

Report of...

Compliance Emission Testing

performed for...

Post Consumer Brands Battle Creek, Michigan

on

Multiple Sources

July 18-20, August 1-2 and ^{November}~~October~~ 7, 2017

050.25

Network Environmental, Inc.
Grand Rapids, MI

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JAN 04 2018

AIR QUALITY DIVISION

I. INTRODUCTION

Network Environmental, Inc. was retained by Post Consumer Brands of Battle Creek, Michigan, to conduct a compliance emission study at their facility. The purpose of the study was to determine the particulate emissions from stacks No. 435, 488, 494, 2930, 32115 and 29113 (this sample is labeled 2983 in the appendices and the raw data sheets) in order to document compliance with MI-ROP-B1548-2014c.

The following test methods were employed to conduct the sampling:

- Total Particulate Matter – U.S. EPA Method 17
- PM₁₀ (including back half condensable analysis) – U.S. EPA Method 202 (in combination with EPA Method 17)
- Exhaust Gas Parameters (air flow rate, temperature, moisture & density) – U.S. EPA Reference Methods 1 through 4.

November

The sampling was performed on July 18-20, August 1-2, and ~~October~~ 7, 2017 by Stephan K. Byrd, R. Scott Cargill, Richard D. Eerdmans and David D. Engelhardt of Network Environmental, Inc.. Assisting with the sampling was Ms Cathy Sanford of Post Consumer Brands and the operating staff of the facility. Mr. Tom Gasloli and Ms. Monica Brothers of the MDEQ AQD were present to observe the testing and source operation.

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II. PRESENTATION OF RESULTS

**II.1 TABLE 1
PM EMISSION RESULTS
POST CONSUMER BRANDS
BATTLE CREEK, MICHIGAN**

Source	Sample	Date	Time	Air Flow Rate SCFM ⁽¹⁾	Concentration lbs/1000 lbs	Mass Rate Lbs/Hr
EU32115	1	7/18/17	15:23-16:25	2,849	0.0030	0.004
	2	7/18/17	16:50-17:52	2,848	0.0082	0.010
	3	7/18/17 7/19/17	18:10-18:30 13:08-13:50	2,807	0.0061	0.007
	Average			2,835	0.0058	0.007
EU29113	1	7/19/17	12:06-14:23	6,485	0.00016	0.004
	2	7/19/17	15:19-16:31	6,671	0.00016	0.004
	3	7/19/17	17:40-18:43	6,764	0.00047	0.013
	Average			6,640	0.0026	0.007
EU2930	1	7/20/17	10:00-11:02	11,223	0.0022	0.108
	2	7/20/17	12:25-13:27	10,985	0.0022	0.103
	3	7/20/17	14:37-19:33	10,696	0.0027	0.124
	Average			10,968	0.0024	0.112

(1) – Flow rates are expressed in terms of Standard Cubic Feet Per Minute @ STP (68° F and 29.92" Hg).

**II.1 TABLE 1 (contd.)
PM EMISSION RESULTS
POST CONSUMER BRANDS
BATTLE CREEK, MICHIGAN**

Source	Sample	Date	Time	Air Flow Rate SCFM ⁽¹⁾	Concentration lbs/1000 lbs	Mass Rate Lbs/Hr
EU435	1	8/1/17	11:35-12:40	6,207	0.00084	0.023
	2	8/1/17	13:02-16:20	5,982	0.00054	0.014
	3	8/1/17	16:50-17:55	6,425	0.00037	0.011
	Average			6,205	0.00058	0.016
EU488	1	8/2/17	08:29-09:49	2,270	0.00029	0.003
	2	8/2/17	10:10-11:12	2,223	0.00018	0.002
	3	8/2/17	11:35-13:09	2,100	0.00050	0.005
	Average			2,198	0.00032	0.003
EU494	1	11/7/17	7:50-8:59	2,724	0.00071	0.008
	2	11/7/17	9:35-13:06	2,768	0.00047	0.006
	3	11/7/17	13:31-14:42	2,822	0.00072	0.009
	Average			2,771	0.00063	0.008

(1) – Flow rates are expressed in terms of Standard Cubic Feet Per Minute @ STP (68° F and 29.92" Hg).

**II.2 TABLE 2
PM₁₀ EMISSION RESULTS
POST CONSUMER BRANDS
BATTLE CREEK, MICHIGAN**

Source	Sample	Date	Time	Air Flow Rate SCFM ⁽¹⁾	Mass Rate Lbs/Hr
EU32115	1	7/18/17	15:23-16:25	2,849	0.107
	2	7/18/17	16:50-17:52	2,848	0.079
	3	7/18/17 7/19/17	18:10-18:30 13:08-13:50	2,807	0.069
	Average				2,835
EU29113	1	7/19/17	12:06-14:23	6,485	0.185
	2	7/19/17	15:19-16:31	6,671	0.141
	3	7/19/17	17:40-18:43	6,764	0.150
	Average				6,640
EU2930	1	7/20/17	10:00-11:02	11,223	0.256
	2	7/20/17	12:25-13:27	10,985	0.199
	3	7/20/17	14:37-19:33	10,696	0.288
	Average				10,968

(1) – Flow rates are expressed in terms of Standard Cubic Feet Per Minute @ STP (68° F and 29.92" Hg).

**II.2 TABLE 2 (contd.)
PM₁₀ EMISSION RESULTS
POST CONSUMER BRANDS
BATTLE CREEK, MICHIGAN**

Source	Sample	Date	Time	Air Flow Rate SCFM ⁽¹⁾	Mass Rate Lbs/Hr
EU435	1	8/1/17	11:35-12:40	6,207	0.363
	2	8/1/17	13:02-16:20	5,982	0.090
	3	8/1/17	16:50-17:55	6,425	0.054
	Average			6,205	0.169
EU488	1	8/2/17	08:29-09:49	2,270	0.021
	2	8/2/17	10:10-11:12	2,223	0.016
	3	8/2/17	11:35-13:09	2,100	0.026
	Average			2,198	0.021
EU494	1	11/7/17	7:50-8:59	2,724	0.036
	2	11/7/17	9:35-13:06	2,768	0.030
	3	11/7/17	13:31-14:42	2,822	0.026
	Average			2,771	0.030

(1) – Flow rates are expressed in terms of Standard Cubic Feet Per Minute @ STP (68° F and 29.92" Hg).

III. DISCUSSION OF RESULTS

The results of the testing are summarized in Tables 1 through 2 (Sections II.1 through II.2).

Tables consist of the following test information:

- Sample Dates & Times
- Air Flow Rates in terms of Standard Cubic Feet Per Minute (SCFM) (STP = 68 °F & 29.92 in. Hg)
- Particulate Concentrations in terms of Pounds Per Thousand Pounds (Lbs/1000 Lbs)
- Particulate Mass Rates in terms of Pounds Per Hour (Lbs/Hr)

A more detailed breakdown of each individual sample can be found in Appendix A.

IV. SAMPLING AND ANALYTICAL PROTOCOL

IV.1 Total Particulate – The sampling was performed in accordance with U.S. EPA Reference Method 17. Three (3) were collected from each exhaust tested. Each sample was a minimum of sixty (60) minutes in duration and had a minimum sample volume of thirty (30) dry standard cubic feet. The samples were collected isokinetically on in-stack filters

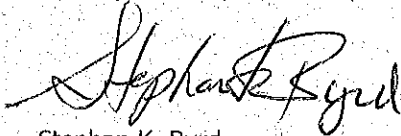
The samples were recovered and transported to the laboratory where the particulate was determined from the front half (filter and nozzle wash) by gravimetric analysis. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis. A diagram of the sampling train is shown in Figure 1.

IV.2 PM₁₀ – The total filterable particulate sampling was conducted in accordance with U.S. EPA Reference Method 17. The PM₁₀ particulate (including back half condensable analysis) sampling was conducted in accordance with U.S. EPA reference Methods 17 and 202. Method 17 is an in stack filtration method. The samples were collected isokinetically on filters and in distilled water. Three (3) were collected from each exhaust tested. Each sample was a minimum of sixty (60) minutes in duration and had a minimum sample volume of thirty (30) dry standard cubic feet.

The nozzle rinses and filters were analyzed gravimetrically for particulate in accordance with Method 17. The condensate (back half) was extracted and analyzed for particulate in accordance with Method 202. All of the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis. The particulate and condensable sampling train can be seen in Figure 1

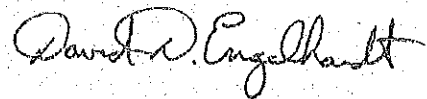
IV.3 Exhaust Gas Parameters – The exhaust gas parameters (air flow rate, temperature, moisture and density) were determined in conjunction with the other sampling by employing U.S. EPA Reference Methods 1 through 4. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis. All stack diameters and sampling points can be found in Appendix C.

This report was prepared by:



Stephan K. Byrd
President

This report was reviewed by:



David D. Engelhardt
Vice President

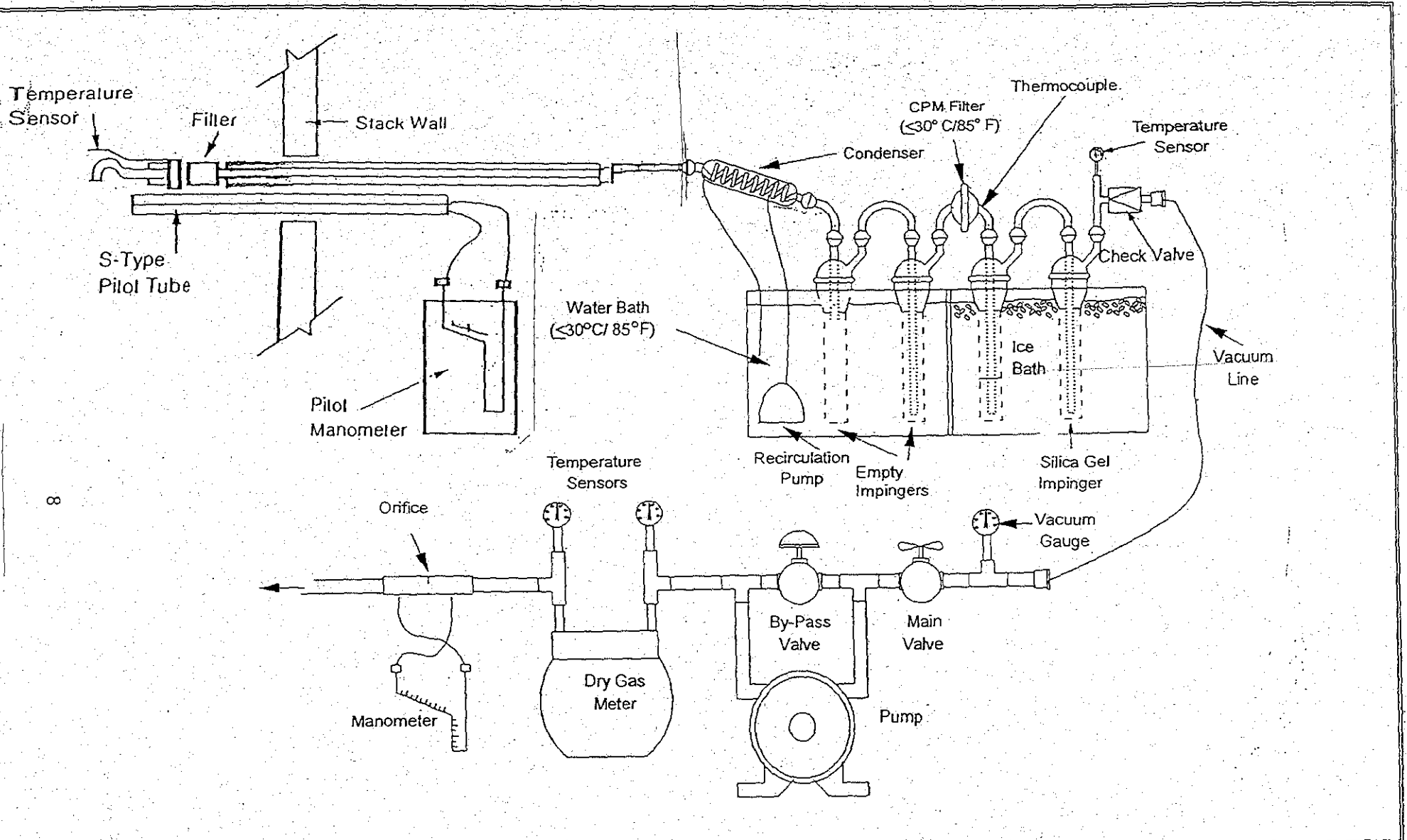


Figure 1
PM & PM₁₀ Sampling Train