

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

A016926862

FACILITY: Bradford White Corporation		SRN / ID: A0169
LOCATION: 200 Lafayette Street, MIDDLEVILLE		DISTRICT: Grand Rapids
CITY: MIDDLEVILLE		COUNTY: BARRY
CONTACT: Ralph Boyea , Plant Engineer		ACTIVITY DATE: 09/12/2014
STAFF: Steve Lachance	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced Inspection on 9-12-14		
RESOLVED COMPLAINTS:		

This was an unannounced inspection. SL was accompanied by HHollenbach of this office. Weather conditions were generally clear and about 50 F, but warming. Prior to plant entry at about 9:30 AM, Friday 9-12-14, we conducted visible emissions and odor surveys from surrounding properties; no issues were noted. Multiple cranes were on-site for apparent construction activities.

The primary purpose of the inspection was to determine compliance with Opt-Out PTI #207-04A. This permit was modified this summer to include the installation of new tank insulation lines. SL assumed that the observed construction was related to the permitted activity. This is correct, in part; see discussions, below.

The secondary purpose of the visit was to become more familiar with the plant and to introduce SL to the current plant contact, Mr. Ralph Boyea.

As part of the Full Compliance Evaluation (FCE) of the source, SL compared collected records to the Michigan Air Emissions Reporting System (MAERS) submittal for EI2013. These appeared to be consistent and based on the same recordkeeping principles/practices.

Mr. Boyea presented himself to SL and HH in the main lobby at about 9:45 AM, and SL announced his intention to complete an air quality inspection. SL shared the DEQ's "Environmental Inspections; Rights and Responsibilities" brochure.

**As indicated in the previous AQD inspection report, the facility is in the midst of a significant expansion. In addition to the installation of new insulation lines and probable powder coating lines, the project will streamline material/product flows and potentially increase plant efficiencies to allow for increased production.**

**Mr. Boyea stated that the insulation line project permitted above has not yet been installed; on-going construction is associated with on-going plant streamlining.**

**Mr. Boyea provided an informative plant tour while describing the hot-water heater**

**manufacturing  
process on site.**

Compliance determination high-lights are listed below, especially with respect to the pertinent conditions of PTI #207-04A (noting that the new, insulation foam lines are not yet installed.)

**SPECIAL CONDITIONS**

The following conditions apply to: EU-Burnoff

The burnoff oven is used in a batch manner to clean overspray from hangers, etc.)

**Emission Limits**

Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
PM	EU-Burnoff	0.1 lb per 1000 lb exhaust gas*	Test Protocol	GC 13	R336.1331 (1)c
*corrected to 50% excess air					

The unit was not in operation at this time.

**Equipment Design**

IV.1 The permittee shall not operate EU-Burnoff unless a minimum temperature of 1400 degrees Fahrenheit and a minimum retention time of 0.3 seconds is maintained in the afterburner. [R336.1702(a)]

**They reportedly have physical interlock controls which preclude the operator from improper operations.**

**Monitoring/Recordkeeping**

VI.1 The permittee shall record the date, the name of the operator and the afterburner temperature at the beginning of each cycle (prior to putting racks/parts into oven). [R336.1702(a)]

**These records were readily available on an on-site clipboard.**

**Stack/Vent Restrictions**

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
VIII.1	SV-Burnoff	12.0	21.5	R336.1901  40 CFR 52.21 (c) & (d)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

**Stack appears to be per spec.**

**The following conditions apply to:**  
**EU-ComEnamel**

A non-VOC porcelain-like coating is spray- or dip-applied to internal heater parts for commercial heaters. The coating is then dried/hardened in ovens. Particulate matter from overspray is now controlled by filter cartridges and emitted into the plant.

### Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
.1	PM	EU-ComEnamel	.05 lb per 1000 lb of exhaust gas, calculated on a dry gas basis.	Test Protocol	GC 13	R336.1331(1)c

**No visible emissions or any physical evidence of operational problems from/with the com enamel cartridge filter/baghouse.**

### Design/Equipment

VI.1 The permittee shall not operate EU-ComEnamel unless the cartridge filter system is installed, maintained and operated in a satisfactory manner. [R336.1331, R336.1901, R336.1910]

**No observable evidence of improper operation or physical condition.**

### Monitoring

VI.1 The permittee shall monitor in a satisfactory manner the pressure drop across the dry filter particulate control system [or other monitoring program proposed by the permittee and approved in

writing by the District Supervisor] on a weekly basis during operations. [R336.1331, R336.1901, R336.1910]

They maintain a weekly log.

**Recordkeeping/Reporting/Notification**

VI.2 The permittee shall keep in a satisfactory manner, weekly records of the pressure drop readings across the dry filter particulate control system. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1331, R336.1901, R336.1910]

They maintain a weekly log.

**The following conditions apply to: EU-Paint**

This is the main source of HAP/VOC emissions at the facility. The hot-water heater housings are triple-coated with a single coating. The paint is deposited through electro-deposition. VOC content of the coating was reduced earlier this year. See attached records.

**Emission Limits**

	<b>Pollutant</b>	<b>Equipment</b>	<b>Limit</b>	<b>Time Period</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirement</b>
I.1	VOC	EU-Paint	25.2 lb	Hourly based upon a monthly average.	SC 3.5, 3.8	R336.1702 (a)

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
I.2	VOC	EU-Paint	71.06 ton	12-month rolling time period.	SC 3.5, 3.8	R336.1702 (a)

From attached records: 17.13 lb./hr and 48.90 tons/12-month rolling time period through July 2014. Records were readily available and current.

**Material Limits**

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirements
II.1	VOCs	EU-Paint	2.4 lb/gal (minus water)* as applied	Instantaneous	SC 3.5	R336.1205, R336.1702(a)
<p>* The phrase "minus water" shall also include compounds which are used as organic solvents and which are excluded from the definition of volatile organic compound. <b>[R336.1602(4)]</b></p>						

The only paint they use is 1.70#/gal.; see attached records.

**Process / Operational Limits**

III.1 The permittee shall not spray more than 59,216 gallons of materials based upon a 12-month rolling time period as determined at the end of each calendar month. [R336.1205]

**Current 12-month rolling total is 51,828 gallons.; see attached.**

#### **Equipment**

IV.1 The permittee shall not operate EU-Paint unless all respective exhaust filters are installed, maintained and operated in a satisfactory manner. [R336.1301, R336.1331, R336.1910]

**These were observed to be appropriately installed.**

#### **Testing**

V.1 The VOC content, water content, and density of any material, as applied and as received, shall be determined using federal Reference Test Method 24 or manufacturer's formulation data. If the Method 24 and the formulation values should differ, the Method 24 results shall be used to determine compliance. [R336.1205, R336.1702(a)]

**They historically use formulation data; this is incorporated into the "Master" spreadsheet.**

#### **Recordkeeping/Reporting**

VI.1 All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [R336.1205, R336.1702(a)]

**These records were readily available, see attached.**

VI.2 The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the

AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205, R336.1702(a)]**

**See above.**

VI.3 The permittee shall keep the following records/calculations in a satisfactory manner for EU-paint: **[R336.1205, R336.1702(a)]**

**1. For each coating used during a calendar month:**

- a. Coating identification.
  - b. VOC content (minus water and with water) of each coating as applied.
  - c. Coating usage in gallons.
2. Monthly calculations determining the total amount in gallons of materials sprayed and the pounds per hour VOC based upon a monthly average for each month.
  3. Monthly calculations determining the monthly and annual mass VOC emission rates, in tons per month and tons per 12-month rolling time period as determined at the end of each calendar month.
  4. Calculations determining the amount of materials sprayed, in gallons per 12-month rolling time period as determined at the end of each calendar month.

The records/calculations shall be kept in a format acceptable to the AQD District Supervisor. All records/calculations shall be kept on file for a period of at least five years and made available to the Department upon request.

**See attached records; these were generally re-constructed and reviewed in Mr. Boyea's office near the end of the inspection. They appear to incorporate the required elements. They include various cross-checks (production records, inventory records, purchase records) in the spreadsheet/data entry process to keep these records "real."**

### **Stack/Vent Restrictions**

	<b>Stack &amp; Vent ID</b>	<b>Maximum Diameter (inches)</b>	<b>Minimum Height Above Ground Level (feet)</b>	<b>Applicable Requirement</b>
VIII.1	SV-Paintbooths	30.0	30.0	R336.1901, 40 CFR 52.21 (c) & (d)
VIII.2	SV-BakeOven	26.0	28.0	R336.1901, 40 CFR 52.21 (c) & (d)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

The stacks appear to be per specification.

The following conditions apply to:  
EU-ResEnamel

A non-VOC porcelain-like coating is spray- or dip-applied to internal heater parts for residential heaters. The coating is then dried/hardened in ovens.

**Emission Limits**

<b>Pollutant</b>	<b>Equipment</b>	<b>Limit</b>	<b>Time Period</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirement</b>

	<b>Pollutant</b>	<b>Equipment</b>	<b>Limit</b>	<b>Time Period</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirement</b>
I.1	PM	EU-ResEnamel	.05 lb per 1000 lb exhaust gas*.	Test Protocol	GC 13, SC 4.4	R336.1331
*calculated on a dry gas basis.						

**No visible emissions or operational issues noted.**

**Design/Equipment**

IV.1 The permittee shall not operate EU-ResEnamel unless the multiclone collector is installed, maintained and operated in a satisfactory manner. **[R336.1331, R336.1910]**

**This was observed to be the case.**

**Monitoring**

VI.1 The permittee shall monitor in a satisfactory manner the condition of the multi clone collector system through visual inspection [or other monitoring program proposed by the permittee] on a weekly basis during operations. **[R336.1331, R336.1910]**

**Recordkeeping**

VI.2 The permittee shall keep in a satisfactory manner records of visual inspections of the multi clone collector system which includes the dates and results of the inspections and the dates and reasons for repairs. All records shall be kept on file for a period of at least five years and made available to the Department upon request.  
**[R336.1331, R336.1910]**

VI.3 The permittee shall design and implement a preventative/malfunction abatement plan for the multiclone. **[R336.1331, R336.1910]**

**Visual inspection logs are kept per the required PM plan (below.)**

**The following conditions apply to:**  
**EU-Traystripper**

A groundwater remediation system is housed in a separate room. This is a contain/treat system with contaminants transferred to the air. Groundwater contaminant concentrations are low; the facility reports to DEQ's Remediation and Redevelopment Division, and air emission estimates are included in site-wide HAP calculations.

**Emission Limits**

	<b>Pollutant</b>	<b>Equipment</b>	<b>Limit</b>	<b>Time Period</b>	<b>Testing/ Monitoring Method</b>	<b>Applicable Requirement</b>
I.1	VOC	EU-Traystripper	0.58 lb	Hourly*	SC 5.2 & 5.3	R336.1702 (a)
I.2	Cis-1,2-dichloroethylene	EU-Traystripper	0.27 lb	Hourly*	SC 5.2 & 5.3	R336.1225 (1)

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
I.3	Trichloroethylene	EU-Traystripper	0.28 lb	Hourly*	SC 5.2 & 5.3	R336.1225 (1)
I.4	Vinyl Chloride	EU-Traystripper	0.026 lb	Hourly*	SC 5.2 & 5.3	R336.1225 (1)
* Emission limits are hourly based upon a monthly average.						

Calculated emissions per attached are below these limits.

**Monitoring**

VI.1 The permittee shall monitor, in a satisfactory manner, the flow rate, the total VOC concentration and the trichloroethylene, cis-1,2-dichloroethylene, and vinyl chloride concentrations in the effluent/influent streams to EU-Traystripper. This shall be done on a monthly basis until valid samples, which pass all quality assurance and quality control requirements have been obtained. Thereafter, effluent/influent streams to the EU-Traystripper shall be monitored for these parameters on a monthly basis. [R336.1225, R336.1702(a), R336.1910]

**Recordkeeping**

VI.2 The permittee shall record the flow rate, the total VOC concentration, and the trichloroethylene, cis-1,2-dichloroethylene, and vinyl chloride concentrations of the effluent/influent streams to EU-Traystripper. This shall be done on a monthly basis until valid samples have been obtained. Thereafter, these parameters shall be recorded on a monthly basis. All data, including calculation of VOC emission rates, shall be kept on file

for a period of at least five years and made available to the Department upon request. [R336.1225, R336.1702(a), R336.1910]

See attached.

**Stack/Vent Restrictions**

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
VIII.1 SV-Traystrip	10.0	40.0	R336.1225, R336.1901, 40 CFR 52.21 (c) & (d)
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			

Stack appears to be per specification.

**The following conditions apply to: EU-Spraybooths**

These conditions address particulate emissions from the porcelain enamel booths and associated dry/bake ovens.

**Emission Limits**

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
I.1	PM	EU-Spraybooths	0.01 lbs per 1000 lbs exhaust gas	Test Protocol	SC 6.4, 6.5	R336.1331 (1)c
I.2	PM	EU-Spraybooths	0.7 lbs*	Monthly Average	SC 6.4, 6.5	R336.1331 (1)c
*based upon a monthly average.						

**Baghouse control; no v/e's; assume compliance. Their calculated number is ~.04#/hr. See attached.**

**Visible Emission Limits**

I.3 Visible emissions from EU-Spraybooths shall not exceed a six-minute average of five percent opacity. **[R336.1301]**

**No v/e's noted.**

**Equipment**

IV.1 The permittee shall not operate EU-Paintbooths unless all respective exhaust filters are installed, maintained and operated in a satisfactory manner. **[R336.1301, R336.1331, R336.1910]**

**Filters were observed in the booths.**

**Monitoring**

VI.1 The permittee shall monitor in a satisfactory manner the condition of dry filter particulate control system through visual inspection [or other monitoring program proposed by the permittee and approved in writing by the District Supervisor] on a weekly basis during operations. **[R336.1331]**

**They do weekly maintenance checks.**

**Recordkeeping/Reporting/Notification**

VI.1 (*sic*) The permittee shall keep in a satisfactory manner records of visual inspections of the dry filter particulate control system which includes the dates and results of the inspections and the dates and reasons for repairs. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1331]**

**Records being kept.**

**Stack/Vent Restrictions**

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
VIII.1 SV-001	30.0	17.0	R336.1225, 336.1901, R336.52.21 (c) & (d)

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
<p>The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.</p> <p>Additional text, descriptions, stack/vent conditions, etc. as needed.</p>			

Stack appears to be per specification.

(Permitted FG-FOAMLINES was not evaluated; these are not yet installed.)

The following conditions apply to : FG-Facility

These are the “opt-out” conditions that maintain the source’s “synthetic Minor” status, and per above, these records were current and readily available.

**Emission Limits**

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirements
I.1	VOC	FG-Facility	Less than 90 tpy	12-month rolling time period as determined at the end of each calendar month.	SC 7.3 & 7.5	R336.1205

I.2	EACH INDIVIDUAL HAP	FG-Facility	Less than 9.0 tpy	12-month rolling time period as determined at the end of each calendar month.	SC 7.2 & 7.5	R336.1205(3)
I.3	Aggregate HAPs	FG-Facility	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month.	SC 7.2 & 7.5	R336.1205(3)

Per attached records;

**VOC: 48.9 tons per 12 month rolling period through July 2014.**

**Highest HAP: xylene ~2.96 tons per 12 month rolling period through July 2014.**

**Aggregate HAPs – ~14.58 tons per 12 month rolling period through July 2014.**

**Testing**

V.1 The HAP content of any material as received and as applied, shall be determined using manufacturer’s formulation data. Upon request of the AQD District Supervisor, the manufacturer’s HAP formulation data shall be verified using EPA Test Method 311. **[R336.1205(3)]**

**Formulation data is incorporated into the spreadsheet.**

V.2 The VOC content, water content, and density of any material as applied and as received, shall be determined using federal Reference Test Method 24 or manufacturer’s formulation data. If the Method 24 and the formulation values should differ, the Method 24 results shall be used to determine compliance. **[R336.1205(3)]**

**Formulation data is incorporated into the spreadsheet.**

**Monitoring/Recordkeeping**

VI.1 All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [R336.1205(3)]

**Attached; current and complete.**

**VI.2 The permittee shall keep the following information on a monthly basis for FG-Facility:**

- a) Gallons or pounds of each VOC and HAP containing material used.**
- b) Where applicable, gallons or pounds of each VOC and HAP containing material reclaimed.**
- c) VOC and HAP content, in pounds per gallon or for HAP, pounds per pound, of each HAP containing material used.**
- d) Individual and aggregate VOC and HAP emission calculations determining the monthly emission rate of each in tons per calendar month.**
- e) Individual and aggregate VOC and HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.**

**The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205(3)]**

**Attached; current and complete.**

**ALSO:**

**CURRENT/Existing Reaction Injection Molding Operations**; these will be replaced by the new/permitted processes. These currently involve in-place injection of MDI and water-based isocyanide compounds, which react to form insulating foam within the heater. Production/Inventory/Emission records are maintained; see attached. These Operations

are either grandfathered or Rule 290 Exempt (since records are maintained for FG-FACILITY.)

**4 Natural Gas-fired Emergency Gen-Sets**. Three of these are “new” post 2012 installations (MG150); attached literature indicates that these are “EPA Certified.” The fourth is older, but also small; all are exempt per Rule 285(g) based on heat input capacity. (SL did NOT complete a full RICE inspection of these; they are very small units, infrequently used and only for testing.)

## SUMMARY

SL considers the facility to be in compliance with applicable air use requirements. All requested records were current and readily available. Mr. Boyea was informative and accommodating.

**While construction has commenced for the over-all plant streamlining, they have obtained a permit for new foam processes to be installed. Existing equipment will reportedly be re-located on-site or replaced with exempt equipment (Powder Coating booths, etc.) However, installation of any equipment requiring an Air Use Permit to Install in the streamlined plant would represent a potential Rule 201 Violation; and so SL recommends subsequent, timely inspection of the source.**

## ATTACHMENTS

Natural Gas Usage Records

EU-PAINT Records (VOC)

EU-SprayBooth Records (Particulate)

EU-Res-Enamel Records (Particulate)

EU-COM-Ename Records (Particulate)

EU-Traystripper Records (VOC and HAP)

EU-COM-Collector (Particulate, Internally vented)

EU-Foam Lines Records (HAPs)

FG-Facility Records (HAPs)

MG150 Generac Specifications Sheets

NAME  DATE 9/30/14 SUPERVISOR 