

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

A163732665

FACILITY: Pratt & Whitney AutoAir		SRN / ID: A1637
LOCATION: 5640 ENTERPRISE DR, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: INGHAM
CONTACT: Michele Strickland , Consultant		ACTIVITY DATE: 12/14/2015
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced, Scheduled compliance inspection to determine compliance with AQD PTI exemptions and Opt-out PTI No.40-03.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow (author) and Dave Thompson (Permit Engineer)

Personnel Present: Gary Franck, Facilities Manager ([gary.franck@pw.utc.com](mailto:gary.franck@pw.utc.com))

Michele Strickland, temporary EH&S manager ([michele.strickland@us.bureauveritas.com](mailto:michele.strickland@us.bureauveritas.com))

Caroline (Piper) Copeland, temporary EH&S manager ([piper.copeland@us.bureauveritas.com](mailto:piper.copeland@us.bureauveritas.com))

Carman Selezan, EH&S manager ([carman.selezan@pw.utc.com](mailto:carman.selezan@pw.utc.com))

**Purpose:** Conduct an unannounced, scheduled, partial compliance evaluation (PCE) inspection by determining compliance with Pratt & Whitney's Permit No. 40-03, including verification that Pratt & Whitney stayed within the permit's emission limits to remain an opt-out source and not enter into Title V status. This inspection was done as part of a full compliance evaluation (FCE).

**Facility Background/Regulatory Overview:** Pratt & Whitney is involved in fabricating and coating repair parts for commercial aircraft passenger planes.

Pratt & Whitney (P&W) is an opt-out facility. The entire opt-out permit consists only of FG FACILITY where VOC's are limited to 90.0 tpy; individual HAP limited to less than 9.0 tpy; and aggregate HAP limited to less than 22.5 tpy on a 12-month rolling time period. There are currently 4 plants that Pratt & Whitney operates their exempt equipment in. All are considered part of the same stationary source (Attached are maps of the layout). Only 3 plants were being used in 2013 during the last inspection. The 4<sup>th</sup> plant was integrated in September 2014. All plants contain all, or a combination of, the following types of exempt equipment: coating booths, alkaline phosphate metal surface treatment, power wash cleaning, shotblasting, grinding, abrasive cutting, cold cleaners, and ovens. Equipment in plants 1-3 are moved around within the 3 plants. Plant 4 equipment was from Sunfield, Michigan said C. Copeland.

**Inspection:** At approximately 8:00 a.m. on December 14, 2015, Dave Thompson and I arrived at P&W and met with Caroline Copeland and Michele Strickland, who temporarily took over EHS responsibilities until the permanent EHS replacement, Carmen Selezan, was hired. I gave C. Copeland a DEQ "Environmental Inspections: Rights and Responsibilities" brochure.

Equipment installed at P&W was inspected per plant and is identified per plant in this report. Attached is a nearly complete listing of all emission units present in each of the plants, complete with approximate installation dates and the applicable exemptions for each unit, as I had requested.

### Plant 1

Equipment	Description	Permit Exemption	Compliance Status
Five coating booths	All coating booths in this plant have tri-pack filters with a primary filter overlay. The primary overlay filters are replaced when the magnehelic gauge is reading outside of P&W's specified range, which is marked on the gauge. Each booth has its own magnehelic gauge with its own operating range. There is one coating booth in the phosphoric acid anodizing (PAA) section of the plant that is used for hexavalent chromium primer.	Rule 287(c)	Compliance
One alkaline phosphate metal surface treatment	This process is used to clean, etch, and anodize aluminum parts.	Rule 285(r)(i), (iv), (v)	Compliance

(phosphoric acid anodizing or "PAA")	Process flow: degreaser --> hot alkali (degreaser) --> deionized (DI) water rinse --> phosphoric acid (etching) --> DI water rinse --> phosphoric acid (anodizing) --> Rinsing twice with DI water		
Cleaning parts with spray and wipes	This process is simply handwashing of equipment using solvents and wipes. This process is not an installed process and therefore a permit to install nor exemptions, are applicable. The use of solvents for this, however, are tracked for the purposes of FGFACILITY recordkeeping.	Not applicable	Compliance
One shotblasting booth	Plastic bead blasting with a cartridge baghouse inside the facility and another baghouse outside the building before being exhausted to ambient air.	Rule 285(l)(vi)	Compliance
3 Natural gas-fired ovens	Used to cure epoxy adhesives produced from coating lines. They vent to the in-plant environment; small vents are used to vent heat. Even if the ovens are not considered to be in-series with the coating line, the ovens would be exempt under Rule 281(e) under equipment used for drying materials.	Rule 287(c)	Compliance
One cold cleaner	Lid is closed on the cold cleaner, with a surface area of 1.5'x 2.5'. (3.75 ft <sup>2</sup> ). Operating instructions present on inside of cold cleaner lid. MDEQ AQD orange operating sticker was posted in the area to ensure compliance with Part 7 Rules. Deodorized kerosene or petroleum distillates (CAS 64742-47-8) is the solvent used in this equipment (Safety Kleen Premium Solvent).	Rule 281(h)	Compliance

Plant 2

Equipment	Description	Permit Exemption	Compliance Status
Eleven coating booths	There are 11 coating booths in this plant. The largest booth is used to coat parts with a hexavalent chromium coating. All booths use tri-pack fabric filters for particulate control, with primary filter overlay. The filters are replaced when the magnehelic gauge is reading outside of P&W's specified range, which is marked on each gauge. Each booth has its own magnehelic gauge with its own operating range.	Rule 287(c)	Compliance
Power wash cleaning	Self-contained washer unit that uses alkaline soap. No VOC's used.	Rule 281(e)	Compliance
Machining operations (cutting, bending, milling)	There is a large machining area in this plant where saws, metal benders and milling take place. These pieces of equipment are vented to the in-plant environment.	Rules 285(l)(i) and 285(l)(vi)	Compliance
One natural gas-fired oven	This oven is used to dry parts that are coated with Kevlar, some paint drying, but the majority of the activities in this oven is drying adhesive from coating lines. Even if the ovens are not considered to be in-series with the coating line, the ovens would be exempt under Rule 281(e) under equipment used for drying materials.	Rule 287(c)	Compliance

Plant 3

Equipment	Description	Permit Exemption	Compliance Status
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Two coating booths	Hexavalent chromium used in one of the two booths. Both booths utilize tripack fabric filters for particulate control. The filters are replaced when the magnehelic gauge is reading outside of P&W's specified range, which is marked on the gauge. Each booth has its own magnehelic gauge with its own operating range.	Rule 287(c)	Compliance
Power wash cleaning	Surface cleaning using Synergy Multi-Surface Cleaner and Turco 5948 DPM Thick or Turco 5805. The service line for this unit is currently on hold (and has been since June 2015). Turco 5805 contains 1 HAP (diethanolamine) at a maximum of 1%, Turco 5948 DPM Thick contains no HAPs. Rule 281 (e) applies because the materials being washed cannot themselves become an air contaminant and these two cleaners do not contain VOC's.	Rule 281(e)	Compliance
One large grinding booth	Employees use palm grinders in this booth. Emissions are vented to the ambient air. A Torit dust collector is used to capture particulate, the room in which sanding/grinding is conducted is considered a mechanical pre-cleaner. Unit was not being used during the inspection.	Rule 285(l)(vi)	Compliance
One large natural gas-fired oven	Oven is used to cure parts coating with paints or adhesives from the coating lines. Even if the ovens are not considered to be in-series with the coating line, the ovens would be exempt under Rule 281(e) under equipment used for drying materials.	Rule 287(c)	Compliance

**Plant 4**

Plant 4 is divided into two sides: "Test" and "Blades."

Equipment	Description	Permit Exemption	Compliance Status
Seven coating booths	<p>Seven booths are located in Plant 4: 2 larger booths in the "Test" side and 5 booths in the "Blades" side to coat aircraft blades.</p> <p>Four of the booths in the "Blades" side are manual coating booths: 2 for paint, 2 for powder coating. The remaining booth uses automatic, or robotic, application for primer and paint</p> <p>The two booths in "Test" use manual application coating for testing.</p> <p>All booths have tri-pack fabric filters for particulate control. The filters are replaced when the magnehelic gauge is reading out of P&amp;W's specified range, which is marked on the gauge. Each booth has its own magnehelic gauge with its own operating range.</p>	<p>Rule 287(c) (surface coating); Rule 287(d) (powder coating)</p>	Compliance
One small alkaline phosphate metal surface treatment (phosphoric acid anodizing or "PAA")	<p>This process is used to clean, etch, and anodize aluminum parts.</p> <p>Process flow: degreaser --&gt; deionized (DI) water rinse --&gt; phosphoric acid (etching) --&gt; DI water rinse --&gt; phosphoric acid (anodizing) --&gt; Rinsing twice with DI water</p> <p>Also has 2 associated electrically operated ovens to dry the parts</p>	<p>Rule 285(r)(i) (surface treatment)</p> <p>Rule 281(e) (drying equipment)</p>	<p>Compliance</p> <p>Compliance</p>
Sanding/Grinding area for large engine parts	2 Booths designated for sanding and/or grinding of large aircraft engine parts. Torit dust collectors are utilized before venting the emissions to the ambient air. The large rooms in which they sand/grind are considered mechanical precleaners.	Rule 285(l)(vi)	Compliance

One mixing room	Services the paint coating lines	Rule 287(k)	Compliance
One natural gas-fired oven	Used to cure coatings from coating lines. Even if the ovens are not considered to be in-series with the coating line, the ovens would be exempt under Rule 281(e) under equipment used for drying materials.	Rule 287(c)	Compliance
One cold cleaner	Lid is closed on the cold cleaner, with a surface area of 1.5'x 2.5'. (3.75 ft <sup>2</sup> ). MDEQ AQD orange operating sticker was posted in the area to ensure compliance with Part 7 Rules. Deodorized kerosene or petroleum distillates (CAS No. 64742-47-8) is the solvent used in this equipment (Safety Kleen Premium Solvent).	Rule 281(h)	Compliance

**Rule 287(c) Coating Booths**

P&W currently does not keep records of coating use per each individual coating line. Instead, they record coating usage per coating used in order to keep records for meeting the opt-out permit FG-FACILITY limits. In the 2003 opt-out permit application P&W stated that each facility paint booth uses less than 200 gallons per month: this included 5 booths in Plant 1, 2 booths in Plant 2, and 1 booth in Plant 3. The additional 9 booths added to Plant 2 are approximately similar in size to the original 2 booths noted in the permit application; the additional booth in Plant 3 is also similar in size to the original booth noted in the permit application. Therefore, it is reasonable to assume that these additional booths will also remain under the 200 gallon/month (minus water) exemption limit. The two smaller booths installed in Plant 4 on the "Blades" side is similar to the small booths installed in Plants 1-3 and it therefore can be assumed that these booths are also under 200 gal/month of coating usage. M. Strickland provided me with information from the operations engineer who provided an explanation on how the 2 manual coating booths and 1 robotic booth meet the Rule 287(c) exemption: Based on the number of blades coated on average per month for 2015 and the amount of coating that is sprayed per blade, the average monthly coating usage (with water) was 37.8 and 4.05 gallons for the 2 manual paint booths and a projected 154 gallons per month for 2016. The gallons are projected for the robot because M. Strickland said the robot is non-operational: it has not been used since its installation in March 2015 and has to be re-engineered. The M. Strickland provided me monthly usage data two larger booths on the "Test" side (she was able to do this through P&W's SAP system because "Test" coating usage was recorded separately from all other coating booth usages). The highest usage of coating without water for 2015 was 275.57 gallons in September 2015. Because this usage was for 2 booths it can be assumed that individually the gallons of coating per month without water per booth was much less than 200 gallon/month as required in Rule 287(c). I will send an email to M. Strickland and C. Selezan to inform them that Pratt & Whitney must do the coating usage analysis from the "Test" booths in a way to determine the coating usage per booth instead of collectively to more reasonably assure the AQD that the 200 gallon/month limits are being met.

**FGFACILITY**

For all coatings used in a particular month (P&W provided me with October 2015 coating usage), P&W has a list of each coating's density, VOC content (with water), and the number of pounds of the coating that were used, in addition to the HAP wt% in each coating. There are deficiencies noted in these records: VOC content with water and exempt solvents and coating usage containing VOCs reported in gallons used with water need to be included in the recordkeeping. Additionally, any VOC- or HAP-containing materials used, regardless of where they are used, must also be recorded and tracked for the monthly and 12-month rolling opt-out limits. I will remind P&W of these and expect that they be completed for future inspections. All other recordkeeping requirements have been met.

P&W has VOC, individual HAP and aggregate HAP limits of 90.0, <9.0, and <22.5 tpy, respectively. I used October 2015 VOC and HAP records to check against the monthly emissions reported. Attached is the October 2015 monthly coating usage records, coating specs for the 4 coatings I requested for spot-checking, monthly VOC and HAP emissions (November 2014 – October 2015), and the 12-month rolling November 2014 – October 2015 VOC and HAP emissions. Additionally, although P&W does not keep records of cold cleaner VOC emissions, M. Strickland said that the cold cleaner in Plant 1 is serviced 6 times per year and the cold cleaner in Plant 4 is serviced an average of 12 times per year. Using the waste manifests she said P&W has determined that about 1 gallon of solvent is lost during the servicing of the units. This would equate to a total of approximately 10 lbs of VOC per month (0.04 tons per year), which is negligible when looking at facility-wide emissions. P&W is in compliance with their emissions limits at this time, as seen in Table 1

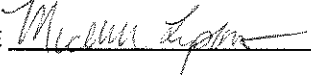
Table 1.

12-month Rolling Totals (tons)		
VOC	Individual HAP	Aggregate HAP
5.76	All <<1	1.56

Inspector's Safety and Health: Safety glasses.

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**Compliance statement:** Pratt and Whitney AutoAir is in compliance at this time. I will request for future inspections that the solvents used in "Bulk Storage Usage" be recorded on a monthly basis and included in the 12-month rolling totals for HAP and VOC. Other areas where recordkeeping was lacking will also need to be complete for future inspections: the spreadsheets need to be updated with the VOC content with water and exempt solvents onto the monthly spreadsheets themselves; and the VOC coating usages have to be reported in *gallons* used with water and exempt solvent, rather than the *pounds* used, which Pratt and Whitney is currently using in their spreadsheets. In addition, an effort must be made to determine coating usage per paint booth in Plant 4 to meet Rule 287(c) more accurately, specifically for Test's 2 booths.

NAME 

DATE 3-1-16

SUPERVISOR \_\_\_\_\_

