Air Emissions Test Report
Aluf Plastics, Inc.
Vapor/Odor Extraction and Treatment Control System
Orangeburg, New York

Prepared for:

Mr. Don Brenner
Attorney at Law

Prepared by:

Mr. Leigh A. Gammie
Gammie Air Monitoring, LLC

September 2006

GamAir Project No.: 503-0606

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REPORT CERTIFICATION

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, that the submitted information is true, accurate, and complete to the best of my knowledge and belief.

Leigh A. Gammie
Officer, Gammie Air Monitoring, LLC

20 SEP 2006
Date

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1.0 INTRODUCTION

1.1 Summary of Test Program

Gammie Air Monitoring, LLC (GamAir) has been retained by Attorney Don Brenner/HRP Associates, Inc., on behalf of Aluf Plastics, Inc., to conduct an emission measurement test program pursuant to the request of the Rockland County, Department of Health (RCDH). The purpose of this test program was to determine the removal efficiency of the following compounds: total suspended and condensible particulate matter, formaldehyde, acetaldehyde, formic acid, acetic acid, acetone, and methyl ethyl ketone (MEK) from a US Filter, Model RB-10 treatment adsorber pollution control device. In addition to the inlet and outlet emissions testing for the aforementioned compounds, total hydrocarbons (THC) were monitored at the outlet of the US Filter control device. Presently four different process lines are ducted into the US Filter control device.

Only 3 during test

These emission tests were carried out in conformance with the NYDEC guidelines for source emission testing and EPA Methods 1-5/202, 25A, CARB Method 430 (formaldehyde and acetaldehyde), OSHA Method ID-186SG (acetic and formic acid), and NIOSH Method 2549 (acetone and MEK). EPA methods can be found in Title 40, Code of Federal Regulations, Part 60, Appendix A, CARB Method 430 can be found in the California Environmental Protection Agency, Air Resources Board manual, and the NIOSH methods can be found in the NIOSH manual of analytical methods. This test program was conducted during a single field effort on 27 July 2006. Mr. Lyman Tinc of HRP was responsible for coordinating the testing with the source operators and collecting all process data. GamAir was responsible for collecting all air emission samples and the respective analysis of these samples.

Section 2.0 of this report presents a description of the source and describes the sampling locations used in this test program. Section 3.0 outlines the test program objectives and summarizes the test results. Sampling and analysis methodologies are presented in Section 4.0. Quality assurance, quality control (QA/QC) procedures specific to this test program are described in Section 5.0.

1.2 Test Program Organization

The following is a list of those individuals responsible for the organization of this test program.

Ms. Ed Lawner	Aluf Plastics	(845) 365-2200
Mr. Jeffrey Sotek	HRP	(518) 899-3011
Mr. Gregory Price	RCDH	(845) 364-2524
Mr. Patrick Dunn	NYSDEC	(845) 256-3046
Ms. Cindy Gosselin	Hartford LC Laboratory	(860) 547-2833
Ms. Ancy Sebastian	Maxxam Analytical, Inc.	(905) 332-8788
Mr. Leigh Gammie	GamAir	(860) 658-4929

2.0 SOURCE AND SAMPLING LOCATION DESCRIPTIONS

2.1 Process and Air Pollution Control Description

The Aluf Plastics Inc. facility currently operates four multiple extruding process lines each equipped with a dedicated exhaust hood. During this test program Extruder #1 was off line for repairs, Extruders #2, #3, and #4 were fully functional. All exhaust hoods were tied together into one common manifold, from the common manifold exhaust fumes pass through a cooling chamber and a knock out tank for condensation separation. Exhaust fumes exit the knock out tank then enter the induced draft (ID) fan. From the ID fan fumes (positive pressure) are then sent to a custom built pre-filter housing with four Flanders PrecisionAire filters (24" x 24" x 2"), and finally to the US Filter, Model RB-10 treatment adsorber. Exhaust fumes exit the US Filter system and are then discharged to the atmosphere at a flowrate of 6,000 actual cubic feet of air per minute. Pressure drop across the Flanders PrecisionAire filter ranged between 0.3 to 0.4 inches of water column (in. w.c.); while the pressure drop across the US Filter device ranged between 1.2 to 1.0 inches of water column. The US Filter system was loaded with approximately 10,000 pounds of carbon.

2.2 Process Monitoring

During this test program Extruders 2-4 operated at normal production rates as shown in Appendix D. For this test program, the following parameters were monitored and recorded by plant personnel during each test run. Minimum process monitoring took place every 15 minutes during each of the three test runs.

- Production rate from each extruder
- Pre-filter pressure drop
- US Filter adsorber pressure drop
- Exhaust gases volumetric flowrate
- Stack temperature

2.3 Inlet Sampling Location

The inlet flue gas sampling location consisted of a diagonal section of ductwork with an inside diameter of 20 inches. Two test ports, spaced 90° apart, were located 50 inches (2.5 duct diameters) from the nearest upstream disturbance and 30 inches (1.5 duct diameters) from the nearest downstream disturbance. EPA Method 1 recommends the use of twenty-four traverse points (12 per port) for isokinetic sampling. The individual traverse point locations and ductwork schematics are shown in Appendix A. For the inlet location only the horizontal sample port was used with a double traverse of each 12 sample points. The vertical sample port could not be safely accessed.

2.4 Outlet Sampling Location

The outlet flue gas sampling occurred in a vertical section of ductwork with an inside diameter of 20 inches. Two test ports, spaced 90° apart, were located 80 inches (4.0 duct diameters) from the nearest upstream disturbance and 20 inches (1.0 duct diameters) from the nearest downstream disturbance. In accordance with EPA Method 1, twenty four traverse points (12 per port) were used for isokinetic sampling. The individual traverse point locations

and ductwork schematic are shown in Appendix A.

3.0 SUMMARY AND DISCUSSION OF RESULTS

3.1 Objectives and Test Matrix

The purpose of this test program was to determine the removal efficiency of suspended and condensible particulate matter, formaldehyde, acetaldehyde, formic acid, acetic acid, acetone and methyl ethyl ketone from the newly installed US Filter carbon adsorber unit. All emissions testing was conducted in accordance with EPA, California EPA, and NIOSH sampling procedures and methodologies. Efficiency tests were conducted simultaneously at the inlet to the US Filter carbon adsorber unit and at the outlet of the carbon adsorber unit. Three emissions tests were conducted for each parameter, with the average result of the three tests used for reporting purposes. The specific objectives of the test program are to:

- Measure continuous total hydrocarbons emissions from the outlet stack in accordance with EPA Method 25A.
- Determine removal efficiency of suspended particulate and condensible particulate matter in accordance with EPA Methods 1-5 and 202.
- Determine removal efficiency of formaldehyde and acetaldehyde in accordance with CARB Method 430.
- Determine removal efficiency of acetone and methyl ethyl ketone in accordance with NIOSH Method 2549.
- Determine removal efficiency of formic acid and acetic acid in accordance with OSHA Method ID-186SG.

Table 3-1 lists the parameters measured, the EPA reference methods used, and the sampling times for each test.

TABLE 3-1
Test Matrix
Air Emissions Test Program
Aluf Plastics, Inc.
Vapor/Odor Extraction Treatment System
Orangeburg, New York

Inlet/Outlet Parameters	Test Methods	Sample Times	Emission Limits	Analytical Laboratory	Number of Runs
Volumetric Flowrates	EPA M1-4	15 min.	NA	GamAir	3
Total Hydrocarbons (**Outlet Only**)	Method 25A	60 min.	NA	GamAir	3
Suspended Particulate	EPA M1-5	72-108 min.	NA	GamAir	3
Condensible Particulate	EPA M202	72-108 min.		Maxxam	3
Formic Acid	OSHA ID-186SG	60 min.	NA	Hartford LC	3
Acetic Acid	OSHA ID-186SG	60 min.		Hartford LC	3
Acetone	NIOSH M2549	60 min.	NA	Hartford LC	3
Methyl Ethyl Ketone	NIOSH M2549	60 min.		Hartford LC	3
Formaldehyde	CARB M430	60 min.	NA	Maxxam	3
Acetaldehyde	CARB M430	60 min.	NA	Maxxam	3

3.2 Field Test Changes

The vertical sample port at the inlet test location could not be safely accessed; hence the horizontal sample port was traversed twice yielding 24 total sample points. The outlet sample location was moved to the rooftop location to facilitate the use of both sample ports. Outlet Run No. 1 sample time was increased from 72 minutes to 108 minutes to accommodate process changes which may have occurred from the closing of several process dampers.

3.3 Summary of Results

Carbon filter inlet test results are summarized in Table 3-2. Detailed test summaries are contained in Appendix B. Copies of all field data sheets are shown in Appendix C. Results from the carbon filter outlet tests are shown in Table 3-3.

3.3.1 Suspended Particulate and Total Suspended Particulate Results

Suspended particulate matter (front half matter collected in the sample probe and heated filter) increased from 0.12 pounds per hour, at the inlet location, to 0.139 pounds per hour at the outlet location. Volumetric flowrates were essentially the same with 5586 dry standard cubic feet per minute (DSCFM) measured at the inlet location as compared to 5369 DSCFM at the outlet location. Total suspended particulate matter (front half and back half fractions combined) was reduced by 48.2 percent. Particulate emissions decreased from 0.85 pounds per hour to 0.44 pounds per hour.

3.3.2 Total Hydrocarbons Tests (Outlet Only)

Total hydrocarbons were measured only at the outlet sample location. Emissions of total hydrocarbons (as methane) averaged 0.61 pounds per hour.

3.3.3 Acetaldehyde and Formaldehyde Tests

Results from the acetaldehyde tests showed no removal efficiency with outlet emissions being slightly higher than the inlet emissions. The acetaldehyde outlet emission rate averaged 0.0374 pounds per hour. Formaldehyde emissions were reduced by 18.2 percent, average inlet emission rate was 0.0159 pounds per hour compared to the outlet emission rate of 0.130 pounds per hour.

3.3.4 Acetone and Methyl Ethyl Ketone Tests

Both acetone and methyl ethyl ketone (MEK) compounds were not detected at either the inlet or outlet test locations. For reporting purposes the outlet acetone emission rate was less than (<) 0.059 pounds per hour and the MEK emission rate was less than 0.052 pounds per hour.

3.3.5 Acetic Acid and Formic Acid Tests

Outlet acetic acid emissions were slightly higher, at 0.098 pounds per hour, than the inlet emission rate of 0.090 pounds per hour. Formic acid results showed a 51.2 percent decrease from the inlet to the outlet test location. Outlet formic acid emissions averaged 0.021 pounds per hour.

Table 3-2
Summary of Emissions Data
Aluf Plastics, Inc.
Inlet to Vapor/Odor Extraction Treatment System
Orangeburg, New York
27 July 2006

Method/Component	Units	Run 1	Run 2	Run 3	Average
Sampling Periods	military time	1107-1219	1325-1437	1605-1717	
EPA M2 – Flow	dscfm	6189	5712	4857	5586
EPA M3 - O_2/CO_2	% O_2	20.8	20.8	20.8	20.8
	% CO_2	0.0	0.0	0.0	0.0
EPA M4 - Moisture	%	2.13	2.96	2.48	2.52
EPA M5 – Suspended Particulate (front half)	lb/hr	0.16	0.083	0.11	0.12
EPA M5 and M202 – Total Particulate (front half and back half)	lb/hr	0.73	1.02	0.79	0.85
CARB M430 – Formaldehyde	lb/hr	0.0302	0.00803	0.00939	0.0159
Acetaldehyde	lb/hr	0.0506	0.0218	0.0243	0.0322
NIOSH M2549 – Acetone	lb/hr	<0.0698	<0.0649	<0.0551	<0.063
MEK	lb/hr	<0.0620	<0.0576	<0.0490	<0.056
OSHA ID-186SG - Acetic Acid	lb/hr	0.101	0.0664	0.103	0.090
Formic Acid	lb/hr	0.0588	0.0336	0.0365	0.043

dscfm – dry standard cubic feet per minute at 68°F and 29.92 inches of mercury.
% - percent, (by volume, dry)
ppm – parts per million, (by volume, dry)
lb/hr – pounds per hour

Table 3-3
Summary of Emissions Data
Aluf Plastics, Inc.
Outlet From Vapor/Odor Extraction Treatment System
Orangeburg, New York
27 July 2006

Method/Component	Units	Run 1	Run 2	Run 3	Average
Sampling Period	military time	1102-1253	1323-1438	1608-1722	
EPA M2 – Flow	dscfm	5793	5435	4878	5369
EPA M3 - O_2/CO_2	% O_2	20.8	20.8	20.8	20.8
	% CO_2	0.0	0.0	0.0	0.0
EPA M4 - Moisture	%	3.09	3.39	2.52	3.00
EPA M5 – Suspended Particulate (front half)	lb/hr	0.042	0.169	0.206	0.139
EPA M5 and M202 – Total Particulate (front half and back half)	lb/hr	0.238	0.512	0.570	0.440
Method 25A - Total Hydrocarbons (Outlet Only)	ppm lb/hr	53.2 0.769	39.6 0.537	43.2 0.526	45.3 0.61
CARB M430 – Formaldehyde Acetaldehyde	lb/hr lb/hr	0.0173 0.0427	0.0115 0.0350	0.0102 0.0344	0.0130 0.0374
NIOSH M2549 – Acetone MEK	lb/hr lb/hr	<0.0633 <0.0563	<0.0597 <0.0531	<0.0536 <0.0477	<0.059 <0.052
OSHA ID-186SG - Acetic Acid Formic Acid	lb/hr lb/hr	0.0860 0.0226	0.0947 0.0193	0.112 0.0216	0.098 0.021

dscfm – dry standard cubic feet per minute at 68°F and 29.92 inches of mercury.
% - percent, (by volume, dry)
ppm – parts per million, (by volume, dry)
lb/hr – pounds per hour

New York State Department of Environmental Conservation

Registration ID: 3-3924-00190/00005 **Facility DEC ID:** 3-3924-00190

AIR FACILITY REGISTRATION CERTIFICATE
In accordance with 6 NYCRR Subpart 201-4

Registration Issued to:
API INDUSTRIES INC
2 GLENSHAW ST
ORANGEBURG,NY 10962

Contact:
DAVID ANDERSON
2 GLENSHAW ST
ORANGEBURG,NY 10962
(845) 365-2200

Facility:
ALUF PLASTICS DIVISION
2 GLENSHAW ST
ORANGEBURG,NY 10962

Description:
Facility manufactures high denisty and low density (HDPE & LDPE) polyethylene plastic bags and covers for various industries. Typical on-site processes include shredding plastic bags for reclamation of materials, plastic extrusion for both HDPE and LDPE applications using plastic pellets, printing, packaging, warehousing and administration.

Total Number of Emission Points: 11 **Cap By Rule:** Yes

Authorized Activity By Standard Industrial Classification Code:
2673 - BAGS: PLASTICS, LAMINATED AND COATED

Registration Effective Date: 11/14/2005 **Registration Expiration Date:** 01/29/2013

List of Regulations in Application:
6 NYCRR Part 201 Permits and Registrations

GEORGE A SWEIKERT
REGION 3 AIR POLLUTION CONTROL ENGINEER
NYSDEC - REGION 3
21 S PUTT CORNERS RD
NEW PALTZ,NY 12561-1696

This registrant is required to operate this facility in accordance with all air pollution control applicable Federal and State laws and regulations. Failure to comply with these laws and regulations is a violation of the ECL and the registrant is subject to fines and/or penalties as provided by the ECL. If ownership of this facility changes, the registrant is required to notify the Department at the address shown above using the appropriate forms and procedures within 30 days after the transfer takes place. The present registrant will continue to be responsible for all fees and penalties until the Department has been notified of any change in ownership.