepta CDD *	pg	960	3.6	30	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	26.1	3.1	30	6.0	0.100	2.61	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	<3.5	3.5	30	6.0	0.0300	0.105	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	12.8 (1)	3.5	30	6.0	0.300	3.84	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	16.9	3.8	30	6.0	0.100	1.69	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	<18 (2)	18	30	6.0	0.100	1.80	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	29.2	4.0	30	6.0	0.100	2.92	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	<4.2	4.2	30	6.0	0.100	0.420	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	166	3.3	30	9.0	0.0100	1.66	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	19.4	3.9	30	6.0	0.0100	0.194	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	150	3.4	300	15	0.000300	0.0450	N/A	4685199
Total Tetra CDF **	pg	149	3.1	30	N/A	N/A	N/A	12	4685199
Total Penta CDF **	pg	119	3.5	30	N/A	N/A	N/A	9	4685199
Total Hexa CDF **	pg	148	3.9	30	N/A	N/A	N/A	9	4685199
Total Hepta CDF **	pg	275	3.6	30	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	<6.1	6.1	30	N/A	0.100	0.610	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	35.5	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM236							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 111-115	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687624
C13-1234678 HeptaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	127	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM255							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 231-235	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	843	31	300	6.0	1.00	843	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	1090	37	300	6.0	1.00	1090	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	404	31	300	6.0	0.100	40.4	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	639	31	300	6.0	0.100	63.9	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	646	29	300	6.0	0.100	64.6	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	2280	42	300	9.0	0.0100	22.8	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	7430	41	3000	9.0	0.000300	2.23	N/A	4685199
Total Tetra CDD *	pg	9450	31	300	N/A	N/A	N/A	14	4685199
Total Penta CDD *	pg	7390	37	300	N/A	N/A	N/A	11	4685199
Total Hexa CDD *	pg	6710	30	300	N/A	N/A	N/A	8	4685199
Total Hepta CDD *	pg	4610	42	300	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	15600	35	300	6.0	0.100	1560	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	5540	38	300	6.0	0.0300	166	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	4330	39	300	6.0	0.300	1300	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	4310	45	300	6.0	0.100	431	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	4310	43	300	6.0	0.100	431	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	2170	48	300	6.0	0.100	217	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	174	50	300	6.0	0.100	17.4	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	9860	29	300	9.0	0.0100	98.6	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	664	35	300	6.0	0.0100	6.64	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	2130	28	3000	15	0.000300	0.639	N/A	4685199
Total Tetra CDF **	pg	160000	35	300	N/A	N/A	N/A	16	4685199
Total Penta CDF **	pg	76000	38	300	N/A	N/A	N/A	14	4685199
Total Hexa CDF **	pg	32900	46	300	N/A	N/A	N/A	15	4685199
Total Hepta CDF **	pg	13100	32	300	N/A	N/A	N/A	4	4685199
Confirmation 2,3,7,8-Tetra CDF **	pg	5650	110	300	N/A	0.100	565	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5360	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4687624

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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ORTECH Environmental
Client Project #: 21707
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Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM255							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 231-235	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	4685199

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM256							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 331-335	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.5	3.5	30	6.0	1.00	3.50	N/A	4685199
1,2,3,7,8-Penta CDD *	pg	12.5	3.3	30	6.0	1.00	12.5	N/A	4685199
1,2,3,4,7,8-Hexa CDD *	pg	47.5	3.1	30	6.0	0.100	4.75	N/A	4685199
1,2,3,6,7,8-Hexa CDD *	pg	117	3.2	30	6.0	0.100	11.7	N/A	4685199
1,2,3,7,8,9-Hexa CDD *	pg	124 (1)	2.9	30	6.0	0.100	12.4	N/A	4685199
1,2,3,4,6,7,8-Hepta CDD *	pg	355	3.5	30	9.0	0.0100	3.55	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDD *	pg	260	3.5	300	9.0	0.000300	0.0780	N/A	4685199
Total Tetra CDD *	pg	253	3.5	30	N/A	N/A	N/A	8	4685199
Total Penta CDD *	pg	848	3.3	30	N/A	N/A	N/A	11	4685199
Total Hexa CDD *	pg	2140	3.1	30	N/A	N/A	N/A	7	4685199
Total Hepta CDD *	pg	719	3.5	30	N/A	N/A	N/A	2	4685199
2,3,7,8-Tetra CDF **	pg	33.6	3.9	30	6.0	0.100	3.36	N/A	4685199
1,2,3,7,8-Penta CDF **	pg	<11 (2)	11	30	6.0	0.0300	0.330	N/A	4685199
2,3,4,7,8-Penta CDF **	pg	27.0	2.9	30	6.0	0.300	8.10	N/A	4685199
1,2,3,4,7,8-Hexa CDF **	pg	35.0	2.7	30	6.0	0.100	3.50	N/A	4685199
1,2,3,6,7,8-Hexa CDF **	pg	<44 (3)	44	30	6.0	0.100	4.40	N/A	4685199
2,3,4,6,7,8-Hexa CDF **	pg	64.4	2.9	30	6.0	0.100	6.44	N/A	4685199
1,2,3,7,8,9-Hexa CDF **	pg	<3.9 (3)	3.9	30	6.0	0.100	0.390	N/A	4685199
1,2,3,4,6,7,8-Hepta CDF **	pg	134	3.3	30	9.0	0.0100	1.34	N/A	4685199
1,2,3,4,7,8,9-Hepta CDF **	pg	25.1	3.9	30	6.0	0.0100	0.251	N/A	4685199
1,2,3,4,6,7,8,9-Octa CDF **	pg	46.3	3.0	300	15	0.000300	0.0139	N/A	4685199
Total Tetra CDF **	pg	211	3.9	30	N/A	N/A	N/A	14	4685199
Total Penta CDF **	pg	330	2.9	30	N/A	N/A	N/A	12	4685199
Total Hexa CDF **	pg	416	2.8	30	N/A	N/A	N/A	12	4685199
Total Hepta CDF **	pg	223	3.5	30	N/A	N/A	N/A	4	4685199

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.
(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DDM256							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 331-335	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Confirmation 2,3,7,8-Tetra CDF **	pg	5.2	4.0	30	N/A	0.100	0.520	N/A	4687624
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	73.8	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4687624
C13-1234678 HeptaCDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234678 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123478 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-1234789 HeptaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123678 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-12378 PentaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-123789 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-23478 PentaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-2378 TetraCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4685199
C13-Octachlorodibenzo-p-Dioxin	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4685199
Cl37-2378 TetraCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4685199

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DDM231							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 1-5	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	910	51	300	N/A	0.00010	0.091	N/A	4679297
344'5-TetraCB-(81)	pg	260	52	300	N/A	0.00030	0.078	N/A	4679297
233'44'-PentaCB-(105)	pg	2600	45	300	N/A	0.000030	0.078	N/A	4679297
2344'5-PentaCB-(114)	pg	320	43	300	N/A	0.000030	0.0096	N/A	4679297
23'44'5-PentaCB-(118)	pg	9000	45	300	N/A	0.000030	0.27	N/A	4679297
23'44'5'-PentaCB-(123)	pg	270	50	300	N/A	0.000030	0.0081	N/A	4679297
33'44'5-PentaCB-(126)	pg	540	46	300	N/A	0.10	54	N/A	4679297
HexaCB-(156)+(157)	pg	640	46	600	N/A	0.000030	0.019	N/A	4679297
23'44'55'-HexaCB-(167)	pg	280	50	300	N/A	0.000030	0.0084	N/A	4679297
33'44'55'-HexaCB-(169)	pg	200	49	300	N/A	0.030	6.0	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	310	34	300	N/A	0.000030	0.0093	N/A	4679297
Total PCB	pg	310000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	61	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	60	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DDM232							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 6-10	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	620	47	300	N/A	0.00010	0.062	N/A	4679297
344'5-TetraCB-(81)	pg	180	47	300	N/A	0.00030	0.054	N/A	4679297
233'44'-PentaCB-(105)	pg	910	30	300	N/A	0.000030	0.027	N/A	4679297
2344'5-PentaCB-(114)	pg	150	28	300	N/A	0.000030	0.0045	N/A	4679297
23'44'5-PentaCB-(118)	pg	2800	29	300	N/A	0.000030	0.084	N/A	4679297
23'44'5'-PentaCB-(123)	pg	150	33	300	N/A	0.000030	0.0045	N/A	4679297
33'44'5-PentaCB-(126)	pg	430	30	300	N/A	0.10	43	N/A	4679297
HexaCB-(156)+(157)	pg	430	34	600	N/A	0.000030	0.013	N/A	4679297
23'44'55'-HexaCB-(167)	pg	190	37	300	N/A	0.000030	0.0057	N/A	4679297
33'44'55'-HexaCB-(169)	pg	160	36	300	N/A	0.030	4.8	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	230	32	300	N/A	0.000030	0.0069	N/A	4679297
Total PCB	pg	82000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	48	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	62	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

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QC Batch = Quality Control Batch

N/A = Not Applicable

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DDM233							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 11-15	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	550	47	300	N/A	0.00010	0.055	N/A	4679297
344'5-TetraCB-(81)	pg	180	48	300	N/A	0.00030	0.054	N/A	4679297
233'44'-PentaCB-(105)	pg	1800	46	300	N/A	0.000030	0.054	N/A	4679297
2344'5-PentaCB-(114)	pg	240	44	300	N/A	0.000030	0.0072	N/A	4679297
23'44'5-PentaCB-(118)	pg	4800	45	300	N/A	0.000030	0.14	N/A	4679297
23'44'5'-PentaCB-(123)	pg	210	50	300	N/A	0.000030	0.0063	N/A	4679297
33'44'5-PentaCB-(126)	pg	520	46	300	N/A	0.10	52	N/A	4679297
HexaCB-(156)+(157)	pg	1800	35	600	N/A	0.000030	0.054	N/A	4679297
23'44'55'-HexaCB-(167)	pg	650	37	300	N/A	0.000030	0.020	N/A	4679297
33'44'55'-HexaCB-(169)	pg	160	37	300	N/A	0.030	4.8	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	490	26	300	N/A	0.000030	0.015	N/A	4679297
Total PCB	pg	260000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	57	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	62	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

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Maxxam Job #: B6K7956
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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TI-WI Out

Maxxam ID		DDM234							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 101-105	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<56 (1)	56	300	N/A	0.00010	0.0056	N/A	4679297
344'5-TetraCB-(81)	pg	<44	44	300	N/A	0.00030	0.013	N/A	4679297
233'44'-PentaCB-(105)	pg	430	45	300	N/A	0.000030	0.013	N/A	4679297
2344'5-PentaCB-(114)	pg	<43	43	300	N/A	0.000030	0.0013	N/A	4679297
23'44'5-PentaCB-(118)	pg	1300	44	300	N/A	0.000030	0.039	N/A	4679297
23'44'5'-PentaCB-(123)	pg	<49	49	300	N/A	0.000030	0.0015	N/A	4679297
33'44'5-PentaCB-(126)	pg	<45	45	300	N/A	0.10	4.5	N/A	4679297
HexaCB-(156)+(157)	pg	54	41	600	N/A	0.000030	0.0016	N/A	4679297
23'44'55'-HexaCB-(167)	pg	<44	44	300	N/A	0.000030	0.0013	N/A	4679297
33'44'55'-HexaCB-(169)	pg	<44	44	300	N/A	0.030	1.3	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	<25	25	300	N/A	0.000030	0.00075	N/A	4679297
Total PCB	pg	32000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5.9	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TD-411 Out

Maxxam ID		DDM235							
Sampling Date		2016/09/26				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 106-110	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	40	37	300	N/A	0.00010	0.0040	N/A	4679297
344'5-TetraCB-(81)	pg	<38	38	300	N/A	0.00030	0.011	N/A	4679297
233'44'-PentaCB-(105)	pg	340	35	300	N/A	0.000030	0.010	N/A	4679297
2344'5-PentaCB-(114)	pg	<34	34	300	N/A	0.000030	0.0010	N/A	4679297
23'44'5-PentaCB-(118)	pg	1000	35	300	N/A	0.000030	0.030	N/A	4679297
23'44'5'-PentaCB-(123)	pg	<39	39	300	N/A	0.000030	0.0012	N/A	4679297
33'44'5-PentaCB-(126)	pg	<35	35	300	N/A	0.10	3.5	N/A	4679297
HexaCB-(156)+(157)	pg	120	34	600	N/A	0.000030	0.0036	N/A	4679297
23'44'55'-HexaCB-(167)	pg	43	37	300	N/A	0.000030	0.0013	N/A	4679297
33'44'55'-HexaCB-(169)	pg	<36	36	300	N/A	0.030	1.1	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	<23	23	300	N/A	0.000030	0.00069	N/A	4679297
Total PCB	pg	37000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	4.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	59	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

T3 4/4 OUT

Maxxam ID		DDM236							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 111-115	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	52	32	300	N/A	0.00010	0.0052	N/A	4679297
344'5-TetraCB-(81)	pg	<32	32	300	N/A	0.00030	0.0096	N/A	4679297
233'44'-PentaCB-(105)	pg	480	26	300	N/A	0.000030	0.014	N/A	4679297
2344'5-PentaCB-(114)	pg	35	25	300	N/A	0.000030	0.0011	N/A	4679297
23'44'5-PentaCB-(118)	pg	1500	25	300	N/A	0.000030	0.045	N/A	4679297
23'44'5'-PentaCB-(123)	pg	<28	28	300	N/A	0.000030	0.00084	N/A	4679297
33'44'5-PentaCB-(126)	pg	<26	26	300	N/A	0.10	2.6	N/A	4679297
HexaCB-(156)+(157)	pg	150	30	600	N/A	0.000030	0.0045	N/A	4679297
23'44'55'-HexaCB-(167)	pg	<42 (1)	42	300	N/A	0.000030	0.0013	N/A	4679297
33'44'55'-HexaCB-(169)	pg	<31	31	300	N/A	0.030	0.93	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	<18	18	300	N/A	0.000030	0.00054	N/A	4679297
Total PCB	pg	27000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	3.6	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	119	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	122	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	122	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	124	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TT-48 in

Maxxam ID		DDM255							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 231-235	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	600	50	300	N/A	0.00010	0.060	N/A	4679297
344'5-TetraCB-(81)	pg	130	50	300	N/A	0.00030	0.039	N/A	4679297
233'44'-PentaCB-(105)	pg	1200	46	300	N/A	0.000030	0.036	N/A	4679297
2344'5-PentaCB-(114)	pg	120	44	300	N/A	0.000030	0.0036	N/A	4679297
23'44'5-PentaCB-(118)	pg	3800	45	300	N/A	0.000030	0.11	N/A	4679297
23'44'5'-PentaCB-(123)	pg	140	50	300	N/A	0.000030	0.0042	N/A	4679297
33'44'5-PentaCB-(126)	pg	350	46	300	N/A	0.10	35	N/A	4679297
HexaCB-(156)+(157)	pg	340	36	600	N/A	0.000030	0.010	N/A	4679297
23'44'55'-HexaCB-(167)	pg	170	39	300	N/A	0.000030	0.0051	N/A	4679297
33'44'55'-HexaCB-(169)	pg	110	39	300	N/A	0.030	3.3	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	130	24	300	N/A	0.000030	0.0039	N/A	4679297
Total PCB	pg	97000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	39	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	119	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	124	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

TT-WOUT

Maxxam ID		DDM256							
Sampling Date		2016/09/27				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 331-335	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<54 (1)	54	300	N/A	0.00010	0.0054	N/A	4679297
344'5-TetraCB-(81)	pg	<49	49	300	N/A	0.00030	0.015	N/A	4679297
233'44'-PentaCB-(105)	pg	850	39	300	N/A	0.000030	0.026	N/A	4679297
2344'5-PentaCB-(114)	pg	50	37	300	N/A	0.000030	0.0015	N/A	4679297
23'44'5-PentaCB-(118)	pg	2200	39	300	N/A	0.000030	0.066	N/A	4679297
23'44'5'-PentaCB-(123)	pg	<43	43	300	N/A	0.000030	0.0013	N/A	4679297
33'44'5-PentaCB-(126)	pg	<39	39	300	N/A	0.10	3.9	N/A	4679297
HexaCB-(156)+(157)	pg	<140 (1)	140	600	N/A	0.000030	0.0042	N/A	4679297
23'44'55'-HexaCB-(167)	pg	<44	44	300	N/A	0.000030	0.0013	N/A	4679297
33'44'55'-HexaCB-(169)	pg	<44	44	300	N/A	0.030	1.3	N/A	4679297
233'44'55'-HeptaCB-(189)	pg	<29	29	300	N/A	0.000030	0.00087	N/A	4679297
Total PCB	pg	36000	N/A	N/A	N/A	N/A	N/A	N/A	4679297
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5.3	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5-HexaCB-(156)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'5'-HexaCB-(157)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-233'44'-PentaCB-(105)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'55'-HexaCB-(167)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2344'5-PentaCB-(114)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-23'44'5-PentaCB-(118)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-2'344'5-PentaCB-(123)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'55'-HexaCB-(169)	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'5-PentaCB-(126)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-33'44'-TetraCB-(77)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4679297
C13-344'5-TetraCB-(81)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4679297

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DDM231
Sample ID: 16-21707-SVOC 1-5
Matrix: Stack Sampling Train

Collected: 2016/09/26
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

Maxxam ID: DDM232
Sample ID: 16-21707-SVOC 6-10
Matrix: Stack Sampling Train

Collected: 2016/09/26
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

Maxxam ID: DDM233
Sample ID: 16-21707-SVOC 11-15
Matrix: Stack Sampling Train

Collected: 2016/09/27
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

Maxxam ID: DDM234
Sample ID: 16-21707-SVOC 101-105
Matrix: Stack Sampling Train

Collected: 2016/09/26
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

Maxxam ID: DDM235
Sample ID: 16-21707-SVOC 106-110
Matrix: Stack Sampling Train

Collected: 2016/09/26
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/13	Branko Vrzic

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Maxxam Job #: B6K7956
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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DDM236
Sample ID: 16-21707-SVOC 111-115
Matrix: Stack Sampling Train

Collected: 2016/09/27
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

Maxxam ID: DDM255
Sample ID: 16-21707-SVOC 231-235
Matrix: Stack Sampling Train

Collected: 2016/09/27
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

Maxxam ID: DDM256
Sample ID: 16-21707-SVOC 331-335
Matrix: Stack Sampling Train

Collected: 2016/09/27
Shipped:
Received: 2016/09/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4687624	N/A	2016/10/03	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4685199	2016/09/28	2016/10/02	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4679297	2016/09/28	2016/10/10	Branko Vrzic

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

GENERAL COMMENTS

Sample DDM231-01 : 10X DILUTION

Sample DDM232-01 : 10X DILUTION

Sample DDM233-01 : 10X DILUTION

Sample DDM255-01 : 10X DILUTION

Results relate only to the items tested.

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ORTECH Environmental
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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4679297	BY	Spiked Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/10		97	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/10		94	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/10		94	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/10		96	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/10		94	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/10		96	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/10		97	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/10		98	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/10		65	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/10		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/10		98	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/10		98	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/10		92	%	50 - 150
			344'5-TetraCB-(81)	2016/10/10		90	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/10		94	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/10		93	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/10		94	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/10		94	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/10		92	%	50 - 150
			HexaCB-(156)+(157)	2016/10/10		92	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/10		93	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/10		92	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/10		86	%	50 - 150
4679297	BY	Spiked Blank DUP	C13-233'44'55'-HeptaCB-(189)	2016/10/10		95	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/10		94	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/10		94	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/10		104	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/10		92	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/10		97	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/10		99	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/10		100	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/10		15 (1)	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/10		41	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/10		61	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/10		78	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/10		92	%	50 - 150
			344'5-TetraCB-(81)	2016/10/10		92	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/10		92	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/10		92	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/10		94	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/10		95	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/10		92	%	50 - 150
			HexaCB-(156)+(157)	2016/10/10		96	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/10		94	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/10		98	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/10		90	%	50 - 150
4679297	BY	RPD	33'44'-TetraCB-(77)	2016/10/10	0		%	30
			344'5-TetraCB-(81)	2016/10/10	2.2		%	30
			233'44'-PentaCB-(105)	2016/10/10	2.2		%	30
			2344'5-PentaCB-(114)	2016/10/10	1.1		%	30
			23'44'5-PentaCB-(118)	2016/10/10	0		%	30
			23'44'5'-PentaCB-(123)	2016/10/10	1.1		%	30

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'44'5-PentaCB-(126)	2016/10/10	0		%	30
			HexaCB-(156)+(157)	2016/10/10	4.3		%	30
			23'44'55'-HexaCB-(167)	2016/10/10	1.1		%	30
			33'44'55'-HexaCB-(169)	2016/10/10	6.3		%	30
			233'44'55'-HeptaCB-(189)	2016/10/10	4.5		%	30
4679297	BY	Method Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/10		96	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/10		91	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/10		91	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/10		99	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/10		91	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/10		96	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/10		97	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/10		100	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/10		61	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/10		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/10		94	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/10		96	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/10	<11		pg	
			344'5-TetraCB-(81)	2016/10/10	<12		pg	
			233'44'-PentaCB-(105)	2016/10/10	<8.4		pg	
			2344'5-PentaCB-(114)	2016/10/10	<8.1		pg	
			23'44'5-PentaCB-(118)	2016/10/10	<8.4		pg	
			23'44'5'-PentaCB-(123)	2016/10/10	<9.3		pg	
			33'44'5-PentaCB-(126)	2016/10/10	<8.5		pg	
			HexaCB-(156)+(157)	2016/10/10	<7.2		pg	
			23'44'55'-HexaCB-(167)	2016/10/10	<7.7		pg	
			33'44'55'-HexaCB-(169)	2016/10/10	<7.6		pg	
			233'44'55'-HeptaCB-(189)	2016/10/10	<10		pg	
			Total PCB	2016/10/10	0.0000000000000		pg	
4685199	OBC	Spiked Blank	C13-1234678 HeptaCDD	2016/10/01		100	%	25 - 130
			C13-1234678 HeptaCDF	2016/10/01		87	%	25 - 130
			C13-123678 HexaCDD	2016/10/01		104	%	40 - 130
			C13-123678 HexaCDF	2016/10/01		92	%	40 - 130
			C13-12378 PentaCDD	2016/10/01		102	%	40 - 130
			C13-12378 PentaCDF	2016/10/01		102	%	40 - 130
			C13-123789 HexaCDF	2016/10/01		86	%	40 - 130
			C13-2378 TetraCDD	2016/10/01		93	%	40 - 130
			C13-2378 TetraCDF	2016/10/01		96	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/10/01		72	%	25 - 130
			2,3,7,8-Tetra CDD	2016/10/01		104	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/10/01		92	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/10/01		92	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/10/01		99	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/10/01		95	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/10/01		81	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/01		101	%	80 - 140
			2,3,7,8-Tetra CDF	2016/10/01		107	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/10/01		96	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/10/01		110	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/10/01		103	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/10/01		103	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/10/01		110	%	80 - 140

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Maxxam Job #: B6K7956
Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDF	2016/10/01		106	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/10/01		95	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/10/01		90	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/01		100	%	80 - 140
4685199	OBC	Spiked Blank DUP	C13-1234678 HeptaCDD	2016/10/02		101	%	25 - 130
			C13-1234678 HeptaCDF	2016/10/02		87	%	25 - 130
			C13-123678 HexaCDD	2016/10/02		99	%	40 - 130
			C13-123678 HexaCDF	2016/10/02		89	%	40 - 130
			C13-12378 PentaCDD	2016/10/02		103	%	40 - 130
			C13-12378 PentaCDF	2016/10/02		98	%	40 - 130
			C13-123789 HexaCDF	2016/10/02		84	%	40 - 130
			C13-2378 TetraCDD	2016/10/02		90	%	40 - 130
			C13-2378 TetraCDF	2016/10/02		92	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/10/02		75	%	25 - 130
			2,3,7,8-Tetra CDD	2016/10/02		104	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/10/02		90	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/10/02		101	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/10/02		98	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/10/02		106	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/10/02		80	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/02		103	%	80 - 140
			2,3,7,8-Tetra CDF	2016/10/02		113	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/10/02		101	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/10/02		107	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/10/02		106	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/10/02		108	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/10/02		119	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2016/10/02		111	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/10/02		98	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/10/02		95	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/02		100	%	80 - 140
4685199	OBC	RPD	2,3,7,8-Tetra CDD	2016/10/02	NC		%	20
			1,2,3,7,8-Penta CDD	2016/10/02	NC		%	20
			1,2,3,4,7,8-Hexa CDD	2016/10/02	NC		%	20
			1,2,3,6,7,8-Hexa CDD	2016/10/02	NC		%	20
			1,2,3,7,8,9-Hexa CDD	2016/10/02	NC		%	20
			1,2,3,4,6,7,8-Hepta CDD	2016/10/02	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/02	NC		%	20
			2,3,7,8-Tetra CDF	2016/10/02	NC		%	20
			1,2,3,7,8-Penta CDF	2016/10/02	NC		%	20
			2,3,4,7,8-Penta CDF	2016/10/02	NC		%	20
			1,2,3,4,7,8-Hexa CDF	2016/10/02	NC		%	20
			1,2,3,6,7,8-Hexa CDF	2016/10/02	NC		%	20
			2,3,4,6,7,8-Hexa CDF	2016/10/02	NC		%	20
			1,2,3,7,8,9-Hexa CDF	2016/10/02	NC		%	20
			1,2,3,4,6,7,8-Hepta CDF	2016/10/02	NC		%	20
			1,2,3,4,7,8,9-Hepta CDF	2016/10/02	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/02	NC		%	20
4685199	OBC	Method Blank	C13-1234678 HeptaCDD	2016/10/02		103	%	25 - 130
			C13-1234678 HeptaCDF	2016/10/02		87	%	25 - 130
			C13-123678 HexaCDD	2016/10/02		101	%	40 - 130
			C13-123678 HexaCDF	2016/10/02		91	%	40 - 130

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Report Date: 2016/10/14

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-12378 PentaCDD	2016/10/02		101	%	40 - 130
			C13-12378 PentaCDF	2016/10/02		102	%	40 - 130
			C13-123789 HexaCDF	2016/10/02		85	%	40 - 130
			C13-2378 TetraCDD	2016/10/02		93	%	40 - 130
			C13-2378 TetraCDF	2016/10/02		93	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/10/02		72	%	25 - 130
			2,3,7,8-Tetra CDD	2016/10/02	<3.5, EDL=3.5		pg	
			1,2,3,7,8-Penta CDD	2016/10/02	<3.3, EDL=3.3		pg	
			1,2,3,4,7,8-Hexa CDD	2016/10/02	<3.3, EDL=3.3		pg	
			1,2,3,6,7,8-Hexa CDD	2016/10/02	<3.4, EDL=3.4		pg	
			1,2,3,7,8,9-Hexa CDD	2016/10/02	<3.1, EDL=3.1		pg	
			1,2,3,4,6,7,8-Hepta CDD	2016/10/02	4.9, EDL=2.9		pg	
			1,2,3,4,6,7,8,9-Octa CDD	2016/10/02	47.6, EDL=2.9		pg	
			Total Tetra CDD	2016/10/02	<6.2, EDL=6.2 (2)		pg	
			Total Penta CDD	2016/10/02	<3.3, EDL=3.3		pg	
			Total Hexa CDD	2016/10/02	<9.5, EDL=9.5 (2)		pg	
			Total Hepta CDD	2016/10/02	4.9, EDL=2.9		pg	
			2,3,7,8-Tetra CDF	2016/10/02	<2.8, EDL=2.8		pg	
			1,2,3,7,8-Penta CDF	2016/10/02	<3.6, EDL=3.6		pg	
			2,3,4,7,8-Penta CDF	2016/10/02	<3.6, EDL=3.6		pg	
			1,2,3,4,7,8-Hexa CDF	2016/10/02	<3.2, EDL=3.2		pg	
			1,2,3,6,7,8-Hexa CDF	2016/10/02	<3.1, EDL=3.1		pg	
			2,3,4,6,7,8-Hexa CDF	2016/10/02	<3.4, EDL=3.4		pg	
			1,2,3,7,8,9-Hexa CDF	2016/10/02	<3.5, EDL=3.5		pg	
			1,2,3,4,6,7,8-Hepta CDF	2016/10/02	3.3, EDL=2.4		pg	
			1,2,3,4,7,8,9-Hepta CDF	2016/10/02	<2.8, EDL=2.8		pg	
			1,2,3,4,6,7,8,9-Octa CDF	2016/10/02	6.9, EDL=3.7		pg	

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Client Project #: 21707
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Tetra CDF	2016/10/02	<2.8, EDL=2.8		pg	
			Total Penta CDF	2016/10/02	<3.6, EDL=3.6		pg	
			Total Hexa CDF	2016/10/02	<3.3, EDL=3.3		pg	
			Total Hepta CDF	2016/10/02	6.6, EDL=2.6		pg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Internal standard recovery is below method limits. No impact on data.

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Branko Vrzic, A.SC.T., Senior Analyst, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

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Your P.O. #: 21707-J2279
Your Project #: 21707
Site Location: COVANTA

Attention:CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
L5J 2Y4

Report Date: 2016/10/20
Report #: R4217259
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B6K2536
Received: 2016/09/21, 12:34

Sample Matrix: Stack Sampling Train
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
2,3,7,8-TCDF Confirmation (M23)	3	N/A	2016/09/26	BRL SOP-00404	EPA M23/23A m
2,3,7,8-TCDF Confirmation (M23)	3	N/A	2016/09/27	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	3	2016/09/21	2016/09/25	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	4	2016/09/21	2016/09/26	BRL SOP-00404	EPA M23/23A m
PCBs in a Sampling Train (1668Amod)	7	2016/09/21	2016/10/09	BRL SOP-00408	EPA 1668A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Clayton Johnson
Project Manager - Air Toxics, Source Evaluation
20 Oct 2016 11:09:17 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905)817-5769

==========

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

U2 Blank

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL350							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 406-410	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.4	3.4	30	6.0	1.00	3.40	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	<3.7	3.7	30	6.0	1.00	3.70	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	<2.8	2.8	30	6.0	0.100	0.280	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	<2.8	2.8	30	6.0	0.100	0.280	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	<2.6	2.6	30	6.0	0.100	0.260	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	3.6	2.8	30	9.0	0.0100	0.0360	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	37.3	4.1	300	9.0	0.000300	0.0112	N/A	4675448
Total Tetra CDD *	pg	<5.7 (1)	5.7	30	N/A	N/A	N/A	0	4675448
Total Penta CDD *	pg	<4.7 (1)	4.7	30	N/A	N/A	N/A	0	4675448
Total Hexa CDD *	pg	<9.2 (1)	9.2	30	N/A	N/A	N/A	0	4675448
Total Hepta CDD *	pg	3.6	2.8	30	N/A	N/A	N/A	1	4675448
2,3,7,8-Tetra CDF **	pg	<3.2	3.2	30	6.0	0.100	0.320	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	<3.1	3.1	30	6.0	0.0300	0.0930	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	<3.1	3.1	30	6.0	0.300	0.930	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	<3.4	3.4	30	6.0	0.100	0.340	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	<3.3	3.3	30	6.0	0.100	0.330	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	<3.6	3.6	30	6.0	0.100	0.360	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	<3.7	3.7	30	6.0	0.100	0.370	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	3.6	2.4	30	9.0	0.0100	0.0360	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.8	2.8	30	6.0	0.0100	0.0280	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	4.5	3.5	300	15	0.000300	0.00135	N/A	4675448
Total Tetra CDF **	pg	<3.2	3.2	30	N/A	N/A	N/A	0	4675448
Total Penta CDF **	pg	<3.1	3.1	30	N/A	N/A	N/A	0	4675448
Total Hexa CDF **	pg	<3.5	3.5	30	N/A	N/A	N/A	0	4675448
Total Hepta CDF **	pg	3.6	2.6	30	N/A	N/A	N/A	1	4675448
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	10.8	N/A	N/A
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL350							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 406-410	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	123	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC In
Test 1

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL351							
Sampling Date		2016/09/19				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 201-205	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	1200	29	300	6.0	1.00	1200	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	1430	38	300	6.0	1.00	1430	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	513	31	300	6.0	0.100	51.3	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	699	32	300	6.0	0.100	69.9	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	1080 (1)	29	300	6.0	0.100	108	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	2660	27	300	9.0	0.0100	26.6	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	5770	27	3000	9.0	0.000300	1.73	N/A	4675448
Total Tetra CDD *	pg	14900	29	300	N/A	N/A	N/A	15	4675448
Total Penta CDD *	pg	9600	38	300	N/A	N/A	N/A	11	4675448
Total Hexa CDD *	pg	7580	31	300	N/A	N/A	N/A	7	4675448
Total Hepta CDD *	pg	5400	27	300	N/A	N/A	N/A	2	4675448
2,3,7,8-Tetra CDF **	pg	23000	43	300	6.0	0.100	2300	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	8020	30	300	6.0	0.0300	241	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	8290	30	300	6.0	0.300	2490	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	10800 (1)	32	300	6.0	0.100	1080	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	6720	31	300	6.0	0.100	672	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	4000	34	300	6.0	0.100	400	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	352	35	300	6.0	0.100	35.2	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	14200	28	300	9.0	0.0100	142	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	1070	33	300	6.0	0.0100	10.7	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	2680	30	3000	15	0.000300	0.804	N/A	4675448
Total Tetra CDF **	pg	231000	43	300	N/A	N/A	N/A	16	4675448
Total Penta CDF **	pg	120000	30	300	N/A	N/A	N/A	15	4675448
Total Hexa CDF **	pg	52600	33	300	N/A	N/A	N/A	14	4675448
Total Hepta CDF **	pg	19200	30	300	N/A	N/A	N/A	4	4675448
Confirmation 2,3,7,8-Tetra CDF **	pg	7710	93	300	N/A	0.100	771	N/A	4678279
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	8730	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL351							
Sampling Date		2016/09/19				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 201-205	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	62	N/A	N/A	N/A	N/A	N/A	N/A	4678279
C13-1234678 HeptaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234678 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	119	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC In
Test 2

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL352							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 206-210	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	849	42	300	6.0	1.00	849	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	910	40	300	6.0	1.00	910	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	388	32	300	6.0	0.100	38.8	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	523	33	300	6.0	0.100	52.3	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	801 (1)	30	300	6.0	0.100	80.1	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	2080	28	300	9.0	0.0100	20.8	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	6030	42	3000	9.0	0.000300	1.81	N/A	4675448
Total Tetra CDD *	pg	10800	42	300	N/A	N/A	N/A	15	4675448
Total Penta CDD *	pg	6570	40	300	N/A	N/A	N/A	11	4675448
Total Hexa CDD *	pg	5760	32	300	N/A	N/A	N/A	7	4675448
Total Hepta CDD *	pg	4300	28	300	N/A	N/A	N/A	2	4675448
2,3,7,8-Tetra CDF **	pg	17200	34	300	6.0	0.100	1720	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	5250	34	300	6.0	0.0300	158	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	5280	34	300	6.0	0.300	1580	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	5970 (1)	29	300	6.0	0.100	597	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	3650	28	300	6.0	0.100	365	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	1870	31	300	6.0	0.100	187	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	162	32	300	6.0	0.100	16.2	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	7750	30	300	9.0	0.0100	77.5	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	543	35	300	6.0	0.0100	5.43	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	1420	29	3000	15	0.000300	0.426	N/A	4675448
Total Tetra CDF **	pg	174000	34	300	N/A	N/A	N/A	16	4675448
Total Penta CDF **	pg	79700	34	300	N/A	N/A	N/A	14	4675448
Total Hexa CDF **	pg	28300	30	300	N/A	N/A	N/A	14	4675448
Total Hepta CDF **	pg	10600	32	300	N/A	N/A	N/A	4	4675448
Confirmation 2,3,7,8-Tetra CDF **	pg	5950	8.2	30	N/A	0.100	595	N/A	4678279
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5530	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL352							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 206-210	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4678279
C13-1234678 HeptaCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234678 HeptaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC In
Test 3

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL353							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 211-215	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	898	39	300	6.0	1.00	898	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	1090	28	300	6.0	1.00	1090	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	466	30	300	6.0	0.100	46.6	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	579	31	300	6.0	0.100	57.9	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	965 (1)	28	300	6.0	0.100	96.5	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	2000	33	300	9.0	0.0100	20.0	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	5400	33	3000	9.0	0.000300	1.62	N/A	4675448
Total Tetra CDD *	pg	11100	39	300	N/A	N/A	N/A	15	4675448
Total Penta CDD *	pg	8090	28	300	N/A	N/A	N/A	12	4675448
Total Hexa CDD *	pg	6450	30	300	N/A	N/A	N/A	7	4675448
Total Hepta CDD *	pg	4160	33	300	N/A	N/A	N/A	2	4675448
2,3,7,8-Tetra CDF **	pg	16200	39	300	6.0	0.100	1620	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	5740	34	300	6.0	0.0300	172	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	5730	34	300	6.0	0.300	1720	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	7690 (1)	31	300	6.0	0.100	769	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	4690	30	300	6.0	0.100	469	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	2370	33	300	6.0	0.100	237	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	231	34	300	6.0	0.100	23.1	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	10400	31	300	9.0	0.0100	104	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	765	37	300	6.0	0.0100	7.65	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	1730	42	3000	15	0.000300	0.519	N/A	4675448
Total Tetra CDF **	pg	166000	39	300	N/A	N/A	N/A	16	4675448
Total Penta CDF **	pg	84100	34	300	N/A	N/A	N/A	14	4675448
Total Hexa CDF **	pg	36400	32	300	N/A	N/A	N/A	14	4675448
Total Hepta CDF **	pg	13900	34	300	N/A	N/A	N/A	4	4675448
Confirmation 2,3,7,8-Tetra CDF **	pg	5380	7.4	30	N/A	0.100	538	N/A	4678279
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	6250	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL353							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 211-215	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4678279
C13-1234678 HeptaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234678 HeptaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	64	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC Out
Test 1

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL354							
Sampling Date		2016/09/19				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 301-305	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.7	3.7	30	6.0	1.00	3.70	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	24.6	3.2	30	6.0	1.00	24.6	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	79.8	2.9	30	6.0	0.100	7.98	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	205	3.0	30	6.0	0.100	20.5	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	221 (1)	2.7	30	6.0	0.100	22.1	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	485	2.7	30	9.0	0.0100	4.85	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	408	3.3	300	9.0	0.000300	0.122	N/A	4675448
Total Tetra CDD *	pg	528	3.7	30	N/A	N/A	N/A	9	4675448
Total Penta CDD *	pg	1620	3.2	30	N/A	N/A	N/A	12	4675448
Total Hexa CDD *	pg	3650	2.9	30	N/A	N/A	N/A	7	4675448
Total Hepta CDD *	pg	981	2.7	30	N/A	N/A	N/A	2	4675448
2,3,7,8-Tetra CDF **	pg	62.3	3.1	30	6.0	0.100	6.23	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	12.8	2.9	30	6.0	0.0300	0.384	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	57.3	2.9	30	6.0	0.300	17.2	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	140 (1)	3.1	30	6.0	0.100	14.0	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	70.6	3.0	30	6.0	0.100	7.06	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	102	3.3	30	6.0	0.100	10.2	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	<7.4 (2)	7.4	30	6.0	0.100	0.740	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	183	2.4	30	9.0	0.0100	1.83	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	32.4	2.8	30	6.0	0.0100	0.324	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	51.3	3.1	300	15	0.000300	0.0154	N/A	4675448
Total Tetra CDF **	pg	378	3.1	30	N/A	N/A	N/A	15	4675448
Total Penta CDF **	pg	569	2.9	30	N/A	N/A	N/A	14	4675448
Total Hexa CDF **	pg	705	3.2	30	N/A	N/A	N/A	12	4675448
Total Hepta CDF **	pg	308	2.6	30	N/A	N/A	N/A	4	4675448
Confirmation 2,3,7,8-Tetra CDF **	pg	<7.6	7.6	30	N/A	0.100	0.760	N/A	4678279
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	136	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL354							
Sampling Date		2016/09/19				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 301-305	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4678279
C13-1234678 HeptaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234678 HeptaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	134 (1)	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin
(1) Recovery exceeds method acceptance criteria due to matrix effects

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

H2 APC Out
Test 2

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL355							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 306-310	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.3	3.3	30	6.0	1.00	3.30	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	24.0	3.0	30	6.0	1.00	24.0	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	70.4	3.5	30	6.0	0.100	7.04	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	165	3.5	30	6.0	0.100	16.5	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	191 (1)	3.2	30	6.0	0.100	19.1	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	496	2.1	30	9.0	0.0100	4.96	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	398	3.5	300	9.0	0.000300	0.119	N/A	4675448
Total Tetra CDD *	pg	471	3.3	30	N/A	N/A	N/A	9	4675448
Total Penta CDD *	pg	1490	3.0	30	N/A	N/A	N/A	12	4675448
Total Hexa CDD *	pg	3120	3.4	30	N/A	N/A	N/A	7	4675448
Total Hepta CDD *	pg	1020	2.1	30	N/A	N/A	N/A	2	4675448
2,3,7,8-Tetra CDF **	pg	60.7	3.4	30	6.0	0.100	6.07	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	20.3	2.8	30	6.0	0.0300	0.609	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	60.6	2.8	30	6.0	0.300	18.2	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	164 (1)	2.4	30	6.0	0.100	16.4	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	<82 (2)	82	30	6.0	0.100	8.20	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	107	2.5	30	6.0	0.100	10.7	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	<6.8 (2)	6.8	30	6.0	0.100	0.680	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	235	2.7	30	9.0	0.0100	2.35	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	41.7	3.2	30	6.0	0.0100	0.417	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	112	3.3	300	15	0.000300	0.0336	N/A	4675448
Total Tetra CDF **	pg	351	3.4	30	N/A	N/A	N/A	13	4675448
Total Penta CDF **	pg	579	2.8	30	N/A	N/A	N/A	12	4675448
Total Hexa CDF **	pg	686	2.5	30	N/A	N/A	N/A	11	4675448
Total Hepta CDF **	pg	384	2.9	30	N/A	N/A	N/A	4	4675448
Confirmation 2,3,7,8-Tetra CDF **	pg	<4.0	4.0	30	N/A	0.100	0.400	N/A	4678279
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	133	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL355							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 306-310	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	59	N/A	N/A	N/A	N/A	N/A	N/A	4678279
C13-1234678 HeptaCDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234678 HeptaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC Out
Test 3

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL356							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 311-315	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.7	3.7	30	6.0	1.00	3.70	N/A	4675448
1,2,3,7,8-Penta CDD *	pg	23.9	2.5	30	6.0	1.00	23.9	N/A	4675448
1,2,3,4,7,8-Hexa CDD *	pg	78.0	2.6	30	6.0	0.100	7.80	N/A	4675448
1,2,3,6,7,8-Hexa CDD *	pg	199	2.7	30	6.0	0.100	19.9	N/A	4675448
1,2,3,7,8,9-Hexa CDD *	pg	215 (1)	2.4	30	6.0	0.100	21.5	N/A	4675448
1,2,3,4,6,7,8-Hepta CDD *	pg	531	2.6	30	9.0	0.0100	5.31	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDD *	pg	330	3.5	300	9.0	0.000300	0.0990	N/A	4675448
Total Tetra CDD *	pg	473	3.7	30	N/A	N/A	N/A	10	4675448
Total Penta CDD *	pg	1340	2.5	30	N/A	N/A	N/A	12	4675448
Total Hexa CDD *	pg	3480	2.6	30	N/A	N/A	N/A	7	4675448
Total Hepta CDD *	pg	1020	2.6	30	N/A	N/A	N/A	2	4675448
2,3,7,8-Tetra CDF **	pg	53.3	3.0	30	6.0	0.100	5.33	N/A	4675448
1,2,3,7,8-Penta CDF **	pg	11.6	3.1	30	6.0	0.0300	0.348	N/A	4675448
2,3,4,7,8-Penta CDF **	pg	<50 (2)	50	30	6.0	0.300	15.0	N/A	4675448
1,2,3,4,7,8-Hexa CDF **	pg	132 (1)	2.5	30	6.0	0.100	13.2	N/A	4675448
1,2,3,6,7,8-Hexa CDF **	pg	65.5	2.4	30	6.0	0.100	6.55	N/A	4675448
2,3,4,6,7,8-Hexa CDF **	pg	91.2	2.7	30	6.0	0.100	9.12	N/A	4675448
1,2,3,7,8,9-Hexa CDF **	pg	<6.7 (2)	6.7	30	6.0	0.100	0.670	N/A	4675448
1,2,3,4,6,7,8-Hepta CDF **	pg	166	2.5	30	9.0	0.0100	1.66	N/A	4675448
1,2,3,4,7,8,9-Hepta CDF **	pg	30.6	3.0	30	6.0	0.0100	0.306	N/A	4675448
1,2,3,4,6,7,8,9-Octa CDF **	pg	49.2	2.7	300	15	0.000300	0.0148	N/A	4675448
Total Tetra CDF **	pg	286	3.0	30	N/A	N/A	N/A	14	4675448
Total Penta CDF **	pg	440	3.1	30	N/A	N/A	N/A	11	4675448
Total Hexa CDF **	pg	655	2.6	30	N/A	N/A	N/A	12	4675448
Total Hepta CDF **	pg	285	2.7	30	N/A	N/A	N/A	4	4675448
Confirmation 2,3,7,8-Tetra CDF **	pg	655 (3)	9.3	30	N/A	0.100	65.5	N/A	4678279

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

(3) The normal procedure followed by laboratories is that extracts for Dioxins/furans testing are first analysed on an HRMS with a primary column (e.g. Varian CP-Sil 8 CB).

If the 2,3,7,8-TCDF congener is determined to be positive, the result is then confirmed on another HRMS with a secondary column (e.g. Restek, Rtx-Dioxin2) for specific quantification. This procedure normally is successful in resolving 2,3,7,8-TCDF.

The chromatography on the secondary column displayed positive enhancement due to other compounds eluting with 2,3,7,8-TCDF. These other compounds effectively elevated the baseline, which by rule, is included in the calculation of 2,3,7,8-TCDF. Hence the result of the secondary column was much higher than the primary result.

For this sample, the result from the primary column analysis should be used.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCL356							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 311-315	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	195	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4678279
C13-1234678 HeptaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234678 HeptaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDD *	%	130	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123478 HexaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-1234789 HeptaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-12378 PentaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-123789 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-23478 PentaCDF **	%	121	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-2378 TetraCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4675448
C13-Octachlorodibenzo-p-Dioxin	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4675448
Cl37-2378 TetraCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675448

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

U2 Blank

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL350							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 406-410	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<18	18	300	N/A	0.00010	0.0018	N/A	4670130
344'5-TetraCB-(81)	pg	<18	18	300	N/A	0.00030	0.0054	N/A	4670130
233'44'-PentaCB-(105)	pg	<15 (1)	15	300	N/A	0.000030	0.00045	N/A	4670130
2344'5-PentaCB-(114)	pg	<13	13	300	N/A	0.000030	0.00039	N/A	4670130
23'44'5-PentaCB-(118)	pg	56	13	300	N/A	0.000030	0.0017	N/A	4670130
23'44'5'-PentaCB-(123)	pg	<14	14	300	N/A	0.000030	0.00042	N/A	4670130
33'44'5-PentaCB-(126)	pg	<13	13	300	N/A	0.10	1.3	N/A	4670130
HexaCB-(156)+(157)	pg	<13	13	600	N/A	0.000030	0.00039	N/A	4670130
23'44'55'-HexaCB-(167)	pg	<13	13	300	N/A	0.000030	0.00039	N/A	4670130
33'44'55'-HexaCB-(169)	pg	<13	13	300	N/A	0.030	0.39	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	<17	17	300	N/A	0.000030	0.00051	N/A	4670130
Total PCB	pg	980	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	1.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC In
Test 1

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL351							
Sampling Date		2016/09/19				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 201-205	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	1200	41	300	N/A	0.00010	0.12	N/A	4670130
344'5-TetraCB-(81)	pg	260	42	300	N/A	0.00030	0.078	N/A	4670130
233'44'-PentaCB-(105)	pg	3300	35	300	N/A	0.000030	0.099	N/A	4670130
2344'5-PentaCB-(114)	pg	300	34	300	N/A	0.000030	0.0090	N/A	4670130
23'44'5-PentaCB-(118)	pg	9100	35	300	N/A	0.000030	0.27	N/A	4670130
23'44'5'-PentaCB-(123)	pg	300	39	300	N/A	0.000030	0.0090	N/A	4670130
33'44'5-PentaCB-(126)	pg	760	36	300	N/A	0.10	76	N/A	4670130
HexaCB-(156)+(157)	pg	980	29	600	N/A	0.000030	0.029	N/A	4670130
23'44'55'-HexaCB-(167)	pg	460	32	300	N/A	0.000030	0.014	N/A	4670130
33'44'55'-HexaCB-(169)	pg	240	31	300	N/A	0.030	7.2	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	290	36	300	N/A	0.000030	0.0087	N/A	4670130
Total PCB	pg	200000	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	84	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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Report Date: 2016/10/20

HCAPC In
Test 2

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL352							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 206-210	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	970	19	300	N/A	0.00010	0.097	N/A	4670130
344'5-TetraCB-(81)	pg	210	19	300	N/A	0.00030	0.063	N/A	4670130
233'44'-PentaCB-(105)	pg	2300	13	300	N/A	0.000030	0.069	N/A	4670130
2344'5-PentaCB-(114)	pg	<220 (1)	220	300	N/A	0.000030	0.0066	N/A	4670130
23'44'5-PentaCB-(118)	pg	7500	13	300	N/A	0.000030	0.23	N/A	4670130
23'44'5'-PentaCB-(123)	pg	240	14	300	N/A	0.000030	0.0072	N/A	4670130
33'44'5-PentaCB-(126)	pg	600	13	300	N/A	0.10	60	N/A	4670130
HexaCB-(156)+(157)	pg	640	25	600	N/A	0.000030	0.019	N/A	4670130
23'44'55'-HexaCB-(167)	pg	320	27	300	N/A	0.000030	0.0096	N/A	4670130
33'44'55'-HexaCB-(169)	pg	180	26	300	N/A	0.030	5.4	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	230	21	300	N/A	0.000030	0.0069	N/A	4670130
Total PCB	pg	240000	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	66	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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#2 APC In
Test 3

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL353							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 211-215	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	740	18	300	N/A	0.00010	0.074	N/A	4670130
344'5-TetraCB-(81)	pg	170	18	300	N/A	0.00030	0.051	N/A	4670130
233'44'-PentaCB-(105)	pg	1600	52	300	N/A	0.000030	0.048	N/A	4670130
2344'5-PentaCB-(114)	pg	170	50	300	N/A	0.000030	0.0051	N/A	4670130
23'44'5-PentaCB-(118)	pg	4600	51	300	N/A	0.000030	0.14	N/A	4670130
23'44'5'-PentaCB-(123)	pg	180	57	300	N/A	0.000030	0.0054	N/A	4670130
33'44'5-PentaCB-(126)	pg	530	52	300	N/A	0.10	53	N/A	4670130
HexaCB-(156)+(157)	pg	450	25	600	N/A	0.000030	0.014	N/A	4670130
23'44'55'-HexaCB-(167)	pg	240	26	300	N/A	0.000030	0.0072	N/A	4670130
33'44'55'-HexaCB-(169)	pg	190	26	300	N/A	0.030	5.7	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	190	23	300	N/A	0.000030	0.0057	N/A	4670130
Total PCB	pg	130000	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	59	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 ARC Out
Test 1

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL354							
Sampling Date		2016/09/19				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 301-305	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<57 (1)	57	300	N/A	0.00010	0.0057	N/A	4670130
344'5-TetraCB-(81)	pg	<35	35	300	N/A	0.00030	0.011	N/A	4670130
233'44'-PentaCB-(105)	pg	610	20	300	N/A	0.000030	0.018	N/A	4670130
2344'5-PentaCB-(114)	pg	<42 (1)	42	300	N/A	0.000030	0.0013	N/A	4670130
23'44'5-PentaCB-(118)	pg	1700	20	300	N/A	0.000030	0.051	N/A	4670130
23'44'5'-PentaCB-(123)	pg	27	22	300	N/A	0.000030	0.00081	N/A	4670130
33'44'5-PentaCB-(126)	pg	<20	20	300	N/A	0.10	2.0	N/A	4670130
HexaCB-(156)+(157)	pg	100	11	600	N/A	0.000030	0.0030	N/A	4670130
23'44'55'-HexaCB-(167)	pg	33	11	300	N/A	0.000030	0.00099	N/A	4670130
33'44'55'-HexaCB-(169)	pg	<16 (1)	16	300	N/A	0.030	0.48	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	35	18	300	N/A	0.000030	0.0011	N/A	4670130
Total PCB	pg	32000	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	2.6	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APC out
Test 2

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL355							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 306-310	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<56 (1)	56	300	N/A	0.00010	0.0056	N/A	4670130
344'5-TetraCB-(81)	pg	<29	29	300	N/A	0.00030	0.0087	N/A	4670130
233'44'-PentaCB-(105)	pg	480	27	300	N/A	0.000030	0.014	N/A	4670130
2344'5-PentaCB-(114)	pg	<26	26	300	N/A	0.000030	0.00078	N/A	4670130
23'44'5-PentaCB-(118)	pg	1400	27	300	N/A	0.000030	0.042	N/A	4670130
23'44'5'-PentaCB-(123)	pg	<30	30	300	N/A	0.000030	0.00090	N/A	4670130
33'44'5-PentaCB-(126)	pg	<28	28	300	N/A	0.10	2.8	N/A	4670130
HexaCB-(156)+(157)	pg	82	8.4	600	N/A	0.000030	0.0025	N/A	4670130
23'44'55'-HexaCB-(167)	pg	<20 (1)	20	300	N/A	0.000030	0.00060	N/A	4670130
33'44'55'-HexaCB-(169)	pg	26	9.0	300	N/A	0.030	0.78	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	<27	27	300	N/A	0.000030	0.00081	N/A	4670130
Total PCB	pg	21000	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	3.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	118	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	117	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	120	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

#2 APCOut
Test 3

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCL356							
Sampling Date		2016/09/20				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 311-315	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<42 (1)	42	300	N/A	0.00010	0.0042	N/A	4670130
344'5-TetraCB-(81)	pg	<33	33	300	N/A	0.00030	0.0099	N/A	4670130
233'44'-PentaCB-(105)	pg	690	26	300	N/A	0.000030	0.021	N/A	4670130
2344'5-PentaCB-(114)	pg	54	25	300	N/A	0.000030	0.0016	N/A	4670130
23'44'5-PentaCB-(118)	pg	1900	26	300	N/A	0.000030	0.057	N/A	4670130
23'44'5'-PentaCB-(123)	pg	<28	28	300	N/A	0.000030	0.00084	N/A	4670130
33'44'5-PentaCB-(126)	pg	<26	26	300	N/A	0.10	2.6	N/A	4670130
HexaCB-(156)+(157)	pg	110	26	600	N/A	0.000030	0.0033	N/A	4670130
23'44'55'-HexaCB-(167)	pg	34	28	300	N/A	0.000030	0.0010	N/A	4670130
33'44'55'-HexaCB-(169)	pg	<28	28	300	N/A	0.030	0.84	N/A	4670130
233'44'55'-HeptaCB-(189)	pg	<26 (1)	26	300	N/A	0.000030	0.00078	N/A	4670130
Total PCB	pg	40000	N/A	N/A	N/A	N/A	N/A	N/A	4670130
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	3.5	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5-HexaCB-(156)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'5'-HexaCB-(157)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-233'44'-PentaCB-(105)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'55'-HexaCB-(167)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2344'5-PentaCB-(114)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-23'44'5-PentaCB-(118)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-2'344'5-PentaCB-(123)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'55'-HexaCB-(169)	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'5-PentaCB-(126)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-33'44'-TetraCB-(77)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4670130
C13-344'5-TetraCB-(81)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4670130

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DCL350
Sample ID: 16-21707-SVOC 406-410
Matrix: Stack Sampling Train

Collected: 2016/09/20
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/26	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

Maxxam ID: DCL351
Sample ID: 16-21707-SVOC 201-205
Matrix: Stack Sampling Train

Collected: 2016/09/19
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4678279	N/A	2016/09/27	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

Maxxam ID: DCL352
Sample ID: 16-21707-SVOC 206-210
Matrix: Stack Sampling Train

Collected: 2016/09/20
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4678279	N/A	2016/09/26	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

Maxxam ID: DCL353
Sample ID: 16-21707-SVOC 211-215
Matrix: Stack Sampling Train

Collected: 2016/09/20
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4678279	N/A	2016/09/26	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

Maxxam ID: DCL354
Sample ID: 16-21707-SVOC 301-305
Matrix: Stack Sampling Train

Collected: 2016/09/19
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4678279	N/A	2016/09/27	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/26	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

Maxxam ID: DCL355
Sample ID: 16-21707-SVOC 306-310
Matrix: Stack Sampling Train

Collected: 2016/09/20
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4678279	N/A	2016/09/26	Vica Cioranic

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DCL355
Sample ID: 16-21707-SVOC 306-310
Matrix: Stack Sampling Train

Collected: 2016/09/20
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/26	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

Maxxam ID: DCL356
Sample ID: 16-21707-SVOC 311-315
Matrix: Stack Sampling Train

Collected: 2016/09/20
Shipped:
Received: 2016/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4678279	N/A	2016/09/27	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4675448	2016/09/21	2016/09/26	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4670130	2016/09/21	2016/10/09	Branko Vrzic

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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

GENERAL COMMENTS

Sample DCL351-01 : 10X DILUTION

Sample DCL352-01 : 10X DILUTION

Sample DCL353-01 : 10X DILUTION

Results relate only to the items tested.

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Maxxam
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Maxxam Job #: B6K2536
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4670130	BY	Spiked Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/09		92	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/09		89	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/09		89	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/09		91	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/09		87	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/09		88	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/09		90	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/09		90	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/09		63	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/09		89	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/09		89	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/09		87	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/09		86	%	50 - 150
			344'5-TetraCB-(81)	2016/10/09		86	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/09		98	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/09		97	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/09		93	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/09		94	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/09		96	%	50 - 150
			HexaCB-(156)+(157)	2016/10/09		104	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/09		104	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/09		104	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/09		98	%	50 - 150
4670130	BY	Spiked Blank DUP	C13-233'44'55'-HeptaCB-(189)	2016/10/09		106	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/09		92	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/09		92	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/09		84	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/09		92	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/09		84	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/09		83	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/09		87	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/09		68	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/09		83	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/09		88	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/09		81	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/09		100	%	50 - 150
			344'5-TetraCB-(81)	2016/10/09		101	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/09		119	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/09		110	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/09		113	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/09		112	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/09		113	%	50 - 150
			HexaCB-(156)+(157)	2016/10/09		108	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/09		107	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/09		108	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/09		92	%	50 - 150
4670130	BY	RPD	33'44'-TetraCB-(77)	2016/10/09	15		%	30
			344'5-TetraCB-(81)	2016/10/09	16		%	30
			233'44'-PentaCB-(105)	2016/10/09	19		%	30
			2344'5-PentaCB-(114)	2016/10/09	13		%	30
			23'44'5-PentaCB-(118)	2016/10/09	19		%	30
			23'44'5'-PentaCB-(123)	2016/10/09	17		%	30

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Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'44'5-PentaCB-(126)	2016/10/09	16		%	30
			HexaCB-(156)+(157)	2016/10/09	3.8		%	30
			23'44'55'-HexaCB-(167)	2016/10/09	2.8		%	30
			33'44'55'-HexaCB-(169)	2016/10/09	3.8		%	30
			233'44'55'-HeptaCB-(189)	2016/10/09	6.3		%	30
4670130	BY	Method Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/09		96	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/09		98	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/09		98	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/09		96	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/09		97	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/09		95	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/09		94	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/09		94	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/09		73	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/09		94	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/09		91	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/09		88	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/09	<20		pg	
			344'5-TetraCB-(81)	2016/10/09	<21		pg	
			233'44'-PentaCB-(105)	2016/10/09	<20		pg	
			2344'5-PentaCB-(114)	2016/10/09	<19		pg	
			23'44'5-PentaCB-(118)	2016/10/09	<19		pg	
			23'44'5'-PentaCB-(123)	2016/10/09	<22		pg	
			33'44'5-PentaCB-(126)	2016/10/09	<20		pg	
			HexaCB-(156)+(157)	2016/10/09	<13		pg	
			23'44'55'-HexaCB-(167)	2016/10/09	<14		pg	
			33'44'55'-HexaCB-(169)	2016/10/09	<14		pg	
			233'44'55'-HeptaCB-(189)	2016/10/09	<15		pg	
			Total PCB	2016/10/09	0.0000000000000		pg	
4675448	OBC	Spiked Blank	C13-1234678 HeptaCDD	2016/09/25		101	%	25 - 130
			C13-1234678 HeptaCDF	2016/09/25		86	%	25 - 130
			C13-123678 HexaCDD	2016/09/25		93	%	40 - 130
			C13-123678 HexaCDF	2016/09/25		82	%	40 - 130
			C13-12378 PentaCDD	2016/09/25		95	%	40 - 130
			C13-12378 PentaCDF	2016/09/25		92	%	40 - 130
			C13-123789 HexaCDF	2016/09/25		81	%	40 - 130
			C13-2378 TetraCDD	2016/09/25		79	%	40 - 130
			C13-2378 TetraCDF	2016/09/25		80	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/09/25		79	%	25 - 130
			2,3,7,8-Tetra CDD	2016/09/25		103	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/09/25		92	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/09/25		97	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/09/25		94	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/09/25		102	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/09/25		82	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/25		104	%	80 - 140
			2,3,7,8-Tetra CDF	2016/09/25		106	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/09/25		99	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/09/25		126	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/09/25		103	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/09/25		105	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/09/25		115	%	80 - 140

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Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDF	2016/09/25		113	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/09/25		101	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/09/25		92	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/25		100	%	80 - 140
4675448	OBC	Spiked Blank DUP	C13-1234678 HeptaCDD	2016/09/25		93	%	25 - 130
			C13-1234678 HeptaCDF	2016/09/25		78	%	25 - 130
			C13-123678 HexaCDD	2016/09/25		83	%	40 - 130
			C13-123678 HexaCDF	2016/09/25		74	%	40 - 130
			C13-12378 PentaCDD	2016/09/25		87	%	40 - 130
			C13-12378 PentaCDF	2016/09/25		83	%	40 - 130
			C13-123789 HexaCDF	2016/09/25		76	%	40 - 130
			C13-2378 TetraCDD	2016/09/25		68	%	40 - 130
			C13-2378 TetraCDF	2016/09/25		68	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/09/25		73	%	25 - 130
			2,3,7,8-Tetra CDD	2016/09/25		105	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/09/25		91	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/09/25		100	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/09/25		96	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/09/25		113	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/09/25		81	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/25		104	%	80 - 140
			2,3,7,8-Tetra CDF	2016/09/25		106	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/09/25		97	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/09/25		130	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/09/25		105	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/09/25		105	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/09/25		115	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2016/09/25		117	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/09/25		97	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/09/25		94	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/25		99	%	80 - 140
4675448	OBC	RPD	2,3,7,8-Tetra CDD	2016/09/25	NC		%	20
			1,2,3,7,8-Penta CDD	2016/09/25	NC		%	20
			1,2,3,4,7,8-Hexa CDD	2016/09/25	NC		%	20
			1,2,3,6,7,8-Hexa CDD	2016/09/25	NC		%	20
			1,2,3,7,8,9-Hexa CDD	2016/09/25	NC		%	20
			1,2,3,4,6,7,8-Hepta CDD	2016/09/25	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/25	NC		%	20
			2,3,7,8-Tetra CDF	2016/09/25	NC		%	20
			1,2,3,7,8-Penta CDF	2016/09/25	NC		%	20
			2,3,4,7,8-Penta CDF	2016/09/25	NC		%	20
			1,2,3,4,7,8-Hexa CDF	2016/09/25	NC		%	20
			1,2,3,6,7,8-Hexa CDF	2016/09/25	NC		%	20
			2,3,4,6,7,8-Hexa CDF	2016/09/25	NC		%	20
			1,2,3,7,8,9-Hexa CDF	2016/09/25	NC		%	20
			1,2,3,4,6,7,8-Hepta CDF	2016/09/25	NC		%	20
			1,2,3,4,7,8,9-Hepta CDF	2016/09/25	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/25	NC		%	20
4675448	OBC	Method Blank	C13-1234678 HeptaCDD	2016/09/25		89	%	25 - 130
			C13-1234678 HeptaCDF	2016/09/25		74	%	25 - 130
			C13-123678 HexaCDD	2016/09/25		93	%	40 - 130
			C13-123678 HexaCDF	2016/09/25		88	%	40 - 130

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-12378 PentaCDD	2016/09/25		103	%	40 - 130
			C13-12378 PentaCDF	2016/09/25		98	%	40 - 130
			C13-123789 HexaCDF	2016/09/25		69	%	40 - 130
			C13-2378 TetraCDD	2016/09/25		89	%	40 - 130
			C13-2378 TetraCDF	2016/09/25		90	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/09/25		64	%	25 - 130
			2,3,7,8-Tetra CDD	2016/09/25	<3.5, EDL=3.5		pg	
			1,2,3,7,8-Penta CDD	2016/09/25	<3.4, EDL=3.4		pg	
			1,2,3,4,7,8-Hexa CDD	2016/09/25	<2.8, EDL=2.8		pg	
			1,2,3,6,7,8-Hexa CDD	2016/09/25	<2.9, EDL=2.9		pg	
			1,2,3,7,8,9-Hexa CDD	2016/09/25	<2.6, EDL=2.6		pg	
			1,2,3,4,6,7,8-Hepta CDD	2016/09/25	<2.4, EDL=2.4		pg	
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/25	4.8, EDL=3.5		pg	
			Total Tetra CDD	2016/09/25	<6.2, EDL=6.2 (1)		pg	
			Total Penta CDD	2016/09/25	<2.4, EDL=2.4 (2)		pg	
			Total Hexa CDD	2016/09/25	<9.1, EDL=9.1 (1)		pg	
			Total Hepta CDD	2016/09/25	<2.4, EDL=2.4		pg	
			2,3,7,8-Tetra CDF	2016/09/25	<3.1, EDL=3.1		pg	
			1,2,3,7,8-Penta CDF	2016/09/25	<3.8, EDL=3.8		pg	
			2,3,4,7,8-Penta CDF	2016/09/25	<3.8, EDL=3.8		pg	
			1,2,3,4,7,8-Hexa CDF	2016/09/25	<2.9, EDL=2.9		pg	
			1,2,3,6,7,8-Hexa CDF	2016/09/25	<2.8, EDL=2.8		pg	
			2,3,4,6,7,8-Hexa CDF	2016/09/25	<3.0, EDL=3.0		pg	
			1,2,3,7,8,9-Hexa CDF	2016/09/25	<3.2, EDL=3.2		pg	
			1,2,3,4,6,7,8-Hepta CDF	2016/09/25	<2.5, EDL=2.5		pg	
			1,2,3,4,7,8,9-Hepta CDF	2016/09/25	<3.0, EDL=3.0		pg	
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/25	<3.1, EDL=3.1		pg	

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ORTECH Environmental
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Tetra CDF	2016/09/25	<3.1, EDL=3.1		pg	
			Total Penta CDF	2016/09/25	<3.8, EDL=3.8		pg	
			Total Hexa CDF	2016/09/25	<3.0, EDL=3.0		pg	
			Total Hepta CDF	2016/09/25	<2.7, EDL=2.7		pg	
4678279	VCI	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2016/09/26	<4.0, EDL=4.0		pg	
			Confirmation C13-2378 TetraCDF	2016/09/26		85	%	40 - 135

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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Client Project #: 21707
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Your P.O. #: 21707-J2279

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cathy Xu, Senior Analyst, HRMS Services, Senior Analyst, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

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Your P.O. #: 21707-J2279
Your Project #: 21707
Site Location: COVANTA

Attention:CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
L5J 2Y4

Report Date: 2016/10/20
Report #: R4217258
Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B6K5662
Received: 2016/09/23, 19:47

Sample Matrix: Stack Sampling Train
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
2,3,7,8-TCDF Confirmation (M23)	4	N/A	2016/09/29	BRL SOP-00404	EPA M23/23A m
2,3,7,8-TCDF Confirmation (M23)	2	N/A	2016/09/30	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	5	2016/09/24	2016/09/28	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	1	2016/09/24	2016/09/29	BRL SOP-00404	EPA M23/23A m
PCBs in a Sampling Train (1668Amod)	6	2016/09/24	2016/10/10	BRL SOP-00408	EPA 1668A m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Clayton Johnson
Project Manager - Air Toxics, Source Evaluation
20 Oct 2016 11:11:30 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905)817-5769

==========

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC Inlet
Test 4

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ388							
Sampling Date		2016/09/22				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 216-220	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	1010	38	300	6.0	1.00	1010	N/A	4679395
1,2,3,7,8-Penta CDD *	pg	1180	38	300	6.0	1.00	1180	N/A	4679395
1,2,3,4,7,8-Hexa CDD *	pg	429	45	300	6.0	0.100	42.9	N/A	4679395
1,2,3,6,7,8-Hexa CDD *	pg	604	46	300	6.0	0.100	60.4	N/A	4679395
1,2,3,7,8,9-Hexa CDD *	pg	986 (1)	42	300	6.0	0.100	98.6	N/A	4679395
1,2,3,4,6,7,8-Hepta CDD *	pg	2030	29	300	9.0	0.0100	20.3	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDD *	pg	5750	36	3000	9.0	0.000300	1.73	N/A	4679395
Total Tetra CDD *	pg	12400	38	300	N/A	N/A	N/A	15	4679395
Total Penta CDD *	pg	8740	38	300	N/A	N/A	N/A	12	4679395
Total Hexa CDD *	pg	6540	45	300	N/A	N/A	N/A	7	4679395
Total Hepta CDD *	pg	4170	29	300	N/A	N/A	N/A	2	4679395
2,3,7,8-Tetra CDF **	pg	21000	43	300	6.0	0.100	2100	N/A	4679395
1,2,3,7,8-Penta CDF **	pg	6960	47	300	6.0	0.0300	209	N/A	4679395
2,3,4,7,8-Penta CDF **	pg	6510	48	300	6.0	0.300	1950	N/A	4679395
1,2,3,4,7,8-Hexa CDF **	pg	9660 (1)	34	300	6.0	0.100	966	N/A	4679395
1,2,3,6,7,8-Hexa CDF **	pg	6040	32	300	6.0	0.100	604	N/A	4679395
2,3,4,6,7,8-Hexa CDF **	pg	4210	36	300	6.0	0.100	421	N/A	4679395
1,2,3,7,8,9-Hexa CDF **	pg	227	37	300	6.0	0.100	22.7	N/A	4679395
1,2,3,4,6,7,8-Hepta CDF **	pg	15300	32	300	9.0	0.0100	153	N/A	4679395
1,2,3,4,7,8,9-Hepta CDF **	pg	1070	38	300	6.0	0.0100	10.7	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDF **	pg	3200	38	3000	15	0.000300	0.960	N/A	4679395
Total Tetra CDF **	pg	216000	43	300	N/A	N/A	N/A	16	4679395
Total Penta CDF **	pg	109000	48	300	N/A	N/A	N/A	13	4679395
Total Hexa CDF **	pg	48000	35	300	N/A	N/A	N/A	13	4679395
Total Hepta CDF **	pg	20800	35	300	N/A	N/A	N/A	4	4679395
Confirmation 2,3,7,8-Tetra CDF **	pg	6640 (2)	45	300	N/A	0.100	664	N/A	4683861
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	7420	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
Result from 10 X dilution

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ388							
Sampling Date		2016/09/22				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 216-220	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4683861
C13-1234678 HeptaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234789 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123789 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-23478 PentaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-Octachlorodibenzo-p-Dioxin	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4679395
Cl37-2378 TetraCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4679395

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC Inlet
Test 5

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ389							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 221-225	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	1060	40	300	6.0	1.00	1060	N/A	4679395
1,2,3,7,8-Penta CDD *	pg	1300	40	300	6.0	1.00	1300	N/A	4679395
1,2,3,4,7,8-Hexa CDD *	pg	466	30	300	6.0	0.100	46.6	N/A	4679395
1,2,3,6,7,8-Hexa CDD *	pg	631	31	300	6.0	0.100	63.1	N/A	4679395
1,2,3,7,8,9-Hexa CDD *	pg	1050 (1)	28	300	6.0	0.100	105	N/A	4679395
1,2,3,4,6,7,8-Hepta CDD *	pg	2570	34	300	9.0	0.0100	25.7	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDD *	pg	8470	29	3000	9.0	0.000300	2.54	N/A	4679395
Total Tetra CDD *	pg	12800	40	300	N/A	N/A	N/A	15	4679395
Total Penta CDD *	pg	8990	40	300	N/A	N/A	N/A	11	4679395
Total Hexa CDD *	pg	6810	30	300	N/A	N/A	N/A	7	4679395
Total Hepta CDD *	pg	5310	34	300	N/A	N/A	N/A	2	4679395
2,3,7,8-Tetra CDF **	pg	24300	31	300	6.0	0.100	2430	N/A	4679395
1,2,3,7,8-Penta CDF **	pg	8360	53	300	6.0	0.0300	251	N/A	4679395
2,3,4,7,8-Penta CDF **	pg	7420	53	300	6.0	0.300	2230	N/A	4679395
1,2,3,4,7,8-Hexa CDF **	pg	9880 (1)	36	300	6.0	0.100	988	N/A	4679395
1,2,3,6,7,8-Hexa CDF **	pg	6130	34	300	6.0	0.100	613	N/A	4679395
2,3,4,6,7,8-Hexa CDF **	pg	4220	38	300	6.0	0.100	422	N/A	4679395
1,2,3,7,8,9-Hexa CDF **	pg	329	39	300	6.0	0.100	32.9	N/A	4679395
1,2,3,4,6,7,8-Hepta CDF **	pg	13600	28	300	9.0	0.0100	136	N/A	4679395
1,2,3,4,7,8,9-Hepta CDF **	pg	1060	33	300	6.0	0.0100	10.6	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDF **	pg	3530	29	3000	15	0.000300	1.06	N/A	4679395
Total Tetra CDF **	pg	243000	31	300	N/A	N/A	N/A	16	4679395
Total Penta CDF **	pg	118000	53	300	N/A	N/A	N/A	14	4679395
Total Hexa CDF **	pg	48700	37	300	N/A	N/A	N/A	13	4679395
Total Hepta CDF **	pg	20000	30	300	N/A	N/A	N/A	4	4679395
Confirmation 2,3,7,8-Tetra CDF **	pg	9330 (2)	68	300	N/A	0.100	933	N/A	4683861
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	8220	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) Result from 10 X dilution

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ389							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 221-225	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4683861
C13-1234678 HeptaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234678 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234789 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDD *	%	128	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123789 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-23478 PentaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-Octachlorodibenzo-p-Dioxin	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4679395
Cl37-2378 TetraCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4679395

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Report Date: 2016/10/20

#2 APC Inlet
Test 6

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ390							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 226-230	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	1140	35	300	6.0	1.00	1140	N/A	4679395
1,2,3,7,8-Penta CDD *	pg	1450	39	300	6.0	1.00	1450	N/A	4679395
1,2,3,4,7,8-Hexa CDD *	pg	702	39	300	6.0	0.100	70.2	N/A	4679395
1,2,3,6,7,8-Hexa CDD *	pg	972	39	300	6.0	0.100	97.2	N/A	4679395
1,2,3,7,8,9-Hexa CDD *	pg	1610 (1)	36	300	6.0	0.100	161	N/A	4679395
1,2,3,4,6,7,8-Hepta CDD *	pg	3650	34	300	9.0	0.0100	36.5	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDD *	pg	10600	43	3000	9.0	0.000300	3.18	N/A	4679395
Total Tetra CDD *	pg	14100	35	300	N/A	N/A	N/A	15	4679395
Total Penta CDD *	pg	11000	39	300	N/A	N/A	N/A	12	4679395
Total Hexa CDD *	pg	10200	38	300	N/A	N/A	N/A	7	4679395
Total Hepta CDD *	pg	7440	34	300	N/A	N/A	N/A	2	4679395
2,3,7,8-Tetra CDF **	pg	20700	43	300	6.0	0.100	2070	N/A	4679395
1,2,3,7,8-Penta CDF **	pg	8020	49	300	6.0	0.0300	241	N/A	4679395
2,3,4,7,8-Penta CDF **	pg	7940	49	300	6.0	0.300	2380	N/A	4679395
1,2,3,4,7,8-Hexa CDF **	pg	11100 (1)	35	300	6.0	0.100	1110	N/A	4679395
1,2,3,6,7,8-Hexa CDF **	pg	6850	34	300	6.0	0.100	685	N/A	4679395
2,3,4,6,7,8-Hexa CDF **	pg	4660	37	300	6.0	0.100	466	N/A	4679395
1,2,3,7,8,9-Hexa CDF **	pg	272	39	300	6.0	0.100	27.2	N/A	4679395
1,2,3,4,6,7,8-Hepta CDF **	pg	19100	34	300	9.0	0.0100	191	N/A	4679395
1,2,3,4,7,8,9-Hepta CDF **	pg	1460	40	300	6.0	0.0100	14.6	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDF **	pg	4780	44	3000	15	0.000300	1.43	N/A	4679395
Total Tetra CDF **	pg	213000	43	300	N/A	N/A	N/A	16	4679395
Total Penta CDF **	pg	120000	49	300	N/A	N/A	N/A	13	4679395
Total Hexa CDF **	pg	53900	36	300	N/A	N/A	N/A	13	4679395
Total Hepta CDF **	pg	26000	37	300	N/A	N/A	N/A	4	4679395
Confirmation 2,3,7,8-Tetra CDF **	pg	7270	77	300	N/A	0.100	727	N/A	4683861
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	8800	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ390							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 226-230	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4683861
C13-1234678 HeptaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234678 HeptaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDD *	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234789 HeptaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123789 HexaCDF **	%	168 (1)	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-23478 PentaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-Octachlorodibenzo-p-Dioxin	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4679395
Cl37-2378 TetraCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4679395

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin
(1) Alternate (cleanup spike) possible double spike

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC Outlet
Test 4

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ391							
Sampling Date		2016/09/22				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 316-320	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<5.0 (1)	5.0	30	6.0	1.00	5.00	N/A	4679395
1,2,3,7,8-Penta CDD *	pg	17.8	3.7	30	6.0	1.00	17.8	N/A	4679395
1,2,3,4,7,8-Hexa CDD *	pg	60.5	4.0	30	6.0	0.100	6.05	N/A	4679395
1,2,3,6,7,8-Hexa CDD *	pg	145	4.1	30	6.0	0.100	14.5	N/A	4679395
1,2,3,7,8,9-Hexa CDD *	pg	170 (2)	3.7	30	6.0	0.100	17.0	N/A	4679395
1,2,3,4,6,7,8-Hepta CDD *	pg	407	3.4	30	9.0	0.0100	4.07	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDD *	pg	346	3.0	300	9.0	0.000300	0.104	N/A	4679395
Total Tetra CDD *	pg	369	3.9	30	N/A	N/A	N/A	9	4679395
Total Penta CDD *	pg	1090	3.7	30	N/A	N/A	N/A	12	4679395
Total Hexa CDD *	pg	2730	3.9	30	N/A	N/A	N/A	7	4679395
Total Hepta CDD *	pg	819	3.4	30	N/A	N/A	N/A	2	4679395
2,3,7,8-Tetra CDF **	pg	56.4	3.7	30	6.0	0.100	5.64	N/A	4679395
1,2,3,7,8-Penta CDF **	pg	18.7	4.1	30	6.0	0.0300	0.561	N/A	4679395
2,3,4,7,8-Penta CDF **	pg	<45 (3)	45	30	6.0	0.300	13.5	N/A	4679395
1,2,3,4,7,8-Hexa CDF **	pg	135 (2)	3.2	30	6.0	0.100	13.5	N/A	4679395
1,2,3,6,7,8-Hexa CDF **	pg	71.9	3.1	30	6.0	0.100	7.19	N/A	4679395
2,3,4,6,7,8-Hexa CDF **	pg	90.1	3.4	30	6.0	0.100	9.01	N/A	4679395
1,2,3,7,8,9-Hexa CDF **	pg	<6.7 (3)	6.7	30	6.0	0.100	0.670	N/A	4679395
1,2,3,4,6,7,8-Hepta CDF **	pg	210	3.4	30	9.0	0.0100	2.10	N/A	4679395
1,2,3,4,7,8,9-Hepta CDF **	pg	35.9	4.0	30	6.0	0.0100	0.359	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDF **	pg	88.5	3.8	300	15	0.000300	0.0266	N/A	4679395
Total Tetra CDF **	pg	349	3.7	30	N/A	N/A	N/A	14	4679395
Total Penta CDF **	pg	440	4.1	30	N/A	N/A	N/A	10	4679395
Total Hexa CDF **	pg	653	3.3	30	N/A	N/A	N/A	11	4679395
Total Hepta CDF **	pg	354	3.7	30	N/A	N/A	N/A	4	4679395
Confirmation 2,3,7,8-Tetra CDF **	pg	<4.5	4.5	30	N/A	0.100	0.450	N/A	4683861

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds
(2) EMPC / Merged Peak
(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
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Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ391							
Sampling Date		2016/09/22				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 316-320	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	112	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4683861
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234678 HeptaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDD *	%	129	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234789 HeptaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123789 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-23478 PentaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-Octachlorodibenzo-p-Dioxin	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4679395
Cl37-2378 TetraCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4679395

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC outlet
Test 5

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ392							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 321-325	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.5	3.5	30	6.0	1.00	3.50	N/A	4679395
1,2,3,7,8-Penta CDD *	pg	15.7	2.8	30	6.0	1.00	15.7	N/A	4679395
1,2,3,4,7,8-Hexa CDD *	pg	51.3	3.6	30	6.0	0.100	5.13	N/A	4679395
1,2,3,6,7,8-Hexa CDD *	pg	135	3.7	30	6.0	0.100	13.5	N/A	4679395
1,2,3,7,8,9-Hexa CDD *	pg	148 (1)	3.4	30	6.0	0.100	14.8	N/A	4679395
1,2,3,4,6,7,8-Hepta CDD *	pg	361	3.5	30	9.0	0.0100	3.61	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDD *	pg	282	3.1	300	9.0	0.000300	0.0846	N/A	4679395
Total Tetra CDD *	pg	323	3.5	30	N/A	N/A	N/A	9	4679395
Total Penta CDD *	pg	952	2.8	30	N/A	N/A	N/A	11	4679395
Total Hexa CDD *	pg	2420	3.6	30	N/A	N/A	N/A	7	4679395
Total Hepta CDD *	pg	721	3.5	30	N/A	N/A	N/A	2	4679395
2,3,7,8-Tetra CDF **	pg	39.7	3.7	30	6.0	0.100	3.97	N/A	4679395
1,2,3,7,8-Penta CDF **	pg	11.5	3.0	30	6.0	0.0300	0.345	N/A	4679395
2,3,4,7,8-Penta CDF **	pg	30.1	3.1	30	6.0	0.300	9.03	N/A	4679395
1,2,3,4,7,8-Hexa CDF **	pg	106 (1)	3.3	30	6.0	0.100	10.6	N/A	4679395
1,2,3,6,7,8-Hexa CDF **	pg	52.2	3.1	30	6.0	0.100	5.22	N/A	4679395
2,3,4,6,7,8-Hexa CDF **	pg	69.3	3.4	30	6.0	0.100	6.93	N/A	4679395
1,2,3,7,8,9-Hexa CDF **	pg	<4.6 (2)	4.6	30	6.0	0.100	0.460	N/A	4679395
1,2,3,4,6,7,8-Hepta CDF **	pg	147	3.0	30	9.0	0.0100	1.47	N/A	4679395
1,2,3,4,7,8,9-Hepta CDF **	pg	26.0	3.5	30	6.0	0.0100	0.260	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDF **	pg	60.2	2.9	300	15	0.000300	0.0181	N/A	4679395
Total Tetra CDF **	pg	220	3.7	30	N/A	N/A	N/A	12	4679395
Total Penta CDF **	pg	357	3.1	30	N/A	N/A	N/A	11	4679395
Total Hexa CDF **	pg	516	3.3	30	N/A	N/A	N/A	12	4679395
Total Hepta CDF **	pg	251	3.2	30	N/A	N/A	N/A	4	4679395
Confirmation 2,3,7,8-Tetra CDF **	pg	9.8	6.6	30	N/A	0.100	0.980	N/A	4683861
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	91.6	N/A	N/A

EDL = Estimated Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ392							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 321-325	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4683861
C13-1234678 HeptaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234678 HeptaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDD *	%	125	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234789 HeptaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123789 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-23478 PentaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-Octachlorodibenzo-p-Dioxin	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4679395
Cl37-2378 TetraCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4679395

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC outlet
Test 6

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ393							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 326-330	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<2.9	2.9	30	6.0	1.00	2.90	N/A	4679395
1,2,3,7,8-Penta CDD *	pg	14.0	3.1	30	6.0	1.00	14.0	N/A	4679395
1,2,3,4,7,8-Hexa CDD *	pg	48.6	3.0	30	6.0	0.100	4.86	N/A	4679395
1,2,3,6,7,8-Hexa CDD *	pg	117	3.0	30	6.0	0.100	11.7	N/A	4679395
1,2,3,7,8,9-Hexa CDD *	pg	126	2.8	30	6.0	0.100	12.6	N/A	4679395
1,2,3,4,6,7,8-Hepta CDD *	pg	360	2.2	30	9.0	0.0100	3.60	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDD *	pg	278	3.0	300	9.0	0.000300	0.0834	N/A	4679395
Total Tetra CDD *	pg	290	2.9	30	N/A	N/A	N/A	7	4679395
Total Penta CDD *	pg	879	3.1	30	N/A	N/A	N/A	10	4679395
Total Hexa CDD *	pg	2180	2.9	30	N/A	N/A	N/A	7	4679395
Total Hepta CDD *	pg	696	2.2	30	N/A	N/A	N/A	2	4679395
2,3,7,8-Tetra CDF **	pg	37.8	3.1	30	6.0	0.100	3.78	N/A	4679395
1,2,3,7,8-Penta CDF **	pg	10.8	2.9	30	6.0	0.0300	0.324	N/A	4679395
2,3,4,7,8-Penta CDF **	pg	20.3 (1)	2.9	30	6.0	0.300	6.09	N/A	4679395
1,2,3,4,7,8-Hexa CDF **	pg	102 (2)	3.4	30	6.0	0.100	10.2	N/A	4679395
1,2,3,6,7,8-Hexa CDF **	pg	<50 (3)	50	30	6.0	0.100	5.00	N/A	4679395
2,3,4,6,7,8-Hexa CDF **	pg	67.8	3.5	30	6.0	0.100	6.78	N/A	4679395
1,2,3,7,8,9-Hexa CDF **	pg	<4.9 (3)	4.9	30	6.0	0.100	0.490	N/A	4679395
1,2,3,4,6,7,8-Hepta CDF **	pg	143	2.3	30	9.0	0.0100	1.43	N/A	4679395
1,2,3,4,7,8,9-Hepta CDF **	pg	26.5	2.7	30	6.0	0.0100	0.265	N/A	4679395
1,2,3,4,6,7,8,9-Octa CDF **	pg	53.3	3.4	300	15	0.000300	0.0160	N/A	4679395
Total Tetra CDF **	pg	161	3.1	30	N/A	N/A	N/A	11	4679395
Total Penta CDF **	pg	379	2.9	30	N/A	N/A	N/A	13	4679395
Total Hexa CDF **	pg	427	3.4	30	N/A	N/A	N/A	9	4679395
Total Hepta CDF **	pg	249	2.5	30	N/A	N/A	N/A	4	4679395
Confirmation 2,3,7,8-Tetra CDF **	pg	14.4	6.1	30	N/A	0.100	1.44	N/A	4683861

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
(2) EMPC / Merged Peak
(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
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Your P.O. #: 21707-J2279

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DCZ393							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 326-330	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	81.8	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4683861
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234678 HeptaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDD *	%	123	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123478 HexaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123678 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-12378 PentaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-123789 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-23478 PentaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-2378 TetraCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4679395
C13-Octachlorodibenzo-p-Dioxin	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4679395
Cl37-2378 TetraCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4679395

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC In
Test 4

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCZ388							
Sampling Date		2016/09/22				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 216-220	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	940	56	300	N/A	0.00010	0.094	N/A	4675147
344'5-TetraCB-(81)	pg	210	56	300	N/A	0.00030	0.063	N/A	4675147
233'44'-PentaCB-(105)	pg	1000	46	300	N/A	0.000030	0.030	N/A	4675147
2344'5-PentaCB-(114)	pg	130	44	300	N/A	0.000030	0.0039	N/A	4675147
23'44'5-PentaCB-(118)	pg	3100	46	300	N/A	0.000030	0.093	N/A	4675147
23'44'5'-PentaCB-(123)	pg	190	51	300	N/A	0.000030	0.0057	N/A	4675147
33'44'5-PentaCB-(126)	pg	520	47	300	N/A	0.10	52	N/A	4675147
HexaCB-(156)+(157)	pg	430	50	600	N/A	0.000030	0.013	N/A	4675147
23'44'55'-HexaCB-(167)	pg	260	54	300	N/A	0.000030	0.0078	N/A	4675147
33'44'55'-HexaCB-(169)	pg	150	54	300	N/A	0.030	4.5	N/A	4675147
233'44'55'-HeptaCB-(189)	pg	190	31	300	N/A	0.000030	0.0057	N/A	4675147
Total PCB	pg	140000	N/A	N/A	N/A	N/A	N/A	N/A	4675147
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	57	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5-HexaCB-(156)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5'-HexaCB-(157)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'-PentaCB-(105)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'55'-HexaCB-(167)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2344'5-PentaCB-(114)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'5-PentaCB-(118)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2'344'5-PentaCB-(123)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'55'-HexaCB-(169)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'5-PentaCB-(126)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'-TetraCB-(77)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-344'5-TetraCB-(81)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

#2 APC In
Tests

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCZ389							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 221-225	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	980	64	300	N/A	0.00010	0.098	N/A	4675147
344'5-TetraCB-(81)	pg	180	65	300	N/A	0.00030	0.054	N/A	4675147
233'44'-PentaCB-(105)	pg	660	47	300	N/A	0.000030	0.020	N/A	4675147
2344'5-PentaCB-(114)	pg	97	45	300	N/A	0.000030	0.0029	N/A	4675147
23'44'5-PentaCB-(118)	pg	1500	47	300	N/A	0.000030	0.045	N/A	4675147
23'44'5'-PentaCB-(123)	pg	180	52	300	N/A	0.000030	0.0054	N/A	4675147
33'44'5-PentaCB-(126)	pg	570	48	300	N/A	0.10	57	N/A	4675147
HexaCB-(156)+(157)	pg	420	49	600	N/A	0.000030	0.013	N/A	4675147
23'44'55'-HexaCB-(167)	pg	220	52	300	N/A	0.000030	0.0066	N/A	4675147
33'44'55'-HexaCB-(169)	pg	160	52	300	N/A	0.030	4.8	N/A	4675147
233'44'55'-HeptaCB-(189)	pg	190	40	300	N/A	0.000030	0.0057	N/A	4675147
Total PCB	pg	58000	N/A	N/A	N/A	N/A	N/A	N/A	4675147
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	62	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5-HexaCB-(156)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5'-HexaCB-(157)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'-PentaCB-(105)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'55'-HexaCB-(167)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2344'5-PentaCB-(114)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'5-PentaCB-(118)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2'344'5-PentaCB-(123)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'55'-HexaCB-(169)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'5-PentaCB-(126)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'-TetraCB-(77)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-344'5-TetraCB-(81)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4675147

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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#2 APC In
Test 6

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCZ390							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 226-230	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	720	56	300	N/A	0.00010	0.072	N/A	4675147
344'5-TetraCB-(81)	pg	180	56	300	N/A	0.00030	0.054	N/A	4675147
233'44'-PentaCB-(105)	pg	540	51	300	N/A	0.000030	0.016	N/A	4675147
2344'5-PentaCB-(114)	pg	82	49	300	N/A	0.000030	0.0025	N/A	4675147
23'44'5-PentaCB-(118)	pg	1300	51	300	N/A	0.000030	0.039	N/A	4675147
23'44'5'-PentaCB-(123)	pg	130	57	300	N/A	0.000030	0.0039	N/A	4675147
33'44'5-PentaCB-(126)	pg	550	52	300	N/A	0.10	55	N/A	4675147
HexaCB-(156)+(157)	pg	420	48	600	N/A	0.000030	0.013	N/A	4675147
23'44'55'-HexaCB-(167)	pg	<210 (1)	210	300	N/A	0.000030	0.0063	N/A	4675147
33'44'55'-HexaCB-(169)	pg	190	52	300	N/A	0.030	5.7	N/A	4675147
233'44'55'-HeptaCB-(189)	pg	<190 (1)	190	300	N/A	0.000030	0.0057	N/A	4675147
Total PCB	pg	46000	N/A	N/A	N/A	N/A	N/A	N/A	4675147
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	61	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5-HexaCB-(156)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5'-HexaCB-(157)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'-PentaCB-(105)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'55'-HexaCB-(167)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2344'5-PentaCB-(114)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'5-PentaCB-(118)	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2'344'5-PentaCB-(123)	%	114	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'55'-HexaCB-(169)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'5-PentaCB-(126)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'-TetraCB-(77)	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-344'5-TetraCB-(81)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675147

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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#2 APC out
Test 4

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCZ391							
Sampling Date		2016/09/22				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 316-320	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	100	55	300	N/A	0.00010	0.010	N/A	4675147
344'5-TetraCB-(81)	pg	<56	56	300	N/A	0.00030	0.017	N/A	4675147
233'44'-PentaCB-(105)	pg	550	47	300	N/A	0.000030	0.017	N/A	4675147
2344'5-PentaCB-(114)	pg	<45 (1)	45	300	N/A	0.000030	0.0014	N/A	4675147
23'44'5-PentaCB-(118)	pg	1900	46	300	N/A	0.000030	0.057	N/A	4675147
23'44'5'-PentaCB-(123)	pg	<51	51	300	N/A	0.000030	0.0015	N/A	4675147
33'44'5-PentaCB-(126)	pg	<47	47	300	N/A	0.10	4.7	N/A	4675147
HexaCB-(156)+(157)	pg	<88 (1)	88	600	N/A	0.000030	0.0026	N/A	4675147
23'44'55'-HexaCB-(167)	pg	<50	50	300	N/A	0.000030	0.0015	N/A	4675147
33'44'55'-HexaCB-(169)	pg	<49	49	300	N/A	0.030	1.5	N/A	4675147
233'44'55'-HeptaCB-(189)	pg	<32	32	300	N/A	0.000030	0.00096	N/A	4675147
Total PCB	pg	52000	N/A	N/A	N/A	N/A	N/A	N/A	4675147
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	6.3	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5-HexaCB-(156)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5'-HexaCB-(157)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'-PentaCB-(105)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'55'-HexaCB-(167)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2344'5-PentaCB-(114)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'5-PentaCB-(118)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2'344'5-PentaCB-(123)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'55'-HexaCB-(169)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'5-PentaCB-(126)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'-TetraCB-(77)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-344'5-TetraCB-(81)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

#2 APC out
Test 5

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCZ392							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 321-325	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	92	46	300	N/A	0.00010	0.0092	N/A	4675147
344'5-TetraCB-(81)	pg	<47	47	300	N/A	0.00030	0.014	N/A	4675147
233'44'-PentaCB-(105)	pg	690	53	300	N/A	0.000030	0.021	N/A	4675147
2344'5-PentaCB-(114)	pg	<51	51	300	N/A	0.000030	0.0015	N/A	4675147
23'44'5-PentaCB-(118)	pg	2300	52	300	N/A	0.000030	0.069	N/A	4675147
23'44'5'-PentaCB-(123)	pg	<58	58	300	N/A	0.000030	0.0017	N/A	4675147
33'44'5-PentaCB-(126)	pg	<53	53	300	N/A	0.10	5.3	N/A	4675147
HexaCB-(156)+(157)	pg	94	44	600	N/A	0.000030	0.0028	N/A	4675147
23'44'55'-HexaCB-(167)	pg	<48	48	300	N/A	0.000030	0.0014	N/A	4675147
33'44'55'-HexaCB-(169)	pg	<47	47	300	N/A	0.030	1.4	N/A	4675147
233'44'55'-HeptaCB-(189)	pg	<23	23	300	N/A	0.000030	0.00069	N/A	4675147
Total PCB	pg	53000	N/A	N/A	N/A	N/A	N/A	N/A	4675147
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	6.8	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5-HexaCB-(156)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5'-HexaCB-(157)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'-PentaCB-(105)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'55'-HexaCB-(167)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2344'5-PentaCB-(114)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'5-PentaCB-(118)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2'344'5-PentaCB-(123)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'55'-HexaCB-(169)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'5-PentaCB-(126)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'-TetraCB-(77)	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-344'5-TetraCB-(81)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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#2 APC out
Test 6

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DCZ393							
Sampling Date		2016/09/23				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707-SVOC 326-330	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	43	43	300	N/A	0.00010	0.0043	N/A	4675147
344'5-TetraCB-(81)	pg	<44	44	300	N/A	0.00030	0.013	N/A	4675147
233'44'-PentaCB-(105)	pg	<280 (1)	280	300	N/A	0.000030	0.0084	N/A	4675147
2344'5-PentaCB-(114)	pg	<43	43	300	N/A	0.000030	0.0013	N/A	4675147
23'44'5-PentaCB-(118)	pg	800	45	300	N/A	0.000030	0.024	N/A	4675147
23'44'5'-PentaCB-(123)	pg	<50	50	300	N/A	0.000030	0.0015	N/A	4675147
33'44'5-PentaCB-(126)	pg	<45	45	300	N/A	0.10	4.5	N/A	4675147
HexaCB-(156)+(157)	pg	55	46	600	N/A	0.000030	0.0017	N/A	4675147
23'44'55'-HexaCB-(167)	pg	<50	50	300	N/A	0.000030	0.0015	N/A	4675147
33'44'55'-HexaCB-(169)	pg	<49	49	300	N/A	0.030	1.5	N/A	4675147
233'44'55'-HeptaCB-(189)	pg	<19	19	300	N/A	0.000030	0.00057	N/A	4675147
Total PCB	pg	16000	N/A	N/A	N/A	N/A	N/A	N/A	4675147
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	6.1	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5-HexaCB-(156)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'5'-HexaCB-(157)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-233'44'-PentaCB-(105)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'55'-HexaCB-(167)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2344'5-PentaCB-(114)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-23'44'5-PentaCB-(118)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-2'344'5-PentaCB-(123)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'55'-HexaCB-(169)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'5-PentaCB-(126)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-33'44'-TetraCB-(77)	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4675147
C13-344'5-TetraCB-(81)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4675147

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DCZ388
Sample ID: 16-21707-SVOC 216-220
Matrix: Stack Sampling Train

Collected: 2016/09/22
Shipped:
Received: 2016/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4683861	N/A	2016/09/29	Leila Azzam
Dioxins/Furans in Air (Method 23)	HRMS/MS	4679395	2016/09/24	2016/09/28	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4675147	2016/09/24	2016/10/10	Branko Vrzic

Maxxam ID: DCZ389
Sample ID: 16-21707-SVOC 221-225
Matrix: Stack Sampling Train

Collected: 2016/09/23
Shipped:
Received: 2016/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4683861	N/A	2016/09/29	Leila Azzam
Dioxins/Furans in Air (Method 23)	HRMS/MS	4679395	2016/09/24	2016/09/28	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4675147	2016/09/24	2016/10/10	Branko Vrzic

Maxxam ID: DCZ390
Sample ID: 16-21707-SVOC 226-230
Matrix: Stack Sampling Train

Collected: 2016/09/23
Shipped:
Received: 2016/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4683861	N/A	2016/09/29	Leila Azzam
Dioxins/Furans in Air (Method 23)	HRMS/MS	4679395	2016/09/24	2016/09/28	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4675147	2016/09/24	2016/10/10	Branko Vrzic

Maxxam ID: DCZ391
Sample ID: 16-21707-SVOC 316-320
Matrix: Stack Sampling Train

Collected: 2016/09/22
Shipped:
Received: 2016/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4683861	N/A	2016/09/30	Leila Azzam
Dioxins/Furans in Air (Method 23)	HRMS/MS	4679395	2016/09/24	2016/09/28	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4675147	2016/09/24	2016/10/10	Branko Vrzic

Maxxam ID: DCZ392
Sample ID: 16-21707-SVOC 321-325
Matrix: Stack Sampling Train

Collected: 2016/09/23
Shipped:
Received: 2016/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4683861	N/A	2016/09/29	Leila Azzam
Dioxins/Furans in Air (Method 23)	HRMS/MS	4679395	2016/09/24	2016/09/28	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4675147	2016/09/24	2016/10/10	Branko Vrzic

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

TEST SUMMARY

Maxxam ID: DCZ393
Sample ID: 16-21707-SVOC 326-330
Matrix: Stack Sampling Train

Collected: 2016/09/23
Shipped:
Received: 2016/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4683861	N/A	2016/09/30	Leila Azzam
Dioxins/Furans in Air (Method 23)	HRMS/MS	4679395	2016/09/24	2016/09/29	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4675147	2016/09/24	2016/10/10	Branko Vrzic

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GENERAL COMMENTS

Sample DCZ388-01 : 10X DILUTION.

Sample DCZ389-01 : 10X DILUTION.

Sample DCZ390-01 : 10X DILUTION.

Results relate only to the items tested.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4675147	BY	Spiked Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/10		112	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/10		104	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/10		104	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/10		105	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/10		108	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/10		101	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/10		104	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/10		106	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/10		86	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/10		102	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/10		102	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/10		101	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/10		93	%	50 - 150
			344'5-TetraCB-(81)	2016/10/10		93	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/10		88	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/10		88	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/10		86	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/10		86	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/10		86	%	50 - 150
			HexaCB-(156)+(157)	2016/10/10		86	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/10		85	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/10		84	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/10		85	%	50 - 150
4675147	BY	Spiked Blank DUP	C13-233'44'55'-HeptaCB-(189)	2016/10/10		109	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/10		108	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/10		108	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/10		115	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/10		112	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/10		109	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/10		109	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/10		110	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/10		93	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/10		110	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/10		107	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/10		104	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/10		94	%	50 - 150
			344'5-TetraCB-(81)	2016/10/10		92	%	50 - 150
			233'44'-PentaCB-(105)	2016/10/10		86	%	50 - 150
			2344'5-PentaCB-(114)	2016/10/10		86	%	50 - 150
			23'44'5-PentaCB-(118)	2016/10/10		89	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/10/10		89	%	50 - 150
			33'44'5-PentaCB-(126)	2016/10/10		85	%	50 - 150
			HexaCB-(156)+(157)	2016/10/10		88	%	N/A
			23'44'55'-HexaCB-(167)	2016/10/10		84	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/10/10		86	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/10/10		82	%	50 - 150
4675147	BY	RPD	33'44'-TetraCB-(77)	2016/10/10	1.1		%	30
			344'5-TetraCB-(81)	2016/10/10	1.1		%	30
			233'44'-PentaCB-(105)	2016/10/10	2.3		%	30
			2344'5-PentaCB-(114)	2016/10/10	2.3		%	30
			23'44'5-PentaCB-(118)	2016/10/10	3.4		%	30
			23'44'5'-PentaCB-(123)	2016/10/10	3.4		%	30

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ORTECH Environmental
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Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'44'5-PentaCB-(126)	2016/10/10	1.2		%	30
			HexaCB-(156)+(157)	2016/10/10	2.3		%	30
			23'44'55'-HexaCB-(167)	2016/10/10	1.2		%	30
			33'44'55'-HexaCB-(169)	2016/10/10	2.4		%	30
			233'44'55'-HeptaCB-(189)	2016/10/10	3.6		%	30
4675147	BY	Method Blank	C13-233'44'55'-HeptaCB-(189)	2016/10/10		108	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/10/10		105	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/10/10		105	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/10/10		107	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/10/10		103	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/10/10		100	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/10/10		101	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/10/10		103	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/10/10		85	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/10/10		103	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/10/10		102	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/10/10		102	%	30 - 140
			33'44'-TetraCB-(77)	2016/10/10	<18		pg	
			344'5-TetraCB-(81)	2016/10/10	<18		pg	
			233'44'-PentaCB-(105)	2016/10/10	<8.9		pg	
			2344'5-PentaCB-(114)	2016/10/10	<8.5		pg	
			23'44'5-PentaCB-(118)	2016/10/10	<8.8		pg	
			23'44'5'-PentaCB-(123)	2016/10/10	<9.8		pg	
			33'44'5-PentaCB-(126)	2016/10/10	<8.9		pg	
			HexaCB-(156)+(157)	2016/10/10	<7.2		pg	
			23'44'55'-HexaCB-(167)	2016/10/10	<7.8		pg	
			33'44'55'-HexaCB-(169)	2016/10/10	<7.7		pg	
			233'44'55'-HeptaCB-(189)	2016/10/10	<13		pg	
			Total PCB	2016/10/10	0.0000000000000		pg	
4679395	OBC	Spiked Blank	C13-1234678 HeptaCDD	2016/09/28		96	%	25 - 130
			C13-1234678 HeptaCDF	2016/09/28		79	%	25 - 130
			C13-123678 HexaCDD	2016/09/28		91	%	40 - 130
			C13-123678 HexaCDF	2016/09/28		82	%	40 - 130
			C13-12378 PentaCDD	2016/09/28		99	%	40 - 130
			C13-12378 PentaCDF	2016/09/28		94	%	40 - 130
			C13-123789 HexaCDF	2016/09/28		78	%	40 - 130
			C13-2378 TetraCDD	2016/09/28		87	%	40 - 130
			C13-2378 TetraCDF	2016/09/28		86	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/09/28		72	%	25 - 130
			2,3,7,8-Tetra CDD	2016/09/28		102	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/09/28		89	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/09/28		98	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/09/28		97	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/09/28		104	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/09/28		81	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/28		103	%	80 - 140
			2,3,7,8-Tetra CDF	2016/09/28		103	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/09/28		98	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/09/28		118	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/09/28		102	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/09/28		105	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/09/28		109	%	80 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDF	2016/09/28		108	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/09/28		97	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/09/28		91	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/28		99	%	80 - 140
4679395	OBC	Spiked Blank DUP	C13-1234678 HeptaCDD	2016/09/28		92	%	25 - 130
			C13-1234678 HeptaCDF	2016/09/28		77	%	25 - 130
			C13-123678 HexaCDD	2016/09/28		87	%	40 - 130
			C13-123678 HexaCDF	2016/09/28		79	%	40 - 130
			C13-12378 PentaCDD	2016/09/28		95	%	40 - 130
			C13-12378 PentaCDF	2016/09/28		88	%	40 - 130
			C13-123789 HexaCDF	2016/09/28		81	%	40 - 130
			C13-2378 TetraCDD	2016/09/28		84	%	40 - 130
			C13-2378 TetraCDF	2016/09/28		83	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/09/28		69	%	25 - 130
			2,3,7,8-Tetra CDD	2016/09/28		105	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/09/28		89	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/09/28		99	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/09/28		101	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/09/28		106	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/09/28		82	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/28		101	%	80 - 140
			2,3,7,8-Tetra CDF	2016/09/28		104	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/09/28		97	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/09/28		109	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/09/28		103	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/09/28		104	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/09/28		112	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2016/09/28		112	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/09/28		95	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/09/28		94	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/28		98	%	80 - 140
4679395	OBC	RPD	2,3,7,8-Tetra CDD	2016/09/28	NC		%	20
			1,2,3,7,8-Penta CDD	2016/09/28	NC		%	20
			1,2,3,4,7,8-Hexa CDD	2016/09/28	NC		%	20
			1,2,3,6,7,8-Hexa CDD	2016/09/28	NC		%	20
			1,2,3,7,8,9-Hexa CDD	2016/09/28	NC		%	20
			1,2,3,4,6,7,8-Hepta CDD	2016/09/28	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/28	NC		%	20
			2,3,7,8-Tetra CDF	2016/09/28	NC		%	20
			1,2,3,7,8-Penta CDF	2016/09/28	NC		%	20
			2,3,4,7,8-Penta CDF	2016/09/28	NC		%	20
			1,2,3,4,7,8-Hexa CDF	2016/09/28	NC		%	20
			1,2,3,6,7,8-Hexa CDF	2016/09/28	NC		%	20
			2,3,4,6,7,8-Hexa CDF	2016/09/28	NC		%	20
			1,2,3,7,8,9-Hexa CDF	2016/09/28	NC		%	20
			1,2,3,4,6,7,8-Hepta CDF	2016/09/28	NC		%	20
			1,2,3,4,7,8,9-Hepta CDF	2016/09/28	NC		%	20
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/28	NC		%	20
4679395	OBC	Method Blank	C13-1234678 HeptaCDD	2016/09/28		104	%	25 - 130
			C13-1234678 HeptaCDF	2016/09/28		82	%	25 - 130
			C13-123678 HexaCDD	2016/09/28		98	%	40 - 130
			C13-123678 HexaCDF	2016/09/28		84	%	40 - 130

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Maxxam
A Bureau Veritas Group Company

Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-12378 PentaCDD	2016/09/28		96	%	40 - 130
			C13-12378 PentaCDF	2016/09/28		91	%	40 - 130
			C13-123789 HexaCDF	2016/09/28		85	%	40 - 130
			C13-2378 TetraCDD	2016/09/28		90	%	40 - 130
			C13-2378 TetraCDF	2016/09/28		90	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/09/28		69	%	25 - 130
			2,3,7,8-Tetra CDD	2016/09/28	<2.9, EDL=2.9		pg	
			1,2,3,7,8-Penta CDD	2016/09/28	<3.2, EDL=3.2		pg	
			1,2,3,4,7,8-Hexa CDD	2016/09/28	<4.3, EDL=4.3		pg	
			1,2,3,6,7,8-Hexa CDD	2016/09/28	<4.3, EDL=4.3		pg	
			1,2,3,7,8,9-Hexa CDD	2016/09/28	<4.0, EDL=4.0		pg	
			1,2,3,4,6,7,8-Hepta CDD	2016/09/28	<3.8, EDL=3.8		pg	
			1,2,3,4,6,7,8,9-Octa CDD	2016/09/28	13.2, EDL=3.0		pg	
			Total Tetra CDD	2016/09/28	<8.3, EDL=8.3 (1)		pg	
			Total Penta CDD	2016/09/28	<4.0, EDL=4.0 (1)		pg	
			Total Hexa CDD	2016/09/28	<11, EDL=11 (1)		pg	
			Total Hepta CDD	2016/09/28	<3.8, EDL=3.8		pg	
			2,3,7,8-Tetra CDF	2016/09/28	<3.9, EDL=3.9		pg	
			1,2,3,7,8-Penta CDF	2016/09/28	<2.7, EDL=2.7		pg	
			2,3,4,7,8-Penta CDF	2016/09/28	<2.7, EDL=2.7		pg	
			1,2,3,4,7,8-Hexa CDF	2016/09/28	<3.1, EDL=3.1		pg	
			1,2,3,6,7,8-Hexa CDF	2016/09/28	<2.9, EDL=2.9		pg	
			2,3,4,6,7,8-Hexa CDF	2016/09/28	<3.2, EDL=3.2		pg	
			1,2,3,7,8,9-Hexa CDF	2016/09/28	<3.4, EDL=3.4		pg	
			1,2,3,4,6,7,8-Hepta CDF	2016/09/28	3.9, EDL=3.4		pg	
			1,2,3,4,7,8,9-Hepta CDF	2016/09/28	<4.0, EDL=4.0		pg	
			1,2,3,4,6,7,8,9-Octa CDF	2016/09/28	5.2, EDL=3.5		pg	

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Tetra CDF	2016/09/28	<3.9, EDL=3.9		pg	
			Total Penta CDF	2016/09/28	<2.7, EDL=2.7		pg	
			Total Hexa CDF	2016/09/28	<3.1, EDL=3.1		pg	
			Total Hepta CDF	2016/09/28	8.6, EDL=3.7		pg	
4683861	LAZ	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2016/09/29	<4.2, EDL=4.2		pg	
			Confirmation C13-2378 TetraCDF	2016/09/29		87	%	40 - 135

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6K5662
Report Date: 2016/10/20

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA
Your P.O. #: 21707-J2279

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Branko Vrzic, A.SC.T., Senior Analyst, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

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Your Project #: 21707
Site Location: COVANTA

Attention:CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
L5J 2Y4

Report Date: 2016/12/02
Report #: R4272538
Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6O1616
Received: 2016/11/07, 15:21

Sample Matrix: Stack Sampling Train
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
2,3,7,8-TCDF Confirmation (M23)	8	N/A	2016/11/28	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	2	2016/11/18	2016/11/24	BRL SOP-00404	EPA M23/23A m
Dioxins/Furans in Air (Method 23)	7	2016/11/18	2016/11/25	BRL SOP-00404	EPA M23/23A m
PCBs in a Sampling Train (1668Amod)	6	2016/11/18	2016/12/01	BRL SOP-00408	EPA 1668A m
PCBs in a Sampling Train (1668Amod)	3	2016/11/18	2016/12/02	BRL SOP-00408	EPA 1668A m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your Project #: 21707
Site Location: COVANTA

Attention:CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
L5J 2Y4

Report Date: 2016/12/02
Report #: R4272538
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CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6O1616
Received: 2016/11/07, 15:21

Encryption Key

Clayton Johnson
Project Manager - Air Toxics, Source Evaluation
02 Dec 2016 17:55:44

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905)817-5769

==========

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB904							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 411-415	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.2	3.2	30	6.0	1.00	3.20	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	<3.6	3.6	30	6.0	1.00	3.60	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	<3.3	3.3	30	6.0	0.100	0.330	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	<3.4	3.4	30	6.0	0.100	0.340	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	<3.1	3.1	30	6.0	0.100	0.310	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	<3.2	3.2	30	9.0	0.0100	0.0320	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	10.4 (1)	3.4	300	9.0	0.000300	0.00312	N/A	4762849
Total Tetra CDD *	pg	<4.5 (2)	4.5	30	N/A	N/A	N/A	0	4762849
Total Penta CDD *	pg	<8.2 (2)	8.2	30	N/A	N/A	N/A	0	4762849
Total Hexa CDD *	pg	<17 (2)	17	30	N/A	N/A	N/A	0	4762849
Total Hepta CDD *	pg	<3.2	3.2	30	N/A	N/A	N/A	0	4762849
2,3,7,8-Tetra CDF **	pg	<3.5	3.5	30	6.0	0.100	0.350	N/A	4762849
1,2,3,7,8-Penta CDF **	pg	<3.3	3.3	30	6.0	0.0300	0.0990	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	<3.3	3.3	30	6.0	0.300	0.990	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	<3.2	3.2	30	6.0	0.100	0.320	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	<3.0	3.0	30	6.0	0.100	0.300	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	<3.4	3.4	30	6.0	0.100	0.340	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	<3.5	3.5	30	6.0	0.100	0.350	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	<3.0	3.0	30	9.0	0.0100	0.0300	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	<3.5	3.5	30	6.0	0.0100	0.0350	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	<3.4	3.4	300	15	0.000300	0.00102	N/A	4762849
Total Tetra CDF **	pg	<3.5	3.5	30	N/A	N/A	N/A	0	4762849
Total Penta CDF **	pg	<3.3	3.3	30	N/A	N/A	N/A	0	4762849
Total Hexa CDF **	pg	<3.3	3.3	30	N/A	N/A	N/A	0	4762849
Total Hepta CDF **	pg	<3.2	3.2	30	N/A	N/A	N/A	0	4762849
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	10.6	N/A	N/A
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB904							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 411-415	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	119	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

41-1+10

Maxxam ID		DKB905							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 41-45	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	413	40	300	6.0	1.00	413	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	561	51	300	6.0	1.00	561	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	104	31	300	6.0	0.100	10.4	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	223	32	300	6.0	0.100	22.3	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	229	29	300	6.0	0.100	22.9	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	1030	32	300	9.0	0.0100	10.3	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	2460	31	3000	9.0	0.000300	0.738	N/A	4762849
Total Tetra CDD *	pg	4060	40	300	N/A	N/A	N/A	12	4762849
Total Penta CDD *	pg	4080	51	300	N/A	N/A	N/A	10	4762849
Total Hexa CDD *	pg	2170	31	300	N/A	N/A	N/A	8	4762849
Total Hepta CDD *	pg	2120	32	300	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	3490	290	300	6.0	0.0300	105	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	2920	290	300	6.0	0.300	876	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	2330 (1)	32	300	6.0	0.100	233	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	1690	30	300	6.0	0.100	169	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	754	33	300	6.0	0.100	75.4	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	58 (2)	35	300	6.0	0.100	5.80	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	3220	30	300	9.0	0.0100	32.2	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	258	35	300	6.0	0.0100	2.58	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	602	32	3000	15	0.000300	0.181	N/A	4762849
Total Tetra CDF **	pg	114000	180	300	N/A	N/A	N/A	16	4762849
Total Penta CDF **	pg	50800	290	300	N/A	N/A	N/A	12	4762849
Total Hexa CDF **	pg	12100	32	300	N/A	N/A	N/A	13	4762849
Total Hepta CDF **	pg	4560	32	300	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	3910	58	300	N/A	0.100	391	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	2930	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4769607

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB905							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 41-45	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

41-74 out

Maxxam ID		DKB906							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 141-145	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.3	3.3	30	6.0	1.00	3.30	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	7.6	3.3	30	6.0	1.00	7.60	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	10.3 (1)	3.1	30	6.0	0.100	1.03	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	35.4	3.2	30	6.0	0.100	3.54	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	19.7	2.9	30	6.0	0.100	1.97	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	368	3.1	30	9.0	0.0100	3.68	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	580	3.1	300	9.0	0.000300	0.174	N/A	4762849
Total Tetra CDD *	pg	88.5	3.3	30	N/A	N/A	N/A	3	4762849
Total Penta CDD *	pg	200	3.3	30	N/A	N/A	N/A	5	4762849
Total Hexa CDD *	pg	218	3.1	30	N/A	N/A	N/A	7	4762849
Total Hepta CDD *	pg	743	3.1	30	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	7.5	3.7	30	6.0	0.0300	0.225	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	16.2	3.7	30	6.0	0.300	4.86	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	25.0 (2)	3.0	30	6.0	0.100	2.50	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	13.5	2.9	30	6.0	0.100	1.35	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	19.4	3.2	30	6.0	0.100	1.94	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	<3.3	3.3	30	6.0	0.100	0.330	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	71.9	3.0	30	9.0	0.0100	0.719	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	12.6	3.5	30	6.0	0.0100	0.126	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	<76 (3)	76	300	15	0.000300	0.0228	N/A	4762849
Total Tetra CDF **	pg	51.1	3.9	30	N/A	N/A	N/A	3	4762849
Total Penta CDF **	pg	84.8	3.7	30	N/A	N/A	N/A	5	4762849
Total Hexa CDF **	pg	120	3.1	30	N/A	N/A	N/A	8	4762849
Total Hepta CDF **	pg	129	3.2	30	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	<6.2	6.2	30	N/A	0.100	0.620	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	34.0	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
(2) EMPC / Merged Peak
(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB906							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 141-145	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4769607
C13-1234678 HeptaCDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

C1- T8 IN

Maxxam ID		DKB908							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 46-50	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	526	31	300	6.0	1.00	526	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	1040	38	300	6.0	1.00	1040	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	299	33	300	6.0	0.100	29.9	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	408	33	300	6.0	0.100	40.8	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	472	31	300	6.0	0.100	47.2	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	1890	32	300	9.0	0.0100	18.9	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	3000	32	3000	9.0	0.000300	0.900	N/A	4762849
Total Tetra CDD *	pg	6260	31	300	N/A	N/A	N/A	15	4762849
Total Penta CDD *	pg	7570	38	300	N/A	N/A	N/A	12	4762849
Total Hexa CDD *	pg	4280	32	300	N/A	N/A	N/A	8	4762849
Total Hepta CDD *	pg	3780	32	300	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	5900	280	300	6.0	0.0300	177	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	5310	280	300	6.0	0.300	1590	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	5890 (1)	48	300	6.0	0.100	589	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	4130	46	300	6.0	0.100	413	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	2170	51	300	6.0	0.100	217	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	144	53	300	6.0	0.100	14.4	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	9430	28	300	9.0	0.0100	94.3	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	762	33	300	6.0	0.0100	7.62	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	1590	32	3000	15	0.000300	0.477	N/A	4762849
Total Tetra CDF **	pg	152000	150	300	N/A	N/A	N/A	17	4762849
Total Penta CDF **	pg	95400	280	300	N/A	N/A	N/A	14	4762849
Total Hexa CDF **	pg	31100	49	300	N/A	N/A	N/A	14	4762849
Total Hepta CDF **	pg	13300	30	300	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	4670	57	300	N/A	0.100	467	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	5270	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4769607

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Client Project #: 21707
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EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB908							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 46-50	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	75	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

U1- TB Out

Maxxam ID		DKB909							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 146-150	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<3.3	3.3	30	6.0	1.00	3.30	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	6.9	3.5	30	6.0	1.00	6.90	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	8.7	3.4	30	6.0	0.100	0.870	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	20.2	3.4	30	6.0	0.100	2.02	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	16.3	3.1	30	6.0	0.100	1.63	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	204	3.3	30	9.0	0.0100	2.04	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	379	3.4	300	9.0	0.000300	0.114	N/A	4762849
Total Tetra CDD *	pg	77.1	3.3	30	N/A	N/A	N/A	3	4762849
Total Penta CDD *	pg	105	3.5	30	N/A	N/A	N/A	5	4762849
Total Hexa CDD *	pg	142	3.3	30	N/A	N/A	N/A	6	4762849
Total Hepta CDD *	pg	419	3.3	30	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	14.3	3.6	30	6.0	0.0300	0.429	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	20.7	3.6	30	6.0	0.300	6.21	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	28.9 (1)	3.3	30	6.0	0.100	2.89	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	17.5	3.1	30	6.0	0.100	1.75	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	17.9	3.4	30	6.0	0.100	1.79	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	<3.6	3.6	30	6.0	0.100	0.360	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	80.9	2.9	30	9.0	0.0100	0.809	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	13.1	3.5	30	6.0	0.0100	0.131	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	<62 (2)	62	300	15	0.000300	0.0186	N/A	4762849
Total Tetra CDF **	pg	143	3.6	30	N/A	N/A	N/A	12	4762849
Total Penta CDF **	pg	169	3.6	30	N/A	N/A	N/A	9	4762849
Total Hexa CDF **	pg	132	3.3	30	N/A	N/A	N/A	9	4762849
Total Hepta CDF **	pg	134	3.2	30	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	<7.4	7.4	30	N/A	0.100	0.740	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	32.0	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB909							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 146-150	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4769607
C13-1234678 HeptaCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB910							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 241-245	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	280	38	300	6.0	1.00	280	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	447	63	300	6.0	1.00	447	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	131	32	300	6.0	0.100	13.1	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	239	33	300	6.0	0.100	23.9	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	224	30	300	6.0	0.100	22.4	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	1270	32	300	9.0	0.0100	12.7	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	2890	31	3000	9.0	0.000300	0.867	N/A	4762849
Total Tetra CDD *	pg	3220	38	300	N/A	N/A	N/A	12	4762849
Total Penta CDD *	pg	3030	63	300	N/A	N/A	N/A	8	4762849
Total Hexa CDD *	pg	2370	32	300	N/A	N/A	N/A	7	4762849
Total Hepta CDD *	pg	2520	32	300	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	2660	190	300	6.0	0.0300	79.8	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	2330	190	300	6.0	0.300	699	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	2070 (1)	31	300	6.0	0.100	207	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	1440	29	300	6.0	0.100	144	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	712	32	300	6.0	0.100	71.2	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	52	34	300	6.0	0.100	5.20	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	3550	28	300	9.0	0.0100	35.5	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	262	33	300	6.0	0.0100	2.62	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	618	31	3000	15	0.000300	0.185	N/A	4762849
Total Tetra CDF **	pg	92400	150	300	N/A	N/A	N/A	16	4762849
Total Penta CDF **	pg	37400	190	300	N/A	N/A	N/A	11	4762849
Total Hexa CDF **	pg	10700	31	300	N/A	N/A	N/A	13	4762849
Total Hepta CDF **	pg	5170	31	300	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	3410	76	300	N/A	0.100	341	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	2390	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4769607

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB910							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 241-245	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB911							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 341-345	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	<5.6	5.6	30	6.0	1.00	5.60	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	10.9	4.1	30	6.0	1.00	10.9	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	25.4	3.2	30	6.0	0.100	2.54	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	66.2	3.3	30	6.0	0.100	6.62	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	21.4	3.0	30	6.0	0.100	2.14	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	395	3.2	30	9.0	0.0100	3.95	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	345	3.3	300	9.0	0.000300	0.104	N/A	4762849
Total Tetra CDD *	pg	125	5.6	30	N/A	N/A	N/A	3	4762849
Total Penta CDD *	pg	489	4.1	30	N/A	N/A	N/A	5	4762849
Total Hexa CDD *	pg	1290	3.2	30	N/A	N/A	N/A	8	4762849
Total Hepta CDD *	pg	845	3.2	30	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	<8.6	8.6	30	6.0	0.0300	0.258	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	18.1	8.6	30	6.0	0.300	5.43	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	52.1 (1)	3.0	30	6.0	0.100	5.21	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	<25 (2)	25	30	6.0	0.100	2.50	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	34.3	3.2	30	6.0	0.100	3.43	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	<3.3	3.3	30	6.0	0.100	0.330	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	119	3.0	30	9.0	0.0100	1.19	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	19.8	3.5	30	6.0	0.0100	0.198	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	<51 (2)	51	300	15	0.000300	0.0153	N/A	4762849
Total Tetra CDF **	pg	144	4.5	30	N/A	N/A	N/A	11	4762849
Total Penta CDF **	pg	140	8.6	30	N/A	N/A	N/A	5	4762849
Total Hexa CDF **	pg	274	3.1	30	N/A	N/A	N/A	12	4762849
Total Hepta CDF **	pg	213	3.2	30	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	<7.0	7.0	30	N/A	0.100	0.700	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	51.1	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak
(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKB911							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 341-345	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4769607
C13-1234678 HeptaCDD *	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	61	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	64	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKC026							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 246-250	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	176	34	300	6.0	1.00	176	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	585	42	300	6.0	1.00	585	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	196	31	300	6.0	0.100	19.6	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	318	32	300	6.0	0.100	31.8	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	443	29	300	6.0	0.100	44.3	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	1530	32	300	9.0	0.0100	15.3	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	3070	34	3000	9.0	0.000300	0.921	N/A	4762849
Total Tetra CDD *	pg	3180	34	300	N/A	N/A	N/A	10	4762849
Total Penta CDD *	pg	2260	42	300	N/A	N/A	N/A	3	4762849
Total Hexa CDD *	pg	3330	31	300	N/A	N/A	N/A	7	4762849
Total Hepta CDD *	pg	3110	32	300	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	3040	42	300	6.0	0.0300	91.2	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	2540	42	300	6.0	0.300	762	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	2590	28	300	6.0	0.100	259	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	1730	26	300	6.0	0.100	173	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	885	29	300	6.0	0.100	88.5	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	71	30	300	6.0	0.100	7.10	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	4670	29	300	9.0	0.0100	46.7	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	337	35	300	6.0	0.0100	3.37	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	820	42	3000	15	0.000300	0.246	N/A	4762849
Total Tetra CDF **	pg	87900	32	300	N/A	N/A	N/A	15	4762849
Total Penta CDF **	pg	44000	42	300	N/A	N/A	N/A	11	4762849
Total Hexa CDF **	pg	13200	28	300	N/A	N/A	N/A	13	4762849
Total Hepta CDF **	pg	6370	32	300	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	2630	72	300	N/A	0.100	263	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	2570	N/A	N/A
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4769607
C13-1234678 HeptaCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKC026							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 246-250	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	62	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	77	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

43-19 out

Maxxam ID		DKC027							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 346-350	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	6.2 (1)	3.4	30	6.0	1.00	6.20	N/A	4762849
1,2,3,7,8-Penta CDD *	pg	10.1	3.6	30	6.0	1.00	10.1	N/A	4762849
1,2,3,4,7,8-Hexa CDD *	pg	26.0	3.3	30	6.0	0.100	2.60	N/A	4762849
1,2,3,6,7,8-Hexa CDD *	pg	67.6	3.3	30	6.0	0.100	6.76	N/A	4762849
1,2,3,7,8,9-Hexa CDD *	pg	26.0	3.0	30	6.0	0.100	2.60	N/A	4762849
1,2,3,4,6,7,8-Hepta CDD *	pg	434	3.5	30	9.0	0.0100	4.34	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDD *	pg	350	3.5	300	9.0	0.000300	0.105	N/A	4762849
Total Tetra CDD *	pg	144	3.4	30	N/A	N/A	N/A	6	4762849
Total Penta CDD *	pg	402	3.6	30	N/A	N/A	N/A	5	4762849
Total Hexa CDD *	pg	1410	3.2	30	N/A	N/A	N/A	8	4762849
Total Hepta CDD *	pg	918	3.5	30	N/A	N/A	N/A	2	4762849
1,2,3,7,8-Penta CDF **	pg	9.2	3.7	30	6.0	0.0300	0.276	N/A	4762849
2,3,4,7,8-Penta CDF **	pg	19.3	3.7	30	6.0	0.300	5.79	N/A	4762849
1,2,3,4,7,8-Hexa CDF **	pg	59.1 (2)	3.4	30	6.0	0.100	5.91	N/A	4762849
1,2,3,6,7,8-Hexa CDF **	pg	<26 (3)	26	30	6.0	0.100	2.60	N/A	4762849
2,3,4,6,7,8-Hexa CDF **	pg	37.1	3.6	30	6.0	0.100	3.71	N/A	4762849
1,2,3,7,8,9-Hexa CDF **	pg	<3.8	3.8	30	6.0	0.100	0.380	N/A	4762849
1,2,3,4,6,7,8-Hepta CDF **	pg	138	2.8	30	9.0	0.0100	1.38	N/A	4762849
1,2,3,4,7,8,9-Hepta CDF **	pg	21.9	3.3	30	6.0	0.0100	0.219	N/A	4762849
1,2,3,4,6,7,8,9-Octa CDF **	pg	<56 (3)	56	300	15	0.000300	0.0168	N/A	4762849
Total Tetra CDF **	pg	118	3.5	30	N/A	N/A	N/A	11	4762849
Total Penta CDF **	pg	192	3.7	30	N/A	N/A	N/A	9	4762849
Total Hexa CDF **	pg	288	3.5	30	N/A	N/A	N/A	10	4762849
Total Hepta CDF **	pg	246	3.1	30	N/A	N/A	N/A	4	4762849
Confirmation 2,3,7,8-Tetra CDF **	pg	<7.1	7.1	30	N/A	0.100	0.710	N/A	4769607
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	53.7	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical
(2) EMPC / Merged Peak
(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

EPS 1/RM/19 DIOXINS, FURANS AND PCBS (STACK SAMPLING TRAIN)

Maxxam ID		DKC027							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 346-350	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
Confirmation C13-2378 TetraCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4769607
C13-1234678 HeptaCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234678 HeptaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123478 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-1234789 HeptaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-12378 PentaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-123789 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-23478 PentaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-2378 TetraCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4762849
C13-Octachlorodibenzo-p-Dioxin	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4762849
Cl37-2378 TetraCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4762849

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Blank

Maxxam ID		DKB904							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 411-415	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<38	38	600	N/A	0.00010	0.0038	N/A	4754688
344'5-TetraCB-(81)	pg	<39	39	600	N/A	0.00030	0.012	N/A	4754688
233'44'-PentaCB-(105)	pg	42	9.1	600	N/A	0.000030	0.0013	N/A	4754688
2344'5-PentaCB-(114)	pg	<8.8	8.8	600	N/A	0.000030	0.00026	N/A	4754688
23'44'5-PentaCB-(118)	pg	110	9.1	600	N/A	0.000030	0.0033	N/A	4754688
23'44'5'-PentaCB-(123)	pg	<10	10	600	N/A	0.000030	0.00030	N/A	4754688
33'44'5-PentaCB-(126)	pg	<9.1	9.1	600	N/A	0.10	0.91	N/A	4754688
HexaCB-(156)+(157)	pg	<23	23	1200	N/A	0.000030	0.00069	N/A	4754688
23'44'55'-HexaCB-(167)	pg	<25	25	600	N/A	0.000030	0.00075	N/A	4754688
33'44'55'-HexaCB-(169)	pg	<24	24	600	N/A	0.030	0.72	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	<31	31	600	N/A	0.000030	0.00093	N/A	4754688
Total PCB	pg	800	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	1.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	67	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DKB905							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 41-45	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	670	56	600	N/A	0.00010	0.067	N/A	4754688
344'5-TetraCB-(81)	pg	140	58	600	N/A	0.00030	0.042	N/A	4754688
233'44'-PentaCB-(105)	pg	340	31	600	N/A	0.000030	0.010	N/A	4754688
2344'5-PentaCB-(114)	pg	61	30	600	N/A	0.000030	0.0018	N/A	4754688
23'44'5-PentaCB-(118)	pg	830	31	600	N/A	0.000030	0.025	N/A	4754688
23'44'5'-PentaCB-(123)	pg	95	34	600	N/A	0.000030	0.0029	N/A	4754688
33'44'5-PentaCB-(126)	pg	350	31	600	N/A	0.10	35	N/A	4754688
HexaCB-(156)+(157)	pg	270	18	1200	N/A	0.000030	0.0081	N/A	4754688
23'44'55'-HexaCB-(167)	pg	140	20	600	N/A	0.000030	0.0042	N/A	4754688
33'44'55'-HexaCB-(169)	pg	<97 (1)	97	600	N/A	0.030	2.9	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	110	20	600	N/A	0.000030	0.0033	N/A	4754688
Total PCB	pg	350000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	38	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	79	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	70	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	71	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Ui-TT Rout

Maxxam ID		DKB906							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 141-145	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	120	38	600	N/A	0.00010	0.012	N/A	4754688
344'5-TetraCB-(81)	pg	<40	40	600	N/A	0.00030	0.012	N/A	4754688
233'44'-PentaCB-(105)	pg	1900	31	600	N/A	0.000030	0.057	N/A	4754688
2344'5-PentaCB-(114)	pg	150	30	600	N/A	0.000030	0.0045	N/A	4754688
23'44'5-PentaCB-(118)	pg	5800	31	600	N/A	0.000030	0.17	N/A	4754688
23'44'5'-PentaCB-(123)	pg	78	34	600	N/A	0.000030	0.0023	N/A	4754688
33'44'5-PentaCB-(126)	pg	<31	31	600	N/A	0.10	3.1	N/A	4754688
HexaCB-(156)+(157)	pg	1600	41	1200	N/A	0.000030	0.048	N/A	4754688
23'44'55'-HexaCB-(167)	pg	560	45	600	N/A	0.000030	0.017	N/A	4754688
33'44'55'-HexaCB-(169)	pg	<44	44	600	N/A	0.030	1.3	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	330	16	600	N/A	0.000030	0.0099	N/A	4754688
Total PCB	pg	260000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	4.7	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	82	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DKB908							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 46-50	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	840	47	600	N/A	0.00010	0.084	N/A	4754688
344'5-TetraCB-(81)	pg	170	49	600	N/A	0.00030	0.051	N/A	4754688
233'44'-PentaCB-(105)	pg	1200	43	600	N/A	0.000030	0.036	N/A	4754688
2344'5-PentaCB-(114)	pg	140	42	600	N/A	0.000030	0.0042	N/A	4754688
23'44'5-PentaCB-(118)	pg	2700	43	600	N/A	0.000030	0.081	N/A	4754688
23'44'5'-PentaCB-(123)	pg	160	48	600	N/A	0.000030	0.0048	N/A	4754688
33'44'5-PentaCB-(126)	pg	620	43	600	N/A	0.10	62	N/A	4754688
HexaCB-(156)+(157)	pg	790	25	1200	N/A	0.000030	0.024	N/A	4754688
23'44'55'-HexaCB-(167)	pg	330	27	600	N/A	0.000030	0.0099	N/A	4754688
33'44'55'-HexaCB-(169)	pg	200	26	600	N/A	0.030	6.0	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	<230 (1)	230	600	N/A	0.000030	0.0069	N/A	4754688
Total PCB	pg	61000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	68	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

CH-TSOCD

Maxxam ID		DKB909							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 146-150	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<40	40	600	N/A	0.00010	0.0040	N/A	4754688
344'5-TetraCB-(81)	pg	<42	42	600	N/A	0.00030	0.013	N/A	4754688
233'44'-PentaCB-(105)	pg	280	31	600	N/A	0.000030	0.0084	N/A	4754688
2344'5-PentaCB-(114)	pg	<30	30	600	N/A	0.000030	0.00090	N/A	4754688
23'44'5-PentaCB-(118)	pg	900	31	600	N/A	0.000030	0.027	N/A	4754688
23'44'5'-PentaCB-(123)	pg	<34	34	600	N/A	0.000030	0.0010	N/A	4754688
33'44'5-PentaCB-(126)	pg	<31	31	600	N/A	0.10	3.1	N/A	4754688
HexaCB-(156)+(157)	pg	31	20	1200	N/A	0.000030	0.00093	N/A	4754688
23'44'55'-HexaCB-(167)	pg	<21	21	600	N/A	0.000030	0.00063	N/A	4754688
33'44'55'-HexaCB-(169)	pg	<21	21	600	N/A	0.030	0.63	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	<31	31	600	N/A	0.000030	0.00093	N/A	4754688
Total PCB	pg	25000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	3.8	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DKB910							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 241-245	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	620	52	600	N/A	0.00010	0.062	N/A	4754688
344'5-TetraCB-(81)	pg	150	54	600	N/A	0.00030	0.045	N/A	4754688
233'44'-PentaCB-(105)	pg	470	37	600	N/A	0.000030	0.014	N/A	4754688
2344'5-PentaCB-(114)	pg	<60 (1)	60	600	N/A	0.000030	0.0018	N/A	4754688
23'44'5-PentaCB-(118)	pg	1200	36	600	N/A	0.000030	0.036	N/A	4754688
23'44'5'-PentaCB-(123)	pg	120	40	600	N/A	0.000030	0.0036	N/A	4754688
33'44'5-PentaCB-(126)	pg	<320 (1)	320	600	N/A	0.10	32	N/A	4754688
HexaCB-(156)+(157)	pg	270	32	1200	N/A	0.000030	0.0081	N/A	4754688
23'44'55'-HexaCB-(167)	pg	<150 (1)	150	600	N/A	0.000030	0.0045	N/A	4754688
33'44'55'-HexaCB-(169)	pg	140	35	600	N/A	0.030	4.2	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	<110 (1)	110	600	N/A	0.000030	0.0033	N/A	4754688
Total PCB	pg	35000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	36	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

UB-TB out

Maxxam ID		DKB911							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 341-345	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<95	95	600	N/A	0.00010	0.0095	N/A	4754688
344'5-TetraCB-(81)	pg	<99	99	600	N/A	0.00030	0.030	N/A	4754688
233'44'-PentaCB-(105)	pg	190	65	600	N/A	0.000030	0.0057	N/A	4754688
2344'5-PentaCB-(114)	pg	<63	63	600	N/A	0.000030	0.0019	N/A	4754688
23'44'5-PentaCB-(118)	pg	540	65	600	N/A	0.000030	0.016	N/A	4754688
23'44'5'-PentaCB-(123)	pg	<72	72	600	N/A	0.000030	0.0022	N/A	4754688
33'44'5-PentaCB-(126)	pg	<66	66	600	N/A	0.10	6.6	N/A	4754688
HexaCB-(156)+(157)	pg	<70	70	1200	N/A	0.000030	0.0021	N/A	4754688
23'44'55'-HexaCB-(167)	pg	<77	77	600	N/A	0.000030	0.0023	N/A	4754688
33'44'55'-HexaCB-(169)	pg	<75	75	600	N/A	0.030	2.3	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	<50	50	600	N/A	0.000030	0.0015	N/A	4754688
Total PCB	pg	11000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	9.0	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

U8-T9 ID

Maxxam ID		DKC026							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 246-250	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	560	78	600	N/A	0.00010	0.056	N/A	4754688
344'5-TetraCB-(81)	pg	140	81	600	N/A	0.00030	0.042	N/A	4754688
233'44'-PentaCB-(105)	pg	390	77	600	N/A	0.000030	0.012	N/A	4754688
2344'5-PentaCB-(114)	pg	<75	75	600	N/A	0.000030	0.0023	N/A	4754688
23'44'5-PentaCB-(118)	pg	890	77	600	N/A	0.000030	0.027	N/A	4754688
23'44'5'-PentaCB-(123)	pg	120	85	600	N/A	0.000030	0.0036	N/A	4754688
33'44'5-PentaCB-(126)	pg	360	78	600	N/A	0.10	36	N/A	4754688
HexaCB-(156)+(157)	pg	290	67	1200	N/A	0.000030	0.0087	N/A	4754688
23'44'55'-HexaCB-(167)	pg	<140 (1)	140	600	N/A	0.000030	0.0042	N/A	4754688
33'44'55'-HexaCB-(169)	pg	110	71	600	N/A	0.030	3.3	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	150	58	600	N/A	0.000030	0.0045	N/A	4754688
Total PCB	pg	33000	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	39	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	69	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Maxxam ID		DKC027							
Sampling Date		2016/11/04				TOXIC EQUIVALENCY		# of	
	UNITS	16-21707 -SVOC 346-350	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	pg	<39	39	600	N/A	0.00010	0.0039	N/A	4754688
344'5-TetraCB-(81)	pg	<40	40	600	N/A	0.00030	0.012	N/A	4754688
233'44'-PentaCB-(105)	pg	110	37	600	N/A	0.000030	0.0033	N/A	4754688
2344'5-PentaCB-(114)	pg	<36	36	600	N/A	0.000030	0.0011	N/A	4754688
23'44'5-PentaCB-(118)	pg	320	37	600	N/A	0.000030	0.0096	N/A	4754688
23'44'5'-PentaCB-(123)	pg	<40	40	600	N/A	0.000030	0.0012	N/A	4754688
33'44'5-PentaCB-(126)	pg	<37	37	600	N/A	0.10	3.7	N/A	4754688
HexaCB-(156)+(157)	pg	<35	35	1200	N/A	0.000030	0.0011	N/A	4754688
23'44'55'-HexaCB-(167)	pg	<38	38	600	N/A	0.000030	0.0011	N/A	4754688
33'44'55'-HexaCB-(169)	pg	<38	38	600	N/A	0.030	1.1	N/A	4754688
233'44'55'-HeptaCB-(189)	pg	<30	30	600	N/A	0.000030	0.00090	N/A	4754688
Total PCB	pg	7200	N/A	N/A	N/A	N/A	N/A	N/A	4754688
TOTAL TOXIC EQUIVALENCY	pg	N/A	N/A	N/A	N/A	N/A	4.8	N/A	N/A
Surrogate Recovery (%)									
C13-233'44'55'-HeptaCB-(189)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5-HexaCB-(156)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'5'-HexaCB-(157)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-233'44'-PentaCB-(105)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'55'-HexaCB-(167)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2344'5-PentaCB-(114)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-23'44'5-PentaCB-(118)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-2'344'5-PentaCB-(123)	%	98	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'55'-HexaCB-(169)	%	76	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'5-PentaCB-(126)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-33'44'-TetraCB-(77)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	4754688
C13-344'5-TetraCB-(81)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	4754688

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

TEST SUMMARY

Maxxam ID: DKB904
Sample ID: 16-21707 -SVOC 411-415
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/24	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/01	Cathy Xu

Maxxam ID: DKB905
Sample ID: 16-21707 -SVOC 41-45
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/01	Cathy Xu

Maxxam ID: DKB906
Sample ID: 16-21707 -SVOC 141-145
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/24	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/01	Cathy Xu

Maxxam ID: DKB908
Sample ID: 16-21707 -SVOC 46-50
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/01	Cathy Xu

Maxxam ID: DKB909
Sample ID: 16-21707 -SVOC 146-150
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/01	Cathy Xu

Maxxam ID: DKB910
Sample ID: 16-21707 -SVOC 241-245
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby

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Maxxam Job #: B601616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

TEST SUMMARY

Maxxam ID: DKB910
Sample ID: 16-21707 -SVOC 241-245
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/01	Cathy Xu

Maxxam ID: DKB911
Sample ID: 16-21707 -SVOC 341-345
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/02	Cathy Xu

Maxxam ID: DKC026
Sample ID: 16-21707 -SVOC 246-250
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/02	Cathy Xu

Maxxam ID: DKC027
Sample ID: 16-21707 -SVOC 346-350
Matrix: Stack Sampling Train

Collected: 2016/11/04
Shipped:
Received: 2016/11/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDF Confirmation (M23)	HRMS/MS	4769607	N/A	2016/11/28	Vica Cioranic
Dioxins/Furans in Air (Method 23)	HRMS/MS	4762849	2016/11/18	2016/11/25	Owen Cosby
PCBs in a Sampling Train (1668Amod)	HRMS/MS	4754688	2016/11/18	2016/12/02	Cathy Xu

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

GENERAL COMMENTS

Sample DKB905 [16-21707 -SVOC 41-45] : Data reported from x10diln

Sample DKB908 [16-21707 -SVOC 46-50] : Data reported from x10diln

Sample DKB910 [16-21707 -SVOC 241-245] : Data reported from x10diln

Sample DKC026 [16-21707 -SVOC 246-250] : 10X DILUTION

Results relate only to the items tested.

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Maxxam Job #: B601616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4754688	CXU	Spiked Blank	C13-233'44'55'-HeptaCB-(189)	2016/12/01		117	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/12/01		113	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/12/01		113	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/12/01		104	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/12/01		111	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/12/01		99	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/12/01		98	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/12/01		99	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/12/01		85	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/12/01		99	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/12/01		96	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/12/01		92	%	30 - 140
			33'44'-TetraCB-(77)	2016/12/01		128	%	50 - 150
			344'5-TetraCB-(81)	2016/12/01		133	%	50 - 150
			233'44'-PentaCB-(105)	2016/12/01		129	%	50 - 150
			2344'5-PentaCB-(114)	2016/12/01		128	%	50 - 150
			23'44'5-PentaCB-(118)	2016/12/01		136	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/12/01		129	%	50 - 150
			33'44'5-PentaCB-(126)	2016/12/01		134	%	50 - 150
			HexaCB-(156)+(157)	2016/12/01		136	%	N/A
			23'44'55'-HexaCB-(167)	2016/12/01		138	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/12/01		126	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/12/01		125	%	50 - 150
4754688	CXU	Spiked Blank DUP	C13-233'44'55'-HeptaCB-(189)	2016/12/01		107	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/12/01		103	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/12/01		103	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/12/01		96	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/12/01		104	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/12/01		95	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/12/01		97	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/12/01		96	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/12/01		83	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/12/01		98	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/12/01		93	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/12/01		91	%	30 - 140
			33'44'-TetraCB-(77)	2016/12/01		129	%	50 - 150
			344'5-TetraCB-(81)	2016/12/01		132	%	50 - 150
			233'44'-PentaCB-(105)	2016/12/01		133	%	50 - 150
			2344'5-PentaCB-(114)	2016/12/01		133	%	50 - 150
			23'44'5-PentaCB-(118)	2016/12/01		132	%	50 - 150
			23'44'5'-PentaCB-(123)	2016/12/01		133	%	50 - 150
			33'44'5-PentaCB-(126)	2016/12/01		131	%	50 - 150
			HexaCB-(156)+(157)	2016/12/01		141	%	N/A
			23'44'55'-HexaCB-(167)	2016/12/01		138	%	50 - 150
			33'44'55'-HexaCB-(169)	2016/12/01		131	%	50 - 150
			233'44'55'-HeptaCB-(189)	2016/12/01		124	%	50 - 150
4754688	CXU	RPD	33'44'-TetraCB-(77)	2016/12/01	0.78		%	30
			344'5-TetraCB-(81)	2016/12/01	0.75		%	30
			233'44'-PentaCB-(105)	2016/12/01	3.1		%	30
			2344'5-PentaCB-(114)	2016/12/01	3.8		%	30
			23'44'5-PentaCB-(118)	2016/12/01	3.0		%	30
			23'44'5'-PentaCB-(123)	2016/12/01	3.1		%	30
			33'44'5-PentaCB-(126)	2016/12/01	2.3		%	30

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Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			HexaCB-(156)+(157)	2016/12/01	3.6		%	30
			23'44'55'-HexaCB-(167)	2016/12/01	0		%	30
			33'44'55'-HexaCB-(169)	2016/12/01	3.9		%	30
			233'44'55'-HeptaCB-(189)	2016/12/01	0.80		%	30
4754688	CXU	Method Blank	C13-233'44'55'-HeptaCB-(189)	2016/12/01		108	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2016/12/01		99	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2016/12/01		99	%	30 - 140
			C13-233'44'-PentaCB-(105)	2016/12/01		93	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2016/12/01		100	%	30 - 140
			C13-2344'5-PentaCB-(114)	2016/12/01		89	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2016/12/01		90	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2016/12/01		90	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2016/12/01		89	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2016/12/01		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2016/12/01		90	%	30 - 140
			C13-344'5-TetraCB-(81)	2016/12/01		87	%	30 - 140
			33'44'-TetraCB-(77)	2016/12/01	<36		pg	
			344'5-TetraCB-(81)	2016/12/01	<37		pg	
			233'44'-PentaCB-(105)	2016/12/01	<27		pg	
			2344'5-PentaCB-(114)	2016/12/01	<26		pg	
			23'44'5-PentaCB-(118)	2016/12/01	<27		pg	
			23'44'5'-PentaCB-(123)	2016/12/01	<29		pg	
			33'44'5-PentaCB-(126)	2016/12/01	<27		pg	
			HexaCB-(156)+(157)	2016/12/01	<17		pg	
			23'44'55'-HexaCB-(167)	2016/12/01	<18		pg	
			33'44'55'-HexaCB-(169)	2016/12/01	<18		pg	
			233'44'55'-HeptaCB-(189)	2016/12/01	<17		pg	
			Total PCB	2016/12/01	0.0000000000000		pg	
4762849	OBC	Spiked Blank	C13-1234678 HeptaCDD	2016/11/24		81	%	25 - 130
			C13-1234678 HeptaCDF	2016/11/24		78	%	25 - 130
			C13-123678 HexaCDD	2016/11/24		90	%	40 - 130
			C13-123678 HexaCDF	2016/11/24		81	%	40 - 130
			C13-12378 PentaCDD	2016/11/24		94	%	40 - 130
			C13-12378 PentaCDF	2016/11/24		97	%	40 - 130
			C13-123789 HexaCDF	2016/11/24		71	%	40 - 130
			C13-2378 TetraCDD	2016/11/24		114	%	40 - 130
			C13-2378 TetraCDF	2016/11/24		104	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/11/24		70	%	25 - 130
			2,3,7,8-Tetra CDD	2016/11/24		109	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/11/24		106	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/11/24		131	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/11/24		100	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/11/24		111	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/11/24		106	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/11/24		114	%	80 - 140
			2,3,7,8-Tetra CDF	2016/11/24		117	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/11/24		115	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/11/24		117	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/11/24		130	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/11/24		97	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/11/24		118	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2016/11/24		114	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/11/24		115	%	80 - 140

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A Bureau Veritas Group Company

Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,4,7,8,9-Hepta CDF	2016/11/24		122	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/11/24		118	%	80 - 140
4762849	OBC	Spiked Blank DUP	C13-1234678 HeptaCDD	2016/11/24		77	%	25 - 130
			C13-1234678 HeptaCDF	2016/11/24		76	%	25 - 130
			C13-123678 HexaCDD	2016/11/24		87	%	40 - 130
			C13-123678 HexaCDF	2016/11/24		81	%	40 - 130
			C13-12378 PentaCDD	2016/11/24		96	%	40 - 130
			C13-12378 PentaCDF	2016/11/24		100	%	40 - 130
			C13-123789 HexaCDF	2016/11/24		72	%	40 - 130
			C13-2378 TetraCDD	2016/11/24		105	%	40 - 130
			C13-2378 TetraCDF	2016/11/24		101	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/11/24		73	%	25 - 130
			2,3,7,8-Tetra CDD	2016/11/24		122	%	80 - 140
			1,2,3,7,8-Penta CDD	2016/11/24		111	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2016/11/24		131	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2016/11/24		103	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2016/11/24		113	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2016/11/24		113	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2016/11/24		117	%	80 - 140
			2,3,7,8-Tetra CDF	2016/11/24		122	%	80 - 140
			1,2,3,7,8-Penta CDF	2016/11/24		121	%	80 - 140
			2,3,4,7,8-Penta CDF	2016/11/24		120	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2016/11/24		133	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2016/11/24		102	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2016/11/24		113	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2016/11/24		116	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2016/11/24		121	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2016/11/24		135	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2016/11/24		115	%	80 - 140
4762849	OBC	RPD	2,3,7,8-Tetra CDD	2016/11/24	11		%	20
			1,2,3,7,8-Penta CDD	2016/11/24	4.6		%	20
			1,2,3,4,7,8-Hexa CDD	2016/11/24	0		%	20
			1,2,3,6,7,8-Hexa CDD	2016/11/24	3.0		%	20
			1,2,3,7,8,9-Hexa CDD	2016/11/24	1.8		%	20
			1,2,3,4,6,7,8-Hepta CDD	2016/11/24	6.4		%	20
			1,2,3,4,6,7,8,9-Octa CDD	2016/11/24	2.6		%	20
			2,3,7,8-Tetra CDF	2016/11/24	4.2		%	20
			1,2,3,7,8-Penta CDF	2016/11/24	5.1		%	20
			2,3,4,7,8-Penta CDF	2016/11/24	2.5		%	20
			1,2,3,4,7,8-Hexa CDF	2016/11/24	2.3		%	20
			1,2,3,6,7,8-Hexa CDF	2016/11/24	5.0		%	20
			2,3,4,6,7,8-Hexa CDF	2016/11/24	4.3		%	20
			1,2,3,7,8,9-Hexa CDF	2016/11/24	1.7		%	20
			1,2,3,4,6,7,8-Hepta CDF	2016/11/24	5.1		%	20
			1,2,3,4,7,8,9-Hepta CDF	2016/11/24	10		%	20
			1,2,3,4,6,7,8,9-Octa CDF	2016/11/24	2.6		%	20
4762849	OBC	Method Blank	C13-1234678 HeptaCDD	2016/11/24		77	%	25 - 130
			C13-1234678 HeptaCDF	2016/11/24		75	%	25 - 130
			C13-123678 HexaCDD	2016/11/24		86	%	40 - 130
			C13-123678 HexaCDF	2016/11/24		79	%	40 - 130
			C13-12378 PentaCDD	2016/11/24		91	%	40 - 130
			C13-12378 PentaCDF	2016/11/24		95	%	40 - 130
			C13-123789 HexaCDF	2016/11/24		72	%	40 - 130

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A Bureau Veritas Group Company

Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-2378 TetraCDD	2016/11/24		114	%	40 - 130
			C13-2378 TetraCDF	2016/11/24		101	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2016/11/24		75	%	25 - 130
			2,3,7,8-Tetra CDD	2016/11/24	<3.4, EDL=3.4		pg	
			1,2,3,7,8-Penta CDD	2016/11/24	<3.6, EDL=3.6		pg	
			1,2,3,4,7,8-Hexa CDD	2016/11/24	<3.4, EDL=3.4		pg	
			1,2,3,6,7,8-Hexa CDD	2016/11/24	<3.4, EDL=3.4		pg	
			1,2,3,7,8,9-Hexa CDD	2016/11/24	<3.1, EDL=3.1		pg	
			1,2,3,4,6,7,8-Hepta CDD	2016/11/24	3.2, EDL=3.2 (1)		pg	
			1,2,3,4,6,7,8,9-Octa CDD	2016/11/24	12.0, EDL=3.2		pg	
			Total Tetra CDD	2016/11/24	<5.0, EDL=5.0 (2)		pg	
			Total Penta CDD	2016/11/24	<3.6, EDL=3.6		pg	
			Total Hexa CDD	2016/11/24	<9.0, EDL=9.0 (2)		pg	
			Total Hepta CDD	2016/11/24	3.2, EDL=3.2 (1)		pg	
			2,3,7,8-Tetra CDF	2016/11/24	<3.3, EDL=3.3		pg	
			1,2,3,7,8-Penta CDF	2016/11/24	<3.2, EDL=3.2		pg	
			2,3,4,7,8-Penta CDF	2016/11/24	<3.2, EDL=3.2		pg	
			1,2,3,4,7,8-Hexa CDF	2016/11/24	<3.1, EDL=3.1		pg	
			1,2,3,6,7,8-Hexa CDF	2016/11/24	<2.9, EDL=2.9		pg	
			2,3,4,6,7,8-Hexa CDF	2016/11/24	<3.2, EDL=3.2		pg	
			1,2,3,7,8,9-Hexa CDF	2016/11/24	3.9, EDL=3.4		pg	
			1,2,3,4,6,7,8-Hepta CDF	2016/11/24	4.3, EDL=2.9 (1)		pg	
			1,2,3,4,7,8,9-Hepta CDF	2016/11/24	<3.4, EDL=3.4		pg	
			1,2,3,4,6,7,8,9-Octa CDF	2016/11/24	4.7, EDL=3.2		pg	
			Total Tetra CDF	2016/11/24	<3.3, EDL=3.3		pg	
			Total Penta CDF	2016/11/24	<3.2, EDL=3.2		pg	

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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Hexa CDF	2016/11/24	3.9, EDL=3.1		pg	
			Total Hepta CDF	2016/11/24	4.3, EDL=3.2 (1)		pg	
4769607	VCI	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2016/11/28	<2.6, EDL=2.6		pg	
			Confirmation C13-2378 TetraCDF	2016/11/28		101	%	40 - 135

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) EMPC / Ratio - Isotopic ratio adjusted to meet theoretical

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam
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Maxxam Job #: B6O1616
Report Date: 2016/12/02

ORTECH Environmental
Client Project #: 21707
Site Location: COVANTA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cathy Xu, Senior Analyst, HRMS Services, Senior Analyst, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓1	Sep. 26/16	Test 1 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓2		Test 1 Filter (3 filters)		Particulate	D & F & PCBs
✓3		Test 1 XAD-II Trap		N.A.	D & F & PCBs
✓4		Test 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓5		Test 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓101	Sep. 26/16	Test 1 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓102		Test 1 Filter		Particulate	D & F & PCBs
✓103		Test 1 XAD-II Trap		N.A.	D & F & PCBs
✓104		Test 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓105		Test 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE — Date: Sept. 27/16

Relinquished To: [signature] — Date: 2016/09/27 19:39

11.8 / 10.7 / 10.8

12.4 / 12.6 / 12.6

10.1 / 10.4 / 10.3

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓6	Sep. 26/16	Test 2 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓7		Test 2 Filter (2 filters)		Particulate	D & F & PCBs
✓8		Test 2 XAD-II Trap		N.A.	D & F & PCBs
✓9		Test 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓10		Test 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓106	Sep. 26/16	Test 2 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓107		Test 2 Filter		Particulate	D & F & PCBs
✓108		Test 2 XAD-II Trap		N.A.	D & F & PCBs
✓109		Test 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓110		Test 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE — Date: Sept. 27/16

Relinquished To: [illegible] Sharon Tom — Date: 2016/09/27 19:39

11.8/10.7/10.8

12.4/12.6/12.6

10.1/10.4/10.3

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓11	Sep. 27/16	Test 3 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓12		Test 3 Filter (2 filters)		Particulate	D & F & PCBs
✓13		Test 3 XAD-II Trap		N.A.	D & F & PCBs ✓
✓14		Test 3 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓15		Test 3 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓111	Sep. 27/16	Test 3 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓112		Test 3 Filter		Particulate	D & F & PCBs
✓113		Test 3 XAD-II Trap		N.A.	D & F & PCBs ✓
✓114		Test 3 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓115		Test 3 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: Sept. 27/16

Relinquished To: [illegible] JULIAN TOM Date: 2016/09/27 19:39

11.8/10.7/10.8

12.4/12.6/12.6

10.1/10.4/10.3

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓16	29 Sep 16	Test 4 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓17		Test 4 Filter		Particulate	D & F & PCBs
✓18		Test 4 XAD-II Trap		N.A.	D & F & PCBs
✓19		Test 4 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓20		Test 4 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓116	29 Sep 16	Test 4 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓117		Test 4 Filter		Particulate	D & F & PCBs
✓118		Test 4 XAD-II Trap		N.A.	D & F & PCBs
✓119		Test 4 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓120		Test 4 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE — Date: SEPT. 30/16

Relinquished To: [illegible] ASHO BIATOU — Date: 2016/09/30 15:41

8.4/10.4/10.6
17.7/16.6 13.5

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓21	29 Sep 16	Test 5 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓22		Test 5 Filter		Particulate	D & F & PCBs
✓23		Test 5 XAD-II Trap		N.A.	D & F & PCBs ✓
✓24		Test 5 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓25		Test 5 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓121	29 Sep 16	Test 5 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓122		Test 5 Filter		Particulate	D & F & PCBs
✓123		Test 5 XAD-II Trap		N.A.	D & F & PCBs ✓
✓124		Test 5 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓125		Test 5 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: SEPT. 30/16

Relinquished To: [illegible] ASHO BHATTA Date: 20161093 0 15:41

5.4 | 10.4 | 10.6
17.7 | 16.6 | 3.5

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓26	30 Sep 16	Test 6 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓27		Test 6 Filter		Particulate	D & F & PCBs
✓28		Test 6 XAD-II Trap		N.A.	D & F & PCBs
✓29		Test 6 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓30		Test 6 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓126	30 Sep 16	Test 6 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓127		Test 6 Filter		Particulate	D & F & PCBs
✓128		Test 6 XAD-II Trap		N.A.	D & F & PCBs
✓129		Test 6 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓130		Test 6 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: SEPT. 30/16

Relinquished To: [illegible] ALEX BNATOV Date: 2016/09/30 15:41

5.4 | 10.4 | 10.6
17.7 | 16.6 | 13.5

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
401	29 Sep 16	Blank 1 Probe Rinse	# 1 APC	Hexane/Acetone	D & F & PCBs
402		Blank 1 Filter		Particulate	D & F & PCBs
403		Blank 1 XAD-II Trap		N.A.	D & F & PCBs
404		Blank 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
405		Blank 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: SEPT. 30/16

Relinquished To: [illegible] ASAD BHAGU Date: 2016/09/30 15:41

8.4 | 10.4 | 10.6
17.7 | 16.6 | 13.5

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓201		Test 1 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓202	Sep.19/16	Test 1 Filter (3 filters)		Particulate	D & F & PCBs
✓203		Test 1 XAD-II Trap		N.A.	D & F & PCBs
✓204		Test 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓205		Test 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓206	Sep. 20/16	Test 2 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓207		Test 2 Filter (3 filters)		Particulate	D & F & PCBs
✓208		Test 2 XAD-II Trap		N.A.	D & F & PCBs
✓209		Test 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓210		Test 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓211	Sep. 20/16	Test 3 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
✓212		Test 3 Filter (3 filters)		Particulate	D & F & PCBs
✓213		Test 3 XAD-II Trap		N.A.	D & F & PCBs
✓214		Test 3 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓215		Test 3 Impinger Rinse		Hexane/Acetone	D & F & PCBs
216		Test 4 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
217		Test 4 Filter		Particulate	D & F & PCBs
218		Test 4 XAD-II Trap		N.A.	D & F & PCBs
219		Test 4 Impinger Solution		Ethylene Glycol	D & F & PCBs
220		Test 4 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: C. Belore — Date: SEPT. 21/16

Relinquished To: [illegible] Tom — Date: 2016/09/21 12:34

15.1/14.8/16.0/12.8/12.8/14.7 20.1/21.4/22.2

RUSH (D+F, 12 dioxin like PCB's + total PCB)

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
201	Sep. 19/16	Test 1 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
202		Test 1 Filter (3 filters)		Particulate	D & F & PCBs
203		Test 1 XAD-II Trap		N.A.	D & F & PCBs
204		Test 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
205		Test 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs
206	Sep. 20/16	Test 2 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
207		Test 2 Filter (3 filters)		Particulate	D & F & PCBs
208		Test 2 XAD-II Trap		N.A.	D & F & PCBs
209		Test 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
210		Test 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs
211	Sep. 20/16	Test 3 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
212		Test 3 Filter (3 filters)		Particulate	D & F & PCBs
213		Test 3 XAD-II Trap		N.A.	D & F & PCBs
214		Test 3 Impinger Solution		Ethylene Glycol	D & F & PCBs
215		Test 3 Impinger Rinse		Hexane/Acetone	D & F & PCBs
216	Sep. 22/16	Test 4 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
217		Test 4 Filter (2 filters)		Particulate	D & F & PCBs
218		Test 4 XAD-II Trap		N.A.	D & F & PCBs
219		Test 4 Impinger Solution		Ethylene Glycol	D & F & PCBs
220		Test 4 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: SEPT. 23/16

Relinquished To: JOSEPH VIMAN Date: 2016/09/23 19:47

RUSH (D+F, 12 dioxin like PCB's + total PCB)

T 18/12 °C. S/14/17 °C ice

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
221	Sep. 23/16	Test 5 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
222		Test 5 Filter (2 filters)		Particulate	D & F & PCBs
223		Test 5 XAD-II Trap		N.A.	D & F & PCBs
224		Test 5 Impinger Solution		Ethylene Glycol	D & F & PCBs
225		Test 5 Impinger Rinse		Hexane/Acetone	D & F & PCBs
226	Sep. 23/16	Test 6 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
227		Test 6 Filter (2 filters)		Particulate	D & F & PCBs
228		Test 6 XAD-II Trap		N.A.	D & F & PCBs
229		Test 6 Impinger Solution		Ethylene Glycol	D & F & PCBs
230		Test 6 Impinger Rinse		Hexane/Acetone	D & F & PCBs
231		Test 7 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
232		Test 7 Filter		Particulate	D & F & PCBs
233		Test 7 XAD-II Trap		N.A.	D & F & PCBs
234		Test 7 Impinger Solution		Ethylene Glycol	D & F & PCBs
235		Test 7 Impinger Rinse		Hexane/Acetone	D & F & PCBs
236		Test 8 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
237		Test 8 Filter		Particulate	D & F & PCBs
238		Test 8 XAD-II Trap		N.A.	D & F & PCBs
239		Test 8 Impinger Solution		Ethylene Glycol	D & F & PCBs
240		Test 8 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: SEPT. 23/16

Relinquished To: [illegible] MAXXAM Date: 2016 09 23 15:47

5/8/12°C, 5/14/15°C ice packs

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
231	Sept 27, 16	Test 7 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
232		Test 7 Filter (2 filters)		Particulate	D & F & PCBs
233		Test 7 XAD-II Trap		N.A.	D & F & PCBs
234		Test 7 Impinger Solution		Ethylene Glycol	D & F & PCBs
235		Test 7 Impinger Rinse		Hexane/Acetone	D & F & PCBs
331	Sept 27, 16	Test 7 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
332		Test 7 Filter		Particulate	D & F & PCBs
333		Test 7 XAD-II Trap		N.A.	D & F & PCBs
334		Test 7 Impinger Solution		Ethylene Glycol	D & F & PCBs
335		Test 7 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE Date: Sept. 27/16

Relinquished To: [illegible] Date: 2016/09/27 19:39

11.8/10.7/10.8

12.4/12.6/12.6

10.1/10.4/10.3

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
301	Sep.19/16	Test 1 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
302		Test 1 Filter		Particulate	D & F & PCBs
303		Test 1 XAD-II Trap		N.A.	D & F & PCBs
304		Test 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
305		Test 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs
306	Sep. 20/16	Test 2 Probe Rinse	~~#1~~ APC OUTLET	Hexane/Acetone	D & F & PCBs
307		Test 2 Filter	#2	Particulate	D & F & PCBs
308		Test 2 XAD-II Trap		N.A.	D & F & PCBs
309		Test 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
310		Test 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs
311	Sep. 20/16	Test 3 Probe Rinse	~~#1~~ APC OUTLET	Hexane/Acetone	D & F & PCBs
312		Test 3 Filter	#2	Particulate	D & F & PCBs
313		Test 3 XAD-II Trap		N.A.	D & F & PCBs
314		Test 3 Impinger Solution		Ethylene Glycol	D & F & PCBs
315		Test 3 Impinger Rinse		Hexane/Acetone	D & F & PCBs
316		Test 4 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
317		Test 4 Filter		Particulate	D & F & PCBs
318		Test 4 XAD-II Trap		N.A.	D & F & PCBs
319		Test 4 Impinger Solution		Ethylene Glycol	D & F & PCBs
320		Test 4 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: C. Belore — Date: SEPT. 21/16

Relinquished To: [illegible] Juan Tom — Date: 2016/09/21 18:34

15.1/14.8/16.0 12.8/12.0/14.7 20.1/21.4/22.2.

RUSH (D+F, 12 dioxin like PCB's + total PCB)

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓ 301	Sep. 19/16	Test 1 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓ 302		Test 1 Filter		Particulate	D & F & PCBs
✓ 303		Test 1 XAD-II Trap		N.A.	D & F & PCBs
✓ 304		Test 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓ 305		Test 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓ 306	Sep. 20/16	Test 2 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓ 307		Test 2 Filter		Particulate	D & F & PCBs
✓ 308		Test 2 XAD-II Trap		N.A.	D & F & PCBs
✓ 309		Test 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓ 310		Test 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓ 311	Sep. 20/16	Test 3 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓ 312		Test 3 Filter		Particulate	D & F & PCBs
✓ 313		Test 3 XAD-II Trap		N.A.	D & F & PCBs
✓ 314		Test 3 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓ 315		Test 3 Impinger Rinse		Hexane/Acetone	D & F & PCBs
✓ 316	Sep. 22/16	Test 4 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
✓ 317		Test 4 Filter		Particulate	D & F & PCBs
✓ 318		Test 4 XAD-II Trap		N.A.	D & F & PCBs
✓ 319		Test 4 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓ 320		Test 4 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BELORE — Date: SEPT. 23/16

Relinquished To: JOSEPH UMAN — Date: 2016/09/23 19:47

RUSH (D+F, 12 dioxin like PCB's + total PCB)

5/8/12°C, 5/14/15°C ice packs

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
321	Sep. 23/16	Test 5 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
322		Test 5 Filter		Particulate	D & F & PCBs
323		Test 5 XAD-II Trap		N.A.	D & F & PCBs
324		Test 5 Impinger Solution		Ethylene Glycol	D & F & PCBs
325		Test 5 Impinger Rinse		Hexane/Acetone	D & F & PCBs
326	Sep. 23/16	Test 6 Probe Rinse	#2 APC OUTLET	Hexane/Acetone	D & F & PCBs
327		Test 6 Filter		Particulate	D & F & PCBs
328		Test 6 XAD-II Trap		N.A.	D & F & PCBs
329		Test 6 Impinger Solution		Ethylene Glycol	D & F & PCBs
330		Test 6 Impinger Rinse		Hexane/Acetone	D & F & PCBs
331		Test 7 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
332		Test 7 Filter		Particulate	D & F & PCBs
333		Test 7 XAD-II Trap		N.A.	D & F & PCBs
334		Test 7 Impinger Solution		Ethylene Glycol	D & F & PCBs
335		Test 7 Impinger Rinse		Hexane/Acetone	D & F & PCBs
336		Test 8 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
337		Test 8 Filter		Particulate	D & F & PCBs
338		Test 8 XAD-II Trap		N.A.	D & F & PCBs
339		Test 8 Impinger Solution		Ethylene Glycol	D & F & PCBs
340		Test 8 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: CHRIS BECORE — Date: SEPT. 23/16

Relinquished To: JOSEPH JOHN — Date: 2016/09/23 19:47

5/8/12 °C, 5/14/15 °C ice pack,

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
✓406	Sep. 20/16	Blank 2 Probe Rinse	# 2 APC	Hexane/Acetone	D & F & PCBs
✓407	↓	Blank 2 Filter		Particulate	D & F & PCBs
✓408	↓	Blank 2 XAD-II Trap		N.A.	D & F & PCBs ✓
✓409	↓	Blank 2 Impinger Solution		Ethylene Glycol	D & F & PCBs
✓410	↓	Blank 2 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: C. Belore Date: SEPT. 21/16

Relinquished To: Julian Tonge Date: 2016/09/21 12:3

15.1/14.8/16.0/12.8/12.0/14.7 20.1/27.4/22.2

RUSH (D+F, 12 dioxin like PCB's + total PCB)

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
41	4-Nov-16	Test 7 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
42		Test 7 2 Filters		Particulate	D & F & PCBs
43		Test 7 XAD-II Trap		XAD 2 resin	D & F & PCBs
44		Test 7 Impinger Solution		Ethylene Glycol	D & F & PCBs
45		Test 7 Impinger Rinse		Hexane/Acetone	D & F & PCBs
141	4-Nov-16	Test 7 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
142		Test 7 Filter		Particulate	D & F & PCBs
143		Test 7 XAD-II Trap		XAD 2 resin	D & F & PCBs
144		Test 7 Impinger Solution		Ethylene Glycol	D & F & PCBs
145		Test 7 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: [signature] Date: Nov 7, 16

Relinquished To: _____ Date: _____

A TESHSH PATEL
2016/11/07 15:21
5.5 / 6.5 / 7.0

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
46	4-Nov-16	Test ~~10~~ 8 Probe Rinse	# 1 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
47		Test ~~10~~ 8 2 Filters		Particulate	D & F & PCBs
48		Test ~~10~~ 8 XAD-II Trap		XAD 2 resin	D & F & PCBs
49		Test ~~10~~ 8 Impinger Solution		Ethylene Glycol	D & F & PCBs
50		Test ~~10~~ 8 Impinger Rinse		Hexane/Acetone	D & F & PCBs
146	4-Nov-16	Test ~~10~~ 8 Probe Rinse	# 1 APC OUTLET	Hexane/Acetone	D & F & PCBs
147		Test ~~10~~ 8 Filter		Particulate	D & F & PCBs
148		Test ~~10~~ 8 XAD-II Trap		XAD 2 resin	D & F & PCBs
149		Test ~~10~~ 8 Impinger Solution		Ethylene Glycol	D & F & PCBs
150		Test ~~10~~ 8 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: _____ Date: Nov 7, 16

Relinquished To: _____ Date: _____

@ TEJASH PATEL
2016/11/07
5.5 / 6.5 / 7.0

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
241	4-Nov-16	Test ~~9~~ 8 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
242		Test ~~9~~ 8 2 Filters		Particulate	D & F & PCBs
243		Test ~~9~~ 8 XAD-II Trap		XAD 2 resin	D & F & PCBs
244		Test ~~9~~ 8 Impinger Solution		Ethylene Glycol	D & F & PCBs
245		Test ~~9~~ 8 Impinger Rinse		Hexane/Acetone	D & F & PCBs
341	4-Nov-16	Test ~~9~~ 8 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
342		Test ~~9~~ 8 Filter		Particulate	D & F & PCBs
343		Test ~~9~~ 8 XAD-II Trap		XAD 2 resin	D & F & PCBs
344		Test ~~9~~ 8 Impinger Solution		Ethylene Glycol	D & F & PCBs
345		Test ~~9~~ 8 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: _____ Date: Nov 7, 16

Relinquished To: _____ Date: _____

@ TEJASH PATEL

2016/11/07 15:21

5.5 / 6.5 / 7.0

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
246	4-Nov-16	Test ~~10~~ 9 Probe Rinse	# 2 APC Quench Inlet	Hexane/Acetone	D & F & PCBs
247		Test ~~10~~ 9 2 Filters		Particulate	D & F & PCBs
248		Test ~~10~~ 9 XAD-II Trap		XAD 2 resin	D & F & PCBs
249		Test ~~10~~ 9 Impinger Solution		Ethylene Glycol	D & F & PCBs
250		Test ~~10~~ 9 Impinger Rinse		Hexane/Acetone	D & F & PCBs
346	4-Nov-16	Test ~~10~~ 9 Probe Rinse	# 2 APC OUTLET	Hexane/Acetone	D & F & PCBs
347		Test ~~10~~ 9 Filter		Particulate	D & F & PCBs
348		Test ~~10~~ 9 XAD-II Trap		XAD 2 resin	D & F & PCBs
349		Test ~~10~~ 9 Impinger Solution		Ethylene Glycol	D & F & PCBs
350		Test ~~10~~ 9 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: [signature] Date: Nov 7, 16

Relinquished To: _____ Date: _____

TEJASH PATEL

2016 / 11 / 07 15:21

5.5 / 6.5 / 7-0

ORTECH Environmental Sample Log
Semi-Volatile Organics Samples
Covanta

Client: Covanta
Job/Report Number: 21707
Received By: Chris Belore
How Received: Train Recovery
Job Assigned To: Maxxam

ORTECH Sample ID 16 - 21707 -SVOC-	Date	Sample Description	Location	Sample Media	Sample Analysis
411	4-Nov-16	Blank 1 Probe Rinse	# 1 APC	Hexane/Acetone	D & F & PCBs
412		Blank 1 Filter		Particulate	D & F & PCBs
413		Blank 1 XAD-II Trap		XAD 2 resin	D & F & PCBs
414		Blank 1 Impinger Solution		Ethylene Glycol	D & F & PCBs
415		Blank 1 Impinger Rinse		Hexane/Acetone	D & F & PCBs

Refer to request letter dated August 29, 2016 for lists of analytes.

Relinquished By: _____ Date: Nov 7, 16

Relinquished To: _____ Date: _____

TEJASH PATEL
2016/11/07 15:21
5.5 / 6.5 / 7.0

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APPENDIX 11

Particulate Matter Field Data Sheets
for Boiler No. 1
(15 pages)

ORTECH Environmental

Plant	Durham-York Energy Center
Plant Location	Courtice, ON
Test No.:	4 PARTICULATE
Test Date	SEPT 29, 16
Test Location	APC Outlet # ~~4~~ 1
Operator Signature	

Project No.:	2707
Page	1 of 5
Probe No.:	6.5
Meter Box No.:	TEAM 2
Impinger Box No.:	

Pitot Factor	.847 ✓	
DGMCF	.976 ✓	
Barometric Pressure	29.84	"Hg
Static Pressure	-10.8	"H2O
Nozzle Size	.2504 ✓	inches
Stack Diameter	4.50 ✓	feet
Length	—	feet
Width	—	feet
Port length:		inches

Reading Interval		4
Number of Ports		2
Number of Points/Port		12

Particulate Gain

Filter	20.0 ✓	mg
Probe	17.4 ✓	mg

Moisture Gain

CWTR	482.0 ✓	g
WCBDA	419 ✓	g

Combustion Gas Concentration

Oxygen	9.09 ✓	%
Carbon Dioxide	10.42 ✓	%
Carbon Monoxide	13.9	ppm

Measuring Device	MII Numbers
Probe / Pitot S10	B03771 ✓
Trendicator	COE 20092 ✓
Control Box	COE 20092 ✓
Incline Manometer	COE 20092 ✓
Comb.Gas Analyzer	
Micromanometer	B03936
Barometer	ENV CAN
Calipers	B03922

Nozzle Measurements	
1	.2520
2	.2480
3	.2520
4	.2495
Average:	.2504

Probe Liner Glass / Metal / Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None / Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: SEPT 29, 16	Plant: Durham-York Energy Center	Test No.: 4 START	Page 2 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	75.00	.85	.75	270	253	240	51	104	54	53	1.80	3.2
	4	77.75	.86	.75	272	253	247	40	192	54	53	1.8	3.2
2	8	80.77	.89	.77	270	253	248	37	214	54	53	1.85	3.2
	12	83.81	.89	.77	271	253	248	37	217	54	53	1.85	3.2
3	16	86.82	.87	.76	271	254	248	39	218	54	53	1.85	3.2
	20	89.83	.87	.76	272	254	249	41	220	54	53	1.85	3.2
4	24	92.82	.81	.73	270	254	248	43	220	53	53	1.75	3.2
	28	95.80	.81	.73	271	253	248	45	221	53	53	1.75	3.2
5	32	98.77	.74	.70	271	253	248	45	221	53	53	1.7	3.2
	36	101.68	.74	.70	271	253	248	45	220	53	53	1.7	3.2
6	40	104.57	.63	.64	271	253	248	45	221	54	53	1.4	3
	44	107.25	.65	.66	272	253	249	43	220	54	53	1.4	3
7	48	109.93	.70	.68	272	253	249	43	222	54	53	1.6	3.2
	52	112.76	.70	.68	272	253	249	42	222	54	53	1.6	3.2
8	56	115.57	.73	.69	271	255	249	42	222	54	53	1.6	3.2
	60	118.36	.80	.73	272	255	249	42	222	55	53	1.8	3.5
9	64	121.32	.80	.73	272	253	249	42	222	55	53	1.8	3.5
	68	124.29	.80	.73	272	253	248	43	223	55	53	1.8	3.5
10	72	127.25	.65	.66	261	253	248	45	223	55	54	1.8	~~3.5~~ 3.2
	76	130.01	.65	.66	260	253	248	45	223	55	54	1.4	3.2
11	80	132.68	.62	.65	247	253	248	48	222	55	54	1.4	3.2

Traverse: 2			
Start Time: 8:22	Initial Leak Check: .002	cfm@ 15	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator: DT

Field Data Sheet

Date: SEPT 29, 16	Plant: Durham-York Energy Center	Test No.: 4 PART	Page 3 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 7	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	84	135.35	.63	.66	245	252	248	48	222	55	54	1.4	3.2
12	88	138.03	.66	.67	248	252	248	49	222	55	54	1.4	3.2
	92	140.70	.66	.67	250	250	250	49	222	55	54	1.4	3.2
	96	143.35											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 9:58	Final Leak Check: .003	cfm@ 15.5	"Hg

Traverse:			
Start Time: X	Initial Leak Check: X	cfm @ X	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : DT

Field Data Sheet

Date: SEPT 29, 16	Plant: Durham-York Energy Center	Test No.: 4 PART	Page 4 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
1	0	143.73	.97	.82	289	270	263	68	118	72	70	2.25	4.5
	4	146.82	.96	.81	290	269	265	59	235	71	70	2.25	4.5
2	8	150.14	1.1	.87	289	270	265	58	238	71	70	2.5	4.5
	12	153.61	1.1	.87	291	270	267	55	241	71	70	2.5	4.5
3	16	157.09	.96	.81	289	257	260	55	237	70	70	2.25	4.5
	20	160.42	.97	.82	290	257	254	50	234	71	70	2.25	4.5
4	24	163.72	.90	.79	290	256	254	50	230	71	70	2.1	4.2
	28	166.94	.90	.79	290	257	255	48	231	71	70	2.1	4.2
5	32	170.12	.89	.78	290	257	255	49	229	71	70	2.1	4.2
	36	173.32	.89	.78	290	257	254	48	229	71	70	2.1	4.2
6	40	176.49	.85	.76	291	257	254	51	229	72	70	2	4
	44	179.57	.85	.76	290	256	254	52	228	72	71	2	4
7	48	182.67	.80	.74	290	257	255	53	228	72	71	1.9	4
	52	185.72	.79	.74	290	257	255	53	228	72	71	1.9	4
8	56	188.78	.80	.74	291	257	255	54	228	73	71	1.9	4
	60	191.81	.80	.74	290	257	255	53	230	73	71	1.9	4
9	64	194.78	.80	.74	290	257	255	53	230	73	71	1.9	4
	68	197.80	.80	.74	290	257	255	53	230	73	71	1.9	4
10	72	200.80	.80	.74	288	258	256	55	230	73	72	1.9	4
	76	203.80	.80	.74	287	257	255	56	231	74	72	1.9	4
11	80	206.80	.72	.71	287	257	255	53	230	74	72	1.7	4

Traverse: 1		Traverse: X	
Start Time: 10:31	Initial Leak Check: 003 cfm@ 15.5 "Hg	Start Time: X	Initial Leak Check: X cfm @ X "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: X cfm @ X "Hg

Project No.: 21707

Operator : DT

Field Data Sheet

Date: Sep 29, 16	Plant: Durham-York Energy Center	Test No.: 4 PART	Page 5 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	*	*	*		*			*		*	*	*	*
	84	209.66	.72	.71	288	257	255	50	230	74	72	1.7	4
12	88	212.55	.62	.67	264 ~~289~~	257	256	50	230	74	72	1.5	4
	92	215.21	.62	.67	264	257	255	47	229	73	72	1.5	4
	96	217.93											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 12:07	Final Leak Check: .003	cfm@ 15	"Hg

Traverse: X			
Start Time: X	Initial Leak Check: X	cfm @ X	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : DT

ORTECH Environmental

Plant	Durham-York Energy Center
Plant Location	Courtice, ON
Test No.:	5 PARTICULATE
Test Date	SEPT 29, 16
Test Location	APC Outlet # 1
Operator Signature	

Project No.:	21707
Page	1 of 5
Probe No.:	6.5
Meter Box No.:	TEAM 2
Impinger Box No.:	

Pitot Factor	.847	
DGMCF	.976	
Barometric Pressure	29.85	"Hg
Static Pressure	~~-10.8~~ -11.4	"H2O
Nozzle Size	.2504	inches
Stack Diameter	4.50	feet
Length	—	feet
Width	—	feet
Port length:		inches

Reading Interval	4
Number of Ports	2
Number of Points/Port	12

Probe Liner Glass / Metal / Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None / Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Particulate Gain

Filter	17.2	mg
Probe	3.4	mg

Moisture Gain

CWTR	536.1	g
WCBDA	33.6	g

Combustion Gas Concentration

Oxygen	9.20	%
Carbon Dioxide	10.45	%
Carbon Monoxide	13.1	ppm

Measuring Device	MII Numbers
Probe / Pitot	See
Trendicator	
Control Box	
Incline Manometer	Test
Comb.Gas Analyzer	
Micromanometer	
Barometer	#4 PART
Calipers	

Nozzle Measurements	
1	See
2	
3	Test
4	
Average:	#4 Part

Site Diagram

Notes:

Field Data Sheet

Date: Sept 29, 16	Plant: Durham-York Energy Center	Test No.: 5 PART	Page 2 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	18.32	.95	.82	274	256	256	65	134	72	71	2.3	3
	4	22.05	.95	.81	291	259	259	55	219	71	71	2.3	3
2	8	25.35	.96	.81	292	259	259	53	225	71	71	2.3	3
	12	28.60	.96	.81	292	259	253	55	232	71	71	2.3	3
3	16	31.98	.92	.80	292	248	249	51	209	71	71	2.1	3
	20	35.17	.92	.80	292	248	249	49	210	71	71	2.1	3
4	24	38.34	.92	.80	291	248	251	48	210	71	71	2.1	3
	28	41.53	.87	.77	291	248	250	47	210	72	71	2	3
5	32	44.62	.81	.75	291	248	250	45	210	72	71	1.9	3
	36	47.65	.81	.75	291	248	250	45	210	72	71	1.9	3
6	40	~~29~~ 50.68	.75	.72	291	248	250	45	210	73	71	1.8	3
	44	53.~~51~~63	.75	.72	291	248	250	45	211	73	72	1.8	3
7	48	56.57	.78	.74	288	248	250	45	204	74	73	1.85	3
	52	59.56	.78	.74	287	248	250	45	208	74	72	1.85	3
8	56	62.57	.82	.76	286	248	251	45	208	74	72	2	3
	60	65.66	.82	.76	286	248	250	46	218	75	72	2	3
9	64	68.74	.83	.76	286	248	250	46	219	74	73	2	3
	68	71.81	.83	.76	285	248	250	47	220	74	73	2	3
10	72	74.87	.83	.76	282	248	250	47	220	75	72	2	3
	76	77.94	.81	.75	279	247	249	47	220	74	72	1.95	3
11	80	80.98	.83	.76	279	247	250	48	220	75	73	~~1~~.92	3

Traverse: 2				Traverse: X			
Start Time: 13:38	Initial Leak Check: .004	cfm@ 15	"Hg	Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg	Finish Time:	Final Leak Check:	cfm @	"Hg

* 1st reading off due to power trip on start up + restarting.

Project No.: 21707

Operator : DP

Field Data Sheet

Date: SEPT 29, 16	Plant: Durham-York Energy Center	Test No.: 5 PART	Page 3 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure ΔH "H_2O	Pump Vacuum "Hg Gauge
	84	84.06	.83	.77	281	247	250	49	222	75	73	2	3
12	88	87.14	.74	.73	265	247	250	48	222	75	73	1.8	3
	92	90.08	.72	.72	260	247	249	47	222	75	73	1.8	3
	96	93.03											

Traverse: 2			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 15:15	Final Leak Check: .004	cfm@ 15	"Hg

Traverse: X			
Start Time: X	Initial Leak Check: X	cfm @ X	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : BT

Field Data Sheet

Date: SEPT 29, 10	Plant: Durham-York Energy Center	Test No.: 5 PART	Page 4 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	93.39	.91	.81	278	248	248	61	73	74	73	2.2	3.2
	4	96.62	1.0	.84	284	247	250	46	220	74	73	2.4	3.5
2	8	100.01	1.05	.86	284	247	251	51	222	74	73	2.5	3.5
	12	103.50	1.05	.86	285	248	250	50	223	74	74	2.5	3.5
3	16	106.95	.94	.81	285	248	250	54	220	74	74	2.2	3.5
	20	110.26	.94	.81	284	248	250	52	220	74	74	2.2	3.5
4	24	113.54	.90	.80	284	248	250	54	219	75	74	2.2	3.5
	28	116.81	.90	.80	285	248	250	52	220	75	74	2.2	3.5
5	32	120.07	.84	.77	285	248	250	54	220	75	74	2.0	3.5
	36	123.22	.84	.77	285	248	250	53	218	75	74	2	3.5
6	40	126.32	.80	.75	285	248	250	54	218	75	74	1.8	3.2
	44	129.30	.80	.75	286	248	250	53	218	76	74	1.85	3.2
7	48	132.31	.78	.74	286	248	250	53	219	79	75	1.8	3.2
	52	135.30	.78	.74	285	248	250	51	217	76	74	1.8	3.2
8	56	138.31	.79	.75	285	248	249	49	218	76	75	1.8	3.2
	60	141.34	.80	.75	285	248	248	49	219	77	75	1.9	3.2
9	64	144.40	.80	.75	285	248	250	49	219	77	75	1.9	3.2
	68	147.43	.80	.75	285	248	250	49	219	77	75	1.9	3.2
10	72	150.45	.80	.75	285	248	250	49	220	78	76	1.9	3.2
	76	153.48	.80	.75	284	248	250	49	220	78	75	1.9	3.2
11	80	156.53	.80	.75	284	247	250	48	220	78	75	1.9	3.2

Traverse:			
Start Time: 15:43	Initial Leak Check: .004	cfm@ 15	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse:			
Start Time: X	Initial Leak Check: X	cfm @ X	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : DT

Field Data Sheet

Date: SEPT 29, 16	Plant: Durham-York Energy Center	Test No.: 5 PART	Page 5 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	84	159.54	.73	.72	285	249	248	48	220	78	76	1.8	3.5
12	88	162.40	.73	.72	276	249	248	48	220	78	76	1.8	3.5
	92	165.42	.73	.72	276	249	250	48	220	78	76	1.8	3.5
	96	168.33											

Traverse: 1		Traverse: X	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time: X	Initial Leak Check: X cfm @ X "Hg
Finish Time: 17:19	Final Leak Check: .003 cfm@ 15 "Hg	Finish Time:	Final Leak Check: X cfm @ X "Hg

Project No.: 21707

Operator : DT

ORTECH Environmental

Plant	Durham-York Energy Center
Plant Location	Courtice, ON
Test No.:	6 PARTICULATE
Test Date	SEPT 30, 16
Test Location	APC Outlet # 1
Operator Signature	[illegible]

Project No.:	21707
Page	1 of 5
Probe No.:	6-5
Meter Box No.:	~~6-5~~ Teon 2
Impinger Box No.:	

Pitot Factor	.847 ✓	
DGMCF	.976 ✓	
Barometric Pressure	29.85	"Hg
Static Pressure	-11.00	"H2O
Nozzle Size	.2504 ✓	inches
Stack Diameter	4.50 ✓	feet
Length		feet
Width		feet
Port length:		inches

Reading Interval	4
Number of Ports	2
Number of Points/Port	12

Probe Liner Glass / Metal / Teflon / Other_____

Nozzle Glass / Metal / Other_____

Union None / Metal / Teflon / Other_____

Pitot Leak Checked? Yes No

Particulate Gain

Filter	19.2 ✓	mg
Probe	2.6 ✓	mg

Moisture Gain

CWTR	490.2 ✓	g
WCBDA	38.0 ✓	g

Combustion Gas Concentration

Oxygen	9.23 ✓	%
Carbon Dioxide	10.44 ✓	%
Carbon Monoxide	14.1	ppm

Site Diagram

Measuring Device	MII Numbers
Probe / Pitot	
Trendicator	See
Control Box	
Incline Manometer	
Comb.Gas Analyzer	Test
Micromanometer	
Barometer	#4 Part
Calipers	

Nozzle Measurements	
1	See
2	
3	Test
4	
Average:	#4 Part

Notes:

Field Data Sheet

Date: Sept 30, 16	Plant: Durham-York Energy Center	Test No.: 6 Point	Page 2 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	69.10	.95	.82	282	249	245	68	99	74	73	2.3	3.2
	4	72.15	.92	.80	288	248	248	56	199	73	73	2.2	3
2	8	75.43	.92	.80	288	249	248	51	207	73	73	2.2	3
	12	78.67	.95	.81	288	249	248	49	208	73	73	2.25	3
3	16	81.94	.92	.80	288	248	249	49	214	73	73	2.2	3
	20	85.22	.92	.80	288	248	248	49	216	74	73	2.2	3
4	24	88.49	.87	.78	289	248	248	50	217	74	73	2.1	3
	28	91.67	.87	.78	289	248	249	51	218	74	73	2.1	3
5	32	94.82	.81	.75	289	248	249	52	219	75	73	1.9	3
	36	97.89	.81	.75	289	249	249	51	219	75	74	1.9	3
6	40	100.94	.72	.71	289	248	249	49	219	75	73	1.7	3
	44	103.81	.72	.71	289	248	249	48	218	75	73	1.7	3
7	48	106.63	.76	.73	289	248	250	49	219	76	74	1.8	3
	52	109.56	.76	.73	289	248	249	49	219	76	74	1.8	3
8	56	112.50	.78	.74	289	248	250	48	220	77	75	1.85	3
	60	115.50	.80	.75	288	248	250	48	220	77	74	1.9	3
9	64	118.52	.82	.76	288	248	250	48	220	77	74	2	3
	68	121.61	.82	.76	288	248	250	48	220	77	75	2	3
10	72	124.70	.84	.77	285	248	251	49	221	77	75	2	3
	76	127.80	.84	.77	286	248	251	50	221	78	75	2	3
11	80	130.87	.84	.77	287	248	250	50	221	78	75	2	3.2

Traverse: 2		Traverse: X	
Start Time: 7:38	Initial Leak Check: .005 cfm@ 17 "Hg	Start Time: X	Initial Leak Check: X cfm @ X "Hg
Finish Time: —	Final Leak Check: — cfm@ — "Hg	Finish Time:	Final Leak Check: X cfm @ X "Hg

Project No.: 21707

Operator : DJ

Field Data Sheet

Date: SEPT 30, 18	Plant: Durham-York Energy Center	Test No.: 6 PART	Page 3 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	84	133.98	.30	.75	273	248	251	50	221	78	75	1.9	3
12	88	137.01	.32	.76	273	248	250	50	220	78	75	1.95	3.2
	92	140.09	.32	.76	275	248	250	51	321	78	76	1.95	3.2
	96	143.17											

Traverse: 2		Traverse: X	
Start Time: —	Initial Leak Check: — cfm@ — "Hg	Start Time: X	Initial Leak Check: X cfm @ X "Hg
Finish Time: 9:14	Final Leak Check: .004 cfm@ 15 "Hg	Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 21707

Operator : AT

Field Data Sheet

Date: SEPT 30, 16	Plant: Durham-York Energy Center	Test No.: 6 PART	Page 4 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	143.53	.89	.79	278	248	248	65	114	76	75	2.15	3.5
	4	146.69	.90	.80	288	248	249	53	215	75	75	2.2	3.5
2	8	149.95	.99	.83	288	248	249	52	220	75	75	2.3	3.5
	12	153.27	1	.84	288	249	250	57	223	75	75	2.3	3.5
3	16	156.60	.95	.82	280	248	249	56	221	75	75	2.3	3.5
	20	159.94	.95	.82	287	248	249	54	224	75	75	2.3	3.5
4	24	163.28	.90	.80	288	247	249	56	222	75	75	2.15	3.5
	28	166.48	.90	.80	288	247	249	55	224	76	75	2.15	3.5
5	32	169.70	.81	.75	288	248	250	57	222	76	75	1.9	3.5
	36	172.78	.81	.75	288	248	250	56	223	76	75	1.9	3.5
6	40	175.82	.72	.71	288	248	250	60	221	76	75	1.7	3.5
	44	178.73	.72	.71	288	248	250	54	219	76	75	1.7	3.5
7	48	181.60	.69	.70	289	248	250	51	219	77	75	1.65	3.5
	52	184.45	.69	.70	287	248	250	49	220	77	76	1.65	3.5
8	56	187.28	.72	.71	289	248	250	49	219	77	76	1.7	3.5
	60	190.17	.72	.71	289	248	250	48	220	77	76	1.7	3.5
9	64	193.04	.75	.73	288	248	250	48	219	77	76	1.8	3.5
	68	195.96	.75	.73	287	248	247	47	219	77	75	1.8	3.5
10	72	198.90	.70	.70	279	248	247	48	219	78	76	1.7	3.5
	76	201.75	.74	.73	286	248	250	49	219	79	76	1.8	3.5
11	80	204.68	.78	.74	287	248	250	49	219	78	76	1.9	3.5

Traverse: 1			
Start Time: 9:48	Initial Leak Check: .003	cfm@ 15	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse: X			
Start Time: X	Initial Leak Check: X	cfm @ X	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 21707

Operator : DT

Field Data Sheet

Date: SEPT 30, 16	Plant: Durham-York Energy Center	Test No.: 6 PART	Page 5 of 5
	Plant Location: Courtice, ON	Test Location: APC Outlet # 1	

Point	Clock Time	Dry Gas Meter ft^3	Pitot Δ P "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
	*	*	*		*			*		*	*	*	*
	84	207.69	.78	.74	284	249	249	50	219	77	75	1.9	3.5
12	88	210.70	.60	.65	265	247	249	49	219	77	75	1.9	3.2
	92	213.34	.60	.65	263	247	249	50	219	77	76	1.4	3.2
	96	215.96											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 11:24	Final Leak Check: .003	cfm@ 15	"Hg

Traverse: X			
Start Time: X	Initial Leak Check: X	cfm @ X	"Hg
Finish Time:	Final Leak Check: X	cfm @ X	"Hg

Project No.: 21707

Operator : DT

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APPENDIX 12

Particulate Matter
Train Recovery Data Sheets
(3 pages)

Particulate Recovery Sheet

Client : CANANTA
Project No.: 21707
Date: Sep. 29/16
Test No.: 4
Test Location: Unit 1 - Outlet

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing	Filter	Impingers 1, 2, 3	Impinger 4
	Filter ID: 16-GFF-29		

CONTAINER TS1	CONTAINER TS2	CONTAINER TS3

Container TS1 Weights	
Empty Wt:	416.0
After Acetone Rinse:	612.4
Total TS1:	196.4 ✓

Initial Wt:	0.6827	g
Final Wt:	0.7029	g
Gain:	20.2 ✓	mg
Colour:	WHITE	

Impinger #1 H_2O	
Empty Wt:	669.3
Initial Wt:	764.9
Final Wt:	1014.4
1 Gain:	249.5 ✓
Colour:	CLEAR

Impinger #4 Silica Gel	
Initial Wt:	940.5
Final Wt:	982.4
4 Gain:	41.9 ✓

MARK FLUID LEVEL	SEAL CONTAINER TS2

Seal and label container TS1

CONTAINER TS1a
Probe Rinse Residue

Initial Wt:	104.2881	g
Final Wt:	104.3055	g
Gain:	17.4 ✓	mg

Impinger #2 H_2O	
Empty Wt:	659.0
Initial Wt:	749.7
Final Wt:	967.9
2 Gain:	218.2 ✓
Colour:	CLEAR

Impinger #3 EMPTY	
Empty Wt:	636.1
Final Wt:	650.4
3 Gain:	14.3 ✓
Colour:	CLEAR

SAMPLE IDENTIFICATION	
TS1(Probe Rinse-Acetone)	
TS2(Filter)	
TS3(Impinger 1,2,3 Sol'n)	

CONTAINER TS3 WEIGHTS	
Empty Wt:	414.7
With Imp. 1,2,3 Soln:	1068.3
Imp. 1,2,3 Volume:	653.6
After Rinse:	1205.9
Total TS3:	791.2

BOX 9

Train Loaded By: AN
Train Recovered By: AN
Recovery Witnessed By:
Date: Sep. 29/16

CWTR = 1+2+3: 482.0 ✓

WCBDA= 4: 41.9 ✓

ORTECH Environmental

Revision: May 6, 2005

Particulate Recovery Sheet

Client : Covanta

Project No.: 21707

Date: 29 sep 16

Test No.: 5

Test Location: U1-outlet

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing	Filter	Impingers 1, 2, 3	Impinger 4
	Filter ID: 16-GFF-24		

CONTAINER TS1	CONTAINER TS2	CONTAINER TS3

Container TS1 Weights	
Empty Wt:	415.1
After Acetone Rinse:	549.7
Total TS1:	134.6

Initial Wt:	0.6811 g
Final Wt:	0.6983 g
Gain:	17.2 mg
Colour:	white

Impinger #1 H_2O	
Empty Wt:	661.0
Initial Wt:	764.6
Final Wt:	969.3
1 Gain:	204.7
Colour:	clear

Impinger #4 Silica Gel	
Initial Wt:	770.6
Final Wt:	804.2
4 Gain:	33.6

MARK FLUID LEVEL	SEAL CONTAINER TS2

Seal and label container TS1

CONTAINER TS1a
Probe Rinse Residue

Initial Wt:	109.1643 g
Final Wt:	109.1677 g
Gain:	3.4 mg

Impinger #2 H_2O	
Empty Wt:	676.9
Initial Wt:	766.9
Final Wt:	990.3
2 Gain:	223.4
Colour:	clear

Impinger #3 EMPTY	
Empty Wt:	621.6
Final Wt:	729.6
3 Gain:	108.0
Colour:	clear

SAMPLE IDENTIFICATION	
TS1(Probe Rinse-Acetone)	
TS2(Filter)	
TS3(Impinger 1,2,3 Sol'n)	

CONTAINER TS3 WEIGHTS	
Empty Wt:	416.1
With Imp. 1,2,3 Soln:	1133.1
Imp. 1,2,3 Volume:	717.0
After Rinse:	1246.3
Total TS3:	830.2

Box 13

Train Loaded By: AN

Train Recovered By: TS

Recovery Witnessed By: —

Date: 29 Sep 16

CWTR = 1+2+3: 536.1 ✓

WCBDA= 4: 33.6

ORTECH Environmental

Revision: May 6, 2005

Particulate Recovery Sheet

Client : COVANTA

Project No.: 21707

Date: SEPT 30, 16

Test No.: 6 PART

Test Location: OUTLET

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing	Filter	Impingers 1, 2, 3	Impinger 4
	Filter ID: 16-GFF-22		

CONTAINER TS1	CONTAINER TS2	CONTAINER TS3

Container TS1 Weights	
Empty Wt:	411.4
After Acetone Rinse:	536.2
Total TS1:	124.8

Initial Wt:	0.6845
Final Wt:	0.7037
Gain:	19.2
Colour:	WHITE

Impinger #1 H_2O	
Empty Wt:	673.6
Initial Wt:	764.6
Final Wt:	1019.8
1 Gain:	255.2
Colour:	clear

Impinger #4 Silica Gel	
Initial Wt:	938.6
Final Wt:	976.6
4 Gain:	38.0

MARK FLUID LEVEL	SEAL CONTAINER TS2

Seal and label container TS1

CONTAINER TS1a
Probe Rinse Residue

Initial Wt:	109.3156
Final Wt:	109.3182
Gain:	2.6

Impinger #2 H_2O	
Empty Wt:	671.9
Initial Wt:	761.4
Final Wt:	986.3
2 Gain:	224.9
Colour:	clear

Impinger #3 EMPTY	
Empty Wt:	624.7
Final Wt:	634.8
3 Gain:	10.1
Colour:	clear

CONTAINER TS3 WEIGHTS	
Empty Wt:	411.9
With Imp. 1,2,3 Soln:	1074.0
Imp. 1,2,3 Volume:	662.1
After Rinse:	1147.5
Total TS3:	735.6

BOX 8

SAMPLE IDENTIFICATION	
TS1(Probe Rinse-Acetone)	
TS2(Filter)	
TS3(Impinger 1,2,3 Sol'n)	

Train Loaded By: AN

Train Recovered By: DT

Recovery Witnessed By:

Date: SEPT 30, 16

CWTR = 1+2+3:	490.2
WCBDA= 4:	38.0

ORTECH Environmental

Revision: May 6, 2005

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APPENDIX 13

ORTECH Equipment Calibration Data
(26 pages)

ORTECH Environmental
Pitot Tube Calibration

Date	February 9, 2016
Probe/Pitot ID	S10
MII Number	B03771
Calibrated Against	B02911
Cp standard	0.99948
Calibration Procedure	93-T62-SP-012

Calibration Facility	ORTECH Environmental
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.88	0.150	0.210	0.845	0.0026
(0.25")	9.54	0.220	0.306	0.847	0.0002
	11.59	0.325	0.450	0.849	0.0021
	13.87	0.465	0.645	0.849	0.0013
	15.69	0.595	0.830	0.846	0.0011
			Mean	0.847	0.0015
Without Nozzle	7.50	0.136	0.190	0.846	0.0005
	9.54	0.220	0.305	0.849	0.0028
	11.50	0.320	0.440	0.852	0.0063
	13.79	0.460	0.650	0.841	0.0053
	16.27	0.640	0.900	0.843	0.0033
			Mean	0.846	0.0036

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Environmental
Pitot Tube Calibration

Date	February 9, 2016
Probe/Pitot ID	SP4
MII Number	B04011
Calibrated Against	B02911
Cp standard	0.99948
Calibration Procedure	93-T62-SP-012

Calibration Facility	ORTECH Environmental
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.53	0.137	0.192	0.844	0.0039
(0.25")	9.58	0.222	0.310	0.846	0.0024
	11.50	0.320	0.450	0.843	0.0054
	14.01	0.475	0.650	0.854	0.0062
	16.01	0.620	0.850	0.854	0.0054
			Mean	0.848	0.0047
Without Nozzle	7.61	0.140	0.195	0.847	0.0011
	9.54	0.220	0.307	0.846	0.0019
	11.86	0.340	0.475	0.846	0.0024
	14.59	0.515	0.710	0.851	0.0032
	15.95	0.615	0.850	0.850	0.0022
			Mean	0.848	0.0022

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Environmental
Pitot Tube Calibration

Date	February 9, 2016
Probe/Pitot ID	SP5
MII Number	COE20109
Calibrated Against	B02911
Cp standard	0.99948
Calibration Procedure	93-T62-SP-012

Calibration Facility	ORTECH Environmental
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.61	0.140	0.195	0.847	0.0047
(0.25")	9.54	0.220	0.312	0.839	0.0029
	11.63	0.327	0.455	0.847	0.0051
	14.23	0.490	0.690	0.842	0.0001
	16.08	0.625	0.895	0.835	0.0070
			Mean	0.842	0.0040
Without Nozzle	7.61	0.140	0.195	0.847	0.0009
	9.21	0.205	0.290	0.840	0.0074
	11.57	0.324	0.450	0.848	0.0003
	13.94	0.470	0.650	0.850	0.0021
	16.01	0.620	0.850	0.854	0.0059
			Mean	0.848	0.0033

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Environmental
Pitot Tube Calibration

Date	February 9, 2016
Probe/Pitot ID	S7A
MII Number	COE20112
Calibrated Against	B02911
Cp standard	0.99948
Calibration Procedure	93-T62-SP-012

Calibration Facility	ORTECH Environmental
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.88	0.150	0.210	0.845	0.0042
(0.25")	10.07	0.245	0.350	0.836	0.0043
	12.12	0.355	0.500	0.842	0.0017
	14.52	0.510	0.720	0.841	0.0007
	16.27	0.640	0.910	0.838	0.0023
			Mean	0.840	0.0026
Without Nozzle	7.47	0.135	0.190	0.842	0.0017
	9.32	0.210	0.300	0.836	0.0079
	11.50	0.320	0.445	0.848	0.0034
	13.87	0.465	0.650	0.845	0.0012
	15.88	0.610	0.845	0.849	0.0050
			Mean	0.844	0.0038

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Environmental
Pitot Tube Calibration

Date	February 9, 2016
Probe/Pitot ID	15A
MII Number	B03775
Calibrated Against	B02911
Cp standard	0.99948
Calibration Procedure	93-T62-SP-012

Calibration Facility	ORTECH Environmental
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.61	0.140	0.195	0.847	0.0010
(0.25")	9.54	0.220	0.310	0.842	0.0039
	11.68	0.330	0.460	0.847	0.0007
	13.79	0.460	0.640	0.847	0.0015
	15.88	0.610	0.850	0.847	0.0008
			Mean	0.846	0.0016
Without Nozzle	7.47	0.135	0.190	0.842	0.0025
	9.32	0.210	0.290	0.851	0.0055
	11.41	0.315	0.440	0.846	0.0007
	14.23	0.490	0.685	0.845	0.0003
	16.14	0.630	0.890	0.841	0.0041
			Mean	0.845	0.0026

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Environmental
Pitot Tube Calibration

Date	February 9, 2016
Probe/Pitot ID	15D
MII Number	B03778
Calibrated Against	B02911
Cp standard	0.99948
Calibration Procedure	93-T62-SP-012

Calibration Facility	ORTECH Environmental
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.61	0.140	0.195	0.847	0.0003
(0.25")	9.32	0.210	0.295	0.843	0.0033
	11.50	0.320	0.450	0.843	0.0037
	14.23	0.490	0.680	0.848	0.0019
	15.69	0.595	0.820	0.851	0.0048
			Mean	0.847	0.0028
Without Nozzle	7.33	0.130	0.185	0.838	0.0055
	9.32	0.210	0.294	0.845	0.0014
	11.41	0.315	0.440	0.846	0.0023
	14.23	0.490	0.682	0.847	0.0039
	15.75	0.600	0.847	0.841	0.0021
			Mean	0.843	0.0030

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Environmental

Manometer Calibration Data

Date	February 4, 2016	Calibrated By	Mike Traynor
Manometer Number	5	Signature	
Manometer MII Number	B00717	Reviewed/Accepted By	
Calibrated Against	HHP-100A		
MII Number	B02679		
Calibration Procedure	03 - J010		

Manometer Scale "H_2O	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.098	NA	0.098	0.5
0-0.5	0.240		0.244	1.6
	0.463		0.462	-0.2
	0.212		0.212	0.0
0-1.0	0.520		0.528	1.5
	0.985		0.992	0.7
	0.42		0.42	0.0
0-2.0	0.94		0.94	0.0
	1.92		1.92	0.0
	1.68		1.68	0.0
0-10.0	5.25		5.24	-0.2
	9.49		9.48	-0.1

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental
Manometer Calibration Data

Date	February 4, 2016	Calibrated By	Mike Traynor
Manometer Number	8	Signature	
Manometer MII Number	A11630	Reviewed/Accepted By	
Calibrated Against	HHP-100A		
MII Number	B02679		
Calibration Procedure	03 - J010		

Manometer Scale "H_20	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.110	NA	0.113	2.7
0-0.5	0.260		0.270	3.7
	0.470		0.484	2.9
	0.220		0.227	3.1
0-1.0	0.510		0.524	2.7
	0.945		0.957	1.3
	0.38		0.38	0.0
0-2.0	1.00		1.02	2.0
	1.93		1.95	1.0
	1.95		1.95	0.0
0-10.0	4.85		4.86	0.2
	9.70		9.68	-0.2

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental
Manometer Calibration Data

Date	February 4, 2016	Calibrated By	Mike Traynor
Manometer Number	9	Signature	MT
Manometer MII Number	A01674	Reviewed/Accepted By	[illegible]
Calibrated Against	HHP-100A		
MII Number	B02679		
Calibration Procedure	03 - J010		

Manometer Scale "H_2O	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	1.050	N/A	1.070	1.9
0-0.5	0.250		0.256	2.3
	0.470		0.471	0.2
	0.150		0.148	-1.4
0-1.0	0.515		0.523	1.5
	0.920		0.918	-0.2
	0.36		0.35	-2.9
0-2.0	0.99		0.99	0.0
	1.85		1.85	0.0
	2.00		2.00	0.0
0-10.0	5.01		5.00	-0.2
	9.65		9.67	0.2

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental
Manometer Calibration Data

Date	February 4, 2016	Calibrated By	Mike Traynor
Manometer Number	10	Signature	
Manometer MII Number	B02107	Reviewed/Accepted By	
Calibrated Against	HHP-100A		
MII Number	B02679		
Calibration Procedure	03 - J010		

Manometer Scale "H_2O	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.090	NA	0.091	1.1
0-0.5	0.260		0.261	0.4
	0.464		0.464	0.0
	0.170		0.166	-2.4
0-1.0	0.520		0.516	-0.8
	0.939		0.936	-0.3
	0.40		0.39	-2.6
0-2.0	0.95		0.98	3.1
	1.86		1.86	0.0
	1.20		1.19	-0.8
0-10.0	4.75		4.75	0.0
	9.30		9.27	-0.3

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental
Manometer Calibration Data

Date	May 27, 2016	Calibrated By	D Turton
Manometer Number	Team 2	Signature	
Manometer MII Number	COE 20092	Reviewed/Accepted By	
Calibrated Against	Omega HHP		
MII Number	B02679		
Calibration Procedure	03 - J010		

Front Leg

Manometer Scale "H_2O	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.445	NA	0.450	1.1
0-1.0	0.720		0.710	-1.4
	0.965		0.970	0.5
	2.12		2.11	-0.5
1.0-10.0	4.25		4.26	0.2
	7.20		7.19	-0.1

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental
Manometer Calibration Data

Date	September 6, 2016	Calibrated By	Thomas Timar
Manometer Number	Team 1	Signature	
Manometer MII Number	COE 20094	Reviewed/Accepted By	
Calibrated Against	Omega HHP		
MII Number	B02679		
Calibration Procedure	03 - J010		

Front Leg

Manometer Scale "H_20	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.300		0.295	-1.7
0-1.0	0.610		0.605	-0.8
	0.950		0.940	-1.1
	2.55		2.51	-1.6
1.0-10.0	5.40		5.40	0.0
	9.20		9.30	1.1

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental

Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Team 2
Date	May 27, 2016
Barometric Pressure	29.53
System Leak Check	< 0.005 cfm @ 22 "Hg

MII NUMBERS	
DGM	COE 20092
Gasometer	A01463
Barometer	COE20028

Calibrated By	D Turton
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ {}^oF+460}{Tstd\ {}^oF+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Make sure to inspect pump before each calibration

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°F	in. H_2O	°F	Factor	min.
87.00	24.10	62.90	2.959	23.5	59.292	62.339	3.047	74	0.75	73	0.969	6.2
87.50	26.30	61.20	2.879	23.5	62.339	65.311	2.972	75	0.75	74	0.968	6
87.60	26.50	61.10	2.874	23.5	65.311	68.275	2.964	75	0.75	74	0.969	6
87.65	24.15	63.50	2.987	23.7	68.527	71.571	3.044	75	1.9	74	0.977	4
87.80	24.20	63.60	2.992	23.7	71.571	74.635	3.064	75.5	1.9	75	0.973	4
87.40	23.60	63.80	3.001	23.7	74.635	77.692	3.057	75.5	1.9	75	0.979	4
87.05	22.25	64.80	3.048	23.7	77.925	81.008	3.083	75.5	3.4	75	0.982	3
87.40	23.05	64.35	3.027	23.7	81.008	84.065	3.057	75.5	3.4	75	0.983	3
87.40	22.85	64.55	3.036	23.7	84.065	87.141	3.076	75.5	3.4	75	0.980	3

DGMCF AVERAGE	0.976
BEFORE	0.980

Acceptance Criteria:
Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

ORTECH Environmental
Trendicator Calibration

Calibration Procedure	03 - J005
Trendicator Type	Team 2
MII	COE 20092
Date	May 27, 2016
Calibrated By	D Turton
Signature	
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	Tredicator Display Value		Percent Difference (%)
	Before Adjustment (°F)	After Adjustment (°F)	
32	32	NA	0.0
70	70		0.0
100	100		0.0
200	200		0.0
250	251		-0.4
300	301		-0.3
400	399		0.3
500	498		0.4
600	600		0.0
700	699		0.1
800	798		0.3
900	898		0.2
1000	998		0.2
1100	1098		0.2
1200	1198		0.2
1250	1248		0.2

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

ORTECH Environmental

Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Team 2
Date	October 12, 2016
Barometric Pressure	29.80
System Leak Check	< 0.002 cfm @ 23 "Hg

MII NUMBERS	
DGM	COE 20092
Gasometer	A01463
Barometer	COE20028

Calibrated By	T. Timar
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ {}^oF+460}{Tstd\ {}^oF+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Make sure to inspect pump before each calibration

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°F	in. H_2O	°F	Factor	min.
87.10	22.80	64.30	3.025	20.0	234.440	237.510	3.070	73	0.75	73	0.993	6.3
88.60	24.20	64.40	3.029	20.0	228.220	231.310	3.090	77	0.75	77	0.995	6.3
86.80	21.40	65.40	3.076	20.0	231.310	234.440	3.130	77	0.75	77	0.998	6.4
87.20	18.30	68.90	3.241	20.0	238.550	241.840	3.290	72.5	1.9	72	0.989	4.3
88.10	23.90	64.20	3.020	20.5	241.840	244.915	3.075	72.5	1.9	72	0.984	4
87.40	23.40	64.00	3.011	20.5	244.915	247.970	3.055	72.5	1.9	72	0.988	4
89.40	25.40	64.00	3.011	21.0	249.270	252.320	3.050	72.5	3.4	72	0.984	3
88.70	24.40	64.30	3.025	21.0	252.320	255.385	3.065	72.5	3.4	72	0.984	3
80.30	15.80	64.50	3.034	21.0	258.435	261.495	3.060	72.5	3.4	72	0.988	3

DGMCF AVERAGE	0.989
BEFORE	0.976

Acceptance Criteria:

Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

ORTECH Environmental
Manometer Calibration Data

Date	October 12, 2016	Calibrated By	T. Timar
Manometer Number	Team 2	Signature	
Manometer MII Number	COE 20092	Reviewed/Accepted By	
Calibrated Against	Omega HHP		
MII Number	B02679		
Calibration Procedure	03 - J010		

Front Leg

Manometer Scale "H_2O	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.410	NA	0.410	0.0
0-1.0	0.710	↓	0.700	-1.4
	0.935	↓	0.920	-1.6
	1.58	NA	1.60	1.3
1.0-10.0	4.20	↓	4.13	-1.7
	8.80	↓	8.62	-2.1

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Environmental
Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Control Box #4
Date	August 17, 2016
Barometric Pressure	29.71
System Leak Check	0.001 cfm @ 22 "Hg

MII NUMBERS	
DGM	A04713
Gasometer	A01463
Barometer	COE 20028

Calibrated By	Andrew Saikaley
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ ^oF+460}{Tstd\ ^oF+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°F	in. H_2O	°F	Factor	min.
81.50	17.60	63.90	3.006	23.0	804.005	806.981	2.976	78.5	0.5	76	1.018	6
82.00	16.30	65.70	3.090	23.0	806.981	810.037	3.056	80.5	0.5	78	1.023	6
81.30	15.60	65.70	3.090	23.0	810.037	813.120	3.083	83.5	0.5	79	1.020	6
80.80	14.60	66.20	3.114	23.5	813.120	816.255	3.135	89.5	1.1	82	1.019	4
81.50	18.60	62.90	2.959	23.5	816.255	819.250	2.995	91	1	83	1.016	4
80.90	17.90	63.00	2.963	23.5	819.250	822.255	3.005	92	1	85	1.016	4
81.80	16.80	65.00	3.058	23.5	822.255	825.350	3.095	94	1.8	87	1.020	3
81.80	16.00	65.80	3.095	23.5	825.350	828.488	3.138	95.5	1.8	88	1.021	3
80.80	16.30	64.50	3.034	23.5	828.488	831.573	3.085	96.5	1.7	89	1.020	3

Acceptance Criteria:
Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

DGMCF AVERAGE	1.019
BEFORE	1.024

ORTECH Environmental
Trendicator Calibration

Calibration Procedure	**03 - J005**
Trendicator Type	**OMEGA DP116**
MII	**A04713**
Date	**August 17, 2016**
Calibrated By	**Andrew Saikaley**
Signature	
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	**Trendicator Display Value**		**Percent Difference (%)**
	Before Adjustment (°F)	**After Adjustment (°F)**	
32	32	NA	0.0
70	70		0.0
100	100		0.0
200	201		-0.5
250	252		-0.8
300	301		-0.3
400	400		0.0
500	499		0.2
600	600		0.0
700	701		-0.1
800	801		-0.1
900	901		-0.1
1000	1001		-0.1
1100	1101		-0.1
1200	1201		-0.1
1250	1250		0.0

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

ORTECH Environmental

Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Control Box # 6
Date	May 25, 2016
Barometric Pressure	29.59
System Leak Check	.002 cfm @ 25 "Hg

MII NUMBERS	
DGM	A06100
Gasometer	A01463
Barometer	COE 20028

Calibrated By	D Turton
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ {}^oF+460}{Tstd\ {}^oF+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°F	in. H_2O	°F	Factor	min.
88.50	28.50	60.00	2.822	23.0	11.618	14.540	2.922	81	0.8	78	0.978	6
88.05	28.55	59.50	2.799	23.0	14.540	17.450	2.910	83	0.8	79	0.977	6
87.70	28.40	59.30	2.789	23.0	17.450	20.362	2.912	84.5	0.8	80	0.976	6
87.90	26.10	61.80	2.907	23.0	20.465	23.518	3.053	87	1.8	82	0.972	4
88.05	26.10	61.95	2.914	23.0	23.518	26.574	3.056	88.5	1.8	82	0.976	4
88.35	26.50	61.85	2.909	23.0	26.574	29.634	3.060	89.5	1.8	83	0.975	4
88.00	25.70	62.30	2.931	23.0	29.822	32.876	3.054	92.5	3.3	84	0.986	3
87.90	19.70	68.20	3.208	23.0	32.876	36.230	3.354	93	3.3	85	0.984	3.3
88.10	25.80	62.30	2.931	23.0	36.230	39.294	3.064	93.5	3.3	85	0.984	3

Acceptance Criteria:
Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

DGMCF AVERAGE	0.979
BEFORE	0.969

ORTECH Environmental
Trendicator Calibration

Calibration Procedure	**03 - J005**
Trendicator Type	**DP119**
MII	**A06100**
Date	**May 25, 2016**
Calibrated By	**D Turton**
Signature	
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	**Tredicator Display Value**		**Percent Difference (%)**
	Before Adjustment (°F)	**After Adjustment (°F)**	
32	32	NA	0.0
70	69		1.4
100	99		1.0
200	200		0.0
250	251		-0.4
300	301		-0.3
400	399		0.3
500	498		0.4
600	599		0.2
700	700		0.0
800	800		0.0
900	900		0.0
1000	1000		0.0
1100	1100		0.0
1200	1200		0.0
1250	1250		0.0

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

ORTECH Environmental

Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Control Box # 7
Date	September 1, 2016
Barometric Pressure	29.65
System Leak Check	0.002 cfm @ 22 "Hg

MII NUMBERS	
DGM	A09072
Gasometer	A01463
Barometer	COE 20028

Calibrated By	Andrew Saikaley
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ ^\circ F+460}{Tstd\ ^\circ F+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°F	in. H_2O	°F	Factor	min.
80.90	21.00	59.90	2.818	23.5	863.370	866.256	2.886	76	0.8	75	0.977	6
79.50	19.90	59.60	2.804	23.5	866.256	869.169	2.913	77.5	0.8	76	0.966	6
81.00	20.50	60.50	2.846	23.0	869.169	872.115	2.946	78	0.8	77	0.972	6
79.50	16.00	63.50	2.987	23.0	872.115	875.195	3.080	79	1.8	78	0.976	4
80.90	16.50	64.40	3.029	23.0	875.195	878.313	3.118	80	1.8	78	0.979	4
79.90	15.80	64.10	3.015	23.0	878.313	881.419	3.106	80	1.8	78	0.978	4
79.90	17.00	62.90	2.959	23.0	881.419	884.450	3.031	81	3	79	0.983	3
79.80	16.80	63.00	2.963	23.0	884.450	887.493	3.043	81.5	3	79	0.981	3
80.00	16.50	63.50	2.987	23.0	887.493	890.556	3.063	82.5	3	80	0.984	3

Acceptance Criteria:
Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

DGMCF AVERAGE	0.978
BEFORE	0.99

ORTECH Environmental
Trendicator Calibration

Calibration Procedure	03 - J005
Trendicator Type	Omega DP116
MII	A09072
Date	September 1, 2016
Calibrated By	Andrew Saikaley
Signature	
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	Tredicator Display Value		Percent Difference (%)
	Before Adjustment (°F)	After Adjustment (°F)	
32	32	NA	0.0
70	70		0.0
100	100		0.0
200	201		-0.5
250	251		-0.4
300	301		-0.3
400	400		0.0
500	499		0.2
600	600		0.0
700	701		-0.1
800	801		-0.1
900	901		-0.1
1000	1001		-0.1
1100	1101		-0.1
1200	1201		-0.1
1250	1251		-0.1

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

ORTECH Environmental

Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Team 1
Date	September 6, 2016
Barometric Pressure	29.74
System Leak Check	< .001 cfm @ 23 "Hg

MII NUMBERS	
DGM	COE 20094
Gasometer	A01463
Barometer	COE 20028

Calibrated By	Thomas Timar
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ {}^oF+460}{Tstd\ {}^oF+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Make sure to inspect pump before each calibration

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	^oC	Initial	Final	ft^3	^oF	in. H_2O	^oF	Factor	min.
80.10	17.80	62.30	2.931	24.0	42.380	45.330	2.950	76	0.75	75	0.993	6
78.90	11.30	67.60	3.180	24.0	45.330	48.530	3.200	75.5	0.75	75	0.992	6
81.90	19.20	62.70	2.949	24.0	48.530	51.480	2.950	75.5	0.75	75	0.998	6
82.10	19.70	62.40	2.935	24.0	57.655	60.600	2.945	75.5	1.8	75	0.993	4
82.10	19.90	62.20	2.926	24.0	60.600	63.540	2.940	75.5	1.8	75	0.991	4
80.10	18.20	61.90	2.912	24.0	63.540	66.450	2.910	75.5	1.8	75	0.997	4
81.30	17.20	64.10	3.015	24.0	71.945	74.965	3.020	75	3.4	75	0.990	3
82.10	17.70	64.40	3.029	24.0	74.965	77.990	3.025	75	3.4	75	0.993	3
80.10	15.90	64.20	3.020	24.0	77.990	81.010	3.020	75	3.4	75	0.991	3

Acceptance Criteria:

Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

DGMCF AVERAGE	0.993
BEFORE	0.983

ORTECH Environmental
Trendicator Calibration

Calibration Procedure	**03 - J005**
Trendicator Type	**Team 1**
MII	**COE 20094**
Date	SEPT 6/16
Calibrated By	**Thomas Timar**
Signature	
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	**Tredicator Display Value**		**Percent Difference**
	Before Adjustment (°F)	**After Adjustment (°F)**	**(%)**
32	32		0.0
70	69		1.4
100	100		0.0
200	200		0.0
250	251		-0.4
300	301		-0.3
400	400		0.0
500	499		0.2
600	600		0.0
700	700		0.0
800	799		0.1
900	899		0.1
1000	999		0.1
1100	1099		0.1
1200	1199		0.1
1250	1248		0.2

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

ORTECH Environmental

Dry Gas Meter Calibration Data

Calibration Procedure	03 - J004
Meter Number	Control Box #11
Date	August 17, 2016
Barometric Pressure	29.75
System Leak Check	< 0.001 cfm @ 22 "Hg

MII NUMBERS	
DGM	B03699
Gasometer	A01463
Barometer	COE 20028

Calibrated By	Andrew Saikaley
Signature	
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{Vstd\ ft^3}{Vdgm\ ft^3} \quad \frac{Tdgm\ {}^oF+460}{Tstd\ {}^oF+460} \quad \frac{Pbar\ (in.\ Hg)}{(Pbar\ in.\ Hg+DGMPressure/13.6)}$$

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading ft^3		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°F	in. H_2O	°F	Factor	min.
80.70	17.30	63.40	2.982	23.0	250.060	253.075	3.015	76	0.7	75	0.992	6
81.00	17.40	63.60	2.992	23.0	253.075	256.095	3.020	77	0.7	75	0.996	6
81.90	18.60	63.30	2.978	23.0	256.095	259.105	3.010	78.5	0.7	76	0.997	6
81.00	17.80	63.20	2.973	23.0	259.105	262.110	3.005	80.5	1.6	77	0.999	4
81.00	17.80	63.20	2.973	23.0	262.110	265.124	3.014	83	1.6	79	1.000	4
81.00	17.80	63.20	2.973	23.0	265.124	268.155	3.031	85	1.6	81	0.998	4
80.90	18.90	62.00	2.916	23.0	269.931	272.917	2.986	87	2.8	82	0.995	3
81.90	19.60	62.30	2.931	23.0	272.917	275.904	2.987	88.5	2.8	83	1.002	3
82.00	19.80	62.20	2.926	23.0	275.904	278.893	2.989	89.5	2.8	84	1.001	3

Acceptance Criteria:
Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

DGMCF AVERAGE	0.998
BEFORE	1.024

ORTECH Environmental
Trendicator Calibration

Calibration Procedure	03 - J005
Trendicator Type	Omega DP116
MII	B03699
Date	August 17, 2016
Calibrated By	Andrew Saikaley
Signature	
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	Tredicator Display Value		Percent Difference (%)
	Before Adjustment (°F)	After Adjustment (°F)	
32	32		0.0
70	69		1.4
100	100		0.0
200	200		0.0
250	251		-0.4
300	300		0.0
400	399		0.3
500	498		0.4
600	599		0.2
700	700		0.0
800	799		0.1
900	899		0.1
1000	999		0.1
1100	1100		0.0
1200	1199		0.1
1250	1250		0.0

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

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APPENDIX 14

SVOC Test Emission Calculations
for Boiler No. 1
(56 pages)

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	1 - SVOC
Date:	September 26, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	3.730 m^3
AVGERGE ISOKINETICITY	98.2 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	171.5 °C
AVERAGE GAS MOISTURE BY VOLUME	14.9 %
AVERAGE GAS VELOCITY	19.68 m/s
BAROMETRIC PRESSURE (Station)	99.628 Kpa
STATIC PRESSURE	-0.697 Kpa
ABSOLUTE GAS PRESSURE	98.930 Kpa
OXYGEN CONCENTRATION	8.92 %
CARBON DIOXIDE CONCENTRATION	10.12 %
CARBON MONOXIDE CONCENTRATION	13.0 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	29.07 m^3/s
DRY REF GAS FLOWRATE	16.19 Rm^3/s
DRY ADJ GAS FLOWRATE	19.59 Rm^3/s
WET REF GAS FLOWRATE	19.04 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.730 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 26, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.42 "Hg	**CWTR (g)**	470.4		
Static Pressure	-2.800 "H_2O	**WCBDA (g)**	10.8		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.81 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.92
CO2%	10.12
COppm	13.0

Measured H2O
14.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	0.04	0.55	340	63	71	72	1.2	5.0		16.09	
	2.5	1.58	0.55	343	52	72	77	1.2	5.5		16.12	98.6
	5	3.12	0.56	343	50	72	79	1.2	6.0		16.27	98.2
2	7.5	4.70	0.67	343	49	73	82	1.5	7.5		17.80	99.6
	10	6.41	0.68	342	48	73	84	1.5	7.5		17.92	98.3
	12.5	8.15	0.68	342	47	74	86	1.5	7.5		17.92	99.0
3	15	9.88	0.76	342	47	74	88	1.7	8.5		18.94	98.2
	17.5	11.72	0.76	342	46	75	90	1.7	8.5		18.94	98.7
	20	13.57	0.75	342	46	76	92	1.65	9.0		18.82	98.9
4	22.5	15.39	0.78	341	46	77	94	1.8	10.0		19.18	97.7
	25	17.29	0.78	341	45	77	96	1.75	10.0		19.18	99.7
	27.5	19.20	0.77	341	45	78	97	1.75	10.0		19.06	100.0
5	30	21.07	0.77	340	45	79	98	1.75	10.0		19.04	98.4
	32.5	22.95	0.77	340	45	80	99	1.75	10.0		19.04	98.7
	35	24.79	0.77	340	44	80	100	1.75	10.5		19.04	96.4
6	37.5	26.66	0.78	340	44	81	101	1.8	11.0		19.17	97.9
	40	28.57	0.79	341	44	82	102	1.8	11.0		19.30	99.2
	42.5	30.48	0.79	342	44	83	102	1.8	11.0		19.31	98.4
7	45	32.39	0.93	341	43	83	103	2.1	13.0		20.94	98.4
	47.5	34.43	0.94	341	45	84	105	2.2	13.5		21.05	96.8
	50	36.52	0.94	341	45	85	106	2.2	13.5		21.05	98.4
8	52.5	38.60	0.98	341	46	85	106	2.25	14.5		21.50	97.7
	55	40.72	0.98	342	47	86	107	2.25	15.0		21.51	97.6
	57.5	42.81	0.98	341	47	86	108	2.25	15.0		21.50	96.1
9	60	44.92	1	341	46	87	108	2.3	10.0		21.72	96.8
	62.5	47.15	1.01	342	51	86	95	2.25	10.0		21.84	101.2
	65	49.13	1.02	342	48	86	95	2.3	11.0		21.95	90.6
10	67.5	51.31	1.02	343	46	86	101	2.3	11.0		21.96	99.3
	70	53.50	1.01	343	46	86	102	2.25	11.0		21.85	99.3
	72.5	55.66	1.02	343	46	86	103	2.3	11.5		21.96	98.3
11	75	57.81	1.03	343	46	86	104	2.35	12.0		22.07	97.3

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 26, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.42 "Hg	**CWTR (g)**	470.4		
Static Pressure	-2.800 "H_2O	**WCBDA (g)**	10.8		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.81 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.92
CO2%	10.12
COppm	13.0

Measured H2O
14.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	59.99	0.99	343	46	86	105	2.25	11.5		21.63	98.1
	80	62.13	0.98	342	46	86	106	2.25	11.5		21.51	98.1
12	82.5	64.27	0.99	342	46	87	106	2.25	11.5		21.62	98.5
	85	66.40	0.98	342	46	87	107	2.25	11.5		21.51	97.4
	87.5	68.52	0.97	341	46	87	108	2.25	11.5		21.39	97.4
	90	70.65								0.81		98.2
1	0	71.46	0.73	343	73	82	83	1.7	10.0		18.58	
	2.5	73.27	0.74	343	49	81	85	1.65	10.0		18.70	98.8
	5	75.08	0.75	343	47	81	87	1.7	10.5		18.83	98.0
2	7.5	76.93	0.79	343	47	81	89	1.8	11.5		19.33	99.4
	10	78.80	0.8	343	45	81	91	1.8	12.0		19.45	97.7
	12.5	80.70	0.8	343	45	81	93	1.8	12.0		19.45	98.5
3	15	82.60	0.82	342	46	81	95	1.85	13.0		19.68	98.3
	17.5	84.54	0.81	342	45	81	96	1.8	13.0		19.56	98.9
	20	86.47	0.81	342	45	82	98	1.8	13.0		19.56	98.9
4	22.5	88.37	0.77	342	45	82	99	1.75	13.0		19.07	97.1
	25	90.24	0.78	342	45	83	100	1.75	13.5		19.19	97.9
	27.5	92.13	0.8	341	45	83	101	1.8	14.0		19.42	98.1
5	30	94.00	0.74	341	43	84	102	1.75	14.0		18.68	95.7
	32.5	95.88	0.74	341	45	85	103	1.75	14.5		18.68	99.9
	35	97.75	0.74	341	45	85	104	1.7	15.0		18.68	99.2
6	37.5	99.61	0.72	342	46	86	105	1.65	15.0		18.44	98.5
	40	101.44	0.72	341	46	86	105	1.65	15.0		18.43	98.2
	42.5	103.29	0.72	341	46	86	106	1.65	15.0		18.43	99.2
7	45	105.12	0.84	340	46	87	106	2	15.5		19.89	98.0
	47.5	107.07	0.83	340	46	87	108	2	15.5		19.77	96.6
	50	109.04	0.84	340	46	88	108	2	10.0		19.89	98.0
8	52.5	110.98	0.93	340	49	88	100	2.15	11.0		20.93	95.9
	55	113.05	0.91	339	47	88	103	2.15	11.0		20.69	98.0
	57.5	115.15	0.91	339	47	88	104	2.1	11.0		20.69	100.1
9	60	117.22	0.93	338	47	88	105	2.15	11.5		20.90	98.6

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 26, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.42 "Hg	**CWTR (g)**	470.4		
Static Pressure	-2.800 "H_2O	**WCBDA (g)**	10.8		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.81 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.92
CO2%	10.12
COppm	13.0

Measured H2O
14.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	119.27	0.92	338	48	88	106	2.15	12.0		20.79	96.5
	65	121.36	0.92	337	48	88	107	2.15	12.0		20.78	98.8
10	67.5	123.44	0.85	337	48	89	107	2	12.0		19.97	98.2
	70	125.47	0.84	337	48	89	108	1.9	12.0		19.85	99.5
	72.5	127.46	0.9	337	49	89	108	2.05	12.5		20.55	98.1
11	75	129.52	0.73	338	49	89	109	1.75	12.0		18.52	98.1
	77.5	131.38	0.72	337	49	90	109	1.75	12.0		18.38	98.2
	80	133.27	0.73	336	49	90	109	1.75	12.0		18.50	100.4
12	82.5	135.15	0.73	336	49	90	109	1.75	12.0		18.50	99.1
	85	137.02	0.7	336	49	90	109	1.7	12.0		18.11	98.6
	87.5	138.84	0.71	335	49	91	110	1.7	12.0		18.23	98.0
	90	140.66										97.0

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	2 - SVOC
Date:	September 26, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	5.97 mm
DRY REF GAS VOLUME SAMPLED	3.282 m^3
AVGERGE ISOKINETICITY	98.6 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	171.6 °C
AVERAGE GAS MOISTURE BY VOLUME	15.0 %
AVERAGE GAS VELOCITY	19.83 m/s
BAROMETRIC PRESSURE (Station)	99.357 Kpa
STATIC PRESSURE	-0.722 Kpa
ABSOLUTE GAS PRESSURE	98.635 Kpa
OXYGEN CONCENTRATION	8.81 %
CARBON DIOXIDE CONCENTRATION	10.15 %
CARBON MONOXIDE CONCENTRATION	13.2 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	29.30 m^3/s
DRY REF GAS FLOWRATE	16.26 Rm^3/s
DRY ADJ GAS FLOWRATE	19.85 Rm^3/s
WET REF GAS FLOWRATE	19.13 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.282 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 26, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.34 "Hg	**CWTR (g)**	414.8		
Static Pressure	-2.900 "H_2O	**WCBDA (g)**	10.4		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.31 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.81
CO2%	10.15
COppm	13.2

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	41.76	0.57	342	67	79	80	0.95	5.0		16.43	
	2.5	43.18	0.57	342	57	78	81	0.9	5.0		16.43	**100.8**
	5	44.55	0.58	342	53	78	84	0.95	5.0		16.57	**97.2**
2	7.5	45.90	0.73	343	53	78	85	1.25	6.5		18.61	**94.7**
	10	47.46	0.73	343	52	78	87	1.25	6.5		18.61	**97.6**
	12.5	49.05	0.72	342	50	79	89	1.2	6.5		18.47	**99.3**
3	15	50.61	0.79	342	50	79	91	1.4	7.5		19.34	**97.8**
	17.5	52.24	0.78	342	49	79	93	1.4	8.0		19.22	**97.4**
	20	53.88	0.78	341	49	80	94	1.4	8.0		19.21	**98.4**
4	22.5	55.52	0.82	341	48	80	95	1.45	8.5		19.70	**98.2**
	25	57.22	0.82	342	48	81	97	1.45	8.5		19.71	**99.2**
	27.5	58.91	0.81	341	48	82	98	1.45	8.5		19.58	**98.4**
5	30	60.60	0.8	342	48	82	99	1.45	8.5		19.47	**98.8**
	32.5	62.23	0.81	341	48	83	99	1.45	9.0		19.58	**95.8**
	35	63.92	0.8	341	48	83	100	1.45	9.0		19.45	**98.6**
6	37.5	65.62	0.81	341	47	84	101	1.45	9.0		19.58	**99.7**
	40	67.31	0.81	341	47	84	102	1.45	9.0		19.58	**98.3**
	42.5	68.99	0.8	340	48	85	102	1.45	9.5		19.44	**97.7**
7	45	70.68	0.92	339	48	85	103	1.7	11.0		20.84	**98.7**
	47.5	72.54	0.93	339	49	86	104	1.65	11.5		20.95	**101.2**
	50	74.39	0.92	339	49	86	105	1.6	11.5		20.84	**99.9**
8	52.5	76.19	0.98	340	50	87	106	1.8	12.0		21.52	**97.7**
	55	78.05	0.97	340	51	87	106	1.75	12.0		21.41	**97.7**
	57.5	79.94	0.97	339	51	88	107	1.75	12.5		21.39	**99.8**
9	60	81.82	0.98	340	51	88	108	1.75	13.0		21.52	**99.0**
	62.5	83.68	0.97	340	50	88	108	1.75	13.0		21.41	**97.4**
	65	85.55	0.96	340	50	89	108	1.75	13.0		21.30	**98.5**
10	67.5	87.40	0.96	340	50	89	108	1.75	13.5		21.30	**97.8**
	70	89.26	0.96	340	50	89	109	1.75	13.5		21.30	**98.3**
	72.5	91.10	0.97	341	50	90	109	1.75	13.5		21.42	**97.2**
11	75	93.01	0.92	340	50	90	110	1.65	14.0		20.85	**100.4**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 26, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.34 "Hg	**CWTR (g)**	414.8		
Static Pressure	-2.900 "H_2O	**WCBDA (g)**	10.4		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.31 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.81
CO2%	10.15
COppm	13.2

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	94.85	0.93	341	50	90	110	1.7	14.5		20.98	99.1
	80	96.70	0.93	341	50	91	110	1.7	14.5		20.98	99.2
12	82.5	98.54	0.94	341	50	91	110	1.7	14.5		21.09	98.5
	85	100.38	0.94	340	51	91	110	1.7	15.0		21.07	98.0
	87.5	102.23	0.93	340	51	91	111	1.7	15.0		20.96	98.5
	90	104.07								0.31		98.4
1	0	104.38	0.71	342	72	83	84	1.2	7.0		18.34	
	2.5	105.98	0.73	342	58	82	86	1.25	7.0		18.60	101.1
	5	107.52	0.72	342	55	82	88	1.25	7.0		18.47	95.9
2	7.5	109.08	0.76	343	51	82	90	1.3	8.0		18.99	97.6
	10	110.71	0.76	343	50	82	92	1.3	8.0		18.99	99.2
	12.5	112.33	0.78	343	49	82	93	1.35	8.5		19.23	98.4
3	15	113.96	0.81	343	48	82	95	1.4	9.0		19.60	97.6
	17.5	115.66	0.8	343	47	82	96	1.35	9.0		19.48	99.7
	20	117.34	0.79	342	46	83	97	1.35	9.0		19.34	99.1
4	22.5	119.01	0.74	342	46	83	99	1.3	8.5		18.72	98.9
	25	120.63	0.74	341	46	84	99	1.3	8.5		18.71	98.9
	27.5	122.22	0.75	342	46	84	100	1.35	9.0		18.85	96.9
5	30	123.85	0.71	341	46	85	101	1.25	9.0		18.33	98.7
	32.5	125.45	0.74	341	47	85	101	1.3	9.0		18.71	99.3
	35	127.08	0.73	342	46	85	102	1.3	9.0		18.60	99.1
6	37.5	128.70	0.7	342	47	86	103	1.25	9.0		18.21	99.1
	40	130.31	0.69	342	47	87	104	1.2	9.0		18.08	100.4
	42.5	131.87	0.71	342	47	87	104	1.25	9.5		18.34	97.8
7	45	133.45	0.82	341	47	87	104	1.45	10.5		19.70	97.7
	47.5	135.16	0.83	340	47	88	106	1.45	10.5		19.80	98.3
	50	136.93	0.84	340	47	88	107	1.45	11.0		19.92	100.8
8	52.5	138.68	0.9	340	47	89	107	1.6	12.0		20.62	99.0
	55	140.48	0.9	340	47	89	108	1.6	12.0		20.62	98.3
	57.5	142.27	0.91	341	47	89	108	1.65	12.5		20.75	97.7
9	60	144.10	0.97	341	47	90	109	1.75	13.0		21.42	99.4

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 26, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.34 "Hg	**CWTR (g)**	414.8		
Static Pressure	-2.900 "H_2O	**WCBDA (g)**	10.4		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.31 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.81
CO2%	10.15
COppm	13.2

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	145.97	0.95	341	47	90	109	1.7	13.0		21.20	98.3
	65	147.84	0.95	341	48	90	110	1.7	13.0		21.20	99.3
10	67.5	149.70	0.93	340	47	91	110	1.65	13.0		20.96	98.6
	70	151.54	0.91	339	47	91	110	1.6	13.5		20.72	98.5
	72.5	153.38	0.93	339	48	91	110	1.65	13.5		20.95	99.5
11	75	155.21	0.9	339	48	91	110	1.6	14.0		20.61	97.9
	77.5	157.03	0.88	338	48	92	111	1.6	14.0		20.37	98.9
	80	158.85	0.88	339	48	92	111	1.55	14.0		20.38	99.8
12	82.5	160.66	0.88	338	49	92	111	1.55	14.0		20.37	99.3
	85	162.46	0.88	338	49	92	111	1.55	14.0		20.37	98.7
	87.5	164.25	0.88	338	49	92	111	1.55	14.0		20.37	98.2
	90	166.03										97.6

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	3 - SVOC
Date:	September 27, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	5.97 mm
DRY REF GAS VOLUME SAMPLED	3.336 m^3
AVGERGE ISOKINETICITY	99.1 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	168.8 °C
AVERAGE GAS MOISTURE BY VOLUME	14.6 %
AVERAGE GAS VELOCITY	19.85 m/s
BAROMETRIC PRESSURE (Station)	99.255 Kpa
STATIC PRESSURE	-0.697 Kpa
ABSOLUTE GAS PRESSURE	98.558 Kpa
OXYGEN CONCENTRATION	8.77 %
CARBON DIOXIDE CONCENTRATION	10.33 %
CARBON MONOXIDE CONCENTRATION	17.7 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	29.33 m^3/s
DRY REF GAS FLOWRATE	16.43 Rm^3/s
DRY ADJ GAS FLOWRATE	20.13 Rm^3/s
WET REF GAS FLOWRATE	19.25 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.336 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 27, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.31 "Hg	**CWTR (g)**	411.5		
Static Pressure	-2.800 "H_2O	**WCBDA (g)**	9.2		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.44 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.77
CO2%	10.33
COppm	17.7

Measured H2O
14.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	66.47	0.75	342	66	69	70	1.25	6.0		18.83	
	2.5	68.07	0.74	342	50	69	72	1.2	6.0		18.71	100.6
	5	69.63	0.74	341	47	69	74	1.2	6.0		18.70	98.6
2	7.5	71.20	0.78	341	47	69	77	1.3	6.5		19.20	98.9
	10	72.83	0.78	341	45	70	79	1.3	6.5		19.20	99.8
	12.5	74.45	0.78	341	44	70	81	1.3	7.0		19.20	98.9
3	15	76.06	0.82	340	44	71	83	1.35	7.5		19.67	98.1
	17.5	77.72	0.81	340	43	71	85	1.35	7.5		19.55	98.3
	20	79.35	0.81	339	43	72	87	1.4	8.0		19.54	97.0
4	22.5	81.00	0.78	339	43	73	88	1.35	8.0		19.17	97.8
	25	82.64	0.77	339	43	74	90	1.35	8.0		19.05	98.9
	27.5	84.26	0.76	338	43	74	91	1.35	8.0		18.91	98.1
5	30	85.90	0.75	339	43	75	93	1.3	8.0		18.80	99.8
	32.5	87.53	0.72	338	43	76	94	1.25	8.0		18.41	99.6
	35	89.13	0.71	338	43	77	95	1.25	8.5		18.28	99.5
6	37.5	90.73	0.68	338	43	78	96	1.2	8.5		17.89	100.0
	40	92.31	0.68	337	43	79	97	1.2	8.5		17.88	100.7
	42.5	93.85	0.69	337	43	79	97	1.25	8.5		18.01	97.9
7	45	95.42	0.85	335	43	80	98	1.55	10.0		19.96	99.1
	47.5	97.15	0.84	334	43	81	99	1.55	10.5		19.83	98.2
	50	98.93	0.84	334	43	81	101	1.5	10.5		19.83	101.4
8	52.5	100.69	0.9	334	43	82	101	1.6	11.5		20.53	100.1
	55	102.49	0.9	333	43	82	102	1.6	11.5		20.52	98.8
	57.5	104.27	0.9	334	44	83	103	1.6	11.5		20.53	97.5
9	60	106.06	0.94	333	44	83	103	1.7	13.0		20.97	98.0
	62.5	107.93	0.93	333	44	84	104	1.65	13.0		20.85	100.1
	65	109.78	0.92	332	44	84	104	1.65	13.0		20.73	99.4
10	67.5	111.61	0.92	332	44	85	105	1.65	13.0		20.73	98.8
	70	113.43	0.9	333	44	85	105	1.6	13.5		20.52	98.1
	72.5	115.25	0.89	333	44	86	105	1.6	13.5		20.40	99.2
11	75	117.06	0.86	332	44	86	105	1.55	13.5		20.04	99.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 27, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0
DGMCF	0.979	**Probe (mg)**	0
Barometric Pressure	29.31 "Hg	**CWTR (g)**	411.5
Static Pressure	-2.800 "H_2O	**WCBDA (g)**	9.2
Nozzle	0.235 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.44 ft^3
Length	0.000 ft	**Reading Interval**	2.5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	8.77
CO2%	10.33
COppm	17.7

Measured H2O
14.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	118.84	0.86	330	45	87	106	1.55	13.5		20.02	99.1
	80	120.60	0.86	330	45	87	106	1.55	14.0		20.02	97.7
12	82.5	122.39	0.86	330	45	87	106	1.55	14.0		20.02	99.3
	85	124.15	0.85	331	45	87	106	1.55	14.5		19.91	97.7
	87.5	125.93	0.86	330	46	87	106	1.55	15.0		20.02	99.4
	90	127.67								0.44		96.6
1	0	128.11	0.58	333	70	81	82	1	6.0		16.47	
	2.5	129.55	0.57	333	52	80	84	0.95	6.0		16.33	100.1
	5	130.94	0.58	333	48	80	86	1	6.5		16.47	97.3
2	7.5	132.35	0.71	334	47	80	87	1.3	7.5		18.23	97.7
	10	133.98	0.7	334	45	80	90	1.25	7.5		18.10	102.1
	12.5	135.59	0.71	334	44	80	91	1.2	8.0		18.23	101.3
3	15	137.20	0.77	334	44	80	93	1.4	9.5		18.99	100.5
	17.5	138.80	0.76	334	44	80	94	1.4	9.5		18.86	95.8
	20	140.48	0.78	334	43	81	96	1.4	9.5		19.11	101.1
4	22.5	142.15	0.79	334	43	81	97	1.4	9.5		19.23	98.9
	25	143.84	0.8	334	43	82	98	1.4	9.5		19.35	99.4
	27.5	145.52	0.8	334	43	82	99	1.45	9.5		19.35	98.0
5	30	147.25	0.81	334	43	83	100	1.45	9.5		19.48	100.9
	32.5	148.98	0.78	334	43	83	101	1.4	9.5		19.11	100.0
	35	150.68	0.79	334	43	84	102	1.4	9.5		19.23	100.1
6	37.5	152.40	0.79	334	43	84	102	1.4	9.5		19.23	100.4
	40	154.06	0.8	333	43	84	103	1.45	10.0		19.34	96.9
	42.5	155.77	0.82	334	43	85	103	1.5	10.5		19.60	99.1
7	45	157.55	0.83	335	43	85	105	1.5	10.5		19.73	101.9
	47.5	159.32	0.97	336	44	86	105	1.75	12.0		21.34	100.6
	50	161.18	0.96	336	44	86	106	1.8	12.0		21.23	97.8
8	52.5	163.08	1.02	336	45	87	107	1.85	13.0		21.88	100.3
	55	165.01	1.01	336	46	87	108	1.85	13.0		21.77	98.7
	57.5	166.95	1.03	336	46	87	108	1.9	13.5		21.99	99.6
9	60	168.90	1.04	337	46	88	108	1.9	13.5		22.11	99.2

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 27, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.31 "Hg	**CWTR (g)**	411.5		
Static Pressure	-2.800 "H_2O	**WCBDA (g)**	9.2		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.44 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.77
CO2%	10.33
COppm	17.7

Measured H2O
14.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	170.87	1.05	337	46	88	109	1.9	14.0		22.22	99.7
	65	172.84	1.06	338	46	89	109	1.95	14.0		22.33	99.1
10	67.5	174.82	1.1	339	45	89	110	2	15.0		22.77	99.1
	70	176.83	1.07	340	45	89	110	1.95	15.0		22.47	98.8
	72.5	178.79	1.07	340	45	90	110	1.95	15.5		22.47	97.7
11	75	180.77	0.97	339	46	90	110	1.8	15.5		21.38	98.6
	77.5	182.71	0.96	338	46	90	111	1.75	15.5		21.26	101.4
	80	184.63	0.96	338	46	90	110	1.75	15.5		21.26	100.7
12	82.5	186.52	0.96	338	47	90	110	1.75	15.5		21.26	99.2
	85	188.41	0.96	338	47	91	111	1.75	15.5		21.26	99.2
	87.5	190.30	0.96	338	47	91	111	1.75	16.0		21.26	99.0
	90	192.18										98.5

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	4 - SVOC
Date:	September 29, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	5.97 mm
DRY REF GAS VOLUME SAMPLED	3.281 m^3
AVGERGE ISOKINETICITY	100.4 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	168.3 °C
AVERAGE GAS MOISTURE BY VOLUME	14.7 %
AVERAGE GAS VELOCITY	18.95 m/s
BAROMETRIC PRESSURE (Station)	101.050 Kpa
STATIC PRESSURE	-0.772 Kpa
ABSOLUTE GAS PRESSURE	100.278 Kpa
OXYGEN CONCENTRATION	8.69 %
CARBON DIOXIDE CONCENTRATION	10.42 %
CARBON MONOXIDE CONCENTRATION	16.9 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.99 m^3/s
DRY REF GAS FLOWRATE	15.95 Rm^3/s
DRY ADJ GAS FLOWRATE	19.67 Rm^3/s
WET REF GAS FLOWRATE	18.72 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.281 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 29, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.84 "Hg	**CWTR (g)**	409.2		
Static Pressure	-3.100 "H_2O	**WCBDA (g)**	7.8		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.42 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.69
CO2%	10.42
COppm	16.9

Measured H2O
14.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	38.31	0.56	333	63	73	73	0.9	5.0		16.04	
	2.5	39.64	0.57	333	47	73	76	0.95	5.0		16.19	96.5
	5	41.00	0.55	333	45	73	78	0.95	5.0		15.90	97.6
2	7.5	42.33	0.64	333	44	73	80	1.15	6.0		17.15	96.9
	10	43.81	0.63	333	43	73	82	1.1	6.0		17.02	99.9
	12.5	45.27	0.64	332	43	73	84	1.15	6.0		17.14	99.1
3	15	46.76	0.72	332	42	74	86	1.35	7.0		18.18	100.1
	17.5	48.38	0.73	333	42	75	88	1.35	7.0		18.32	102.4
	20	49.99	0.73	333	42	75	89	1.35	7.5		18.32	100.8
4	22.5	51.61	0.74	332	41	76	91	1.35	7.5		18.43	101.4
	25	53.21	0.74	332	41	77	93	1.35	7.5		18.43	99.1
	27.5	54.83	0.75	332	42	78	95	1.4	8.0		18.56	100.1
5	30	56.48	0.74	332	41	78	95	1.35	8.0		18.43	101.0
	32.5	58.15	0.73	332	41	79	97	1.3	8.0		18.31	102.9
	35	59.79	0.73	332	41	80	97	1.3	8.0		18.31	101.4
6	37.5	61.40	0.75	332	41	81	98	1.35	8.5		18.56	99.5
	40	63.06	0.75	333	41	81	99	1.35	8.5		18.57	101.0
	42.5	64.70	0.75	333	41	82	100	1.35	8.5		18.57	99.8
7	45	66.32	0.91	333	41	82	100	1.7	10.0		20.45	98.4
	47.5	68.14	0.89	333	41	83	102	1.65	10.5		20.23	100.4
	50	69.96	0.89	333	41	83	103	1.65	10.5		20.23	101.3
8	52.5	71.76	0.89	333	41	84	104	1.65	11.0		20.23	100.0
	55	73.60	0.9	333	41	85	105	1.65	11.0		20.34	102.1
	57.5	75.43	0.9	333	41	85	105	1.65	11.0		20.34	100.8
9	60	77.23	0.92	333	41	86	106	1.7	12.0		20.56	99.1
	62.5	79.07	0.94	334	40	88	106	1.75	12.0		20.80	100.1
	65	80.95	0.94	335	40	87	107	1.75	12.5		20.81	101.0
10	67.5	82.80	0.93	335	40	87	107	1.75	12.5		20.70	99.5
	70	84.65	0.93	336	40	87	108	1.75	12.5		20.72	100.0
	72.5	86.50	0.9	335	40	88	108	1.7	13.0		20.37	100.0
11	75	88.32	0.81	335	40	88	108	1.55	12.5		19.32	99.8

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 29, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.84 "Hg	**CWTR (g)**	409.2		
Static Pressure	-3.100 "H_2O	**WCBDA (g)**	7.8		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.42	ft^3
Length	0.000 ft	**Reading Interval**		2.5	minutes
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.69
CO2%	10.42
COppm	16.9

Measured H2O
14.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	90.09	0.82	333	40	88	108	1.5	12.0		19.41	**102.3**
	80	91.85	0.83	333	40	89	108	1.5	12.0		19.53	**101.0**
12	82.5	93.58	0.82	333	40	89	108	1.5	12.0		19.41	**98.6**
	85	95.35	0.84	334	40	89	108	1.55	12.5		19.66	**101.4**
	87.5	97.12	0.84	334	40	89	108	1.55	12.5		19.66	**100.3**
	90	98.89								0.42		**100.3**
1	0	99.31	0.7	338	70	82	84	1.25	7.0		17.99	
	2.5	100.91	0.72	341	45	82	85	1.25	7.0		18.28	**102.3**
	5	102.46	0.73	340	42	80	86	1.3	7.0		18.40	**97.9**
2	7.5	104.04	0.74	340	41	80	89	1.35	7.5		18.52	**99.1**
	10	105.66	0.75	339	40	80	90	1.4	8.0		18.64	**100.7**
	12.5	107.31	0.75	339	40	80	91	1.35	8.0		18.64	**101.7**
3	15	108.95	0.73	339	40	80	93	1.3	8.0		18.39	**101.0**
	17.5	110.57	0.74	338	39	80	93	1.35	8.0		18.50	**100.9**
	20	112.21	0.74	338	39	81	95	1.35	8.0		18.50	**101.4**
4	22.5	113.85	0.71	337	39	81	96	1.3	8.0		18.11	**101.1**
	25	115.43	0.71	338	39	82	97	1.3	8.0		18.12	**99.3**
	27.5	117.02	0.71	338	39	82	98	1.3	8.5		18.12	**99.8**
5	30	118.63	0.68	338	39	82	98	1.25	8.5		17.74	**101.0**
	32.5	120.22	0.67	338	39	83	99	1.25	8.5		17.60	**101.9**
	35	121.78	0.68	338	39	83	99	1.25	8.5		17.74	**100.5**
6	37.5	123.35	0.64	338	39	84	100	1.2	8.5		17.21	**100.4**
	40	124.89	0.65	338	39	84	101	1.2	8.5		17.34	**101.3**
	42.5	126.43	0.65	338	40	84	101	1.2	8.5		17.34	**100.5**
7	45	127.96	0.77	337	40	85	101	1.45	9.5		18.86	**99.8**
	47.5	129.63	0.79	336	39	85	102	1.5	10.0		19.09	**100.0**
	50	131.35	0.79	336	39	85	104	1.45	10.0		19.09	**101.5**
8	52.5	133.10	0.88	335	39	86	104	1.65	11.0		20.14	**103.1**
	55	134.89	0.88	335	39	86	105	1.65	11.0		20.14	**99.8**
	57.5	136.67	0.88	336	39	86	105	1.65	11.0		20.15	**99.2**
9	60	138.50	0.9	335	39	87	106	1.7	12.0		20.37	**102.0**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 29, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.84 "Hg	**CWTR (g)**	409.2		
Static Pressure	-3.100 "H_2O	**WCBDA (g)**	7.8		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.42 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.69
CO2%	10.42
COppm	16.9

Measured H2O
14.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	140.35	0.9	336	39	87	106	1.65	12.0		20.38	**101.8**
	65	142.20	0.89	336	40	87	107	1.6	12.0		20.26	**101.8**
10	67.5	144.07	0.87	334	40	88	107	1.55	12.0		20.01	**103.4**
	70	145.83	0.88	334	40	88	107	1.6	12.0		20.13	**98.2**
	72.5	147.61	0.88	334	40	88	107	1.6	12.0		20.13	**98.7**
11	75	149.40	0.81	333	40	88	107	1.55	12.5		19.30	**99.3**
	77.5	151.17	0.83	334	40	88	107	1.55	12.5		19.55	**102.3**
	80	152.94	0.83	334	40	89	107	1.55	12.5		19.55	**101.1**
12	82.5	154.67	0.83	333	40	89	107	1.55	12.5		19.53	**98.7**
	85	156.44	0.83	334	41	89	108	1.55	13.0		19.55	**100.9**
	87.5	158.20	0.83	333	41	89	108	1.55	13.0		19.53	**100.3**
	90	159.95										**99.7**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	5 - SVOC
Date:	September 29, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	5.97 mm
DRY REF GAS VOLUME SAMPLED	3.313 m^3
AVGERGE ISOKINETICITY	100.6 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	171.0 °C
AVERAGE GAS MOISTURE BY VOLUME	15.0 %
AVERAGE GAS VELOCITY	19.24 m/s
BAROMETRIC PRESSURE (Station)	101.084 Kpa
STATIC PRESSURE	-0.722 Kpa
ABSOLUTE GAS PRESSURE	100.362 Kpa
OXYGEN CONCENTRATION	8.76 %
CARBON DIOXIDE CONCENTRATION	10.45 %
CARBON MONOXIDE CONCENTRATION	15.0 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	28.43 m^3/s
DRY REF GAS FLOWRATE	16.07 Rm^3/s
DRY ADJ GAS FLOWRATE	19.71 Rm^3/s
WET REF GAS FLOWRATE	18.91 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.313 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 29, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	419.7		
Static Pressure	-2.900 "H_2O	**WCBDA (g)**	8.9		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.69 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.76
CO2%	10.45
COppm	15.0

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	60.65	0.55	340	67	77	79	0.95	5.0		15.97	
	2.5	62.04	0.55	340	55	74	77	0.95	5.0		15.97	101.5
	5	63.39	0.55	340	52	74	79	0.95	5.0		15.97	99.1
2	7.5	64.76	0.67	340	52	74	81	1.15	5.5		17.63	100.3
	10	66.27	0.68	340	50	75	84	1.15	5.5		17.76	100.1
	12.5	67.80	0.68	340	50	75	85	1.15	6.0		17.76	100.3
3	15	69.31	0.76	341	49	75	87	1.35	7.0		18.78	98.9
	17.5	70.95	0.76	341	49	76	89	1.35	7.0		18.78	101.5
	20	72.60	0.77	341	49	77	91	1.35	7.0		18.91	101.8
4	22.5	74.24	0.76	340	49	77	93	1.3	7.0		18.77	100.3
	25	75.87	0.75	340	48	78	94	1.3	7.0		18.65	100.1
	27.5	77.47	0.75	340	48	79	95	1.35	7.5		18.65	98.7
5	30	79.11	0.77	340	48	79	96	1.4	7.5		18.90	101.0
	32.5	80.78	0.76	340	48	80	98	1.35	7.5		18.77	101.4
	35	82.44	0.76	341	48	81	99	1.35	7.5		18.78	101.2
6	37.5	84.10	0.75	340	48	82	99	1.35	7.5		18.65	101.0
	40	85.73	0.74	340	49	83	101	1.3	7.5		18.52	99.7
	42.5	87.34	0.73	340	49	83	101	1.3	7.5		18.40	98.9
7	45	88.97	0.9	339	50	84	102	1.65	9.0		20.42	100.8
	47.5	90.75	0.91	338	50	84	104	1.7	9.5		20.52	99.0
	50	92.60	0.91	338	47	85	104	1.7	9.5		20.52	102.1
8	52.5	94.46	0.94	338	47	86	105	1.75	10.0		20.85	102.5
	55	96.31	0.93	338	48	86	105	1.75	10.0		20.74	100.2
	57.5	98.20	0.93	338	48	87	106	1.7	10.5		20.74	102.9
9	60	100.06	0.94	338	47	87	107	1.7	10.5		20.85	101.0
	62.5	101.92	0.94	339	47	87	107	1.7	10.5		20.86	100.4
	65	103.78	0.94	338	46	88	108	1.7	10.5		20.85	100.5
10	67.5	105.62	0.9	338	46	88	108	1.65	11.0		20.40	99.2
	70	107.44	0.9	338	46	89	108	1.65	11.0		20.40	100.2
	72.5	109.26	0.91	338	46	89	108	1.65	11.0		20.52	100.1
11	75	111.07	0.88	337	46	89	108	1.6	11.0		20.16	99.0

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 29, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	419.7		
Static Pressure	-2.900 "H_2O	**WCBDA (g)**	8.9		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.69 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.76
CO2%	10.45
COppm	15.0

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	112.90	0.86	337	46	89	109	1.55	11.0		19.93	**101.7**
	80	114.65	0.85	337	46	90	109	1.55	11.0		19.82	**98.3**
12	82.5	116.42	0.86	337	46	90	109	1.6	11.5		19.93	**99.9**
	85	118.19	0.85	336	46	90	109	1.6	11.5		19.80	**99.4**
	87.5	119.98	0.84	336	46	90	109	1.6	11.5		19.69	**101.0**
	90	121.76								0.69		**101.1**
1	0	122.45	0.6	342	74	84	85	1.05	5.5		16.70	
	2.5	123.90	0.61	343	50	83	86	1.1	5.5		16.85	**100.3**
	5	125.33	0.6	343	47	82	89	1.1	5.5		16.71	**98.2**
2	7.5	126.77	0.79	343	47	82	89	1.4	6.5		19.18	**99.5**
	10	128.40	0.79	342	45	82	92	1.4	7.0		19.16	**98.3**
	12.5	130.09	0.8	342	44	82	94	1.4	7.5		19.28	**101.5**
3	15	131.79	0.76	342	44	83	96	1.35	7.5		18.80	**101.3**
	17.5	133.45	0.77	341	44	83	97	1.35	7.5		18.91	**101.2**
	20	135.09	0.77	341	44	83	98	1.4	7.5		18.91	**99.2**
4	22.5	136.76	0.75	341	44	84	99	1.35	7.5		18.66	**100.9**
	25	138.40	0.74	341	44	84	100	1.35	8.0		18.54	**100.2**
	27.5	140.02	0.75	341	44	84	101	1.4	8.0		18.66	**99.6**
5	30	141.70	0.71	342	44	85	102	1.3	8.0		18.17	**102.5**
	32.5	143.34	0.72	342	44	85	102	1.3	8.0		18.29	**102.7**
	35	144.95	0.7	342	44	86	103	1.3	8.0		18.04	**100.1**
6	37.5	146.53	0.69	341	44	86	103	1.3	8.0		17.90	**99.4**
	40	148.12	0.7	342	45	87	104	1.3	8.5		18.04	**100.7**
	42.5	149.68	0.7	342	45	87	104	1.35	8.5		18.04	**98.0**
7	45	151.32	0.85	341	45	88	105	1.6	10.0		19.87	**103.1**
	47.5	153.09	0.87	341	45	88	107	1.65	10.0		20.10	**100.7**
	50	154.94	0.86	342	45	89	108	1.6	10.5		19.99	**103.9**
8	52.5	156.74	0.91	341	46	89	108	1.7	11.0		20.55	**101.6**
	55	158.58	0.92	340	45	89	109	1.75	11.5		20.65	**100.9**
	57.5	160.45	0.92	340	46	90	109	1.75	11.5		20.65	**101.8**
9	60	162.30	0.95	340	46	90	110	1.8	12.0		20.99	**100.6**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 29, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	419.7		
Static Pressure	-2.900 "H_2O	**WCBDA (g)**	8.9		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.69 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.76
CO2%	10.45
COppm	15.0

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	164.20	0.94	339	46	91	110	1.75	12.5		20.86	**101.6**
	65	166.08	0.93	340	46	91	111	1.75	12.5		20.77	**100.9**
10	67.5	167.96	0.92	340	46	91	111	1.7	12.5		20.65	**101.5**
	70	169.83	0.92	340	46	92	111	1.7	12.5		20.65	**101.4**
	72.5	171.66	0.93	340	46	92	111	1.75	13.0		20.77	**99.2**
11	75	173.53	0.84	338	47	92	111	1.6	13.0		19.71	**100.8**
	77.5	175.35	0.84	339	47	92	112	1.55	13.0		19.72	**103.1**
	80	177.16	0.83	338	47	92	112	1.5	12.5		19.59	**102.5**
12	82.5	178.95	0.83	337	47	92	111	1.5	12.5		19.58	**101.9**
	85	180.71	0.82	337	47	93	111	1.5	12.5		19.46	**100.2**
	87.5	182.45	0.82	338	47	93	112	1.5	12.5		19.47	**99.6**
	90	184.19										**99.5**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	6 - SVOC
Date:	September 30, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	5.97 mm
DRY REF GAS VOLUME SAMPLED	3.319 m^3
AVGERGE ISOKINETICITY	100.2 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	167.3 °C
AVERAGE GAS MOISTURE BY VOLUME	14.3 %
AVERAGE GAS VELOCITY	19.05 m/s
BAROMETRIC PRESSURE (Station)	101.084 Kpa
STATIC PRESSURE	-0.672 Kpa
ABSOLUTE GAS PRESSURE	100.411 Kpa
OXYGEN CONCENTRATION	8.77 %
CARBON DIOXIDE CONCENTRATION	10.44 %
CARBON MONOXIDE CONCENTRATION	15.8 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	28.15 m^3/s
DRY REF GAS FLOWRATE	16.18 Rm^3/s
DRY ADJ GAS FLOWRATE	19.82 Rm^3/s
WET REF GAS FLOWRATE	18.89 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.319 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 30, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	400.1		
Static Pressure	-2.700 "H_2O	**WCBDA (g)**	7.7		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.46 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.77
CO2%	10.44
COppm	15.8

Measured H2O
14.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	84.72	0.57	333	73	75	76	0.95	5.0		16.16	
	2.5	86.16	0.57	334	62	75	78	0.95	5.0		16.17	102.7
	5	87.57	0.58	334	58	75	81	0.95	5.0		16.31	100.4
2	7.5	88.95	0.69	334	57	76	83	1.25	6.5		17.79	97.1
	10	90.46	0.68	334	54	76	86	1.25	7.0		17.66	97.3
	12.5	92.02	0.68	334	51	77	88	1.25	7.0		17.66	100.9
3	15	93.58	0.77	334	49	77	90	1.4	8.0		18.79	100.7
	17.5	95.23	0.76	333	47	78	92	1.4	8.0		18.66	99.9
	20	96.89	0.75	334	46	79	94	1.35	8.0		18.55	100.8
4	22.5	98.52	0.77	333	45	79	95	1.4	8.5		18.78	99.4
	25	100.19	0.77	333	44	81	98	1.4	8.5		18.78	100.4
	27.5	101.83	0.77	335	44	82	99	1.4	8.5		18.81	98.1
5	30	103.47	0.8	334	44	82	99	1.5	9.0		19.16	98.1
	32.5	105.18	0.79	334	44	82	100	1.45	9.0		19.04	100.3
	35	106.90	0.79	333	43	84	102	1.45	9.5		19.02	101.4
6	37.5	108.62	0.77	333	43	84	103	1.4	9.5		18.78	101.0
	40	110.31	0.77	333	43	85	103	1.4	9.5		18.78	100.4
	42.5	112.00	0.76	333	43	86	104	1.4	9.5		18.66	100.3
7	45	113.66	0.89	332	43	86	105	1.7	11.0		20.18	99.0
	47.5	115.50	0.89	332	45	87	107	1.7	11.0		20.18	101.3
	50	117.34	0.89	332	45	88	107	1.7	11.0		20.18	101.1
8	52.5	119.18	0.93	332	45	88	108	1.7	11.5		20.63	101.0
	55	121.03	0.93	332	46	89	109	1.7	11.5		20.63	99.2
	57.5	122.85	0.92	333	47	89	109	1.75	12.0		20.53	97.4
9	60	124.70	0.93	333	46	90	110	1.75	12.5		20.64	99.7
	62.5	126.58	0.93	333	46	90	110	1.75	12.5		20.64	100.5
	65	128.43	0.93	332	46	90	111	1.75	12.5		20.63	98.9
10	67.5	130.31	0.91	332	46	91	111	1.7	13.0		20.41	100.4
	70	132.12	0.92	332	46	91	111	1.75	13.5		20.52	97.6
	72.5	133.95	0.94	333	45	91	111	1.8	14.5		20.75	98.2
11	75	135.85	0.93	333	45	92	112	1.75	15.0		20.64	100.9

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 30, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	400.1		
Static Pressure	-2.700 "H_2O	**WCBDA (g)**	7.7		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.46	ft^3
Length	0.000 ft	**Reading Interval**		2.5	minutes
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.77
CO2%	10.44
COppm	15.8

Measured H2O
14.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	137.74	0.92	333	45	92	112	1.7	15.0		20.53	100.7
	80	139.60	0.91	333	45	92	112	1.7	15.0		20.42	99.6
12	82.5	141.45	0.9	334	45	92	112	1.7	15.5		20.32	99.7
	85	143.28	0.9	333	45	93	112	1.7	15.5		20.31	99.2
	87.5	145.10	0.91	333	45	93	112	1.7	15.5		20.42	98.5
	90	146.93								0.46		98.5
1	0	147.39	0.69	336	71	85	87	1.25	7.0		17.81	
	2.5	148.96	0.7	337	47	85	89	1.25	7.0		17.95	100.0
	5	150.53	0.7	336	44	84	91	1.3	7.5		17.94	99.2
2	7.5	152.11	0.74	336	43	84	93	1.35	7.5		18.45	99.7
	10	153.74	0.74	336	42	84	94	1.35	7.5		18.45	99.9
	12.5	155.38	0.73	336	42	84	96	1.3	8.0		18.32	100.4
3	15	157.00	0.74	335	42	84	97	1.35	8.0		18.44	99.6
	17.5	158.64	0.74	335	42	84	98	1.35	8.0		18.44	100.1
	20	160.28	0.75	335	42	85	99	1.4	8.5		18.56	100.0
4	22.5	161.96	0.72	335	42	85	100	1.35	8.5		18.19	101.5
	25	163.63	0.71	334	42	86	102	1.3	8.5		18.05	102.9
	27.5	165.25	0.7	334	42	86	102	1.3	8.5		17.92	100.2
5	30	166.84	0.65	333	42	87	103	1.25	8.5		17.26	99.0
	32.5	168.43	0.65	333	42	87	103	1.25	8.5		17.26	102.5
	35	170.00	0.67	333	42	87	104	1.3	9.0		17.52	101.2
6	37.5	171.60	0.62	333	42	87	105	1.25	8.5		16.85	101.5
	40	173.04	0.63	333	42	88	105	1.3	9.0		16.99	94.9
	42.5	174.64	0.62	333	42	88	106	1.2	9.0		16.85	104.5
7	45	176.20	0.78	332	43	89	105	1.5	10.5		18.89	102.6
	47.5	177.95	0.78	332	43	89	107	1.5	10.5		18.89	102.6
	50	179.69	0.81	332	43	89	108	1.5	10.5		19.25	101.8
8	52.5	181.42	0.85	332	43	90	109	1.6	11.5		19.72	99.3
	55	183.19	0.85	332	43	90	109	1.65	12.0		19.72	99.0
	57.5	185.00	0.85	332	43	90	110	1.6	12.0		19.72	101.3
9	60	186.80	0.86	332	43	91	110	1.65	12.5		19.84	100.6

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	September 30, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	400.1		
Static Pressure	-2.700 "H_2O	**WCBDA (g)**	7.7		
Nozzle	0.235 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.46 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.77
CO2%	10.44
COppm	15.8

Measured H2O
14.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	188.63	0.86	332	44	91	111	1.65	12.5		19.84	**101.6**
	65	190.45	0.89	332	44	92	111	1.7	13.0		20.18	**100.9**
10	67.5	192.30	0.88	332	44	92	112	1.7	13.0		20.07	**100.8**
	70	194.14	0.88	332	44	92	112	1.7	13.5		20.07	**100.7**
	72.5	195.97	0.88	332	44	92	112	1.7	13.5		20.07	**100.2**
11	75	197.81	0.83	330	44	92	112	1.6	13.5		19.46	**100.7**
	77.5	199.62	0.84	330	44	93	112	1.6	13.5		19.58	**101.9**
	80	201.39	0.86	331	44	93	112	1.7	14.0		19.82	**98.9**
12	82.5	203.20	0.86	332	44	93	113	1.7	14.0		19.84	**100.1**
	85	205.00	0.85	332	44	93	113	1.7	14.0		19.72	**99.5**
	87.5	206.81	0.85	333	44	93	113	1.7	14.0		19.73	**100.6**
	90	208.62										**100.7**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	7 - SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.84
DGM CORRECTION FACTOR	1.019
NOZZLE DIAMETER	6.01 mm
DRY REF GAS VOLUME SAMPLED	3.163 m^3
AVGERGE ISOKINETICITY	102.2 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	167.7 °C
AVERAGE GAS MOISTURE BY VOLUME	17.5 %
AVERAGE GAS VELOCITY	18.27 m/s
BAROMETRIC PRESSURE (Station)	100.982 Kpa
STATIC PRESSURE	-0.660 Kpa
ABSOLUTE GAS PRESSURE	100.322 Kpa
OXYGEN CONCENTRATION	7.45 %
CARBON DIOXIDE CONCENTRATION	11.25 %
CARBON MONOXIDE CONCENTRATION	12.5 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.00 m^3/s
DRY REF GAS FLOWRATE	14.91 Rm^3/s
DRY ADJ GAS FLOWRATE	20.25 Rm^3/s
WET REF GAS FLOWRATE	18.08 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.163 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	November 4, 2016	**Operator:**	TS

Pitot Factor	0.84	**Filter (mg)**	0
DGMCF	1.019	**Probe (mg)**	0
Barometric Pressure	29.82 "Hg	**CWTR (g)**	485.9
Static Pressure	-2.650 "H_2O	**WCBDA (g)**	8.4
Nozzle	0.2366 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.22 ft^3
Length	0.000 ft	**Reading Interval**	2.5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	7.45
CO2%	11.25
COppm	12.5

Measured H2O
17.5 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	78.91	0.45	334	71	85	92	0.45	1.0		14.32	
	2.5	79.95	0.48	333	61	78	80	0.55	2.0		14.78	87.1
	5	81.12	0.48	333	53	79	84	0.6	2.5		14.78	96.6
2	7.5	82.42	0.61	333	51	81	85	0.65	3.5		16.66	106.8
	10	83.84	0.61	336	51	81	87	0.65	3.5		16.69	103.2
	12.5	85.28	0.66	334	49	82	88	0.7	4.0		17.34	104.7
3	15	86.74	0.72	334	49	83	89	0.75	4.5		18.11	101.7
	17.5	88.29	0.73	334	49	83	91	0.75	4.5		18.24	103.2
	20	89.83	0.71	334	50	83	93	0.75	4.5		17.99	101.7
4	22.5	91.35	0.73	333	48	85	93	0.8	5.0		18.23	101.6
	25	92.89	0.71	333	48	86	95	0.8	5.0		17.98	101.2
	27.5	94.46	0.73	333	48	88	96	0.8	5.0		18.23	104.4
5	30	96.04	0.72	333	49	89	97	0.8	5.0		18.10	103.3
	32.5	97.60	0.75	334	49	89	98	0.85	6.0		18.49	102.5
	35	99.20	0.74	334	50	91	99	0.85	6.0		18.36	103.0
6	37.5	100.84	0.75	334	47	91	100	0.85	6.5		18.49	106.0
	40	102.46	0.74	334	48	90	101	0.8	6.5		18.36	103.9
	42.5	104.07	0.74	334	48	91	103	0.8	6.5		18.36	104.0
7	45	105.67	0.86	334	49	93	104	0.9	7.5		19.80	103.0
	47.5	107.35	0.87	334	47	94	105	0.9	7.5		19.91	100.1
	50	109.07	0.87	334	47	95	107	0.95	8.0		19.91	101.7
8	52.5	110.81	0.88	335	50	95	108	1	8.5		20.04	102.6
	55	112.60	0.89	334	47	96	109	1	8.5		20.14	105.0
	57.5	114.39	0.89	333	48	96	110	1	9.0		20.13	104.1
9	60	116.17	0.87	333	48	96	111	0.95	9.0		19.90	103.4
	62.5	117.93	0.87	332	48	97	113	0.95	9.0		19.89	103.3
	65	119.67	0.86	333	50	98	114	0.95	9.5		19.78	101.8
10	67.5	121.40	0.86	333	48	96	115	0.95	9.5		19.78	101.7
	70	123.15	0.85	333	47	97	115	0.95	9.5		19.67	102.9
	72.5	124.89	0.85	333	47	98	116	0.95	10.0		19.67	102.9
11	75	126.63	0.77	328	50	98	116	0.85	10.0		18.66	102.7

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	November 4, 2016	**Operator:**	TS

Pitot Factor	0.84	**Filter (mg)**	0		
DGMCF	1.019	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	485.9		
Static Pressure	-2.650 "H_2O	**WCBDA (g)**	8.4		
Nozzle	0.2366 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.22 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.45
CO2%	11.25
COppm	12.5

Measured H2O
17.5 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	128.34	0.78	327	47	98	117	0.85	10.0		18.77	**105.7**
	80	130.02	0.77	327	47	99	116	0.85	10.0		18.65	**103.0**
12	82.5	131.69	0.75	326	49	99	116	0.8	10.5		18.39	**103.0**
	85	133.34	0.76	325	50	99	116	0.8	10.5		18.50	**103.1**
	87.5	134.98	0.75	325	46	100	116	0.8	10.5		18.38	**101.7**
	90	136.63								0.22		**102.9**
1	0	136.85	0.67	334	77	87	87	0.7	3.5		17.47	
	2.5	138.25	0.68	334	58	88	91	0.75	4.0		17.60	**96.5**
	5	139.78	0.68	333	51	86	95	0.75	4.0		17.59	**104.2**
2	7.5	141.31	0.7	337	49	86	97	0.75	4.0		17.89	**103.9**
	10	142.83	0.69	334	49	86	99	0.75	4.5		17.73	**101.8**
	12.5	144.33	0.7	338	50	86	101	0.8	5.0		17.91	**100.8**
3	15	145.89	0.74	335	48	87	102	0.85	5.5		18.38	**104.2**
	17.5	147.52	0.75	334	48	88	104	0.85	5.5		18.49	**105.5**
	20	149.14	0.75	333	48	88	105	0.85	5.5		18.48	**103.8**
4	22.5	150.74	0.73	335	49	89	106	0.85	6.0		18.25	**102.4**
	25	152.33	0.72	334	48	90	107	0.85	6.0		18.11	**103.1**
	27.5	153.91	0.72	336	48	91	108	0.85	6.0		18.14	**102.9**
5	30	155.46	0.69	334	48	91	109	0.8	6.0		17.73	**100.9**
	32.5	157.01	0.7	335	49	93	110	0.8	6.5		17.87	**102.8**
	35	158.55	0.71	335	48	93	110	0.85	7.0		18.00	**101.2**
6	37.5	160.20	0.65	334	50	94	111	0.75	6.5		17.21	**107.7**
	40	161.70	0.68	334	49	94	112	0.8	6.5		17.60	**102.0**
	42.5	163.26	0.66	334	47	94	112	0.75	6.5		17.34	**103.7**
7	45	164.74	0.75	334	48	95	112	0.85	7.5		18.49	**99.8**
	47.5	166.30	0.75	337	50	96	113	0.9	8.0		18.52	**98.6**
	50	167.92	0.76	336	44	96	114	0.9	8.5		18.63	**102.5**
8	52.5	169.60	0.8	334	45	97	114	0.9	8.5		19.09	**105.4**
	55	171.30	0.81	337	44	97	115	0.9	9.0		19.25	**103.7**
	57.5	173.00	0.8	333	45	98	115	0.9	9.0		19.08	**103.2**
9	60	174.65	0.8	334	45	98	115	0.9	9.0		19.09	**100.4**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	November 4, 2016	**Operator:**	TS

Pitot Factor	0.84	**Filter (mg)**	0
DGMCF	1.019	**Probe (mg)**	0
Barometric Pressure	29.82 "Hg	**CWTR (g)**	485.9
Static Pressure	-2.650 "H_2O	**WCBDA (g)**	8.4
Nozzle	0.2366 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.22 ft^3
Length	0.000 ft	**Reading Interval**	2.5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	7.45
CO2%	11.25
COppm	12.5

Measured H2O
17.5 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	176.32	0.79	335	44	97	116	0.9	9.0		18.99	101.7
	65	177.94	0.9	337	45	100	116	1	9.0		20.29	99.4
10	67.5	179.67	0.7	337	45	98	116	0.8	9.0		17.89	99.3
	70	181.17	0.75	338	46	98	116	0.8	9.5		18.53	97.7
	72.5	182.75	0.73	338	45	98	116	0.75	9.5		18.29	99.5
11	75	184.33	0.72	337	45	99	117	0.75	9.5		18.15	100.9
	77.5	185.88	0.69	336	47	99	117	0.75	9.5		17.76	99.4
	80	187.42	0.68	336	46	100	116	0.7	9.5		17.63	100.8
12	82.5	188.94	0.65	336	46	101	116	0.7	9.5		17.23	100.2
	85	190.44	0.62	336	46	100	117	0.65	9.5		16.83	101.1
	87.5	191.92	0.6	337	44	101	117	0.65	9.5		16.57	102.1
	90	193.39										103.1

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #1
Test No.:	8 - SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.84
DGM CORRECTION FACTOR	1.019
NOZZLE DIAMETER	6.01 mm
DRY REF GAS VOLUME SAMPLED	3.237 m^3
AVGERGE ISOKINETICITY	100.4 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	168.2 °C
AVERAGE GAS MOISTURE BY VOLUME	15.2 %
AVERAGE GAS VELOCITY	18.57 m/s
BAROMETRIC PRESSURE (Station)	100.779 Kpa
STATIC PRESSURE	-0.660 Kpa
ABSOLUTE GAS PRESSURE	100.119 Kpa
OXYGEN CONCENTRATION	8.09 %
CARBON DIOXIDE CONCENTRATION	10.69 %
CARBON MONOXIDE CONCENTRATION	9.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.44 m^3/s
DRY REF GAS FLOWRATE	15.52 Rm^3/s
DRY ADJ GAS FLOWRATE	20.08 Rm^3/s
WET REF GAS FLOWRATE	18.32 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.237 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	November 4, 2016	**Operator:**	TS

Pitot Factor	0.84	**Filter (mg)**	0		
DGMCF	1.019	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	416.9		
Static Pressure	-2.650 "H_2O	**WCBDA (g)**	11.2		
Nozzle	0.2366 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.38 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.09
CO2%	10.69
COppm	9.4

Measured H2O
15.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	0.53	0.55	333	71	85	84	0.55	2.0		15.78	
	2.5	1.80	0.53	335	60	85	85	0.6	2.5		15.51	94.6
	5	3.06	0.53	333	48	84	88	0.65	3.0		15.49	95.6
2	7.5	4.35	0.57	333	46	83	92	0.7	4.5		16.06	97.6
	10	5.79	0.57	332	45	81	94	0.7	4.5		16.05	104.8
	12.5	7.20	0.58	333	46	83	96	0.7	4.5		16.20	102.6
3	15	8.60	0.64	333	45	85	98	0.75	5.0		17.02	100.7
	17.5	10.09	0.65	334	46	84	100	0.75	5.0		17.16	101.6
	20	11.60	0.67	333	47	85	101	0.75	5.0		17.41	102.2
4	22.5	13.10	0.67	333	45	86	103	0.75	5.5		17.41	99.7
	25	14.60	0.69	334	45	88	104	0.8	6.0		17.68	99.4
	27.5	16.16	0.69	333	44	91	105	0.8	6.0		17.67	101.7
5	30	17.71	0.66	334	45	89	107	0.75	6.0		17.29	100.6
	32.5	19.26	0.72	334	44	90	108	0.8	6.5		18.06	103.0
	35	20.83	0.69	334	46	92	109	0.75	6.5		17.68	99.7
6	37.5	22.42	0.7	335	46	94	109	0.75	6.5		17.82	102.8
	40	23.98	0.72	335	44	93	110	0.8	7.0		18.07	100.0
	42.5	25.55	0.73	334	45	93	111	0.8	7.0		18.19	99.3
7	45	27.13	0.88	336	46	95	112	0.95	8.5		19.99	99.1
	47.5	28.90	0.88	335	45	95	113	0.95	8.5		19.98	101.0
	50	30.68	0.88	336	45	96	114	0.9	9.0		19.99	101.4
8	52.5	32.45	0.88	337	47	98	115	0.9	9.0		20.00	100.7
	55	34.22	0.87	339	45	97	115	0.9	9.0		19.92	100.5
	57.5	35.97	0.86	335	46	97	116	0.9	9.0		19.75	100.2
9	60	37.70	0.85	335	46	98	116	0.9	9.5		19.64	99.3
	62.5	39.42	0.85	336	47	99	117	0.9	9.5		19.65	99.2
	65	41.15	0.85	333	46	99	117	0.9	9.5		19.61	99.6
10	67.5	42.91	0.81	335	46	99	117	0.85	9.5		19.17	101.2
	70	44.64	0.81	334	47	99	118	0.85	9.5		19.16	102.0
	72.5	46.35	0.83	332	47	99	118	0.9	10.0		19.37	100.7
11	75	48.05	0.82	332	47	100	118	0.9	10.0		19.25	98.7

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	November 4, 2016	**Operator:**	TS

Pitot Factor	0.84	**Filter (mg)**	0		
DGMCF	1.019	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	416.9		
Static Pressure	-2.650 "H_2O	**WCBDA (g)**	11.2		
Nozzle	0.2366 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.38 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.09
CO2%	10.69
COppm	9.4

Measured H2O
15.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	49.79	0.79	332	45	100	118	0.85	10.0		18.89	**101.6**
	80	51.51	0.78	331	45	100	118	0.85	10.0		18.76	**102.3**
12	82.5	53.19	0.78	332	45	101	118	0.85	10.0		18.77	**100.5**
	85	54.87	0.79	332	44	100	118	0.85	10.5		18.89	**100.5**
	87.5	56.58	0.79	331	45	101	119	0.85	10.5		18.88	**101.7**
	90	58.25								0.38		**99.1**
1	0	58.63	0.7	338	79	90	88	0.75	4.0		17.85	
	2.5	60.18	0.72	338	52	88	92	0.75	4.0		18.11	**101.9**
	5	61.74	0.73	338	45	87	96	0.75	5.0		18.23	**100.9**
2	7.5	63.27	0.76	338	44	87	98	0.8	5.5		18.60	**98.0**
	10	64.87	0.78	337	44	88	100	0.85	6.0		18.83	**100.3**
	12.5	66.51	0.77	337	43	88	102	0.85	6.0		18.71	**101.1**
3	15	68.16	0.8	336	43	89	104	0.85	6.5		19.06	**102.2**
	17.5	69.79	0.79	335	43	89	105	0.85	6.5		18.93	**98.8**
	20	71.42	0.78	335	44	90	107	0.85	6.5		18.81	**99.2**
4	22.5	73.04	0.77	335	44	91	108	0.85	6.5		18.69	**99.0**
	25	74.65	0.77	335	43	92	109	0.85	7.0		18.69	**98.8**
	27.5	76.27	0.77	337	43	92	110	0.85	7.0		18.71	**99.3**
5	30	77.89	0.71	335	44	93	111	0.85	7.0		17.95	**99.3**
	32.5	79.49	0.69	335	43	94	111	0.8	7.0		17.69	**101.8**
	35	81.09	0.68	336	44	94	112	0.75	7.0		17.57	**103.2**
6	37.5	82.66	0.67	335	44	95	112	0.75	6.5		17.43	**102.0**
	40	84.18	0.7	337	44	96	113	0.8	7.0		17.84	**99.3**
	42.5	85.75	0.67	334	45	97	113	0.75	7.0		17.42	**100.3**
7	45	87.25	0.77	336	46	96	114	0.85	8.0		18.70	**97.7**
	47.5	88.89	0.79	334	45	98	115	0.85	8.5		18.92	**99.8**
	50	90.58	0.78	337	45	97	115	0.85	8.5		18.83	**101.1**
8	52.5	92.27	0.83	337	45	98	116	0.95	9.5		19.43	**102.0**
	55	94.04	0.84	334	45	98	116	0.95	10.0		19.51	**103.4**
	57.5	95.80	0.86	334	45	98	117	0.95	10.0		19.74	**102.0**
9	60	97.55	0.9	338	46	99	117	1	10.5		20.24	**100.2**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 - SVOC	**Test Location:**	Quench Inlet Unit #1
Date:	November 4, 2016	**Operator:**	TS

Pitot Factor	0.84	**Filter (mg)**	0		
DGMCF	1.019	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	416.9		
Static Pressure	-2.650 "H_2O	**WCBDA (g)**	11.2		
Nozzle	0.2366 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.38 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.09
CO2%	10.69
COppm	9.4

Measured H2O
15.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	99.36	0.91	336	45	99	118	1	10.5		20.33	**101.5**
	65	101.16	0.91	337	45	100	118	1	10.5		20.34	**100.1**
10	67.5	102.95	0.9	335	46	99	118	1	10.5		20.21	**99.5**
	70	104.72	0.9	336	45	100	118	1	11.0		20.22	**98.9**
	72.5	106.52	0.89	335	46	100	119	1	11.0		20.09	**100.6**
11	75	108.31	0.81	335	46	100	119	0.9	11.0		19.17	**100.4**
	77.5	110.07	0.82	336	47	100	119	0.85	11.0		19.30	**103.5**
	80	111.80	0.83	335	48	101	119	0.85	11.0		19.40	**101.2**
12	82.5	113.52	0.8	334	48	101	119	0.8	11.0		19.04	**99.8**
	85	115.22	0.81	335	48	101	119	0.85	11.5		19.17	**100.4**
	87.5	116.91	0.81	335	48	101	119	0.85	11.5		19.17	**99.3**
	90	118.60										**99.3**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	1 - SVOC
Date:	September 26, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	5.042 m^3
AVGERGE ISOKINETICITY	97.5 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	144.1 °C
AVERAGE GAS MOISTURE BY VOLUME	15.4 %
AVERAGE GAS VELOCITY	20.35 m/s
BAROMETRIC PRESSURE (Station)	99.628 Kpa
STATIC PRESSURE	-2.814 Kpa
ABSOLUTE GAS PRESSURE	96.814 Kpa
OXYGEN CONCENTRATION	9.33 %
CARBON DIOXIDE CONCENTRATION	10.12 %
CARBON MONOXIDE CONCENTRATION	10.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	30.06 m^3/s
DRY REF GAS FLOWRATE	17.35 Rm^3/s
DRY ADJ GAS FLOWRATE	20.28 Rm^3/s
WET REF GAS FLOWRATE	20.53 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		5.042 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 26, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.42 "Hg	**CWTR (g)**	659.7		
Static Pressure	-11.300 "H_2O	**WCBDA (g)**	17		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.49 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.33
CO2%	10.12
COppm	10.4

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	7.12	1.01	292	64	78	77	2.1	6.2		21.24	
	5	10.82	1.01	292	46	69	69	2.1	6.2		21.24	91.4
2	10	14.58	1.01	293	48	69	69	2.1	6.2		21.26	94.4
	15	18.35	1.05	292	48	70	69	2.1	6.6		21.66	94.7
3	20	22.19	1.1	293	48	70	69	2.2	7.0		22.18	94.5
	25	26.17	1.1	292	50	71	70	2.2	7.0		22.17	95.8
4	30	30.20	0.99	290	49	71	69	2.1	7.0		21.00	96.7
	35	34.12	0.99	291	47	71	69	2.1	7.0		21.02	99.1
5	40	38.02	0.94	292	49	72	69	2	7.0		20.49	98.7
	45	41.86	0.94	292	49	72	69	2	7.0		20.49	99.6
6	50	45.68	0.88	292	48	73	70	1.9	7.0		19.83	99.1
	55	49.47	0.88	293	48	72	70	1.9	7.0		19.84	101.4
7	60	53.23	0.87	292	48	73	70	1.8	6.8		19.72	100.8
	65	56.95	0.88	292	48	72	71	1.8	6.8		19.83	100.1
8	70	60.61	0.87	292	45	73	71	1.8	6.8		19.72	97.9
	75	64.26	0.87	292	44	72	71	1.8	6.8		19.72	98.1
9	80	67.89	0.92	293	43	73	71	1.9	6.8		20.29	97.7
	85	71.59	0.9	293	43	73	71	1.9	6.8		20.07	96.8
10	90	75.35	0.89	293	43	74	71	1.8	6.8		19.95	99.5
	95	78.96	0.9	292	43	73	71	1.8	6.8		20.05	95.9
11	100	82.66	0.86	292	43	74	72	1.7	6.7		19.60	97.8
	105	86.27	0.84	292	43	75	72	1.75	6.7		19.37	97.4
12	110	89.80	0.8	292	43	75	72	1.7	6.7		18.91	96.3
	115	93.35	0.78	292	43	75	72	1.7	6.7		18.67	99.2
	120	96.92								0.49		101.1
1	0	97.41	1.1	291	54	74	72	2.2	8.0		22.15	
	5	101.28	1.1	291	43	75	72	2.2	8.0		22.15	92.4
2	10	105.26	1.1	292	43	75	73	2.2	8.0		22.17	94.9
	15	109.29	1.1	292	43	75	73	2.2	8.0		22.17	96.1
3	20	113.31	1.05	292	43	75	73	2.2	8.0		21.66	95.9

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 26, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.42 "Hg	**CWTR (g)**	659.7		
Static Pressure	-11.300 "H_2O	**WCBDA (g)**	17		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.49 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.33
CO2%	10.12
COppm	10.4

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	117.33	1.05	292	44	75	73	2.2	8.0		21.66	**98.1**
4	30	121.33	0.96	292	44	75	73	2	8.0		20.71	**97.6**
	35	125.25	0.96	292	44	75	73	2	8.0		20.71	**100.0**
5	40	129.16	0.91	292	44	75	73	1.8	8.0		20.16	**99.7**
	45	132.89	0.92	292	44	75	73	1.8	8.0		20.27	**97.7**
6	50	136.62	0.82	292	45	75	73	1.75	8.0		19.14	**97.2**
	55	140.27	0.88	291	45	75	73	1.75	8.0		19.82	**100.7**
7	60	143.91	0.9	291	45	75	73	1.8	8.0		20.04	**96.9**
	65	147.53	0.94	291	46	76	74	1.9	8.0		20.48	**95.3**
8	70	151.25	0.9	289	45	76	74	1.9	8.0		20.01	**95.6**
	75	155.02	0.9	290	45	76	74	1.9	8.0		20.03	**98.9**
9	80	158.72	0.79	290	46	76	74	1.7	8.0		18.76	**97.1**
	85	162.28	0.79	290	46	77	74	1.7	7.8		18.76	**99.7**
10	90	165.85	0.8	290	46	77	74	1.7	7.8		18.88	**99.9**
	95	169.38	0.81	290	46	77	74	1.7	7.8		19.00	**98.2**
11	100	172.91	0.86	289	46	77	74	1.8	7.8		19.56	**97.6**
	105	176.53	0.86	289	46	77	74	1.8	7.8		19.56	**97.1**
12	110	180.16	0.92	289	46	77	74	1.85	7.8		20.23	**97.3**
	115	183.90	0.92	289	46	77	74	1.85	8.0		20.23	**97.0**
	120	187.64										**97.0**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	2 - SVOC
Date:	September 26, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.909 m^3
AVGERGE ISOKINETICITY	97.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	142.6 °C
AVERAGE GAS MOISTURE BY VOLUME	15.8 %
AVERAGE GAS VELOCITY	19.79 m/s
BAROMETRIC PRESSURE (Station)	99.357 Kpa
STATIC PRESSURE	-2.863 Kpa
ABSOLUTE GAS PRESSURE	96.493 Kpa
OXYGEN CONCENTRATION	9.16 %
CARBON DIOXIDE CONCENTRATION	10.15 %
CARBON MONOXIDE CONCENTRATION	10.7 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	29.24 m^3/s
DRY REF GAS FLOWRATE	16.82 Rm^3/s
DRY ADJ GAS FLOWRATE	19.95 Rm^3/s
WET REF GAS FLOWRATE	19.97 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.909 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 26, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.34 "Hg	**CWTR (g)**	654.9		
Static Pressure	-11.500 "H_2O	**WCBDA (g)**	20.1		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.39 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.16
CO2%	10.15
COppm	10.7

Measured H2O
15.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	88.08	1.1	290	69	74	74	2.1	8.0		22.19	
	5	91.96	1.1	290	57	74	74	2.2	9.0		22.19	92.6
2	10	95.96	1.08	289	56	73	74	2.2	9.0		21.97	95.4
	15	100.00	1.08	291	54	73	73	2.2	9.0		22.00	97.3
3	20	104.04	1.05	289	51	73	73	2.1	9.0		21.67	97.5
	25	108.00	1.05	288	47	73	73	2.1	9.0		21.65	96.8
4	30	111.93	0.96	288	47	73	73	2	9.0		20.70	96.0
	35	115.79	0.97	287	46	73	73	2	9.0		20.80	98.6
5	40	119.68	0.89	287	47	73	73	1.85	8.5		19.92	98.8
	45	123.43	0.89	287	45	74	73	1.85	8.0		19.92	99.4
6	50	127.14	0.87	286	45	74	73	1.85	8.0		19.68	98.2
	55	130.80	0.81	286	45	74	73	1.7	8.0		18.99	97.9
7	60	134.35	0.78	286	45	74	73	1.6	8.0		18.64	98.4
	65	137.82	0.78	285	44	74	73	16	8.0		18.62	98.0
8	70	141.28	0.83	285	44	75	73	1.7	8.0		19.21	101.2
	75	144.80	0.83	286	45	75	73	1.7	8.0		19.23	96.2
9	80	148.32	0.85	285	44	75	73	1.7	8.0		19.44	96.3
	85	151.87	0.85	286	44	75	73	1.7	8.0		19.46	95.9
10	90	155.43	0.84	284	44	75	73	1.7	8.0		19.31	96.3
	95	159.02	0.84	284	43	75	73	1.7	8.0		19.31	97.5
11	100	162.56	0.81	284	43	75	73	1.7	8.0		18.97	96.1
	105	166.15	0.8	283	43	75	73	1.7	8.0		18.84	99.3
12	110	169.70	0.75	283	43	75	73	1.6	7.8		18.24	98.7
	115	173.18	0.75	283	43	75	73	1.6	7.8		18.24	99.9
	120	176.66								0.39		99.9
1	0	177.05	0.97	288	56	74	73	2.05	9.5		20.81	
	5	180.90	0.99	290	44	75	73	2.05	9.5		21.05	97.7
2	10	184.91	1.01	291	43	75	74	2.05	9.5		21.28	100.8
	15	188.86	1.01	291	42	75	73	2.05	9.5		21.28	98.3
3	20	192.80	0.96	292	42	74	74	2	9.5		20.76	98.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 26, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0
DGMCF	0.993	**Probe (mg)**	0
Barometric Pressure	29.34 "Hg	**CWTR (g)**	654.9
Static Pressure	-11.500 "H_2O	**WCBDA (g)**	20.1
Nozzle	0.2456 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.39 ft^3
Length	0.000 ft	**Reading Interval**	5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	9.16
CO2%	10.15
COppm	10.7

Measured H2O
15.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	196.70	0.94	292	42	74	74	1.95	9.3		20.54	99.7
4	30	200.52	0.89	292	42	74	73	1.85	9.0		19.99	98.7
	35	204.27	0.91	292	43	75	74	1.85	9.0		20.21	99.6
5	40	207.98	0.83	293	43	74	73	1.7	8.5		19.32	97.3
	45	211.56	0.83	292	44	75	74	1.7	8.5		19.30	98.5
6	50	215.13	0.77	292	44	75	73	1.6	8.0		18.59	98.0
	55	218.61	0.77	292	44	75	73	1.6	8.0		18.59	99.2
7	60	222.06	0.82	292	44	76	74	1.7	8.3		19.19	98.4
	65	225.55	0.82	292	44	76	74	1.7	8.5		19.19	96.3
8	70	229.10	0.82	293	44	76	74	1.7	8.5		19.20	97.9
	75	232.72	0.82	292	44	76	74	1.7	8.5		19.19	99.9
9	80	236.32	0.82	292	45	77	74	1.7	8.5		19.19	99.3
	85	239.82	0.82	292	45	77	75	1.7	8.5		19.19	96.5
10	90	243.41	0.83	290	45	77	75	1.7	8.5		19.28	98.8
	95	246.93	0.83	290	45	77	75	1.7	8.5		19.28	96.2
11	100	250.48	0.82	290	45	77	75	1.7	8.5		19.16	97.0
	105	254.03	0.82	289	45	77	75	1.7	8.5		19.15	97.6
12	110	257.57	0.77	289	45	77	75	1.6	8.5		18.55	97.3
	115	261.03	0.76	289	45	77	75	1.6	8.5		18.43	98.1
	120	264.52										99.6

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	3 - SVOC
Date:	September 27, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.890 m^3
AVGERGE ISOKINETICITY	98.1 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	140.1 °C
AVERAGE GAS MOISTURE BY VOLUME	15.3 %
AVERAGE GAS VELOCITY	19.47 m/s
BAROMETRIC PRESSURE (Station)	99.255 Kpa
STATIC PRESSURE	-2.789 Kpa
ABSOLUTE GAS PRESSURE	96.466 Kpa
OXYGEN CONCENTRATION	9.14 %
CARBON DIOXIDE CONCENTRATION	10.33 %
CARBON MONOXIDE CONCENTRATION	14.8 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	28.76 m^3/s
DRY REF GAS FLOWRATE	16.73 Rm^3/s
DRY ADJ GAS FLOWRATE	19.88 Rm^3/s
WET REF GAS FLOWRATE	19.76 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.890 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 27, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.31 "Hg	**CWTR (g)**	631		
Static Pressure	-11.200 "H_2O	**WCBDA (g)**	18.2		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.29 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.14
CO2%	10.33
COppm	14.8

Measured H2O
15.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	65.51	1.08	289	66	67	66	2.1	6.0		21.95	
	5	69.36	1.08	290	50	67	67	2.1	7.0		21.96	93.5
2	10	73.32	1.05	290	49	68	67	2.1	7.0		21.65	96.1
	15	77.10	1.05	289	46	68	67	2.2	7.5		21.64	93.0
3	20	81.06	1	289	45	68	67	2.1	7.5		21.12	97.4
	25	85.04	1	289	46	68	67	2.1	7.5		21.12	100.2
4	30	88.96	0.95	289	45	69	67	1.95	7.3		20.58	98.7
	35	92.79	0.94	290	45	69	67	1.9	7.0		20.49	98.8
5	40	96.62	0.85	288	47	69	67	1.75	6.8		19.46	99.4
	45	100.25	0.84	287	48	70	67	1.75	6.8		19.33	98.9
6	50	103.85	0.8	286	46	71	67	1.7	6.8		18.85	98.5
	55	107.43	0.83	286	48	71	68	1.7	6.8		19.20	100.2
7	60	111.00	0.73	284	45	72	68	1.5	6.8		17.98	98.0
	65	114.42	0.74	283	45	72	69	15	6.5		18.09	99.9
8	70	117.82	0.74	282	45	72	69	1.5	6.5		18.08	101.8
	75	121.23	0.74	284	44	73	69	1.5	6.5		18.11	98.7
9	80	124.66	0.76	284	44	73	69	1.5	6.5		18.35	99.3
	85	128.07	0.75	282	44	74	70	1.5	6.5		18.20	97.4
10	90	131.49	0.75	279	45	74	70	1.5	6.5		18.17	98.0
	95	134.90	0.75	279	45	74	70	1.5	6.5		18.17	97.5
11	100	138.30	0.73	279	45	75	71	1.5	6.5		17.92	97.2
	105	141.68	0.73	279	45	75	71	1.5	6.5		17.92	97.8
12	110	145.12	0.68	279	45	75	71	1.4	6.3		17.30	99.5
	115	148.39	0.68	279	46	75	71	1.4	6.3		17.30	98.0
	120	151.66								0.29		98.0
1	0	151.95	0.93	281	56	74	72	1.95	7.3		20.26	
	5	155.75	0.92	281	46	75	72	1.95	7.6		20.15	97.7
2	10	159.54	0.94	282	46	74	72	2	7.8		20.38	97.8
	15	163.36	0.94	282	46	75	72	2	7.8		20.38	97.7
3	20	167.18	0.91	282	46	75	72	1.95	7.8		20.05	97.6

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 27, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.31 "Hg	**CWTR (g)**	631		
Static Pressure	-11.200 "H_2O	**WCBDA (g)**	18.2		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.29 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.14
CO2%	10.33
COppm	14.8

Measured H2O
15.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	170.96	0.92	283	45	75	72	1.95	7.8		20.17	**98.2**
4	30	174.74	0.87	283	45	75	72	1.8	7.8		19.62	**97.7**
	35	178.46	0.87	283	45	75	72	1.8	7.7		19.62	**98.8**
5	40	182.17	0.83	283	45	75	73	1.75	7.6		19.16	**98.6**
	45	185.82	0.82	284	46	75	73	1.7	7.6		19.06	**99.2**
6	50	189.42	0.78	284	47	76	73	1.6	7.5		18.59	**98.5**
	55	192.92	0.78	284	47	76	73	1.6	7.5		18.59	**98.0**
7	60	196.42	0.84	283	47	76	73	1.7	7.6		19.28	**98.0**
	65	200.00	0.84	285	47	77	74	1.7	7.6		19.30	**96.6**
8	70	203.64	0.91	286	47	77	74	1.95	8.0		20.11	**98.2**
	75	207.41	0.91	286	47	77	74	1.9	8.0		20.11	**97.8**
9	80	211.08	0.88	286	47	77	74	1.9	8.0		19.77	**95.2**
	85	214.84	0.88	285	47	77	74	1.9	8.0		19.76	**99.2**
10	90	218.59	0.89	285	48	77	74	1.9	8.0		19.87	**98.9**
	95	222.35	0.89	285	48	77	74	1.9	8.0		19.87	**98.6**
11	100	226.11	0.89	283	48	77	74	1.85	8.0		19.84	**98.6**
	105	229.83	0.86	283	48	77	74	1.8	8.0		19.51	**97.4**
12	110	233.53	0.82	283	49	77	74	1.75	8.0		19.05	**98.5**
	115	237.14	0.82	283	49	77	75	1.75	8.0		19.05	**98.4**
	120	240.70										**97.0**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	4 - SVOC
Date:	September 29, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.753 m^3
AVGERGE ISOKINETICITY	97.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	142.3 °C
AVERAGE GAS MOISTURE BY VOLUME	15.4 %
AVERAGE GAS VELOCITY	18.72 m/s
BAROMETRIC PRESSURE (Station)	101.050 Kpa
STATIC PRESSURE	-2.689 Kpa
ABSOLUTE GAS PRESSURE	98.361 Kpa
OXYGEN CONCENTRATION	9.09 %
CARBON DIOXIDE CONCENTRATION	10.42 %
CARBON MONOXIDE CONCENTRATION	13.9 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.67 m^3/s
DRY REF GAS FLOWRATE	16.30 Rm^3/s
DRY ADJ GAS FLOWRATE	19.45 Rm^3/s
WET REF GAS FLOWRATE	19.28 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.753 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.84 "Hg	**CWTR (g)**	621.4		
Static Pressure	-10.800 "H_2O	**WCBDA (g)**	15.3		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.59 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.09
CO2%	10.42
COppm	13.9

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	6.76	0.78	282	58	71	71	1.6	5.8		18.39	
	5	10.10	0.72	282	45	71	71	1.5	6.0		17.66	94.9
2	10	13.38	0.72	282	45	71	70	1.5	6.0		17.66	97.0
	15	16.68	0.7	280	43	71	70	1.5	6.0		17.39	97.7
3	20	20.00	0.71	281	44	71	71	1.5	6.0		17.53	99.6
	25	23.22	0.72	280	43	72	70	1.5	6.0		17.64	95.9
4	30	26.54	0.73	280	43	72	70	1.5	6.0		17.76	98.1
	35	29.87	0.73	286	43	72	70	1.5	6.0		17.83	97.7
5	40	33.19	0.73	288	43	72	71	1.5	6.5		17.86	97.8
	45	36.53	0.73	288	43	72	71	1.5	6.5		17.86	98.4
6	50	39.84	0.7	289	44	73	71	1.5	6.5		17.50	97.5
	55	43.20	0.7	289	44	73	71	1.5	6.5		17.50	101.1
7	60	46.46	0.74	289	44	73	71	1.5	6.7		17.99	98.1
	65	49.81	0.76	290	45	74	72	1.6	7.0		18.25	98.0
8	70	53.20	0.8	290	45	73	72	1.6	7.0		18.72	97.8
	75	56.65	0.8	290	45	73	72	1.6	7.0		18.72	97.1
9	80	60.08	0.8	290	48	74	72	1.6	7.0		18.72	96.5
	85	63.52	0.89	290	48	73	72	1.85	8.0		19.74	96.7
10	90	67.17	0.96	291	48	73	72	2	8.5		20.52	97.4
	95	70.91	0.97	291	49	73	72	2	8.5		20.63	96.2
11	100	74.70	0.98	291	49	74	72	2	8.5		20.73	97.0
	105	78.46	0.98	290	47	73	72	2	9.0		20.72	95.7
12	110	82.28	0.98	291	46	73	72	2	9.0		20.73	97.2
	115	86.07	0.98	291	45	73	72	2	9.0		20.73	96.5
	120	90.02								0.59		100.6
1	0	90.61	0.8	281	57	73	72	1.7	8.0		18.61	
	5	94.01	0.82	282	43	72	72	1.7	8.0		18.85	95.1
2	10	97.53	0.78	282	42	72	72	1.7	8.0		18.39	97.4
	15	101.04	0.75	283	42	72	72	1.7	8.0		18.04	99.6
3	20	104.53	0.76	284	42	72	72	1.7	8.0		18.17	101.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0
DGMCF	0.993	**Probe (mg)**	0
Barometric Pressure	29.84 "Hg	**CWTR (g)**	621.4
Static Pressure	-10.800 "H_2O	**WCBDA (g)**	15.3
Nozzle	0.2456 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.59 ft^3
Length	0.000 ft	**Reading Interval**	5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	9.09
CO2%	10.42
COppm	13.9

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	108.00	0.75	284	42	73	72	1.7	8.0		18.05	99.9
4	30	111.47	0.8	291	42	73	72	1.7	8.0		18.73	100.5
	35	114.95	0.8	292	42	73	72	1.7	8.0		18.74	98.0
5	40	118.46	0.81	292	42	72	72	1.7	8.0		18.86	98.9
	45	122.00	0.81	292	42	72	72	1.7	8.0		18.86	99.3
6	50	125.50	0.81	292	42	72	72	1.7	8.0		18.86	98.1
	55	128.98	0.81	292	42	73	72	1.7	8.0		18.86	97.6
7	60	132.50	0.75	292	43	73	72	1.6	8.0		18.15	98.6
	65	135.95	0.76	292	43	73	72	1.6	8.0		18.27	100.4
8	70	139.39	0.7	292	43	73	72	1.45	8.0		17.53	99.5
	75	142.67	0.7	290	44	73	72	1.45	8.0		17.51	98.8
9	80	145.95	0.75	289	44	73	72	1.5	8.0		18.11	98.6
	85	149.25	0.75	291	44	73	72	1.5	8.0		18.14	95.8
10	90	152.60	0.85	291	45	74	72	1.7	8.5		19.31	97.4
	95	156.05	0.85	292	44	74	72	1.7	8.5		19.32	94.2
11	100	159.60	0.9	291	44	73	72	1.9	9.3		19.87	97.0
	105	163.22	0.9	292	45	73	72	1.9	9.3		19.88	96.2
12	110	166.94	0.95	291	45	73	72	2	9.5		20.41	98.9
	115	170.68	0.95	292	45	73	72	2	9.5		20.43	96.7
	120	174.51										99.1

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	5 - SVOC
Date:	September 29, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.948 m^3
AVGERGE ISOKINETICITY	98.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	142.1 °C
AVERAGE GAS MOISTURE BY VOLUME	15.9 %
AVERAGE GAS VELOCITY	19.41 m/s
BAROMETRIC PRESSURE (Station)	101.084 Kpa
STATIC PRESSURE	-2.839 Kpa
ABSOLUTE GAS PRESSURE	98.245 Kpa
OXYGEN CONCENTRATION	9.2 %
CARBON DIOXIDE CONCENTRATION	10.45 %
CARBON MONOXIDE CONCENTRATION	13.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	28.68 m^3/s
DRY REF GAS FLOWRATE	16.78 Rm^3/s
DRY ADJ GAS FLOWRATE	19.83 Rm^3/s
WET REF GAS FLOWRATE	19.97 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.948 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0
DGMCF	0.993	**Probe (mg)**	0
Barometric Pressure	29.85 "Hg	**CWTR (g)**	656.1
Static Pressure	-11.400 "H_2O	**WCBDA (g)**	34
Nozzle	0.2456 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.37 ft^3
Length	0.000 ft	**Reading Interval**	5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	9.2
CO2%	10.45
COppm	13.1

Measured H2O
15.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	75.16	0.76	289	70	72	71	1.66	6.0		18.26	
	5	78.51	0.76	290	50	72	72	1.55	6.0		18.27	97.5
2	10	81.81	0.81	289	49	72	71	1.7	6.5		18.85	96.0
	15	85.25	0.81	289	47	72	72	1.7	6.6		18.85	97.0
3	20	88.81	0.82	291	46	72	72	1.7	6.6		19.00	100.2
	25	92.28	0.82	291	42	73	72	1.7	6.7		19.00	97.2
4	30	95.80	0.81	291	41	73	72	1.7	6.7		18.88	98.5
	35	99.33	0.81	292	41	74	72	1.7	6.7		18.89	99.4
5	40	102.83	0.8	292	41	74	72	1.7	6.7		18.77	98.6
	45	106.35	0.8	292	41	74	72	1.7	6.7		18.77	99.7
6	50	109.88	0.77	291	41	74	72	1.55	6.5		18.41	100.0
	55	113.27	0.77	290	42	75	72	1.6	6.5		18.39	97.8
7	60	116.71	0.8	288	42	75	73	1.7	6.5		18.72	99.1
	65	120.19	0.79	287	43	75	73	1.75	6.5		18.59	98.2
8	70	123.75	0.82	287	44	75	73	1.75	7.0		18.94	101.0
	75	127.33	0.86	286	45	75	73	1.85	7.0		19.39	99.7
9	80	130.99	0.9	286	46	76	73	1.9	7.0		19.83	99.5
	85	134.71	0.9	286	46	76	74	1.9	7.5		19.83	98.8
10	90	138.44	0.99	289	45	76	74	2.1	8.0		20.84	98.9
	95	142.28	0.99	289	46	76	74	2.1	8.0		20.84	97.3
11	100	146.17	1.05	290	46	76	76	2.2	8.5		21.48	98.6
	105	150.17	1.05	291	46	76	74	2.2	8.5		21.49	98.4
12	110	154.14	0.99	291	47	76	74	2.1	8.5		20.87	97.9
	115	158.04	0.99	290	46	76	74	2.1	8.5		20.86	99.0
	120	162.05								0.37		101.7
1	0	162.42	0.8	288	59	76	74	1.7	7.0		18.72	
	5	165.93	0.82	288	46	76	75	1.7	7.0		18.96	98.8
2	10	169.45	0.83	288	46	76	75	1.8	7.5		19.07	97.8
	15	173.07	0.83	288	45	76	75	1.8	7.5		19.07	100.0
3	20	176.71	0.87	286	45	77	75	1.85	7.5		19.50	100.5

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0
DGMCF	0.993	**Probe (mg)**	0
Barometric Pressure	29.85 "Hg	**CWTR (g)**	656.1
Static Pressure	-11.400 "H_2O	**WCBDA (g)**	34
Nozzle	0.2456 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.37 ft^3
Length	0.000 ft	**Reading Interval**	5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	9.2
CO2%	10.45
COppm	13.1

Measured H2O
15.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	180.36	0.87	285	45	77	75	1.85	7.5		19.49	98.3
4	30	184.04	0.86	286	46	77	75	1.85	8.0		19.39	99.0
	35	187.74	0.86	286	46	77	75	1.85	8.0		19.39	100.2
5	40	191.46	0.84	286	46	77	75	1.8	8.0		19.16	100.7
	45	195.07	0.84	287	46	77	75	1.8	8.0		19.17	98.9
6	50	198.71	0.83	287	47	78	75	1.8	8.0		19.06	99.8
	55	202.37	0.83	286	46	77	76	1.8	8.0		19.05	100.8
7	60	206.01	0.8	287	47	78	76	1.7	7.8		18.71	100.2
	65	209.59	0.8	287	47	78	76	1.7	7.8		18.71	100.4
8	70	213.17	0.84	287	47	78	76	1.8	8.0		19.17	100.4
	75	216.76	0.84	286	48	78	76	1.8	8.0		19.16	98.2
9	80	220.38	0.88	286	48	78	76	1.9	8.0		19.61	99.0
	85	224.09	0.88	286	48	79	76	1.9	8.0		19.61	99.1
10	90	227.85	0.91	285	48	79	76	1.9	8.0		19.93	100.4
	95	231.62	0.91	285	48	79	76	1.9	8.0		19.93	98.9
11	100	235.30	0.93	285	48	79	76	1.9	8.0		20.15	96.5
	105	239.04	0.94	284	49	78	77	1.95	8.2		20.24	97.1
12	110	242.86	0.94	285	48	78	77	1.95	8.2		20.26	98.6
	115	246.62	0.94	285	48	79	77	1.95	8.2		20.26	97.1
	120	250.37										96.7

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	6 - SVOC
Date:	September 30, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.803 m^3
AVGERGE ISOKINETICITY	97.8 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	142.3 °C
AVERAGE GAS MOISTURE BY VOLUME	15.0 %
AVERAGE GAS VELOCITY	18.85 m/s
BAROMETRIC PRESSURE (Station)	101.084 Kpa
STATIC PRESSURE	-2.739 Kpa
ABSOLUTE GAS PRESSURE	98.345 Kpa
OXYGEN CONCENTRATION	9.23 %
CARBON DIOXIDE CONCENTRATION	10.44 %
CARBON MONOXIDE CONCENTRATION	14.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.86 m^3/s
DRY REF GAS FLOWRATE	16.49 Rm^3/s
DRY ADJ GAS FLOWRATE	19.43 Rm^3/s
WET REF GAS FLOWRATE	19.41 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.803 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 30, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	608.7		
Static Pressure	-11.000 "H_2O	**WCBDA (g)**	16.2		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.41 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.23
CO2%	10.44
COppm	14.1

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	51.15	0.76	280	66	75	74	1.6	5.8		18.11	
	5	54.66	0.76	281	52	74	74	1.6	5.8		18.12	100.0
2	10	58.05	0.76	284	50	74	74	1.6	5.8		18.16	96.7
	15	61.44	0.76	283	48	74	74	1.6	5.8		18.14	96.9
3	20	64.85	0.76	283	47	75	74	1.6	5.8		18.14	97.4
	25	68.29	0.76	287	46	75	74	1.6	5.8		18.19	98.2
4	30	71.51	0.78	289	46	76	74	1.6	6.0		18.46	92.2
	35	74.92	0.77	289	46	76	74	1.6	6.0		18.34	96.4
5	40	78.36	0.77	289	46	77	74	1.6	6.0		18.34	97.8
	45	81.79	0.76	289	46	77	74	1.6	6.0		18.22	97.5
6	50	85.25	0.74	290	47	77	74	1.55	6.0		17.99	99.0
	55	88.65	0.75	290	46	77	75	1.55	6.3		18.11	98.6
7	60	92.04	0.78	290	47	78	75	1.6	6.5		18.47	97.6
	65	95.47	0.76	289	50	78	75	1.6	6.5		18.22	96.7
8	70	98.92	0.8	287	49	78	75	1.7	6.8		18.67	98.5
	75	102.42	0.81	287	51	78	75	1.7	6.8		18.78	97.3
9	80	105.93	0.9	289	54	78	75	1.9	7.2		19.82	97.0
	85	109.61	0.9	289	50	78	75	1.9	7.5		19.82	96.6
10	90	113.41	0.97	289	50	78	75	2	8.0		20.58	99.8
	95	117.27	0.97	290	52	78	76	2	8.0		20.60	97.6
11	100	121.05	0.96	290	49	78	76	2	8.0		20.49	95.6
	105	124.87	0.96	290	50	78	76	2	8.0		20.49	97.1
12	110	128.69	0.97	289	51	78	76	2	8.0		20.58	97.1
	115	132.53	0.97	289	49	78	76	2	8.0		20.58	97.0
	120	136.39								0.41		97.6
1	0	136.80	0.8	288	61	77	76	1.7	7.0		18.68	
	5	140.32	0.83	289	47	77	76	1.7	7.2		19.04	97.9
2	10	143.85	0.83	289	46	77	76	1.7	7.2		19.04	96.5
	15	147.35	0.83	289	45	77	76	1.75	7.3		19.04	95.6
3	20	150.94	0.8	289	44	78	76	1.7	7.3		18.69	98.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	September 30, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0
DGMCF	0.993	**Probe (mg)**	0
Barometric Pressure	29.85 "Hg	**CWTR (g)**	608.7
Static Pressure	-11.000 "H_2O	**WCBDA (g)**	16.2
Nozzle	0.2456 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.41 ft^3
Length	0.000 ft	**Reading Interval**	5 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	9.23
CO2%	10.44
COppm	14.1

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	154.51	0.83	288	44	78	76	1.75	7.3		19.03	99.3
4	30	158.10	0.8	288	44	78	76	1.7	7.3		18.68	98.0
	35	161.67	0.78	289	44	78	76	1.65	7.3		18.46	99.2
5	40	165.17	0.78	288	45	78	76	1.65	7.3		18.44	98.6
	45	168.67	0.78	289	45	79	76	1.65	7.3		18.46	98.5
6	50	172.17	0.77	289	45	78	76	1.6	7.3		18.34	98.5
	55	175.65	0.78	290	45	79	76	1.6	7.3		18.47	98.6
7	60	179.10	0.75	290	45	79	76	1.6	7.2		18.11	97.1
	65	182.54	0.74	289	45	78	76	1.6	7.2		17.98	98.7
8	70	185.95	0.7	289	45	79	77	1.5	7.0		17.48	98.6
	75	189.32	0.7	288	46	79	77	1.5	7.0		17.47	99.9
9	80	192.68	0.72	289	46	79	77	1.5	7.0		17.73	99.6
	85	196.02	0.72	289	46	79	77	1.5	7.0		17.73	97.7
10	90	199.36	0.89	290	46	79	77	1.9	8.3		19.73	97.7
	95	203.11	0.9	290	45	79	77	1.9	8.3		19.84	98.8
11	100	206.86	0.9	289	46	79	77	1.9	8.3		19.82	98.2
	105	210.63	0.9	287	46	79	77	1.9	8.3		19.80	98.7
12	110	214.40	0.9	286	46	79	77	1.9	8.3		19.79	98.6
	115	218.14	0.9	286	46	79	77	1.9	8.3		19.79	97.7
	120	221.81										95.9

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	7 - SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.41 mm
DRY REF GAS VOLUME SAMPLED	4.796 m^3
AVGERGE ISOKINETICITY	101.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	142.3 °C
AVERAGE GAS MOISTURE BY VOLUME	17.6 %
AVERAGE GAS VELOCITY	17.63 m/s
BAROMETRIC PRESSURE (Station)	100.982 Kpa
STATIC PRESSURE	-2.515 Kpa
ABSOLUTE GAS PRESSURE	98.467 Kpa
OXYGEN CONCENTRATION	8.07 %
CARBON DIOXIDE CONCENTRATION	11.25 %
CARBON MONOXIDE CONCENTRATION	10.6 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.05 m^3/s
DRY REF GAS FLOWRATE	14.96 Rm^3/s
DRY ADJ GAS FLOWRATE	19.39 Rm^3/s
WET REF GAS FLOWRATE	18.17 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.796 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	November 4, 2016	**Operator:**	RW

Pitot Factor	0.847	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	742.4		
Static Pressure	-10.100 "H_2O	**WCBDA (g)**	12.9		
Nozzle	0.2524 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.35 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.07
CO2%	11.25
COppm	10.6

Measured H2O
17.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	11.55	0.73	288	67	68	67	2	6.5		18.02	
	5	15.33	0.75	288	49	67	67	1.8	6.5		18.26	108.1
2	10	18.92	0.77	289	47	67	67	1.5	6.5		18.52	101.4
	15	22.47	0.77	288	45	67	67	1.6	6.5		18.50	98.9
3	20	26.03	0.75	289	43	67	67	1.6	6.5		18.27	99.2
	25	29.58	0.75	289	42	67	67	1.6	6.5		18.27	100.3
4	30	33.17	0.69	289	41	68	67	1.6	7.0		17.53	101.4
	35	36.73	0.71	289	41	67	67	1.6	7.0		17.78	104.7
5	40	40.28	0.68	290	41	68	67	1.6	7.0		17.41	103.0
	45	43.81	0.68	290	41	68	67	1.5	7.0		17.41	104.7
6	50	47.33	0.65	290	41	68	67	1.3	7.0		17.02	104.3
	55	50.77	0.66	290	41	68	67	1.3	7.0		17.15	104.2
7	60	54.19	0.63	290	42	68	67	1.1	6.5		16.76	102.9
	65	57.56	0.64	289	42	69	67	1.1	6.5		16.88	103.7
8	70	60.91	0.67	289	42	69	67	1.1	6.5		17.27	102.1
	75	64.26	0.67	289	42	69	68	1.2	6.5		17.27	99.8
9	80	67.64	0.67	289	42	69	68	1.2	6.5		17.27	100.6
	85	71.00	0.67	289	42	69	68	1.2	6.5		17.27	100.0
10	90	74.36	0.67	289	43	70	68	1.2	6.5		17.27	100.0
	95	77.75	0.69	288	43	70	68	1.4	6.5		17.52	100.8
11	100	81.20	0.69	288	43	70	68	1.4	6.5		17.52	101.1
	105	84.66	0.69	288	43	70	69	1.4	6.5		17.52	101.4
12	110	88.14	0.69	281	43	70	69	1.4	6.5		17.43	101.9
	115	91.58	0.69	280	44	70	69	1.7	6.5		17.42	100.2
	120	95.17								0.35		104.6
1	0	95.52	0.71	287	57	70	69	1.7	6.5		17.76	
	5	99.04	0.75	287	46	70	70	2	7.0		18.25	101.6
2	10	102.76	0.79	288	46	71	70	2	7.0		18.74	104.4
	15	106.47	0.81	288	45	70	70	2	7.0		18.98	101.4
3	20	110.38	0.78	288	44	70	70	1.8	7.0		18.62	105.7

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	November 4, 2016	**Operator:**	RW

Pitot Factor	0.847	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	742.4		
Static Pressure	-10.100 "H_2O	**WCBDA (g)**	12.9		
Nozzle	0.2524 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.35 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.07
CO2%	11.25
COppm	10.6

Measured H2O
17.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	113.87	0.76	288	43	71	69	1.6	7.0		18.38	**96.1**
4	30	117.51	0.71	288	43	70	70	1.2	7.0		17.77	**101.5**
	35	121.01	0.7	288	41	70	70	1.2	7.0		17.64	**100.8**
5	40	124.46	0.59	288	43	71	70	1	7.0		16.20	**100.1**
	45	127.82	0.59	288	43	70	70	1	7.0		16.20	**106.0**
6	50	131.16	0.58	288	44	70	69	0.8	6.5		16.06	**105.5**
	55	134.41	0.57	288	43	71	70	0.8	6.5		15.92	**103.6**
7	60	137.61	0.66	288	43	70	70	1.2	7.0		17.13	**102.7**
	65	140.92	0.68	288	43	71	70	1.2	7.0		17.39	**98.9**
8	70	144.23	0.73	287	43	71	70	1.6	7.0		18.00	**97.4**
	75	147.79	0.73	289	43	71	70	1.8	7.0		18.03	**101.1**
9	80	151.38	0.75	290	43	71	70	1.9	7.0		18.29	**102.1**
	85	155.04	0.75	290	43	71	70	1.9	7.0		18.29	**102.8**
10	90	158.77	0.74	290	44	71	70	1.7	7.0		18.16	**104.8**
	95	162.32	0.77	290	44	71	70	1.7	7.0		18.53	**100.4**
11	100	165.96	0.7	289	44	71	70	1.2	7.0		17.65	**100.9**
	105	169.41	0.7	288	45	71	70	1.4	7.0		17.64	**100.1**
12	110	172.90	0.69	286	45	71	70	1.4	7.0		17.49	**101.2**
	115	176.40	0.69	286	45	71	70	1.4	7.0		17.49	**102.1**
	120	179.80										**99.2**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	8 - SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.41 mm
DRY REF GAS VOLUME SAMPLED	4.926 m^3
AVGERGE ISOKINETICITY	100.1 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	140.2 °C
AVERAGE GAS MOISTURE BY VOLUME	16.1 %
AVERAGE GAS VELOCITY	18.04 m/s
BAROMETRIC PRESSURE (Station)	100.779 Kpa
STATIC PRESSURE	-2.515 Kpa
ABSOLUTE GAS PRESSURE	98.264 Kpa
OXYGEN CONCENTRATION	8.64 %
CARBON DIOXIDE CONCENTRATION	10.69 %
CARBON MONOXIDE CONCENTRATION	8.3 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.66 m^3/s
DRY REF GAS FLOWRATE	15.65 Rm^3/s
DRY ADJ GAS FLOWRATE	19.38 Rm^3/s
WET REF GAS FLOWRATE	18.65 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.926 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	November 4, 2016	**Operator:**	RW

Pitot Factor	0.847	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	674.7		
Static Pressure	-10.100 "H_2O	**WCBDA (g)**	19.5		
Nozzle	0.2524 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.46 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.64
CO2%	10.69
COppm	8.3

Measured H2O
16.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	80.43	0.75	288	50	70	70	1.5	7.0		18.24	
	5	84.11	0.74	286	50	71	71	1.5	7.0		18.09	**101.5**
2	10	87.50	0.76	286	47	71	71	1.5	7.0		18.33	**93.8**
	15	91.05	0.85	286	46	71	71	2	7.0		19.39	**96.9**
3	20	94.87	0.78	287	44	71	71	1.8	7.0		18.59	**98.7**
	25	98.63	0.8	286	44	72	71	1.8	7.0		18.81	**101.5**
4	30	102.37	0.72	286	44	71	71	1.6	7.0		17.84	**99.5**
	35	106.02	0.78	286	45	72	71	1.6	7.0		18.57	**102.4**
5	40	109.65	0.7	285	44	72	71	1.6	7.0		17.58	**97.8**
	45	113.28	0.67	287	44	72	71	1.4	8.0		17.23	**103.1**
6	50	116.82	0.62	288	44	72	71	1	8.0		16.58	**102.9**
	55	120.20	0.65	289	46	72	72	1.2	8.0		16.99	**102.1**
7	60	123.65	0.65	289	44	73	71	1.2	8.0		16.99	**101.8**
	65	127.17	0.68	287	44	73	72	1.6	8.0		17.35	**103.9**
8	70	130.66	0.68	284	43	73	72	1.6	8.0		17.32	**100.5**
	75	134.27	0.74	285	43	73	72	1.6	8.0		18.08	**103.8**
9	80	137.93	0.7	287	43	73	72	1.6	8.0		17.61	**100.9**
	85	141.56	0.75	285	42	73	72	1.6	8.0		18.20	**103.1**
10	90	145.17	0.75	285	42	73	72	1.6	8.0		18.20	**98.9**
	95	148.78	0.74	284	42	74	72	1.6	8.0		18.07	**98.9**
11	100	152.41	0.72	282	43	74	73	1.6	8.0		17.80	**100.0**
	105	156.02	0.72	281	42	74	73	1.6	8.0		17.78	**100.5**
12	110	159.61	0.73	282	43	74	73	1.6	8.0		17.92	**99.9**
	115	163.26	0.73	282	44	74	73	1.6	8.0		17.92	**101.0**
	120	166.80								0.46		**97.9**
1	0	167.26	0.85	285	50	74	74	2	8.5		19.38	
	5	170.98	0.84	289	45	75	74	2	8.5		19.31	**95.6**
2	10	174.78	0.84	287	42	74	74	2	8.5		19.29	**98.4**
	15	178.54	0.82	286	42	74	73	2	8.5		19.04	**97.3**
3	20	182.30	0.84	284	41	73	73	2	8.5		19.25	**98.5**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 - SVOC	**Test Location:**	APC Outlet Unit #1
Date:	November 4, 2016	**Operator:**	RW

Pitot Factor	0.847	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	674.7		
Static Pressure	-10.100 "H_2O	**WCBDA (g)**	19.5		
Nozzle	0.2524 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.46 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.64
CO2%	10.69
COppm	8.3

Measured H2O
16.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	186.04	0.84	284	41	74	73	2	8.5		19.25	**96.8**
4	30	189.84	0.77	283	42	73	73	2	8.5		18.42	**98.2**
	35	193.56	0.72	283	42	74	73	1.8	9.0		17.81	**100.4**
5	40	197.36	0.71	282	43	74	73	1.6	9.0		17.67	**106.0**
	45	200.90	0.68	282	43	74	73	1.6	9.0		17.30	**99.3**
6	50	204.52	0.66	282	43	74	73	1.6	9.0		17.04	**103.7**
	55	208.09	0.65	281	44	73	73	1.4	9.0		16.90	**103.9**
7	60	211.62	0.72	282	44	73	73	1.4	9.0		17.80	**103.5**
	65	215.14	0.72	282	44	73	73	1.4	9.0		17.80	**98.1**
8	70	218.66	0.74	282	44	73	73	1.4	9.0		18.04	**98.1**
	75	222.18	0.74	282	44	73	73	1.4	9.0		18.04	**96.7**
9	80	225.71	0.75	282	44	73	73	1.6	9.0		18.16	**97.0**
	85	229.31	0.77	282	45	73	73	1.6	9.0		18.40	**98.3**
10	90	232.91	0.8	282	45	73	73	1.6	9.0		18.76	**97.0**
	95	236.53	0.79	282	45	73	73	1.8	9.0		18.64	**95.7**
11	100	240.27	0.72	282	45	73	73	1.8	9.0		17.80	**99.6**
	105	244.12	0.7	282	45	73	73	1.4	9.0		17.55	**107.4**
12	110	247.59	0.7	282	45	73	73	1.4	9.0		17.55	**98.1**
	115	251.20	0.68	282	45	73	73	1.4	9.0		17.30	**102.0**
	120	254.76										**102.1**

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APPENDIX 15

SVOC Test Emission Calculations
for Boiler No. 2
(60 pages)

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	1 - SVOC
Date:	September 19, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.998
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	4.578 m^3
AVGERGE ISOKINETICITY	97.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	167.3 °C
AVERAGE GAS MOISTURE BY VOLUME	15.8 %
AVERAGE GAS VELOCITY	18.12 m/s
BAROMETRIC PRESSURE (Station)	99.966 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	99.344 Kpa
OXYGEN CONCENTRATION	7.76 %
CARBON DIOXIDE CONCENTRATION	10.97 %
CARBON MONOXIDE CONCENTRATION	22.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.78 m^3/s
DRY REF GAS FLOWRATE	14.96 Rm^3/s
DRY ADJ GAS FLOWRATE	19.86 Rm^3/s
WET REF GAS FLOWRATE	17.78 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.578 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 19, 2016	**Operator:**	TT

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.52 "Hg	**CWTR (g)**	528.6		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	103.3		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.32 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.76
CO2%	10.97
COppm	22.1

Measured H2O
15.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	24.64	0.57	329	83	84	85	1.1	3.0		16.25	
	5	27.80	0.57	334	68	84	86	1.1	4.0		16.30	99.2
2	10	30.94	0.57	334	64	84	89	1.1	5.0		16.30	98.8
	15	34.16	0.58	334	61	84	92	1.1	5.0		16.44	101.1
3	20	37.34	0.63	333	58	85	94	1.3	6.0		17.12	98.7
	25	40.72	0.63	333	55	87	97	1.3	6.5		17.12	100.3
4	30	44.11	0.64	333	53	88	99	1.35	7.5		17.26	100.2
	35	47.57	0.63	333	52	90	101	1.35	7.5		17.12	101.2
5	40	50.99	0.62	333	51	91	103	1.3	8.0		16.99	100.4
	45	54.36	0.61	333	52	92	104	1.3	8.0		16.85	99.5
6	50	57.74	0.6	332	53	94	105	1.25	8.5		16.70	100.4
	55	61.09	0.59	332	53	95	107	1.25	9.0		16.56	100.0
7	60	64.39	0.77	332	52	96	109	1.6	10.5		18.92	99.1
	65	68.09	0.76	332	51	97	111	1.6	12.0		18.80	97.1
8	70	71.82	0.81	332	51	99	112	1.7	13.5		19.40	98.2
	75	75.67	0.85	332	51	100	113	1.8	14.0		19.88	98.0
9	80	79.56	0.83	333	52	101	115	1.8	14.0		19.65	96.5
	85	83.37	0.83	332	52	102	115	1.8	14.5		19.64	95.4
10	90	87.16	0.86	331	52	102	116	1.8	14.5		19.98	94.8
	95	90.80	0.83	331	53	103	117	1.8	14.5		19.63	89.3
11	100	94.55	0.65	331	53	103	117	1.4	5.0		17.37	93.5
	105	98.15	0.64	335	54	101	111	1.4	5.0		17.28	101.3
12	110	101.57	0.58	335	55	101	112	1.2	5.0		16.45	97.9
	115	104.80	0.57	334	55	101	114	1.2	5.5		16.30	97.0
	120	108.05								0.32		98.3
1	0	108.37	0.61	331	73	100	104	1.3	6.0		16.83	
	5	111.82	0.67	334	51	99	107	1.3	6.0		17.67	101.6
2	10	115.27	0.67	334	55	99	110	1.3	6.5		17.67	97.0
	15	118.70	0.68	334	55	99	111	1.35	7.5		17.80	96.2
3	20	122.21	0.69	334	55	100	113	1.35	7.5		17.93	97.6

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 19, 2016	**Operator:**	TT

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.52 "Hg	**CWTR (g)**	528.6		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	103.3		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.32 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.76
CO2%	10.97
COppm	22.1

Measured H2O
15.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	125.74	0.71	334	55	101	114	1.4	9.0		18.19	97.2
4	30	129.35	0.69	335	55	101	115	1.35	9.0		17.94	97.8
	35	132.88	0.67	335	56	102	116	1.35	9.0		17.68	97.0
5	40	136.37	0.68	334	56	103	116	1.35	9.0		17.80	97.2
	45	139.87	0.67	334	57	103	116	1.35	9.5		17.67	96.6
6	50	143.37	0.7	335	57	104	117	1.4	10.5		18.07	97.3
	55	146.87	0.67	335	57	104	117	1.35	10.5		17.68	95.1
7	60	150.37	0.74	334	58	104	118	1.5	12.0		18.57	97.2
	65	154.05	0.76	334	58	105	119	1.6	14.0		18.82	97.1
8	70	157.80	0.76	334	58	106	119	1.6	14.0		18.82	97.5
	75	161.68	0.88	334	57	106	120	1.8	7.0		20.25	100.8
9	80	165.70	0.89	333	50	103	113	1.8	7.0		20.35	97.0
	85	169.65	0.87	336	50	103	114	1.8	7.0		20.16	95.6
10	90	173.67	0.87	335	50	103	116	1.8	7.0		20.15	98.5
	95	177.66	0.87	335	50	104	117	1.8	7.0		20.15	97.5
11	100	181.69	0.78	332	50	104	118	1.6	9.5		19.04	98.3
	105	185.53	0.78	333	50	105	119	1.6	9.5		19.05	98.6
12	110	189.32	0.75	333	51	105	120	1.6	10.0		18.68	97.2
	115	193.05	0.75	329	51	105	120	1.6	10.0		18.64	97.5
	120	196.79										97.5

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	2 - SVOC
Date:	September 20, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.998
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	4.740 m^3
AVGERGE ISOKINETICITY	100.5 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	166.7 °C
AVERAGE GAS MOISTURE BY VOLUME	16.8 %
AVERAGE GAS VELOCITY	18.41 m/s
BAROMETRIC PRESSURE (Station)	100.237 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	99.615 Kpa
OXYGEN CONCENTRATION	7.89 %
CARBON DIOXIDE CONCENTRATION	11.03 %
CARBON MONOXIDE CONCENTRATION	17.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.20 m^3/s
DRY REF GAS FLOWRATE	15.08 Rm^3/s
DRY ADJ GAS FLOWRATE	19.82 Rm^3/s
WET REF GAS FLOWRATE	18.13 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.740 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 20, 2016	**Operator:**	TT

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.6 "Hg	**CWTR (g)**	675.5		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	27.1		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.93 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.89
CO2%	11.03
COppm	17.4

Measured H2O
16.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	97.44	0.7	336	73	80	81	1.3	3.0		18.09	
	5	100.87	0.75	336	56	81	83	1.4	4.0		18.73	99.5
2	10	104.35	0.76	335	53	81	86	1.4	4.0		18.84	97.3
	15	107.94	0.76	334	52	82	89	1.5	6.0		18.83	99.3
3	20	111.58	0.76	334	51	83	92	1.5	6.0		18.83	100.3
	25	115.24	0.77	334	51	84	95	1.55	6.5		18.95	100.5
4	30	118.93	0.77	335	51	85	97	1.55	7.0		18.96	100.3
	35	122.69	0.77	336	50	87	99	1.55	7.5		18.98	102.0
5	40	126.41	0.77	336	50	88	102	1.55	7.5		18.98	100.6
	45	130.10	0.76	335	51	89	103	1.5	7.5		18.84	99.4
6	50	133.62	0.76	335	51	91	105	1.6	8.5		18.84	95.2
	55	137.29	0.75	335	51	92	107	1.5	9.0		18.72	99.0
7	60	140.95	0.76	333	51	93	108	1.55	10.0		18.82	99.1
	65	144.72	0.76	332	50	94	109	1.55	10.0		18.81	101.1
8	70	148.43	0.77	332	50	96	110	1.6	11.0		18.93	99.2
	75	152.22	0.77	332	50	97	111	1.6	12.0		18.93	100.4
9	80	156.05	0.79	332	50	98	112	1.7	13.0		19.17	101.3
	85	160.00	0.76	331	50	99	113	1.55	4.5		18.79	103.0
10	90	163.79	0.74	334	54	97	107	1.5	5.0		18.58	100.5
	95	167.44	0.73	334	51	97	109	1.5	5.5		18.45	99.0
11	100	171.15	0.73	332	51	97	110	1.5	6.0		18.43	101.1
	105	174.80	0.73	332	51	98	110	1.5	6.5		18.43	99.2
12	110	178.52	0.73	333	51	98	111	1.5	7.0		18.44	101.1
	115	182.23	0.73	331	51	98	111	1.5	8.0		18.42	100.8
	120	185.92								0.93		100.1
1	0	186.85	0.59	331	74	96	98	1.2	7.0		16.56	
	5	190.23	0.6	336	55	94	101	1.1	7.0		16.75	103.3
2	10	193.48	0.65	335	53	94	104	1.3	8.5		17.42	98.7
	15	196.86	0.65	334	52	94	105	1.3	9.5		17.41	98.3
3	20	200.34	0.66	334	52	95	106	1.35	10.0		17.55	101.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 20, 2016	**Operator:**	TT

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.6 "Hg	**CWTR (g)**	675.5		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	27.1		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.93 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.89
CO2%	11.03
COppm	17.4

Measured H2O
16.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	203.86	0.66	334	52	96	107	1.35	10.0		17.55	**101.3**
4	30	207.35	0.68	336	53	96	109	1.4	11.5		17.83	**100.2**
	35	210.91	0.68	335	53	97	110	1.4	11.5		17.82	**100.7**
5	40	214.48	0.68	334	54	98	110	1.4	11.5		17.81	**100.7**
	45	218.05	0.69	333	55	98	111	1.5	14.0		17.93	**100.6**
6	50	221.61	0.68	333	55	99	111	1.5	15.0		17.80	**99.4**
	55	225.16	0.74	332	56	99	112	1.6	5.0		18.56	**99.8**
7	60	228.95	0.74	331	57	97	106	1.6	6.0		18.54	**102.0**
	65	232.70	0.74	331	55	97	108	1.55	6.0		18.54	**101.6**
8	70	236.31	0.74	331	56	98	110	1.55	6.5		18.54	**97.6**
	75	239.98	0.76	330	57	98	111	1.7	7.5		18.78	**99.0**
9	80	243.81	0.75	331	58	99	112	1.6	7.5		18.67	**101.8**
	85	247.60	0.75	332	58	100	113	1.6	8.5		18.68	**101.3**
10	90	251.35	0.76	331	58	100	114	1.65	9.0		18.79	**100.1**
	95	255.24	0.74	332	59	101	115	1.6	9.0		18.56	**103.0**
11	100	259.07	0.72	328	60	101	115	1.55	9.0		18.26	**102.6**
	105	262.83	0.75	312	61	102	116	1.65	10.5		18.44	**101.9**
12	110	266.64	0.75	312	61	102	116	1.65	10.5		18.44	**100.0**
	115	270.71	0.74	323	63	103	117	1.6	11.0		18.45	**106.8**
	120	274.52										**101.2**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	3 - SVOC
Date:	September 20, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.998
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	4.543 m^3
AVGERGE ISOKINETICITY	98.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	167.8 °C
AVERAGE GAS MOISTURE BY VOLUME	15.6 %
AVERAGE GAS VELOCITY	17.69 m/s
BAROMETRIC PRESSURE (Station)	100.373 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	99.750 Kpa
OXYGEN CONCENTRATION	7.74 %
CARBON DIOXIDE CONCENTRATION	11.06 %
CARBON MONOXIDE CONCENTRATION	16.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.14 m^3/s
DRY REF GAS FLOWRATE	14.68 Rm^3/s
DRY ADJ GAS FLOWRATE	19.51 Rm^3/s
WET REF GAS FLOWRATE	17.41 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.543 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 20, 2016	**Operator:**	TT

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	598.2		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	21.4		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.37 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.74
CO2%	11.06
COppm	16.4

Measured H2O
15.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	74.92	0.57	334	78	95	97	1.1	4.0		16.26	
	5	78.16	0.57	335	59	89	93	1.1	4.5		16.27	100.0
2	10	81.28	0.57	334	55	89	95	1.1	4.5		16.26	97.2
	15	84.50	0.59	334	53	90	98	1.2	5.5		16.54	100.1
3	20	87.85	0.59	333	52	91	100	1.2	5.5		16.53	102.0
	25	91.08	0.6	334	52	92	103	1.25	6.5		16.68	98.1
4	30	94.39	0.6	335	52	92	104	1.2	6.5		16.69	99.4
	35	97.67	0.6	334	52	94	106	1.2	6.5		16.68	98.4
5	40	100.98	0.58	334	52	95	108	1.2	6.5		16.40	98.9
	45	104.27	0.58	334	53	96	109	1.2	6.5		16.40	99.7
6	50	107.57	0.59	333	53	97	111	1.2	7.5		16.53	99.8
	55	110.87	0.59	333	54	98	112	1.2	8.0		16.53	98.7
7	60	114.16	0.71	332	54	99	113	1.5	10.0		18.12	98.2
	65	117.81	0.7	332	54	100	115	1.5	10.0		17.99	99.1
8	70	121.48	0.77	332	54	101	117	1.6	11.0		18.87	100.1
	75	125.23	0.78	332	55	103	118	1.65	13.0		18.99	97.3
9	80	129.15	0.78	333	56	104	119	1.65	14.0		19.00	100.8
	85	133.03	0.82	334	55	105	120	1.7	14.5		19.50	99.7
10	90	136.92	0.79	334	54	105	120	1.7	7.0		19.14	97.4
	95	140.85	0.8	333	55	104	113	1.65	7.0		19.25	100.2
11	100	144.67	0.76	334	54	103	115	1.6	7.5		18.77	97.4
	105	148.41	0.72	332	54	104	117	1.5	8.0		18.25	97.8
12	110	152.10	0.72	332	53	104	118	1.5	8.0		18.25	98.7
	115	155.76	0.74	332	54	105	119	1.6	9.0		18.50	97.9
	120	159.54								0.37		99.5
1	0	159.91	0.55	336	78	104	108	1.1	7.0		15.99	
	5	163.11	0.54	335	56	103	112	1.1	7.0		15.83	98.9
2	10	166.26	0.6	335	55	103	114	1.2	8.0		16.69	97.9
	15	169.56	0.59	335	54	103	115	1.2	9.0		16.55	97.2
3	20	172.95	0.6	335	55	104	117	1.25	9.0		16.69	100.6

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 20, 2016	**Operator:**	TT

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	598.2		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	21.4		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.37 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.74
CO2%	11.06
COppm	16.4

Measured H2O
15.6 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	176.33	0.64	335	55	104	118	1.3	10.0		17.24	99.2
4	30	179.80	0.6	335	55	105	118	1.25	10.0		16.69	98.5
	35	183.16	0.61	335	57	105	119	1.25	10.0		16.83	98.5
5	40	186.53	0.61	335	57	106	119	1.25	10.0		16.83	97.8
	45	189.97	0.59	335	57	106	120	1.2	11.0		16.55	99.8
6	50	193.31	0.58	335	59	106	120	1.2	11.0		16.41	98.4
	55	196.67	0.61	336	57	107	120	1.3	11.5		16.84	99.9
7	60	200.04	0.73	334	56	107	120	1.55	14.0		18.40	97.7
	65	203.73	0.77	332	54	107	121	1.6	7.0		18.87	97.7
8	70	207.53	0.83	335	53	104	114	1.7	8.0		19.63	97.8
	75	211.43	0.85	335	53	104	116	1.8	9.0		19.86	97.7
9	80	215.40	0.85	336	54	104	117	1.8	9.5		19.88	98.1
	85	219.46	0.86	336	54	104	118	1.8	9.5		19.99	100.3
10	90	223.50	0.83	337	54	105	119	1.8	9.5		19.65	99.2
	95	227.54	0.81	336	53	105	120	1.75	10.5		19.40	100.8
11	100	231.52	0.71	336	54	105	120	1.5	10.0		18.17	100.4
	105	235.29	0.72	334	54	106	121	1.4	9.5		18.27	101.5
12	110	238.86	0.69	330	54	106	121	1.45	10.0		17.84	95.1
	115	242.49	0.69	329	54	106	122	1.45	10.0		17.83	98.6
	120	246.13										98.7

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	4 - SVOC
Date:	September 22, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.998
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	3.472 m^3
AVGERGE ISOKINETICITY	98.5 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	169.0 °C
AVERAGE GAS MOISTURE BY VOLUME	15.4 %
AVERAGE GAS VELOCITY	18.13 m/s
BAROMETRIC PRESSURE (Station)	100.102 Kpa
STATIC PRESSURE	-0.598 Kpa
ABSOLUTE GAS PRESSURE	99.504 Kpa
OXYGEN CONCENTRATION	8.08 %
CARBON DIOXIDE CONCENTRATION	10.75 %
CARBON MONOXIDE CONCENTRATION	33.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.79 m^3/s
DRY REF GAS FLOWRATE	15.01 Rm^3/s
DRY ADJ GAS FLOWRATE	19.43 Rm^3/s
WET REF GAS FLOWRATE	17.75 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.472 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 22, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.56 "Hg	**CWTR (g)**	449.1		
Static Pressure	-2.400 "H_2O	**WCBDA (g)**	15.7		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.75 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.08
CO2%	10.75
COppm	33.1

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	47.40	0.6	335	83	84	85	1.2	3.0		16.71	
	2.5	49.07	0.59	335	64	84	86	1.1	3.0		16.57	102.3
	5	50.64	0.58	334	59	84	87	1.1	3.5		16.42	96.8
2	7.5	52.18	0.64	335	56	84	88	1.3	4.0		17.26	95.7
	10	53.88	0.65	335	53	84	89	1.3	4.0		17.39	100.5
	12.5	55.56	0.67	335	52	84	90	1.35	4.5		17.66	98.5
3	15	57.26	0.69	336	50	84	92	1.4	5.0		17.93	98.1
	17.5	59.03	0.68	336	50	85	93	1.35	5.0		17.80	100.5
	20	60.78	0.68	336	49	85	94	1.35	5.0		17.80	99.9
4	22.5	62.50	0.68	336	50	86	96	1.35	5.5		17.80	98.1
	25	64.22	0.68	336	49	87	97	1.35	5.5		17.80	97.9
	27.5	65.93	0.69	336	50	87	98	1.4	6.0		17.93	97.1
5	30	67.68	0.66	336	49	88	99	1.35	6.0		17.54	98.6
	32.5	69.38	0.66	336	50	89	101	1.35	6.0		17.54	97.7
	35	71.07	0.65	336	50	89	102	1.35	6.0		17.40	96.9
6	37.5	72.80	0.63	336	50	90	103	1.3	6.5		17.13	99.9
	40	74.50	0.63	336	50	91	104	1.25	6.5		17.13	99.5
	42.5	76.20	0.63	336	50	92	105	1.25	6.5		17.13	99.3
7	45	77.86	0.74	335	50	92	106	1.55	8.0		18.56	96.8
	47.5	79.69	0.75	335	50	93	107	1.6	8.5		18.68	98.4
	50	81.57	0.75	335	50	94	108	1.6	8.5		18.68	100.2
8	52.5	83.43	0.79	334	50	94	109	1.7	9.0		19.16	99.0
	55	85.35	0.79	334	50	95	110	1.65	9.0		19.16	99.4
	57.5	87.26	0.78	334	50	95	111	1.65	9.0		19.04	98.7
9	60	89.16	0.79	333	51	96	112	1.65	9.5		19.15	98.7
	62.5	91.05	0.79	333	51	97	113	1.65	9.5		19.15	97.4
	65	92.94	0.8	333	51	98	113	1.7	10.0		19.27	97.2
10	67.5	94.86	0.78	333	51	98	114	1.65	10.0		19.03	98.0
	70	96.78	0.78	333	52	99	114	1.65	10.0		19.03	99.2
	72.5	98.68	0.79	333	52	99	115	1.7	10.5		19.15	98.1
11	75	100.60	0.76	334	52	100	115	1.65	11.0		18.79	98.4

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 22, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.56 "Hg	**CWTR (g)**	449.1		
Static Pressure	-2.400 "H_2O	**WCBDA (g)**	15.7		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.75 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.08
CO2%	10.75
COppm	33.1

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	102.49	0.74	333	52	100	116	1.6	11.0		18.53	98.7
	80	104.36	0.72	332	53	101	116	1.55	11.0		18.27	98.8
12	82.5	106.21	0.72	332	53	101	117	1.55	11.5		18.27	98.9
	85	108.05	0.73	333	54	101	117	1.55	11.5		18.41	98.3
	87.5	109.87	0.73	333	54	102	117	1.55	11.5		18.41	96.6
	90	111.69								0.75		96.6
1	0	112.44	0.52	338	79	98	100	1.05	3.0		15.59	
	2.5	114.02	0.51	339	57	97	102	1.05	3.0		15.44	101.4
	5	115.55	0.51	338	55	97	103	1	3.0		15.43	99.1
2	7.5	117.07	0.59	338	54	97	104	1.2	4.0		16.60	98.3
	10	118.71	0.61	338	53	97	105	1.3	4.5		16.88	98.6
	12.5	120.42	0.6	338	53	97	106	1.25	4.5		16.74	101.0
3	15	122.10	0.63	339	53	97	107	1.25	5.0		17.17	100.0
	17.5	123.79	0.63	339	53	97	108	1.25	5.0		17.17	98.1
	20	125.47	0.64	339	53	97	109	1.3	5.0		17.30	97.4
4	22.5	127.16	0.64	339	53	98	110	1.3	5.5		17.30	97.2
	25	128.88	0.65	339	54	98	111	1.35	6.0		17.44	98.7
	27.5	130.62	0.65	339	54	98	112	1.35	6.0		17.44	99.0
5	30	132.35	0.65	340	55	99	112	1.35	6.0		17.45	98.4
	32.5	134.08	0.64	340	55	99	113	1.3	6.0		17.31	98.3
	35	135.80	0.64	340	55	100	113	1.3	6.0		17.31	98.4
6	37.5	137.49	0.65	341	55	100	114	1.35	6.5		17.46	96.6
	40	139.23	0.64	341	54	100	115	1.35	6.5		17.32	98.7
	42.5	140.94	0.64	340	52	101	115	1.35	6.5		17.31	97.7
7	45	142.65	0.81	339	52	101	115	1.75	8.5		19.46	97.5
	47.5	144.62	0.81	338	51	102	117	1.7	8.0		19.45	99.9
	50	146.55	0.81	338	51	102	118	1.7	8.5		19.45	97.6
8	52.5	148.47	0.85	337	51	102	118	1.85	10.0		19.91	97.0
	55	150.52	0.84	336	50	103	119	1.8	10.0		19.78	101.0
	57.5	152.55	0.84	336	50	103	120	1.8	10.0		19.78	100.4
9	60	154.54	0.84	336	51	104	120	1.8	10.5		19.78	98.3

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 22, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.56 "Hg	**CWTR (g)**	449.1		
Static Pressure	-2.400 "H_2O	**WCBDA (g)**	15.7		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.75 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.08
CO2%	10.75
COppm	33.1

Measured H2O
15.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	156.56	0.85	338	52	104	121	1.8	10.5		19.93	99.7
	65	158.51	0.86	338	52	105	121	1.8	10.5		20.04	95.7
10	67.5	160.49	0.85	338	53	105	122	1.8	10.5		19.93	96.6
	70	162.50	0.86	337	54	105	122	1.8	11.0		20.03	98.5
	72.5	164.51	0.83	337	54	105	122	1.75	11.0		19.68	97.9
11	75	166.49	0.8	336	55	106	122	1.75	11.5		19.31	98.1
	77.5	168.45	0.79	336	55	106	122	1.7	11.5		19.19	98.8
	80	170.37	0.79	336	56	106	122	1.7	12.0		19.19	97.4
12	82.5	172.31	0.72	336	56	106	122	1.6	11.5		18.32	98.4
	85	174.20	0.7	335	57	107	122	1.55	11.5		18.05	100.4
	87.5	176.07	0.7	335	58	107	122	1.5	12.0		18.05	100.6
	90	177.93										100.0

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	5 - SVOC
Date:	September 23, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.998
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	3.531 m^3
AVGERGE ISOKINETICITY	99.4 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	167.6 °C
AVERAGE GAS MOISTURE BY VOLUME	16.0 %
AVERAGE GAS VELOCITY	18.33 m/s
BAROMETRIC PRESSURE (Station)	100.271 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	99.648 Kpa
OXYGEN CONCENTRATION	8.02 %
CARBON DIOXIDE CONCENTRATION	10.73 %
CARBON MONOXIDE CONCENTRATION	30.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.09 m^3/s
DRY REF GAS FLOWRATE	15.14 Rm^3/s
DRY ADJ GAS FLOWRATE	19.69 Rm^3/s
WET REF GAS FLOWRATE	18.02 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.531 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 23, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.61 "Hg	**CWTR (g)**	482.7		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	10.8		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		1.23 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.02
CO2%	10.73
COppm	30.4

Measured H2O
16.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	78.78	0.61	337	77	82	83	1.2	2.0		16.88	
	2.5	80.44	0.6	336	69	82	84	1.15	2.0		16.73	102.0
	5	82.05	0.62	335	67	82	85	1.15	2.5		17.00	99.5
2	7.5	83.62	0.72	336	66	82	86	1.4	3.0		18.33	95.3
	10	85.40	0.71	336	64	82	88	1.4	3.0		18.20	100.3
	12.5	87.17	0.71	336	62	83	90	1.4	3.0		18.20	100.3
3	15	88.92	0.74	336	59	83	92	1.5	4.0		18.58	98.9
	17.5	90.73	0.73	336	58	83	92	1.45	4.0		18.45	100.0
	20	92.53	0.72	336	57	84	94	1.4	4.0		18.33	100.1
4	22.5	94.26	0.71	336	56	85	95	1.4	4.0		18.20	96.6
	25	96.04	0.71	335	55	85	96	1.4	4.0		18.19	99.9
	27.5	97.79	0.7	335	55	86	98	1.4	4.5		18.06	98.1
5	30	99.54	0.69	335	55	87	99	1.4	4.5		17.93	98.5
	32.5	101.33	0.68	337	55	87	100	1.35	5.0		17.82	101.3
	35	103.10	0.71	335	56	88	101	1.4	5.0		18.19	101.0
6	37.5	104.86	0.69	335	56	89	102	1.4	5.0		17.93	98.0
	40	106.60	0.68	336	57	89	103	1.35	5.5		17.81	98.1
	42.5	108.33	0.67	336	57	90	104	1.35	5.5		17.68	98.2
7	45	110.04	0.79	336	57	91	105	1.65	7.0		19.20	97.6
	47.5	111.95	0.83	336	56	91	106	1.75	7.5		19.68	100.3
	50	113.90	0.83	336	56	92	107	1.75	7.5		19.68	99.8
8	52.5	115.86	0.85	336	56	92	108	1.8	8.0		19.91	100.1
	55	117.82	0.85	335	55	93	109	1.8	8.5		19.90	98.9
	57.5	119.80	0.84	335	54	94	109	1.75	8.5		19.78	99.7
9	60	121.76	0.87	335	52	94	110	1.85	9.5		20.13	99.1
	62.5	123.78	0.86	335	51	95	111	1.8	9.5		20.02	100.3
	65	125.82	0.88	335	51	95	111	1.85	10.0		20.25	101.7
10	67.5	127.83	0.87	336	50	96	112	1.8	10.0		20.15	99.1
	70	129.82	0.86	336	51	97	112	1.8	10.5		20.03	98.5
	72.5	131.82	0.85	336	50	97	112	1.8	10.5		19.91	99.5
11	75	133.80	0.85	335	50	97	113	1.8	11.0		19.90	99.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 23, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.61 "Hg	**CWTR (g)**	482.7		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	10.8		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		1.23 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.02
CO2%	10.73
COppm	30.4

Measured H2O
16.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	135.78	0.84	334	50	89	113	1.75	11.0		19.77	98.9
	80	137.75	0.84	334	49	98	113	1.75	11.5		19.77	99.7
12	82.5	139.76	0.83	334	49	98	114	1.75	11.5		19.65	100.9
	85	141.73	0.81	334	49	99	114	1.75	11.5		19.41	99.4
	87.5	143.68	0.8	333	49	99	114	1.7	11.5		19.28	99.5
	90	145.62								1.23		99.5
1	0	146.85	0.52	332	73	93	97	1.05	3.0		15.54	
	2.5	148.43	0.51	333	59	93	98	1	3.0		15.39	102.4
	5	149.96	0.52	333	56	92	99	1	3.0		15.55	100.1
2	7.5	151.49	0.56	333	55	92	100	1.1	3.5		16.13	99.1
	10	153.06	0.58	332	54	93	101	1.2	4.0		16.41	97.9
	12.5	154.71	0.58	332	51	92	102	1.15	4.0		16.41	100.9
3	15	156.35	0.61	332	49	92	103	1.2	4.5		16.83	100.3
	17.5	158.00	0.61	332	48	92	104	1.2	4.5		16.83	98.3
	20	159.65	0.6	333	48	92	105	1.2	5.0		16.70	98.2
4	22.5	161.30	0.59	332	48	93	105	1.2	5.0		16.55	99.0
	25	162.94	0.58	332	48	93	105	1.2	5.0		16.41	99.1
	27.5	164.60	0.59	333	47	93	106	1.2	5.0		16.56	101.2
5	30	166.23	0.58	332	47	93	106	1.2	5.5		16.41	98.5
	32.5	167.86	0.57	332	47	93	107	1.15	5.5		16.27	99.2
	35	169.48	0.59	332	47	94	107	1.2	5.5		16.55	99.4
6	37.5	171.11	0.58	332	47	94	108	1.2	6.0		16.41	98.2
	40	172.76	0.59	333	46	94	108	1.2	6.0		16.56	100.2
	42.5	174.41	0.6	334	46	94	108	1.25	6.0		16.71	99.4
7	45	176.05	0.75	333	46	95	109	1.6	7.5		18.67	98.0
	47.5	177.92	0.77	332	46	95	110	1.65	8.0		18.90	99.8
	50	179.80	0.76	332	46	95	110	1.65	8.0		18.78	98.9
8	52.5	181.69	0.8	331	46	95	111	1.7	8.5		19.26	100.1
	55	183.62	0.81	332	46	96	111	1.7	9.0		19.39	99.5
	57.5	185.55	0.81	332	45	96	112	1.75	9.0		19.39	98.9
9	60	187.52	0.82	332	45	96	112	1.75	9.5		19.51	100.8

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 23, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.61 "Hg	**CWTR (g)**	482.7		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	10.8		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		1.23 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.02
CO2%	10.73
COppm	30.4

Measured H2O
16.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	189.49	0.82	331	46	96	112	1.75	9.5		19.50	100.2
	65	191.43	0.82	332	46	97	112	1.75	10.0		19.51	98.6
10	67.5	193.39	0.82	331	47	97	113	1.75	10.0		19.50	99.6
	70	195.33	0.81	332	47	97	113	1.7	10.0		19.39	98.4
	72.5	197.26	0.82	332	47	97	113	1.75	10.5		19.51	98.6
11	75	199.21	0.8	332	47	97	113	1.7	10.5		19.27	99.0
	77.5	201.15	0.8	331	47	98	114	1.7	11.0		19.26	99.7
	80	203.06	0.8	332	47	98	114	1.7	11.0		19.27	97.9
12	82.5	205.01	0.8	331	47	98	114	1.7	11.0		19.26	100.1
	85	206.94	0.79	331	48	98	114	1.65	11.5		19.14	99.0
	87.5	208.87	0.8	332	48	98	114	1.7	12.0		19.27	99.6
	90	210.79										98.5

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	6 - SVOC
Date:	September 23, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.998
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	3.500 m^3
AVGERGE ISOKINETICITY	98.5 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	168.0 °C
AVERAGE GAS MOISTURE BY VOLUME	15.2 %
AVERAGE GAS VELOCITY	18.15 m/s
BAROMETRIC PRESSURE (Station)	100.373 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	99.750 Kpa
OXYGEN CONCENTRATION	7.99 %
CARBON DIOXIDE CONCENTRATION	10.78 %
CARBON MONOXIDE CONCENTRATION	20.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.82 m^3/s
DRY REF GAS FLOWRATE	15.14 Rm^3/s
DRY ADJ GAS FLOWRATE	19.74 Rm^3/s
WET REF GAS FLOWRATE	17.85 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.500 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 23, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	452.8		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	7.5		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.62 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.99
CO2%	10.78
COppm	20.1

Measured H2O
15.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	11.61	0.6	336	66	83	85	1.2	2.5		16.69	
	2.5	13.23	0.61	337	51	79	81	1.2	2.5		16.84	99.3
	5	14.84	0.6	337	48	79	82	1.2	3.0		16.70	98.6
2	7.5	16.45	0.65	337	48	78	83	1.25	3.5		17.38	99.4
	10	18.09	0.64	336	48	78	85	1.25	4.0		17.24	97.3
	12.5	19.82	0.66	337	48	79	86	1.3	4.0		17.52	103.1
3	15	21.53	0.68	337	48	79	88	1.3	4.0		17.78	100.3
	17.5	23.23	0.68	337	48	79	89	1.35	4.5		17.78	98.0
	20	24.92	0.67	336	48	80	90	1.35	4.5		17.64	97.4
4	22.5	26.60	0.66	336	48	80	91	1.3	4.5		17.51	97.3
	25	28.30	0.65	337	48	81	93	1.3	5.0		17.38	99.1
	27.5	30.00	0.66	336	48	82	94	1.35	5.0		17.51	99.6
5	30	31.69	0.63	337	48	82	94	1.25	5.0		17.11	98.1
	32.5	33.37	0.63	336	48	83	96	1.25	5.0		17.10	99.8
	35	35.05	0.63	336	48	83	97	1.25	5.5		17.10	99.5
6	37.5	36.69	0.61	336	48	84	98	1.2	5.5		16.83	97.0
	40	38.34	0.61	336	47	85	99	1.2	5.5		16.83	99.0
	42.5	40.00	0.61	336	47	85	100	1.2	6.0		16.83	99.4
7	45	41.65	0.74	335	47	86	101	1.5	7.0		18.52	98.7
	47.5	43.45	0.75	335	47	87	102	1.55	7.5		18.65	97.6
	50	45.30	0.75	334	46	87	103	1.55	7.5		18.64	99.5
8	52.5	47.12	0.81	334	46	88	104	1.7	8.5		19.37	97.7
	55	49.04	0.82	334	45	89	105	1.7	8.5		19.49	99.1
	57.5	50.96	0.83	334	45	89	106	1.75	9.0		19.61	98.3
9	60	52.91	0.84	334	45	90	107	1.75	9.0		19.72	99.2
	62.5	54.84	0.84	335	45	90	107	1.75	10.0		19.74	97.4
	65	56.79	0.85	335	45	91	108	1.8	10.5		19.85	98.4
10	67.5	58.77	0.83	335	46	92	109	1.75	10.0		19.62	99.2
	70	60.73	0.82	334	46	92	110	1.7	10.0		19.49	99.2
	72.5	62.67	0.85	334	46	93	110	1.8	10.5		19.84	98.6
11	75	64.65	0.8	333	46	93	111	1.7	10.5		19.24	98.8

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 23, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	452.8		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	7.5		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.62 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.99
CO2%	10.78
COppm	20.1

Measured H2O
15.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	66.60	0.81	332	46	94	111	1.65	10.5		19.34	100.1
	80	68.51	0.8	332	46	94	112	1.65	10.5		19.22	97.3
12	82.5	70.40	0.8	332	46	94	112	1.65	11.0		19.22	96.8
	85	72.31	0.79	332	46	95	113	1.65	11.0		19.10	97.8
	87.5	74.21	0.8	332	46	95	113	1.65	11.0		19.22	97.7
	90	76.12								0.62		97.6
1	0	76.74	0.58	332	72	90	93	1.15	3.0		16.37	
	2.5	78.37	0.58	337	56	89	94	1	3.0		16.42	100.0
	5	79.95	0.58	336	52	89	96	1.15	3.0		16.41	97.2
2	7.5	81.56	0.64	336	50	89	97	1.3	4.0		17.24	98.8
	10	83.27	0.66	337	48	89	98	1.35	4.5		17.52	99.8
	12.5	84.98	0.68	338	48	89	99	1.4	5.0		17.79	98.3
3	15	86.70	0.67	336	48	89	101	1.4	5.0		17.64	97.4
	17.5	88.45	0.69	336	48	89	101	1.4	5.0		17.90	99.5
	20	90.21	0.71	338	48	90	102	1.45	5.5		18.18	98.6
4	22.5	92.03	0.65	337	47	90	103	1.3	5.5		17.38	100.5
	25	93.76	0.66	336	47	90	104	1.3	5.5		17.51	99.7
	27.5	95.47	0.68	338	47	91	104	1.35	6.0		17.79	97.6
5	30	97.20	0.65	337	47	91	103	1.3	6.0		17.38	97.3
	32.5	98.92	0.62	336	47	91	106	1.25	6.0		16.97	99.0
	35	100.60	0.65	336	46	91	106	1.3	6.5		17.37	98.7
6	37.5	102.30	0.61	336	46	92	107	1.25	6.0		16.83	97.5
	40	103.95	0.61	335	46	92	107	1.25	6.0		16.82	97.5
	42.5	105.64	0.62	336	46	93	108	1.25	6.0		16.97	99.8
7	45	107.32	0.79	335	46	93	109	1.7	8.5		19.14	98.3
	47.5	109.26	0.77	334	45	94	110	1.6	8.5		18.88	100.5
	50	111.18	0.77	333	45	94	111	1.55	8.5		18.87	100.5
8	52.5	113.06	0.8	332	45	95	112	1.65	9.0		19.22	98.3
	55	114.98	0.8	332	44	95	112	1.65	9.0		19.22	98.2
	57.5	116.90	0.8	332	44	95	113	1.65	9.0		19.22	98.2
9	60	118.80	0.83	333	44	96	113	1.7	9.5		19.59	97.1

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 23, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.998	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	452.8		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	7.5		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.62 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.99
CO2%	10.78
COppm	20.1

Measured H2O
15.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	120.73	0.82	332	44	96	114	1.7	10.0		19.46	96.8
	65	122.67	0.8	331	44	97	114	1.65	10.0		19.21	97.8
10	67.5	124.60	0.77	332	44	97	115	1.6	10.0		18.86	98.3
	70	126.48	0.77	331	44	98	115	1.6	10.5		18.85	97.6
	72.5	128.37	0.77	332	44	98	116	1.6	10.5		18.86	98.0
11	75	130.24	0.75	330	44	98	116	1.55	10.5		18.59	96.9
	77.5	132.11	0.73	329	44	98	116	1.5	10.5		18.33	98.1
	80	133.96	0.72	328	44	98	116	1.5	10.5		18.19	98.3
12	82.5	135.79	0.71	326	44	99	117	1.45	10.5		18.04	97.8
	85	137.59	0.72	327	44	99	117	1.5	11.0		18.18	96.6
	87.5	139.42	0.72	329	44	99	117	1.5	11.0		18.20	97.6
	90	141.26										98.2

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Quench Inlet Unit #2
Test No.:	7 - SVOC
Date:	September 27, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.979
NOZZLE DIAMETER	6.39 mm
DRY REF GAS VOLUME SAMPLED	3.559 m^3
AVGERGE ISOKINETICITY	99.5 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	167.0 °C
AVERAGE GAS MOISTURE BY VOLUME	15.7 %
AVERAGE GAS VELOCITY	18.59 m/s
BAROMETRIC PRESSURE (Station)	99.120 Kpa
STATIC PRESSURE	-0.672 Kpa
ABSOLUTE GAS PRESSURE	98.447 Kpa
OXYGEN CONCENTRATION	7.88 %
CARBON DIOXIDE CONCENTRATION	10.93 %
CARBON MONOXIDE CONCENTRATION	14.0 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.46 m^3/s
DRY REF GAS FLOWRATE	15.23 Rm^3/s
DRY ADJ GAS FLOWRATE	20.03 Rm^3/s
WET REF GAS FLOWRATE	18.08 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.559 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 27, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.27 "Hg	**CWTR (g)**	477.1		
Static Pressure	-2.700 "H_2O	**WCBDA (g)**	10.7		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		2.09 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.88
CO2%	10.93
COppm	14.0

Measured H2O
15.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	0.45	0.6	335	62	77	78	1.35	6.0		16.80	
	2.5	2.12	0.6	335	49	76	81	1.35	6.0		16.80	101.5
	5	3.73	0.59	335	46	76	83	1.35	6.5		16.66	97.7
2	7.5	5.35	0.61	335	45	77	86	1.4	7.0		16.94	99.0
	10	7.02	0.61	335	44	77	88	1.4	7.0		16.94	100.0
	12.5	8.68	0.61	334	44	77	89	1.4	7.0		16.93	99.2
3	15	10.35	0.66	335	44	78	91	1.5	8.0		17.63	99.6
	17.5	12.09	0.67	335	43	78	93	1.55	8.0		17.76	99.6
	20	13.86	0.67	335	43	79	95	1.55	8.0		17.76	100.4
4	22.5	15.62	0.67	335	43	80	96	1.55	8.5		17.76	99.6
	25	17.38	0.66	335	42	80	97	1.55	8.5		17.63	99.4
	27.5	19.14	0.67	335	42	81	98	1.55	8.5		17.76	100.0
5	30	20.89	0.66	335	43	82	99	1.6	9.0		17.63	98.5
	32.5	22.69	0.63	335	43	83	101	1.5	9.0		17.22	101.9
	35	24.46	0.65	335	43	83	101	1.55	9.0		17.49	102.3
6	37.5	26.22	0.64	334	43	84	102	1.55	9.0		17.35	100.2
	40	27.97	0.64	334	43	84	103	1.55	9.0		17.35	100.1
	42.5	29.70	0.63	334	43	85	103	1.5	9.0		17.21	98.9
7	45	31.44	0.83	333	43	86	104	1.95	11.0		19.74	100.1
	47.5	33.40	0.82	333	43	86	106	1.95	11.5		19.62	98.2
	50	35.40	0.82	333	43	87	107	1.95	11.5		19.62	100.6
8	52.5	37.41	0.87	332	43	87	108	2.05	12.5		20.20	100.9
	55	39.47	0.87	332	43	88	109	2.05	12.5		20.20	100.3
	57.5	41.53	0.87	332	43	88	109	2.05	13.0		20.20	100.1
9	60	43.58	0.9	331	43	89	110	2.1	14.0		20.53	99.6
	62.5	45.68	0.9	331	43	89	111	2.1	14.0		20.53	100.1
	65	47.76	0.9	331	43	90	111	2.1	14.0		20.53	99.0
10	67.5	49.82	0.87	331	43	90	112	2.05	14.5		20.18	98.0
	70	51.89	0.87	331	43	91	112	2.05	14.5		20.18	100.1
	72.5	53.91	0.86	331	43	91	112	2.05	14.5		20.07	97.6
11	75	55.98	0.76	332	44	91	112	1.85	14.5		18.88	100.6

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 27, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.27 "Hg	**CWTR (g)**	477.1		
Static Pressure	-2.700 "H_2O	**WCBDA (g)**	10.7		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		2.09 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.88
CO2%	10.93
COppm	14.0

Measured H2O
15.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	57.93	0.77	332	44	91	112	1.85	14.5		19.00	100.8
	80	59.86	0.76	332	44	92	113	1.85	14.5		18.88	99.1
12	82.5	61.76	0.76	331	44	92	113	1.85	14.5		18.87	98.0
	85	63.67	0.77	331	44	92	113	1.85	15.0		18.99	98.5
	87.5	65.62	0.77	331	44	93	114	1.85	15.0		18.99	99.9
	90	67.56								2.09		99.2
1	0	69.65	0.67	332	72	85	87	1.55	7.5		17.72	
	2.5	71.41	0.68	333	56	84	89	1.55	7.5		17.87	99.6
	5	73.13	0.67	333	51	84	92	1.55	7.5		17.74	96.5
2	7.5	74.86	0.7	333	50	84	94	1.65	9.0		18.13	97.6
	10	76.68	0.7	333	49	84	96	1.65	9.0		18.13	100.3
	12.5	78.51	0.7	333	48	84	97	1.65	9.0		18.13	100.6
3	15	80.31	0.74	333	48	84	98	1.75	9.5		18.64	98.9
	17.5	82.15	0.74	334	47	85	100	1.75	9.5		18.65	98.2
	20	84.02	0.73	333	47	85	101	1.75	10.0		18.51	99.6
4	22.5	85.89	0.7	333	47	85	102	1.65	10.0		18.13	100.2
	25	87.72	0.71	333	47	86	103	1.65	10.0		18.26	100.0
	27.5	89.55	0.71	333	47	86	104	1.65	10.0		18.26	99.1
5	30	91.38	0.68	333	46	87	105	1.55	10.5		17.87	99.0
	32.5	93.20	0.68	333	45	88	106	1.55	10.5		17.87	100.4
	35	95.00	0.67	333	44	88	107	1.55	10.5		17.74	99.1
6	37.5	96.79	0.66	333	44	89	107	1.6	11.0		17.60	99.2
	40	98.58	0.66	333	44	89	108	1.55	11.0		17.60	99.9
	42.5	100.37	0.66	332	44	89	108	1.55	11.0		17.59	99.8
7	45	102.16	0.78	331	43	90	109	1.85	12.0		19.11	99.7
	47.5	104.08	0.79	331	43	90	110	1.9	12.5		19.23	98.2
	50	106.05	0.78	331	43	91	111	1.9	12.5		19.11	100.1
8	52.5	108.01	0.82	331	43	91	112	1.95	13.0		19.60	100.0
	55	110.03	0.83	331	43	91	112	1.95	13.0		19.72	100.5
	57.5	112.03	0.83	331	43	92	112	1.95	13.0		19.72	98.9
9	60	114.03	0.84	331	43	92	113	2	14.0		19.83	98.8

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	Quench Inlet Unit #2
Date:	September 27, 2016	**Operator:**	TS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.979	**Probe (mg)**	0		
Barometric Pressure	29.27 "Hg	**CWTR (g)**	477.1		
Static Pressure	-2.700 "H_2O	**WCBDA (g)**	10.7		
Nozzle	0.2516 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		2.09 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.88
CO2%	10.93
COppm	14.0

Measured H2O
15.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	116.04	0.84	332	44	93	113	2	14.5		19.85	**98.6**
	65	118.06	0.84	332	44	93	114	2	14.5		19.85	**99.1**
10	67.5	120.08	0.81	331	44	93	114	1.95	14.5		19.48	**99.0**
	70	122.09	0.82	331	45	94	114	1.95	14.5		19.60	**100.2**
	72.5	124.08	0.81	330	45	94	115	1.95	15.0		19.46	**98.5**
11	75	126.08	0.75	330	45	94	115	1.85	14.5		18.73	**99.5**
	77.5	128.05	0.74	330	45	94	115	1.8	14.5		18.60	**101.8**
	80	129.98	0.75	330	45	95	115	1.8	14.5		18.73	**100.4**
12	82.5	131.89	0.76	330	46	95	115	1.85	15.0		18.85	**98.6**
	85	133.82	0.76	331	46	95	115	1.85	15.0		18.87	**99.0**
	87.5	135.74	0.75	330	46	95	116	1.85	15.0		18.73	**98.5**
	90	137.65										**98.5**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice
Test Location:	Quench Inlet Unit 2
Test No.:	8 - SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.846
DGM CORRECTION FACTOR	0.978
NOZZLE DIAMETER	5.98 mm
DRY REF GAS VOLUME SAMPLED	3.004 m^3
AVGERGE ISOKINETICITY	101.8 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	168.0 °C
AVERAGE GAS MOISTURE BY VOLUME	17.8 %
AVERAGE GAS VELOCITY	17.65 m/s
BAROMETRIC PRESSURE (Station)	100.982 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	100.360 Kpa
OXYGEN CONCENTRATION	7.2 %
CARBON DIOXIDE CONCENTRATION	11.15 %
CARBON MONOXIDE CONCENTRATION	15.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.09 m^3/s
DRY REF GAS FLOWRATE	14.36 Rm^3/s
DRY ADJ GAS FLOWRATE	19.87 Rm^3/s
WET REF GAS FLOWRATE	17.47 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.004 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice
Test No.:	8 - SVOC	**Test Location:**	Quench Inlet Unit 2
Date:	November 4, 2016	**Operator:**	TT

Pitot Factor	0.846	**Filter (mg)**	0		
DGMCF	0.978	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	463.7		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	13.5		
Nozzle	0.2355 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.33 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.2
CO2%	11.15
COppm	15.4

Measured H2O
17.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	31.74	0.47	332	69	73	74	0.6	2.0		14.73	
	2.5	32.89	0.47	333	59	73	74	0.9	4.0		14.74	**93.3**
	5	34.15	0.46	333	56	73	75	0.9	4.0		14.58	**102.4**
2	7.5	35.46	0.56	333	54	73	76	0.95	4.0		16.09	**107.5**
	10	36.83	0.55	332	53	73	77	0.95	4.5		15.94	**101.8**
	12.5	38.20	0.57	332	52	74	77	1	5.0		16.22	**102.6**
3	15	39.60	0.71	332	51	74	78	1.1	6.0		18.11	**102.9**
	17.5	41.13	0.7	332	51	74	79	1.1	6.0		17.98	**100.7**
	20	42.65	0.71	333	50	74	79	1.1	6.0		18.12	**100.6**
4	22.5	44.19	0.7	335	50	75	80	1.1	6.5		18.01	**101.3**
	25	45.75	0.71	335	49	75	81	1.2	7.0		18.14	**103.3**
	27.5	47.30	0.71	336	49	76	82	1.2	7.0		18.15	**101.8**
5	30	48.85	0.72	335	49	76	82	1.2	7.0		18.27	**101.7**
	32.5	50.45	0.71	336	49	77	83	1.2	7.0		18.15	**104.2**
	35	51.99	0.72	336	49	77	83	1.25	7.5		18.28	**100.9**
6	37.5	53.57	0.72	336	50	77	84	1.25	7.5		18.28	**102.8**
	40	55.15	0.72	336	49	78	85	1.25	7.5		18.28	**102.7**
	42.5	56.73	0.71	336	49	78	85	1.25	7.5		18.15	**102.5**
7	45	58.29	0.78	335	49	79	85	1.3	9.0		19.01	**101.9**
	47.5	59.94	0.78	335	49	79	86	1.3	9.0		19.01	**102.7**
	50	61.60	0.8	335	49	79	86	1.35	9.5		19.26	**103.2**
8	52.5	63.26	0.81	335	49	80	87	1.35	9.5		19.38	**101.9**
	55	64.96	0.84	335	49	80	87	1.35	10.0		19.73	**103.5**
	57.5	66.65	0.85	336	49	80	87	1.4	10.5		19.86	**101.1**
9	60	68.34	0.84	336	49	80	87	1.35	10.5		19.74	**100.6**
	62.5	70.03	0.84	336	49	80	87	1.35	10.5		19.74	**101.1**
	65	71.74	0.84	336	49	81	88	1.35	10.5		19.74	**102.3**
10	67.5	73.42	0.66	335	49	81	88	1.1	9.5		17.49	**100.4**
	70	74.95	0.67	334	50	81	88	1.1	9.0		17.61	**103.0**
	72.5	76.45	0.65	334	50	81	88	1.1	9.0		17.35	**100.1**
11	75	77.95	0.61	334	50	81	88	1.1	9.0		16.80	**101.7**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice
Test No.:	8 - SVOC	**Test Location:**	Quench Inlet Unit 2
Date:	November 4, 2016	**Operator:**	TT

Pitot Factor	0.846	**Filter (mg)**	0		
DGMCF	0.978	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	463.7		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	13.5		
Nozzle	0.2355 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.33 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.2
CO2%	11.15
COppm	15.4

Measured H2O
17.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	79.44	0.61	333	50	81	88	1.05	9.0		16.79	**104.3**
	80	80.89	0.6	333	50	81	89	1.05	9.0		16.66	**101.4**
12	82.5	82.34	0.59	331	50	82	89	1.05	9.0		16.50	**102.1**
	85	83.77	0.6	332	51	82	89	1.05	9.0		16.64	**101.3**
	87.5	85.22	0.61	332	51	82	89	1.1	9.5		16.78	**102.0**
	90	86.69								0.33		**102.5**
1	0	87.02	0.51	334	68	80	82	0.75	3.0		15.37	
	2.5	88.21	0.51	334	53	78	79	0.8	4.0		15.37	**91.6**
	5	89.47	0.51	334	50	78	80	0.9	4.5		15.37	**97.4**
2	7.5	90.78	0.54	335	48	78	81	1	5.0		15.82	**101.2**
	10	92.17	0.56	335	47	78	81	1.05	6.0		16.11	**104.4**
	12.5	93.63	0.54	335	47	78	82	1	6.0		15.82	**107.7**
3	15	95.05	0.57	334	47	78	83	0.95	5.0		16.24	**106.5**
	17.5	96.48	0.57	334	47	78	84	0.95	5.0		16.24	**104.2**
	20	97.82	0.55	335	47	78	84	1	5.5		15.97	**97.6**
4	22.5	99.21	0.58	335	47	78	84	1.05	6.5		16.40	**103.1**
	25	100.63	0.56	335	47	78	85	1	6.0		16.11	**102.6**
	27.5	102.05	0.57	335	47	79	85	0.95	6.0		16.25	**104.3**
5	30	103.44	0.55	335	47	79	85	0.95	6.0		15.97	**101.1**
	32.5	104.81	0.55	334	47	79	86	0.95	6.0		15.96	**101.4**
	35	106.16	0.54	334	47	79	86	0.95	6.0		15.81	**99.8**
6	37.5	107.52	0.55	335	48	79	86	0.95	6.0		15.97	**101.5**
	40	108.90	0.56	335	47	80	86	1	6.5		16.11	**102.1**
	42.5	110.31	0.56	335	48	80	87	1	6.5		16.11	**103.3**
7	45	111.70	0.75	334	48	80	87	1.25	9.0		18.63	**101.7**
	47.5	113.30	0.74	334	48	80	87	1.2	9.0		18.51	**101.2**
	50	114.90	0.74	333	48	80	88	1.2	9.0		18.50	**101.9**
8	52.5	116.50	0.79	333	48	80	88	1.35	10.0		19.11	**101.7**
	55	118.18	0.79	334	48	81	88	1.35	10.5		19.12	**103.4**
	57.5	119.86	0.8	334	48	81	88	1.35	11.0		19.24	**103.4**
9	60	121.53	0.81	334	48	81	88	1.35	11.0		19.36	**102.1**

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice
Test No.:	8 - SVOC	**Test Location:**	Quench Inlet Unit 2
Date:	November 4, 2016	**Operator:**	TT

Pitot Factor	0.846	**Filter (mg)**	0		
DGMCF	0.978	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	463.7		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	13.5		
Nozzle	0.2355 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.33 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.2
CO2%	11.15
COppm	15.4

Measured H2O
17.8 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	123.19	0.81	334	48	81	88	1.35	11.0		19.36	**100.9**
	65	124.83	0.83	334	49	81	88	1.4	12.0		19.60	**99.6**
10	67.5	126.56	0.83	334	49	81	88	1.4	13.0		19.60	**103.8**
	70	128.26	0.84	334	49	81	88	1.4	13.0		19.72	**102.0**
	72.5	129.95	0.85	335	49	81	89	1.45	14.0		19.85	**100.8**
11	75	131.70	0.83	335	49	81	89	1.45	14.0		19.61	**103.8**
	77.5	133.42	0.79	336	49	81	89	1.35	14.0		19.15	**103.2**
	80	135.09	0.8	336	50	81	89	1.35	13.0		19.27	**102.8**
12	82.5	136.74	0.78	335	50	82	89	1.25	13.0		19.01	**100.9**
	85	138.38	0.78	335	50	82	89	1.25	13.0		19.01	**101.4**
	87.5	140.00	0.79	334	50	82	89	1.2	13.0		19.12	**100.2**
	90	141.51										**92.7**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice
Test Location:	Quench Inlet Unit 2
Test No.:	9 - SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.846
DGM CORRECTION FACTOR	0.978
NOZZLE DIAMETER	5.98 mm
DRY REF GAS VOLUME SAMPLED	3.022 m^3
AVGERGE ISOKINETICITY	99.8 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	169.6 °C
AVERAGE GAS MOISTURE BY VOLUME	15.9 %
AVERAGE GAS VELOCITY	17.80 m/s
BAROMETRIC PRESSURE (Station)	100.779 Kpa
STATIC PRESSURE	-0.622 Kpa
ABSOLUTE GAS PRESSURE	100.156 Kpa
OXYGEN CONCENTRATION	7.51 %
CARBON DIOXIDE CONCENTRATION	10.77 %
CARBON MONOXIDE CONCENTRATION	16.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.30 m^3/s
DRY REF GAS FLOWRATE	14.72 Rm^3/s
DRY ADJ GAS FLOWRATE	19.91 Rm^3/s
WET REF GAS FLOWRATE	17.51 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		3.022 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice
Test No.:	9 - SVOC	**Test Location:**	Quench Inlet Unit 2
Date:	November 4, 2016	**Operator:**	TT

Pitot Factor	0.846	**Filter (mg)**	0		
DGMCF	0.978	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	408.6		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	12.1		
Nozzle	0.2355 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.28 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.51
CO2%	10.77
COppm	16.1

Measured H2O
15.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	41.95	0.64	336	75	77	78	1	3.0		17.20	
	2.5	43.40	0.62	337	59	76	77	0.95	3.0		16.94	98.5
	5	44.77	0.61	337	56	76	78	1	4.0		16.80	94.7
2	7.5	46.18	0.72	338	55	77	79	1.2	5.0		18.26	98.2
	10	47.75	0.71	338	53	77	80	1.2	5.0		18.13	100.6
	12.5	49.32	0.73	338	52	77	81	1.25	5.5		18.39	101.2
3	15	50.90	0.69	339	52	77	82	1.15	5.5		17.89	100.4
	17.5	52.44	0.76	339	51	77	83	1.3	6.0		18.77	100.6
	20	54.06	0.77	339	51	78	83	1.3	6.5		18.90	100.7
4	22.5	55.72	0.79	339	50	78	84	1.3	6.5		19.14	102.5
	25	57.37	0.78	339	50	78	85	1.3	6.5		19.02	100.5
	27.5	59.00	0.77	338	50	79	85	1.3	6.5		18.88	99.8
5	30	60.63	0.79	339	50	79	86	1.3	6.5		19.14	100.3
	32.5	62.28	0.79	339	50	79	86	1.3	7.0		19.14	100.2
	35	63.92	0.76	339	50	80	87	1.3	7.0		18.77	99.6
6	37.5	65.55	0.74	339	50	80	87	1.25	7.0		18.52	100.7
	40	67.15	0.74	338	50	81	88	1.25	7.0		18.51	100.2
	42.5	68.74	0.72	337	51	81	88	1.2	7.0		18.25	99.3
7	45	70.30	0.83	338	51	81	88	1.4	8.5		19.61	98.7
	47.5	72.01	0.82	338	51	82	89	1.4	8.5		19.49	100.9
	50	73.73	0.84	338	51	82	89	1.4	9.0		19.72	101.9
8	52.5	75.44	0.85	338	51	82	90	1.4	9.0		19.84	100.1
	55	77.15	0.81	337	51	83	90	1.4	9.0		19.36	99.4
	57.5	78.85	0.79	337	51	83	91	1.4	9.0		19.12	101.1
9	60	80.52	0.74	337	52	83	91	1.25	8.5		18.50	100.5
	62.5	82.13	0.72	337	52	84	91	1.25	8.5		18.25	100.0
	65	83.72	0.74	336	52	84	91	1.25	8.5		18.49	100.1
10	67.5	85.32	0.71	337	52	84	92	1.2	9.0		18.12	99.3
	70	86.88	0.68	336	53	84	92	1.15	9.0		17.72	98.8
	72.5	88.44	0.69	336	53	84	92	1.15	9.0		17.85	100.8
11	75	89.98	0.69	336	53	84	92	1.15	9.0		17.85	98.8

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice
Test No.:	9 - SVOC	**Test Location:**	Quench Inlet Unit 2
Date:	November 4, 2016	**Operator:**	TT

Pitot Factor	0.846	**Filter (mg)**	0		
DGMCF	0.978	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	408.6		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	12.1		
Nozzle	0.2355 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.28 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.51
CO2%	10.77
COppm	16.1

Measured H2O
15.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	77.5	91.52	0.61	333	53	84	92	1.05	8.0		16.76	98.8
	80	92.98	0.64	335	54	84	92	1.05	8.0		17.18	99.4
12	82.5	94.44	0.63	335	54	84	92	1.1	9.0		17.05	97.2
	85	95.93	0.57	335	54	85	92	0.95	8.0		16.22	100.0
	87.5	97.33	0.57	336	54	85	92	0.95	8.0		16.23	98.6
	90	98.73								0.28		98.7
1	0	99.01	0.54	337	72	82	84	0.9	4.0		15.80	
	2.5	100.35	0.56	337	58	81	82	0.9	4.0		16.09	98.1
	5	101.60	0.56	337	54	81	83	1	4.5		16.09	90.1
2	7.5	103.01	0.58	338	52	81	84	1.05	5.0		16.39	101.6
	10	104.49	0.61	338	51	81	85	1.05	5.0		16.81	104.7
	12.5	105.93	0.6	338	50	81	85	1.05	5.0		16.67	99.3
3	15	107.37	0.61	338	49	81	86	1.05	5.0		16.81	100.1
	17.5	108.81	0.61	338	49	81	86	1.05	5.0		16.81	99.2
	20	110.26	0.63	338	49	81	87	1.05	5.5		17.08	99.9
4	22.5	111.74	0.61	338	49	81	87	1.05	5.5		16.81	100.2
	25	113.20	0.61	339	49	81	87	1.05	5.5		16.82	100.5
	27.5	114.67	0.61	339	49	81	88	1.05	5.5		16.82	101.2
5	30	116.13	0.59	339	49	82	88	1	5.5		16.54	100.4
	32.5	117.53	0.57	338	49	82	88	1.05	5.5		16.25	97.8
	35	118.94	0.57	338	49	82	89	1.05	5.5		16.25	100.2
6	37.5	120.36	0.57	338	49	82	89	1.05	6.0		16.25	100.8
	40	121.77	0.6	338	49	82	89	1.05	6.0		16.67	100.1
	42.5	123.25	0.57	338	49	82	89	1.05	6.5		16.25	102.4
7	45	124.71	0.77	336	49	83	90	1.3	8.0		18.86	103.7
	47.5	126.35	0.78	336	49	83	90	1.3	8.0		18.98	99.9
	50	128.00	0.77	336	49	83	90	1.3	8.0		18.86	99.9
8	52.5	129.65	0.79	336	49	83	90	1.35	9.0		19.10	100.5
	55	131.33	0.8	337	49	83	91	1.35	9.0		19.24	101.1
	57.5	133.01	0.79	338	49	83	91	1.35	9.0		19.13	100.4
9	60	134.68	0.79	338	49	84	91	1.35	9.0		19.13	100.5

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice
Test No.:	9 - SVOC	**Test Location:**	Quench Inlet Unit 2
Date:	November 4, 2016	**Operator:**	TT

Pitot Factor	0.846	**Filter (mg)**	0		
DGMCF	0.978	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	408.6		
Static Pressure	-2.500 "H_2O	**WCBDA (g)**	12.1		
Nozzle	0.2355 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.28 ft^3	
Length	0.000 ft	**Reading Interval**		2.5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	7.51
CO2%	10.77
COppm	16.1

Measured H2O
15.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	62.5	136.37	0.75	338	49	84	91	1.3	9.0		18.64	**101.6**
	65	138.02	0.77	337	50	84	91	1.3	9.0		18.87	**101.8**
10	67.5	139.68	0.74	337	50	84	91	1.3	9.5		18.50	**101.0**
	70	141.31	0.77	336	50	84	91	1.3	9.5		18.86	**101.2**
	72.5	142.93	0.71	337	50	84	91	1.2	9.0		18.12	**98.5**
11	75	144.48	0.63	336	50	84	91	1	8.0		17.06	**98.2**
	77.5	145.92	0.65	335	50	84	91	1.1	9.0		17.32	**96.8**
	80	147.40	0.66	335	51	84	91	1.2	9.5		17.45	**97.9**
12	82.5	148.95	0.55	336	51	84	91	0.95	8.5		15.94	**101.7**
	85	150.35	0.57	335	51	84	91	0.95	8.5		16.22	**100.7**
	87.5	151.72	0.56	336	51	84	91	0.95	8.5		16.08	**96.7**
	90	153.11										**99.0**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	1 - SVOC
Date:	September 19, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.582 m^3
AVGERGE ISOKINETICITY	98.0 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	136.6 °C
AVERAGE GAS MOISTURE BY VOLUME	16.5 %
AVERAGE GAS VELOCITY	18.22 m/s
BAROMETRIC PRESSURE (Station)	99.966 Kpa
STATIC PRESSURE	-2.614 Kpa
ABSOLUTE GAS PRESSURE	97.352 Kpa
OXYGEN CONCENTRATION	8.4 %
CARBON DIOXIDE CONCENTRATION	10.97 %
CARBON MONOXIDE CONCENTRATION	16.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.92 m^3/s
DRY REF GAS FLOWRATE	15.70 Rm^3/s
DRY ADJ GAS FLOWRATE	19.83 Rm^3/s
WET REF GAS FLOWRATE	18.82 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.582 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 19, 2016	**Operator:**	JG

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.52 "Hg	**CWTR (g)**	648.5		
Static Pressure	-10.500 "H_2O	**WCBDA (g)**	19		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.27 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.4
CO2%	10.97
COppm	16.4

Measured H2O
16.5 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	81.47	0.95	278	64	78	77	2	5.0		20.37	
	5	84.26	0.95	279	47	75	77	2	5.0		20.38	71.3
2	10	88.12	0.92	279	47	76	77	2	5.0		20.06	99.0
	15	91.93	0.96	280	47	77	77	2	5.0		20.51	99.2
3	20	95.78	0.88	279	47	77	77	1.9	6.0		19.62	98.1
	25	99.50	0.88	279	48	79	77	1.9	6.0		19.62	98.9
4	30	103.20	0.83	279	48	79	77	1.8	6.0		19.05	98.2
	35	106.83	0.83	279	48	80	78	1.8	6.0		19.05	99.2
5	40	110.43	0.76	279	48	81	78	1.65	5.5		18.23	98.2
	45	113.97	0.79	279	47	81	79	1.7	5.5		18.59	100.8
6	50	117.56	0.72	279	46	82	79	1.5	5.0		17.75	100.2
	55	120.88	0.71	278	47	82	79	1.6	5.0		17.61	96.9
7	60	124.25	0.73	278	47	82	80	1.6	5.0		17.86	99.0
	65	127.60	0.71	278	48	83	80	1.5	5.0		17.61	97.0
8	70	130.95	0.74	278	48	83	80	1.6	5.0		17.98	98.2
	75	134.38	0.78	278	48	83	80	1.7	6.0		18.46	98.5
9	80	137.86	0.75	279	48	84	80	1.7	6.0		18.11	97.4
	85	141.34	0.74	278	48	83	80	1.7	6.0		17.98	99.3
10	90	144.82	0.75	278	48	83	81	1.7	6.0		18.10	100.0
	95	148.30	0.73	278	49	84	81	1.6	6.0		17.86	99.2
11	100	151.46	0.74	279	62	83	81	1.6	6.0		17.99	91.2
	105	154.80	0.77	279	49	83	82	1.7	6.0		18.35	95.9
12	110	158.25	0.75	280	46	82	82	1.65	6.0		18.12	97.1
	115	161.67	0.75	281	46	83	82	1.65	6.0		18.14	97.6
	120	165.19								0.27		100.5
1	0	165.46	0.88	279	71	83	81	1.9	6.0		19.62	
	5	169.00	0.86	278	48	82	82	1.9	7.0		19.38	93.3
2	10	172.70	0.86	277	48	82	82	1.9	7.0		19.37	98.6
	15	176.35	0.86	278	48	82	82	1.9	7.0		19.38	97.2
3	20	180.10	0.83	278	48	82	82	1.9	7.0		19.04	99.9

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	1 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 19, 2016	**Operator:**	JG

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.52 "Hg	**CWTR (g)**	648.5		
Static Pressure	-10.500 "H_2O	**WCBDA (g)**	19		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.27 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.4
CO2%	10.97
COppm	16.4

Measured H2O
16.5 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	183.82	0.84	278	53	82	81	1.9	7.0		19.16	100.9
4	30	187.52	0.78	278	54	82	82	1.8	7.0		18.46	99.8
	35	191.17	0.76	279	50	83	82	1.6	7.0		18.23	102.1
5	40	194.68	0.73	278	50	82	82	1.6	7.0		17.86	99.4
	45	198.21	0.72	278	49	83	82	1.5	6.0		17.73	102.0
6	50	201.55	0.7	278	49	83	82	1.5	6.0		17.49	97.1
	55	204.84	0.7	279	50	85	82	1.5	6.0		17.50	97.0
7	60	208.14	0.7	279	50	84	82	1.5	6.0		17.50	97.1
	65	211.48	0.68	279	50	84	82	1.5	6.0		17.25	98.4
8	70	214.73	0.7	279	48	86	83	1.5	6.0		17.50	97.2
	75	218.06	0.7	279	48	85	83	1.5	6.0		17.50	97.8
9	80	221.28	0.72	278	48	85	83	1.6	6.0		17.73	94.7
	85	224.69	0.69	279	47	84	83	1.6	6.5		17.37	98.8
10	90	228.05	0.68	279	47	84	83	1.6	6.5		17.25	99.6
	95	231.30	0.68	279	48	84	83	1.6	6.5		17.25	97.1
11	100	234.84	0.6	270	48	84	83	1.3	6.0		16.10	105.7
	105	238.05	0.6	270	49	85	83	1.3	6.0		16.10	101.4
12	110	241.17	0.6	270	49	85	83	1.3	6.0		16.10	98.5
	115	244.34	0.6	270	50	85	83	1.3	6.0		16.10	100.0
	120	247.49										99.4

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	2 - SVOC
Date:	September 20, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.860 m^3
AVGERGE ISOKINETICITY	102.2 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	136.2 °C
AVERAGE GAS MOISTURE BY VOLUME	17.3 %
AVERAGE GAS VELOCITY	18.58 m/s
BAROMETRIC PRESSURE (Station)	100.237 Kpa
STATIC PRESSURE	-2.490 Kpa
ABSOLUTE GAS PRESSURE	97.747 Kpa
OXYGEN CONCENTRATION	8.48 %
CARBON DIOXIDE CONCENTRATION	11.03 %
CARBON MONOXIDE CONCENTRATION	12.0 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.45 m^3/s
DRY REF GAS FLOWRATE	15.95 Rm^3/s
DRY ADJ GAS FLOWRATE	20.01 Rm^3/s
WET REF GAS FLOWRATE	19.29 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.860 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 20, 2016	**Operator:**	JG

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.6 "Hg	**CWTR (g)**	646.3		
Static Pressure	-10.000 "H_2O	**WCBDA (g)**	100.6		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.4 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.48
CO2%	11.03
COppm	12.0

Measured H2O
17.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	48.06	0.95	277	76	78	77	2.1	6.0		20.35	
	5	51.87	0.94	277	51	78	77	2.2	7.0		20.24	98.2
2	10	55.90	0.92	277	49	78	77	2.1	7.0		20.02	104.4
	15	59.84	0.9	277	49	77	77	2	7.0		19.80	103.2
3	20	63.72	0.9	276	49	78	77	2	7.0		19.79	102.8
	25	67.55	0.94	276	46	78	77	2.15	7.0		20.22	101.3
4	30	71.51	0.87	277	50	78	77	2	7.0		19.47	102.5
	35	75.40	0.9	277	46	78	77	2	7.0		19.80	104.7
5	40	79.27	0.93	278	46	78	77	2	7.0		20.14	102.4
	45	83.20	0.82	278	46	79	77	1.9	7.0		18.91	102.4
6	50	87.00	0.77	278	46	79	77	1.7	7.0		18.33	105.3
	55	90.57	0.76	278	46	80	77	1.7	7.0		18.21	102.0
7	60	94.10	0.73	278	47	81	78	1.65	7.0		17.85	101.5
	65	97.57	0.73	277	47	81	78	1.65	7.0		17.83	101.6
8	70	101.08	0.75	280	50	83	80	1.7	7.0		18.11	102.7
	75	104.66	0.75	277	47	82	79	1.7	7.0		18.08	103.2
9	80	108.17	0.77	277	48	83	79	1.75	7.0		18.32	101.1
	85	111.75	0.77	278	70	82	80	1.75	7.0		18.33	101.7
10	90	115.29	0.81	278	47	82	80	1.8	7.0		18.80	100.6
	95	118.88	0.8	278	48	82	80	1.8	7.0		18.68	99.5
11	100	122.51	0.8	277	49	82	81	1.8	7.0		18.67	101.3
	105	126.14	0.8	277	49	82	80	1.8	7.0		18.67	101.1
12	110	129.74	0.78	278	50	82	80	1.8	7.0		18.45	100.3
	115	133.37	0.78	277	50	82	80	1.8	7.0		18.44	102.5
	120	136.97								0.4		101.6
1	0	137.37	0.93	280	64	82	81	2.15	9.0		20.17	
	5	141.29	0.98	278	51	82	81	2.2	9.0		20.68	101.5
2	10	145.35	0.93	277	53	82	81	2.2	9.0		20.13	102.3
	15	149.42	0.94	278	55	81	81	2.2	9.0		20.25	105.2
3	20	153.51	0.89	278	55	81	81	2.1	9.0		19.71	105.4

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	2 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 20, 2016	**Operator:**	JG

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.6 "Hg	**CWTR (g)**	646.3		
Static Pressure	-10.000 "H_2O	**WCBDA (g)**	100.6		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.4 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.48
CO2%	11.03
COppm	12.0

Measured H2O
17.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	157.44	0.89	278	56	81	81	2	9.0		19.71	**104.0**
4	30	161.32	0.82	278	53	82	81	1.9	8.0		18.91	**102.7**
	35	165.10	0.81	278	52	82	81	1.9	8.0		18.80	**104.1**
5	40	168.85	0.76	278	51	82	81	1.7	8.0		18.21	**103.9**
	45	172.47	0.72	277	51	83	81	1.6	7.0		17.71	**103.5**
6	50	175.93	0.72	277	51	83	81	1.6	7.0		17.71	**101.4**
	55	179.35	0.69	275	51	83	81	1.6	7.0		17.32	**100.3**
7	60	182.78	0.68	276	49	83	82	1.6	7.0		17.20	**102.6**
	65	186.17	0.7	276	49	83	82	1.6	7.0		17.45	**102.1**
8	70	189.61	0.67	276	48	82	81	1.6	7.0		17.07	**102.1**
	75	192.99	0.69	276	47	82	81	1.6	7.0		17.33	**102.7**
9	80	196.47	0.7	276	50	82	81	1.6	7.0		17.45	**104.2**
	85	199.80	0.72	276	50	83	81	1.6	7.0		17.70	**99.0**
10	90	203.24	0.72	277	53	84	81	1.7	8.0		17.71	**100.8**
	95	206.74	0.72	277	52	84	81	1.7	8.0		17.71	**102.5**
11	100	210.24	0.65	277	53	84	82	1.5	8.0		16.83	**102.5**
	105	213.57	0.65	276	54	85	82	1.5	8.0		16.82	**102.5**
12	110	216.84	0.65	277	54	85	82	1.5	8.0		16.83	**100.5**
	115	220.17	0.65	277	54	85	83	1.5	8.0		16.83	**102.4**
	120	223.43										**100.2**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	3 - SVOC
Date:	September 20, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.865 m^3
AVGERGE ISOKINETICITY	101.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	135.4 °C
AVERAGE GAS MOISTURE BY VOLUME	16.2 %
AVERAGE GAS VELOCITY	18.35 m/s
BAROMETRIC PRESSURE (Station)	100.373 Kpa
STATIC PRESSURE	-2.490 Kpa
ABSOLUTE GAS PRESSURE	97.883 Kpa
OXYGEN CONCENTRATION	8.43 %
CARBON DIOXIDE CONCENTRATION	11.06 %
CARBON MONOXIDE CONCENTRATION	11.6 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.12 m^3/s
DRY REF GAS FLOWRATE	16.01 Rm^3/s
DRY ADJ GAS FLOWRATE	20.17 Rm^3/s
WET REF GAS FLOWRATE	19.12 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.865 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 20, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	675.9		
Static Pressure	-10.000 "H_2O	**WCBDA (g)**	17.6		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.41 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.43
CO2%	11.06
COppm	11.6

Measured H2O
16.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	24.05	0.88	275	77	83	82	2	5.0		19.50	
	5	27.67	0.9	278	52	83	83	2.2	6.0		19.76	94.9
2	10	31.73	0.88	277	51	83	82	2.1	6.0		19.52	105.5
	15	35.72	0.88	277	50	83	83	2	6.0		19.52	104.8
3	20	39.62	0.86	277	49	83	83	2	6.5		19.30	102.3
	25	43.54	0.86	278	49	84	82	2	6.5		19.31	104.0
4	30	47.41	0.8	277	50	84	82	1.9	6.2		18.61	102.8
	35	51.18	0.8	278	50	85	82	1.8	6.0		18.63	103.7
5	40	54.91	0.78	278	51	86	83	1.75	6.0		18.39	102.6
	45	58.54	0.78	278	48	86	83	1.75	6.0		18.39	100.9
6	50	62.18	0.72	278	48	87	83	1.6	5.6		17.67	101.2
	55	65.69	0.72	278	48	87	83	1.6	5.6		17.67	101.4
7	60	69.19	0.72	277	49	88	84	1.6	5.6		17.66	101.1
	65	72.69	0.73	278	49	88	84	1.6	5.6		17.79	100.9
8	70	76.26	0.72	277	49	89	85	1.6	5.6		17.66	102.2
	75	79.67	0.73	277	50	89	85	1.6	5.6		17.78	98.1
9	80	83.16	0.73	277	50	89	85	1.6	5.6		17.78	99.7
	85	86.63	0.74	277	50	90	86	1.6	5.6		17.90	99.1
10	90	90.12	0.73	278	50	89	85	1.6	5.5		17.79	98.9
	95	93.66	0.74	278	49	88	85	1.6	5.5		17.91	101.2
11	100	97.18	0.74	278	49	88	85	1.6	5.5		17.91	100.0
	105	100.56	0.7	277	48	88	86	1.6	5.7		17.41	96.1
12	110	104.02	0.72	277	49	88	86	1.6	5.7		17.66	100.9
	115	107.57	0.71	277	49	88	86	1.6	5.7		17.54	102.1
	120	111.05								0.41		100.8
1	0	111.46	0.91	275	70	88	87	2.2	7.0		19.83	
	5	115.48	0.91	278	48	88	86	2.2	7.0		19.87	102.8
2	10	119.50	0.92	278	48	88	87	2.2	7.0		19.97	103.1
	15	123.66	0.93	278	48	88	87	2.2	7.0		20.08	106.0
3	20	127.79	0.88	278	48	88	86	2.1	7.0		19.54	104.7

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	3 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 20, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	675.9		
Static Pressure	-10.000 "H_2O	**WCBDA (g)**	17.6		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.41 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.43
CO2%	11.06
COppm	11.6

Measured H2O
16.2 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	131.77	0.9	278	48	88	86	2.1	7.0		19.76	**103.8**
4	30	135.75	0.82	279	50	91	89	1.9	7.0		18.87	**102.6**
	35	139.61	0.83	279	48	88	87	1.8	7.0		18.99	**103.7**
5	40	143.33	0.77	278	48	89	87	1.8	6.8		18.27	**99.8**
	45	147.04	0.77	279	48	89	87	1.8	6.8		18.29	**103.1**
6	50	150.75	0.71	279	49	89	87	1.65	6.6		17.56	**103.2**
	55	154.32	0.71	279	48	89	86	1.65	6.6		17.56	**103.4**
7	60	157.86	0.7	279	48	89	86	1.65	6.6		17.44	**102.6**
	65	161.50	0.7	279	48	89	86	1.65	1.7		17.44	**106.3**
8	70	164.92	0.75	278	50	87	86	1.8	7.0		18.04	**99.8**
	75	168.55	0.74	279	49	87	86	1.8	7.0		17.93	**102.5**
9	80	172.18	0.78	279	50	87	86	1.8	7.0		18.40	**103.3**
	85	175.88	0.78	280	50	87	86	1.8	7.0		18.42	**102.5**
10	90	179.55	0.8	280	50	87	86	1.8	7.0		18.65	**101.8**
	95	183.25	0.78	280	50	87	86	1.8	7.0		18.42	**101.3**
11	100	186.91	0.7	277	50	87	86	1.65	6.8		17.41	**101.5**
	105	190.50	0.71	176	50	87	87	1.65	6.8		16.29	**104.8**
12	110	194.04	0.71	276	51	87	86	1.65	6.8		17.52	**95.3**
	115	197.57	0.7	276	50	87	85	1.65	6.8		17.40	**102.3**
	120	201.18										**105.5**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	4 - SVOC
Date:	September 22, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.750 m^3
AVGERGE ISOKINETICITY	98.9 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	136.2 °C
AVERAGE GAS MOISTURE BY VOLUME	16.1 %
AVERAGE GAS VELOCITY	18.50 m/s
BAROMETRIC PRESSURE (Station)	100.102 Kpa
STATIC PRESSURE	-2.316 Kpa
ABSOLUTE GAS PRESSURE	97.786 Kpa
OXYGEN CONCENTRATION	8.46 %
CARBON DIOXIDE CONCENTRATION	10.75 %
CARBON MONOXIDE CONCENTRATION	26.6 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.33 m^3/s
DRY REF GAS FLOWRATE	16.12 Rm^3/s
DRY ADJ GAS FLOWRATE	20.26 Rm^3/s
WET REF GAS FLOWRATE	19.22 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.750 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 22, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.56 "Hg	**CWTR (g)**	652.1		
Static Pressure	-9.300 "H_2O	**WCBDA (g)**	17.1		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.21 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.46
CO2%	10.75
COppm	26.6

Measured H2O
16.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	2.16	0.8	277	77	79	78	1.7	5.0		18.63	
	5	5.92	0.8	277	50	79	78	1.7	5.0		18.63	103.8
2	10	9.46	0.9	277	49	79	78	1.8	5.5		19.76	97.7
	15	13.16	0.89	278	49	80	78	1.8	5.5		19.66	96.3
3	20	16.67	0.91	279	48	80	79	1.8	5.6		19.90	91.9
	25	20.41	0.91	278	48	80	78	1.9	5.8		19.88	96.8
4	30	24.25	0.88	279	48	81	79	1.9	5.8		19.57	99.4
	35	28.00	0.88	279	48	82	79	1.9	5.8		19.57	98.6
5	40	31.63	0.79	279	48	82	79	1.8	5.8		18.54	95.4
	45	35.40	0.8	279	49	83	80	1.8	5.8		18.66	104.5
6	50	38.95	0.72	279	49	83	80	1.6	5.6		17.70	97.6
	55	42.43	0.72	278	49	84	80	1.6	5.6		17.69	100.8
7	60	45.93	0.71	278	49	84	80	1.6	5.6		17.56	101.2
	65	49.42	0.71	278	50	85	81	1.6	5.6		17.56	101.6
8	70	52.92	0.71	278	50	85	81	1.55	5.5		17.56	101.8
	75	56.34	0.71	278	50	85	81	1.55	5.5		17.56	99.4
9	80	59.75	0.76	278	50	85	81	1.55	5.5		18.17	99.1
	85	63.24	0.75	278	49	85	81	1.55	5.5		18.05	98.1
10	90	66.75	0.73	276	50	86	82	1.6	5.5		17.78	99.3
	95	70.20	0.73	274	50	86	82	1.6	5.5		17.76	98.6
11	100	73.67	0.67	276	52	88	83	1.5	5.5		17.04	99.0
	105	77.05	0.67	267	50	86	82	1.5	5.5		16.93	100.5
12	110	80.42	0.73	267	50	86	83	1.6	5.5		17.68	99.9
	115	83.88	0.73	267	50	86	83	1.6	5.5		17.68	98.2
	120	87.36								0.21		98.8
1	0	87.57	0.88	276	54	86	83	1.9	6.5		19.53	
	5	91.32	0.88	278	51	86	83	1.9	6.5		19.55	97.6
2	10	95.08	0.94	278	52	85	83	2	6.6		20.21	98.0
	15	98.92	0.93	278	51	86	86	2	6.6		20.10	96.9
3	20	102.77	0.95	278	52	86	83	2	6.6		20.32	97.4

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 22, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.56 "Hg	**CWTR (g)**	652.1		
Static Pressure	-9.300 "H_2O	**WCBDA (g)**	17.1		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.21 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.46
CO2%	10.75
COppm	26.6

Measured H2O
16.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	106.61	0.98	279	52	86	83	2.1	7.0		20.65	96.3
4	30	110.52	0.97	279	52	87	84	2.1	7.0		20.54	96.7
	35	114.44	0.97	280	52	86	84	2.1	7.0		20.56	97.2
5	40	118.35	0.91	280	53	87	84	0.05	7.0		19.91	97.1
	45	122.27	0.88	281	53	87	84	1.9	7.0		19.59	100.0
6	50	126.06	0.8	280	54	87	84	1.8	6.8		18.67	98.8
	55	129.80	0.8	280	54	87	84	1.8	6.8		18.67	102.1
7	60	133.48	0.73	280	54	87	84	1.6	6.5		17.83	100.5
	65	137.00	0.73	280	55	87	84	1.6	6.5		17.83	100.6
8	70	140.51	0.74	280	55	87	84	1.6	6.5		17.95	100.3
	75	144.03	0.72	280	55	87	84	1.55	6.5		17.71	99.9
9	80	147.47	0.74	280	55	87	84	1.6	6.5		17.95	99.0
	85	150.93	0.74	280	55	87	84	1.6	6.5		17.95	98.2
10	90	154.42	0.74	279	55	87	84	1.6	6.5		17.94	99.1
	95	157.91	0.74	278	55	87	84	1.6	6.5		17.93	99.0
11	100	161.39	0.7	271	55	87	84	1.5	6.5		17.36	98.6
	105	164.78	0.7	270	53	87	84	1.5	6.5		17.34	98.3
12	110	168.17	0.61	271	53	87	84	1.4	6.3		16.20	98.2
	115	171.41	0.6	271	53	87	84	1.35	6.3		16.07	100.6
	120	174.60										99.9

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	5 - SVOC
Date:	September 23, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.640 m^3
AVGERGE ISOKINETICITY	99.7 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	135.8 °C
AVERAGE GAS MOISTURE BY VOLUME	16.7 %
AVERAGE GAS VELOCITY	18.02 m/s
BAROMETRIC PRESSURE (Station)	100.271 Kpa
STATIC PRESSURE	-2.465 Kpa
ABSOLUTE GAS PRESSURE	97.806 Kpa
OXYGEN CONCENTRATION	8.48 %
CARBON DIOXIDE CONCENTRATION	10.73 %
CARBON MONOXIDE CONCENTRATION	23.5 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.63 m^3/s
DRY REF GAS FLOWRATE	15.62 Rm^3/s
DRY ADJ GAS FLOWRATE	19.59 Rm^3/s
WET REF GAS FLOWRATE	18.74 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.640 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 23, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.61 "Hg	**CWTR (g)**	666.4		
Static Pressure	-9.900 "H_2O	**WCBDA (g)**	15.6		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.32 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.48
CO2%	10.73
COppm	23.5

Measured H2O
16.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	75.85	0.86	277	67	77	77	1.9	5.5		19.34	
	5	79.58	0.86	279	54	77	77	1.85	5.5		19.37	100.4
2	10	83.27	0.88	279	50	77	77	1.9	5.7		19.59	99.4
	15	87.00	0.89	279	48	78	77	1.9	5.7		19.70	99.3
3	20	90.72	0.89	279	47	78	76	1.9	5.7		19.70	98.4
	25	94.42	0.88	279	46	78	76	1.9	5.7		19.59	98.0
4	30	98.14	0.82	279	46	79	76	1.8	5.7		18.91	99.1
	35	101.80	0.81	279	47	80	77	1.75	5.7		18.79	100.9
5	40	105.41	0.76	279	47	80	77	1.6	5.5		18.20	99.9
	45	108.90	0.76	278	47	81	77	1.6	5.5		18.19	99.7
6	50	112.35	0.72	278	47	81	78	1.55	5.5		17.71	98.4
	55	115.77	0.72	278	47	81	78	1.55	5.5		17.71	100.1
7	60	119.18	0.74	278	47	81	78	1.55	5.5		17.95	99.8
	65	122.68	0.74	278	47	81	78	1.55	5.5		17.95	101.0
8	70	126.06	0.75	279	47	81	78	1.6	5.7		18.08	97.6
	75	129.54	0.74	279	47	81	78	1.6	5.7		17.96	99.9
9	80	133.02	0.75	279	47	82	78	1.6	5.7		18.08	100.5
	85	136.51	0.75	278	47	81	78	1.6	5.7		18.07	100.1
10	90	139.98	0.73	276	47	81	78	1.55	5.7		17.81	99.5
	95	143.40	0.73	276	46	81	78	1.55	5.7		17.81	99.3
11	100	146.81	0.71	277	45	81	78	1.5	5.7		17.57	99.0
	105	150.19	0.71	276	45	80	78	1.5	5.7		17.56	99.5
12	110	153.57	0.58	276	45	80	78	1.2	5.3		15.87	99.6
	115	156.63	0.58	276	45	80	78	1.2	5.3		15.87	99.6
	120	159.70								0.32		100.0
1	0	160.02	0.79	276	55	78	78	1.8	6.3		18.52	
	5	163.73	0.79	276	44	78	77	1.8	6.5		18.52	103.9
2	10	167.36	0.83	275	43	78	77	1.8	6.5		18.97	101.7
	15	170.99	0.82	275	43	78	77	1.8	6.5		18.86	99.2
3	20	174.61	0.82	274	43	78	77	1.8	6.5		18.85	99.5

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 23, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.61 "Hg	**CWTR (g)**	666.4		
Static Pressure	-9.900 "H_2O	**WCBDA (g)**	15.6		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.32 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.48
CO2%	10.73
COppm	23.5

Measured H2O
16.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	178.22	0.83	274	43	78	77	1.8	6.5		18.96	99.2
4	30	181.87	0.77	275	43	77	76	1.7	6.5		18.27	99.6
	35	185.40	0.77	275	43	77	76	1.65	6.5		18.27	100.3
5	40	188.90	0.77	275	43	77	76	1.65	6.5		18.27	99.4
	45	192.41	0.74	275	44	77	76	1.6	6.5		17.91	99.7
6	50	195.86	0.68	276	44	77	76	1.5	6.2		17.18	100.0
	55	199.22	0.69	276	44	77	75	1.5	6.2		17.31	101.6
7	60	202.58	0.66	276	44	77	75	1.4	6.0		16.93	100.9
	65	205.83	0.67	276	44	77	75	1.4	6.0		17.06	99.8
8	70	209.07	0.73	276	44	76	75	1.55	6.2		17.81	98.8
	75	212.46	0.73	276	44	76	75	1.55	6.2		17.81	99.1
9	80	215.81	0.75	276	44	76	75	1.6	6.4		18.05	98.0
	85	219.23	0.75	277	45	76	75	1.6	6.4		18.06	98.7
10	90	222.65	0.73	276	45	76	75	1.6	6.4		17.81	98.7
	95	226.05	0.73	275	45	76	75	1.6	6.4		17.79	99.4
11	100	229.46	0.69	271	45	76	76	1.5	6.3		17.25	99.7
	105	232.77	0.67	271	45	75	74	1.5	6.3		17.00	99.1
12	110	236.07	0.6	271	45	75	74	1.25	6.0		16.09	100.6
	115	239.18	0.6	271	45	75	74	1.25	6.0		16.09	100.1
	120	242.28										99.8

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	6 - SVOC
Date:	September 23, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.593 m^3
AVGERGE ISOKINETICITY	98.8 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	135.6 °C
AVERAGE GAS MOISTURE BY VOLUME	16.4 %
AVERAGE GAS VELOCITY	17.91 m/s
BAROMETRIC PRESSURE (Station)	100.373 Kpa
STATIC PRESSURE	-2.440 Kpa
ABSOLUTE GAS PRESSURE	97.932 Kpa
OXYGEN CONCENTRATION	8.49 %
CARBON DIOXIDE CONCENTRATION	10.78 %
CARBON MONOXIDE CONCENTRATION	14.7 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.46 m^3/s
DRY REF GAS FLOWRATE	15.60 Rm^3/s
DRY ADJ GAS FLOWRATE	19.55 Rm^3/s
WET REF GAS FLOWRATE	18.66 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.593 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 23, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	645.2		
Static Pressure	-9.800 "H_2O	**WCBDA (g)**	16.1		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.39 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.49
CO2%	10.78
COppm	14.7

Measured H2O
16.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	42.85	0.86	277	58	73	72	1.9	5.5		19.31	
	5	46.62	0.82	278	46	71	71	1.7	5.0		18.87	102.1
2	10	50.16	0.88	279	46	71	71	1.8	5.5		19.56	98.4
	15	53.78	0.86	278	45	70	71	1.8	5.5		19.33	97.3
3	20	57.37	0.85	279	46	70	70	1.8	5.5		19.23	97.6
	25	60.93	0.85	278	46	71	71	1.8	5.5		19.21	97.5
4	30	64.53	0.78	278	46	71	70	1.6	5.5		18.40	98.3
	35	68.02	0.77	278	47	72	71	1.6	5.5		18.29	99.6
5	40	71.47	0.73	278	47	72	70	1.6	5.5		17.80	98.9
	45	74.90	0.73	278	47	72	70	1.6	5.5		17.80	101.1
6	50	78.32	0.7	278	47	72	70	1.5	5.0		17.44	100.8
	55	81.66	0.7	277	44	73	71	1.5	5.0		17.42	100.5
7	60	84.96	0.73	277	44	74	71	1.55	5.0		17.79	99.0
	65	88.35	0.73	277	44	74	71	1.55	5.0		17.79	99.5
8	70	91.67	0.72	277	44	75	71	1.55	5.0		17.67	97.5
	75	95.04	0.73	277	44	75	71	1.55	5.0		17.79	99.5
9	80	98.38	0.73	276	45	75	72	1.55	5.0		17.78	98.0
	85	101.73	0.72	276	45	75	72	1.55	5.0		17.66	98.1
10	90	105.04	0.71	276	45	76	72	1.55	5.0		17.54	97.6
	95	108.37	0.71	275	45	76	72	1.55	5.0		17.52	98.8
11	100	111.68	0.7	275	46	76	72	1.55	5.0		17.40	98.1
	105	115.00	0.7	275	46	76	72	1.55	5.0		17.40	99.1
12	110	118.31	0.7	275	46	76	72	1.55	5.0		17.40	98.8
	115	121.60	0.7	275	46	76	73	1.55	5.0		17.40	98.2
	120	124.81								0.39		95.7
1	0	125.20	0.89	275	50	75	73	1.9	6.5		19.62	
	5	129.00	0.9	276	48	76	73	1.9	6.5		19.74	100.7
2	10	132.62	0.9	276	47	76	73	1.9	6.5		19.74	95.4
	15	136.32	0.97	276	48	76	73	2.1	7.0		20.50	97.5
3	20	140.23	0.86	276	48	76	73	1.8	7.0		19.30	99.3

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 23, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.64 "Hg	**CWTR (g)**	645.2		
Static Pressure	-9.800 "H_2O	**WCBDA (g)**	16.1		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.39 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.49
CO2%	10.78
COppm	14.7

Measured H2O
16.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	143.90	0.86	278	48	76	74	1.8	7.0		19.33	98.9
4	30	147.57	0.81	278	49	77	74	1.7	6.5		18.76	98.9
	35	151.14	0.76	278	48	76	74	1.6	6.5		18.17	99.0
5	40	154.60	0.74	278	47	77	74	1.6	6.5		17.93	99.2
	45	158.06	0.71	277	46	77	74	1.55	6.0		17.55	100.4
6	50	161.46	0.71	277	46	77	74	1.5	6.0		17.55	100.6
	55	164.81	0.68	276	46	78	74	1.4	6.0		17.16	99.2
7	60	168.09	0.67	276	47	78	74	1.4	6.0		17.03	99.0
	65	171.30	0.65	276	46	77	74	1.4	6.0		16.78	97.6
8	70	174.53	0.66	275	47	78	75	1.4	6.0		16.90	99.8
	75	177.78	0.66	274	47	78	75	1.4	6.0		16.88	99.4
9	80	180.99	0.66	274	47	78	75	1.4	6.0		16.88	98.1
	85	184.21	0.65	273	47	78	75	1.4	6.0		16.74	98.4
10	90	187.44	0.65	273	47	78	75	1.4	6.0		16.74	99.4
	95	190.66	0.65	273	48	78	75	1.4	6.0		16.74	99.1
11	100	193.90	0.68	273	48	79	75	1.4	6.0		17.13	99.7
	105	197.12	0.68	273	48	78	75	1.4	6.0		17.13	96.8
12	110	200.34	0.58	273	48	79	76	1.2	5.8		15.82	96.9
	115	203.40	0.58	273	49	79	76	1.2	5.8		15.82	99.5
	120	206.47										99.8

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #2
Test No.:	7 - SVOC
Date:	September 27, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.842
DGM CORRECTION FACTOR	0.993
NOZZLE DIAMETER	6.24 mm
DRY REF GAS VOLUME SAMPLED	4.551 m^3
AVGERGE ISOKINETICITY	98.6 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	136.1 °C
AVERAGE GAS MOISTURE BY VOLUME	16.4 %
AVERAGE GAS VELOCITY	18.06 m/s
BAROMETRIC PRESSURE (Station)	99.120 Kpa
STATIC PRESSURE	-2.515 Kpa
ABSOLUTE GAS PRESSURE	96.605 Kpa
OXYGEN CONCENTRATION	8.14 %
CARBON DIOXIDE CONCENTRATION	10.93 %
CARBON MONOXIDE CONCENTRATION	9.5 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.68 m^3/s
DRY REF GAS FLOWRATE	15.49 Rm^3/s
DRY ADJ GAS FLOWRATE	19.96 Rm^3/s
WET REF GAS FLOWRATE	18.54 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.551 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 27, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.27 "Hg	**CWTR (g)**	646.4		
Static Pressure	-10.100 "H_2O	**WCBDA (g)**	11.5		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.41 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.14
CO2%	10.93
COppm	9.5

Measured H2O
16.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	41.25	0.88	278	64	75	74	1.9	6.0		19.68	
	5	44.90	0.88	277	62	74	74	1.9	6.5		19.67	96.9
2	10	48.59	0.9	277	60	74	74	1.9	6.5		19.89	98.0
	15	52.37	0.9	278	56	75	74	1.9	6.5		19.90	99.3
3	20	55.98	0.88	278	48	74	74	1.9	6.8		19.68	94.8
	25	59.70	0.88	278	47	74	74	1.9	6.8		19.68	98.8
4	30	63.43	0.83	279	47	75	74	1.9	6.8		19.13	99.1
	35	67.18	0.83	279	46	75	73	1.8	6.5		19.13	102.6
5	40	70.90	0.76	279	45	75	73	1.6	6.5		18.30	101.8
	45	74.39	0.76	278	45	75	73	1.6	6.5		18.29	99.8
6	50	77.80	0.7	278	45	76	74	1.5	6.0		17.55	97.4
	55	81.16	0.7	278	45	76	74	1.5	6.0		17.55	99.8
7	60	84.50	0.71	278	45	76	74	1.5	6.0		17.68	99.2
	65	87.82	0.71	278	45	76	74	1.5	6.0		17.68	97.9
8	70	91.15	0.7	278	45	76	74	1.5	6.0		17.55	98.2
	75	94.47	0.7	278	45	77	74	1.5	6.0		17.55	98.6
9	80	97.78	0.67	277	45	77	74	1.4	6.0		17.16	98.2
	85	101.02	0.67	277	45	77	75	1.4	6.0		17.16	98.2
10	90	104.25	0.7	277	46	77	75	1.5	6.0		17.54	97.8
	95	107.56	0.7	275	46	77	75	1.5	6.0		17.52	98.1
11	100	110.92	0.7	275	46	77	75	1.5	6.0		17.52	99.4
	105	114.20	0.66	275	46	77	75	1.4	6.0		17.01	97.1
12	110	117.40	0.66	275	46	77	75	1.4	6.0		17.01	97.5
	115	120.71	0.66	275	46	77	75	1.4	6.0		17.01	100.8
	120	123.99								0.41		99.9
1	0	124.40	0.9	278	63	79	78	2	8.0		19.90	
	5	128.10	0.89	279	50	77	76	2	8.0		19.81	96.4
2	10	131.91	0.87	278	44	77	76	1.9	8.0		19.57	100.3
	15	135.71	0.87	278	43	76	76	1.85	8.0		19.57	101.1
3	20	139.43	0.85	278	43	77	76	1.75	8.0		19.34	99.0

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	7 - SVOC	**Test Location:**	APC Outlet Unit #2
Date:	September 27, 2016	**Operator:**	CB

Pitot Factor	0.842	**Filter (mg)**	0		
DGMCF	0.993	**Probe (mg)**	0		
Barometric Pressure	29.27 "Hg	**CWTR (g)**	646.4		
Static Pressure	-10.100 "H_2O	**WCBDA (g)**	11.5		
Nozzle	0.2456 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.41 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.14
CO2%	10.93
COppm	9.5

Measured H2O
16.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	143.08	0.85	278	44	76	76	1.75	8.0		19.34	98.2
4	30	146.70	0.8	279	45	78	77	1.6	7.8		18.78	97.5
	35	150.25	0.8	278	44	77	76	1.6	7.8		18.77	98.3
5	40	153.81	0.73	278	44	77	76	1.55	7.5		17.93	98.7
	45	157.17	0.73	278	44	77	76	1.55	7.5		17.93	97.5
6	50	160.56	0.68	277	45	77	76	1.4	6.8		17.29	98.4
	55	163.88	0.66	276	46	77	76	1.4	6.8		17.02	99.7
7	60	167.15	0.66	276	46	78	76	1.4	6.8		17.02	99.6
	65	170.39	0.64	277	46	78	76	1.4	6.8		16.77	98.6
8	70	173.64	0.67	276	46	78	76	1.4	6.8		17.15	100.5
	75	176.90	0.67	277	46	78	76	1.4	6.8		17.16	98.5
9	80	180.18	0.66	277	46	78	77	1.4	6.8		17.03	99.1
	85	183.50	0.66	276	46	78	77	1.4	6.8		17.02	101.0
10	90	186.66	0.66	276	46	79	77	1.4	6.8		17.02	96.1
	95	189.92	0.67	274	46	79	77	1.4	6.8		17.13	99.0
11	100	193.16	0.67	274	46	79	77	1.4	6.8		17.13	97.5
	105	196.40	0.67	274	46	79	77	1.4	6.8		17.13	97.5
12	110	199.64	0.66	274	46	79	77	1.4	6.8		17.00	97.5
	115	202.88	0.67	274	46	80	77	1.4	6.8		17.13	98.3
	120	206.05										95.3

ORTECH Environmental

Plant:	DYEC DYEC
Plant Location:	Courtice, ON
Test Location:	Unit No. 2 APC Outlet
Test No.:	8 SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.989
NOZZLE DIAMETER	6.47 mm
DRY REF GAS VOLUME SAMPLED	4.737 m^3
AVGERGE ISOKINETICITY	101.1 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	139.1 °C
AVERAGE GAS MOISTURE BY VOLUME	17.7 %
AVERAGE GAS VELOCITY	17.09 m/s
BAROMETRIC PRESSURE (Station)	100.982 Kpa
STATIC PRESSURE	-2.365 Kpa
ABSOLUTE GAS PRESSURE	98.617 Kpa
OXYGEN CONCENTRATION	8.01 %
CARBON DIOXIDE CONCENTRATION	11.15 %
CARBON MONOXIDE CONCENTRATION	10.8 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	25.25 m^3/s
DRY REF GAS FLOWRATE	14.63 Rm^3/s
DRY ADJ GAS FLOWRATE	19.05 Rm^3/s
WET REF GAS FLOWRATE	17.78 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.737 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	DYEC DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 SVOC	**Test Location:**	Unit No. 2 APC Outlet
Date:	November 4, 2016	**Operator:**	AS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.989	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	731.4		
Static Pressure	-9.500 "H_2O	**WCBDA (g)**	17.1		
Nozzle	0.2546 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.355 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.01
CO2%	11.15
COppm	10.8

Measured H2O
17.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	25.70	0.63	277	60	68	67	1.5	5.0		16.63	
	5	29.07	0.61	283	52	67	67	1.4	5.0		16.43	100.5
2	10	32.31	0.72	282	48	67	67	1.7	6.0		17.83	98.7
	15	35.83	0.72	282	44	67	67	1.7	6.0		17.83	98.7
3	20	39.54	0.72	282	44	67	67	1.7	6.0		17.83	104.0
	25	43.02	0.74	283	43	69	67	1.8	6.0		18.09	97.6
4	30	46.68	0.7	284	43	70	68	1.7	6.0		17.61	101.1
	35	50.24	0.7	284	43	70	68	1.7	6.0		17.61	101.0
5	40	53.81	0.65	285	42	71	68	1.6	6.0		16.98	101.3
	45	57.23	0.65	285	41	71	68	1.6	6.0		16.98	100.6
6	50	60.65	0.6	285	41	72	69	1.4	5.5		16.31	100.6
	55	63.96	0.61	285	41	72	69	1.5	5.5		16.45	101.1
7	60	67.28	0.65	285	41	73	70	1.5	6.0		16.98	100.6
	65	70.69	0.66	286	41	73	70	1.6	6.0		17.12	99.9
8	70	74.15	0.66	286	41	74	70	1.6	6.0		17.12	100.7
	75	77.64	0.64	285	41	74	70	1.6	6.0		16.85	101.5
9	80	81.12	0.69	284	42	74	71	1.7	6.0		17.48	102.7
	85	84.68	0.66	282	42	74	71	1.6	6.0		17.08	101.0
10	90	88.21	0.67	280	42	75	71	1.6	6.0		17.18	102.3
	95	91.73	0.68	279	41	75	72	1.6	6.0		17.30	101.0
11	100	95.22	0.64	277	40	75	72	1.5	6.0		16.76	99.2
	105	98.69	0.63	277	40	75	72	1.5	6.0		16.63	101.5
12	110	102.15	0.6	277	41	75	72	1.4	6.0		16.23	102.1
	115	105.50	0.64	277	40	75	72	1.5	6.0		16.76	101.2
	120	108.93								0.355		100.4
1	0	109.29	0.73	279	54	74	73	1.8	6.0		17.92	
	5	112.95	0.74	281	41	74	73	1.8	6.0		18.07	100.6
2	10	116.63	0.76	283	41	74	73	1.8	7.0		18.34	100.5
	15	120.33	0.76	282	42	74	73	1.8	7.0		18.32	99.8
3	20	124.09	0.77	282	42	75	73	1.8	7.0		18.44	101.4

ORTECH Environmental

Plant:	DYEC DYEC	**Plant Location:**	Courtice, ON
Test No.:	8 SVOC	**Test Location:**	Unit No. 2 APC Outlet
Date:	November 4, 2016	**Operator:**	AS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.989	**Probe (mg)**	0		
Barometric Pressure	29.82 "Hg	**CWTR (g)**	731.4		
Static Pressure	-9.500 "H_2O	**WCBDA (g)**	17.1		
Nozzle	0.2546 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.355 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.01
CO2%	11.15
COppm	10.8

Measured H2O
17.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	127.88	0.75	283	42	75	73	1.8	7.0		18.21	**101.4**
4	30	131.64	0.7	283	42	75	73	1.7	7.0		17.60	**102.0**
	35	135.27	0.69	283	43	75	73	1.7	7.0		17.47	**101.9**
5	40	138.89	0.61	284	43	75	73	1.5	6.0		16.44	**102.4**
	45	142.22	0.61	284	43	75	73	1.5	6.0		16.44	**100.2**
6	50	145.62	0.54	284	43	76	73	1.3	5.5		15.47	**102.3**
	55	148.79	0.55	284	43	76	73	1.3	5.5		15.61	**101.2**
7	60	151.96	0.58	284	43	76	73	1.4	6.0		16.03	**100.3**
	65	155.23	0.58	284	43	76	74	1.4	6.0		16.03	**100.8**
8	70	158.49	0.64	285	43	76	74	1.6	6.0		16.85	**100.4**
	75	161.94	0.66	285	43	76	74	1.6	6.0		17.11	**101.2**
9	80	165.41	0.7	285	44	76	74	1.7	7.0		17.62	**100.3**
	85	169.01	0.68	286	44	76	74	1.7	7.0		17.38	**101.0**
10	90	172.62	0.69	285	44	76	74	1.7	7.0		17.49	**102.9**
	95	176.22	0.7	286	45	76	74	1.7	7.0		17.63	**101.8**
11	100	179.81	0.63	277	45	76	74	1.6	6.5		16.63	**100.8**
	105	183.27	0.63	277	45	76	74	1.6	6.5		16.63	**101.8**
12	110	186.72	0.6	277	45	76	74	1.5	6.0		16.23	**101.5**
	115	190.14	0.61	277	45	76	74	1.5	6.0		16.36	**103.1**
	120	193.56										**102.3**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	Unit No. 2 APC Outlet
Test No.:	9 SVOC
Date:	November 4, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.848
DGM CORRECTION FACTOR	0.989
NOZZLE DIAMETER	6.47 mm
DRY REF GAS VOLUME SAMPLED	4.921 m^3
AVGERGE ISOKINETICITY	100.4 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	139.6 °C
AVERAGE GAS MOISTURE BY VOLUME	16.3 %
AVERAGE GAS VELOCITY	17.64 m/s
BAROMETRIC PRESSURE (Station)	100.779 Kpa
STATIC PRESSURE	-2.365 Kpa
ABSOLUTE GAS PRESSURE	98.413 Kpa
OXYGEN CONCENTRATION	8.41 %
CARBON DIOXIDE CONCENTRATION	10.77 %
CARBON MONOXIDE CONCENTRATION	12.4 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	26.06 m^3/s
DRY REF GAS FLOWRATE	15.31 Rm^3/s
DRY ADJ GAS FLOWRATE	19.31 Rm^3/s
WET REF GAS FLOWRATE	18.29 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0 mg
	-FILTER	0 mg
	-TOTAL	0 mg
DRY REF GAS VOLUME SAMPLED		4.921 m^3
PARTICULATE CONC. - ACTUAL		0.000 mg/m^3
PARTICULATE CONC. - DRY REF		0.000 mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000 mg/m^3
PARTICULATE CONC. - WET REF		0.000 mg/m^3
PARTICULATE EMISSION RATE		0.000000 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	9 SVOC	**Test Location:**	Unit No. 2 APC Outlet
Date:	November 4, 2016	**Operator:**	AS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.989	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	684.6		
Static Pressure	-9.500 "H_2O	**WCBDA (g)**	18.7		
Nozzle	0.2546 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.397 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.41
CO2%	10.77
COppm	12.4

Measured H2O
16.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	194.08	0.82	283	60	73	73	2	6.0		19.02	
	5	197.98	0.82	285	45	72	73	2	6.5		19.05	99.8
2	10	201.86	0.9	286	43	73	73	2.2	7.5		19.97	99.6
	15	205.93	0.87	285	42	73	73	2.1	7.0		19.62	99.7
3	20	209.90	0.84	285	41	73	73	2.1	7.0		19.28	98.9
	25	213.80	0.87	285	41	74	73	2.1	7.5		19.62	98.8
4	30	217.88	0.77	285	41	74	73	1.9	7.0		18.46	101.5
	35	221.57	0.75	284	42	75	73	1.9	7.0		18.20	97.5
5	40	225.36	0.73	285	42	75	73	1.8	7.0		17.97	101.3
	45	229.10	0.68	285	42	75	73	1.7	7.0		17.34	101.4
6	50	232.71	0.64	286	43	76	73	1.6	6.5		16.84	101.4
	55	236.22	0.68	285	43	77	74	1.7	7.0		17.34	101.6
7	60	239.81	0.67	285	44	77	74	1.7	7.0		17.22	100.6
	65	243.42	0.64	283	44	77	74	1.6	6.5		16.80	101.9
8	70	246.92	0.71	280	45	77	75	1.8	6.5		17.66	100.9
	75	250.56	0.65	281	45	78	75	1.6	6.0		16.91	99.4
9	80	254.08	0.68	283	46	78	75	1.7	6.5		17.32	100.4
	85	257.66	0.7	283	46	78	75	1.7	6.5		17.57	100.0
10	90	261.28	0.74	283	46	79	76	1.8	7.0		18.07	99.6
	95	265.00	0.71	284	47	79	76	1.8	7.0		17.71	99.4
11	100	268.69	0.68	278	47	79	76	1.7	7.0		17.26	100.7
	105	272.31	0.6	278	47	79	76	1.5	6.0		16.21	100.5
12	110	275.71	0.6	278	47	79	76	1.5	6.0		16.21	100.5
	115	279.13	0.64	278	47	79	76	1.6	6.0		16.75	101.1
	120	282.61								0.397		99.6
1	0	283.01	0.84	281	61	78	76	2.1	8.0		19.22	
	5	286.90	0.83	283	48	78	77	2.1	8.0		19.14	97.7
2	10	290.94	0.84	283	49	78	76	2.1	8.0		19.25	102.0
	15	295.08	0.86	284	50	77	76	2.1	8.0		19.49	104.0
3	20	299.21	0.83	285	51	77	76	2.1	8.0		19.16	102.7

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	9 SVOC	**Test Location:**	Unit No. 2 APC Outlet
Date:	November 4, 2016	**Operator:**	AS

Pitot Factor	0.848	**Filter (mg)**	0		
DGMCF	0.989	**Probe (mg)**	0		
Barometric Pressure	29.76 "Hg	**CWTR (g)**	684.6		
Static Pressure	-9.500 "H_2O	**WCBDA (g)**	18.7		
Nozzle	0.2546 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.397 ft^3	
Length	0.000 ft	**Reading Interval**		5 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	8.41
CO2%	10.77
COppm	12.4

Measured H2O
16.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	25	303.20	0.82	285	51	77	76	2	8.0		19.05	101.1
4	30	307.15	0.78	286	50	77	76	1.9	7.5		18.59	100.6
	35	310.93	0.75	286	52	77	76	1.9	7.5		18.23	98.8
5	40	314.68	0.63	285	51	78	76	1.6	7.0		16.69	99.9
	45	318.18	0.65	285	49	78	76	1.6	7.0		16.96	101.5
6	50	321.72	0.56	284	47	78	76	1.4	6.0		15.73	101.1
	55	324.99	0.58	285	47	78	76	1.4	6.0		16.02	100.5
7	60	328.31	0.63	285	46	79	77	1.6	7.0		16.69	100.3
	65	331.81	0.62	286	45	79	77	1.6	7.0		16.57	101.4
8	70	335.34	0.65	286	45	78	77	1.6	7.0		16.97	103.1
	75	338.85	0.66	285	45	79	77	1.6	7.0		17.09	100.2
9	80	342.39	0.68	284	45	79	77	1.7	7.0		17.33	100.2
	85	345.95	0.7	285	46	79	77	1.7	7.0		17.60	99.2
10	90	349.58	0.65	284	46	79	77	1.6	7.0		16.95	99.7
	95	353.12	0.66	285	46	79	77	1.6	7.0		17.09	100.9
11	100	356.64	0.58	278	46	78	77	1.4	6.0		15.94	99.6
	105	359.94	0.6	278	46	78	77	1.5	6.0		16.21	99.2
12	110	363.28	0.59	278	47	78	77	1.5	6.0		16.08	98.7
	115	366.63	0.6	278	47	78	77	1.5	6.0		16.21	99.8
	120	370.01										99.9

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APPENDIX 16

Particulate Matter Test Emission Calculations
for Boiler No. 1
(9 pages)

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	4 - Particulate
Date:	September 29, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847
DGM CORRECTION FACTOR	0.976
NOZZLE DIAMETER	6.36 mm
DRY REF GAS VOLUME SAMPLED	4.058 m^3
AVGERGE ISOKINETICITY	99.1 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	136.1 °C
AVERAGE GAS MOISTURE BY VOLUME	14.9 %
AVERAGE GAS VELOCITY	18.61 m/s
BAROMETRIC PRESSURE (Station)	101.050 Kpa
STATIC PRESSURE	-2.689 Kpa
ABSOLUTE GAS PRESSURE	98.361 Kpa
OXYGEN CONCENTRATION	9.09 %
CARBON DIOXIDE CONCENTRATION	10.42 %
CARBON MONOXIDE CONCENTRATION	13.9 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.50 m^3/s
DRY REF GAS FLOWRATE	16.54 Rm^3/s
DRY ADJ GAS FLOWRATE	19.73 Rm^3/s
WET REF GAS FLOWRATE	19.45 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	17.4 mg
	-FILTER	20.2 mg
	-TOTAL	37.6 mg
DRY REF GAS VOLUME SAMPLED		4.058 m^3
PARTICULATE CONC. - ACTUAL		5.573 mg/m^3
PARTICULATE CONC. - DRY REF		9.265 mg/m^3
PARTICULATE CONC. - DRY ADJ		7.767 mg/m^3
PARTICULATE CONC. - WET REF		7.881 mg/m^3
PARTICULATE EMISSION RATE		0.153247 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - Particulate	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	DT

Pitot Factor	0.847	**Filter (mg)**	20.2
DGMCF	0.976	**Probe (mg)**	17.4
Barometric Pressure	29.84 "Hg	**CWTR (g)**	482
Static Pressure	-10.800 "H_2O	**WCBDA (g)**	41.9
Nozzle	0.2504 inches		
Stack Diameter	4.500 ft	**Leak Check Volume**	0.38 ft^3
Length	0.000 ft	**Reading Interval**	4 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	12

Combustion Gases	
O2%	9.09
CO2%	10.42
COppm	13.9

Measured H2O
14.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	75.00	0.85	270	51	54	53	1.8	3.2		19.13	
	4	77.75	0.86	272	40	54	53	1.8	3.2		19.27	89.9
2	8	80.77	0.89	270	37	54	53	1.85	3.2		19.58	98.3
	12	83.81	0.89	271	37	54	53	1.85	3.2		19.59	97.1
3	16	86.82	0.87	271	39	54	53	1.85	3.2		19.37	96.2
	20	89.83	0.87	272	41	54	53	1.85	3.2		19.38	97.3
4	24	92.82	0.81	270	43	53	53	1.75	3.2		18.67	96.7
	28	95.80	0.81	271	45	53	53	1.75	3.2		18.69	99.9
5	32	98.77	0.74	271	45	53	53	1.7	3.2		17.86	99.6
	36	101.68	0.74	271	45	53	53	1.7	3.2		17.86	102.1
6	40	104.57	0.63	271	45	54	53	1.4	3.0		16.48	101.4
	44	107.25	0.65	272	43	54	53	1.4	3.0		16.75	101.7
7	48	109.93	0.7	272	43	54	53	1.6	3.2		17.38	100.2
	52	112.76	0.7	272	42	54	53	1.6	3.2		17.38	102.0
8	56	115.57	0.73	271	42	54	53	1.6	3.2		17.74	101.3
	60	118.36	0.8	272	42	55	53	1.8	3.5		18.58	98.4
9	64	121.32	0.8	272	42	55	53	1.8	3.5		18.58	99.8
	68	124.29	0.8	272	43	55	53	1.8	3.5		18.58	100.1
10	72	127.25	0.65	261	45	55	54	1.4	3.2		16.63	99.8
	76	130.01	0.65	260	45	55	54	1.4	3.2		16.61	102.2
11	80	132.68	0.62	247	48	55	54	1.4	3.2		16.08	98.8
	84	135.35	0.63	245	48	55	54	1.4	3.2		16.18	100.3
12	88	138.03	0.66	248	49	55	54	1.4	3.2		16.60	99.7
	92	140.70	0.66	250	49	55	54	1.4	3.2		16.62	97.2
	96	143.35								0.38		96.7
1	0	143.73	0.97	289	68	72	70	2.25	4.5		20.70	
	4	146.82	0.96	290	59	71	70	2.25	4.5		20.61	92.7
2	8	150.14	1.1	289	58	71	70	2.5	4.5		22.04	100.3
	12	153.61	1.1	291	55	71	70	2.5	4.5		22.07	97.9
3	16	157.09	0.96	289	55	70	70	2.25	4.5		20.59	98.3

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	4 - Particulate	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	DT

Pitot Factor	0.847	**Filter (mg)**	20.2		
DGMCF	0.976	**Probe (mg)**	17.4		
Barometric Pressure	29.84 "Hg	**CWTR (g)**	482		
Static Pressure	-10.800 "H_2O	**WCBDA (g)**	41.9		
Nozzle	0.2504 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.38 ft^3	
Length	0.000 ft	**Reading Interval**		4 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.09
CO2%	10.42
COppm	13.9

Measured H2O
14.9 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	20	160.42	0.97	290	50	71	70	2.25	4.5		20.71	100.6
4	24	163.72	0.9	290	50	71	70	2.1	4.2		19.95	99.2
	28	166.94	0.9	290	48	71	70	2.1	4.2		19.95	100.4
5	32	170.12	0.89	290	49	71	70	2.1	4.2		19.84	99.2
	36	173.32	0.89	290	48	71	70	2.1	4.2		19.84	100.4
6	40	176.49	0.85	291	51	72	70	2	4.0		19.40	99.4
	44	179.57	0.85	290	52	72	71	2	4.0		19.39	98.8
7	48	182.67	0.8	290	53	72	71	1.9	4.0		18.81	99.3
	52	185.72	0.79	290	53	72	71	1.9	4.0		18.69	100.7
8	56	188.78	0.8	291	54	73	71	1.9	4.0		18.82	101.6
	60	191.81	0.8	290	53	73	71	1.9	4.0		18.81	100.0
9	64	194.78	0.8	290	53	73	71	1.9	4.0		18.81	97.9
	68	197.80	0.8	290	53	73	71	1.9	4.0		18.81	99.6
10	72	200.80	0.8	288	55	73	72	1.9	4.0		18.79	98.9
	76	203.80	0.8	287	56	74	72	1.9	4.0		18.77	98.7
11	80	206.80	0.72	287	53	74	72	1.7	4.0		17.81	98.5
	84	209.66	0.72	288	50	74	72	1.7	4.0		17.82	99.0
12	88	212.55	0.62	264	50	74	72	1.5	4.0		16.27	100.1
	92	215.21	0.62	264	47	73	72	1.5	4.0		16.27	97.6
	96	217.93										99.9

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	5 - Particulate
Date:	September 29, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847
DGM CORRECTION FACTOR	0.976
NOZZLE DIAMETER	6.36 mm
DRY REF GAS VOLUME SAMPLED	4.174 m^3
AVGERGE ISOKINETICITY	100.3 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	140.0 °C
AVERAGE GAS MOISTURE BY VOLUME	15.7 %
AVERAGE GAS VELOCITY	19.26 m/s
BAROMETRIC PRESSURE (Station)	101.084 Kpa
STATIC PRESSURE	-2.839 Kpa
ABSOLUTE GAS PRESSURE	98.245 Kpa
OXYGEN CONCENTRATION	9.2 %
CARBON DIOXIDE CONCENTRATION	10.45 %
CARBON MONOXIDE CONCENTRATION	13.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	28.46 m^3/s
DRY REF GAS FLOWRATE	16.79 Rm^3/s
DRY ADJ GAS FLOWRATE	19.84 Rm^3/s
WET REF GAS FLOWRATE	19.91 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	3.4 mg
	-FILTER	17.2 mg
	-TOTAL	20.6 mg
DRY REF GAS VOLUME SAMPLED		4.174 m^3
PARTICULATE CONC. - ACTUAL		2.912 mg/m^3
PARTICULATE CONC. - DRY REF		4.935 mg/m^3
PARTICULATE CONC. - DRY ADJ		4.176 mg/m^3
PARTICULATE CONC. - WET REF		4.163 mg/m^3
PARTICULATE EMISSION RATE		0.082868 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - Particulate	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	DT

Pitot Factor	0.847	**Filter (mg)**	17.2		
DGMCF	0.976	**Probe (mg)**	3.4		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	536.1		
Static Pressure	-11.400 "H_2O	**WCBDA (g)**	33.6		
Nozzle	0.2504 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.36 ft^3	
Length	0.000 ft	**Reading Interval**		4 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.2
CO2%	10.45
COppm	13.1

Measured H2O
15.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	18.32	0.95	274	65	72	71	2.3	3.0		20.32	
	4	22.05	0.95	291	55	71	71	2.3	3.0		20.55	112.8
2	8	25.35	0.96	292	53	71	71	2.3	3.0		20.68	101.0
	12	28.60	0.96	292	55	71	71	2.3	3.0		20.68	99.0
3	16	31.98	0.92	292	51	71	71	2.1	3.0		20.24	103.0
	20	35.17	0.92	292	49	71	71	2.1	3.0		20.24	99.2
4	24	38.34	0.92	291	48	71	71	2.1	3.0		20.23	98.6
	28	41.53	0.87	291	47	72	71	2	3.0		19.67	99.2
5	32	44.62	0.81	291	45	72	71	1.9	3.0		18.98	98.7
	36	47.65	0.81	291	45	72	71	1.9	3.0		18.98	100.2
6	40	50.68	0.75	291	45	73	71	1.8	3.0		18.26	100.2
	44	53.63	0.75	291	45	73	72	1.8	3.0		18.26	101.3
7	48	56.57	0.78	288	45	74	73	1.85	3.0		18.59	100.9
	52	59.56	0.78	287	45	74	72	1.85	3.0		18.57	100.2
8	56	62.57	0.82	286	45	74	72	2	3.0		19.03	100.9
	60	65.66	0.82	286	46	75	72	2	3.0		19.03	101.0
9	64	68.74	0.83	286	46	74	73	2	3.0		19.15	100.6
	68	71.81	0.83	285	47	74	73	2	3.0		19.14	99.6
10	72	74.87	0.83	282	47	75	72	2	3.0		19.10	99.3
	76	77.94	0.81	279	47	74	72	1.95	3.0		18.83	99.4
11	80	80.98	0.83	279	48	75	73	2	3.0		19.06	99.5
	84	84.06	0.83	281	49	75	73	2	3.0		19.08	99.4
12	88	87.14	0.74	265	48	75	73	1.8	3.0		17.82	99.5
	92	90.08	0.72	260	47	75	73	1.8	3.0		17.52	99.5
	96	93.03								0.36		100.9
1	0	93.39	0.91	278	61	74	73	2.2	3.2		19.94	
	4	96.62	1	284	46	74	73	2.4	3.5		20.99	99.6
2	8	100.01	1.05	284	51	74	73	2.5	3.5		21.51	100.2
	12	103.50	1.05	285	50	74	74	2.5	3.5		21.52	100.7
3	16	106.95	0.94	285	54	74	74	2.2	3.5		20.36	99.5

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	5 - Particulate	**Test Location:**	APC Outlet Unit #1
Date:	September 29, 2016	**Operator:**	DT

Pitot Factor	0.847	**Filter (mg)**	17.2		
DGMCF	0.976	**Probe (mg)**	3.4		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	536.1		
Static Pressure	-11.400 "H_2O	**WCBDA (g)**	33.6		
Nozzle	0.2504 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.36 ft^3	
Length	0.000 ft	**Reading Interval**		4 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.2
CO2%	10.45
COppm	13.1

Measured H2O
15.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	20	110.26	0.94	284	52	74	74	2.2	3.5		20.35	**100.8**
4	24	113.54	0.9	284	54	75	74	2.2	3.5		19.91	**99.9**
	28	116.81	0.9	285	52	75	74	2.2	3.5		19.93	**101.6**
5	32	120.07	0.84	285	54	75	74	2	3.5		19.25	**101.4**
	36	123.22	0.84	285	53	75	74	2	3.5		19.25	**101.4**
6	40	126.32	0.8	285	54	75	74	1.8	3.2		18.79	**99.8**
	44	129.30	0.8	286	53	76	74	1.85	3.2		18.80	**98.2**
7	48	132.31	0.78	286	53	76	75	1.8	3.2		18.56	**99.2**
	52	135.30	0.78	285	51	76	74	1.8	3.2		18.55	**99.7**
8	56	138.31	0.79	285	49	76	75	1.9	3.2		18.67	**100.4**
	60	141.34	0.8	285	49	77	75	1.9	3.2		18.79	**100.3**
9	64	144.40	0.8	285	49	77	75	1.9	3.2		18.79	**100.6**
	68	147.43	0.8	285	49	77	75	1.9	3.2		18.79	**99.6**
10	72	150.45	0.8	285	49	78	76	1.9	3.2		18.79	**99.3**
	76	153.48	0.8	284	49	78	75	1.9	3.2		18.77	**99.4**
11	80	156.53	0.8	284	48	78	75	1.9	3.2		18.77	**100.1**
	84	159.54	0.73	265	48	78	76	1.8	3.5		17.70	**98.8**
12	88	162.48	0.73	276	48	78	76	1.8	3.5		17.84	**99.6**
	92	165.42	0.73	276	48	78	76	1.8	3.5		17.84	**100.4**
	96	168.33										**99.3**

ORTECH Environmental

Plant:	Covanta DYEC
Plant Location:	Courtice, ON
Test Location:	APC Outlet Unit #1
Test No.:	6 - Particulate
Date:	September 30, 2016

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847
DGM CORRECTION FACTOR	0.976
NOZZLE DIAMETER	6.36 mm
DRY REF GAS VOLUME SAMPLED	4.074 m^3
AVGERGE ISOKINETICITY	99.1 %
STACK DIAMETER	1.37 m
LENGTH	0.00 m
WIDTH	0.00 m
AREA OF STACK or DUCT	1.48 m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	140.8 °C
AVERAGE GAS MOISTURE BY VOLUME	15.0 %
AVERAGE GAS VELOCITY	18.90 m/s
BAROMETRIC PRESSURE (Station)	101.084 Kpa
STATIC PRESSURE	-2.739 Kpa
ABSOLUTE GAS PRESSURE	98.345 Kpa
OXYGEN CONCENTRATION	9.23 %
CARBON DIOXIDE CONCENTRATION	10.44 %
CARBON MONOXIDE CONCENTRATION	14.1 ppm

FLOWRATE

ACTUAL GAS FLOWRATE	27.93 m^3/s
DRY REF GAS FLOWRATE	16.59 Rm^3/s
DRY ADJ GAS FLOWRATE	19.56 Rm^3/s
WET REF GAS FLOWRATE	19.53 Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	2.6 mg
	-FILTER	19.2 mg
	-TOTAL	21.8 mg
DRY REF GAS VOLUME SAMPLED		4.074 m^3
PARTICULATE CONC. - ACTUAL		3.179 mg/m^3
PARTICULATE CONC. - DRY REF		5.351 mg/m^3
PARTICULATE CONC. - DRY ADJ		4.539 mg/m^3
PARTICULATE CONC. - WET REF		4.549 mg/m^3
PARTICULATE EMISSION RATE		0.088793 g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Environmental

Plant:	Covanta DYEC	**Plant Location:**	Courtice, ON
Test No.:	6 - Particulate	**Test Location:**	APC Outlet Unit #1
Date:	September 30, 2016	**Operator:**	DT

Pitot Factor	0.847	**Filter (mg)**	19.2		
DGMCF	0.976	**Probe (mg)**	2.6		
Barometric Pressure	29.85 "Hg	**CWTR (g)**	490.2		
Static Pressure	-11.000 "H_2O	**WCBDA (g)**	38		
Nozzle	0.2504 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.36 ft^3	
Length	0.000 ft	**Reading Interval**		4 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.23
CO2%	10.44
COppm	14.1

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	69.10	0.95	282	68	74	73	2.3	3.2		20.39	
	4	72.15	0.92	288	56	73	73	2.2	3.0		20.15	91.7
2	8	75.43	0.92	288	51	73	73	2.2	3.0		20.15	100.7
	12	78.67	0.95	288	49	73	73	2.25	3.0		20.47	99.5
3	16	81.94	0.92	288	49	73	73	2.2	3.0		20.15	98.8
	20	85.22	0.92	288	49	74	73	2.2	3.0		20.15	100.7
4	24	88.49	0.87	289	50	74	73	2.1	3.0		19.61	100.3
	28	91.67	0.87	289	51	74	73	2.1	3.0		19.61	100.3
5	32	94.82	0.81	289	52	75	73	1.9	3.0		18.92	99.4
	36	97.89	0.81	289	51	75	74	1.9	3.0		18.92	100.3
6	40	100.94	0.72	289	49	75	73	1.7	3.0		17.84	99.5
	44	103.81	0.72	289	48	75	73	1.7	3.0		17.84	99.4
7	48	106.63	0.76	289	49	76	74	1.8	3.0		18.32	97.6
	52	109.56	0.76	289	49	76	74	1.8	3.0		18.32	98.6
8	56	112.50	0.78	289	48	77	75	1.85	3.0		18.56	98.9
	60	115.50	0.8	288	48	77	74	1.9	3.0		18.79	99.4
9	64	118.52	0.82	288	48	77	74	2	3.0		19.02	98.9
	68	121.61	0.82	286	48	77	75	2	3.0		19.00	100.0
10	72	124.70	0.84	285	49	77	75	2	3.0		19.21	99.7
	76	127.80	0.84	286	50	78	75	2	3.0		19.23	98.8
11	80	130.87	0.84	287	50	78	75	2	3.2		19.24	97.8
	84	133.98	0.8	273	50	78	75	1.9	3.0		18.60	99.2
12	88	137.01	0.82	273	50	78	75	1.95	3.2		18.83	98.0
	92	140.09	0.82	275	51	78	76	1.95	3.2		18.85	98.4
	96	143.17								0.36		98.5
1	0	143.53	0.88	278	65	76	75	2.15	3.5		19.57	
	4	146.69	0.9	288	53	75	75	2.2	3.5		19.93	98.1
2	8	149.95	0.99	288	52	75	75	2.3	3.5		20.90	100.8
	12	153.27	1	288	57	75	75	2.3	3.5		21.01	97.9
3	16	156.60	0.95	288	56	75	75	2.3	3.5		20.47	97.7

ORTECH Environmental

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Nozzle	0.2504 inches				
Stack Diameter	4.500 ft	**Leak Check Volume**		0.36 ft^3	
Length	0.000 ft	**Reading Interval**		4 minutes	
Width	0.000 ft	**Number of Ports**		2	
		Number of points / Port		12	

Combustion Gases	
O2%	9.23
CO2%	10.44
COppm	14.1

Measured H2O
15.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	20	159.94	0.95	287	54	75	75	2.3	3.5		20.46	100.6
4	24	163.28	0.9	288	56	75	75	2.15	3.5		19.93	100.5
	28	166.48	0.9	288	55	76	75	2.15	3.5		19.93	98.9
5	32	169.70	0.81	288	57	76	75	1.9	3.5		18.90	99.5
	36	172.78	0.81	288	56	76	75	1.9	3.5		18.90	100.2
6	40	175.82	0.72	288	60	76	75	1.7	3.5		17.82	98.9
	44	178.73	0.72	288	54	76	75	1.7	3.5		17.82	100.4
7	48	181.60	0.69	289	51	77	75	1.65	3.5		17.46	99.0
	52	184.45	0.69	289	49	77	76	1.65	3.5		17.46	100.4
8	56	187.28	0.72	289	49	77	76	1.7	3.5		17.84	99.6
	60	190.17	0.72	289	48	77	76	1.7	3.5		17.84	99.6
9	64	193.04	0.75	288	48	77	76	1.8	3.5		18.19	98.9
	68	195.96	0.75	287	47	77	75	1.8	3.5		18.18	98.5
10	72	198.90	0.7	279	48	78	76	1.7	3.5		17.47	99.2
	76	201.75	0.74	286	49	79	76	1.8	3.5		18.05	98.8
11	80	204.68	0.78	287	49	78	76	1.9	3.5		18.54	99.2
	84	207.69	0.78	284	50	77	75	1.9	3.5		18.50	99.5
12	88	210.70	0.6	265	49	77	75	1.4	3.2		16.02	99.5
	92	213.34	0.6	263	50	77	76	1.4	3.2		16.00	98.1
	96	215.96										97.1