

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection**

N179426322

<b>FACILITY:</b> Atlas EPS, a Division of Atlas Roofing Corp.	<b>SRN / ID:</b> N1794
<b>LOCATION:</b> 8240 Byron Center Rd., BYRON CENTER	<b>DISTRICT:</b> Grand Rapids
<b>CITY:</b> BYRON CENTER	<b>COUNTY:</b> KENT
<b>CONTACT:</b> Dan Hielkema, Director of Accounting	<b>ACTIVITY DATE:</b> 07/08/2014
<b>STAFF:</b> Denise Plafcan	<b>COMPLIANCE STATUS:</b> Compliance
<b>SUBJECT:</b> Conduct an unannounced scheduled inspection.	<b>SOURCE CLASS:</b> MAJOR
<b>RESOLVED COMPLAINTS:</b>	

Denise Plafcan (DP) conducted an unannounced scheduled inspection to determine compliance with state and federal Air Quality rules and regulations and ROP MI-ROP-N1794-2012. DP drove around the area prior to entering the facility. There were no odors, fugitive emissions or opacity noted from the facility. DP met with, Dan Hielkema, Director of Accounting and explained the purpose of the inspection, reviewed the Environmental Inspection brochure and discussed any changes since the last inspection.

Dan and Paul Espinosa, Safety Coordinator, were both the escorts on the inspection. Responsibilities for Air Quality related compliance and MAERS will no longer be handled in the Accounting Department, Paul will be taking over those responsibilities. DP will send Paul information about signing up for MAERS training notification.

Atlas manufacturers structural foam made from expanded polystyrene (EPS) beads. The foam is used as a structural support on roadways, in landscape design, in garage doors and most recently as an alternative to extruded foam products used for insulation in construction projects. The raw beads are smaller than grains of salt and almost like a powder. The beads then go through the steam expander process with one of two on-site expanders. Following expansion the beads are allowed to rest in hanging bags and then go to the mold where they are pressed into blocks or panels. Some product is placed in an embosser that actually melts away the foam to create an embossed or three dimensional pattern. Foam blocks can be cut to size or ground to make a particular shape. Foam board that is used for construction is tinted orange with a powder (non-voc) dye that is added to the beads during the expansion process. Material that is tinted orange is done on a dedicated line to prevent cross contamination with the white product. The expanders are attached to an RTO which is located just outside the building on the same side as the expanders.

There is a Compliance Assurance Monitoring (CAM) plan required for the RTO but it is not listed in the ROP as a CAM Plan Flex Group. The conditions of the CAM plan are included in the Flex Group FGEPS Table.

They do not have a paper temperature chart recorder for their RTO they keep all the monitoring data electronically. Paul was able to access all of the electronic data while DP was on site for the inspection. Dan explained the low temperature indicator strobes and buzzer alarms near the expanders that cause the expanders to shut down if the RTO is not operating properly. These notification systems are checked regularly as part of their CAM.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EUEXPANDER2	Polystyrene expander	FGEPS
EUEXPANDER4	Polystyrene expander	FGEPS
EUEXPANDER5	Hirsch Vacutrans Polystyrene expander	FGEPS
EUBAGAGING	Bagaging area for EPS beads prior to molding	FGEPS
EUMOLD3	Polystyrene molding machine	FGEPS
EUMOLD4	Polystyrene molding machine	FGEPS
EUMOLD5	Polystyrene molding machine	FGEPS
EUMOLD6	Stand-alone polystyrene shape molding machine	FGEPS
EURTO	Thermal Oxidizer	FGEPS
EUCUTTING	Cutting lines, routers,	FGRULE290

	granulators	
EUEMBOSSING	Three embossing lines, where shapes or textures are burned into sheets of expanded polystyrene	FGRULE290

Dan asked if it was possible to run the expanders without the RTO if their emissions were well below permitted levels. He explained that they had a plant in another state that had that flexibility. DP explained that with such a high VOC limit that it was doubtful they would be allowed to operate without the RTO but that if they wanted there could be a discussion with the permit section to see if there was any flexibility. Dan did admit that the permit for the other state was below 100 tons of VOC, which would make a big difference in the flexibility of operating without the RTO.

#### EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

#### FLEXIBLE GROUP SUMMARY TABLE

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGEPS	Polystyrene bead expansion and molding operations with a Thermal Oxidizer	EUEXPANDER2 EUEXPANDER4 EUEXPANDER5 EUBAGAGING EUMOLD3 EUMOLD4 EUMOLD5 EUMOLD6 EURTO
FGRULE290	Shapes or textures are burned onto sheets of EPS Foam cutting operations	EUCUTTING EUEMBOSSING

#### FGEPS FLEXIBLE GROUP CONDITIONS

##### DESCRIPTION

This process expands and molds polystyrene beads, and consists of all expanders and molds.

**Emission Units:** EUEXPANDER2, EUEXPANDER4, EUEXPANDER5, EUBAGAGING, EUMOLD3, EUMOLD4, EUMOLD5, EUMOLD6, EURTO

**POLLUTION CONTROL EQUIPMENT** Thermal Oxidizer, to control expander emissions.

##### I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	COMPLIANCE
1. VOC	272.4 lb/hr <sup>2</sup>	Daily hours of operation average	FGEPS	Highest was June 10, 2014 at 116.46 lbs VOC/hr
2. VOC	374.5 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGEPS	190 tpy as of the end of June 2014

##### II. MATERIAL LIMIT(S)

The permittee shall limit the annual throughput of EPS beads in FGEPs at expansion based on a 12-month

rolling time period as determined at the end of each calendar month. Records are being maintained and were submitted electronically following the inspection.

### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. Input feed to the expanders shall cease immediately, consistent with safe operating procedures, upon initiation of the thermal oxidizer bypass. Input feed to the expanders shall not restart until the thermal oxidizer is back on line and functioning properly. Lock out and alarms were in place at the time of the inspection.
2. The permittee shall not operate more than four (4) block mold machines at any given time.
3. No excursions or exceedance were reported with the ROP 2013 Annual Certification.
  - a. a measurement of less than 1340°F upon a visual review of the report generated from electronic data at the end of each operating day.
  - b. any observation that the capture system is not operating under a negative operating pressure. No excursions, exceedances or monitor downtime have been reported since the issuance of the current ROP in May of 2012.
4. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of FGEPS (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). See Appendix 3 for the corrective action plan. The emission unit is automatically shut down in response to an excursion or exceedance. No excursions, exceedances or monitor downtime have been reported since the issuance of the current ROP in May of 2012.

### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall equip the thermal oxidizer with a continuous temperature indicator device. The oxidizer is equipped with an electronic temperature monitoring device, see attached print outs.
2. The permittee shall not input feed into any expander unless it is vented to the thermal oxidizer and the thermal oxidizer is installed and operating properly. Proper operation includes maintaining a minimum VOC destruction efficiency in the thermal oxidizer of 95 percent by weight, a minimum combustion temperature of 1340°F and a minimum retention time of 0.25 second. Temperature charts indicate the oxidizer is running properly and above the required temperature.

### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall conduct a performance test on the EPS process during the first year after the effective date of this permit. The performance test shall measure the thermal oxidizer inlet VOC concentration and thermal oxidizer VOC destruction efficiency. Proposed test methodology shall be submitted to and approved by the District Supervisor no less than 30 days prior to the anticipated date of the testing. Testing was conducted on October 4, 2012. After a review, the tests results were deemed acceptable to demonstrate compliance and the test was conducted in compliance with the testing requirements in this permit.
2. The permittee shall determine the VOC content, as shipped, of product from FGEPS. The permittee shall use sampling and analysis methods approved by the District Supervisor. The samples shall represent the full range of VOC content of EPS beads used in FGEPS and shall support an estimate of the production-weighted average fraction of VOC retained in product from FGEPS. Results of product sampling and analysis shall be submitted to the District Supervisor in an acceptable format within 30 days following the receipt of analytical results. Analysis has been completed on average 32% retained..

### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years.

1. The permittee shall record the daily hours of operation for the EPS process . Daily records are being maintained. See attached records
2. The permittee shall record the monthly throughput at expansion for each lot of EPS beads.2 Throughput records are being maintained. See attached records
3. The permittee shall record the total EPS bead throughput at expansion, for each calendar month and for a 12-month rolling time period, as determined at the end of each calendar month. Throughput records are being maintained. See attached records
4. The permittee shall record total pounds of densified scrap shipped and the VOC content of the regrind, for each calendar month and for a 12-month rolling time period, as determined at the end of each calendar month. Records are being maintained. See attached records
5. The permittee shall record the pounds of VOC per 100 pounds of EPS beads as received, for each lot of EPS beads used in FGEPS. Records are being maintained. See attached records
6. The permittee shall record the weight fraction of the total VOC emissions emitted at expansion and the VOC destruction efficiency of the thermal oxidizer. Records are being maintained. See attached records
7. The permittee shall calculate and keep a record of the pounds of VOC per 100 pounds of EPS beads used at expansion, for each calendar month and for a 12-month rolling time period, as determined at the end of each calendar month.
8. The permittee shall calculate and keep a record of the total VOC emissions from FGEPS (based on throughput at expansion and the amount of densified scrap shipped), using the method detailed in Appendix 3, for each calendar month and a 12-month rolling time period, as determined at the end of each calendar month. Records are being maintained. See attached records.
9. The permittee shall calibrate, operate and maintain a continuous temperature indicator device, including a low temperature alarm, on the thermal oxidizer in accordance with manufacturer's specifications. This requirement is being met with an electronic monitoring system see attached.
10. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emission unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. No monitoring malfunctions reported.
11. For the thermal oxidizer, the permittee shall conduct:
  - a. Weekly visual inspection of gas regulators, signal strengths, burner, flame appearance, and for signs of leaks, deterioration, damage or developing problems. Inspections are being conducted see attached records.
  - b. Semiannual inspection of igniter, verifying electrode condition and proper gap, and ceramic fiber lining. The company has a contract with Hurst Mechanical inspection is being conducted semiannually, see attached records.
  - c. Semiannual verification of interlocks and fuel valves. The company has a contract with Hurst Mechanical Inspections are being conducted see attached records.
  - d. Annual calibration of RTO temperature control. The company has a contract with Hurst Mechanical calibration is being conducted semiannually, see attached records.
  - e. Annual check of chamber refractory, flame controls, burner, high and low temperature alarms and shut-off. The company has a contract with Hurst Mechanical inspection is being conducted semiannually, see attached records.

12. For the capture system, the permittee shall conduct:
  - a. Weekly inspection of valves, piping, control valves, signal strengths, motors, and linkages for signs of leaks, deterioration or damage. Inspections are being conducted see attached records.
  - b. Monthly inspection of damper plate seals if they exist, and verify actuator functionality. Inspections are being conducted see attached records.
  - c. Semiannual inspection and lubrication of damper and fan bearings. The company has a contract with Hurst Mechanical inspection and lubrication is being conducted semiannually, see attached records.
  - d. Semiannual calibration of pressure sensor, sending device and verification of interlocks. The company has a contract with Hurst Mechanical calibration is being conducted semiannually, see attached records.
  - e. Quarterly replacement of damper seals. Quarterly records were not requested as part of this compliance evaluation..
13. The permittee shall review the report generated from electronic data at the end of each operating day to determine if a minimum combustion temperature of 1340°F has been met. Records for the month of June demonstrate that minimum combustion temperature of 1340 °F is being met, see attached records.
14. The permittee shall continuously monitor the static pressure of the capture system. Monitoring is conducted electronically, see attached graph.

## **VII. REPORTING**

1. Reporting of deviations, semiannual reporting and annual certification of compliance are being submitted as required and reviewed. See documentation in MACES.
2. The permittee shall promptly notify the AQD for the need to modify the CAM plan if it is found to be inadequate and submit a proposed modification to the ROP if necessary. No CAM modifications have been received.

## **VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Stack vent dimensions were not verified during this compliance inspection.
1. SV0015	10 <sup>1</sup>	39 <sup>1</sup>	
2. SV0016	16 <sup>1</sup>	41 <sup>1</sup>	
3. SV0029	16 <sup>1</sup>	41 <sup>1</sup>	
4. SV0034	40.5 <sup>2</sup>	49 <sup>2</sup>	
5. SV0200	8.5 <sup>2</sup>	31 <sup>2</sup>	
6. SV0201	8 <sup>2</sup>	45 <sup>2</sup>	
7. SV0202	11.5 <sup>2</sup>	45 <sup>2</sup>	
8. SV0203	16 <sup>2</sup>	45 <sup>2</sup>	
9. SV0204	12 <sup>2</sup>	34.5 <sup>2</sup>	
10. SV153	20 <sup>2</sup>	10 <sup>2</sup>	
11. SV0002	15 <sup>2</sup>	37 <sup>2</sup>	
12. SV0003	20 <sup>2</sup>	37 <sup>2</sup>	
13. SV0006	18 <sup>2</sup>	38 <sup>2</sup>	
14. SV205	8 <sup>2</sup>	40 <sup>2</sup>	

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall maintain the monitoring system, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. **Parts are being maintained.**

**FGRULE290****DESCRIPTION**

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290.

EUCUTTING, EUEMBOSSING emissions are negligible so these operations are compliant with Rule 290. EUCUTTING could also use a Rule 285(I)(vi) exemption for the grinding and cutting of plastic.

Based on the physical inspection and the records reviewed the company appears to be in compliance with state and federal Air Quality rules and regulations and ROP MI-ROP-N1794-2012.

NAME

Denise Pappas

DATE

7-28-14

SUPERVISOR

PAB