I. INTRODUCTION

Network Environmental, Inc. was retained by Prolime Agricultural, Inc. to perform compliance emission sampling on the Pelletizer exhaust of at their Laingsburg, Michigan facility. The purpose of the study was to meet the testing requirements of Michigan Department of Environment, Great Lakes and Energy (EGLE) – Air Quality Division Permit to Install No. 41-18. EGLE Air Permit No. 41-18 has established the following emission limit for this source:

Source	Pollutant	Emission Limit
Pelletizer	VOCs	13.2 PPH

The following reference test methods were employed to conduct the sampling:

- VOCs – U.S. EPA Method 25A
- Methane – U.S. EPA Method 18
- Exhaust Gas Parameters – U.S. EPA Methods 1 through 4

The sampling was performed on November 5, 2020. The sampling was performed by Stephan K. Byrd and Richard D. Eerdmans of Network Environmental, Inc. Assisting with the study was Mr. Bob Rogers and John Uliveo of Prolime. Mrs. Julie Brunner and Mr. Mark Dziadosz of the Michigan Department of the Environment, Great Lakes and Energy (EGLE) – Air Quality Division were present to observe the sampling and source operation.

II. PRESENTATION OF RESULTS

II.1 TABLE 1
VOC EMISSION RESULTS SUMMARY
PELLETIZER EXHAUST
PROLIME AGRICULTURAL, INC.
LAINGSBURG, MICHIGAN

Sample	Date	Time	Air Flow Rate SCFM (1)	Concentration PPM (2)	Emission Rate Lbs/Hr (3)
1	11/5/20	09:52-10:52	38,054	32.2	8.34
2	11/5/20	11:27-12:27	37,930	30.9	7.98
3	11/5/20	12:55-13:55	38,085	25.5	6.61
Average			**38,023**	**29.5**	**7.64**

(1) SCFM = Standard Cubic Feet Per Minute (STP = 68 ° F & 29.92 in. Hg)
(2) PPM = Parts per million on a Wet basis minus methane
(3) Lbs/Hr = Pounds of VOC Per Hour

III. DISCUSSION OF RESULTS

The results of the emission sampling are summarized in Table 1 (Section II.1). The results are presented as follows:

III.1 Pelletizer VOC Emission Results (Table 1)

Table 1 summarizes the Pelletizer emission results as follows:

- Sample
- Date
- Time
- Air Flow Rate (SCFM) – Standard Cubic Feet Per Minute (STP = 68 °F & 29.92 in. Hg)
- Concentration (PPM, Wet) – Parts Per Million on a Wet Basis minus methane
- Mass Emission Rate (Lbs/Hr) – Pounds of VOC Per Hour

IV. SAMPLING AND ANALYTICAL PROTOCOL

IV.1 VOCs - The VOC sampling was conducted in accordance with U.S. EPA Reference Method 25A. A J.U.M. 3-500 with Flame Ionization Detector gas analyzer was used to monitor the Pelletizer exhaust. A heated Teflon sample line was used to transport the exhaust gases to the analyzer. The analyzer produces instantaneous readouts of the VOCs concentrations (PPM). The analyzer was operated on the 0-1000 ppm scale.

The analyzer was calibrated by direct injection prior to the testing. A span gas of 959.3 PPM was used to establish the initial instrument calibration. Calibration gases of 250 PPM and 491 PPM were used to determine the calibration error of the analyzer. After each sample, a system zero and system injection of 250 PPM were performed to establish system drift during the test period. All calibration gases were EPA Protocol 1 Certified.

The analyzer was calibrated to the output of the data acquisition system (DAS) used to collect the data from the exhaust. A diagram of the sampling train is shown in Figure 1. Three (3) samples, each sixty (60) minutes in duration, were collected from the exhaust. All quality assurance and quality control procedures listed in the method were incorporated in the sampling and analysis.

IV.2 Methane – The methane determination was performed in accordance with EPA Method 18. Integrated Tedlar bag samples were collected during each of the Method 25A runs. The bag samples were overnighted to the laboratory where they were analyzed by GC-FID. All quality assurance and quality control procedures listed in the method were incorporated in the sampling and analysis. The methane results can be found in Appendix D.

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 Methods 1 through 4. An integrated Tedlar bag sample was collected to determine the Oxygen and carbon dioxide content of the exhaust gas. The measurements were determined by orsat analysis. Moisture was determined by operating a moisture train. One moisture train was performed for each test run. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis.

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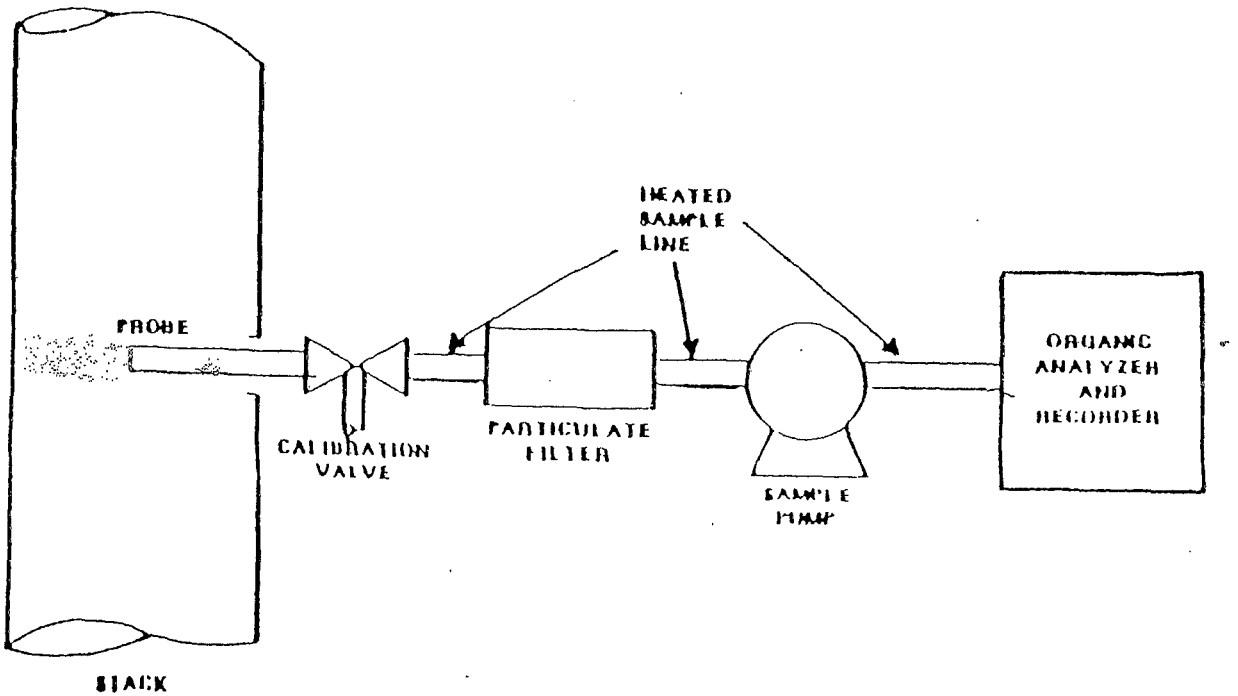

Figure 1

THC Sampling Train